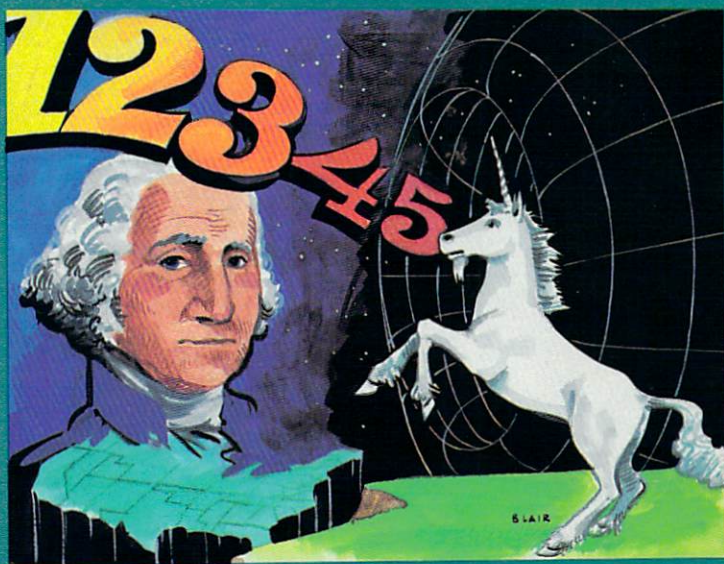# 64 GAMES FOR KIDS

Turn your Commodore 64® into a teacher and entertainer for all ages, from preschool to high school. Thirty game programs you can type in and run.

Clark and Kathy H. Kidd

$12.95

COMMODORE

64 GAMES FOR KIDS

Clark and Kathy H. Kidd

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Contents

A Word to Parents

Games have long been used to teach. Even the simplest children's games, like tag or hopscotch, teach cooperation, shapes, counting, or other skills. Games make learning fun.

The computer makes that learning even more enjoyable. With its graphics, colors, and sounds, the Commodore 64 can become an excellent tool for learning.

Commodore 64 Games for Kids gives you 30 fully developed games, including a quiz builder you can use to create your own test on any subject. This book places a powerful teaching tool in your child's hands. Game programs that teach such subjects as reading, spelling, geography, and mythology make learning pleasant, not painful.

Divided into four levels, the games are grouped according to age and skills, as well as subject areas. Each game includes detailed and clear explanations of its story, how to play the game, and how to score points. Many of the games can be modified to suit your child's individual needs.

Some of the games contain many questions on a topic. In order to include a vast resource of questions, these programs also contain many DATA statements, which means a lot of typing. Although *you* will have to enter these programs, you'll find the thoroughness of the question-and-answer games well worth the time.

In order to make entering the programs easier, a checksum program is included. Please read the article "Automatic Proofreader" before typing in any of the programs in this book.

There are even four arcade-style games for your child to play when the homework's done.

Expanding your child's (and perhaps even your own) knowledge with the Commodore 64 becomes easy with *Commodore 64 Games for Kids.* You'll spend many entertaining and educational hours with this book and your Commodore 64 home computer.

Introduction

Guilty Conscience

If you're like most parents, part of the reason you bought your Commodore 64 was to teach your kids. "Computer literacy is the issue of the eighties," you told yourself. "Our kids won't be able to survive in the world if they don't know computers."

Well, that was enough justification for you to buy your Commodore 64, but have you really put the computer to full use as a teaching tool? Perhaps you wrote a couple of simple math games for the kids, but chances are they have been playing *Frogger* ever since.

You don't need to feel guilty any longer. *Commodore 64 Games for Kids* will ease your conscience and teach the kids (and you) at the same time.

What Did *You* Learn in High School?

For many people, high school was a free ride. The goal was to have fun. If you are like most people, you went to school because you had to go. If you'd had a choice, you'd have gone to school anyway; it was a good place to meet friends. The fact that your teachers were trying to cram knowledge into your head during those few years was incidental.

What do you remember from high school? You remember your friends, the games, and those painful school dances.

You also remember the teachers. You remember Billy's imitation of the way Mr. Berryhill walked and the way Mrs. Thompson came all unhinged when people threw things in class.

But do you remember what those teachers labored to teach you? Do you remember the capitals of more than 5 of the 50 states? When the new Dionysus Greek Restaurant opens downtown, do you know the significance of the name? How many names of the bones of the body or chemical elements can you recall?

If you're like most of us, you forgot all that information because you studied one night to memorize for a test. When the test was over, you let the information slip from your memory. You didn't have any incentive to remember what you'd learned.

Commodore 64 Games for Kids can change all that, at least for children. What they learn playing these games will stay with them. Why? Because they'll have fun learning it. They'll learn the information by playing games they'll want to play.

The Commodore 64 As a Teacher

Computers are a mixed blessing when it comes to teaching. Some features adapt themselves well to a teaching environment, while others may make it frustrating for beginners to use. A programmer can minimize the frustration, but some will always be present.

Computers are good teaching tools because they can utilize sounds, colors, and graphics — features that help hold your attention. Computers also have the ability to present data with a degree of randomness. This reduces boredom and makes learning the same material fun for a longer period of time.

Computers are also well accepted by most children because they represent a comfortable environment. The fact that some games use joysticks further promotes this environment. If you don't tell the kids they're learning while they're having fun, they may never know.

There can be problems though. Your main pipeline to the computer is the keyboard. Although most older children find the keyboard a challenge, some younger children may be intimidated by it. This anxiety can be minimized by using a joystick on games for younger players, or by requiring the younger child to enter only a few characters at the keyboard. The games in this book are written to give young children computer exposure that will encourage, not frighten them.

Another problem in using computers as teaching tools is that the machines are very exact. You may recognize *Misissipi* as a correct answer, but the computer won't. You can minimize this by using multiple-choice answers such as A, B, or C when you create your own games. When creating your own games, if you expect an answer to be typed in, you need to provide a list of possible answers *as the computer will accept them* so the child won't be frustrated by spelling errors. All of the question-and-answer games in *Commodore 64 Games for Kids* do this.

Another possible problem when using computer games is that some of the more complex programs have short delays while tables are loaded and manipulated within the program. This can be alleviated by including a short song that plays while tables are being loaded. You can also reduce the frustration by telling the user a delay will occur. The programs in this book have taken all this into consideration.

Programmer's Guide

A common misconception that has been created by zealous computer salespeople is that you can buy a home computer, unpack it, plug it in, and it will immediately solve all your problems. This is as sensible as buying a power saw and expecting it to build furniture for you. The saw is capable of doing the job, but you must guide it to do the work. A home computer, like the saw, is capable of doing many things — but you must guide it via your program.

Commodore 64 Games for Kids will provide a good set of enjoyable and educational games. And in the process of entering the games into the Commodore 64, you may even learn something about how the programs work. It's just a short step from entering a program to making minor modifications of that program. Once you've made those minor modifications, you're on your way to a knowledge of computer programming.

Acknowledgments

How to Use This Book

The games in this book are divided into four levels, plus a section of games children can play solely for entertainment. Finally, there's a section featuring a program you can use to make your own computer quizzes. The appendices will give you more tips on what this book contains, how to modify the games to suit your children's individual needs and tastes, and a guide to typing in the programs. It is very important that you read the guide before typing in the games.

The games in this book are divided into four levels:

Level 1 includes games for preschoolers, or children who have not yet learned to read.

Level 2 features games for early readers. First- through fifth-graders will feel most comfortable playing games in this level.

Level 3 games are for kids in upper elementary or junior high school. The games are more sophisticated than those in Level 2, and some are nearly as complex as the Level 4 games.

Level 4 games are for older students. Adults would also be challenged by these games.

Turn to the first game in the Level 1 section, "A-Maze-Ing." At the top of the first page is a section of information for you, the programmer. The first line, Skill Area, tells you what your child can learn by playing this game. All games in *Commodore 64 Games for Kids* teach children something in at least one of six areas:

Coordination (includes shape recognition, color identification, motor skills, and instruction-following)

Language Arts

Mathematics

Memory and Logic

Science

Social Studies

A parent whose child needs help in, say, mathematics, may wish to leaf through the book and pick out the mathematics programs to enter first. Check Appendix C for a breakdown of games according to subject.

The second line, Level, tells which skill or age level(s) would enjoy playing the game. Programs are grouped according to the

earliest level at which a child would enjoy the game. However, most of the games appeal to children of more than one age group. A-Maze-Ing, for instance, appeals to a Level 1 child, but a Level 2 child could also enjoy playing the maze. For a complete grouping of games by age level, see Appendix C.

The third line, Equipment Required, indicates extra equipment that may be required for full enjoyment of the game. (All the programs in this book, of course, require a Commodore 64 and a TV or monitor and a disk drive or datassette to SAVE the programs.) In some games, this line indicates whether a joystick is required for play. If you don't have a joystick, Appendix D will tell you how to adapt each game to play without one.

The final line, Modification, tells you whether the program can easily be changed to suit individual needs. Modification can involve just changing the program from joystick to keyboard control. More often, however, you may want to modify a program to include additional information. The list of United States presidents in "Mr. President" can be updated, for example, and some new elements may be discovered to justify additions to "Element Man." Children's needs have been anticipated here. Programs that can be modified will be listed and instructions will be given in Appendix D.

Look at the rest of the documentation for the game A-Maze-Ing. It's divided into three parts — a scenario, instructions for play, and scoring rules. All the games except the complex question-and-answer games include a scenario to stimulate the child's imagination and his interest in the game. The How to Play and Scoring sections give the mechanics for game play.

Note that for the games in Levels 1 and 2, you will have to read the scenario, instructions, and scoring rules to your child. Younger children are not expected to use the games alone. Of course, this can enhance the learning experience as your child learns alongside you. The scenario would not have to be read word for word, for example, but could be described in a storytelling manner. Children in Levels 3 and 4 can probably understand the games' documentation, although they may need some interpretation from you.

You will have to do the majority of the typing as you enter each program, especially with the games in the first two levels. Young children can get easily frustrated as their errors multiply. Children in Levels 3 and 4 could try to enter the programs if they wish, perhaps after watching you, or if they already have had

some experience with personal computers.

All the documentation for *Commodore 64 Games for Kids* follows the format explained above. Even the games in the "Just for Fun When the Homework's Done" section teach coordination and quick thinking and can thus be loosely construed as educational games.

The only exception is "Build a Quiz," a program for parents. In this section, you can create your own question-and-answer games or tests, using a skeleton program.

Level 1: Games for Preschoolers

A-Maze-Ing

Skill area: Coordination
Level: 1, 2
Equipment required: Joystick
Modification: Yes

Story of the Orchard

You are a piglet in the orchard. Piglets like food, and orchards are full of apples, so you've escaped from your pen and run toward the trees. Farmer Brown is following close behind, so you have two minutes to eat all the apples you can before Farmer Brown catches you.

Some of the apples may be out of reach. Don't worry about them. Just eat all the apples you can before you have to leave the orchard.

How to Play

"A-Maze-Ing" is a game of coordination and speed. Using the joystick, you move through the maze to find the apples. You have two minutes to eat all the apples you can. If you've eaten all the apples that aren't hidden by dead ends of the maze, you can end the game by pressing f1.

There are 25 apples. Each time you eat an apple, you'll hear a *Gulp!* sound, and the background color of the orchard will change. When you've eaten all the apples, a song will play.

Scoring

At the end of the game, your score will tell you how many apples you ate, as well as the percentage of the 25 apples that you ate. You will also see how long it took you to eat all the apples within reach.

If you're a good piglet, you'll soon be able to eat all the apples in the orchard, unless one or two are hidden by the orchard maze. When you get that good, try to see how much faster you can do it. If you're fast enough to eat all the apples in two minutes, see if you can move like a greased pig and eat all of them in one minute.

1

A-Maze-Ing

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM A-MAZE-ING                                :rem 187
100 DIMRT(3),NT%(16,1,1),JT%(10,1):RT(0)=2:RT(1)=-
    80:RT(2)=-2:RT(3)=80:LS=40                   :rem 126
110 VC=53248:POKEVC+32,6:POKEVC+33,1:PRINTCHR$(147
    )                                              :rem 7
120 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX      :rem 69
130 M=((PEEK(53272)AND240)/16)*1024            :rem 41
140 C=55296                                    :rem 32
200 FORW=0TO1:X=0                              :rem 16
210 READY,Z:NT%(X,W,0)=Y:NT%(X,W,1)=Z:X=X+1:IFY<>0
    THEN210                                    :rem 223
220 NEXTW:FORW=0TO10:FORY=0TO1:READZ:JT%(W,Y)=Z:NE
    XTY,W                                      :rem 148
300 PRINT"{CLR}{RED}{DOWN}{15 SPACES}{RVS}A-MAZE-I
    NG{OFF}"                                   :rem 110
305 PRINT"{2 DOWN} RUN AROUND THE APPLE ORCHARD EA
    TING"                                       :rem 87
310 PRINT" ALL YOU CAN BEFORE YOUR TIME IS UP."
                                               :rem 173
320 PRINT"{2 DOWN} USE THE JOYSTICK TO MOVE AROUND
     THE{5 SPACES}ORCHARD MAZE."               :rem 168
325 PRINT"{2 DOWN} YOU HAVE TWO MINUTES TO EAT ALL
     YOU"                                       :rem 32
327 PRINT" CAN, OR USE {RVS}F1{OFF} TO QUIT EARLY.
    "                                          :rem 165
330 PRINT"{2 DOWN} YOU MAY NOT BE ABLE TO REACH AL
    L OF{5 SPACES}THE APPLES IN THE ORCHARD!"
                                               :rem 175
340 PRINT"{3 DOWN}{9 SPACES}(HIT ANY KEY TO START)
    "                                          :rem 211
350 X=0:GOSUB9500                              :rem 229
360 GETX$:IFX$=""THEN360                       :rem 131
370 GOSUB9000:FORW=1TO40:GOSUB8500:POKEM+X,81:POKE
    C+X,2:NEXTW                                :rem 130
380 GOSUB8500:POKEM+X,86:POKEC+X,4             :rem 74
390 R1=INT(X/LS):C1=X-(R1*LS):TI$="000000":AC=0
                                               :rem 146
400 C2=C1:R2=R1                                :rem 56
410 GOSUB8000:IFC1=C2ANDR1=R2THEN410           :rem 167
420 IFC2<0THENC2=0                             :rem 23
430 IFC2>39THENC2=39                           :rem 146
440 IFR2<0THENR2=0                             :rem 55
450 IFR2>24THENR2=24                           :rem 166
460 X=PEEK(M+(R2*LS)+C2)                       :rem 91
470 IFX<>32ANDX<>81THEN400                     :rem 50
```

4

```
480 OD=(R1*LS)+C1:ND=(R2*LS)+C2:IFX=81THEN600
                                            :rem 123
500 POKEM+OD,32:POKEC+OD,1:POKEM+ND,86:POKEC+ND,4
                                            :rem 253
510 C1=C2:R1=R2:GOTO410                     :rem 66
600 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15:
    POKEMC+4,129:POKEMC+24,5                :rem 159
610 FORY=40TO60STEP5:POKEMC+1,Y:FORW=1TO5:NEXTW,Y
                                            :rem 223
615 POKEMC+4,128:POKEMC+24,0                :rem 103
617 POKEM+ND,86:POKEC+ND,4                  :rem 58
620 POKEM+OD,32:POKEC+OD,1                   :rem 42
640 C1=C2:R1=R2:AC=AC+1                       :rem 25
650 IFAC>39THENGOTO800                        :rem 88
660 Y=(PEEK(VC+32)AND15)+1:IFY>15THENY=2     :rem 116
670 POKEVC+32,Y                              :rem 122
680 GOTO410                                  :rem 108
800 POKEVC+32,6:PRINT"{CLR}{RED}{DOWN}{14 SPACES}
    {RVS}HAPPY EATING{OFF}"                  :rem 251
810 PRINT"{3 DOWN} YOU ATE";AC;"APPLES."    :rem 165
820 PRINT"{DOWN} YOUR SCORE IS";INT(AC*10/4);"
    {LEFT}%":W=INT(TI/60):X=INT(W/60)       :rem 64
830 Y=W-(X*60):X$=STR$(X):Y$=RIGHT$(X$,1)+".":IFY<
    10THENY=Y+100                           :rem 157
840 X$=STR$(Y):Y$=Y$+RIGHT$(X$,2):PRINT"{DOWN} YOU
    R TIME IS ";Y$                          :rem 115
850 X=1:GOSUB9500                           :rem 235
860 PRINT"{3 DOWN}{BLK} PLAY AGAIN? ({RVS}Y{OFF}/
    {RVS}N{OFF})"                           :rem 118
870 GETX$:IFX$=""THEN870                    :rem 143
880 IFX$="Y"THEN370                          :rem 78
890 IFX$<>"N"THEN870                        :rem 134
900 X=0:GOSUB9500:PRINTCHR$(147)            :rem 155
910 END                                     :rem 113
8000 IFTI$>"000200"ORPEEK(197)=4THEN800     :rem 172
8010 J1=15-(PEEK(56321)AND15)                :rem 21
8020 R2=R2+JT%(J1,0)                          :rem 37
8030 C2=C2+JT%(J1,1)                           :rem 9
8040 RETURN                                  :rem 172
8500 X=INT(RND(1)*1000):IFPEEK(M+X)<>32THEN8500
                                            :rem 217
8510 RETURN                                 :rem 174
9000 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15
    :POKEMC+24,5                            :rem 178
9005 PRINTCHR$(147);"{BLK}";:X$="{RVS}{39 SPACES}
    {OFF}"                                  :rem 110
9010 FORX=1TO24:PRINTX$;"{RVS} {OFF}";:NEXTX:PRINT
    X$;:POKEM+999,160:POKEC+999,0           :rem 157
9020 X=M+81:POKEX,4                          :rem 98
```

5

```
9030 Y=INT(4*RND(1)):Z=Y:POKEMC+1,INT(RND(1)*10)+1
     0:POKEMC+4,17                            :rem 178
9040 W=X+RT(Y):IFPEEK(W)=160THENPOKEW,Y:POKEX+RT(Y
     )/2,32:X=W:GOTO9030                      :rem 107
9045 POKEMC+4,16                              :rem 131
9050 Y=Y+1:IFY>3THENY=0                       :rem 161
9060 IFY<>ZTHEN9040                           :rem 135
9070 Y=PEEK(X):POKEX,32                       :rem 134
9080 IFY<4THENX=X-RT(Y):GOTO9030                :rem 1
9090 POKEMC+24,0:FORX=0TO999:IFPEEK(M+X)<>160THENP
     OKE(M+X),32                              :rem 226
9100 NEXTX:RETURN                             :rem 123
9500 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
     9:POKEMC+24,15:Y=0                        :rem 40
9510 W=INT(NT%(Y,X,0)/256)                    :rem 188
9520 POKEMC+0,NT%(Y,X,0)-(W*256)                :rem 3
9530 POKEMC+1,W:POKEMC+4,17                    :rem 91
9540 FORW=1TONT%(Y,X,1)*100:NEXTW             :rem 254
9550 POKEMC+4,16:FORW=1TO20:NEXTW              :rem 63
9560 IFNT%(Y,X,0)<>0THENY=Y+1:GOTO9510         :rem 26
9570 POKEMC+24,0                              :rem 129
9580 RETURN                                   :rem 182
10000 DATA6430,2,6430,2,6430,2,4817,2,5407,2,5407,
      2,4817,4,8101,2                         :rem 170
10010 DATA8101,2,7217,2,7217,2,6430,4,0,0    :rem 251
10020 DATA6430,2,6430,2,7217,2,5728,2,6430,1,7217,
      2,8101,2,8101,2                         :rem 163
10030 DATA8583,2,8101,2,7217,1,6430,2,8583,2
                                              :rem 171
10040 DATA6430,2,5728,2,6430,8,0,0            :rem 175
10500 DATA0,0,-1,0,1,0,0,0,0,-1,-1,-1,1,-1,0,0,0,1
      ,-1,1,1,1                               :rem 230
```

Count the Spots

Skill area: Mathematics
Level: 1
Equipment required: None
Modification: No

The Old *Monopoly* Dice

All the big kids play *Monopoly*, but you can't get anybody to play it with you. *Monopoly* isn't easy, and Dad says you have to be able to roll the dice before you can learn the rest of the game.

Rolling the dice isn't hard, unless a die rolls off the table and you have to look for it in the carpet. The hardest part is deciding what the spots on the dice mean. Each spot stands for the number 1, and you add the number of spots on both dice to see how many squares you can move ahead when your turn comes. When you can count the numbers on the dice, maybe the other kids will let you play *Monopoly* with them.

How to Play

Each game consists of ten rolls of the dice. The computer will roll the dice, and you count the number of spots. When you think you have the right number, type the number and then press the key that says RETURN. *Don't* spell the numbers out: type 10, not TEN.

You'll know when you get a right answer by the whooshing sound and the colors flashing on the screen. A wrong guess will cause the screen to go black, and you'll hear a raspberry.

Scoring

At the end of the game, the computer will tell how many times you were right. The highest score possible in one game is 10. The computer will also tell the highest score that you've made since you started playing "Count the Spots" this time. After a game, type the letter Y to play again. To quit, type N when the computer asks if you want to play once more.

Count the Spots

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM COUNT THE SPOTS                          :rem 24
10 VC=53248:POKEVC+32,0:POKEVC+33,1:PRINTCHR$(147)
                                               :rem 208
20 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX    :rem 20
50 DIMDI$(5),DI%(5,2),S%(11,1)                 :rem 236
60 A$="{RVS}{40 SPACES}{OFF}"                  :rem 240
70 B$="{RVS}{6 SPACES}{OFF}{11 SPACES}{RVS}
   {6 SPACES}{OFF}{11 SPACES}{RVS}{6 SPACES}{OFF}"
                                               :rem 58
100 FORX=0TO5:READX$:DI$(X)=X$:NEXTX:CT$="{CYN}
    {PUR}{GRN}{BLU}{YEL}"                      :rem 145
110 FORX=0TO5:FORY=0TO2:READZ:DI%(X,Y)=Z:NEXTY,X:H
    S=0                                        :rem 203
120 PRINT"{RED}{CLR}{2 DOWN}{13 SPACES}{RVS}COUNT
    {SPACE}THE SPOTS"                          :rem 74
125 PRINT"{2 DOWN} EACH GAME CONSISTS OF TEN ROLLS
    OF THE{2 SPACES}DICE."                     :rem 237
130 PRINT"{2 DOWN} THE PLAYER MUST COUNT THE NUMBE
    R OF"                                      :rem 70
135 PRINT" SPOTS ONBOTH{OFF} DICE AND ENTER
    {SPACE}THAT{7 SPACES}NUMBER."              :rem 255
140 PRINT"{2 DOWN} ONE POINT IS RECEIVED FOR EACH
    {SPACE}CORRECT{2 SPACES}ANSWER."           :rem 223
150 PRINT"{3 DOWN}{15 SPACES}{RVS}GOOD LUCK!{OFF}"
                                               :rem 183
160 X=RND(-TI):POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:P
    OKEMC+6,129:POKEMC+24,15                   :rem 191
170 READX,Y:IFX<0THEN194                       :rem 235
175 Z=INT(X/256)                               :rem 148
180 POKEMC+0,X-(Z*256):POKEMC+1,Z              :rem 177
190 POKEMC+4,17:FORX=1TOY:NEXTX:POKEMC+4,16
                                               :rem 235
192 FORX=1TO10:NEXTX:GOTO170                   :rem 41
194 POKEMC+24,0                                :rem 74
200 PRINT"{BLK}{2 DOWN}{8 SPACES}(PRESS ANY KEY TO
    START)"                                    :rem 245
210 GETX$:IFX$=""THEN210                       :rem 119
220 FORX=0TO11:READZ,Y:S%(X,0)=Z:S%(X,1)=Y:NEXTX
                                               :rem 231
300 S=0:FORX=0TO9                              :rem 21
310 D1=INT(RND(1)*6)+1:D2=INT(RND(1)*6)+1 :rem 239
320 Y=INT(RND(1)*5)+1:X$=MID$(CT$,Y,1)        :rem 103
330 PRINT"{CLR}";X$;:FORY=0TO4:PRINTA$;:NEXTY:FORY
    =0TO8:PRINTB$;:NEXTY                       :rem 223
335 FORY=0TO4:PRINTA$;:NEXTY                   :rem 88
340 Z$="{BLK}{HOME}{6 DOWN}":FORY=0TO2:X$=DI$(DI%(
    D1-1,Y)):Y$=DI$(DI%(D2-1,Y))              :rem 253
350 PRINTZ$;"{7 RIGHT} ";X$;" {8 RIGHT} ";Y$;"
    {SHIFT-SPACE}":Z$=Z$+"{3 DOWN}":NEXTY :rem 201
```

```
360 INPUT"{7 DOWN} HOW MANY{SHIFT-SPACE}SPOTS";X$:
    Y=VAL(X$):IFY=(D1+D2)THEN400
370 PRINTCHR$(147):POKEVC+33,0:POKEMC+0,0:POKEMC+1
    ,10:POKEMC+5,15                            :rem 129
375 POKEMC+6,15:POKEMC+24,7:POKEMC+4,33:FORZ=1TO10
    0:NEXTZ:POKEMC+4,32                        :rem 1
380 FORZ=1TO50:NEXTZ:POKEMC+24,0:POKEVC+33,1
                                               :rem 251
390 GOTO500                                    :rem 106
400 REM *** ANSWER CORRECT ***                 :rem 86
410 S=S+1                                      :rem 212
420 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15:
    POKEMC+24,10                               :rem 171
430 FORZ=8TO1STEP-1                            :rem 187
440 POKEVC+33,Z:POKEMC+1,(10-Z)*5:POKEMC+4,17
                                               :rem 124
450 FORY=1TO50:NEXTY:POKEMC+4,16               :rem 12
460 FORY=1TO10:NEXTY,Z                         :rem 164
470 POKEMC+24,0                                :rem 71
500 NEXTX                                      :rem 44
600 Z=0:IFS>HSTHENHS=S:Z=1                     :rem 174
610 PRINT"{BLU}{CLR}{2 DOWN}{15 SPACES}{RVS}GAME O
    VER!{OFF}{DOWN}"                           :rem 104
620 PRINT"{2 DOWN}{5 SPACES}YOUR SCORE =";S:rem 33
630 PRINT"{2 DOWN}{5 SPACES}HIGH SCORE =";HS
                                               :rem 59
640 IFZ=1THENPRINT"{2 DOWN}{5 SPACES}{RVS}YOU SET
    {SPACE}A NEW HIGH!{OFF}"                   :rem 12
650 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,129
    :POKEMC+24,15                              :rem 245
660 FORX=0TO11:Y=INT(S%(X,0)/256)              :rem 162
665 POKEMC+0,S%(X,0)-(Y*256)                   :rem 2
670 POKEMC+1,Y:POKEMC+4,17                     :rem 41
675 FORY=1TOS%(X,1):NEXTY:POKEMC+4,16          :rem 46
680 FORY=1TO30:NEXTY,X                         :rem 168
685 POKEMC+24,0                                :rem 79
690 PRINT"{BLK}{3 DOWN}{5 SPACES}PRESS {RVS}Y{OFF}
     TO REPLAY"                                :rem 45
700 PRINT"{2 DOWN}{5 SPACES}PRESS {RVS}N{OFF} TO Q
    UIT"                                       :rem 239
710 GETX$:IFX$=""THEN710                       :rem 129
720 IFX$="Y"THEN300                            :rem 64
730 IFX$<>"N"THEN710                           :rem 120
740 PRINTCHR$(147)                             :rem 22
750 END                                        :rem 115
2000 DATA"{7 SPACES}","{3 SPACES}Q{3 SPACES}","Q
     {6 SPACES}","{6 SPACES}Q","Q{5 SPACES}Q","Q
     {2 SPACES}Q{2 SPACES}Q"                   :rem 216
2010 DATA0,1,0,2,0,3,2,1,3,4,0,4,4,1,4,5,0,5
                                               :rem 80
```

Level

1

```
2020 DATA4817,300,5407,300,4291,300,2145,300,3215,
     600,-1,-1                                    :rem 107
2030 DATA4817,175,0,5,4817,175,0,5,4817,175,5407,1
     00                                           :rem 65
2040 DATA6069,200,6069,100,5407,100,6069,100,6430,
     100,7217,200                                 :rem 25
```

Counting Game

Skill area: Mathematics
Level: 1, 2
Equipment required: None
Modification: No

The Counting House
You, the king, are in the counting house. The counting house is full of hearts, spades, triangles, and other shapes, which you've collected to decorate the kingdom. An accurate count of each shape must be made.

How to Play
This game teaches a child to recognize the written and numeric characters from 1 to 99. Each number picked is shown as a word and also as a number of objects. For example, the word *four*, followed by a picture of four hearts, might appear. Look at the pictures and the word and then enter the correct number on the keyboard (in this case, 4).

Because people learn to count a little bit at a time, the level of difficulty can be adjusted when entering the maximum value at the beginning of the game. Beginning counters, for example, could choose a maximum of 10, and the largest number of objects presented in any question would be 10. The number of questions that will be asked can also be selected. To choose any number in these categories, type the number and then press the RETURN key.

When the word and the corresponding number of objects appear on the screen, type the number on the keyboard, then press the RETURN key. Correct answers will be rewarded with songs; incorrect answers will be noted with a buzzing noise and a black screen.

Scoring
The score at the end of the game will tell you how many questions were asked, how many items were answered correctly, and the percentage of correct answers.

Counting Game

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM COUNTING GAME                              :rem 150
100 DIMNT%(4,10,1),W1$(18),W2$(7)               :rem 148
110 FORX=0TO4:FORY=0TO10:FORZ=0TO1              :rem 188
120 READW:NT%(X,Y,Z)=W:NEXTZ,Y,X               :rem 43
130 FORX=0TO18:READX$:W1$(X)=X$:NEXTX           :rem 55
140 FORX=0TO7:READX$:W2$(X)=X$:NEXTX:G$="Q*ASZW":C
    $="{BLK}{RED}{PUR}{GRN}{BLU}"               :rem 20
150 VC=53248:POKEVC+32,14:POKEVC+33,1:PRINTCHR$(14
    7):X=RND(-TI)                               :rem 8
160 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX       :rem 73
200 PRINT"{BLK}{DOWN}{13 SPACES}{RVS}COUNTING
    {2 SPACES}GAME{OFF}"                        :rem 41
210 PRINT"{3 DOWN} THIS GAME TEACHES YOU TO RECOGN
    IZE THE{2 SPACES}NUMBERS FROM 1 TO 99."
                                                :rem 209
220 PRINT"{2 DOWN} EACH NUMBER PICKED IS SHOWN"
                                                :rem 60
230 PRINT" REPRESENTED AS A WORD AND AS A NUMBER
    {3 SPACES}OF OBJECTS."                      :rem 246
235 PRINT"{2 DOWN} YOU MUST ENTER THE NUMBER REPRE
    SENTED."                                    :rem 106
240 PRINT"{2 DOWN} A GAME CAN CONSIST OF FROM 1 TO
     500{5 SPACES}QUESTIONS."                   :rem 4
250 X=INT(RND(1)*5):GOSUB8000                   :rem 175
260 PRINT"{3 DOWN}{7 SPACES}(PRESS ANY KEY TO STAR
    T)"                                         :rem 124
270 GETX$:IFX$=""THEN270                        :rem 131
300 PRINTCHR$(147);"{3 DOWN} WHAT IS THE MAXIMUM N
    UMBER TO BE USED?"                          :rem 242
304 PRINT" (ENTER A NUMBER FROM 1 TO 99)"       :rem 187
310 X$="":INPUT"{3 DOWN} ";X$                    :rem 137
320 RG=VAL(X$):IFRG<1 OR RG>99THEN300           :rem 150
400 PRINT"{CLR}{3 DOWN} HOW MANY QUESTIONS SHOULD
    {SPACE}BE ASKED IN{3 SPACES}THIS GAME?"
                                                :rem 255
410 PRINT" (ENTER A VALUE FROM 1 TO 500)"       :rem 144
420 X$="":INPUT"{3 DOWN} ";X$                    :rem 139
430 NQ=VAL(X$):IFNQ<1ORNQ>500THEN400            :rem 206
440 NC=0                                        :rem 150
500 FORLC=1TONQ:PN=INT(RND(1)*RG)+1             :rem 145
510 IFPN<20THENX$=W1$(PN-1):GOTO550            :rem 79
520 X=INT(PN/10):Y=PN-(X*10):X$=W2$(X-2)        :rem 13
530 IFY=0THEN550                                :rem 182
540 X$=X$+"-"+W1$(Y-1)                          :rem 73
```

```
 550 X=INT(RND(1)*5)+1:Y=INT(RND(1)*6)+1    :rem 186
 560 Y$=MID$(C$,X,1)+MID$(G$,Y,1)+"{SHIFT-SPACE}"
                                            :rem 194
 600 PRINT"{CLR}{DOWN}{4 SPACES}QUESTION #";LC
                                            :rem 112
 610 PRINT"{4 DOWN}{4 SPACES}";X$;"{2 DOWN}" :rem 4
 620 FORX=1TOPN:PRINTY$;:NEXTX:PRINT"{BLK} "
                                            :rem 113
 630 INPUT"{2 DOWN}{4 SPACES}HOW MANY OBJECTS";X$
                                            :rem 115
 640 X=VAL(X$):IFX=PNTHEN700                :rem 161
 650 POKEVC+33,0:POKEMC+0,0:POKEMC+1,20:POKEMC+4,33
                                            :rem 205
 655 POKEMC+5,15:POKEMC+6,15:POKEMC+24,8    :rem 43
 660 FORX=1TO300:NEXTX:POKEMC+4,32          :rem 57
 670 FORX=1TO30:NEXTX:POKEMC+24,0            :rem 7
 680 PRINTCHR$(147):POKEVC+33,1              :rem 9
 690 GOTO800                                :rem 112
 700 X=INT(RND(1)*5):GOSUB8000              :rem 175
 710 NC=NC+1                                 :rem 83
 800 NEXTLC                                 :rem 102
 900 PRINT"{CLR}{2 DOWN}{14 SPACES}{RVS}GAME
     {2 SPACES}OVER{OFF}"                    :rem 25
 910 PRINT"{3 DOWN}{3 SPACES}NUMBER OF QUESTIONS ="
     ;NQ                                    :rem 222
 920 PRINT"{DOWN}{3 SPACES}NUMBER CORRECT{6 SPACES}
     =";NC                                   :rem 97
 930 X=INT((NC*100)/NQ)                     :rem 216
 940 PRINT"{DOWN}{3 SPACES}PERCENT CORRECT
     {5 SPACES}=";X;"{LEFT}%"               :rem 179
 950 PRINT"{4 DOWN}{11 SPACES}PLAY AGAIN? ({RVS}Y
     {OFF}/{RVS}N{OFF})"                    :rem 247
 960 GETX$:IFX$=""THEN960                   :rem 143
 970 IFX$="Y"THEN300                         :rem 71
 980 IFX$<>"N"THEN960                       :rem 134
 990 PRINTCHR$(147)                          :rem 29
1000 END                                    :rem 152
8000 REM *** PLAY SONGS ***                 :rem 104
8010 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
     9:POKEMC+24,15                         :rem 35
8020 FORY=0TO10                             :rem 123
8030 Z=INT(NT%(X,Y,0)/256)                  :rem 187
8040 POKEMC+0,NT%(X,Y,0)-(Z*256)             :rem 2
8050 POKEMC+1,Z:POKEMC+4,17                  :rem 90
8060 FORZ=1TONT%(X,Y,1)*70:NEXTZ            :rem 214
8070 POKEMC+4,16:FORZ=1TO20:NEXTZ,Y         :rem 198
8080 POKEMC+24,0                            :rem 124
8090 RETURN                                 :rem 177
9000 DATA4050,2,5407,2,5407,2,5407,2,5728,1,6430,2
                                            :rem 206
```

Level

1

```
9010 DATA7217,2,8583,1,8101,2,0,1,0,1        :rem 58
9020 DATA4817,2,6430,2,7217,2,8101,2,6430,2,6430,1
                                             :rem 202
9030 DATA8101,2,9634,2,9634,2,7217,4,0,1    :rem 228
9040 DATA6430,2,7217,2,8101,2,6430,2,6430,2,7217,2
                                             :rem 202
9050 DATA8101,2,6430,2,8101,2,8583,2,9634,4
                                             :rem 127
9060 DATA5407,2,5728,2,6430,2,5407,2,5728,2,6430,2
     ,5407,2,5728,2                          :rem 153
9070 DATA6430,2,7217,2,4817,2               :rem 206
9080 DATA4291,2,4291,2,4291,2,4817,1,5407,2,5407,2
                                             :rem 222
9090 DATA4817,1,5407,2,5728,1,6430,4,0,1    :rem 232
9200 DATAONE,TWO,THREE,FOUR,FIVE,SIX,SEVEN,EIGHT,N
     INE,TEN                                 :rem 34
9210 DATAELEVEN,TWELVE,THIRTEEN,FOURTEEN,FIFTEEN,S
     IXTEEN                                  :rem 68
9215 DATASEVENTEEN,EIGHTEEN,NINETEEN        :rem 143
9220 DATATWENTY,THIRTY,FORTY,FIFTY,SIXTY,SEVENTY,E
     IGHTY,NINETY                            :rem 112
```

Get the Treasure

Skill area: Coordination
Level: 1
Equipment required: Joystick
Modification: Yes

The Treasure Chest

You have a treasure chest, but it's empty. The genie who gave you the treasure chest said he would help you fill it, but only if his instructions are followed. In fact, there is a whole field full of treasures you may have if they are collected in the right order.

How to Play

The computer will scatter ten treasures, geometric shapes of various colors, around the screen. Using a joystick, move the cursor to the treasure indicated at the top of the screen. When the cursor touches a treasure, the treasure will be moved to the chest at the foot of the screen.

In addition to teaching coordination (use of the joystick) and shape recognition, "Get the Treasure" teaches you to match colors. If the item to find is a blue heart, for example, the heart you touch must also be a blue one. A red one or a purple one won't do.

If you pick the right treasure, a musical tone will indicate that you've made a correct choice. Picking the wrong treasure will produce a buzzing sound.

Scoring

At the end of the game, you will be told how many errors were made and how many seconds it took you to get all ten treasures into the treasure chest. You'll always win Get the Treasure — that is, always get all ten treasures unless you quit playing in mid-game. However, the score and your coordination can be improved by trying to reach all ten treasures in a shorter time period. This is the true object of the game.

Get the Treasure

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM GET THE TREASURE                        :rem 65
100 VC=53248:POKEVC+32,6:POKEVC+33,1:PRINTCHR$(147
    ):LS=40                                   :rem 128
105 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX     :rem 72
110 S1=((PEEK(53272)AND240)/16)*1024+160      :rem 32
120 C1=55296+160:S2=S1+770:C2=C1+770          :rem 131
130 DIMT(9),CL(5),FT(9,1),NT%(11,1)           :rem 61
140 FORX=0TO9:READY:T(X)=Y:NEXTX              :rem 106
150 FORX=0TO5:READY:CL(X)=Y:NEXTX             :rem 162
160 FORX=0TO11:READY,Z:NT%(X,0)=Y:NT%(X,1)=Z:NEXTX
                                              :rem 136
170 GOSUB1000                                 :rem 217
200 FORX=0TO9                                 :rem 26
210 Y=INT(RND(1)*10):FT(X,0)=T(Y)             :rem 106
220 Y=INT(RND(1)*6):FT(X,1)=CL(Y):NEXTX:ER=0
                                              :rem 139
240 PRINT"{CLR}{RVS}{BLU}********** GET THE TREAS
    URE **********{OFF}{BLK}";                :rem 80
250 PRINT"{2 DOWN}CCCC *******************CCCCCCCC
    CCCCCCCCC";                               :rem 4
260 PRINT"{17 DOWN}************ {RED}TREASURE CHES
    T{BLK} **********C";                      :rem 86
300 FORY=0TO9:GOSUB2000:POKES1+X,FT(Y,0):POKEC1+X,
    FT(Y,1):NEXTY                             :rem 211
310 GOSUB2000:POKES1+X,42:POKEC1+X,0:J1=INT(X/LS):
    K1=X-(J1*LS)                              :rem 245
320 TI$="000000"                             :rem 247
400 FORX=0TO9                                 :rem 28
410 PRINT"{HOME}{2 DOWN}{2 SPACES}FIND --> ":POKES
    1-69,FT(X,0):POKEC1-69,FT(X,1)            :rem 237
420 J2=J1:K2=K1:Y=PEEK(56321)                :rem 129
425 IF(YAND1)=0THENJ2=J2-1                   :rem 7
430 IF(YAND2)=0THENJ2=J2+1                   :rem 2
440 IF(YAND4)THENK2=K2+1                     :rem 154
450 IF(YAND8)THENK2=K2-1                     :rem 161
460 IFJ2<0THENJ2=0                           :rem 41
470 IFJ2>16THENJ2=16                         :rem 154
480 IFK2<0THENK2=0                           :rem 45
490 IFK2>39THENK2=39                         :rem 168
500 IFJ1=J2ANDK1=K2THEN420                   :rem 38
510 Y=PEEK(S1+(J2*40)+K2):IFY<>32THEN600     :rem 26
520 POKES1+(J1*LS)+K1,32:POKEC1+(J1*LS)+K1,1
                                              :rem 227
525 POKES1+(J2*LS)+K2,42:POKEC1+(J2*LS)+K2,0
                                              :rem 236
530 J1=J2:K1=K2:GOTO420                       :rem 69
600 Z=PEEK(C1+(J2*LS)+K2)                     :rem 128
605 IFZ=FT(X,1)ANDY=FT(X,0)THEN700            :rem 47
```

```
610 ER=ER+1:POKEMC+0,0:POKEMC+1,5:POKEMC+4,33:POKE
    MC+5,15:POKEMC+6,15                      :rem 133
620 POKEMC+24,10                             :rem 117
630 FORZ=1TO150:NEXTZ:POKEMC+4,32            :rem 61
640 POKEMC+24,0                              :rem 70
650 GOTO420                                  :rem 106
700 POKES1+(J2*LS)+K2,42:POKEC1+(J2*LS)+K2,0
                                             :rem 231
705 POKES1+(J1*LS)+K1,32:POKEC1+(J1*LS)+K1,1
                                             :rem 232
710 POKES2+(X*2),Y:POKEC2+(X*2),Z            :rem 149
720 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15:
    POKEMC+24,8                              :rem 133
730 FORY=20TO50STEP5                         :rem 242
740 POKEMC+1,Y:POKEMC+4,17:FORZ=1TO80:NEXTZ
                                             :rem 238
750 POKEMC+4,16:FORZ=1TO20:NEXTZ,Y           :rem 147
760 POKEMC+24,0                              :rem 73
770 J1=J2:K1=K2                              :rem 66
780 NEXTX                                    :rem 54
800 PRINT"{CLR}{DOWN}{RVS}{11 SPACES}G A M E
    {4 SPACES}O V E R{11 SPACES}{OFF}";      :rem 66
810 PRINT"{2 DOWN}{11 SPACES}TOTAL ERRORS
    {2 SPACES}= ";ER                         :rem 252
820 PRINT"{2 DOWN}{11 SPACES}TOTAL SECONDS =";INT(
    TI/60)                                   :rem 6
830 PRINT"{4 DOWN}{11 SPACES}WANT TO PLAY AGAIN?"
                                             :rem 98
835 PRINT"{DOWN}{13 SPACES}(REPLY {RVS}Y{OFF} OR
    {RVS}N{OFF})"                            :rem 239
840 GETX$:IFX$=""THEN840                     :rem 137
850 IFX$="Y"THEN200                          :rem 67
860 IFX$<>"N"THEN840                         :rem 128
870 GOSUB3000:PRINTCHR$(147)                 :rem 151
880 END                                      :rem 119
1000 PRINT"{CLR}{BLU}{DOWN}{RVS} ********** GET TH
     E TREASURE ********** {OFF}";           :rem 168
1010 PRINT"{2 DOWN}{BLK} TEN TREASURES WILL BE PLA
     CED ON THE{5 SPACES}COMPUTER SCREEN."   :rem 45
1020 PRINT"{2 DOWN} THE TOP OF THE SCREEN WILL SHO
     W YOU"                                  :rem 54
1025 PRINT"THE TREASURE YOU MUST FIND"       :rem 76
1030 PRINT"{2 DOWN} USE THE JOYSTICK TO MOVE YOURS
     ELF (*){3 SPACES}TO THE CORRECT TREASURE."
                                             :rem 242
1040 PRINT"{2 DOWN} AS YOU GET EACH ITEM, IT WILL
     {SPACE}BE MOVED{2 SPACES}TO YOUR TREASURE CHE
     ST."                                    :rem 110
```

17

```
1050 PRINT"{2 DOWN} GET ALL TEN ITEMS IN THE CHEST
     AND{6 SPACES}YOU WIN!"                    :rem 169
1060 GOSUB3000:PRINT"{DOWN}{8 SPACES}(PRESS ANY KE
     Y TO START)";                            :rem 65
1070 GETX$:IFX$=""THEN1070                     :rem 225
1080 RETURN                                    :rem 169
2000 X=INT(RND(1)*680):Z=PEEK(S1+X)            :rem 15
2010 IFZ<>32THEN2000                           :rem 124
2020 RETURN                                    :rem 164
3000 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
     9:POKEMC+24,15                            :rem 29
3010 FORX=0TO11                                :rem 117
3020 Y=INT(NT%(X,0)/256)                       :rem 47
3030 POKEMC+0,NT%(X,0)-(Y*256)                 :rem 118
3040 POKEMC+1,Y:POKEMC+4,17                    :rem 83
3050 FORY=1TONT%(X,1)*80:NEXTY                 :rem 74
3060 POKEMC+4,16:FORY=1TO30:NEXTY              :rem 58
3070 NEXTX:POKEMC+24,0                         :rem 71
3080 RETURN                                    :rem 171
10000 DATA81,83,160,90,65,88,81,95,105,102 :rem 70
10010 DATA0,2,4,5,6,12                         :rem 76
10020 DATA6430,2,6430,2,6430,2,4817,2,5407,2,5407,
      2                                        :rem 248
10030 DATA4817,4,8101,2,8101,2,7217,2,7217,2,6430,
      4                                        :rem 249
```

Hidden Picture

Skill area: Coordination
Level: 1
Equipment required: Joystick
Modification: Yes

The Magic Show
You're a famous magician, and you've learned how to take an
empty canvas and turn it into a picture without doing any work at
all. Artists would like to know your secret, so they could paint
pictures without messing up their living rooms with sticky paint.
They ask you to tell them how to uncover hidden pictures, but the
secret is not for sale. Your magic is done for free, and just for
friends.

How to Play
This game of coordination requires only a joystick and a little
patience. The computer will print a picture on the screen, camou-
flaged in the same color as the background of the screen. Try to
uncover the picture by moving the cursor back and forth with a
joystick to erase the background. A song will play to indicate the
game is over once every square in the picture field is uncovered.

There are five pictures entered into the basic program. If you
uncover part of a picture and realize you've seen it before, you can
press the fire button on the joystick to get a new picture.

Hidden Picture
Remember, do not type the checksum number at the end of each line. For example, do
not type ":rem 123." Please read the article about the "Automatic Proofreader" in
Appendix E.

```
1 REM HIDDEN PICTURE                           :rem 221
100 DIMCC%(9,1),NT%(22,1),JT%(10,1)
110 VC=53248:POKEVC+32,6:POKEVC+33,12:PRINTCHR$(14
    7)                                          :rem 57
114 CT$="{BLK}{WHT}{RED}{CYN}{PUR}{GRN}{BLU}{YEL}"
    :LS=40                                      :rem 19
118 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX    :rem 76
120 FORX=0TO9:FORY=0TO1:READZ:CC%(X,Y)=Z:NEXTY,X
                                              :rem 134
125 FORX=0TO22:FORY=0TO1:READZ:NT%(X,Y)=Z:NEXTY,X
                                              :rem 210
```

```
130 PRINT"{WHT}{DOWN} {RVS}{12 SPACES}HIDDEN PICTU
    RE{12 SPACES}{OFF}"                        :rem 231
140 PRINT"{2 DOWN} USE THE JOYSTICK TO ERASE THE S
    CREEN"                                     :rem 122
150 PRINT" AND UNCOVER THE HIDDEN PICTURE.":rem 51
160 PRINT"{2 DOWN} STOP DOING THE CURRENT PICTURE
    {SPACE}BY"                                 :rem 252
165 PRINT" PRESSING THE FIRE BUTTON ON THE "
                                               :rem 57
168 PRINT" JOYSTICK, OR BY UNCOVERING THE WHOLE
    {4 SPACES}PICTURE."                        :rem 242
170 GOSUB2000                                  :rem 218
175 PRINT"{2 DOWN}{7 SPACES}(PRESS ANY KEY TO STAR
    T)"                                        :rem 112
180 GETX$:IFX$=""THEN180                       :rem 131
190 M=((PEEK(53272)AND240)/16)*1024:C=55296
                                               :rem 244
195 FORX=0TO10:FORY=0TO1:READZ:JT%(X,Y)=Z:NEXTY,X
                                               :rem 210
200 SC=INT(RND(1)*10):DC=0:JF=0                :rem 247
210 POKEVC+32,1:POKEVC+33,CC%(SC,0)            :rem 245
220 X$=MID$(CT$,CC%(SC,0)+1,1):PRINTX$;:PC=CC%(SC,
    1)                                         :rem 161
230 GOTO4000                                   :rem 146
250 C1=INT(RND(1)*25):R1=INT(RND(1)*LS)        :rem 224
260 CV=PEEK(M+(C1*LS)+R1):POKEM+(C1*LS)+R1,160:POK
    EC+(C1*LS)+R1,15                           :rem 29
270 IFCV<128THENCV=CV+128                      :rem 252
300 C2=C1:R2=R1:GOSUB8000                      :rem 185
350 IFJFTHEN1000                               :rem 167
360 IFC2<0THENC2=0                             :rem 26
370 IFC2>24THENC2=24                           :rem 137
380 IFR2<0THENR2=0                             :rem 58
390 IFR2>39THENR2=39                           :rem 181
400 IFC1=C2ANDR1=R2THEN300                     :rem 34
405 POKEM+(C1*LS)+R1,CV:POKEC+(C1*LS)+R1,PC:rem 19
410 C1=C2:R1=R2:CV=PEEK(M+(C1*LS)+R1):IFCV<128THEN
    CV=CV+128:DC=DC+1                          :rem 241
420 POKEM+(C1*LS)+R1,160:POKEC+(C1*LS)+R1,15
                                               :rem 225
430 IFDC>998THEN1000                           :rem 133
440 GOTO300                                    :rem 100
1000 REM *** PICTURE DONE ***                  :rem 227
1005 GOSUB2000:POKEVC+32,6:POKEVC+33,15        :rem 33
1010 PRINT"{CLR}{BLK}{3 DOWN}{4 SPACES}ANOTHER PIC
     TURE?"                                    :rem 85
1020 PRINT"{2 DOWN}{4 SPACES}PRESS {RVS}Y{OFF} FOR
      YES":PRINT"{2 DOWN}{4 SPACES}PRESS {RVS}N
     {OFF} FOR NO"                             :rem 72
```

```
1030 GETX$:IFX$=""THEN1030                    :rem 217
1040 IFX$="Y"THEN200                          :rem 107
1050 IFX$<>"N"THEN1030                        :rem 208
1060 PRINTCHR$(147)                            :rem 66
1070 END                                      :rem 159
2000 REM *** PLAY A SONG ***                   :rem 80
2010 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
     9:POKEMC+24,15                           :rem 29
2020 FORX=0TO22                               :rem 119
2030 Y=INT(NT%(X,0)/256)                       :rem 47
2040 POKEMC+0,NT%(X,0)-(Y*256)                :rem 118
2050 POKEMC+1,Y:POKEMC+4,17                    :rem 83
2060 FORY=1TONT%(X,1)*90:NEXTY                 :rem 75
2070 POKEMC+4,16:FORY=1TO30:NEXTY,X           :rem 190
2080 POKEMC+24,0                              :rem 118
2090 RETURN                                   :rem 171
4000 K=INT(RND(1)*4)+1                        :rem 168
4010 ONKGOTO4100,4300,4500,4700              :rem 138
4100 PRINT"{CLR}{DOWN}{10 SPACES}TULIPS AND WINDMI
     LLS{2 DOWN}"                             :rem 195
4110 PRINTSPC(19);"〔+〕"                       :rem 25
4120 PRINTSPC(19);"〔+〕"                       :rem 26
4130 PRINTSPC(19);"〔+〕"                       :rem 27
4140 PRINTSPC(18);"U〔+〕I"                     :rem 185
4150 PRINTSPC(12);"〔7 +〕+〔7 +〕"               :rem 95
4160 PRINTSPC(18);"G〔+〕H"                     :rem 172
4170 PRINTSPC(18);"G̅〔+〕H̅"                   :rem 173
4180 PRINTSPC(18);"G̅〔+〕H̅"                   :rem 174
4190 PRINTSPC(18);"G̅〔+〕H̅"                   :rem 175
4200 PRINTSPC(18);"G̅ H̅"                       :rem 1
4205 PRINTSPC(18);"G̅ H̅"                       :rem 6
4207 PRINTSPC(18);"G̅ H̅"                       :rem 8
4210 PRINT"{2 SPACES}X̅{3 SPACES}X{3 SPACES}X
     {3 SPACES}X{3 SPACES}G H{2 SPACES}X{3 SPACES}
     X{3 SPACES}X{3 SPACES}X "                :rem 231
4220 PRINT" M-N M̅-N M-N M-N{2 SHIFT-SPACE}G H
     {SHIFT-SPACE}M-N{SHIFT-SPACE}M-N M-N M̅-N̅"
                                             :rem 104
4230 PRINT"〔40 U〕";                          :rem 149
4240 PRINT"{3 DOWN}{12 SPACES}DECORATE HOLLAND"
                                              :rem 23
4250 GOTO250                                  :rem 155
4300 PRINT"{CLR}{DOWN}{5 SPACES}*{8 SPACES}*
     {8 SPACES}*{5 SPACES}*{8 SPACES}*"        :rem 14
4310 PRINT"{2 SPACES}*{6 SPACES}*{9 SPACES}*
     {2 SPACES}*{4 SPACES}*{7 SPACES}*{3 SPACES}*"
                                             :rem 191
4320 PRINT"{7 SPACES}*{8 SPACES}*{9 SPACES}*
     {4 SPACES}*{5 SPACES}*"                  :rem 108
```

```
4330 PRINT"{2 SPACES}*{11 SPACES}*{6 SPACES}*
     {8 SPACES}*{3 SPACES}*"                    :rem 109
4340 PRINT"{7 SPACES}*{3 SPACES}*{3 SPACES}UI
     {8 SPACES}*{10 SPACES}* "                  :rem 226
4350 PRINT" *{13 SPACES}JK{2 SPACES}*{7 SPACES}*
     {3 SPACES}*{6 SPACES}*"                    :rem 4
4360 PRINT"{3 SPACES}*{9 SPACES}*{7 SPACES}*
     {12 SPACES}*"                              :rem 70
4370 PRINT"{13 SPACES}V{9 SPACES}"             :rem 117
4380 PRINT"{13 SPACES}E+3{9 SPACES}"    :rem 70
4390 PRINT"{6 SPACES}E2 +3{5 SPACES}E+3
     {2 SPACES}+{6 SPACES}+{7 SPACES}<>"  :rem 195
4400 PRINT"{6 SPACES}E2 +3{5 SPACES}E+3
     {2 SPACES}E+3{2 SPACES}X{3 SPACES}E+3
     {7 SPACES}E2 +3"                      :rem 251

4410 PRINT"{3 SPACES}++ E2 +3{5 SPACES}E+3
     {2 SPACES}E+3{2 SPACES}E+3{3 SPACES}E+3
     {4 SPACES}V{2 SPACES}E2 +3{3 SPACES}V
     {2 SPACES}"                          :rem 44
4420 PRINT"{3 SPACES}E2 +3 E2 +3{2 SPACES}A
     {2 SPACES}E+3{2 SPACES}E+3{2 SPACES}E+3
     {3 SPACES}E+3{4 SPACES}E+3{2 SPACES}
     E2 +3{3 SPACES}E+3 "                 :rem 36
4430 PRINT"{2 SPACES}E3 +3 E2 +3{2 SPACES}
     E+3 E2 +3{2 SPACES}E+3{2 SPACES}E2 +3
     {2 SHIFT-SPACE}E2 +3{2 SPACES}E2 +3Q
     E2 +3{2 SHIFT-SPACE} E+3 "           :rem 153

4440 PRINT"{2 SPACES}E3 +3{SHIFT-SPACE}E2 +3
     E-3 E5 +3 E2 +3 E6 +3 E4 +3 E3 +3
     E4 +3"                               :rem 231
4450 PRINT" E38 +3"                      :rem 66
4460 PRINT"E40 U3";                      :rem 154
4470 PRINT"{2 DOWN}";SPC(11);"MOON OVER MANHATTAN"
                                         :rem 38
4480 GOTO250                             :rem 160
4500 PRINT"{CLR}{DOWN} .{2 SPACES}.{3 SPACES}.
     {2 SPACES}.{4 SPACES}. .{3 SPACES}.{2 SPACES}
     .{2 SPACES}.{2 SPACES}.{2 SPACES}.{3 SPACES}.
     "                                   :rem 102

4510 PRINT"{2 SPACES}. .{3 SPACES}.{2 SPACES}.
     {4 SPACES}. .{2 SPACES}.{2 SPACES}.{3 SPACES}
     . .{2 SPACES}. .{2 SPACES}."        :rem 241
4520 PRINT".{2 SPACES}.{3 SPACES}.{4 SPACES}.
     {2 SPACES}.{2 SPACES}. .{2 SPACES}. .
     {2 SPACES}.{2 SPACES}.{2 SPACES}. . ."  :rem 32
4530 PRINT" . .{2 SPACES}.{2 SPACES}.{3 SPACES}.
     {2 SPACES}. .E+3 . .{2 SPACES}. . .
     {3 SPACES}.{2 SPACES}. "            :rem 199
```

```
4540 PRINT".{3 SPACES}.{3 SPACES}.{3 SPACES}.
     {4 SPACES}[5 +][3 SPACES}.{2 SPACES}.
     {2 SPACES}.{2 SPACES}.{4 SPACES}"      :rem 76
4550 PRINT"{2 SPACES}.{2 SPACES}.{4 SPACES}.
     {3 SPACES}. [7 +] .{2 SPACES}. .{2 SPACES}.
     {3 SPACES}. ."                         :rem 245
4560 PRINT".{3 SPACES}.{2 SPACES}.{4 SPACES}.
     {3 SPACES}-{5 SPACES}-{2 SPACES}.{2 SPACES}.
     {2 SPACES}.{2 SPACES}.{4 SPACES}"      :rem 202
4570 PRINT"{2 SPACES}.{3 SPACES}.{3 SPACES}.
     {2 SPACES}. S[W] Q Q [Q]S .{2 SPACES}. .
     {2 SPACES}.{2 SPACES}. ."              :rem 19
4580 PRINT".{3 SPACES}.{3 SPACES}.{3 SPACES}.
     {3 SPACES}-{2 SPACES}Z{2 SPACES}- . . .
     {3 SPACES}.{6 SPACES}"                 :rem 166
4590 PRINT" .{3 SPACES}. .{3 SPACES}.{2 SPACES}. -
     J*K -{2 SPACES}. .{2 SPACES}.{4 SPACES}.
     {3 SPACES}"                            :rem 80
4600 PRINT"{2 SPACES}. .{4 SPACES}.{3 SPACES}.
     {2 SPACES}J*****K.{2 SPACES}. .
     {2 SPACES}.{2 SPACES}.{4 SPACES}"      :rem 142
4610 PRINT".{2 SPACES}.{2 SPACES}.{4 SPACES}.
     {3 SPACES}.{2 SPACES}- - . .{2 SPACES}.
     {2 SPACES}.{5 SPACES}.{2 SPACES}"      :rem 34
4620 PRINT" .{2 SPACES}.{3 SPACES}.{4 SPACES}.
     {2 SPACES}U*K J*I. .{3 SPACES}.{3 SPACES}.
     {2 SPACES}.{2 SPACES}"                 :rem 238
4630 PRINT"{2 SPACES}.{2 SPACES}.{3 SPACES}.
     {2 SPACES}.{3 SPACES}-{5 SPACES}- . . .
     {2 SPACES}.{4 SPACES}.{2 SPACES}"      :rem 246
4632 PRINT"{3 SPACES}.{3 SPACES}.{3 SPACES}Q
     ****[W]{5 SPACES}[Q]****Q.
     {4 SPACES}.{5 SPACES}"                 :rem 88
4634 PRINT"{2 SPACES}.{2 SPACES}.{2 SPACES}.
     {2 SPACES}.{2 SPACES}. -{5 SPACES}- . . .
     {2 SPACES}.{3 SPACES}.{2 SPACES}."     :rem 86
4636 PRINT"{2 SPACES}.{2 SPACES}.{3 SPACES}.
     {3 SPACES}.{2 SPACES}-{5 SPACES}- . . . .
     {2 SPACES}.{3 SPACES}. "               :rem 42
4640 PRINT"[40 U]";                         :rem 154
4650 PRINT"{DOWN}";SPC(10);"SOME PEOPLE CAN MAKE"
                                            :rem 236
4660 PRINT"{DOWN}";SPC(9);"SNOWMEN IN THE WINTER."
     ;                                      :rem 189
4670 GOTO250                                :rem 161
4700 PRINT"{CLR}{3 DOWN}{12 SPACES}[16 @]"
                                            :rem 162
4710 PRINT"{11 SPACES}NNNNNNNNNNNNNNNNNNNNM" :rem 24
```

23

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4720 PRINT"{10 SPACES}NNNNNNNNNNNNNNNNNNN
     {2 SHIFT-SPACE}M"                         :rem 89
4730 PRINT"{10 SPACES}{J}{15 SPACES}{J}
     {2 SPACES}{L}"                            :rem 191
4740 PRINT"{10 SPACES}{J}{15 SPACES}{J}
     {2 SPACES}{L}"                            :rem 192
4750 PRINT"{10 SPACES}{J}{15 SPACES}{J}
     {2 SPACES}{L}"                            :rem 193
4760 PRINT"{10 SPACES}{J}{2 SPACES}{3 +}
     {5 SPACES}{3 +}{2 SPACES}{J}{2 SPACES}
     {L}"                                      :rem 166
4770 PRINT"{10 SPACES}{J}{2 SPACES}{3 +}
     {5 SPACES}{3 +}{2 SPACES}{J}{2 SPACES}
     {L}"                                      :rem 167
4780 PRINT"{10 SPACES}{J}{10 SPACES}{3 +}
     {2 SPACES}{J}{2 SPACES}{L}"      :rem 182
4790 PRINT"{10 SPACES}{J}{10 SPACES}{3 +}
     {2 SPACES}{J}{2 SPACES}{L}"      :rem 183
4800 PRINT"{10 SPACES}{J}{10 SPACES}{3 +}
     {2 SPACES}{J}{2 SPACES}{L}"      :rem 175
4810 PRINT"{3 SPACES}{34 Y}"              :rem 236
4820 PRINT"{2 DOWN}{3 SPACES}DO YOU LIVE IN A HOUS
     E LIKE THIS?"                            :rem 121
4830 GOTO250                                 :rem 159
8000 REM *** READ JOYSTICK ***               :rem 52
8010 Z=15-(PEEK(56321)AND15)                 :rem 244
8020 C2=C2+JT%(Z,0)                           :rem 230
8030 R2=R2+JT%(Z,1)                            :rem 6
8040 IF(PEEK(56321)AND16)=0THENJF=1          :rem 247
8050 RETURN                                   :rem 173
9000 REM *** SCREEN COLOR TABLE ***           :rem 80
9010 DATA2,1,3,6,3,0,4,1,2,1,5,1,6,1,6,3,7,0,7,2
                                              :rem 37
9100 REM *** SONG DATA ***                   :rem 251
9110 DATA8583,1,9634,2,8583,2,8101,2,6430,2,5728,2
     ,7217,2,7217,1                          :rem 156
9120 DATA6430,2,8101,2,8101,1,7217,2,8583,2,8583,1
     ,9634,2                                   :rem 54
9130 DATA8583,2,8101,2,6430,2,5728,2,7217,2,8583,2
     ,8583,2,5728,2                          :rem 167
9200 REM *** JOYSTICK TABLE ***              :rem 131
9210 DATA0,0,-1,0,1,0,0,0,0,-1,-1,-1,1,-1,0,0,0,1,
     -1,1,1,1                                :rem 188
```

Level 2: Games for Early Readers

Matchmaker

Skill area: Memory and Logic
Level: 2, 3, 4
Equipment required: Joystick
Modification: No

The Matchmaker

You're the kingdom's foremost matchmaker, and you've been
hired by the king to keep him distracted from the problems he
faces from day to day. The king's favorite pastime is throwing
things on the floor. Then he calls you, the matchmaker, to pick
everything up.

Being an eccentric king, he doesn't want to make things easy
for you. He has a rule: Whatever he throws on the floor must be
picked up with an object that matches. Today he's scattered a
bunch of flat objects on the floor and covered them with paper to
hide their shapes. You have to remove all the objects, pair by pair.
If you want, you can get others to help you.

How to Play

"Matchmaker" is a game for one to eight players, with four skill
levels. Each player must uncover two squares and try to match the
shapes underneath them. When playing in skill levels 2, 3, or 4,
you must also match the *color* of the objects.

To begin the game, press number 1, 2, 3, or 4 to indicate the
skill level. The higher the number, the more objects will have to
be matched. Next, press a number from 1 to 8 to indicate how
many people are playing. The computer will take a few seconds
to build the Matchmaker screen.

Notice that the top of the screen will indicate two things.
First, it will tell whose turn it is. Second, it will indicate whether
this is your first or second choice during a turn. When the game
begins, the top of the screen will tell you player #1 is about to ask
his first question.

To uncover a square, use the joystick to move the arrow
directly underneath it. When you are in the right position, press
the fire button. (Important: Hold down the fire button as long as
you need to remember what's underneath the square, but don't
press it a second time in the same location or it'll count as your

next guess. This is particularly crucial when you're playing with more than one person. If you press the fire button a second time on your second turn, it'll count as the next player's first guess.)

When you make a match, a whooping noise will sound and the matched squares will disappear.

Scoring

Matchmaker is not a game of high points. The total number of points is the number of pairs of objects in the game. If only one person is playing and there are 20 pairs of objects on the board, the score at the end will always be 20 unless the game is stopped in the middle. If more than one person is playing Matchmaker, the final score will tell how many matches were made by each player.

Matchmaker

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM MATCHMAKER                          :rem 242
100 DIMHT(1,3),ST(9),CT(3),S%(7),NT%(20):CB=828:VC
    =53248:MC=54272                       :rem 29
110 SM=((PEEK(53272)AND240)/16)*1024:CO=55296-SM
                                          :rem 91
120 FORX=54272TO54296:POKEX,0:NEXTX       :rem 174
130 FORX=0TO3:READZ:CT(X)=Z:NEXTX:FORX=0TO9:READZ:
    ST(X)=Z:NEXTX                         :rem 12
140 FORX=0TO20:READZ:NT%(X)=Z:NEXTX:GOSUB8000
                                          :rem 138
200 PRINT"{CLR}{2 DOWN} ENTER SKILL LEVEL:":PRINT"
    {2 DOWN}{3 SPACES}{RVS}1{OFF} - BEGINNING
    {DOWN}":PRINT"{7 SPACES}TO"           :rem 70
210 PRINT"{DOWN}{3 SPACES}{RVS}4{OFF} - ADVANCED"
                                          :rem 176
220 GETX$:IFX$=""THEN220                  :rem 121
230 IFX$<"1"ORX$>"4"THEN220               :rem 231
240 SL=VAL(X$)                            :rem 34
250 PRINT"{3 DOWN} ENTER NUMBER OF PLAYERS (1 TO 8
    )"                                    :rem 244
252 GETX$:IFX$=""THEN252                  :rem 131
253 IFX$<"1"ORX$>"8"THEN252               :rem 245
254 NP=VAL(X$)                            :rem 38
255 PRINT"{5 DOWN}{10 SPACES}(SCREEN BEING BUILT)"
                                          :rem 184
260 FORX=1TONP:S%(X-1)=0:NEXTX:FORX=1TO(SL*20):POK
    ECB+X-1,0:NEXTX                       :rem 127
270 FORX=1TOSL:FORY=0TO9:FORZ=1TO2        :rem 9
```

```
280 GOSUB1000:POKECB+R1,ST(Y):POKECB+R1+(SL*20),CT
    (X-1):NEXTZ,Y,X                           :rem 221
300 PRINT"{CLR}{4 DOWN}{BLK}":FORX=1TOSL*2    :rem 80
310 PRINT"{5 SPACES}";:FORY=0TO9:PRINT"{PUR}{RVS}
    {SPACE}{OFF}{2 SPACES}";:NEXTY            :rem 187
320 PRINT"{DOWN}"                             :rem 119
330 NEXTX:M%=0:AP=245:POKESM+AP,30:POKESM+CO+AP,0
                                              :rem 27
400 W=1                                       :rem 89
410 FORX=1TO2:PRINT"{HOME}{DOWN} PLAYER #
    {3 SPACES}{3 LEFT}";W:PRINT"{DOWN} SQUARE #";X
    "                                         :rem 100
420 GOSUB2000:Y=(R*10)+C:Z=PEEK(CB+Y)         :rem 148
430 HT(X-1,0)=Z:HT(X-1,1)=PEEK(CB+Y+(SL*20)):HT(X-
    1,2)=Y                                    :rem 155
440 HT(X-1,3)=AP-40                           :rem 249
450 POKESM+HT(X-1,3),HT(X-1,0):POKESM+CO+HT(X-1,3)
    ,HT(X-1,1)                                :rem 223
455 IF(PEEK(56321)AND16)=0THEN455             :rem 105
456 POKESM+HT(X-1,3),160:POKESM+CO+HT(X-1,3),4
                                              :rem 177
457 NEXTX                                     :rem 55
470 IFHT(0,0)=HT(1,0)ANDHT(0,1)=HT(1,1)ANDHT(0,3)<
    >HT(1,3)THEN475                           :rem 116
473 GOTO600                                   :rem 109
475 FORX=0TO1                                 :rem 32
480 POKESM+HT(X,3),32:POKESM+CO+HT(X,3),1:NEXTX
                                              :rem 142
485 POKECB+HT(0,2),0:POKECB+HT(1,2),0         :rem 72
490 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15:
    POKEMC+24,8                               :rem 137
492 FORY=40TO20STEP-5                         :rem 35
494 POKEMC+1,Y:POKEMC+4,17:FORZ=1TO30:NEXTZ
                                              :rem 239
496 POKEMC+4,16:NEXTY:POKEMC+24,0             :rem 12
500 S%(W-1)=(S%(W-1))+1                       :rem 123
510 M%=M%+1:IFM%=(SL*10)THEN700               :rem 204
600 W=W+1                                     :rem 221
610 IFW<=NPTHEN410                            :rem 88
620 GOTO400                                   :rem 101
700 PRINT"{CLR}{BLK}{DOWN}{16 SPACES}{RVS}SCORES
    {OFF}{3 DOWN}"                            :rem 66
710 FORX=1TONP:PRINT"{2 SPACES}PLAYER #";X;"=";S%(
    X-1);:PRINT"{DOWN}":NEXTX                 :rem 178
720 GOSUB4000                                 :rem 221
740 PRINTCHR$(147);"{3 DOWN}{2 SPACES}PLAY AGAIN ?
    "                                         :rem 157
742 PRINT"{2 DOWN}{5 SPACES}{RVS}Y{OFF} = YES"
                                              :rem 187
```

```
744 PRINT"{2 DOWN}{5 SPACES}{RVS}N{OFF} = NO"
                                              :rem 94
750 GETX$:IFX$=""THEN750                       :rem 137
760 IFX$="Y"THEN200                            :rem 67
770 IFX$<>"N"THEN750                           :rem 128
780 PRINTCHR$(147)                             :rem 26
790 END                                        :rem 119
800 REM *** PLAY SONG                          :rem 103
810 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,129
    :POKEMC+24,15                              :rem 243
820 FORX=0TO20                                 :rem 75
830 Y=INT(NT%(X)/256)                          :rem 169
840 POKEMC+0,NT%(X)-(Y*256)                    :rem 240
850 POKEMC+1,Y:POKEMC+4,17                     :rem 41
860 FORY=1TO150:NEXTY:POKEMC+4,16              :rem 66
870 FORY=1TO10:NEXTY,X:POKEMC+24,0             :rem 141
880 RETURN                                     :rem 128
1000 W=0                                       :rem 133
1010 R1=INT(RND(1)*(SL*20)):IFPEEK(CB+R1)=0THENRET
     URN                                       :rem 184
1020 W=W+1:IFW<5THEN1010                       :rem 140
1030 R1=0                                      :rem 180
1040 IFPEEK(CB+R1)=0THENRETURN                 :rem 121
1050 R1=R1+1:GOTO1040                          :rem 157
2000 REM *** READ JOYSTICK                     :rem 176
2005 JQ=PEEK(56321):IF(JQAND16)=0THEN2200      :rem 101
2010 Z=AP:IF(JQAND1)=0THENZ=Z-40               :rem 194
2020 IF(JQAND2)=0THENZ=Z+40                    :rem 96
2030 IF(JQAND4)=0THENZ=Z-1                     :rem 50
2040 IF(JQAND8)=0THENZ=Z+1                     :rem 53
2050 IFAP=ZORZ<240ORZ>839THEN2000              :rem 25
2060 IFPEEK(SM+Z)=160THEN2000                  :rem 183
2070 POKESM+AP,32:POKESM+CO+AP,1:POKESM+Z,30:POKES
     M+CO+Z,0                                  :rem 136
2080 AP=Z:GOTO2000                             :rem 39
2200 IFPEEK(SM+AP-40)<>160THEN2000             :rem 184
2210 Z=AP-245:R=INT(Z/80):C=Z-(R*80)           :rem 33
2220 C=INT(C/3)                                :rem 39
2230 RETURN                                    :rem 167
4000 PRINT"{2 DOWN}{12 SPACES}(PRESS ANY KEY)"
                                              :rem 102
4010 GOSUB800                                  :rem 221
4015 POKE198,0                                 :rem 247
4020 GETX$:IFX$=""THEN4020                     :rem 221
4030 RETURN                                    :rem 167
8000 POKEVC+32,6:POKEVC+33,1:PRINTCHR$(147);
                                              :rem 98
8005 PRINT"{BLK}{DOWN} {RVS}{11 SPACES}** MATCHMAK
     ER **{11 SPACES}{OFF}"                    :rem 104
```

```
8100 PRINT"{2 DOWN}MATCHMAKER IS A MEMORY GAME FOR
     1 TO 8"                                    :rem 92
8105 PRINT"PLAYERS, WITH FOUR SKILL LEVELS."
                                                :rem 219
8110 PRINT"{2 DOWN}EACH PLAYER MUST UNCOVER TWO SQ
     UARES AND";                               :rem 50
8115 PRINT"TRY TO MATCH THE SHAPES UNDER THEM."
                                                :rem 46
8120 PRINT"SKILL LEVELS 2-4 MUST ALSO MATCH THE
     {4 SPACES}OBJECTS' COLOR."                :rem 29
8140 PRINT"{2 DOWN}MOVE UNDER A SQUARE WITH THE JO
     YSTICK,"                                  :rem 64
8145 PRINT"AND EXPOSE IT WITH THE FIRE BUTTON."
                                                :rem 52
8150 GOSUB4000                                  :rem 18
8160 RETURN                                     :rem 175
9000 DATA0,8,5,14,65,42,81,83,86,87,78,90,95,105
                                                :rem 127
9010 DATA6430,8101,8101,8583,6430,7217,8101,7217,6
     430,5728,4291                             :rem 129
9020 DATA4291,5407,5728,6430,7217,6430,5728,6430,4
     291,4291                                  :rem 149
```

2

Notecrafter

Skill area: Memory and Logic
Level: 2, 3, 4
Equipment required: None
Modification: No

The Notecrafter's Craft

You are a notecrafter. If the orchestra gives a bad concert, the newspaper critic will blame the conductor, and the conductor will blame you. It's your job to make the orchestra sound good by getting the instruments to sound just right.

So that you can tune the instruments, the computer will tell just how a note should sound. Then it's your responsibility to get the note made by the musical instrument to sound just like the computer's note. It takes talent — a good memory and a good musical ear — to get a note exactly right.

How to Play

The computer will sound a note. Then it will play the note made by your musical instrument. You must raise or lower the note until it sounds exactly the same as the note you remember from the computer.

Raise or lower a note by pressing numbers on the computer keyboard.

To make a note sound lower, press 1, 2, or 3:

    1 = lower the note just a little bit.
    2 = lower the note an average amount.
    3 = lower the note a lot.

To make a note sound higher, press 7, 8, or 9:

    7 = raise the note a little bit.
    8 = raise the note an average amount.
    9 = raise the note a lot.

The sound of your note can be changed as many times as necessary. When you think the note sounds the same as the computer's note, press 5 to indicate the note matches.

Scoring

When you press 5, the computer will play its note and then play

the note you picked. If the notes are exactly the same, you will be rewarded with music and flashing lights.

Don't be surprised if your note doesn't exactly match the computer's note. Very few people have what is known as perfect pitch. If your note doesn't match the computer's note, the computer will tell you how close you came to matching it. If you get a perfect match, you're 100 percent correct.

The computer will look at the score and tell you whether your ear for music is *not bad, normal, above average, good, very good,* or *excellent.* If your guess is very far off, the computer may not tell you anything. If this happens, try again.

If you don't get the note exactly right, or even close to it, don't give up. Music is like everything else. You certainly need talent, but practice is just as important.

Notecrafter

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM NOTECRAFTER                              :rem 82
100 VC=53248:POKEVC+32,6:POKEVC+33,0:PRINTCHR$(147
    )                                          :rem 5
105 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX     :rem 72
110 DIM NT%(37,1):GOSUB1000                    :rem 198
115 PRINT"{WHT}{CLR}{DOWN}{RVS}{10 SPACES}N O T E
    {SPACE}C R A F T E R{9 SPACES}{OFF}";     :rem 45
120 PRINT"{2 DOWN} THIS GAME TESTS BOTH YOUR MEMOR
    Y AND{4 SPACES}YOUR EAR FOR MUSIC."       :rem 80
130 PRINT"{2 DOWN} THE COMPUTER WILL PICK A NOTE A
    ND PLAY"                                  :rem 182
135 PRINT" IT.{2 SPACES}THE COMPUTER WILL THEN PIC
    K A"                                      :rem 84
140 PRINT" NOTE FOR YOU AND PLAY IT."         :rem 84
150 PRINT"{2 DOWN} YOU MUST RAISE OR LOWER THE PIT
    CH OF"                                    :rem 91
155 PRINT" YOUR NOTE UNTIL IT MATCHES THE NOTE"
                                              :rem 54
160 PRINT" THE COMPUTER PICKED."              :rem 150
170 PRINT"{2 DOWN}{9 SPACES}(HIT ANY KEY TO START)
    "                                         :rem 195
180 GOSUB1500                                 :rem 223
190 DIMRT$(5):FORX=0TO5:READX$:RT$(X)=X$:NEXTX
                                              :rem 139
200 REM *** SELECT THE NOTES                  :rem 30
210 CN=INT(RND(1)*61)+10                      :rem 32
220 PN=INT(RND(1)*61)+10:IFCN=PNTHEN220       :rem 38
```

33

```
230 POKEVC+33,15:PRINT"{CLR}{BLK}{3 DOWN}
    {12 SPACES}COMPUTER'S NOTE:"         :rem 58
240 X=CN:GOSUB2000:FORX=1TO1000:NEXTX    :rem 84
250 PRINT"{3 DOWN}{13 SPACES}PLAYER'S NOTE:"
                                         :rem 82
260 X=PN:GOSUB2000                       :rem 71
300 PRINT"{CLR}{2 DOWN} ENTER OPTION ---{2 DOWN}"
                                         :rem 25
310 PRINT"{DOWN}{3 SPACES}{RVS}1{OFF} LOWER PITCH
    {SPACE}A SMALL AMOUNT"               :rem 218
320 PRINT"{DOWN}{3 SPACES}{RVS}2{OFF} LOWER PITCH
    {SPACE}A MEDIUM AMOUNT"              :rem 36
330 PRINT"{DOWN}{3 SPACES}{RVS}3{OFF} LOWER PITCH
    {SPACE}A LARGE AMOUNT"               :rem 208
340 PRINT"{2 DOWN}{3 SPACES}{RVS}5{OFF} *** NOTE M
    ATCHES ***"                         :rem 154
350 PRINT"{2 DOWN}{3 SPACES}{RVS}7{OFF} RAISE PITC
    H A SMALL AMOUNT"                   :rem 224
360 PRINT"{DOWN}{3 SPACES}{RVS}8{OFF} RAISE PITCH
    {SPACE}A MEDIUM AMOUNT"              :rem 25
370 PRINT"{DOWN}{3 SPACES}{RVS}9{OFF} RAISE PITCH
    {SPACE}A LARGE AMOUNT"               :rem 197
400 X=PEEK(197):IFX=64THEN400            :rem 203
410 IFX=56THENPN=PN-1:GOTO500            :rem 50
420 IFX=59THENPN=PN-5:GOTO500            :rem 58
430 IFX=8THENPN=PN-10:GOTO500            :rem 49
440 IFX=16THEN700                        :rem 233
450 IFX=24THENPN=PN+1:GOTO500            :rem 47
460 IFX=27THENPN=PN+5:GOTO500            :rem 55
470 IFX=32THENPN=PN+10:GOTO500           :rem 96
480 GOTO400                              :rem 105
500 IFPN<10THENPN=10                     :rem 202
610 IFPN>70THENPN=70                     :rem 218
620 X=PN:GOSUB2000:GOTO400               :rem 78
700 IFPN<>CNTHEN800                      :rem 150
710 PRINT"{CLR}{2 DOWN}{12 SPACES}CONGRATULATIONS!
    "                                    :rem 188
720 PRINT"{3 DOWN}{2 SPACES}YOU PICKED THE VERY SA
    ME NOTE AS"                          :rem 97
725 PRINTSPC(11);"{DOWN}THE COMPUTER DID!!"
                                         :rem 183
730 PRINT"{3 DOWN}{3 SPACES}YOU MUST BE A VERY GOO
    D MUSICIAN!!"                        :rem 182
740 PRINT "{3 DOWN}{8 SPACES}PRESS ANY KEY TO CONT
    INUE"                                :rem 5
750 POKE 198,0                           :rem 201
760 GOSUB 1500                           :rem 227
770 GOTO 900                             :rem 112
800 PRINT"{CLR}{3 DOWN}{12 SPACES}COMPUTER'S NOTE:
    "                                    :rem 136
```

```
805  X=CN:GOSUB2000:FORX=1TO1000:NEXTX          :rem 91
810  PRINT"{3 DOWN}{13 SPACES}PLAYER'S NOTE:"
                                                :rem 84
815  X=PN:GOSUB2000                             :rem 77
820  IFPN<CNTHENX=CN-PN:GOTO840                 :rem 195
830  X=PN-CN                                    :rem 140
840  Y=100-INT((X*100)/60):IFY<1THENY=1         :rem 170
850  PRINT"{3 DOWN}{11 SPACES}YOUR SCORE IS";Y;"
     {LEFT}%"                                   :rem 221
860  X=INT((100-Y)/10):IFX<0THENX=0             :rem 232
870  IFX>5THEN900                               :rem 193
880  PRINT"{3 DOWN}{9 SPACES}YOUR EAR FOR MUSIC IS"
     :X$=RT$(X)                                 :rem 53
885  IFLEN(X$)<38THENX$=" "+X$+" ":GOTO885      :rem 225
890  PRINTX$;                                   :rem 229
900  PRINT"{4 DOWN}{11 SPACES}PLAY AGAIN ({RVS}Y
     {OFF} OR {RVS}N{OFF})"                     :rem 37
910  GETX$:IFX$=""THEN910                       :rem 133
920  IFX$="Y"THEN200                            :rem 65
930  IFX$<>"N"THEN910                           :rem 124
940  PRINTCHR$(147)                             :rem 24
950  END                                        :rem 117
1000 FORX=832TO832+63:READZ:POKEX,Z:NEXTX       :rem 118
1010 POKEVC+0,40:POKEVC+2,120:POKEVC+4,200:POKEVC+
     6,22                                       :rem 165
1020 POKEVC+1,40:POKEVC+3,30:POKEVC+5,20:POKEVC+7,
     10                                         :rem 71
1030 POKEVC+16,8:POKEVC+23,15:POKEVC+27,15:POKEVC+
     28,0:POKEVC+29,15                          :rem 235
1040 FORX=0TO3:POKEVC+39+X,X+2:NEXTX            :rem 21
1050 FORX=0TO3:POKE2040+X,13:NEXTX              :rem 91
1100 FORX=0TO37:FORY=0TO1:READZ:NT%(X,Y)=Z:NEXTY,X
                                                :rem 2
1110 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
     9                                          :rem 1
1120 RETURN                                     :rem 164
1500 POKEVC+21,15:POKEMC+24,15:X=0              :rem 201
1510 Y=INT(NT%(X,0)/256)                        :rem 49
1520 POKEMC+0,NT%(X,0)-(Y*256)                  :rem 120
1530 POKEMC+1,Y:POKEMC+4,17                     :rem 85
1540 FORZ=1TONT%(X,1)*100:NEXTZ                 :rem 119
1550 X=X+1:IFX>37THENX=0                        :rem 209
1560 POKEMC+4,16                                :rem 125
1570 FORZ=1TO7STEP2                             :rem 196
1580 Y=PEEK(VC+Z)+8:IFY>250THENY=10             :rem 120
1590 POKEVC+Z,Y                                 :rem 161
1595 NEXTZ                                      :rem 109
1600 GETX$:IFX$=""THEN1510                      :rem 223
1610 POKEMC+24,0:POKEVC+21,0                    :rem 96
```

```
1620 PRINTCHR$(147)                        :rem 68
1630 FORX=1TO1000:NEXTX                    :rem 172
1640 RETURN                               :rem 171
1700 DATA1,255,248,1,255,248,1,255,248,1,192,56,1,
     192,56,1,255,248,1,192              :rem 15
1710 DATA56,1,192,56,1,192,56,1,192,56,1,192,56,1,
     192,56,1,192,56,1,192,56            :rem 114
1720 DATA15,193,248,31,195,248,63,199,248,127,143,
     240,255,31,224,254                  :rem 95
1730 DATA31,192,124,15,128,0              :rem 137
1800 DATA8101,2,8583,2,10814,2,5728,1,5728,2,5728,
     2,5728,2,6430,2,5728,1              :rem 42
1810 DATA8101,2,10814,1,8583,2,11457,1,6430,2,7217
     ,1,8101,2,8583,1                    :rem 230
1820 DATA10814,2,10814,1,10814,2,5728,1,5728,2,572
     8,1,6430,2,5728,1,8101,2            :rem 120
1830 DATA10814,2,10814,2,8583,2,11457,1,6430,2,721
     7,1                                 :rem 104
1840 DATA8101,2,8101,1,7217,1,7217,2,8101,3,8101,2
                                         :rem 192
1900 DATAEXCELLENT,"VERY GOOD",GOOD,"ABOVE AVERAGE
     ",NORMAL,"NOT BAD"                  :rem 177
2000 POKEMC+0,0:POKEMC+1,X:POKEMC+4,17:POKEMC+5,15
     :POKEMC+6,15                        :rem 212
2010 POKEMC+24,5                          :rem 116
2020 FORX=1TO800:NEXTX:POKEMC+4,16        :rem 104
2030 FORX=1TO50:NEXTX                     :rem 75
2040 POKEMC+24,0                          :rem 114
2050 RETURN                               :rem 167
```

36

Personal Story

Skill area: Language Arts
Level: 2
Equipment required: None
Modification: Yes

The Personal Story

We all like to hear about ourselves, and children are no exception. In fact, children are especially impressed to see their names and their life stories in print. Children's book companies have made thousands of dollars on the premise that children will learn to read faster if they read stories about themselves.

"Personal Story" is programmed with this in mind, but it really isn't a game for the child to play. Other than pressing a key on the computer keyboard to continue the story, the child has no input except reading along with the words, delighting in the story, and perhaps increasing his or her reading skills.

How to Play

Before your child sits down with this game, you need to enter the data for nine variables. Only then will the game tell a personalized story.

As you type in the program, you can enter your child's personal data in lines 10000-10100, or if you entered the program as it's listed here, you can change it by LISTing these lines, then insert your own information. (Be sure the word DATA follows the line number and that the information has quotation marks.)

The lines and information needed are:

10000 Enter the child's first name.
10010 Enter the child's last name.
10020 Enter BOY or GIRL.
10030 Enter HE or SHE.
10040 Enter the child's age.
10050 Enter the child's birthday — a month and date, for example, MAY 3RD.
10060 Enter the child's street address.
10070 Enter the child's city of residence.
10080 Enter the first name of a good friend of the child.

10090 Enter the child's phone number.
10100 Enter the name of the child's favorite toy.

You may want to enlist the child's help, or you may want to program the game as a surprise.

Personal Story

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM PERSONAL STORY                       :rem 26
100 DIMNT%(14,1,7):MC=54272:VC=53248       :rem 201
105 POKEVC+32,4:POKEVC+33,1:PRINTCHR$(147):rem 243
110 FORX=0TO7:Y=0                          :rem 24
120 READW,Z:NT%(Y,0,X)=W:NT%(Y,1,X)=Z:Y=Y+1:IFW<>0
    THEN120                                :rem 223
130 NEXTX:C$="{BLK}{RED}{CYN}{PUR}{GRN}{BLU}{YEL}"
                                           :rem 15
135 FORX=54272TO54296:POKEX,0:NEXTX        :rem 180
140 READN1$,N2$,SX$,PR$,AG$,BD$,AD$,CT$,F1$,PO$,FT
    $                                      :rem 27
150 X$=N1$+" "+N2$                         :rem 48
160 IFLEN(X$)>40THEN175                     :rem 64
170 Y$="{SHIFT-SPACE}"+X$:X$=Y$+"{SHIFT-SPACE}":GO
    TO160                                  :rem 102
175 X$=RIGHT$(X$,LEN(X$)-1)                :rem 251
180 PRINT"{BLK}{7 DOWN}";SPC(11);"THIS IS YOUR LIF
    E!":PRINTSPC(16);"{3 DOWN}STARRING{3 DOWN}"
                                           :rem 220
185 PRINTX$:SS=2:GOSUB8000                 :rem 120
190 PRINT"{HOME}";:FORY=0TO998:X=INT(RND(1)*7)+1:X
    $=MID$(C$,X,1)                         :rem 165
200 PRINTX$;"{RVS} {OFF}";:NEXTY           :rem 203
210 POKEVC+32,6:PRINT"{CLR}{BLK}{DOWN}{3 SPACES}TH
    IS IS A STORY ABOUT A VERY NICE"       :rem 99
220 PRINT"{DOWN}{3 SPACES}";SX$;" NAMED ";N1$;"."
                                           :rem 239
230 PRINT"{3 DOWN}{3 SPACES}";PR$;" HAD A BIRTHDAY
    ON":PRINT"{DOWN}{3 SPACES}";BD$;", AND"
                                           :rem 154
240 PRINT"{DOWN}{3 SPACES}IS ";AG$;" YEARS OLD."
                                           :rem 11
250 PRINT"{3 DOWN}{13 SPACES}{YEL}Q{SHIFT-SPACE}Q
    {SHIFT-SPACE}Q{BLK}{3 SPACES}HAPPY"    :rem 254
260 PRINT"{13 SPACES}-{SHIFT-SPACE}-{SHIFT-SPACE}-
    {3 SPACES}BIRTHDAY"                    :rem 151
270 PRINT"{12 SPACES}{RVS}{RED}{7 SPACES}{OFF}
    {2 SPACES}";N1$                        :rem 8
```

```
280 PRINT"{12 SPACES}{RVS}{RED}{7 SPACES}{OFF}
    {2 SPACES}";N2$;"{BLK}I"                    :rem 58
290 SS=3:GOSUB8000:GOSUB7800                    :rem 188
300 POKEVC+32,2:PRINT"{CLR}{BLK}{2 DOWN}";SPC(11);
    N1$;" LIVES IN"                             :rem 228
305 PRINTSPC(11);"{DOWN}A NICE HOUSE AT":PRINTSPC(
    11);"{DOWN}";AD$                            :rem 155
310 PRINTSPC(11);"{DOWN}IN ";CT$;"."            :rem 132
315 PRINTSPC(11);"{BLU}{2 DOWN}{5 SPACES}RRRRRRRRR
    "                                           :rem 225
320 PRINTSPC(11);"{4 SPACES}NMMMMMMMMMM"        :rem 10
330 PRINTSPC(11);"{3 SPACES}N{2 SPACES}MMMMMMMMMM"
                                                :rem 11
340 PRINTSPC(11);"{2 SPACES}Y***+
    *********T"                     :rem 196
345 PRINTSPC(11);"{2 SPACES}Y{3 SPACES}-{9 SPACES}
    T"                                          :rem 203
350 PRINTSPC(11);"{2 SPACES}Y{3 SPACES}- {BLK}
    {2 +}{2 SPACES}{+}{BLU}{3 SPACES}T"
                                                :rem 104
360 PRINTSPC(11);"{2 SPACES}Y{3 SPACES}- {BLK}
    {2 +}{2 SPACES}{+}{BLU}{3 SPACES}T"
                                                :rem 105
370 PRINTSPC(11);"{2 SPACES}Y{3 SPACES}-{5 SPACES}
    {BLK}{+}{BLU}{3 SPACES}T"      :rem 30
380 PRINTSPC(10);"EEEEEEEEEEEEEEEEEEEEEE{BLK}":PRI
    NTSPC(11);AD$                               :rem 1
390 SS=4:GOSUB8000:GOSUB7800                    :rem 190
400 POKEVC+32,6:PRINT"{CLR}{BLK}{DOWN}";SPC(08);N1
    $;" HAS A GOOD FRIEND"                      :rem 194
405 PRINTSPC(08);"{DOWN}NAMED ";F1$;"."         :rem 61
410 PRINTSPC(08);"{3 DOWN}THINKING ABOUT GOOD"
                                                :rem 115
415 PRINTSPC(08);"{DOWN}FRIENDS MAKES":PRINTSPC(08
    );"{DOWN}";N1$;" SMILE."                    :rem 205
420 PRINTSPC(11);"{RED}{3 DOWN}"                :rem 138
430 PRINTSPC(11);"{3 SPACES}{O} {O}{DOWN}"
                                                :rem 191
440 PRINTSPC(11);"{3 SPACES}Q{SHIFT-SPACE}Q
    {7 SPACES}";F1$                             :rem 85
450 PRINTSPC(11);"{4 SPACES}-{9 SPACES}MAKES"
                                                :rem 140
460 PRINTSPC(11);"{4 SPACES}+{8 SPACES}";N1$
                                                :rem 248
480 PRINTSPC(11);"{2 SPACES}J***K{7 SPACES}SMIL
    E!"                                         :rem 177
490 SS=6:GOSUB8000:GOSUB7800                    :rem 193
500 PRINT"{CLR}{BLK}{2 DOWN}"SPC(12);F1$;" WILL":P
    RINTSPC(12);"SOMETIMES CALL"                :rem 132
```

```
505  PRINTSPC(12);N1$;" ON"                      :rem 187
510  PRINTSPC(12);"THE TELEPHONE.{2 DOWN}"   :rem 17
520  FORX=1TO14:PRINT"{12 SPACES}{RVS}{YEL}
     {15 SPACES}":NEXTX                        :rem 216
530  PRINT"{HOME}{BLK}{11 DOWN}{14 RIGHT}PHONE
     {2 SPACES}BOOK"                           :rem 2
532  PRINT"{2 DOWN}{14 RIGHT}";N1$:PRINT"{14 RIGHT}
     ";N2$                                     :rem 129
540  PRINT"{2 DOWN}{14 RIGHT}";PO$             :rem 32
550  SS=5:GOSUB8000:GOSUB7800                  :rem 189
600  POKEVC+32,12:POKEVC+33,0                  :rem 108
604  PRINT"{CLR}{WHT}{DOWN}";SPC(9);"THEN ";F1$:PRI
     NTSPC(9);"{DOWN}AND ";N1$                 :rem 187
606  PRINTSPC(9);"{DOWN}WILL DO SOMETHING FUN"
                                               :rem 139
610  PRINTSPC(9);"{DOWN}LIKE WATCHING THE MOON"
                                               :rem 184
615  PRINTSPC(9);"{DOWN}COME UP OVER{DOWN}":PRINTSP
     C(9);CT$;"."                              :rem 25
620  PRINT"{2 DOWN}{4 SPACES}*{8 SPACES}*{5 SPACES}
     *{6 SPACES}*{4 SPACES}*{4 SPACES}* "   :rem 135
625  PRINT"{2 SPACES}*{6 SPACES}*{2 SPACES}*
     {7 SPACES}*{4 SPACES}*{4 SPACES}*{4 SPACES}*"
                                               :rem 148
628  PRINT"*{3 SPACES}*{2 SPACES}*{6 SPACES}*
     {2 SPACES}*{5 SPACES}*{3 SPACES}UI{4 SPACES}*
     {4 SPACES}*"                              :rem 95
630  PRINT"{3 SPACES}*{6 SPACES}*{3 SPACES}*
     {5 SPACES}*{2 SPACES}*{3 SPACES}JK *{3 SPACES}
     *{4 SPACES}*"                             :rem 79
640  PRINT"{5 SPACES}E+3{SHIFT-SPACE}E+3{2 SHIFT-SP
     ACE}E+3 E+3{4 SPACES}E+3{5 SPACES}E+3{SHIFT-SP
     ACE}E+3 E+3{2 SPACES}E+3{2 SHIFT-SPACE}E2 +3
     {SHIFT-SPACE}E+3"                         :rem 147
650  PRINT"{3 SPACES}E+3 E3 +3 E2 +3 E2 +3
     {2 SHIFT-SPACE}E3 +3{4 SHIFT-SPACE}E5 +3
     {2 SPACES}E2 +3{SHIFT-SPACE}E2 +3
     {SHIFT-SPACE}E+3"                         :rem 10
660  PRINT"{3 SPACES}E34 +3"                   :rem 121
670  SS=0:GOSUB8000:GOSUB7800                  :rem 187
700  POKEVC+32,13:POKEVC+33,1:PRINT"{CLR}{BLK}
     {2 DOWN}";SPC(9);"IF ";F1$                :rem 78
710  PRINTSPC(9);"{DOWN}IS BUSY, ";N1$         :rem 14
715  PRINTSPC(9);"{DOWN}WILL PLAY WITH A"      :rem 21
720  PRINTSPC(9);"{DOWN}FAVORITE TOY LIKE A":PRINTS
     PC(9);"{DOWN}";FT$;"."                    :rem 85
730  PRINT"{DOWN}":FORX=1TO9:PRINT"{RED}{10 SPACES}
     {RVS}{19 SPACES}{OFF}":NEXTX             :rem 219
740  PRINT"{BLK}{HOME}{15 DOWN}{15 RIGHT}TOY CHEST
     {BLK}"                                    :rem 196
```

```
750  SS=1:GOSUB8000:GOSUB7800              :rem 187
800  POKEVC+32,10:PRINT"{CLR}{BLK}{DOWN}";SPC(9);"G
     OOD FRIENDS AND FUN"                  :rem 214
805  PRINTSPC(9);"TOYS MAKE EVERY DAY"     :rem 239
810  PRINTSPC(9);"SEEM LIKE CHRISTMAS":PRINTSPC(9);
     "AT THE ";N2$                         :rem 29
815  PRINTSPC(9);"HOUSE.{2 DOWN}"          :rem 238
820  PRINTSPC(9);"{YEL}{10 SPACES}Z"       :rem 142
830  PRINTSPC(9);"{GRN}{9 SPACES}{RVS}£ {*}"
                                           :rem 207
840  PRINTSPC(9);"{8 SPACES}{RVS}£{3 SPACES}{*}"
                                           :rem 178
850  PRINTSPC(9);"{8 SPACES}{RVS}{5 SPACES}":rem 43
860  PRINTSPC(9);"{7 SPACES}{RVS}£{5 SPACES}{*}"
                                           :rem 180
870  PRINTSPC(9);"{7 SPACES}{RVS}{7 SPACES}":rem 45
875  PRINTSPC(9);"{7 SPACES}{RVS}{7 SPACES}":rem 50
880  PRINTSPC(9);"{6 SPACES}{RVS}£{7 SPACES}{*}
     {BLK}"                                :rem 70
885  PRINTSPC(9);"{10 SPACES}-"            :rem 254
890  PRINTSPC(9);"{10 SPACES}-"            :rem 250
900  PRINTSPC(9);"{10 SPACES}-"            :rem 242
910  SS=7:GOSUB8000                        :rem 54
920  FORX=832TO832+63:READZ:POKEX,Z:NEXTX :rem 80
925  SS=-1:GOSUB7800:Y=58                  :rem 167
930  POKEVC+0,50:POKEVC+1,Y:POKE2040,13    :rem 242
940  POKEVC+16,0:POKEVC+23,1:POKEVC+29,1   :rem 55
950  POKEVC+28,0:POKEVC+39,6:POKEVC+21,1   :rem 63
960  PRINT"{HOME}";:FORX=1TO24             :rem 174
970  POKEVC+1,Y:Y=Y+8                      :rem 213
980  PRINT"{BLK}{RVS}{40 SPACES}{OFF}";    :rem 225
990  FORZ=1TO75:NEXTZ,X                    :rem 183
1000 POKEVC+33,0:POKEVC+21,0:SS=.3         :rem 224
1010 POKEMC+0,0:POKEMC+1,0:POKEMC+5,11:POKEMC+6,13
     :POKEMC+24,15:Y=10:PRINT"{HOME}";     :rem 96
1020 FORX=1TO111                           :rem 166
1030 POKEMC+1,INT(Y):Y=Y+SS:POKEMC+4,17    :rem 134
1040 Z=INT(RND(1)*6)+2:X$=MID$(C$,Z,1)     :rem 71
1050 PRINTX$;"THE END{2 SPACES}";:POKEMC+4,16
                                           :rem 44
1055 IFX>55THENSS=-.3                       :rem 250
1060 NEXTX                                  :rem 94
1070 POKEMC+24,0:POKEVC+32,6:POKEVC+33,15  :rem 141
1080 PRINT"{CLR}{BLK}"                      :rem 189
1090 END                                    :rem 161
7800 PRINT"{HOME}{24 DOWN}{12 SPACES}(PRESS ANY KE
     Y)";                                  :rem 53
7810 GETX$:IFX$=""THEN7810                 :rem 241
7815 IFSS<0THENRETURN                       :rem 133
```

```
7820 PRINT"{HOME}";:FORY=1TO24:X=INT(RND(1)*7)+1:X
     $=MID$(C$,X,1)                        :rem 153
7830 PRINTX$;"{RVS}{40 SPACES}{OFF}";      :rem 57
7840 FORZ=1TO40:NEXTZ,Y                    :rem 225
7850 RETURN                               :rem 180
8000 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
     9:POKEMC+24,15:Y=0                    :rem 34
8010 Z=INT(NT%(Y,0,SS)/256)                :rem 7
8020 POKEMC+0,NT%(Y,0,SS)-(Z*256)          :rem 78
8030 POKEMC+1,Z:POKEMC+4,17                :rem 88
8040 FORZ=1TONT%(Y,1,SS)*90:NEXTZ          :rem 36
8050 POKEMC+4,16:FORZ=1TO10:NEXTZ          :rem 62
8060 IFNT%(Y,0,SS)>0THENY=Y+1:GOTO8010     :rem 32
8070 POKEMC+24,0                          :rem 123
8080 RETURN                               :rem 176
9000 DATA4291,2,4291,2,6430,2,6430,2,7217,2,7217,2
     ,6430,4,5728,2,5728,2                 :rem 232
9010 DATA5407,2,5407,2,4817,2,4817,2,4291,4,0,1
                                          :rem 61
9020 DATA7217,2,8583,4,7217,2,5728,2,5407,2,5728,2
     ,6430,2                              :rem 68
9030 DATA6430,2,5407,2,4291,4,0,1         :rem 128
9040 DATA4817,2,5407,2,6430,2,6430,2,6430,2,6430,2
                                          :rem 207
9050 DATA5407,2,4817,2,4050,2,4817,2,6430,8,0,1
                                          :rem 59
9060 DATA4817,1,4817,1,5407,2,4817,2,6430,2,6069,4
     ,4817,1                              :rem 68
9070 DATA4817,1,5407,2,4817,2,7217,2,6430,4,0,1
                                          :rem 64
9080 DATA6430,2,6430,2,6430,2,4817,2,5407,2,5407,2
     ,4817,4,8101,2,8101,2                :rem 222
9090 DATA7217,2,7217,2,6430,4,0,1         :rem 136
9100 DATA4291,2,4291,1,4817,2,4817,1,5407,2,6430,2
     ,5407,2                              :rem 49
9110 DATA4291,2,7217,2,4817,2,5728,1,5407,2,4291,2
     ,0,1                                 :rem 152
9120 DATA10814,3,9634,3,1,1,8101,2,8583,3,8101,2,7
     217,2,6430,2,8101,2                  :rem 111
9130 DATA4817,2,5407,2,6430,4,0,1         :rem 133
9200 DATA4291,2,4291,2,4291,2,5728,1,5728,1,5728,2
                                          :rem 229
9210 DATA5407,2,5728,2,6430,2,7217,2,7647,2,6430,2
     ,7217,2,0,1                          :rem 243
10000 DATA"JOHN"                          :rem 126
10010 DATA"DOE"                            :rem 40
10020 DATA"BOY"                            :rem 59
10030 DATA"HE"                            :rem 223
10040 DATA"7"                             :rem 138
```

```
10050 DATA"DECEMBER 31ST"                        :rem 150
10060 DATA"1605 MAPLE STREET WEST"               :rem 170
10070 DATA"NEW YORK CITY"                        :rem 190
10080 DATA"SANDRA"                                :rem 16
10090 DATA"582-1234"                             :rem 238
10100 DATA"ELECTRIC TRAIN"                        :rem 25
20000 DATA60,0,0,24,124,0,24,130,0,25,171,0,24,146
      ,0,24,130,0,24,124                         :rem 245
20010 DATA0,24,16,0,31,255,0,15,255,0,0,59,0,0,59,
      0,0,59,128,0,59,128                         :rem 70
20020 DATA0,56,0,0,254,0,0,198,0,3,199,128,3,1,128
      ,3,1,128,7,1,192,0                          :rem 21
```

Spelling Bee

Skill area: Language Arts
Level: 2, 3, 4
Equipment required: None
Modification: Yes

The Mighty Bee

If there's such a thing as a guardian angel of spelling, the spelling bee is it. As long as you're doing a good job at your spelling, she'll stay around and watch you. If you don't do well, though, she'll lose strength and slowly disappear. The object of "Spelling Bee" is to guess the letters of words the bee gives you before she disappears. If you guess a word correctly, she'll return in all her glory for the next one.

How to Play

The computer will pick a word and tell you how many letters it contains. You must guess the word by selecting a letter at a time. If you pick more than 11 incorrect letters, the spelling bee will disappear.

To begin play, choose a skill level as listed below:

1 = Beginner
2 = Intermediate
3 = Advanced

Press the appropriate number and the game begins. A line of blank spaces appears on the screen. Each blank indicates a letter in the word. You should type a letter you think may be in the word.

When you type a letter, one of two things will happen. If the letter belongs in the word, it will appear in the right space. If it does not belong in the word, the bee will buzz, the screen will temporarily go black, and the letter will appear on the bottom of the screen. Each time you make an incorrect guess, a little bit of the spelling bee will disappear. If you guess 11 incorrect letters, the correct word will appear. But the spelling bee will be gone — until the next round.

Scoring

No point score is given in Spelling Bee. Either the correct word is

guessed by the player, or it isn't. At the end of a round, the computer will ask if you want to play again. If you indicate you do not want to play again, the computer will tell you how many words were guessed correctly. Then the computer will tell you how many words you missed.

Spelling Bee

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM SPELLING BEE                           :rem 63
100 NW%=40:VC=53248:MC=54272                 :rem 29
105 POKEVC+32,15:POKEVC+33,1:PRINTCHR$(147):rem 37
106 FORX=54272TO54296:POKEX,0:NEXTX        :rem 178
110 DIM NT%(11),WT$(NW%-1),WI$(19)          :rem 5
120 S1=((PEEK(53272)AND240)/16)*1024:S2=55296
                                            :rem 102
130 FORX=0TO11:READZ:NT%(X)=Z:NEXTX         :rem 7
140 PRINT"{BLK}{DOWN}{RVS}{14 SPACES}SPELLING BEE
    {14 SPACES}{OFF}";                      :rem 16
150 PRINT"{2 DOWN}THE COMPUTER WILL SELECT A WORD
    {SPACE}AND SHOW";                       :rem 157
160 PRINT"YOU THE NUMBER OF LETTERS IT CONTAINS."
                                            :rem 241
170 PRINT"{2 DOWN}YOU MUST GUESS THE WORD BY SELEC
    TING ONELETTER AT A TIME."              :rem 147
180 PRINT"{2 DOWN}IF YOU PICK MORE THAN 11 INCORRE
    CT"                                     :rem 168
190 PRINT"LETTERS, THE SPELLING BEE WILL DISAPPEAR
    AND YOU WILL LOSE THAT ROUND."          :rem 184
200 GOSUB2500:PRINT"{2 DOWN}{8 SPACES}(PRESS ANY K
    EY TO START)"                           :rem 230
210 GETX$:IFX$=""THEN210                    :rem 119
220 PRINTCHR$(147);"{3 DOWN}{2 SPACES}ENTER SKILL
    {SPACE}LEVEL:"                          :rem 112
230 PRINT"{3 DOWN}{4 SPACES}{RVS}1{OFF} BEGINNER":
    PRINT"{3 DOWN}{4 SPACES}{RVS}2{OFF} INTERMEDIA
    TE"                                     :rem 71
240 PRINT"{3 DOWN}{4 SPACES}{RVS}3{OFF} ADVANCED"
                                            :rem 167
250 GETP$:IFP$=""THEN250                    :rem 111
260 IFP$<"1"ORP$>"3"THEN250                 :rem 220
270 X=(VAL(P$)-1)*NW%:IFX=0THEN290          :rem 209
280 FORY=1TOX:READX$:NEXTY                  :rem 231
290 FORX=1TONW%:READX$:WT$(X-1)=X$:NEXTX:WU=0
                                            :rem 116
300 WU=WU+1                                 :rem 132
310 X=INT(RND(1)*NW%):WO$=WT$(X):IFWO$="$"THEN310
                                            :rem 115
```

```
320 WT$(X)="$":LW%=LEN(WO$)                  :rem 235
330 FORX=0TOLW%-1                            :rem 11
340 WI$(X)=MID$(WO$,X+1,1):NEXTX             :rem 104
350 LC%=0:OF%=921:BC%=0:GOSUB1000:LW%=LW%-1
                                            :rem 183
400 GET X$:IFX$=""THEN400                    :rem 121
410 X=ASC(X$):IFX<65ORX>90THEN400            :rem 249
500 HI=0:FORY=0TOLW%:IFWI$(Y)<>X$THEN530     :rem 217
510 HI=1:WI$(Y)="$":POKES1+720+UL+(Y*2),X-64
                                            :rem 171
520 LC%=LC%+1                                :rem 152
530 NEXTY:IFHI=1THEN560                      :rem 194
540 GOSUB3000:BC%=BC%+1                      :rem 3
550 IFBC%>10THENGOSUB2000:LO%=LO%+1:FORX=1TO2000:N
    EXTX:GOTO700                             :rem 93
560 IFLC%<=LW%THEN400                        :rem 226
570 GOSUB4000:WI%=WI%+1:GOTO700              :rem 71
700 IFWU=NW%THENPRINT"{CLR}{RED}{2 DOWN}":GOTO750
                                            :rem 185
710 PRINTCHR$(147);"{BLK}{3 DOWN}{12 SPACES}{RVS}A
    NOTHER WORD ?{OFF}"                      :rem 133
715 PRINT"{2 DOWN}{13 SPACES}ENTER {RVS}Y{OFF} OR
    {SPACE}{RVS}N{OFF}"                      :rem 158
720 GETX$:IFX$=""THEN720                     :rem 131
730 IFX$="Y"THEN300                          :rem 65
740 IFX$<>"N"THEN720                         :rem 122
750 PRINT"{3 DOWN}{7 SPACES}# CORRECT =";WI%
                                            :rem 18
760 PRINT"{2 DOWN}{7 SPACES}# MISSED{2 SPACES}=";L
    O%                                       :rem 176
770 GOSUB2500:FORX=1TO1000:NEXTX             :rem 1
780 PRINTCHR$(147)                           :rem 26
790 END                                      :rem 119
1000 POKEVC+32,6:POKEVC+33,12                :rem 157
1005 PRINTCHR$(147);"{BLK}{DOWN}{8 SPACES}S P E L
    {SPACE}L I N G{4 SPACES}B E E{2 DOWN}"
                                            :rem 173
1010 PRINTSPC(20);"{BLK}{+}{-}"       :rem 121
1020 PRINTSPC(20);"{2 +}"              :rem 180
1030 PRINTSPC(16);"M{@}{2 SPACES}{2 +}":rem 43
1040 PRINTSPC(18);"M {+}{-}{M}"       :rem 103
1050 PRINTSPC(18);"{RVS}£{YEL} {BLK} {YEL}{*}
    {OFF}{BLK}N N"                           :rem 150
1060 PRINTSPC(16);"C{RVS}{YEL} {BLK} {YEL} {BLK}
    {YEL} {BLK}{OFF}Q"                       :rem 51
1070 PRINTSPC(18);"{*}{RVS}{YEL} {BLK} {OFF}
    {YEL}£{BLK}M M"                          :rem 150
1080 PRINTSPC(18);"N {+}{-}{M}"       :rem 108
1090 PRINTSPC(16);"N{T}{2 SPACES}{2 +}" :rem 49
1100 PRINTSPC(20);"{2 +}"             :rem 179
```

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```
1110 PRINTSPC(20);"[+][-]"                    :rem 234
1500 PRINT"{5 DOWN}{BLK}
     ***************************************";
                                             :rem 183
1510 PRINT" ENTER A LETTER:"                  :rem 97
1520 UL=INT((40-((LW%*2)-1))/2)               :rem 73
1525 X=(LW%-1)*2                              :rem 53
1530 FORY=0TOXSTEP2                           :rem 223
1540 POKES1+720+UL+Y,121:POKES2+720+UL+Y,1:NEXTY
                                             :rem 130
1550 RETURN                                   :rem 171
2000 REM **** WORD MISSED / SHOW IT           :rem 92
2005 FORX=0TOLW%:IFWI$(X)="$"THEN2020         :rem 172
2010 Y=ASC(WI$(X)):POKES1+720+UL+(X*2),Y-64
                                             :rem 183
2020 NEXTX                                    :rem 91
2030 POKEMC+0,0:POKEMC+1,1:POKEMC+5,15:POKEMC+6,15
                                             :rem 196
2040 POKEMC+24,15:FORY=80TO10STEP-5          :rem 105
2050 POKEMC+1,Y:POKEMC+4,17:FORX=1TO50:NEXTX
                                             :rem 19
2060 POKEMC+4,16:NEXTY:POKEMC+24,0            :rem 49
2070 RETURN                                   :rem 169
2500 REM *** PLAY A LITTLE SONG               :rem 165
2510 POKEMC+5,79:POKEMC+6,129:POKEMC+24,15:rem 193
2520 FORX=0TO11:Y=NT%(X):Z=INT(Y/256)        :rem 236
2530 Y=Y-(Z*256):POKEMC+0,Y:POKEMC+1,Z        :rem 12
2540 POKEMC+4,17:FORY=1TO100:NEXTY            :rem 107
2550 POKEMC+4,16:FORY=1TO40:NEXTY             :rem 62
2560 NEXTX:POKEMC+24,0                        :rem 74
2570 RETURN                                   :rem 174
3000 REM *** BLANK OUT PART OF THE BEE         :rem 254
3002 PRINT"{HOME}{2 DOWN}":FORY=0TOBC%:PRINT" ":NE
     XTY                                      :rem 220
3005 PRINT"{32 SPACES}"                        :rem 153
3010 POKEVC+33,0:POKEMC+0,49:POKEMC+1,10       :rem 72
3020 POKEMC+5,15:POKEMC+6,15:POKEMC+24,15      :rem 126
3030 POKEMC+4,17:FORY=1TO250:NEXTY:POKEMC+4,16
                                             :rem 87
3040 POKEMC+24,0:POKEVC+33,12                 :rem 149
3050 POKES1+OF%,X-64:POKES2+OF%,1:OF%=OF%+2
                                             :rem 243
3060 RETURN                                   :rem 169
4000 REM *** WORD GUESSED - FLASH SCREEN       :rem 205
4010 POKEMC+0,0:POKEMC+5,15:POKEMC+6,15:POKEMC+1,0
     :Y=30:POKEMC+24,15                       :rem 18
4020 FORX=2TO12:POKEVC+33,X                   :rem 145
4030 POKEMC+1,Y:POKEMC+4,17:FORZ=1TO100:NEXTZ
                                             :rem 67
4040 POKEMC+4,16:Y=Y+4:NEXTX:POKEMC+24,0      :rem 184
```

Level
2

```
4050  RETURN                                        :rem 169
5000  DATA5728,5728,7217,8583,7217,5728,6430,8101,5
      728,6430,5728,5728                            :rem 165
6000  DATABOY,GIRL,FIRST,HER,WERE                    :rem 66
6010  DATATAKE,NAME,DAY,ASK,SUN                     :rem 138
6020  DATAWITH,WHEN,THEM,AND,WENT                    :rem 63
6030  DATASTOP,CAN,LOOK,READ,BOOK                    :rem 39
6040  DATACAN,BEAT,TIME,RIDE,ADD                    :rem 158
6050  DATABALL,HARD,BIG,MAKE,CAME                   :rem 213
6060  DATAGAME,GREEN,GOOD,SAY,MEAN                   :rem 88
6070  DATATREE,HAD,TOP,MAN,GAVE                     :rem 134
7000  DATAAFTERNOON,BECAUSE,THIRD,ALWAYS,ANIMAL
                                                     :rem 51
7010  DATABASEBALL,ALIKE,CLOCK,BROTHER,CATCH:rem 19
7020  DATAMORNING,SEVEN,FRIEND,GROUND,HOUSE  :rem 57
7030  DATALEARN,LARGE,LUNCH,PURPLE,HORSE     :rem 68
7040  DATALAST,BEST,SCHOOL,LITTLE,UNDER      :rem 11
7050  DATAWATER,LETTER,AROUND,DRINK,THANK    :rem 160
7060  DATAPRINT,AGAIN,ABOVE,SISTER,LIGHT     :rem 67
7070  DATACOLOR,AIRPLANE,ABOUT,EARTH,ROUND   :rem 218
8000  DATASHELF,DINNER,WINDOW,MACHINE,FINGERNAIL
                                                     :rem 112
8010  DATANEIGHBOR,BALLOON,DIRECTION,SANDWICH,PRESI
      DENT                                          :rem 136
8020  DATANOTEBOOK,ENGINE,ASLEEP,LANGUAGE,VEGETABLE
                                                     :rem 56
8030  DATACOMPANY,TOMORROW,SCREAM,MINUTE,KNIVES
                                                     :rem 146
8040  DATAIMPOSSIBLE,BACON,FROZEN,NEEDLE,CAMERA
                                                     :rem 26
8050  DATACARDBOARD,BAREFOOT,BEAUTY,IMPORTANT,ANNOU
      NCE                                           :rem 74
8060  DATAGARBAGE,ALARM,FARMER,SNEEZE,GENERAL
                                                     :rem 115
8070  DATASPOON,WEIGHT,CONTAIN,FAMILY,MYSELF
                                                     :rem 142
```

Spend Your Allowance

Skill area: Mathematics
Level: 2, 3, 4
Equipment required: None
Modification: Yes

A Monthly Income

Your parents have decided to give you an allowance of $10 each month. Ten dollars sounded like a fortune at first, but the world is full of exciting things to buy. If you spend wisely, your allowance will be increased. What does *wisely* mean? How can your parents know whether buying a hamster or going to the movies is important to you? You'll have to spend your money the best way you can. If you spend your money unwisely, however, they may deduct a dollar from your monthly income.

"Spend Your Allowance" is full of situations that suddenly pop up. You may have to buy a birthday present, or you may be able to pick up some money doing chores around the house. When you get any extra money, keep it if you wish, or spend it if there's something you'd like to buy. It's your money.

How to Play

A game consists of 12 months, with four spending decisions each month. The computer will ask you to buy one of three items. Sometimes you'll see two or three items you'd like to have. Other times, nothing will look very appealing. In any case, choose the item you'd most like to purchase. Indicate your choice by pressing the number 1, 2, or 3.

Every month the computer will tell you how much money you have at the end of the month, how much your allowance is for next month, and what your total amount on hand is. For example, if your first month's allowance is $10, and you spend $12, you will have a balance of − $2 at the end of January, but your $10 allowance will bring your total amount on hand to $8 for February. Random events throughout the game may increase or decrease that amount.

49

Level
2

If you spend wisely in any month, you may hear a musical signal at the beginning of the following month, along with the news that your allowance has been increased. Your allowance can be increased only $1 at a time, but it can be raised as many months in the year as your parents choose. Remember that unwise spending may cause your parents to reduce your allowance by a dollar per month.

Scoring

At the end of the game the computer will tell you how much your monthly allowance was and how much you had on hand at the end of the year. You will then be given three options:

Press 1 to start the game over. Your allowance will be $10, just as it was at the beginning of the last game.

Press 2 to continue the game that you just finished. Because this is just a continuation, January will be considered the first month of the next year. You can play Spend Your Allowance for as many game years as you want, and your ending allowance can be astronomical if you spend your money wisely.

Press 3 to end the game.

Note to Parents

Do you want to use this game to teach your children to spend their money wisely? Appendix D describes the technique used by this program to determine if the monthly allowance should be raised or lowered. Changes to this program can easily be made by referring to Appendix D.

Spend Your Allowance

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM SPEND..ALLOWANCE                      :rem 129
100 MC=54272:VC=53248:POKEVC+32,6:POKEVC+33,12:PRI
    NTCHR$(147)                             :rem 67
110 DIMST%(12,1),MT$(11),BT$(99,2),CT$(29,2),RT(2)
                                            :rem 74
120 FORX=54272TO54296:POKEX,0:NEXTX         :rem 174
150 PRINT"{CLR}{WHT}{DOWN} {RVS}{9 SPACES}SPEND YO
    UR ALLOWANCE{9 SPACES}{OFF}"             :rem 19
160 PRINT"{2 DOWN} YOUR PARENTS GIVE YOU $10.00 AL
    LOWANCE{2 SPACES}PER MONTH."             :rem 98
170 PRINT"{2 DOWN} YOUR PARENTS MAY RAISE OR LOWER
     YOUR"                                   :rem 203
```

```
175 PRINT" ALLOWANCE, BASED ON HOW WISELY YOU
    {6 SPACES}SPEND IT."                      :rem 57
180 PRINT"{2 DOWN} UNEXPECTED THINGS CAN SOMETIMES
    HAPPEN"                                   :rem 146
185 PRINT" WHICH WILL INCREASE OR DECREASE THE"
                                              :rem 34
190 PRINT" MONEY YOU HAVE."                   :rem 66
200 PRINT"{2 DOWN} A GAME CONSISTS OF 12 MONTHS, W
    ITH"                                      :rem 143
205 PRINT" FOUR SPENDING DECISIONS PER MONTH."
                                              :rem 56
210 FORX=ØTO12:FORY=ØTO1:READZ:ST%(X,Y)=Z:NEXTY,X
                                              :rem 209
220 GOSUB1100:FORX=ØTO11:READX$:MT$(X)=X$:NEXTX:GO
    SUB1000                                   :rem 64
300 CB=Ø:AA=1000:IQ=Ø                         :rem 128
310 RESTORE                                   :rem 184
320 READX$:IFX$<>"$"THEN320                   :rem 24
330 FORX=ØTO99:FORY=ØTO2:READX$:BT$(X,Y)=X$:NEXTY,
    X                                         :rem 22
340 FORX=ØTO29:FORY=ØTO2:READX$:CT$(X,Y)=X$:NEXTY,
    X                                         :rem 17
400 FORL1=ØTO11:GOSUB900:IQ=Ø                 :rem 254
410 FORL2=ØTO3                                :rem 61
420 IFL2=ØTHEN500                             :rem 212
430 IFRND(1)>.10THEN500                       :rem 29
440 X=INT(RND(1)*30):X$=CT$(X,Ø):IFX$="."THEN440
                                              :rem 202
450 PRINT"{CLR}":CT$(X,Ø)="."                 :rem 166
452 POKEMC+Ø,Ø:POKEMC+1,Ø:POKEMC+5,15:POKEMC+6,15:
    POKEMC+24,15                              :rem 181
454 FORY=2TO12:POKEVC+33,Y:POKEMC+1,(3*Y):POKEMC+4
    ,17                                       :rem 222
460 FORZ=1TO30:NEXTZ:POKEMC+4,16:NEXTY:POKEMC+24,Ø
                                              :rem 197
470 Y=VAL(CT$(X,1)):Z=VAL(CT$(X,2)):PRINT"{HOME}
    {3 DOWN}";X$;".":X$=STR$(Y)               :rem 92
480 GOSUB1200:IFZ<ØTHENPRINT"{3 DOWN} YOU SPEND ";
    X$                                        :rem 207
485 IFZ>ØTHENPRINT"{3 DOWN} YOU MAKE ";X$     :rem 253
490 CB=CB+(Y*Z):GOSUB1000                     :rem 184
500 FORX=ØTO2                                 :rem 22
510 Y=INT(RND(1)*100):IFBT$(Y,Ø)="."THEN510
                                              :rem 134
520 RT(X)=Y:NEXTX                             :rem 77
530 IFRT(Ø)=RT(1)ORRT(Ø)=RT(2)ORRT(1)=RT(2)THEN500
                                              :rem 212
540 PRINT"{CLR}{DOWN} ";MT$(L1):PRINT"{DOWN} DECIS
    ION #";L2+1                               :rem 126
```

```
545 PRINT"{DOWN} ON WHICH ITEM LISTED BELOW WOULD
    {SPACE}YOU"                                    :rem 133
550 PRINT" SPEND YOUR ALLOWANCE?{DOWN}"            :rem 26
560 FORZ=1TO3:X$=STR$(Z):Y$=RIGHT$(X$,1):PRINT"
    {DOWN}{RVS}";Y$;"{OFF} ";BT$(RT(Z-1),0)
                                                   :rem 227
570 X$=BT$(RT(Z-1),1):GOSUB1200:PRINT"{3 SPACES}CO
    ST = ";X$;"{DOWN}":NEXTZ                       :rem 132
580 PRINT"{2 DOWN}{3 SPACES}ENTER {RVS}1{OFF}
    {RVS}2{OFF} OR {RVS}3{OFF}";                   :rem 108
590 GETX$:IFX$=""THEN590                           :rem 141
600 X=VAL(X$):IFX<1ORX>3THEN590                    :rem 160
610 Y=VAL(BT$(RT(X-1),1)):CB=CB-Y:Y=VAL(BT$(RT(X-1
    ),2)):IQ=IQ+Y                                  :rem 198
620 BT$(RT(X-1),0)="."                             :rem 91
630 NEXTL2                                         :rem 86
700 NEXTL1                                         :rem 83
800 PRINT"{CLR}{DOWN}{15 SPACES}{RVS}GAME OVER!
    {OFF}":X$=STR$(CB):GOSUB1200                   :rem 139
810 PRINT"{2 DOWN} TOTAL CASH ON HAND IS ";X$:X$=S
    TR$(AA):GOSUB1200                              :rem 154
820 PRINT"{DOWN} CURRENT MONTHLY ALLOWANCE IS
    {SHIFT-SPACE}";X$:GOSUB1100                    :rem 207
830 PRINT"{3 DOWN} ENTER REPLAY OPTION:{DOWN}"
                                                   :rem 14
840 PRINT"{DOWN} {RVS}1{OFF} START GAME OVER":PRIN
    T"{DOWN} {RVS}2{OFF} CONTINUE GAME"            :rem 168
841 PRINT"{DOWN} {RVS}3{OFF} END GAME"             :rem 71
850 GETX$:IFX$=""THEN850                           :rem 139
860 X=VAL(X$):ONXGOTO300,310,880                   :rem 106
870 GOTO850                                        :rem 117
880 PRINTCHR$(147)                                 :rem 27
890 END                                            :rem 120
900 PRINT"{CLR}{2 DOWN}{4 SPACES}START OF ";MT$(L1
    )                                              :rem 16
905 X=IQ/4:IFCB<0ORX<4THEN2000                     :rem 68
910 AA=AA+100                                      :rem 151
920 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15:
    POKEMC+24,15:FORX=2TO11                        :rem 162
925 POKEMC+1,(X*3):POKEMC+4,17                     :rem 217
930 FORY=1TO30:NEXTY:POKEMC+4,16:NEXTX             :rem 222
935 POKEMC+24,0                                    :rem 77
940 PRINT"{2 DOWN} BECAUSE OF YOUR WISE SPENDING H
    ABITS,"                                        :rem 227
945 PRINT" YOUR PARENTS HAVED RAISED YOUR"         :rem 78
950 PRINT" ALLOWANCE BY $1 PER MONTH."             :rem 144
960 X$=STR$(CB):GOSUB1200:PRINT"{2 DOWN} OLD BALAN
    CE =";X$:X$=STR$(AA):GOSUB1200                 :rem 14
965 PRINT"{DOWN} ALLOWANCE{3 SPACES}=";X$:CB=CB+AA
                                                   :rem 62
```

```
970 X$=STR$(CB):GOSUB1200:PRINT"{DOWN} NEW BALANCE
    =";X$:GOSUB1000                          :rem 36
980 RETURN                                    :rem 129
1000 PRINT"{HOME}{24 DOWN}{12 SPACES}(PRESS ANY KE
     Y)";                                     :rem 39
1010 GETX$:IFX$=""THEN1010                    :rem 213
1020 RETURN                                   :rem 163
1100 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
     9:POKEMC+24,15                           :rem 28
1110 FORX=0TO12                               :rem 117
1120 Y=INT(ST%(X,0)/256)                      :rem 51
1130 POKEMC+0,ST%(X,0)-(Y*256)                :rem 122
1140 POKEMC+1,Y:POKEMC+4,17                   :rem 82
1150 FORY=1TOST%(X,1)*75:NEXTY                 :rem 82
1160 POKEMC+4,16:FORY=1TO20:NEXTY,X           :rem 188
1170 POKEMC+24,0                              :rem 117
1180 RETURN                                   :rem 170
1200 X=VAL(X$):X$=STR$(X):X=LEN(X$):IFX>3THEN1230
                                              :rem 195
1210 IFX=2THENY$=LEFT$(X$,1)+"$0.0"+RIGHT$(X$,1):G
     OTO1280                                  :rem 210
1220 Y$=LEFT$(X$,1)+"$0."+RIGHT$(X$,2):GOTO1280
                                              :rem 31
1230 X=X-3:Y$=LEFT$(X$,1)+"$"+MID$(X$,2,X)+"."+RIG
     HT$(X$,2)                                :rem 128
1280 X$=Y$:IFLEN(X$)>7THENRETURN              :rem 250
1290 Y$=" "+Y$:GOTO1280                       :rem 176
2000 IFX=>2ORAA<600ORIQ=0THEN960              :rem 193
2005 AA=AA-100                                :rem 198
2010 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15
     :POKEMC+24,15                            :rem 221
2015 FORX=11TO2STEP-1                         :rem 21
2020 POKEMC+1,X*3:POKEMC+4,17                 :rem 172
2030 FORY=1TO30:NEXTY:POKEMC+4,16:NEXTX        :rem 7
2040 POKEMC+24,0                              :rem 114
2050 PRINT"{2 DOWN} UNWISE SPENDING HAS CAUSED YOU
     R"                                       :rem 205
2060 PRINT" PARENTS TO LOWER YOUR ALLOWANCE BY $1
     {3 SPACES}PER MONTH."                    :rem 82
2070 GOTO960                                  :rem 161
3000 DATA6430,2,4817,1,6430,1,4817,1,6430,1,7217,1
     ,8101,3                                  :rem 29
3010 DATA6430,3,8583,2,8583,1,6430,2,7217,2,8101,4
                                              :rem 213
3020 DATAJANUARY,FEBRUARY,MARCH,APRIL,MAY,JUNE,JUL
     Y,AUGUST,SEPTEMBER,OCTOBER               :rem 179
3030 DATANOVEMBER,DECEMBER,"$"                :rem 53
3100 DATA"JOE'S MATH NOTES",100,1,"KUNG FU POSTER"
     ,150,1                                   :rem 131
```

Level

2

```
3110 DATA"PET FROG",125,1,"BOX OF MATCHES",75,1
                                    :rem 67
3120 DATA"LIVE BABY BAT",175,1,"PET SNAKE",150,1
                                    :rem 89
3130 DATA"SODA POP",50,1,"FIRECRACKERS",100,1
                                    :rem 39
3140 DATA"STINK BOMB",150,1,"PET MOUSE",125,1
                                    :rem 241
3150 DATA"WHITE RAT",200,1,"LOCKPICKING SET",75,1
                                    :rem 41
3160 DATA"PET SPIDER",100,1,"PELLET GUN",250,1
                                    :rem 50
3170 DATA"BUBBLE GUM",50,1,"MOTHER AND BABY RABBIT
     S",80,1                        :rem 212
3180 DATA"BROKEN ROLLER SKATE",200,1,"DRUM SET",30
     0,1                            :rem 254
3190 DATA"ROTTEN GOOSE EGG",200,1,"LOCK WITHOUT A
     {SPACE}KEY",175,1             :rem 143
3210 DATA"BASEBALL CARDS",75,2,"CAT'S EYE MARBLE",
     50,2                          :rem 4
3220 DATA"COMIC BOOK",50,2,"NOISY ROCK RECORD",200
     ,2                            :rem 182
3230 DATA"HOT FUDGE SUNDAE",150,2,"PET GOLDFISH",1
     75,2                          :rem 44
3240 DATA"PAIR OF DICE",100,2,"PEN KNIFE",100,2
                                    :rem 243
3250 DATA"BOX OF CHOCOLATES",200,2,"BUMPER STICKER
     ",100,2                       :rem 18
3260 DATA"FALSE MUSTACHE",125,2,"PHONY NOSE",75,2
                                    :rem 57
3270 DATA"PEA SHOOTER",50,2,"NERF BALL",100,2
                                    :rem 228
3280 DATA"JELLY BEANS",50,2,"WOLFMAN MODEL",200,2
                                    :rem 20
3290 DATA"DRACULA FANGS",100,2,"TATTOO KIT",150,2
                                    :rem 5
3300 DATA"WATER PISTOL",150,2,"PET HAMSTER",150,2
                                    :rem 47
3310 DATAHARMONICA,100,3,"HULA HOOP",75,3  :rem 86
3320 DATA"ROLLER SKATES",300,3,"CHAMPION YO-YO",20
     0,3                           :rem 56
3330 DATABASKETBALL,300,3,"T-SHIRT",175,3 :rem 121
3340 DATA"MATCHBOX CAR",125,3,"MOVIE TICKET",200,3
                                    :rem 72
3350 DATA"COMPUTER GAME",300,3,"STUFFED ANIMAL",30
     0,3                           :rem 33
3360 DATA"ICE CREAM CONE",75,3,"BUBBLE STUFF",50,3
                                    :rem 19
3370 DATABANJO,400,3,"CAP GUN",200,3       :rem 187
```

```
3380 DATAFOOTBALL,300,3,"CATCHER'S MITT",400,3
                                        :rem 154
3390 DATA"BASEBALL BAT",250,3,"BUG COLLECTION",200
     ,3                                 :rem 179
3400 DATA"CAMPING TENT",350,3,CANTEEN,150,3
                                        :rem 205
3410 DATA"STAMP COLLECTION",200,4,"POSTAGE STAMPS"
     ,200,4                            :rem 46
3420 DATA"BICYCLE PUMP",300,4,"TENNIS SHOES",500,4
                                        :rem 103
3430 DATA"FROZEN YOGURT",200,4,PENCILS,175,4
                                        :rem 103
3440 DATAKITE,300,4,"DOG FOOD",500,4    :rem 196
3450 DATA"CAMERA FILM",250,4,"FILM DEVELOPING",350
     ,4                                 :rem 199
3460 DATA"FINGER PAINTS",350,4,"COIN COLLECTION",5
     00,4                              :rem 127
3470 DATA"SHELL COLLECTION",300,4,"ELECTRIC TRAIN"
     ,500,4                             :rem 9
3480 DATA"CHECKER SET",275,4,"SCOUT KNIFE",300,4
                                        :rem 194
3490 DATA"MICKEY MOUSE WATCH",500,4,COMPASS,250,4
                                        :rem 118
3500 DATA"BOOK OF MAGIC",300,4,"TOY TYPEWRITER",50
     0,4                               :rem 18
3510 DATA"BIRTHDAY CARD",150,5,NOTEBOOK,300,5
                                        :rem 104
3520 DATADICTIONARY,600,5,"POCKET CALCULATOR",650,
     5                                 :rem 69
3530 DATA"SILVER DOLLAR",700,5,DIARY,400,5:rem 166
3540 DATA"TOM SAWYER BOOK",300,5,"CHESS SET",450,5
                                        :rem 56
3550 DATADOMINOES,400,5,"SAVINGS ACCOUNT",500,5
                                        :rem 32
3560 DATA"GET-WELL PRESENT",300,5,"BIRTHDAY PRESEN
     T",350,5                          :rem 187
3570 DATA"WEDDING PRESENT",500,5,"FLEA COLLAR",250
     ,5                                 :rem 219
3580 DATA"KITTY LITTER",350,5,"ANT FARM",500,5
                                        :rem 87
3590 DATA"DRAWING PAPER",550,5,"GIFT FOR MOM",600,
     5                                 :rem 103
3600 DATA"GIFT FOR DAD",600,5,"WATERCOLOR SET",575
     ,5                                 :rem 176
4000 DATA" GRANDMA SENDS YOU A CHECK FOR YOUR
     {6 SPACES}BIRTHDAY",500,1         :rem 224
4010 DATA" MOM PAYS YOU FOR BABYSITTING YOUR
     {7 SPACES}LITTLE BROTHER",300,1   :rem 188
4020 DATA" YOU SELL YOUR BASEBALL GLOVE TO YOUR
     {4 SPACES}FRIEND TOMMY",400,1     :rem 176
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4030 DATA" YOU MOW YOUR NEIGHBOR'S LAWN TO GET
     {5 SPACES}EXTRA MONEY",300,1          :rem 9
4040 DATA" MOM PAYS YOU FOR CLEAINING YOUR ROOM
     {4 SPACES}WITHOUT BEING ASKED",300,1  :rem 99
4050 DATA" YOU WIN A PRIZE AT SCHOOL FOR BEING A
     {3 SPACES}GOOD STUDENT",500,1         :rem 53
4060 DATA" YOU RETURN A WALLET THAT YOU FIND AND
     {3 SPACES}GET A REWARD",500,1         :rem 53
4070 DATA" YOU WIN A CONTEST FROM A LOCAL RADIO
     {4 SPACES}STATION",500,1              :rem 4
4080 DATA" HELP JEFF DELIVER PAPERS ON HIS
     {9 SPACES}NEWSPAPER ROUTE",300,1      :rem 37
4090 DATA" YOU GET A GOOD REPORT CARD, AND DAD IS
     {2 SPACES}VERY PLEASED",400,1         :rem 45
4100 DATA" YOU AND SUSIE MAKE MONEY RUNNING A
     {6 SPACES}LEMONAIDE STAND",500,1      :rem 170
4110 DATA" YOU LOSE A TOOTH AND THE TOOTH FAIRY
     {4 SPACES}LEAVES YOU SOME COINS",75,1 :rem 66
4120 DATA" YOU RAKE THE YARD AND DAD PAYS YOU FOR
     {2 SPACES}IT",200,1                   :rem 203
4130 DATA" YOU CLEAN THE HOUSE AND MOM PAYS YOU
     {4 SPACES}FOR YOUR HARD WORK",250,1   :rem 153
4140 DATA" YOU DON'T WATCH TV FOR A WHOLE WEEK AND
     DAD REWARDS YOU",300,1               :rem 65
4150 DATA" YOUR BICYCLE TIRE POPS AND YOU HAVE TO
     {2 SPACES}BUY A NEW ONE",250,-1       :rem 201
4160 DATA" YOU JOIN A SECRET CLUB AND HAVE TO PAY
     {2 SPACES}DUES",200,-1                :rem 128
4170 DATA" YOU BUY A BIRTHDAY GIFT FOR YOUR
     {8 SPACES}SISTER",150,-1              :rem 53
4180 DATA" YOU BREAK YOUR SISTER'S DOLL AND HAVE
     {3 SPACES}TO BUY HER A NEW ONE",500,-1:rem 28
4190 DATA" YOU BREAK MOM'S LAMP AND HAVE TO
     {8 SPACES}REPLACE IT",500,-1          :rem 153
4200 DATA" YOU LOSE YOUR WALLET ON THE WAY HOME
     {4 SPACES}FROM SCHOOL",400,-1         :rem 74
4210 DATA" YOU KNOCK YOUR BALL THROUGH A WINDOW
     {4 SPACES}AND MUST FIX IT",400,-1     :rem 38
4220 DATA" PAY YOUR FRIEND TO TEACH YOU YO-YO
     {6 SPACES}TRICKS",100,-1              :rem 176
4230 DATA" YOU AND BETTY GO TO THE CIRCUS",200,-1
                                          :rem 170
4240 DATA" DAD MAKES YOU BUY BACK A BROKEN TOY
     {5 SPACES}YOU SOLD TO SAM",200,-1     :rem 89
4250 DATA" YOU BUY DAD A PRESENT FOR HIS BIRTHDAY"
     ,400,-1                              :rem 173
4260 DATA" YOU BUY A GIFT TO TAKE TO SALLY'S
     {7 SPACES}BIRTHDAY PARTY",350,-1      :rem 33
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```
4270 DATA" YOUR FAVORITE CANDY BARS ARE ON SALE,
     {3 SPACES}AND YOU BUY A CASE",500,-1 :rem 159
4280 DATA" YOU PAY YOUR LITTLE BROTHER TO WASH THE
     DOG FOR YOU",300,-1                    :rem 4
4290 DATA" YOU MUST PAY PART OF THE DOCTOR BILL TO
     GET A BEAN OUT OF YOUR EAR"          :rem 134
4300 DATA400,-1                           :rem 255
```

Word Scramble

Skill area: Language Arts
Level: 2, 3, 4
Equipment required: None
Modification: Yes

A Long Night and Tired Eyes

It's one of those nights. There's a super triple feature on television — three monster movies, back-to-back. You should do your homework, but you just *have* to find out if the cockroach really does eat Cincinnati.

By the time the third feature ends, your eyes are almost shut. You hit the pillow and fall asleep in 43 seconds. Two minutes later, you sit straight up in bed. Miss Zane, your English teacher, is yelling at you in your mind. You've just remembered the big exam tomorrow. And you spent the evening watching cock-roaches dine on Cincinnati!

There's nothing to do but get out of bed and study for that exam. Miss Zane is no easy teacher, and if you flunk the exam you'll be grounded until four years from next Saturday. But your eyes don't seem to care. Every time you try to read a word, your eyes play tricks on you. All the words are jumbled up. If you don't unjumble those words quickly, you're going to be in big trouble tomorrow morning.

How to Play

"Word Scramble" is geared to three different skill levels. Level 1 is for beginners. Level 2 contains words of five or six letters. Level 3 contains words of seven to nine letters. Press the number of the level you want, then hit the RETURN key to start the game.

The computer will show you a word with its letters scrambled. Type the correct word on the computer keyboard and press the RETURN key to enter it. A correct answer will be rewarded with music and colored lights. An incorrect answer will be greeted with a buzz. You can guess as many times as you want, or you can skip a tough word by pressing the f1 key. If you press the f1 key, the computer will unscramble the word and display the correct answer. Unscramble as many words as you can in the two-minute time limit.

Scoring

You'll receive five points for each word you correctly unscramble.
One point will be deducted from your score for each incorrect
guess. There are 50 words in each level of difficulty, so the ideal
high score would be 250 points. That total is very difficult to
reach. But if you're really good at Word Scramble, you'll pass Miss
Zane's test.

Word Scramble

Remember, do not type the checksum number at the end of each line. For example, do
not type ":rem 123." Please read the article about the "Automatic Proofreader" in
Appendix E.

```
1 REM WORD SCRAMBLE                              :rem 154
100 TS=50                                        :rem 218
110 DIMWT$(TS-1),R%(20),NT%(30,1)                :rem 235
120 VC=53248:POKEVC+32,14:POKEVC+33,12:PRINTCHR$(1
    47)                                          :rem 105
130 Z=((PEEK(53272)AND240)/16)*1024:M=Z+603:C=5529
    6+603                                        :rem 161
140 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX   :rem 71
150 READX$:IFX$<>"$SONG"THEN150              :rem 81
160 FORW=0TO30:FORY=0TO1:READX:NT%(W,Y)=X:NEXTY,W
                                            :rem 201
200 PRINT"{2 SPACES}{WHT}*********{2 SPACES}{BLK}D
    ROW{2 SPACES}ELBMARCS{2 SPACES}{WHT}*********"
                                            :rem 118
210 PRINT"{2 DOWN} THE COMPUTER WILL SHOW YOU A SC
    RAMBLED{2 SPACES}WORD."                 :rem 132
220 PRINT"{DOWN} YOU MUST UNSCRAMBLE IT AND ENTER
    {SPACE}THE{4 SPACES}CORRECT WORD."      :rem 243
230 PRINT"{2 DOWN}{4 SPACES}+5 POINTS FOR EACH COR
    RECT WORD."                             :rem 57
240 PRINT"{DOWN}{4 SPACES}-1 POINT FOR AN INCORREC
    T GUESS."                               :rem 52
250 PRINT"{2 DOWN} EACH GAME LASTS TWO MINUTES."
                                            :rem 137
255 PRINT"{DOWN} PRESS THE {RVS}F1{OFF} KEY TO SKI
    P A WORD."                              :rem 117
260 GOSUB6000:FORX=1TO1000:NEXTX            :rem 250
270 GOSUB6200                               :rem 225
280 PRINT"{DOWN}{7 SPACES}(PRESS ANY KEY TO START)
    "                                       :rem 92
290 GETX$:IFX$=""THEN290                    :rem 135
300 PRINT"{CLR}{3 DOWN}{2 SPACES}ENTER SKILL LEVEL
    :"                                      :rem 217
310 PRINT"{2 DOWN}{6 SPACES}{RVS}1{OFF}
    {SHIFT-SPACE}- BEGINNER":PRINT"{10 SPACES}(4 L
    ETTERS)"                                :rem 38
```

```
320 PRINT"{2 DOWN}{6 SPACES}{RVS}2{OFF} - INTERMED
    IATE":PRINT"{10 SPACES}(5-6 LETTERS)"    :rem 29
330 PRINT"{2 DOWN}{6 SPACES}{RVS}3{OFF}
    {SHIFT-SPACE}- ADVANCED":PRINT"{10 SPACES}(7-9
    LETTERS)"                                :rem 127
335 PRINT"{2 DOWN}{2 SPACES}(ENTER 1, 2 OR 3)"
                                             :rem 192
340 GETX$:IFX$=""THEN340                     :rem 127
350 IFX$<"1"ORX$>"3"THEN340                  :rem 236
360 SK=VAL(X$):RESTORE:IFSK=1THEN380         :rem 33
370 X=(SK-1)*TS:FORY=1TOX:READX$:NEXTY       :rem 212
380 FORX=1TOTS:READX$:WT$(X-1)=X$:NEXTX      :rem 254
390 SC=0:WC=1:TL$="000200":TI$="000000"      :rem 30
500 X=INT(RND(1)*TS):UW$=WT$(X):IFUW$="$"THEN500
                                             :rem 94
510 WT$(X)="$"                               :rem 179
520 X=LEN(UW$):FORY=1TOX:R%(Y)=0:NEXTY:FORY=1TOX
                                             :rem 140
530 Z=INT(RND(1)*X)+1:IFR%(Z)<>0THEN530      :rem 11
540 R%(Z)=Y:NEXTY:SW$="":FORY=1TOX:SW$=SW$+MID$(UW
    $,R%(Y),1):NEXTY                         :rem 104
550 IFSW$=UW$THEN520                         :rem 202
560 X$=MID$(TI$,3,2)+"."+MID$(TI$,5,2)       :rem 184
565 IFTL$<TI$THEN700                         :rem 182
570 PRINT"{CLR}{2 DOWN}{3 SPACES}WORD{2 SPACES}#";
    WC:PRINT"{DOWN}{3 SPACES}TIME{2 SPACES}= ";X$
                                             :rem 149
580 PRINT"{DOWN}{3 SPACES}SCORE =";SC        :rem 9
590 PRINT"{4 DOWN}{3 SPACES}--->{4 SPACES}{BLK}";S
    W$;"{WHT}";                              :rem 208
600 GOSUB8000                                :rem 222
605 IFSW$="Q"THEN680                         :rem 23
610 IFSW$<>UW$THENSC=SC-1:GOSUB7000:GOTO600
                                             :rem 190
620 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15:
    POKEMC+24,5                              :rem 129
630 FORX=3TO12                               :rem 78
640 POKEMC+1,X*3:POKEMC+4,17:POKEVC+33,X     :rem 153
650 FORY=1TO40:NEXTY:POKEMC+4,16             :rem 13
660 FORY=1TO20:NEXTY,X:POKEMC+24,0           :rem 139
670 SC=SC+5                                  :rem 102
680 WC=WC+1:IFWC<(TS+1)THEN500               :rem 34
700 IFSC<0THENSC=0                           :rem 90
710 PRINT"{CLR}{2 DOWN}{15 SPACES}{RVS}GAME OVER!
    {OFF}":PRINT"{3 DOWN}{6 SPACES}SCORE =";SC
                                             :rem 1
720 PRINT"{3 DOWN}{6 SPACES}PLAY AGAIN? ({RVS}Y
    {OFF} OR {RVS}N{OFF})"                   :rem 83
730 GETX$:IFX$=""THEN730                     :rem 133
740 IFX$="Y"THEN300                          :rem 66
```

```
750 IFX$<>"N"THEN730                          :rem 124
760 GOSUB6000:PRINTCHR$(147)                  :rem 152
770 END                                       :rem 117
6000 REM *** PLAY THE SONG ***                :rem 244
6010 POKEMC+0,0:POKEMC+1,0:POKEMC+5,39:POKEMC+6,12
     9:POKEMC+24,8                            :rem 239
6020 FORX=0TO30                               :rem 122
6030 Y=INT(NT%(X,0)/256)                      :rem 51
6040 POKEMC+0,NT%(X,0)-(Y*256)                :rem 122
6050 POKEMC+1,Y:POKEMC+4,33                   :rem 85
6060 FORY=1TONT%(X,1)*60:NEXTY                :rem 76
6070 POKEMC+4,32:FORY=1TO20:NEXTY,X           :rem 191
6080 POKEMC+24,0                              :rem 122
6090 RETURN                                   :rem 175
6200 REM *** FIX THE TITLE ***                :rem 242
6210 Z=Z+52:X$="WORD{2 SPACES}SCRAMBLE"       :rem 8
6220 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15
     :POKEMC+24,5                             :rem 179
6230 FORX=1TO14                               :rem 128
6240 POKEMC+1,X*3:POKEMC+4,33                 :rem 178
6250 Y=ASC(MID$(X$,X,1))                      :rem 55
6260 IFY<>32THENY=Y-64                        :rem 74
6270 POKEZ+X,Y                                :rem 96
6280 FORY=1TO40:NEXTY:POKEMC+4,32             :rem 64
6290 FORY=1TO10:NEXTY,X:POKEMC+24,0           :rem 191
6295 RETURN                                   :rem 182
7000 REM *** BAD ANSWER - BEEP IT ***         :rem 36
7010 POKEMC+0,0:POKEMC+1,10:POKEMC+4,33:POKEMC+5,1
     5:POKEMC+6,15:POKEMC+24,5                :rem 204
7020 FORY=1TO500:NEXTY                        :rem 129
7030 POKEMC+4,32                              :rem 121
7040 FORY=1TO100:NEXTY:POKEMC+24,0            :rem 101
7050 PRINT"{HOME}{6 DOWN}{3 RIGHT}SCORE =";SC;"
     {5 SPACES}";                             :rem 177
7060 RETURN                                   :rem 173
8000 SW$="":FORX=0TO19:POKEM+X,32:POKEC+X,0:NEXTX:
     POKEM,160                                :rem 169
8010 GETX$:IFTL$<TI$THEN700                   :rem 117
8020 Y$=MID$(TI$,3,2)+"."+MID$(TI$,5,2):PRINT"
     {HOME}{4 DOWN}{11 RIGHT}";Y$             :rem 65
8025 IFX$=""THEN8010                          :rem 83
8030 X=ASC(X$)                                :rem 4
8040 IFX<>133THEN8045                         :rem 196
8042 PRINT"{6 DOWN}{11 RIGHT}{BLK}";UW$:FORX=1TO15
     00:NEXTX:PRINT"{WHT}{CLR}":SW$="Q":RETURN
                                              :rem 23
8045 IFX=13THENRETURN                         :rem 104
8050 IFX=20THEN8100                           :rem 75
8055 IFX<65ORX>90THEN8010                     :rem 248
```

```
8060 Z=LEN(SW$):POKEM+Z,X-64:POKEM+Z+1,160:SW$=SW$
     +X$:GOTO8010                              :rem 9
8100 Z=LEN(SW$):IFZ=0THEN8010                  :rem 230
8110 POKEM+Z,32:POKEM+Z-1,160:X$=LEFT$(SW$,Z-1):SW
     $=X$:GOTO8010                             :rem 250
9000 DATATALK,FOUR,BEST,BLUE,WARM,SOAP,FOOT,PILL,W
     ORK,YELL                                  :rem 121
9010 DATAEVEN,GATE,HELP,HOUR,JOKE,WORD,GIRL,MOON,N
     ICE,DISH                                  :rem 57
9020 DATAJULY,JUNE,BOOK,HIDE,BOYS,TREE,CORN,GONE,Q
     UIT,EASY                                  :rem 105
9030 DATAGOLD,GOAL,WHIP,PILE,PIGS,PLAY,TEST,BOIL,T
     OYS,LION                                  :rem 109
9040 DATAROAR,THEM,ZOOM,MATH,FIVE,NINE,FARM,JUNK,H
     EAD,IRON                                  :rem 64
9100 DATAAPPLE,BUTTER,CHILD,DRIVE,ENOUGH,GIVEN,HOL
     LOW,IGLOO,LAMBS,MAKER                     :rem 3
9110 DATANOISE,PLAYER,QUIET,RUBBER,SHAVE,TELLER,VI
     OLET,WATER,YOUNG,ZEBRA                    :rem 161
9120 DATAPLEASE,CAMEL,STORY,MOUSE,RABBIT,PENCIL,DE
     SKS,CHAIR,WATCH,SHELL                     :rem 247
9130 DATASLEEP,ORANGE,BOTTLE,HOTEL,CANDLE,MONDAY,F
     ORGET,LIGHT,PILLOW,SHELF                  :rem 229
9140 DATAGIANT,WHALE,SHIRT,THREE,EVERY,PHONE,LETTE
     R,GRASS,BUBBLE,ROAST                      :rem 228
9200 DATAALPHABET,BOTTLED,GEOGRAPHY,DANGEROUS,ELEM
     ENTS                                      :rem 143
9210 DATAFEBRUARY,GREATER,HELIPORT,ISOLATE,LAMINAT
     E                                         :rem 195
9230 DATAMESSAGE,NOVEMBER,OPTIMIST,PASSAGE,REMEMBE
     R                                         :rem 199
9240 DATASALIVATE,TELEPHONE,UNKNOWN,VACCINATE,WITN
     ESS                                       :rem 129
9250 DATAMUSHROOM,EVAPORATE,PHYSICIAN,REGULATE,REP
     ORTER                                     :rem 47
9260 DATACOMPUTER,TERMINAL,GRANDSON,APRICOT,QUESTI
     ON                                        :rem 76
9270 DATAWEATHER,GIRAFFE,SHARPEN,HYDROGEN,JOURNAL
                                               :rem 44
9280 DATABEDROOM,TROUSERS,NECKTIE,RELIGION,SCIENCE
                                               :rem 130
9290 DATAGUMBALL,LUBRICATE,BATHROOM,CLOTHES,WASHIN
     G                                         :rem 188
9300 DATALAUNDRY,DRAWER,ASPARAGUS,OATMEAL,PENGUIN
                                               :rem 58
20000 REM *** SONG DATA ***                    :rem 35
20005 DATA"$SONG"                              :rem 176
20010 DATA2408,1,2864,2,3215,2,3608,2,3215,1,2864,
      2,2703,2,2408,2,2703,1                   :rem 251
```

```
20020 DATA2864,2,3608,2,4817,2,4817,2,4291,1,3608,
      2,4291,1,4817,2,4050,2                    :rem 21
20030 DATA3215,2,3608,2,4050,2,3608,2,2864,2,2408,
      2,2703,1,2864,2                           :rem 170
20040 DATA3608,2,4050,2,3608,2,2864,1,2408,2
                                                :rem 162
```

Level 3: Intermediate Games (Grades 6-8)

Alphabet Soup

Skill area: Language Arts
Level: 3, 4
Equipment required: None
Modification: No

Lunchtime

It's lunchtime again, and the only thing to eat in the house is
alphabet soup. Alphabet soup isn't a bad lunch — if you like soup,
that is. But the good thing about alphabet soup isn't the taste. The
good thing is that letters float up from the bottom of the bowl and
bob around on the top with the peas and the carrots. If you don't
have anything better to do, you can make all sorts of nifty words
with the letters.

How to Play

Today it's okay to play with your food. Sixteen letters float up to
the top in your bowl of alphabet soup. See how many words of 2
letters or more you can make with those 16 letters.

When you see a word in the line of letters, type it on the com-
puter keyboard. If you decide you don't like a word you typed,
type the symbol @, followed by the word. For example, if you've
entered the word *zero* and decide you'd rather spell *zebra*, type
" @zero" to make *zero* disappear. The letters Z, E, R, and O will re-
turn to the soupbowl, and you can use them again.

Before the game starts, you can decide how long you want the
game to last. If you're quick, make the time limit a minute. If
you'd rather concentrate on getting beautiful words than on spell-
ing words quickly, choose a longer playing time. If you've used all
the letters you can and the time still isn't up, press f1 to end a
round early.

At the end of a game, you can press Y or N, indicating
whether or not you want to play again. If you want to play again
but would like to select a different time limit, press R to reset the
time.

Scoring

The score is based on the word length and value of the letters in
the word. A six-letter word, for example, is going to be worth

much more than three two-letter words.

At the top of the soupbowl are the 16 letters you'll be using in the round. Underneath each letter is a number. Letters that are harder to use — Q, X, Z, and some others — are worth more points than letters you can use anywhere. Try to use those big letters first.

The computer does not check to see if a word is spelled correctly, or even if it *is* a word, so you'll have to be honest.

At the end of the game, your score will appear. Each word you created will be printed together with the point value for that word. Then you'll see your total score. Your score will depend a little bit on which letters float to the top of the soupbowl, but your final score will depend most on how good you are at making words with your food.

Alphabet Soup

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM ALPHABET SOUP                         :rem 157
100 VC=53248:MC=54272:POKEVC+32,3:POKEVC+33,1
                                            :rem 89
102 PRINTCHR$(147):CB=828                   :rem 172
104 LP=((PEEK(53272)AND240)/16)*1024:LP=LP+44
                                            :rem 187
106 CO=55296-LP+44:CP=LP+840                :rem 58
108 FORX=54272TO54296:POKEX,0:NEXTX         :rem 180
120 DIML%(25,2),W$(7):X=RND(-TI)            :rem 241
130 PRINT"{BLK}{11 SPACES}{RVS}* ALPHABET
    {2 SPACES}SOUP *{OFF}"                  :rem 117
140 PRINT"{2 DOWN}16 RANDOM LETTERS AND THEIR POIN
    T VALUESWILL BE PRINTED."               :rem 127
150 PRINT"{2 DOWN}BUILD WORDS OF 2 OR MORE LETTERS
     EACH."                                 :rem 133
160 PRINT"{2 DOWN}END A ROUND EARLY BY USING ALL 1
    6"                                      :rem 8
165 PRINT"LETTERS OR BY PRESSING {RVS}F1{OFF}."
                                            :rem 128
170 PRINT"{2 DOWN}CANCEL A WORD BY USING '@' FOLLO
    WED BY{2 SPACES}THE WORD."              :rem 159
180 PRINT"{2 DOWN}YOUR SCORE IS BASED ON WORD LENG
    TH AND{2 SPACES}LETTER VALUES."         :rem 142
185 GOSUB7000                               :rem 229
190 PRINT"{2 DOWN}{8 SPACES}(PRESS ANY KEY TO STAR
    T)"                                     :rem 109
200 FORW=0TO25:READX,Y,Z:L%(W,0)=X:L%(W,1)=Y:L%(W,
    2)=Z:NEXTW                              :rem 162
```

```
210 GETX$:IFX$=""THEN210                    :rem 119
220 PRINTCHR$(147);"{3 DOWN}HOW MANY MINUTES SHOUL
    D EACH GAME LAST??";                    :rem 240
225 PRINT"{3 DOWN}{7 SPACES}ENTER A NUMBER FROM
    {RVS}1{OFF} TO {RVS}4{OFF}"             :rem 169
230 GETRL$:IFRL$=""THEN230                  :rem 7
240 IFRL$<"1"ORRL$>"4"THEN230               :rem 117
250 TL$="000"+RL$+"00"                      :rem 40
300 POKEVC+32,10:WC=0:LC=0:PRINTCHR$(147)   :rem 164
305 FORW=0TO25                              :rem 77
310 FORX=1TOL%(W,1):POKECB+LC,L%(W,0):LC=LC+1:NEXT
    X,W                                     :rem 232
320 FORX=0TO7:W$(X)=".":NEXTX               :rem 249
330 FORX=0TO30STEP2                         :rem 182
340 Y=INT(RND(1)*LC):Z=PEEK(CB+Y):IFZ=0THEN340
                                            :rem 46
350 POKECB+Y,0:POKELP+X,Z:POKELP+X+CO,0:W=L%(Z-1,2
    )+48                                    :rem 24
360 POKELP+X+40,W:POKELP+X+40+CO,6:NEXTX
370 POKECP-1,62:POKECP-1+CO,4:TI$="000000"  :rem 97
400 WB$="":LE=0:D%=0                        :rem 26
410 IFTI$>TL$THEN800                        :rem 174
415 J$=MID$(TI$,3,2)+"."+MID$(TI$,5,2)      :rem 169
416 PRINT"{HOME}{23 DOWN}";SPC(17);J$;      :rem 196
420 GETX$:IFX$=""THEN410                    :rem 124
430 X=ASC(X$):IFX=13THEN600                 :rem 87
435 IFX=133THEN800                          :rem 30
437 IFX=20THEN1700                          :rem 27
440 IFX$="@"ANDLE=0ANDD%=0ANDWC>0THEND%=1:GOTO500
                                            :rem 199
450 IFX<65ORX>90THENGOSUB1800:GOTO410       :rem 71
455 IFD%=1THEN490                           :rem 208
460 W=0                                     :rem 94
465 IFPEEK(LP+W)=(X-64)THEN480              :rem 10
470 W=W+2:IFW<32THEN465                     :rem 114
475 GOSUB1800:GOTO410                       :rem 241
480 POKELP+W,32:POKELP+W+CO,1:POKELP+W+40,32:POKEL
    P+W+40+CO,1                             :rem 242
490 WB$=WB$+X$                              :rem 251
500 POKECP+LE,X-64:POKECP+LE+CO,9:LE=LE+1:IFLE<17T
    HEN410                                  :rem 191
600 X=LEN(WB$):IFX<2THENGOSUB1800:GOTO410   :rem 39
610 IFD%<>1THEN700                          :rem 209
620 W=0                                     :rem 92
625 IFWB$=W$(W)THEN640                      :rem 18
630 W=W+1:IFW<8THEN625                      :rem 64
635 GOSUB1800:GOTO750                       :rem 246
640 W$(W)=".":X$="":FORY=1TO(W*2)+6:X$=X$+"{DOWN}"
    :NEXTY                                  :rem 84
```

```
645 PRINT"{HOME}";X$;"{38 SPACES}"          :rem 185
650 WC=WC-1:FORY=1TOX:Z=0                   :rem 78
660 IFPEEK(LP+Z)=32THEN680                  :rem 49
670 Z=Z+2:GOTO660                           :rem 250
680 X$=MID$(WB$,Y,1):W=ASC(X$)-64:POKELP+Z,W:POKEL
    P+Z+CO,0                                :rem 254
690 W=L%(W-1,2):POKELP+Z+40,W+48:POKELP+Z+40+CO,6:
    NEXTY:GOTO750                           :rem 84
700 X=0                                     :rem 92
705 IFW$(X)="."THEN720                      :rem 198
710 X=X+1:IFX<8THEN705                      :rem 65
720 W$(X)=WB$:X$="":FORY=1TO(X*2)+6:X$=X$+"{DOWN}"
    :NEXTY:PRINT"{HOME}";X$;"{4 SPACES}";WB$;
                                            :rem 39
730 WC=WC+1                                 :rem 103
750 FORX=0TO18:POKECP+X,32:POKECP+X+CO,1:NEXTX
                                            :rem 206
760 X=0                                     :rem 98
765 W=PEEK(LP+X):IFW<>32THEN400             :rem 141
770 X=X+2:IFX<32THEN765                     :rem 123
800 POKEVC+32,3:W=0:PRINTCHR$(147);"{2 SPACES}WORD
    {12 SPACES}SCORE"                       :rem 57
805 PRINT"{2 SPACES}--------------------":rem 31
810 X=0                                     :rem 94
815 IFW$(X)="."THEN900                      :rem 200
820 WB$=W$(X):Y=LEN(WB$):Z=Y:IFZ>8THENZ=8   :rem 54
830 S=Z-2:FORZ=1TOY:X$=MID$(WB$,Z,1):A=ASC(X$)-65:
    S=S+L%(A,2):NEXTZ                       :rem 27
840 WB$=WB$+" "                             :rem 194
850 IFLEN(WB$)<17THENWB$=WB$+"-":GOTO850    :rem 79
860 X$=STR$(S)                              :rem 24
870 IFLEN(X$)<4THENX$=" "+X$:GOTO870        :rem 47
880 PRINT"{DOWN}{2 SPACES}";WB$;X$          :rem 49
890 W=W+S:X=X+1:IFX<8THEN815                :rem 239
900 PRINT"{DOWN}TOTAL SCORE ={7 SPACES}";W  :rem 74
930 PRINT"{DOWN}REPLAY OPTION?{3 SPACES}{RVS}Y
    {OFF} - YES"                            :rem 126
932 PRINT"{17 SPACES}{RVS}N{OFF} - NO"      :rem 43
934 PRINT"{17 SPACES}{RVS}R{OFF} - NEW TIME LIMIT"
                                            :rem 44
940 GETX$:IFX$=""THEN940                    :rem 139
950 IFX$="Y"THEN300                         :rem 69
955 IFX$="R"THEN220                         :rem 68
960 IFX$<>"N"THEN940                        :rem 130
970 PRINTCHR$(147)                          :rem 27
980 END                                     :rem 120
1700 IFLE<1THENGOSUB1800:GOTO410            :rem 213
1710 LE=LE-1                                :rem 134
1720 X=PEEK(CP+LE):POKECP+LE,32:POKECP+LE+CO,1
                                            :rem 63
```

```
1725 IFD%=1THEN1760                              :rem 50
1730 W=0                                         :rem 143
1735 IFPEEK(LP+W)=32THEN1750                     :rem 145
1740 W=W+2:IFW<32THEN1735                        :rem 212
1750 POKELP+W,X:POKELP+W+CO,0:POKELP+W+40,L%(X-1,2
     )+48:POKELP+W+40+CO,6                       :rem 34
1760 IFLE=0THENWB$="":D%=0:GOTO410               :rem 224
1770 X$=LEFT$(WB$,LE):WB$=X$:GOTO410             :rem 90
1800 POKEMC+1,14:POKEMC+0,0:POKEMC+5,15:POKEMC+6,1
     5                                           :rem 252
1810 POKEMC+24,15:POKEMC+4,17                    :rem 152
1820 FORW=0TO200:NEXTW:POKEMC+4,16               :rem 102
1830 FORW=1TO20:NEXTW:POKEMC+24,0                :rem 51
1840 RETURN                                      :rem 173
7000 POKEMC+5,79:POKEMC+6,129:POKEMC+24,15:rem 192
7010 READX,Y:IFX<0THEN7050                       :rem 73
7020 Z=INT(X/256):X=X-(Z*256)                    :rem 134
7030 POKEMC+0,X:POKEMC+1,Z:POKEMC+4,33           :rem 45
7040 FORZ=1TO(Y*75):NEXTZ:POKEMC+4,32:FORZ=1TO20:N
     EXTZ:GOTO7010                               :rem 21
7050 POKEMC+24,0                                 :rem 120
7060 RETURN                                      :rem 173
7100 DATA4291,2,4291,1,4050,1,3608,2,3608,1,3608,1
                                                 :rem 202
7110 DATA3215,1,2864,1,3215,1,3608,1,2864,4,-1,0
                                                 :rem 92
8000 DATA1,9,1,2,2,3,3,2,3,4,4,2,5,12,1,6,2,4,7,3,
     2,8,2,4,9,9,1
8010 DATA10,1,8,11,1,5,12,4,1,13,2,3,14,6,1,15,8,1
     ,16,2,3,17,1,9,18,6,1                       :rem 135
8020 DATA19,4,1,20,6,1,21,4,1,22,2,4,23,2,4,24,1,8
     ,25,2,4,26,1,9                              :rem 59
```

3

Lawn Mower

Skill area: Mathematics
Level: 3, 4
Equipment required: None
Modification: No

The Summer Job

Dad's decided the time has come to teach you a little responsibility. This summer, you won't get an allowance. You're going to enter the world of high finance instead.

Your job is to mow lawns in the neighborhood. Dad will let you use his power mower, and he'll lend you $15 to get your business started. The rest is up to you.

You'll get $5 for each lawn mowed, but you're responsible for buying supplies. You have to buy gasoline, oil, and plastic bags. And once in a while, the lawn mower blades must be sharpened. The $15 Dad loaned you is for supplies.

How to Play

At the beginning of the summer, and again at the start of each month, the computer will ask you what supplies you want. You may purchase 0 to 9 gallons of gasoline, at the current price. You'll also be asked how much oil and how many leaf bags you want to buy. Again, choose a number from 0 to 9. Finally, you need to decide whether you want to have the lawn mower blades sharpened. The lawn mower can't run forever on dull blades.

Once you've purchased your supplies, it's time to start mowing lawns. You can mow as many lawns per month as you have supplies, but once you run out of gas or oil or plastic bags, or your lawn mower blades get dull, you can't mow any more lawns for the rest of the month. Buy your supplies wisely. Wait for a good price on something before you stock up, but make sure you don't run out. If you do, it's going to be a long summer.

Watch the screen to see your progress. You'll hear the sound of the lawn mower as the grass is mowed. When each lawn is mowed, the computer will give a running tally of how many gallons of gasoline you have left, how much oil you have in reserve, and how many plastic bags you have on hand. Keep this tally in mind when you're purchasing supplies next month. After all, you don't want to end the year with 256 plastic trash bags!

Scoring

At the end of the summer, you'll find out your cash balance and your balance after paying Dad his $15.

Lawn Mower

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM LAWN MOWER                                   :rem 209
100 VC=53248:POKEVC+32,13:POKEVC+33,6:PRINTCHR$(14
    7)                                             :rem 57
110 DIMMT$(4),ST%(20,1)                            :rem 190
120 FORX=0TO20:FORY=0TO1:READZ:ST%(X,Y)=Z:NEXTY,X
                                                   :rem 208
130 FORX=0TO4:READX$:MT$(X)=X$:NEXTX               :rem 27
140 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX          :rem 71
150 GOSUB4000                                      :rem 218
160 PRINT"{WHT}{7 DOWN} DAD LOANS YOU $15 SO YOU C
    AN RUN A"                                      :rem 88
170 PRINT" LAWN MOWING SERVICE FOR THE SUMMER."
                                                   :rem 76
175 PRINT"{DOWN} AT THE END OF THE SUMMER YOU MUST
     PAY{3 SPACES}DAD BACK THE $15."               :rem 190
180 PRINT"{DOWN} YOU GET $5 FOR EACH LAWN YOU MOW,
     BUT"                                          :rem 226
185 PRINT" YOU MUST DEDUCT EXPENSES SUCH AS:"
                                                   :rem 218
190 PRINT"{2 DOWN}{3 SPACES}GAS FOR THE MOWER"
                                                   :rem 186
193 PRINT"{3 SPACES}OIL FOR THE MOWER"             :rem 164
195 PRINT"{3 SPACES}LAWN AND LEAF BAGS"            :rem 170
200 PRINT"{3 SPACES}MOWER SHARPENING"              :rem 220
210 GOSUB1000:GOSUB1100                            :rem 80
220 PRINT"{CLR}{2 DOWN} IF YOU RUN OUT OF SUPPLIES
     DURING THE"                                   :rem 71
225 PRINT" MONTH OR IF YOUR MOWER GETS DULL FROM"
                                                   :rem 145
230 PRINT" LACK OF SHARPENING, YOU LOSE YOUR"
                                                   :rem 176
240 PRINT" INCOME FOR THE REST OF THAT MONTH."
                                                   :rem 162
250 PRINT"{2 DOWN} THE OBJECT OF THE GAME IS TO BU
    Y YOUR"                                        :rem 48
255 PRINT" SUPPLIES WISELY SO THAT YOU CAN EARN"
                                                   :rem 135
260 PRINT" AS MUCH AS POSSIBLE DURING THE SUMMER."
                                                   :rem 208
270 GOSUB1100:POKEVC+33,15:PRINT"{BLK}";CHR$(147)
                                                   :rem 196
```

```
300 MO=1500:GA=0:OA=0:BA=0:SA=0                    :rem 253
310 FORL1=0TO4:LM=0:MM=0                           :rem 189
320 X=INT(RND(1)*71)+80:D1$="GAS":D2$="GALLON":GOS
    UB1200                                         :rem 175
330 IFY=0THEN350                                   :rem 178
340 GA=GA+(Y*100):MO=MO-(X*Y)                      :rem 124
350 X=INT(RND(1)*51)+90:D1$="OIL":D2$="QUART":GOSU
    B1200                                          :rem 138
360 IFY=0THEN380                                   :rem 184
370 OA=OA+(Y*100):MO=MO-(X*Y)                      :rem 143
380 X=INT(RND(1)*151)+200:D1$="LAWN BAGS":D2$="DOZ
    EN":GOSUB1200                                  :rem 69
390 IFY=0THEN410                                   :rem 181
400 BA=BA+(Y*12):MO=MO-(X*Y)                       :rem 65
410 X=INT(RND(1)*201)+400:GOSUB1300:PRINT"{CLR}
    {2 DOWN}{3 SPACES}MONTH = ";MT$(L1)            :rem 23
420 PRINT"{2 DOWN}{3 SPACES}DO YOU WANT TO HAVE YO
    UR MOWER{10 SPACES}SHARPENED?"                 :rem 204
422 PRINT"{2 DOWN}{3 SPACES}COST{2 SPACES}= ";X$
                                                   :rem 184
430 PRINT"{2 DOWN}{3 SPACES}ENTER {RVS}Y{OFF} OR
    {RVS}N{OFF}"                                   :rem 152
440 GETX$:IFX$=""THEN440                           :rem 129
450 IFX$="N"THEN500                                :rem 55
460 IFX$<>"Y"THEN440                               :rem 131
470 MO=MO-X                                        :rem 149
480 X=INT(RND(1)*21)+20:SA=SA+X                    :rem 15
500 GC=INT(RND(1)*51)+20:OC=INT(RND(1)*31)+10
                                                   :rem 224
510 BC=INT(RND(1)*4)+1                             :rem 180
520 IFMO<0THENGC=GC*2:OC=OC*2:BC=BC*2              :rem 222
530 X=1:IF(GA-GC)<0THEN700                         :rem 233
540 X=2:IF(OA-OC)<0THEN700                         :rem 251
550 X=3:IF(BA-BC)<0THEN700                         :rem 227
560 X=4:IF(SA-1)<0THEN700                          :rem 162
570 GA=GA-GC:OA=OA-OC:BA=BA-BC:SA=SA-1             :rem 34
580 LM=LM+1:MM=MM+500                              :rem 211
600 PRINT"{CLR}{2 DOWN}{3 SPACES}";MT$(L1):PRINT"
    {2 DOWN}{3 SPACES}LAWN NUMBER ";LM             :rem 230
610 X=MM:GOSUB1300:PRINT"{2 DOWN}{3 SPACES}MONEY M
    ADE = ";X$                                     :rem 4
620 PRINT"{2 DOWN}{3 SPACES}GAS LEFT{3 SPACES}=";I
    NT((GA+100)/100)                               :rem 154
625 PRINT"{2 DOWN}{3 SPACES}OIL LEFT{3 SPACES}=";I
    NT((OA+100)/100)                               :rem 176
630 PRINT"{2 DOWN}{3 SPACES}BAGS LEFT{2 SPACES}=";
    BA                                             :rem 207
640 FORX=2TO10STEP2:GOSUB660:NEXTX                 :rem 225
650 FORX=10TO0STEP-2:GOSUB660:NEXTX:GOTO500:rem 21
```

```
660 POKEMC+0,0:POKEMC+1,10:POKEMC+5,15:POKEMC+6,15
    :POKEMC+7,0:POKEMC+8,0                       :rem 58
670 POKEMC+11,15:POKEMC+12,15                    :rem 148
675 POKEMC+24,X:POKEMC+8,40:POKEMC+4,129:POKEMC+10
    ,17                                          :rem 155
680 FORY=1TO100:NEXTY                            :rem 82
685 POKEMC+4,128:POKEMC+10,16                    :rem 160
690 FORY=1TO20:NEXTY                             :rem 36
695 RETURN                                       :rem 132
700 POKEMC+0,0:POKEMC+1,25:POKEMC+7,0:POKEMC+8,0:P
    OKEMC+5,15:POKEMC+6,15                       :rem 59
710 POKEMC+24,9:POKEMC+4,33:FORY=1TO500:NEXTY
                                                 :rem 41
715 POKEMC+4,32:FORY=1TO20:NEXTY:POKEMC+24,0:PRINT
    CHR$(147);                                   :rem 225
720 ONXGOTO730,740,750,760                       :rem 185
730 PRINT"{2 DOWN}{3 SPACES}OUT OF GAS!":GOTO770
                                                 :rem 39
740 PRINT"{2 DOWN}{3 SPACES}OUT OF OIL!":GOTO770
                                                 :rem 49
750 PRINT"{2 DOWN}{3 SPACES}OUT OF LAWN BAGS!":GOT
    O770                                         :rem 157
760 PRINT"{2 DOWN}{3 SPACES}MOWER NOT SHARP!"
                                                 :rem 170
770 PRINT"{2 DOWN}{3 SPACES}LAWNS MOWED = ";LM
                                                 :rem 163
780 X=MM:GOSUB1300                               :rem 76
785 PRINT"{2 DOWN}{3 SPACES}MONEY MADE{2 SPACES}=
    {2 SPACES}";X$                              :rem 42
790 MO=MO+MM:X=MO:GOSUB1300:PRINT"{2 DOWN}
    {3 SPACES}BALANCE{5 SPACES}={2 SPACES}";X$
                                                 :rem 202
795 GOSUB1100:NEXTL1                             :rem 221
800 PRINT"{CLR}{2 DOWN}";SPC(14);"SUMMER OVER!":X=
    MO:GOSUB1300                                 :rem 147
805 PRINT"{2 DOWN}{3 SPACES}CASH ON HAND = ";X$
                                                 :rem 91
810 X=1500:GOSUB1300:PRINT"{2 DOWN}{3 SPACES}LESS
    {SPACE}LOAN{4 SPACES}= ";X$                  :rem 244
820 MO=MO-1500:X=MO:GOSUB1300:PRINT"{2 DOWN}
    {3 SPACES}NEW BALANCE{2 SPACES}= ";X$ :rem 220
830 PRINT"{2 DOWN}{3 SPACES}REPLAY? ({RVS}Y{OFF} O
    R {RVS}N{OFF})"                              :rem 123
840 GETX$:IFX$=""THEN840                         :rem 137
850 IFX$="Y"THEN300                              :rem 68
860 IFX$<>"N"THEN840                             :rem 128
870 PRINTCHR$(147)                               :rem 26
880 END                                          :rem 119
1000 POKEMC+24,15:POKEVC+21,1                    :rem 144
```

```
1005 FORX=0TO20:TT$=RIGHT$(TT$,LEN(TT$)-2):TT$=TT$
     +"{2 SPACES}"                        :rem 126
1010 PRINT"{HOME}{5 DOWN}";TT$;           :rem 61
1015 Y=INT(ST%(X,0)/256)                  :rem 54
1020 POKEMC+0,ST%(X,0)-(Y*256)            :rem 120
1025 POKEMC+1,Y:POKEMC+4,17               :rem 84
1030 Y=PEEK(VC+0)-14                      :rem 86
1035 IFY<1THENY=255:POKEVC+0,Y:POKEVC+16,0 :rem 81
1040 POKEVC+0,Y                           :rem 109
1045 FORY=1TOST%(X,1)*60:NEXTY            :rem 79
1050 POKEMC+4,16:FORY=1TO30:NEXTY,X       :rem 187
1055 POKEMC+24,0:POKEVC+21,0              :rem 99
1060 PRINT"{HOME}{3 DOWN}";SPC(15);"{RVS}LAWN MOWE
     R{OFF}";                             :rem 208
1070 RETURN                              :rem 168
1100 PRINT"{HOME}{24 DOWN}{12 SPACES}(PRESS ANY KE
     Y)";                                 :rem 40
1110 GETX$:IFX$=""THEN1110                :rem 215
1120 RETURN                              :rem 164
1200 PRINT"{CLR}{2 DOWN}{3 SPACES}MONTH = ";MT$(L1
     ):GOSUB1300                          :rem 88
1210 PRINT"{2 DOWN}{3 SPACES}ITEM{2 SPACES}= ";D1$
     :PRINT"{2 DOWN}{3 SPACES}COST{2 SPACES}= ";X$
     ;" PER ";D2$                         :rem 140
1220 PRINT"{2 DOWN}{3 SPACES}HOW MANY DO YOU WANT?
     ":PRINT"{2 DOWN}{3 SPACES}ENTER {RVS}0{OFF} T
     HROUGH {RVS}9{OFF}"                  :rem 97
1230 GETD1$:IFD1$=""THEN1230              :rem 23
1240 IFD1$<"0"ORD1$>"9"THEN1230           :rem 137
1250 Y=VAL(D1$):RETURN                    :rem 69
1300 X$=STR$(X):Z=LEN(X$)                 :rem 192
1310 IFZ<3THENX$=LEFT$(X$,1)+"$0.0"+RIGHT$(X$,1):G
     OTO1370                              :rem 212
1320 IFZ<4THENX$=LEFT$(X$,1)+"$0."+RIGHT$(X$,2):GO
     TO1370                               :rem 167
1330 Z=Z-3:X$=LEFT$(X$,1)+"$"+MID$(X$,2,Z)+"."+RIG
     HT$(X$,2)                            :rem 134
1370 IFLEFT$(X$,1)=" "THENX$=RIGHT$(X$,LEN(X$)-1):
     GOTO1370                             :rem 31
1380 RETURN                              :rem 172
3000 DATA8583,2,4291,2,4291,2,5407,1,5728,2,10814,
     2,10814,2,9634,2                     :rem 240
3010 DATA8583,1,7217,2,8583,2,4291,2,4291,2,5407,2
     ,6430,2,6430,2                       :rem 140
3020 DATA6430,2,7217,2,8101,2,8101,2,8583,2
                                          :rem 111
3100 DATAMAY,JUNE,JULY,AUGUST,SEPTEMBER   :rem 107
3200 DATA0,0,0,0,0,0,0,0,0,0,0,0,0,3,128,0,7,128,0
     ,3,128,0,1,0,0,3                     :rem 93
```

```
3210 DATA128,0,3,128,0,31,128,0,35,128,0,67,128,0,
     131,128                                    :rem 7
3220 DATA1,3,128,2,3,128,4,2,64,8,4,32,80,8,16,224
     ,4,8,80,2,4,0                              :rem 38
4000 REM *** SETUP FOR SPRITE ***              :rem 243
4010 FORX=832TO832+63:READZ:POKEX,Z:NEXTX :rem 122
4020 POKEVC+0,60:POKEVC+1,55:POKEVC+16,1:POKEVC+23
     ,1:POKEVC+28,0                            :rem 66
4030 POKEVC+29,1:POKEVC+39,0:POKE2040,13    :rem 54
4040 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
     9                                         :rem 6
4050 TT$="{24 SPACES}LAWN MOWER"            :rem 210
4060 RETURN                                 :rem 170
```

Plan a Menu

Skill area: Science
Level: 3, 4
Equipment required: None
Modification: Yes

Making Meals
"Plan a Menu" lets you pick a sample meal. Then the computer tells you how nutritious the meal is and how much weight you would gain or lose by following such a meal-planning strategy all the time.

How to Play
The game begins by asking for your sex and your age. Indicate the proper answer by typing M, F, or the numerical age. Press the RETURN key to enter the information.

Next will appear a number of foods from six different food categories: main courses, vegetables, fruits, breads, drinks, and desserts. Category by category, choose the foods you would pick for a sample meal. Make your selections by typing the letter that appears to the left of the item. To move to another category, press the letter Z.

Choose as many items from a particular category as you wish. If nothing in a category looks appealing, by-pass the category altogether by pressing Z.

When the sample menu is complete, the computer will analyze it to see what quantities of the following items it contains:

calories	riboflavin
protein	niacin
vitamin A	calcium
vitamin C	iron
thiamin	

The computer multiplies all totals by 3 to indicate what percent of the minimum daily requirements of those calories or nutrients you would get if you ate three similar meals in a day. The percentage total for each item will be printed next to its name.

Scoring
Each sample meal is rated according to the number of calories it

contains and the amount of nutrients found in the chosen foods. The computer rates each meal fair, average, good, very good, or excellent.

Each meal also is evaluated to tell you how many pounds per week you would gain or lose if all your meals contained the same number of calories as the sample meal. The calorie count applies to an average-sized person whose metabolism burns food at a normal rate. Overweight or underweight players should take this into account and use calorie charts, not Plan a Menu, to determine how many calories they should consume.

Plan a Menu

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM PLAN A MENU/28JUL83                    :rem 165
100 DIMNT%(16,1),CT%(2,7,1),HT(18,8),VT(8),DT$(8),
    GT$(4)                                   :rem 152
110 FORX=0TO16:FORY=0TO1                       :rem 3
120 READZ:NT%(X,Y)=Z:NEXTY,X                  :rem 37
130 VC=53248:MC=54272                        :rem 123
140 FORX=54272TO54296:POKEX,0:NEXTX          :rem 176
150 POKEVC+32,6:POKEVC+33,11                 :rem 113
160 SM=((PEEK(53272)AND240)/16)*1024         :rem 127
200 PRINTCHR$(147);"{WHT}{DOWN}*******************
    ********************";                   :rem 109
202 PRINT"{8 SPACES}P L A N{4 SPACES}A{4 SPACES}M
    {SPACE}E N U"                              :rem 6
204 PRINT"****************************************
    ";                                        :rem 50
210 PRINT"{2 DOWN}YOU WILL BE SHOWN A NUMBER OF FO
    ODS FROMSIX DIFFERENT FOOD GROUPS."     :rem 224
220 PRINT"{DOWN}YOU MAY SELECT AS MANY ITEMS AS YO
    U WANTFROM EACH GROUP."                  :rem 48
230 PRINT"{DOWN}IF DESIRED, YOU MAY BYPASS A GROUP
     AND{2 SPACES}NOT PICK ANYTHING FROM IT."
                                              :rem 2
240 PRINT"{DOWN}WHEN YOUR MENU IS COMPLETE, IT WIL
    L BE"                                    :rem 171
250 PRINT"ANALYZED FOR ITS NUTRITIONAL VALUE."
                                             :rem 155
260 GOSUB1000                                :rem 217
270 FORX=0TO2:FORY=0TO7:FORW=0TO1            :rem 148
280 READZ:CT%(X,Y,W)=Z:NEXTW,Y,X             :rem 39
290 FORX=0TO8:READX$:DT$(X)=X$:NEXTX         :rem 29
300 FORX=0TO4:READX$:GT$(X)=X$:NEXTX         :rem 20
310 PRINT"{2 DOWN}{8 SPACES}(PRESS ANY KEY TO STAR
    T)"                                      :rem 103
```

```
320 GETX$:IFX$=""THEN320                        :rem 123
330 RESTORE                                     :rem 186
340 READX$:IFX$<>"$"THEN340                     :rem 28
400 REM **MAIN LOOP**                           :rem 127
410 FORX=0TO8:VT(X)=0:NEXTX                      :rem 231
420 PRINTCHR$(147);"{3 DOWN}PLEASE ENTER YOUR SEX:
    "                                           :rem 116
430 PRINT"{DOWN}{4 SPACES}ENTER {YEL}M {WHT}FOR MA
    LE OR {YEL}F {WHT}FOR FEMALE"               :rem 8
440 S$="":POKE198,0:INPUT"{DOWN}{2 SPACES}";S$
                                                :rem 200
450 IFS$<>"M"ANDS$<>"F"THEN440                  :rem 191
460 PRINT"{3 DOWN}PLEASE ENTER YOUR AGE IN YEARS:"
                                                :rem 71
470 X$="":POKE198,0:INPUT"{DOWN}{2 SPACES}";X$
                                                :rem 213
480 X=VAL(X$):IFX<1THENX=1                      :rem 100
490 IFX>99THENX=99                              :rem 106
500 IFX<10THENY=0:S$="X"                        :rem 152
510 IFS$="M"THENY=1                             :rem 96
520 IFS$="F"THENY=2                             :rem 91
530 Z=0                                         :rem 95
540 IFX<=CT%(Y,Z,0)THEN560                      :rem 11
550 Z=Z+1:GOTO540                               :rem 243
560 CL%=CT%(Y,Z,1)                              :rem 213
600 PRINTCHR$(147);:READX$                      :rem 30
610 IFX$="$$$"THEN800                           :rem 86
620 PRINT"{DOWN}{RVS}";X$;"{OFF}{DOWN}";:X=0
                                                :rem 159
630 READX$:IFX$="$$"THEN700                      :rem 5
640 S$=CHR$(X+65)                               :rem 142
650 PRINT"{RVS}";S$;"{OFF} - ";X$               :rem 37
660 FORY=0TO8:READZ:HT(X,Y)=Z:NEXTY             :rem 65
670 X=X+1:GOTO630                               :rem 242
700 PRINT"{DOWN}{RVS}Z{OFF} - (GO TO NEXT CATEGORY
    )"                                          :rem 203
710 GETX$:IFX$=""THEN710                        :rem 129
720 IFX$<"A"ORX$>"Z"THEN710                     :rem 37
725 IFX$="Z"THEN600                             :rem 73
730 Y=ASC(X$)+64                                :rem 105
740 IH=0:FORX=SM+120TOSM+960STEP40              :rem 90
750 IFPEEK(X)=YTHENIH=X                         :rem 228
760 NEXTX:IFIH=0THEN710                         :rem 194
770 FORZ=0TO39:POKE(IH+Z),32:NEXTZ              :rem 143
780 FORX=0TO8:VT(X)=VT(X)+HT(Y-129,X):NEXTX
                                                :rem 210
790 GOTO710                                     :rem 113
800 PRINT"{2 DOWN}THREE MEALS A DAY SIMILAR TO THE
    ONE YOU";                                   :rem 67
```

```
810 PRINT"JUST SELECTED WOULD FILL THESE NEEDS:
    {2 DOWN}"                                  :rem 239
820 Y=0:FORX=0TO8                              :rem 33
830 X$=DT$(X)                                  :rem 185
840 IFLEN(X$)<10THENX$=X$+"{SHIFT-SPACE}":GOTO840
                                               :rem 246
850 Z=VT(X)*3:IFX=0THENZ=(Z*100)/CL%:W=Z       :rem 169
855 IFX>0ANDZ>=100THENY=Y+1                    :rem 170
860 GOSUB1100:PRINT"{3 SPACES}";X$;" -";S$
870 NEXTX                                      :rem 54
880 X=ABS(W-100):Y=Y-INT(X/20):Y=INT(Y/2):IFY<0THE
    NY=0                                       :rem 53
890 IFY>4THENY=4                               :rem 244
900 PRINT"{2 DOWN}THE NUTRITIONAL VALUE OF THIS ME
    NU WOULDBE RATED ";GT$(Y);"."              :rem 24
910 PRINT"{2 DOWN}{12 SPACES}(PRESS ANY KEY)"
                                               :rem 60
920 GETX$:IFX$=""THEN920                       :rem 135
930 X=CL%*7:Y=VT(0)*21:IFX=YTHENX=-1:GOTO970
                                               :rem 186
940 IFX>YTHENX$="LOSE":Z=X-Y:GOTO960           :rem 59
950 X$="GAIN":Z=Y-X                            :rem 105
960 X=INT(Z/3500):IFX<1THENX=1                 :rem 68
970 GOSUB1200                                  :rem 227
980 PRINT"{3 DOWN}{2 SPACES}WANT TO PLAN ANOTHER M
    ENU?{2 SPACES}({RVS}Y{OFF} OR {RVS}N{OFF})"
                                               :rem 19
985 GETX$:IFX$=""THEN985                       :rem 157
990 IFX$="Y"THEN330                            :rem 76
995 IFX$<>"N"THEN985                           :rem 147
998 GOSUB1000:PRINTCHR$(147)                   :rem 160
999 END                                        :rem 130
1000 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
     9                                         :rem 255
1010 POKEMC+24,15                              :rem 164
1020 FORX=0TO16:POKEMC+4,17                    :rem 101
1030 Y=NT%(X,0):Z=INT(Y/256):Y=Y-(Z*256)       :rem 32
1040 POKEMC+0,Y:POKEMC+1,Z                     :rem 63
1050 FORY=1TONT%(X,1)*100:NEXTY                 :rem 113
1060 POKEMC+4,0:FORY=1TO20:NEXTY,X              :rem 132
1070 POKEMC+24,0                               :rem 116
1080 RETURN                                    :rem 169
1100 S$=STR$(INT(Z))+"%"                       :rem 14
1110 IFLEN(S$)>=7THENRETURN                    :rem 186
1120 S$="{SHIFT-SPACE}"+S$:GOTO1110            :rem 52
1200 PRINTCHR$(147);"{3 DOWN}FOLLOWING A MENU LIKE
     THE ONE JUST SHOWN";                      :rem 15
1210 IFX>0THEN 1220                            :rem 13
```

```
1215 PRINT"WOULD CAUSE YOU TO KEEP YOUR SAME
     {7 SPACES}WEIGHT LEVEL.":RETURN          :rem 88
1220 PRINT"WOULD CAUSE YOU TO ";X$;X; "POUNDS"
                                             :rem 212
1230 PRINT"EACH WEEK."                         :rem 2
1240 RETURN                                  :rem 167
3000 DATA8101,2,7217,2,6430,4,8101,2,7217,2,6430,4
     ,6430,2,6430,2,6430,2                   :rem 198
3010 DATA6430,2,7217,2,7217,2,7217,2,7217,2,8101,2
     ,7217,2,6430,4                          :rem 125
3100 DATA1,1100,2,1250,3,1400,5,1600,7,2000,9,2200
     ,0,0,0,0                                  :rem 9
3110 DATA11,2500,13,2700,17,3000,21,2800,34,2800,5
     4,2600,99,2400,0,0                       :rem 27
3120 DATA11,2250,13,2300,15,2400,17,2300,21,2000,3
     4,2000,54,1850,99,1700                  :rem 224
3200 DATACALORIES,PROTEIN,"VITAMIN A","VITAMIN C",
     "THIAMIN","RIBOFLAVIN"                  :rem 232
3210 DATANIACIN,CALCIUM,IRON                  :rem 32
3300 DATAFAIR,AVERAGE,GOOD,"VERY GOOD",EXCELLENT
                                             :rem 45
3400 DATA"$"                                  :rem 73
4000 DATA"{8 SPACES}M A I N{4 SPACES}C O U R S E S
     {8 SPACES}"                             :rem 107
4010 DATA"REFRIED BEANS",142,14,0,0,0,0,0,.5,3
                                             :rem 155
4020 DATA"ROAST BEEF",182,57,.3,0,3,12,20,1.1,18
                                             :rem 212
4030 DATA"BEEF LIVER",195,50,908,38,15,209,70,.9,4
     2                                       :rem 138
4040 DATA"FRIED CHICKEN",201,58,3,0,4,22,30,1.2,11
                                             :rem 98
4050 DATA"HARD BOILED EGG",79,13,5,0,2,8,.2,3,6
                                             :rem 192
4070 DATA"BAKED HAM",179,57,0,0,37,15,25,1.1,18
                                             :rem 127
4080 DATA"MEAT LOAF",230,34,2,0,18,14,17,7,13
                                             :rem 46
4090 DATA"BREADED PERCH",193,36,0,0,6,5,8,3,6
                                             :rem 130
4100 DATA"PORK CHOP",308,46,0,0,55,14,25,.9,15
                                             :rem 125
4110 DATA"T-BONE STEAK",212,64,.4,0,5,13,28,1.1,19
                                             :rem 91
4120 DATA"TUNA FISH",168,54,1.4,0,3,6,51,.7,9
                                             :rem 75
4130 DATA"BAKED BEANS",156,12,3,5,7,2,4,7,13
                                             :rem 17
4140 DATA"BEEF STEW",209,23,46,27,9,9,23,3,16
                                             :rem 76
```

```
4150 DATA"CHILI CON CARNE",333,29,3,0,5,11,17,8,24
                                             :rem 106
4160 DATA"MACARONI & CHEESE",215,13,9,0,7,12,5,18,
     5                                       :rem 164
4170 DATA"CHEESE PIZZA",354,28,19,20,25,29,19,33,1
     5                                       :rem 203
4180 DATA"CHICKEN SOUP",59,5,.9,0,1.3,1.2,4,.9,3
                                             :rem 30
4190 DATA"SPAGHETTI & MEAT",332,29,32,37,17,18,20,
     12,21                                   :rem 121
4200 DATA"BEEF TACO",216,38,7,7,7,11,15,17,14
                                             :rem 39
4210 DATA"$$"                                :rem 109
4500 DATA"{9 SPACES}V E G E T A B L E S{12 SPACES}
     "                                       :rem 9
4510 DATA"ASPARAGUS",12,2,11,27,7,6,4,1.3,2:rem 32
4520 DATA"GREEN BEANS",16,1.5,7,13,3,4,1.5,3,2
                                             :rem 133
4530 DATA"LIMA BEANS",94,10,5,23,10,5,6,4,12
                                             :rem 13
4540 DATA"COOKED BEETS",31,1.2,.3,3,.7,1.2,.5,1.6,
     3                                       :rem 137
4550 DATA"BROCCOLI STALK",20,4,39,117,5,9,3,7,3
                                             :rem 42
4560 DATA"CABBAGE",13,1.1,1.7,28,.7,.6,.5,3,1.1
                                             :rem 113
4570 DATA"CARROT STICKS",21,.9,110,7,2,1.8,1.5,1.9
     ,2                                      :rem 16
4580 DATA"CAULIFLOWER",13,2,.7,55,3,3,2,1.3,2
                                             :rem 185
4590 DATA"CELERY STICKS",10,.8,3,8,1.3,1.2,1,2,1.1
                                             :rem 153
4600 DATA"CORN ON THE COB",114,6,10,18,10,8,9,.4,4
                                             :rem 54
4610 DATA"BLACKEYE PEAS",134,15,9,35,25,8,9,3,14
                                             :rem 45
4620 DATA"GREEN PEAS",54,6,10,17,15,4,7,1.5,8
                                             :rem 85
4630 DATA"BAKED POTATO",132,6,0,47,9,4,12,1.3,6
                                             :rem 228
4640 DATA"FRENCH FRIES",233,6,0,30,7,4,13,1.3,6
                                             :rem 223
4650 DATA"MASHED POTATOES",63,3,.4,17,5,3,5,2,2
                                             :rem 65
4660 DATA"SWEET POTATO",76,1.9,89,20,3,2,2,2,3
                                             :rem 237
4670 DATA"SUMMER SQUASH",16,1.7,9,20,3,5,4,3,2
                                             :rem 2
4680 DATA"SLICED TOMATO",22,1.7,18,38,4,2,4,1.3,3
                                             :rem 113
```

```
4690 DATA"LETTUCE SALAD",13,1.1,28,43,2,2,1.5,3,3
                                          :rem 91
4700 DATA"$$"                             :rem 113
5000 DATA"{6 SPACES}G R A I N{4 SPACES}P R O D U C
     T S{6 SPACES}"                       :rem 8
5010 DATA"BAGEL",165,9,.6,0,9,6,6,.9,7    :rem 183
5020 DATA"BISCUIT",103,3,0,0,5,5,4,3,2    :rem 238
5030 DATA"WHITE BREAD",61,3,0,0,6,4,4,1.9,3
                                          :rem 244
5040 DATA"WHEAT BREAD",55,4,0,0,4,1.8,3,2,3
                                          :rem 235
5050 DATA"CORNBREAD",191,9,5,1.7,9,12,5,9,7:rem 36
5060 DATA"CORN FLAKES",72,2,0,0,5,1.2,2,.3,1.7
                                          :rem 135
5070 DATA"HOMINY GRITS",62,2,1.5,0,3,2,3,.1,2
                                          :rem 154
5080 DATA"EGG NOODLES",100,5,1.1,0,7,4,5,.8,4
                                          :rem 94
5090 DATA"OATMEAL",66,4,0,0,7,1.2,.5,1.1,4:rem 170
5100 DATA"PANCAKE",61,3,1.4,0,4,5,1.5,6,1.7
                                          :rem 201
5110 DATA"COOKED RICE",112,3,0,0,7,4,5,1,5:rem 182
5120 DATA"DINNER ROLL",156,8,0,0,13,7,9,2,7:rem 28
5130 DATA"WHITE TOAST",61,3,0,0,6,4,4,1.9,3:rem 34
5140 DATA"CORN TORTILLA",63,2,.1,0,3,1.2,1.5,6,5
                                          :rem 62
5150 DATA"WAFFLES",130,7,2,0,6,8,3,11,3   :rem 32
5160 DATA"$$"                             :rem 114
5500 DATA"{15 SPACES}F R U I T S{14 SPACES}":rem 5
5510 DATA"MEDIUM APPLE",80,.5,2,10,3,1.8,.5,1,2
                                          :rem 214
5520 DATA"MEDIUM BANANA",101,2,5,20,4,4,4,1,4
                                          :rem 116
5530 DATA"CANTALOUPE",29,1.1,65,53,3,1.8,3,1.3,2
                                          :rem 50
5540 DATA"FRUIT SALAD",99,2,11,73,7,5,4,5,5:rem 33
5550 DATA"GRAPEFRUIT HALF",48,.9,10,75,3,1.2,1,1.9
     ,3                                   :rem 45
5560 DATA"GRAPES",48,.6,1.4,5,3,1.2,1,.9,1.7:rem 6
5570 DATA"MEDIUM ORANGE",65,2,5,110,9,3,3,5,3
                                          :rem 163
5580 DATA"MEDIUM PEACH",100,.8,11,6,.9,1.5,4,.5,2
                                          :rem 49
5590 DATA"MEDIUM PEAR",101,1.9,.7,12,2,4,1,1.3,3
                                          :rem 244
5600 DATA"PINEAPPLE SLICE",90,.6,1.2,15,7,1.2,1,1.
     3,2                                  :rem 68
5610 DATA"STEWED PRUNES",108,1.1,9,1.7,1.3,2,2,1.9
     ,5                                   :rem 26
```

```
5620 DATA"RAISINS",123,1.7,.2,0,3,1.8,1,3,8
                                      :rem 242
5630 DATA"STRAWBERRIES",28,.8,.9,73,1.3,3,2,1.6,4
                                      :rem 182
5640 DATA"WATERMELON",52,1.5,24,23,4,4,2,1.4,6
                                      :rem 224
5650 DATA"APPLESAUCE",116,.5,1,1.7,2,.6,0,.5,3
                                      :rem 187
5660 DATA"DRIED APRICOTS",39,1.2,33,3,0,1.2,3,1.0,
     4                                :rem 213
5670 DATA"$$"                         :rem 120
6000 DATA"{15 SPACES}D R I N K S{14 SPACES}"
                                      :rem 239
6010 DATA"BUTTERMILK",99,18,1.6,4,6,22,.7,29,.7
                                      :rem 39
6020 DATA"HOT COCOA",64,15,5,3,5,19,1.4,22,3:rem 3
6030 DATA"WHOLE MILK",150,18,6,4,6,23,1,29,.7
                                      :rem 100
6040 DATA"CHOCOLATE MILK",208,18,6,4,6,24,1.6,28,3
                                      :rem 174
6050 DATA"2% LOWFAT MILK",121,18,10,4,6,24,1.1,30,
     .7                               :rem 140
6060 DATA"SKIM MILK",86,19,10,4,6,20,1.1,30,.6
                                      :rem 115
6070 DATA"CHOCOLATE MILKSHAKE",356,20,5,0,9,39,1.9
     ,40,5                            :rem 29
6080 DATA"ORANGE JUICE",56,1.4,5,93,7,.6,2,1.1,.6
                                      :rem 68
6090 DATA"TOMATO JUICE",26,1.7,19,32,4,2,5,.9,6
                                      :rem 2
6100 DATA"BLACK COFFEE",2,0,0,0,0,0,3,.3,1.1
                                      :rem 252
6110 DATA"COLA SOFT DRINK",96,0,0,0,0,0,0,0,0
                                      :rem 116
6120 DATA"BEER",151,1.7,0,0,0,6,11,1.8,0  :rem 237
6130 DATA"WATER",0,0,0,0,0,0,0,0,0    :rem 231
6140 DATA"$$"                         :rem 113
6500 DATA"{12 SPACES}D E S S E R T S{13 SPACES}"
                                      :rem 150
6510 DATA"VANILLA ICE CREAM",135,5,5,.6,1.7,10,.3,
     9,.3                             :rem 79
6520 DATA"STRAWBERRY YOGURT",225,20,2,2,5,22,1,31,
     .8                               :rem 169
6530 DATA"AMERICAN CHEESE",106,14,7,0,.5,6,.1,17,.
     6                                :rem 204
6540 DATA"SWISS CHEESE",107,18,5,0,.4,6,.1,27,.3
                                      :rem 38
6550 DATA"SALTED PEANUTS",211,14,0,0,8,3,31,3,4
                                      :rem 38
```

```
6560 DATA"COTTAGE CHEESE",109,29,3,0,1.5,10,.7,6,.
     8                                        :rem 205
6570 DATA"GRAHAM CRACKERS",54,1.7,0,0,.7,1.8,1,.6,
     1.1                                      :rem 58
6580 DATA"BAKED CUSTARD",152,16,9,0,3,15,.5,15,3
                                              :rem 39
6590 DATA"CHOCOLATE BAR",147,3,1.5,0,1.3,6,.5,7,1.
     7                                        :rem 176
6600 DATA"DEVIL'S FOOD CAKE",234,5,2,0,1.3,4,1,4,3
                                              :rem 110
6610 DATA"SPONGE CAKE",196,8,6,0,2,5,.5,2,4 :rem 5
6620 DATA"SUGAR COOKIE",89,1.9,.4,0,3,2,2,1.6,1.7
                                              :rem 81
6630 DATA"CAKE DOUGHNUT",125,2,.5,0,5,4,3,1.3,2
                                              :rem 248
6640 DATA"GELATIN DESSERT",71,3,0,0,0,0,0,0,0
                                              :rem 195
6650 DATA"APPLE PIE",403,5,.9,3,10,8,9,1.3,6
                                              :rem 11
6660 DATA"POPCORN",23,1.2,0,0,0,.6,.5,.1,1.1
                                              :rem 25
6670 DATA"CHOCOLATE PUDDING",161,10,3,0,2,12,.5,13
     ,2                                       :rem 68
6680 DATA"DANISH PASTRY",274,7,4,0,3,6,3,3,3
                                              :rem 146
6690 DATA"ORANGE SHERBET",135,2,2,3,1.3,2.4,.3,5,.
     8                                        :rem 218
6700 DATA"$$"                                 :rem 115
7000 DATA"$$$"                                :rem 145
```

Stargazer

Skill area: Science
Level: 3, 4
Equipment required: None
Modification: Yes

The Stargazer

You are the emperor's stargazer. The emperor expects you to fore-tell the future by looking at the constellations. He also wants you to predict the weather by peering at the stars.

As far as you know, you can't predict the future from the stars. And the only way the constellations can give you a weather report is if you can't see them because of the clouds. But the emperor wants a stargazer, and you've learned some things from watching the sky. Each constellation has its own history, and people like to have you tell them about it.

If you hope to keep your high-paying job with the emperor, the least you can do is know where the constellations are. Also, you should know something about each one so you can impress the emperor with your knowledge.

How to Play

The computer will present one of 32 constellations and ask for its name. Because constellations change position as the seasons progress, the picture will be the one that best represents the constellation as seen from the ground. The computer will also state what month the constellation looks like this, as well as telling which direction you have to look if you're in North America.

Look at the constellation and see if you can determine its name from its shape. If you can, type the name of the constellation on the computer keyboard and press RETURN. If you aren't sure, make a guess or hit the RETURN key.

If you can't guess the name of the constellation by its shape alone, the computer will give you a clue that may help you identify the constellation. If the clue helps, type the answer on the keyboard.

Since the computer will count any misspelled name as a wrong answer, refer to this list of the 32 constellations used in "Stargazer":

Andromeda	Cassiopeia	Hercules	Pisces
Aquarius	Cepheus	Hydra	Sagittarius
Aquila	Cetus	Leo	Scorpius
Aries	Corona Borealis	Lepus	Serpens
Bootes	Cygnus	Libra	Taurus
Cancer	Draco	Orion	Ursa Major
Canis Major	Eridanus	Pegasus	Ursa Minor
Capricornus	Gemini	Perseus	Virgo

If you still can't guess the constellation after receiving a clue, press RETURN and the computer will tell you the name of the constellation and let you look at its star pattern and name for a few seconds. Then the computer will give you another constellation to guess.

You can quit playing at any time by entering END on the keyboard. Your percentage score will not be affected if you quit before all questions have been asked.

Scoring

You'll receive 10 points for each constellation you guess by its shape alone, and 2 points for each constellation name you guess after getting a clue from the computer.

Your score will be given in two areas: the number of points, which will appear in the Total Points category, and a Percentage Score.

If you don't do well the first time, try again. Remember, it took thousands of years for ancient societies to spot constellations in the sky and develop stories about each one.

Stargazer

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM STARGAZER                            :rem 200
100 NS=32                                  :rem 212
110 DIMCT$(NS-1,3),ST%(NS-1,19),NT%(14,2) :rem 187
120 PRINTCHR$(147):VC=53248:MC=54272        :rem 47
122 FORX=54272TO54296:POKEX,0:NEXTX        :rem 176
124 C$="{40 SPACES}"                       :rem 127
126 POKEVC+32,6:POKEVC+33,15               :rem 120
130 FORX=0TO14:FORY=0TO2:READZ:NT%(X,Y)=Z:NEXTY,X:
    X=RND(-TI)                             :rem 158
140 PRINT"{BLK}{RVS}{15 SPACES}STARGAZER!
    {15 SPACES}{OFF}";                     :rem 169
150 PRINT"{DOWN}YOU WILL BE ASKED TO NAME CONSTELL
    ATIONSIN THE NIGHT SKY."               :rem 169
```

```
160 PRINT"{DOWN}THE SKY DIRECTION AND OPTIMUM VIEW
    ING{3 SPACES}MONTH WILL ALSO BE PROVIDED."
                                              :rem 8
170 PRINT"{DOWN}A CLUE WILL BE GIVEN IF YOU CAN'T
    {SPACE}GUESS THE NAME BY ITS SHAPE."   :rem 168
180 PRINT"{DOWN}YOU GET 10 POINTS FOR EACH CORRECT
    "                                      :rem 160
185 PRINT"ANSWER BASED ON SHAPE ALONE."      :rem 73
190 PRINT"{DOWN}YOU GET 2 POINTS IF YOU NEED THE E
    XTRA{2 SPACES}CLUE."                   :rem 204
195 PRINT"{DOWN}TYPE {RVS}END{OFF} TO STOP THE GAM
    E EARLY."                              :rem 205
200 GOSUB1000                                :rem 211
210 CB=828:M=((PEEK(53272)AND240)/16)*1024:CC=5529
    6                                      :rem 206
215 PRINT"{DOWN}{3 SPACES}(PRESS ANY KEY -- 10 SEC
    OND DELAY) "                            :rem 15
220 FORX=0TONS-1                             :rem 226
230 FORY=0TO3:READX$:CT$(X,Y)=X$:NEXTY       :rem 152
240 Y=0                                       :rem 92
250 READZ:ST%(X,Y)=Z:Y=Y+1:IFZ>0THEN250      :rem 180
260 NEXTX                                     :rem 47
280 GETX$:IFX$=""THEN280                     :rem 133
300 S%=0:FORX=1TONS:POKECB+X,0:NEXTX          :rem 65
310 FORX=1TONS:GOSUB2000:POKECB+Z,X:NEXTX    :rem 201
320 POKEVC+32,0:POKEVC+33,1                   :rem 57
400 LC=1                                      :rem 145
410 CI=PEEK(CB+LC)-1                          :rem 113
420 PRINTCHR$(147);:FORX=1TO14                :rem 59
430 PRINT"{BLU}{RVS}{40 SPACES}{OFF}";:NEXTX
                                              :rem 55
440 X$=CT$(CI,1):X=40-LEN(X$)-LEN(CT$(CI,2))
                                             :rem 165
450 FORY=1TOX:X$=X$+"{SHIFT-SPACE}":NEXTY    :rem 146
460 X$=X$+CT$(CI,2)                           :rem 240
465 PRINT"{BLK}{HOME}{23 DOWN}";SPC(15);"SCORE =";
    S%;                                     :rem 152
470 PRINT"{BLU}{HOME}{13 DOWN}{RVS}";X$;"{OFF}";
                                             :rem 144
480 X=0                                       :rem 97
490 Y=ST%(CI,X):IFY=0THEN510                 :rem 180
500 POKEM+Y,174:X=X+1:GOTO490                 :rem 240
510 PRINT"{2 DOWN}{BLK}{2 SPACES}CONSTELLATION?
    {DOWN}"                                  :rem 72
520 X=10:GOSUB3000                            :rem 10
530 IFX$="Q"THEN600                          :rem 186
535 IFX$="END"THEN610                        :rem 198
537 PRINT"{BLK}{HOME}{23 DOWN}";SPC(15);"SCORE =";
    S%;                                     :rem 152
```

89

```
540 PRINT"{HOME}{16 DOWN}";CT$(CI,3);".{DOWN}"
                                             :rem 125
550 X=2:GOSUB3000                            :rem 222
560 IFX$="Q"THEN600                          :rem 189
565 IFX$="END"THEN610                        :rem 201
568 PRINT"{BLK}{HOME}{23 DOWN}";SPC(15);"SCORE =";
    S%;                                      :rem 156
570 PRINT"{BLU}{HOME}{16 DOWN}{2 SPACES}";CT$(CI,0
    )                                        :rem 222
580 FORX=1TO3000:NEXTX                       :rem 129
600 LC=LC+1:IFLC<=NSTHEN410                  :rem 131
610 POKEVC+32,6:POKEVC+33,15                 :rem 118
620 PRINTCHR$(147);"{RED}{DOWN}{15 SPACES}{RVS}GAM
    E OVER!{OFF}"                            :rem 218
630 PRINT"{3 DOWN}{4 SPACES}TOTAL POINTS{2 SPACES}
    =";S%                                    :rem 238
635 X=LC-1:IFX<1THENX=1                      :rem 163
640 X=INT((S%*100)/(X*10))                   :rem 82
650 PRINT"{DOWN}{4 SPACES}TOTAL SCORE{2 RIGHT} =";
    X;"{LEFT}%"                              :rem 200
660 PRINT"{3 DOWN}{4 SPACES}PLAY AGAIN? ({RVS}Y
    {OFF} OR {RVS}N{OFF})"                   :rem 86
670 GETX$:IFX$=""THEN670                     :rem 139
680 IFX$="Y"THEN300                          :rem 69
690 IFX$<>"N"THEN670                         :rem 130
700 GOSUB1000                                :rem 216
710 PRINTCHR$(147):END                       :rem 36
1000 POKEMC+24,15:POKEMC+5,79:POKEMC+6,129:rem 186
1010 FORX=0TO14                              :rem 118
1020 POKEMC+0,NT%(X,0)                       :rem 213
1030 POKEMC+1,NT%(X,1)                       :rem 216
1040 POKEMC+4,17                             :rem 119
1050 FORY=1TONT%(X,2)*80:NEXTY               :rem 73
1060 POKEMC+4,16:FORY=1TO30:NEXTY,X          :rem 188
1070 POKEMC+24,0                             :rem 116
1080 RETURN                                  :rem 169
2000 Y=0                                     :rem 136
2010 Z=INT(RND(1)*NS)+1:IFPEEK(CB+Z)=0THENRETURN
                                             :rem 232
2020 Y=Y+1:IFY<9THEN2010                     :rem 152
2030 Z=1                                     :rem 141
2040 IFPEEK(CB+Z)=0THENRETURN                :rem 81
2050 Z=Z+1:GOTO2040                          :rem 77
3000 X$="":POKE198,0:INPUTX$                 :rem 109
3010 IFX$=CT$(CI,0)THEN3100                  :rem 243
3015 IFX$="END"THENRETURN                    :rem 59
3020 POKEVC+33,0:POKEMC+24,15:POKEMC+0,49:POKEMC+1
    ,28                                      :rem 110
3030 POKEMC+5,15:POKEMC+6,15:POKEMC+4,17     :rem 79
```

```
3040 FORY=1TO100:NEXTY:POKEMC+4,16          :rem 102
3050 PRINT"{HOME}{14 DOWN}";C$;C$;C$;C$;C$;C$;C$;C
     $;C$;                                  :rem 135
3060 POKEMC+24,0:POKEVC+33,1                :rem 101
3070 RETURN                                 :rem 170
3100 X$="Q":S%=S%+X                         :rem 124
3110 POKEMC+24,15:POKEMC+0,0:POKEMC+5,15:POKEMC+6,
     15:POKEMC+1,0                          :rem 223
3120 FORX=15TO1STEP-1                       :rem 22
3130 POKEVC+33,X:POKEMC+1,Y:POKEMC+4,17     :rem 106
3140 FORZ=1TO50:NEXTZ:POKEMC+4,16           :rem 61
3150 Y=Y+10:NEXTX                           :rem 21
3160 POKEMC+24,0                            :rem 118
3170 RETURN                                 :rem 171
9000 DATA104,9,2,104,9,2,24,14,2,24,14,2,210,15,2,
     210,15,2,24,14,4,0,0,1                 :rem 183
9010 DATA143,12,2,143,12,2,218,11,2,218,11,2,143,1
     0,2,143,10,2,104,9,8                   :rem 104
9100 DATACEPHEUS,JUNE,NORTH                 :rem 6
9110 DATA"THE PULSATING STARS, OR CEPHEIDS, FIND
     {2 SPACES}THEIR PROTOTYPE HERE"        :rem 35
9120 DATA100,170,147,300,309,0              :rem 230
9130 DATACASSIOPEIA,JUNE,NORTH              :rem 221
9140 DATA"TYCHO BRAHE OBSERVED A NOVA HERE IN
     {5 SPACES}1572"                        :rem 110
9150 DATA129,107,294,178,301,0              :rem 252
9160 DATABOOTES,JUNE,SOUTH                  :rem 211
9170 DATA"IT WAS ERRONEOUSLY CALLED 'ORION' IN
     {4 SPACES}AMOS 5:8"                    :rem 6
9180 DATA14,61,172,221,258,383,420,427,0    :rem 231
9190 DATALIBRA,JUNE,SOUTH                   :rem 116
9200 DATA"ITS STARS WERE ONCE KNOWN AS SCORPIO'S
     {2 SPACES}CLAWS"                       :rem 50
9210 DATA16,132,183,380,0                   :rem 250
9220 DATADRACO,JUNE,NORTH                   :rem 101
9230 DATA"ITS BODY WINDS BETWEEN THE BIG AND THE
     {2 SPACES}LITTLE DIPPERS"              :rem 37
9240 DATA16,36,60,74,78,90,116,141,205,223,241,381
     ,429,465,0                            :rem 199
9250 DATA"URSA MAJOR",SEPTEMBER,NORTH       :rem 108
9260 DATA"THE BIG DIPPER IS 'BEARLY' HALF OF THIS
     {SPACE}CONSTELLATION"                  :rem 22
9270 DATA1,5,87,130,176,210,223,254,269,300,289,41
     2,421,447,0                           :rem 244
9280 DATA"URSA MINOR",JUNE,NORTH            :rem 6
9290 DATA"THE NORTH STAR IS THE TIP OF ITS TAIL"
                                            :rem 241
9300 DATA18,96,101,180,301,378,454,0        :rem 32
9310 DATACYGNUS,JUNE,EAST                   :rem 119
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9320 DATA"THE NORTHERN CROSS FORMS THIS BIRD'S
     {4 SPACES}NECK AND BODY"              :rem 131
9330 DATA9,47,130,241,249,263,272,370,450,0
                                           :rem 124
9340 DATAHERCULES,JUNE,EAST                :rem 252
9350 DATA"HE KNEELS ON THE HEAD OF THE DRAGON
     {5 SPACES}KILLED"                     :rem 244
9360 DATA7,92,118,139,149,218,252,281,343,369,432,
     0 DATA"CORONA BOREALIS",JUNE,EAST     :rem 27
9370 DATA"CORONA BOREALIS",JUNE,EAST       :rem 251
9380 DATA"BACCHUS GAVE ARIADNE THIS WREATH OF
     {5 SPACES}GEMS"                       :rem 6
9390 DATA132,145,227,252,338,341,307,0     :rem 135
9400 DATASCORPIUS,JULY,SOUTH               :rem 142
9410 DATA"ANTARES IS ONE REASON IT SHINES SO
     {6 SPACES}BRIGHTLY"                   :rem 238
9420 DATA29,32,74,149,158,185,223,234,296,298,301,
     334,341,372,421,454,460,0             :rem 190
9430 DATAHYDRA,JUNE,WEST                   :rem 47
9440 DATA"'THE MAINSAIL' STAR GROUP RIDES ON THIS
     {SPACE}SERPENT'S BACK"                :rem 107
9450 DATA1,40,129,94,176,220,345,229,312,356,398,4
     36,478,0                              :rem 121
9460 DATALEO,JUNE,WEST                     :rem 154
9470 DATA"ITS MANE IS FORMED BY 'THE SICKLE' STAR
     {SPACE}GROUP"                         :rem 232
9480 DATA5,87,50,216,220,263,303,327,336,374,454,0
                                           :rem 221
9490 DATASAGITTARIUS,JULY,SOUTH            :rem 111
9500 DATA"THE CENTAUR LOOKS MORE LIKE A TEAPOT IN
     {SPACE}THE SKY"                       :rem 124
9510 DATA60,90,94,167,181,225,249,340,0    :rem 188
9520 DATAAQUARIUS,SEPTEMBER,SOUTH          :rem 231
9530 DATA"THE WATER FROM HIS JAR FEEDS THE
     {8 SPACES}'SOUTHERN FISH'"            :rem 192
9540 DATA5,9,47,89,52,178,203,267,325,361,403,0
                                           :rem 80
9550 DATAVIRGO,JULY,WEST                   :rem 83
9560 DATA"THE STAR SPICA IS A STALK OF GRAIN IN
     {3 SPACES}HER HAND"                   :rem 176
9570 DATA56,72,147,170,225,349,434,0       :rem 47
9580 DATASERPENS,SEPTEMBER,WEST            :rem 82
9590 DATA"IT IS AESCULAPIUS' SNAKE, THE SYMBOL OF
     {SPACE}MEDICINE"                      :rem 252
9600 DATA7,85,203,287,370,376,378,461,347,392,389,
     312,272,276,278,238,0                 :rem 24
9610 DATAPISCES,SEPTEMBER,EAST             :rem 221
9620 DATA"THE TAILS OF THESE FISHES ARE BOUND BY
     {2 SPACES}RIBBON"                     :rem 4
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9630 DATA29,32,65,109,105,125,143,147,165,169,210,
     260,292,298,374,376,454,0            :rem 193
9640 DATACAPRICORNUS,SEPTEMBER,SOUTH      :rem 200
9650 DATA"THIS 'SEA GOAT' MAY BE PAN IN DISGUISE"
                                          :rem 253
9660 DATA147,149,170,172,187,296,340,381,0 :rem 95
9670 DATATAURUS,OCTOBER,EAST              :rem 103
9680 DATA"THE PLEIADES FORM THE APEX OF ITS
     {7 SPACES}SHOULDER"                  :rem 139
9690 DATA54,190,212,216,229,243,258,261,292,296,34
     9,365,0                             :rem 77
9700 DATAAQUILA,OCTOBER,WEST              :rem 80
9710 DATA"JUPITER IN DISGUISE (THE EAGLE) FORMS
     {3 SPACES}THE TAIL OF SERPENS"       :rem 29
9720 DATA50,61,141,145,300,307,414,0      :rem 18
9730 DATAPERSEUS,NOVEMBER,EAST           :rem 247

9740 DATA"IT CONTAINS ALGOL, A VARIABLE STAR THAT
     {SPACE}IS REALLY TWO STARS"         :rem 167
9750 DATA3,47,129,136,140,210,294,336,378,343,381,
     0                                   :rem 18
9760 DATAORION,NOVEMBER,EAST              :rem 90
9770 DATA"BETELGEUSE AND RIGEL ARE FOUND HERE"
                                         :rem 216
9780 DATA92,96,180,187,220,260,245,285,289,290,385
     ,0                                  :rem 93
9790 DATAGEMINI,NOVEMBER,EAST            :rem 143
9800 DATA"ITS MAJOR STARS ARE CASTOR AND POLLUX"
                                         :rem 128
9810 DATA109,170,187,330,343,349,429,0   :rem 145
9820 DATAARIES,OCTOBER,EAST              :rem 244
9830 DATA"ITS GOLDEN FLEECE WAS WORN BY JASON"
                                         :rem 198
9840 DATA212,138,181,0                   :rem 110
9850 DATACANCER,APRIL,WEST               :rem 175
9860 DATA"WHEN ITS CLUSTER PRAESEPE IS VISIBLE,
     {3 SPACES}RAIN IS FORETOLD"         :rem 201
9870 DATA132,149,218,263,0                :rem 60
9880 DATACETUS,DECEMBER,SOUTH            :rem 153
9890 DATA"DENEB KAITOS IS THE 'SEA MONSTER'S'
     {5 SPACES}MAJOR STAR"                :rem 90
9900 DATA1,5,85,129,254,180,263,378,430,238,0
                                         :rem 232
9910 DATAANDROMEDA,DECEMBER,SOUTH        :rem 154
9920 DATA"IT FEATURES A SPIRAL THAT CAN BE SEEN ON
     MOONLESS NIGHTS"                    :rem 201
9930 DATA25,220,229,261,250,292,336,338,458,0
                                         :rem 235
9940 DATA"CANIS MAJOR",JANUARY,SOUTH      :rem 32
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9950 DATA"'SIRIUS' ASTRONOMY STUDENTS WILL
     {8 SPACES}RECOGNIZE THIS"           :rem 190
9960 DATA18,61,105,220,298,336,347,381,414,423,0
                                         :rem 127
9970 DATALEPUS,JANUARY,SOUTH             :rem 129
9980 DATA"THIS RABBIT IS FLEEING FROM ORION,
     {6 SPACES}'THE HUNTER'"             :rem 166
9990 DATA92,136,220,187,294,336,301,345,389,0
                                         :rem 249
10000 DATAERIDANUS,JANUARY,SOUTH         :rem 107
10010 DATA"'THE RIVER' IS THOUGHT TO REPRESENT
      {5 SPACES}CHINA'S RIVER PO"        :rem 37
10020 DATA14,50,56,100,141,134,296,338,381,460,0
                                         :rem 94
10030 DATAPEGASUS,DECEMBER,SOUTH         :rem 72
10040 DATA"THREE STARS OF THE 'GREAT SQUARE' FORM
      {2 SPACES}ITS TORSO"               :rem 27
10050 DATA12,105,178,185,149,298,349,316,378,463,0
                                         :rem 233
```

State of the Union

Skill area: Social Studies
Level: 3, 4
Equipment required: None
Modification: Yes

"State of the Union" is a question-and-answer game designed to teach the names of the 50 states, their capitals, locations, and various facts about each state's history or economics. The object is to see how quickly you can identify the state from the questions asked.

How to Play
To begin the game, hit any key. There is about a ten-second delay between the time you hit the key and the time the game begins.

When a question is asked, type the name of the state on the keyboard and hit RETURN. If you don't know the answer to the question, you can either make a guess or hit the RETURN key. Abbreviations and misspellings will count as incorrect answers, so you must correctly spell the full name of the state. For your reference, the correct spellings of the state names appear below:

Alabama	Louisiana	Ohio
Alaska	Maine	Oklahoma
Arizona	Maryland	Oregon
Arkansas	Massachusetts	Pennsylvania
California	Michigan	Rhode Island
Colorado	Minnesota	South Carolina
Connecticut	Mississippi	South Dakota
Delaware	Missouri	Tennessee
Florida	Montana	Texas
Georgia	Nebraska	Utah
Hawaii	Nevada	Vermont
Idaho	New Hampshire	Virginia
Illinois	New Jersey	Washington
Indiana	New Mexico	West Virginia
Iowa	New York	Wisconsin
Kansas	North Carolina	Wyoming
Kentucky	North Dakota	

If you are still unable to name a state after the first four ques-
tions, a map of the continental United States will be shown, with
the state in question indicated. Your final question will be to iden-
tify the state from its location.

If you are still unable to identify the state after seeing its loca-
tion on the map, the name of the state will flash on the screen.

If you want to quit the game early, type END in the place of
any answer. Your percentage score will not be affected by your
decision to quit playing before all questions are asked.

Scoring

If you answer correctly after only one question, 5 points.

If you answer after the second question, 4 points.

If you answer after the third question, 3 points.

If you answer after the fourth question, 2 points.

If you answer after seeing the location of the state on the map, 1
point.

If you are still unable to guess the name of the state, −5 points.

Scoring is determined by the number of points you receive,
and that number is shown at the end of the game. You will also re-
ceive a percentage score to let you know how well you've done.

State of the Union

Remember, do not type the checksum number at the end of each line. For example, do
not type ":rem 123." Please read the article about the "Automatic Proofreader" in
Appendix E.

```
1 REM STATE..UNION                              :rem 123
100 NS=50:CB=828                                :rem 114
110 VC=53248:POKEVC+32,2:POKEVC+33,6:PRINTCHR$(147
    )                                              :rem 8
120 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX   :rem 69
130 DIM QT$(5),NT%(22,1)                        :rem 194
140 READX$:IFX$<>"$SONG"THEN140                 :rem 79
150 FORX=0TO22:FORY=0TO1:READZ:NT%(X,Y)=Z:NEXTY,X
                                               :rem 208
160 SM=((PEEK(53272)AND240)/16)*1024            :rem 127
170 CM=55296                                    :rem 112
200 GOSUB700                                    :rem 169
205 S%=0:FORX=1TONS:POKECB+X,0:NEXTX:POKEVC+32,6:P
    OKEVC+33,15:PRINTCHR$(147)                   :rem 19
210 FORX=1TONS:GOSUB800:POKECB+Z,X:NEXTX    :rem 158
300 X=1                                         :rem 89
305 Y=PEEK(CB+X):Y=(Y-1)*6                      :rem 228
310 RESTORE:IFY=0THEN330                        :rem 12
```

```
320 FORW=1TOY:READX$:NEXTW                      :rem 223
330 FORW=1TO6:READX$:QT$(W-1)=X$:NEXTW          :rem 127
400 W=Ø                                         :rem 88
405 PRINTCHR$(147);"{BLK}{23 DOWN}";SPC(15);"SCORE
    =";S%;                                       :rem 168
410 PRINT"{HOME}{2 DOWN}{3 SPACES}QUESTION #";W+1
                                                :rem 36
420 PRINT"{3 DOWN}";QT$(W);".{3 DOWN}"          :rem 38
430 X$="":POKE198,Ø:INPUTX$:IFX$=QT$(4)THEN500
                                                :rem 213
435 IFX$="END"THEN600                           :rem 196
440 POKEVC+33,Ø:POKEMC+Ø,Ø:POKEMC+1,20:POKEMC+4,33
    :POKEMC+5,15:POKEMC+6,15                    :rem 161
450 POKEMC+24,8:FORV=1TO200:NEXTV               :rem 54
452 POKEMC+4,32:FORV=1TO30:NEXTV                :rem 4
454 POKEMC+24,Ø:PRINTCHR$(147):POKEVC+33,15:rem 35
455 IFW=4THEN465                                :rem 195
456 W=W+1:IFW<4THEN405                          :rem 62
457 GOSUB4000                                   :rem 228
458 IFX$=QT$(4)THEN500                          :rem 251
459 IFX$="END"THEN600                           :rem 202
460 W=4:GOTO440                                 :rem 109
465 PRINT"{BLU}{2 DOWN}{3 SPACES}STATE=";QT$(4);"
    {BLK}":S%=S%-5                              :rem 208
470 FORW=1TO1500:NEXTW                          :rem 128
480 GOTO590                                     :rem 115
500 S%=S%+(5-W)                                 :rem 247
510 POKEMC+Ø,Ø:POKEMC+1,Ø:POKEMC+5,15:POKEMC+6,15:
    POKEMC+24,9                                 :rem 131
520 FORV=4TO15                                  :rem 78
530 POKEVC+33,V:POKEMC+1,V*3:POKEMC+4,33        :rem 145
540 FORW=1TO30:NEXTW:POKEMC+4,32                :rem 4
550 FORW=1TO10:NEXTW                            :rem 26
560 NEXTV                                       :rem 48
570 POKEMC+24,Ø                                 :rem 72
590 X=X+1:IFX<=NSTHEN305                        :rem 233
600 PRINTCHR$(147);"{DOWN}{15 SPACES}{RVS}TEST OVE
    R!{OFF}"                                    :rem 226
610 PRINT"{3 DOWN}{4 SPACES}YOUR SCORE = ";S%
                                                :rem 86
620 IFS%<ØTHENS%=Ø                              :rem 31
625 X=X-1:IFX<1THENX=1                          :rem 107
630 X=INT((S%*100)/(X*5))                       :rem 37
640 PRINT"{DOWN}{4 SPACES}YOUR GRADE = ";X;"{LEFT}
    %"                                          :rem 63
650 PRINT"{3 DOWN}{4 SPACES}PLAY AGAIN?":PRINT"
    {DOWN}{4 SPACES}ENTER {RVS}Y{OFF} OR {RVS}N
    {OFF}"                                      :rem 158
660 GETX$:IFX$=""THEN660                        :rem 137
```

```
670  IFX$="Y"THEN205                          :rem 72
680  IFX$<>"N"THEN660                         :rem 128
690  GOSUB900:PRINTCHR$(147)                  :rem 109
695  END                                      :rem 123
700  PRINT"{WHT}{2 SPACES}{RVS}{9 SPACES}STATE OF T
     HE UNION{9 SPACES}{OFF}"                  :rem 145
705  PRINT"{DOWN} YOU WILL BE ASKED UP TO 5 QUESTIO
     NS{5 SPACES}ABOUT EACH U.S. STATE."       :rem 41
710  PRINT"{DOWN} POINTS WILL BE GIVEN DEPENDING UP
     ON"                                       :rem 95
712  PRINT" HOW MANY QUESTIONS YOU NEED:"  :rem 172
715  PRINT"{2 DOWN}{2 SPACES}1 QUESTION{2 SPACES}=
     {2 SPACES}5.":PRINT"{2 SPACES}2 QUESTIONS =
     {2 SPACES}4."                            :rem 128
720  PRINT"{2 SPACES}3 QUESTIONS ={2 SPACES}3.":PRI
     NT"{2 SPACES}4 QUESTIONS ={2 SPACES}2."
                                              :rem 173
722  PRINT"{2 SPACES}5 QUESTIONS ={2 SPACES}1."
                                              :rem 8
725  PRINT"{2 SPACES}ALL MISSED{2 SPACES}= -5."
                                              :rem 218
730  PRINT"{2 DOWN} TYPE {RVS}END{OFF} TO QUIT EARL
     Y."                                       :rem 219
785  PRINT"{3 DOWN}{7 SPACES}(PRESS ANY KEY TO STAR
     T)"                                       :rem 136
786  GOSUB900                                  :rem 190
787  PRINT"{DOWN}{10 SPACES}(TEN-SECOND DELAY)";
                                              :rem 83
790  GETX$:IFX$=""THEN790                     :rem 145
795  RETURN                                    :rem 133
800  W=0                                       :rem 92
810  Z=INT((RND(1)*NS)+1):IFPEEK(CB+Z)=0THENRETURN
                                              :rem 15
820  W=W+1:IFW<9THEN810                        :rem 62
830  Z=1                                       :rem 99
840  IFPEEK(CB+Z)=0THENRETURN                  :rem 39
850  Z=Z+1:GOTO840                             :rem 249
900  POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,129
     :POKEMC+24,15                            :rem 243
910  FORX=0TO22                                :rem 77
920  Y=INT(NT%(X,0)/256)                       :rem 5
930  POKEMC+0,NT%(X,0)-(Y*256)                :rem 76
940  POKEMC+1,Y:POKEMC+4,17                    :rem 41
950  FORY=1TONT%(X,1)*40:NEXTY                 :rem 28
960  POKEMC+4,16:FORY=1TO20:NEXTY,X:POKEMC+24,0
                                              :rem 121
970  RETURN                                    :rem 128
1000 DATA"JEFFERSON DAVIS BECAME PRESIDENT OF THE
     {SPACE}CONFEDERACY HERE"                  :rem 64
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1010 DATA"THE SOUTH'S LARGEST STEEL PRODUCING
     {5 SPACES}STATE"                        :rem 201
1020 DATA"IT'S FAMOUS FOR MAGNOLIAS, COTTON, AND
     {2 SPACES}EARLY AEROSPACE RESEARCH" :rem 228
1030 DATA"THE STATE CAPITAL IS MONTGOMERY",ALABAMA
     ,627                                   :rem 5
1040 DATA"THE HIGHEST PEAK IN NORTH AMERICA IS
     {4 SPACES}HERE"                        :rem 5
1050 DATA"IT WAS ONCE KNOWN AS SEWARD'S ICE BOX"
                                          :rem 236
1060 DATA"IT HAS THE LARGEST AREA AND THE SMALLEST
     POPULATION"                          :rem 206
1070 DATA"THE STATE CAPITAL IS JUNEAU",ALASKA,1
                                           :rem 32
1080 DATA"THE LAST MAINLAND STATE TO JOIN THE
     {5 SPACES}UNION"                       :rem 62
1090 DATA"ASTRONOMERS LIKE ITS DRY, CLEAR AIR"
                                          :rem 248
1100 DATA"THE HOME OF THE GRAND CANYON"    :rem 212
1110 DATA"THE STATE CAPITAL IS PHOENIX",ARIZONA,56
     9                                      :rem 72
1120 DATA"IT PRODUCES 90% OF AMERICA'S ALUMINUM"
                                           :rem 27
1130 DATA"IT WAS THE HOME OF HANGING JUDGE PARKER"
                                          :rem 122
1140 DATA"IT CONTAINS AMERICA'S ONLY DIAMOND MINE"
                                          :rem 243
1150 DATA"THE STATE CAPITAL IS LITTLE ROCK",ARKANS
     AS,583                               :rem 106
1160 DATA"THE MOST POPULOUS OF THE STATES" :rem 27
1170 DATA"IT CONTAINS THE LOWEST ELEVATION IN
     {5 SPACES}NORTH AMERICA"             :rem 157
1180 DATA"THERE WAS 'GOLD IN THEM THAR HILLS'"
                                          :rem 111
1190 DATA"THE STATE CAPITAL IS SACRAMENTO",CALIFOR
     NIA,444                              :rem 222
1200 DATA"THE STATE WITH THE HIGHEST OVERALL
     {6 SPACES}ELEVATION"                 :rem 104
1210 DATA"IT PRODUCES 72% OF THE WORLD'S
     {10 SPACES}MOLYBDENUM"                :rem 38
1220 DATA"ITS NAME MEANS 'COLORED RED' IN SPANISH"
                                          :rem 134
1230 DATA"THE STATE CAPITAL IS DENVER",COLORADO,41
     4                                      :rem 40
1240 DATA"IT WAS THE HOME OF NATHAN HALE"  :rem 32
1250 DATA"IT RECEIVED STATEHOOD IN 1788"   :rem 36
1260 DATA"IT IS FAMOUS FOR YALE UNIVERSITY":rem 95
1270 DATA"THE STATE CAPITAL IS HARTFORD",CONNECTIC
     UT,275                               :rem 179
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1280 DATA"THE FIRST STATE TO RATIFY THE{11 SPACES}
     CONSTITUTION"                          :rem 25
1290 DATA"IT IS SOMETIMES CALLED THE 'CHEMICAL
     {4 SPACES}CAPITAL OF THE WORLD'"       :rem 31
1300 DATA"AMERICA'S SECOND SMALLEST STATE" :rem 48
1310 DATA"THE STATE CAPITAL IS DOVER",DELAWARE,394
                                           :rem 220
1320 DATA"ITS COASTLINE MEASURES 1,350 MILES"
                                           :rem 138
1330 DATA"THE SOUTHERNMOST OF THE CONTINENTAL U.S"
                                           :rem 76
1340 DATA"THE HOME OF CAPE CANAVERAL"      :rem 107
1350 DATA"THE STATE CAPITAL IS TALLAHASSEE",FLORID
     A,832                                 :rem 64
1360 DATA"THE LAST OF THE 13 COLONIES TO BE
     {7 SPACES}SETTLED"                    :rem 178
1370 DATA"HOME OF STONE MOUNTAIN PARK"     :rem 9
1380 DATA"BIRTHPLACE OF UNCLE REMUS, SCARLETT
     {5 SPACES}O'HARA AND COCA-COLA"       :rem 245
1390 DATA"THE STATE CAPITAL IS ATLANTA",GEORGIA,67
     0                                     :rem 31
1400 DATA"THIS STATE WAS FORMED BY ERUPTING
     {7 SPACES}VOLCANOS"                   :rem 242
1410 DATA"THE 50TH STATE TO JOIN THE UNION"
                                           :rem 196
1420 DATA"WORLD WAR II STARTED FOR THE U.S. WITH
     {2 SPACES}AN ATTACK HERE"             :rem 179
1430 DATA"THE STATE CAPITAL IS HONOLULU",HAWAII,76
     0                                     :rem 64
1440 DATA"IT LEADS IN PRODUCTION OF SILVER AND
     {4 SPACES}COBALT"                     :rem 189
1450 DATA"HOME OF THE NATION'S DEEPEST CANYON --
     {2 SPACES}HELLS CANYON"               :rem 118
1460 DATA"THE STATE CAPITAL IS BOISE"      :rem 151
1465 DATA"FAMOUS FOR ITS POTATOES",IDAHO,249
                                           :rem 155
1470 DATA"THE LINCOLN-DOUGLAS DEBATES WERE HELD
     {3 SPACES}HERE"                       :rem 194
1480 DATA"IT IS HOME OF THE WORLD'S TALLEST
     {7 SPACES}BUILDING"                   :rem 108
1490 DATA"THE STATE CAPITAL IS SPRINGFIELD":rem 95
1500 DATA"THE WINDY CITY IS PART OF THIS GREAT
     {4 SPACES}LAKE STATE",ILLINOIS,385    :rem 213
1510 DATA"THE SMALLEST OF THE 'LOWER 48' STATES
     {3 SPACES}WEST OF THE ALLEGHENIES"    :rem 210
1520 DATA"ITS LAKE MICHIGAN WATERFRONT IS LINED
     {3 SPACES}WITH STEEL MILLS"           :rem 193
1530 DATA"IT IS THE HOME OF PURDUE UNIVERSITY"
                                           :rem 246
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1540 DATA"THE STATE CAPITAL IS INDIANAPOLIS",INDIA
     NA,427                                :rem 136
1550 DATA"THIS FARMING STATE PRODUCES 10% OF
     {6 SPACES}AMERICA'S FOOD"             :rem 250
1560 DATA"IT IS THE LEADING LOG STATE IN THE U.S"
                                           :rem 233
1570 DATA"IT IS BORDERED BY SIX FARMING AND TWO
     {3 SPACES}GREAT LAKE STATES"          :rem 111
1580 DATA"THE STATE CAPITAL IS DES MOINES",IOWA,34
     2                                     :rem 240
1590 DATA"IT PRODUCES MORE WHEAT THAN ANY OTHER
     {3 SPACES}STATE"                      :rem 241
1600 DATA"IT HAD ITS OWN CIVIL WAR OVER SLAVERY IN
     1821"                                 :rem 153
1610 DATA"LEAVENWORTH FEDERAL PENITENTIARY IS
     {5 SPACES}HERE"                       :rem 196
1620 DATA"THE STATE CAPITAL IS TOPEKA",KANSAS,459
                                           :rem 162
1630 DATA"PRESIDENTS OF BOTH CIVIL WAR FACTIONS
     {3 SPACES}CAME FROM THIS STATE"       :rem 166
1640 DATA"THE STATE CAPITAL IS FRANKFORT" :rem 210
1650 DATA"IT IS THE SITE OF THE WORLD'S MOST
     {6 SPACES}FAMOUS HORSE RACE"          :rem 155
1660 DATA"MAMMOTH CAVE AND FORT KNOX ARE HERE",KEN
     TUCKY,468                             :rem 15
1670 DATA"IT CONTAINS THE NATION'S SECOND BUSIEST
     {SPACE}SEAPORT"                       :rem 69
1680 DATA"IT IS DIVIDED INTO PARISHES, AND NOT
     {4 SPACES}COUNTIES"                   :rem 82
1690 DATA"THE STATE CAPITAL IS BATON ROUGE":rem 32
1700 DATA"THE HOME OF CAJUNS, CRAWFISH AND MARDI
     {2 SPACES}GRAS",LOUISIANA,704         :rem 17
1710 DATA"THIS STATE HAD A 'TEA PARTY' BUT NOT IN
     {SPACE}BOSTON"                        :rem 238
1720 DATA"IT WAS A PART OF MASSACHUSETTS UNTIL
     {4 SPACES}1820"                       :rem 252
1730 DATA"THE STATE CAPITAL IS AUGUSTA"    :rem 63
1740 DATA"IT IS FAMOUS FOR ITS LOBSTER",MAINE,116
                                           :rem 122
1750 DATA"THE ONLY STATE WITH A STATE SPORT --
     {4 SPACES}JOUSTING"                   :rem 50
1760 DATA"THE FIRST STATE TO RATIFY THE{11 SPACES}
     CONSTITUTION"                         :rem 28
1770 DATA"IT STRADDLES CHESAPEAKE BAY"     :rem 22
1780 DATA"THE STATE CAPITAL IS ANNAPOLIS",MARYLAND
     ,393                                  :rem 30
1790 DATA"THE PILGRIMS FIRST LANDED HERE" :rem 203
1800 DATA"HOME OF THE INFAMOUS SALEM WITCH TRIALS"
                                           :rem 232
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1810 DATA"THE HOME OF HARVARD UNIVERSITY" :rem 241
1820 DATA"THE STATE CAPITAL IS BOSTON",MASSACHUSET
     TS,235                                 :rem 212
1830 DATA"IT IS COMPOSED OF TWO PENINSULAS,
     {7 SPACES}DIVIDED BY THE GREAT LAKES":rem 210
1840 DATA"THE STATE CAPITAL IS LANSING"    :rem 51
1845 DATA"IT IS THE AUTOMOBILE CAPITAL OF THE
     {5 SPACES}WORLD"                       :rem 55
1850 DATA"A GREAT LAKE SHARES ITS NAME",MICHIGAN,2
     67                                     :rem 11
1860 DATA"IT CONTAINS MORE THAN 15,000 LAKES"
                                            :rem 25
1870 DATA"THE HOME OF THE MAYO CLINIC"     :rem 150
1880 DATA"THE MISSISSIPPI RIVER HAS ITS ORIGIN IN
     {SPACE}THIS STATE"                     :rem 217
1890 DATA"THE STATE CAPITAL IS ST. PAUL",MINNESOTA
     ,221                                   :rem 206
1900 DATA"ONLY VIRGINIA HAD MORE CIVIL WAR
     {8 SPACES}BATTLES THAN THIS STATE"     :rem 23
1910 DATA"DEVASTATED IN 1969 BY AMERICA'S MOST
     {4 SPACES}POWERFUL HURRICANE"          :rem 221
1920 DATA"ITS NAME IS AN INDIAN WORD MEANING
     {6 SPACES}'LARGE RIVER'"               :rem 149
1930 DATA"THE STATE CAPITAL IS JACKSON",MISSISSIPP
     I,625                                  :rem 130
1940 DATA"IT RANKS FIRST IN THE NATION IN LEAD
     {4 SPACES}MINING"                      :rem 128
1950 DATA"IT WAS ADMITTED AS A SLAVE STATE WHEN
     {3 SPACES}MAINE JOINED AS A FREE STATE"
                                            :rem 159
1960 DATA"IT IS THE 'GATEWAY TO THE WEST'":rem 111
1970 DATA"THE STATE CAPITAL IS JEFFERSON CITY",MIS
     SOURI,463                              :rem 118
1980 DATA"IT IS THE MUSTARD SEED CAPITAL OF THE
     {3 SPACES}U.S"                         :rem 213
1990 DATA"GLACIER NATIONAL PARK IS HERE"   :rem 108
2000 DATA"THE SITE OF CUSTER'S LAST STAND":rem 201
2010 DATA"THE STATE CAPITAL IS HELENA",MONTANA,173
                                            :rem 203
2020 DATA"THE BIRTHPLACE OF PRESIDENT GERALD FORD"
                                            :rem 254
2030 DATA"THE PLATTE RIVER RUNS THE WIDTH OF THE
     {2 SPACES}STATE"                       :rem 246
2040 DATA"THE TRANSCONTINENTAL RAILROAD STARTED
     {3 SPACES}HERE IN 1865"                :rem 192
2050 DATA"THE STATE CAPITAL IS OMAHA",NEBRASKA,378
                                            :rem 200
2060 DATA"THE DRIEST STATE, WITH LESS THAN 3
     {6 SPACES}INCHES OF RAIN PER YEAR"     :rem 225
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2070 DATA"THE SITE OF UNDERGROUND NUCLEAR TESTS"
                                        :rem 188
2080 DATA"THE STATE CAPITAL IS CARSON CITY":rem 35
2090 DATA"IT IS THE GAMBLING CAPITAL OF THE U.S",N
     EVADA,407                          :rem 112
2100 DATA"IT SHARED A GOVERNOR WITH MASSACHUSETTS
     {SPACE}FROM 1699-1741"             :rem 83
2110 DATA"AS THE 9TH STATE TO RATIFY, IT MADE THE
     {SPACE}CONSTITUTION LEGAL"         :rem 56
2120 DATA"PUBLIC PARK LANDS COMPRISE ONE-FIFTH OF
     {2 SPACES}THIS STATE"              :rem 178
2130 DATA"THE STATE CAPITAL IS CONCORD","NEW HAMPS
     HIRE",195                          :rem 238
2140 DATA"ONE OF ITS CITIES WAS USED AS A PATTERN
     {SPACE}FOR THE MONOPOLY BOARD"     :rem 9
2150 DATA"THE STATE CAPITAL IS TRENTON"    :rem 76
2160 DATA"THE HOME OF PRINCETON AND RUTGERS
     {7 SPACES}UNIVERSITIES"            :rem 33
2170 DATA"THE SITE OF 'AMERICA'S OTHER LAS VEGAS'"
     ,"NEW JERSEY",314                  :rem 85
2180 DATA"IT LEADS THE NATION IN URANIUM
     {10 SPACES}PRODUCTION"             :rem 152
2190 DATA"THE FIRST ATOMIC BOMB WAS PRODUCED AND
     {2 SPACES}EXPLODED HERE"           :rem 253
2200 DATA"THE STATE CAPITAL IS SANTA FE"   :rem 32
2210 DATA"CARLSBAD CAVERNS IS ITS MAJOR TOURIST
     {3 SPACES}ATTRACTION","NEW MEXICO",614
                                        :rem 143
2220 DATA"ITS LARGEST CITY WAS THE FIRST U.S.
     {5 SPACES}CAPITOL"                 :rem 195
2230 DATA"IT LEADS THE NATION IN MANUFACTURING"
                                        :rem 64
2240 DATA"IT CONTAINS THE NATION'S LARGEST CITY
     {3 SPACES}AND PORT"                :rem 169
2250 DATA"THE STATE CAPITAL IS ALBANY","NEW YORK",
     233                                :rem 61
2260 DATA"THE WRIGHT BROTHERS' FIRST PLANE FLEW
     {3 SPACES}HERE"                    :rem 184
2270 DATA"HOME OF THE NEW WORLD'S 'LOST COLONY'"
                                        :rem 24
2280 DATA"IT LEADS THE NATION IN TOBACCO
     {10 SPACES}PRODUCTION"             :rem 115
2290 DATA"THE STATE CAPITAL IS RALEIGH","NORTH CAR
     OLINA",551                         :rem 46
2300 DATA"THE BIRTHPLACE OF ULYSSES GRANT AND SIX
     {SPACE}OTHER PRESIDENTS"           :rem 117
2310 DATA"THE ABOLITIONIST MOVEMENT BEGAN HERE"
                                        :rem 130
2320 DATA"IT LEADS THE NATION IN LIME PRODUCTION"
                                        :rem 154
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2330 DATA"THE STATE CAPITAL IS COLUMBUS",OHIO,389
                                        :rem 183
2340 DATA"90% OF THIS RURAL STATE IS DEVOTED TO
     {3 SPACES}FARM LAND"                :rem 24
2350 DATA"HOME OF THE BADLANDS"
2360 DATA"SITE OF THE RED RIVER VALLEY"     :rem 4
2370 DATA"THE STATE CAPITAL IS BISMARCK","NORTH DA
     KOTA",178                          :rem 237
2380 DATA"IT WAS THE BIRTHPLACE OF WILL ROGERS"
                                         :rem 17
2390 DATA"IT WAS PART OF INDIAN TERRITORY DURING
     {2 SPACES}THE 19TH CENTURY"        :rem 225
2400 DATA"INDIANS WANTED PART OF ITS LAND TO
     {6 SPACES}BECOME THE STATE OF SEQUOYAH"
                                        :rem 124
2410 DATA"THE STATE CAPITAL IS OKLAHOMA CITY",OKLA
     HOMA,620                           :rem 226
2420 DATA"IN 1811 JOHN JACOB ASTOR FOUNDED A FUR
     {2 SPACES}DEPOT HERE"              :rem 114
2430 DATA"IT BOASTS THE NATION'S DEEPEST LAKE,
     {4 SPACES}CRATER LAKE"             :rem 229
2440 DATA"IT LEADS THE NATION IN LUMBER{11 SPACES}
     PRODUCTION"                         :rem 61
2450 DATA"THE STATE CAPITAL IS SALEM",OREGON,205
                                         :rem 80
2460 DATA"BENJAMIN FRANKLIN IS ITS MOST FAMOUS
     {4 SPACES}SON"                      :rem 77
2470 DATA"IT IS THE HOME OF THE 1ST RADIO STATION
     {SPACE}-- KDKA"                    :rem 194
2480 DATA"VALLEY FORGE AND GETTYSBURG ARE BOTH IN
     {SPACE}THIS STATE"                 :rem 164
2490 DATA"THE STATE CAPITAL IS HARRISBURG",PENNSYL
     VANIA,312                          :rem 168
2500 DATA"ROGER WILLIAMS STARTED THE STATE'S FIRST
     SETTLEMENT IN 1636"               :rem 237
2510 DATA"IT WAS THE LAST OF THE ORIGINAL COLONIES
     TO RATIFY THE CONSTITUTION"       :rem 240
2520 DATA"IT IS THE NATION'S SMALLEST STATE, AND
     {2 SPACES}IT IS NOT AN ISLAND"    :rem 221
2530 DATA"THE STATE CAPITAL IS PROVIDENCE","RHODE
     {SPACE}ISLAND",276                :rem 123
2540 DATA"THE CIVIL WAR STARTED HERE"    :rem 166
2550 DATA"IT WAS THE 1ST STATE TO SECEDE FROM THE
     {SPACE}UNION"                     :rem 214
2560 DATA"IT IS THE BIGGEST PEACH-PRODUCING STATE
     {SPACE}EAST OF CALIFORNIA"        :rem 158
2570 DATA"THE STATE CAPITAL IS COLUMBIA","SOUTH CA
     ROLINA",551                       :rem 135
2580 DATA"IT CONTAINS THE GEOGRAPHICAL CENTER OF
     {2 SPACES}THE U.S"                :rem 125
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2590 DATA"IT LEADS THE NATION IN GOLD PRODUCTION"
                                          :rem 162
2600 DATA"IT IS FAMOUS FOR MOUNT RUSHMORE" :rem 25
2610 DATA"THE STATE CAPITAL IS PIERRE","SOUTH DAKO
     TA",258                              :rem 108
2620 DATA"IT LEADS THE NATION IN ZINC PRODUCTION"
                                          :rem 170
2630 DATA"ANDREW JACKSON MADE HIS HOME HERE"
                                          :rem 59
2640 DATA"IT IS THE MUSIC CENTER OF AMERICA"
                                          :rem 13
2650 DATA"THE STATE CAPITAL IS NASHVILLE",TENNESSE
     E,547                               :rem 111
2660 DATA"IT WAS AN INDEPENDENT COUNTRY FOR ALMOST
     A DECADE"                            :rem 51
2670 DATA"IT LEADS THE NATION IN OIL, CATTLE AND
     {2 SPACES}COTTON PRODUCTION"         :rem 242
2680 DATA"THE BATTLE OF THE ALAMO WAS FOUGHT HERE"
                                          :rem 135
2690 DATA"THE STATE CAPITAL IS AUSTIN",TEXAS,738
                                          :rem 126
2700 DATA"IT CONTAINS THE NATION'S LARGEST OPEN
     {3 SPACES}PIT COPPER MINE"           :rem 106
2710 DATA"ITS ORIGINAL NAME WAS DESERET"  :rem 133
2720 DATA"BRIGHAM YOUNG LED THE FIRST MORMON
     {6 SPACES}SETTLERS HERE"             :rem 101
2730 DATA"THE STATE CAPITAL IS SALT LAKE CITY",UTA
     H,410                               :rem 207
2740 DATA"IT CLAIMS TWO U.S. PRESIDENTS, BUT ONE
     {2 SPACES}WAS PROBABLY BORN IN CANADA":rem 31
2750 DATA"IT IS THE ONLY NEW ENGLAND STATE WITHOUT
     AN OCEAN COASTLINE"                 :rem 183
2760 DATA"IT'S FAMOUS FOR THE PRODUCTION OF MAPLE
     {SPACE}SYRUP"                       :rem 133
2770 DATA"THE STATE CAPITAL IS MONTPELIER",VERMONT
     ,194                                 :rem 74
2780 DATA"IT IS FAMOUS FOR COAL PRODUCTION":rem 64
2790 DATA"HARPERS FERRY IS LOCATED HERE"  :rem 137
2800 DATA"STONEWALL JACKSON WAS A NATIVE OF THIS
     {2 SPACES}STATE"                     :rem 43
2810 DATA"THE STATE CAPITAL IS CHARLESTON","WEST V
     IRGINIA",431                        :rem 232
2820 DATA"IT HAS THE MILDEST CLIMATE OF ALL THE
     {3 SPACES}NORTHERN STATES"           :rem 40
2830 DATA"IT LEADS THE NATION IN APPLE PRODUCTION"
                                          :rem 235
2840 DATA"IT CONTAINS THE ONLY ACTIVE VOLCANO IN
     {2 SPACES}THE CONTINENTAL U.S"       :rem 166
2850 DATA"THE STATE CAPITAL IS OLYMPIA",WASHINGTON
     86                                   :rem 12
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2860 DATA"IT WAS THE HOME OF THE MAIN CAPITAL OF
     {2 SPACES}THE CONFEDERACY"          :rem 242
2870 DATA"THE FIRST PERMANENT ENGLISH SETTLEMENT
     {2 SPACES}IN AMERICA WAS HERE"      :rem 233
2880 DATA"IT IS THE BIRTHPLACE OF EIGHT{11 SPACES}
     PRESIDENTS"                         :rem 47
2890 DATA"THE STATE CAPITAL IS RICHMOND",VIRGINIA,
     472                                 :rem 207
2900 DATA"IT WAS THE BOYHOOD HOME OF HARRY
     {8 SPACES}HOUDINI"                  :rem 250
2910 DATA"IT LEADS THE NATION IN BEER PRODUCTION"
                                         :rem 150
2920 DATA"IT IS THE NATION'S LEADING DAIRY STATE"
                                         :rem 118
2930 DATA"THE STATE CAPITAL IS MADISON",WISCONSIN,
     264                                 :rem 228
2940 DATA"WOMEN WERE FIRST GIVEN THE RIGHT TO VOTE
     HERE"                               :rem 75
2950 DATA"ITS DEVIL'S TOWER WAS THE FIRST U.S.
     {4 SPACES}NATIONAL MONUMENT"        :rem 190
2960 DATA"IT IS THE HOME OF YELLOWSTONE NATIONAL
     {2 SPACES}PARK"                     :rem 240
2970 DATA"THE STATE CAPITAL IS CHEYENNE",WYOMING,2
     94                                  :rem 156
3900 DATA"$SONG"                         :rem 133
3910 DATA6430,2,5407,2,6430,4,6430,2,5407,2,6430,4
     ,6430,2,5407,2,6430,2               :rem 215
3920 DATA7217,2,6430,2,5407,2,6430,4,0,1,5407,2,57
     28,2,6430,2,5728,4                  :rem 77
3930 DATA4817,2,6430,2,5728,4,4817,2,4291,8
                                         :rem 146
4000 V=VAL(QT$(5))                       :rem 218
4002 POKEVC+33,6                         :rem 129
4008 PRINTCHR$(147);"{WHT}{DOWN}{4 SPACES}{D}
     {RVS}{U}{Y}{U}{OFF}{I}{O}";SPC(25);
     "{RVS} {OFF}{K}"                    :rem 75
4010 PRINT"{4 SPACES}{L}{RVS}{7 SPACES}{2 T}
     {2 Y}{2 U}{OFF}{O}{2 P}{O}
     {13 SPACES}{RVS}{2 SPACES}{OFF}{K}"    :rem 41
4020 PRINT"{4 SPACES}{RVS}£{17 SPACES}{C}{OFF}
     {11 SPACES}{RVS}£{2 SPACES}{OFF} "    :rem 237
4030 PRINT"{3 SPACES}{RVS}£{19 SPACES}{*}£
     {U} {U}{*}{OFF}{4 SPACES}{RVS}£
     {3 SPACES}{OFF}{K}"                 :rem 170
4040 PRINT"{2 SPACES}{RVS}£{22 SPACES}{OFF}
     {7 SPACES}{RVS}£{4 SPACES}{C}{OFF}"  :rem 239
4050 PRINT"{2 SPACES}{RVS}{24 SPACES}{OFF} {RVS}
     {*}{OFF}{2 SPACES}{RVS}{V}{4 SPACES}{OFF}
     {U}"                               :rem 219
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4060 PRINT"{2 SPACES}{RVS}{24 SPACES}{OFF} {RVS}
     {2 SPACES}{OFF} {RVS}£{3 SPACES}{OFF}£K]"
                                          :rem 209
4070 PRINT"{2 SPACES}{RVS}£H]{23 SPACES}£U]
     {8 SPACES}{OFF}"                      :rem 172
4080 PRINT"{2 SPACES}£L]{RVS}{31 SPACES}{OFF}£"
                                          :rem 160
4090 PRINT"{2 SPACES}£N]{RVS}{31 SPACES}{OFF}
     £V]"                                 :rem 170
4100 PRINT"{3 SPACES}£*]{RVS}{30 SPACES}{OFF}
     £F]"                                 :rem 212
4120 PRINT"{4 SPACES}£*]{RVS}{28 SPACES}{OFF}£
     £V]"                                 :rem 130
4130 PRINT"{5 SPACES}£*]{RVS}{27 SPACES}{OFF}
     £V]"                                 :rem 218
4140 PRINT"{6 SPACES}{RVS}£F]{25 SPACES}{OFF}£"
                                          :rem 162
4150 PRINT"{7 SPACES}£Y]£*]{RVS}{22 SPACES}
     £N]{OFF}"                            :rem 127
4160 PRINT"{10 SPACES}£C]£2 U]{RVS}{19 SPACES}
     {OFF}"                               :rem 108
4170 PRINT"{13 SPACES}£*]{RVS}{11 SPACES}£U]
     £Y]{OFF} £*]{RVS}{3 SPACES}{OFF}"    :rem 18
4180 PRINT"{14 SPACES}£Y]£*]{RVS}{6 SPACES}
     {OFF}£2 U]{6 SPACES}£*]{RVS} £*]"    :rem 24
4190 PRINT"{16 SPACES}£*]{RVS}{2 SPACES}{OFF}£
     {10 SPACES}£L]{RVS}{2 SPACES}£*]{OFF}"
                                          :rem 4
4200 PRINT"{17 SPACES}£*]{RVS} £*]{OFF}
     {11 SPACES}£*]{RVS} £L]{OFF}"        :rem 50
4210 PRINT"{32 SPACES}£C]"                :rem 84
4220 POKESM+V,160:POKECM+V,0              :rem 177
4230 INPUT"{DOWN} WHICH STATE";X$         :rem 89
4240 PRINT"{BLK}";                        :rem 102
4250 POKEVC+33,15                         :rem 182
4260 RETURN                               :rem 172
```

Wise Shopper

Skill area: Mathematics
Level: 3, 4
Equipment required: None
Modification: Yes

Money Talks

You had the day all planned. You were going to spend the morning playing with the computer, and you wanted to goof around with your friends in the afternoon. After dark, you hoped to borrow enough money from mom to go to the movies.

Mom has different ideas. She wants you to go to the grocery store. The list isn't a long one — it's just ten items. But going to the store isn't exactly the way you wanted to spend your day.

But mom offers a compromise. She'll give you the money and the grocery list. You go to the grocery store and buy everything she needs. Any money you save by shopping wisely, you get to keep for your night at the movies.

The idea still doesn't sound as good as spending the day with your computer and hanging around with the kids, but it beats missing the movie altogether.

How to Play

The computer will show you a selection of ten items. Each time you need to make a purchase, you may choose between Brand A and Brand B. Select the brand you think is the better bargain by pressing A or B. Each time you choose the better buy the computer will let you know with sound and flashing colors. If you make a mistake, the computer screen will go black and you'll get a raspberry.

Scoring

At the end of each game, the computer will tell you the number of wise purchases you made, followed by the number of unwise choices. Then the computer will tell you how much you saved by comparison shopping.

Wise Shopper

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM WISE SHOPPER                                :rem 110
100 DIMP$(19,1),NT%(17,1),PT%(19)                 :rem 176
104 VC=53248:POKEVC+32,6:POKEVC+33,15:PRINTCHR$(14
    7):C$="{CYN}{PUR}{GRN}{BLU}{YEL}"             :rem 119
106 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX         :rem 73
108 B1$="{RVS}{40 SPACES}{OFF}"                   :rem 85
110 B2$="{RVS}{15 SPACES}{OFF}{10 SPACES}{RVS}
    {15 SPACES}{OFF}"                             :rem 243
120 PRINT"{BLK}{DOWN} {RVS}{6 SPACES}$$$$$
    {2 SPACES}WISE SHOPPER{2 SPACES}$$$$$
    {6 SPACES}{OFF}"                              :rem 106
125 PRINT"{3 DOWN} YOU ARE GOING TO THE STORE TO B
    UY TEN{3 SPACES}ITEMS.."                      :rem 32
130 PRINT"{DOWN} AS YOU BUY EACH ITEM YOU MUST CHO
    OSE"                                          :rem 62
135 PRINT" BETWEEN BRAND {RVS}A{OFF} AND BRAND
    {RVS}B{OFF}."                                 :rem 14
140 PRINT"{DOWN} YOU MUST SELECT THE BRAND WHICH I
    S THE{2 SPACES}BEST BARGAIN."                 :rem 5
150 PRINT"{DOWN} DETERMINE THIS BY CALCULATING THE
     UNIT{2 SPACES}COST PER OUNCE."               :rem 248
160 FORX=0TO17:FORY=0TO1:READZ:NT%(X,Y)=Z:NEXTY,X
                                                  :rem 213
170 GOSUB1000                                     :rem 217
180 PRINT"{3 DOWN}{8 SPACES}(PRESS ANY KEY TO STAR
    T)"                                           :rem 125
190 GETX$:IFX$=""THEN190                          :rem 133
195 FORX=0TO19:READX$,Y$:P$(X,0)=X$:P$(X,1)=Y$:NEX
    TX                                            :rem 126
200 EC=0:RC=0:XS=0                                :rem 21
210 FORX=0TO19:PT%(X)=0:NEXTX                     :rem 54
300 QA=INT(RND(1)*7)+3                            :rem 195
310 QB=INT(RND(1)*7)+3:IFQA=QBTHEN310             :rem 179
320 PA=INT(RND(1)*11)+30:X=INT(RND(1)*5)+1:IFRND(1
    )>.5THENX=X*-1                                :rem 191
330 PB=PA+X                                       :rem 121
340 X=INT(RND(1)*20):IFPT%(X)=1THEN340            :rem 201
350 X$=P$(X,0):Y$=P$(X,1):PT%(X)=1                :rem 82
360 X=INT(RND(1)*5)+1:Z$=MID$(C$,X,1)             :rem 23
400 PRINT"{CLR}";Z$;:FORX=1TO4:PRINTB1$;:NEXTX
                                                  :rem 20
410 FORX=1TO10:PRINTB2$;:NEXTX:FORX=1TO3:PRINTB1$;
    :NEXTX                                        :rem 216
420 PRINT"{BLK}{HOME}{7 DOWN}{17 RIGHT}";X$:PRINT"
    {DOWN}{17 RIGHT}";Y$                          :rem 230
```

```
430 X=QA*PA:GOSUB8000                        :rem 251
440 PRINT"{HOME}{19 DOWN} {RVS}A{OFF} -";QA;"OUNCE
    S FOR ";X$                               :rem 136
450 X=QB*PB:GOSUB8000                        :rem 255
460 PRINT"{DOWN} {RVS}B{OFF} -";QB;"OUNCES FOR ";X
    $                                        :rem 71
470 PRINT"{2 DOWN}{5 SPACES}ENTER {RVS}A{OFF} OR
    {RVS}B{OFF}";                            :rem 179
480 PRINT"{HOME}{16 RIGHT}{RVS}ITEM #";EC+RC+1;"
    {OFF}"                                   :rem 164
500 GETX$:IFX$=""THEN500                     :rem 123
510 IFX$<>"A"ANDX$<>"B"THEN500               :rem 179
520 IFX$="B"ANDPB>PATHEN600                  :rem 94
530 IFX$="A"ANDPA>PBTHEN600                  :rem 94
540 GOTO700                                  :rem 105
600 REM *** MADE WRONG CHOICE ***            :rem 197
610 POKEVC+33,0:POKEMC+0,0:POKEMC+1,30:POKEMC+4,33
    :POKEMC+5,15:POKEMC+6,15                 :rem 161
620 POKEMC+6,15:POKEMC+24,9                  :rem 57
630 FORY=1TO300:NEXTY:POKEMC+4,32            :rem 56
640 FORY=1TO30:NEXTY                         :rem 32
650 POKEMC+24,0:PRINTCHR$(147):POKEVC+33,15:rem 33
660 EC=EC+1                                  :rem 69
670 GOTO790                                  :rem 118
700 REM *** MADE RIGHT CHOICE ***            :rem 183
710 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15:
    POKEMC+24,9                              :rem 133
720 FORY=5TO15                               :rem 84
730 POKEVC+33,Y:POKEMC+1,Y*2:POKEMC+4,33    :rem 152
740 FORZ=1TO50:NEXTZ:POKEMC+4,32            :rem 14
750 FORZ=1TO20:NEXTZ,Y:POKEMC+24,0          :rem 142
760 RC=RC+1                                  :rem 96
770 IFX$="A"THENXS=XS+((PB-PA)*QA):GOTO790 :rem 25
780 XS=XS+((PA-PB)*QB)                       :rem 12
790 IFRC+EC<10THEN300                        :rem 214
800 PRINT"{CLR}{DOWN}{13 SPACES}{RVS}SHOPPING OVER
    !{OFF}"                                  :rem 118
810 PRINT"{2 DOWN}{7 SPACES}RIGHT ITEMS =";RC
                                             :rem 153
820 PRINT"{DOWN}{7 SPACES}WRONG ITEMS =";EC
                                             :rem 139
830 X=RC*10                                  :rem 80
840 PRINT"{DOWN}{7 SPACES}CORRECT %{3 SPACES}=";X;
    "{LEFT}%"                                :rem 198
850 IFRC=0THEN900                            :rem 246
860 X=XS:GOSUB8000                           :rem 96
870 PRINT"{2 DOWN}{3 SPACES}TODAY YOU SAVED ";X$
                                             :rem 58
880 PRINT"{DOWN}{3 SPACES}BY WISE SHOPPING."
                                             :rem 235
```

```
900 PRINT"{2 DOWN}{3 SPACES}PLAY AGAIN? ({RVS}Y
    {OFF}/{RVS}N{OFF})"                        :rem 208
910 GETX$:IFX$=""THEN910                       :rem 133
920 IFX$="Y"THEN200                            :rem 65
930 IFX$<>"N"THEN910                           :rem 124
935 GOSUB1000                                  :rem 226
940 PRINTCHR$(147)                             :rem 24
950 END                                        :rem 117
1000 REM *** PLAY THE SONG ***                 :rem 239
1010 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
     9:POKEMC+24,15                            :rem 28
1020 FORX=0TO17                                :rem 122
1030 Y=INT(NT%(X,0)/256)                       :rem 46
1040 POKEMC+0,NT%(X,0)-(Y*256)                 :rem 117
1050 POKEMC+1,Y:POKEMC+4,17                    :rem 82
1060 FORY=1TONT%(X,1)*50:NEXTY                 :rem 70
1070 POKEMC+4,16:FORY=1TO30:NEXTY,X            :rem 189
1080 POKEMC+24,0                               :rem 117
1090 RETURN                                    :rem 170
8000 Y$=STR$(X):X=LEN(Y$):ONXGOTO8010,8010,8020,80
     30                                        :rem 215
8010 X$="$0.0"+RIGHT$(Y$,1):RETURN             :rem 138
8020 X$="$0."+RIGHT$(Y$,2):RETURN              :rem 92
8030 X$="$"+MID$(Y$,2,1)+"."+RIGHT$(Y$,2):RETURN
                                               :rem 78
9000 DATA8583,2,8583,2,7647,1,7217,1,7217,2,6812,1
     ,7217,1,7217,4                            :rem 162
9010 DATA6812,1,7217,1,7217,2,6812,1,7217,1,8583,2
     ,7217,1,8583,1                            :rem 152
9020 DATA7647,4,6430,2                         :rem 116
9100 DATACORN,FLAKES,DISH,SOAP,CAKE,MIX,GINGER,SNA
     PS,BREAD,CRUMBS                           :rem 32
9110 DATARICE," ",BROWN,SUGAR,SUGAR,CUBES,OAT,MEAL
     ,CORN,MEAL                                :rem 42
9120 DATACORN,CHIPS,POTATO,FLAKES,FUDGE,MIX,PIZZA,
     MIX,FRUIT,BARS                            :rem 47
9130 DATAPASTA," ",BAKING,SODA,BAKING,POWDER,WAFFL
     E,MIX,RED,BEANS                           :rem 103
```

Level 4: Advanced Games (Grades 9-12)

Element Man

Skill area: Science
Level: 4
Equipment required: None
Modification: Yes

The Formidable Element Man

They say everything in the world is made up of elements. The Element Man is no exception. Even though he's made of the same stuff as you and I, the Element Man is not very nice. He's not exactly the kind of guy you'd invite to a party.

Two things are true about the Element Man: He knows where he's not wanted; and he'll do his best to be there anyway. But if you know your elements, you can keep him off your doorstep.

How to Play

The computer will pick the name of a chemical element, tell how many letters it contains, its atomic number and its symbol. You must guess the element by selecting one letter at a time. If you pick more than 11 incorrect letters, the Element Man will follow you around for the rest of the week.

After you type a letter and press RETURN, one of two things will happen. If the letter belongs in the name of this particular element, it will appear in its proper place in the word. But, if the letter does not belong in the word, the computer will buzz, the screen will temporarily go black, the letter will appear on the bottom of the screen, and a piece of the Element Man will appear. If you guess 11 incorrect letters, the Element Man is yours to keep.

A list of the chemical elements appears below. Familiarize yourself with the names, but try not to use the list when you're playing "Element Man."

actinium	berkelium	carbon	dysprosium
aluminum	beryllium	cerium	einsteinium
americium	bismuth	cesium	erbium
antimony	boron	chlorine	europium
argon	bromine	chromium	fermium
arsenic	cadmium	cobalt	fluorine
astatine	calcium	copper	francium
barium	californium	curium	gadolinium

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gallium	manganese	potassium	tantalum
germanium	mendelevium	praseodymium	technetium
gold	mercury	promethium	tellurium
hafnium	molybdenum	protactinium	terbium
helium	neodymium	radium	thallium
holmium	neon	radon	thorium
hydrogen	neptunium	rhenium	thulium
indium	nickel	rhodium	tin
iodine	niobium	rubidium	titanium
iridium	nitrogen	ruthenium	tungsten
iron	nobelium	samarium	uranium
krypton	osmium	scandium	vanadium
lanthanum	oxygen	selenium	xenon
lawrencium	palladium	silicon	ytterbium
lead	phosphorus	silver	yttrium
lithium	platinum	sodium	zinc
lutetium	plutonium	strontium	zirconium
magnesium	polonium	sulfur	

Scoring
No point score is given in Element Man. At the end of each round, the computer will ask if you want to try another element. Type Y for Yes or N for No. If you indicate you do not want to play again, the computer will tell you how many elements were guessed correctly and how many you missed since you began playing this session of Element Man.

Element Man
Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM ELEMENT MAN                                :rem 251
90 POKE 53272,23                                 :rem 44
100 NW%=103:MC=54272:VC=53248:CB=828:PRINTCHR$(147
    );                                           :rem 219
110 DIM NT%(15),WT$(NW%-1),WI$(19),LL$(NW%-1),XY$(
    NW%-1)                                       :rem 228
120 S1=((PEEK(53272)AND240)/16)*1024:S2=55296:POKE
    VC+32,6:POKEVC+33,15                         :rem 127
125 FORX=54272TO54296:POKEX,0:NEXTX              :rem 179
130 FORX=0TO15:READZ:NT%(X)=Z:NEXTX:FORX=1TONW%:RE
    ADX$:WT$(X-1)=X$:NEXTX                       :rem 203
135 FOR X=1TONW%:READ X$,XX$:LL$(X-1)=X$:XY$(X-1)=
    XX$:NEXTX                                    :rem 51
```

```
140 PRINT"{BLK}{DOWN} {RVS}{13 SPACES}ELEMENT
    {2 SPACES}MAN{13 SPACES}{OFF}"          :rem 145
150 PRINT"{2 DOWN} THE COMPUTER WILL PICK A CHEMIC
    AL"                                     :rem 47
160 PRINT" ELEMENT AND SHOW YOU THE NUMBER OF"
                                            :rem 194
165 PRINT" LETTERS IT CONTAINS."            :rem 186
170 PRINT"{2 DOWN} YOU MUST GUESS THE ELEMENT BY S
    ELECTING ONE LETTER AT A TIME."         :rem 225
180 PRINT"{2 DOWN} IF YOU PICK MORE THAN 11 INCORR
    ECT"                                    :rem 40
190 PRINT" LETTERS, THE FORMIDABLE ELEMENT MAN
    {5 SPACES}WILL APPEAR!!"                :rem 137
200 PRINT"{2 DOWN}{9 SPACES}PRESS ANY KEY TO START
    ":GOSUB2500                             :rem 149
205 PRINT"{2 DOWN}{11 SPACES}(15 SECOND DELAY)"
                                            :rem 108
210 GETX$:IFX$=""THEN210                    :rem 119
220 FORX=1TONW%:POKECB+X,0:NEXTX            :rem 76
230 FORX=1TONW%:GOSUB800:POKECB+Z,X:NEXTX   :rem 201
300 FORLC=1TONW%                            :rem 228
310 X=PEEK(CB+LC):WO$=WT$(X-1):SY$=LL$(X-1):XZ$=XY
    $(X-1)                                  :rem 40
320 LW%=LEN(WO$)                            :rem 148
330 FORX=0TOLW%-1                           :rem 11
340 WI$(X)=MID$(WO$,X+1,1):NEXTX            :rem 104
350 LC%=0:OF%=881:BC%=0:GOSUB1000:LW%=LW%-1
                                            :rem 188
400 GETX$:IFX$=""THEN400                    :rem 121
410 X=ASC(X$):IFX<65ORX>90THEN400           :rem 249
500 HI=0:FORY=0TOLW%:IFWI$(Y)<>X$THEN530    :rem 217
510 HI=1:WI$(Y)="$":POKES1+600+CC+(Y*2),X-64
                                            :rem 141
520 LC%=LC%+1                               :rem 152
530 NEXTY:IFHI=1THEN560                     :rem 194
540 GOSUB3000:BC%=BC%+1                     :rem 3
550 IFBC%>10THENGOSUB2000:LO%=LO%+1:FORX=1TO3000:N
    EXTX:GOTO700                            :rem 94
560 IFLC%<=LW%THEN400                       :rem 226
570 GOSUB4000:WI%=WI%+1:GOTO700             :rem 71
700 PRINTCHR$(147);SPC(11);"{BLK}{3 DOWN}ANOTHER E
    LEMENT?"                                :rem 130
710 PRINT"{2 DOWN}";SPC(13);"ENTER {RVS}Y{OFF} OR
    {SPACE}{RVS}N{OFF}"                     :rem 110
720 GETX$:IFX$=""THEN720                    :rem 131
730 IFX$="Y"THENNEXTLC:POKE198,1:GOTO220    :rem 235
740 IFX$<>"N"THEN720                        :rem 122
750 PRINT"{3 DOWN}{11 SPACES}NUMBER CORRECT =";WI%
                                            :rem 184
```

```
760 PRINT"{2 DOWN}{11 SPACES}NUMBER MISSED
    {2 SPACES}=";LO%                              :rem 86
770 GOSUB2500:FORX=1TO500:NEXTX:PRINTCHR$(147)
                                                  :rem 138
775 POKE53272,21                                  :rem 100
780 END                                           :rem 118
800 Y=0                                           :rem 94
810 Z=INT(RND(1)*NW%)+1:IFPEEK(CB+Z)=0THENRETURN
                                                  :rem 231
820 Y=Y+1:IFY<10THEN810                           :rem 108
830 Z=1                                           :rem 99
840 IFPEEK(CB+Z)=0THENRETURN                      :rem 39
850 Z=Z+1:GOTO840                                 :rem 249
1000 PRINT"{CLR}{BLK}{DOWN}{9 SPACES}E L E M E N T
     {3 SPACES}M A N"                              :rem 172
1110 PRINT"{7 DOWN}SYMBOL:"SY$"{2 DOWN}"          :rem 209
1120 PRINT"ATOMIC":PRINT"NUMBER:"XZ$              :rem 54
1500 PRINT"{2 DOWN}{BLK}
     ************************************
     ";                                           :rem 132
1510 PRINT"{2 DOWN} ENTER A LETTER:"              :rem 131
1515 CC=INT((40-(2*LW%))/2)                       :rem 131
1520 X=(LW%-1)                                     :rem 212
1530 FORY=0TOX*2STEP2                             :rem 59
1540 POKES1+600+CC+Y,100:POKES2+600+CC+Y,0:NEXTY
                                                  :rem 66
1550 RETURN                                       :rem 171
2000 FORX=0TOLW%:IFWI$(X)="$"THEN2020             :rem 167
2010 Y=ASC(WI$(X)):POKES1+600+CC+(X*2),Y-64
                                                  :rem 153
2020 NEXTX                                         :rem 91
2030 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15
     :POKEMC+24,15                                :rem 223
2040 FORX=40TO10STEP-2                            :rem 69
2050 POKEMC+1,X:POKEMC+4,17:FORY=1TO40:NEXTY
                                                  :rem 19
2060 POKEMC+4,16:NEXTX                            :rem 74
2070 POKEMC+24,0                                  :rem 117
2080 RETURN                                       :rem 170
2500 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
     9:POKEMC+24,15                               :rem 33
2510 FORX=0TO15                                   :rem 125
2520 Y=INT(NT%(X)/256)                            :rem 215
2530 POKEMC+0,NT%(X)-(Y*256)                      :rem 30
2540 POKEMC+1,Y:POKEMC+4,17                       :rem 87
2550 FORY=1TO75:NEXTY:POKEMC+4,16                 :rem 70
2560 FORY=1TO15:NEXTY,X                           :rem 218
2570 POKEMC+24,0                                  :rem 122
2580 RETURN                                       :rem 175
```

```
3000 PRINT"{BLU}";                              :rem 238
3005 ON(BC%+1)GOTO3010,3020,3030,3040,3050,3060,39
     70,3080,3090,3100,3110,3120              :rem 48
3010 PRINT"{HOME}{3 DOWN}";SPC(18);"{@}X{@}":G
     OTO3500                                   :rem 144
3020 PRINTSPC(17);"{M}O*O{G}":GOTO3500:rem 85
3030 PRINTSPC(17);"< - >":GOTO3500             :rem 3
3040 PRINTSPC(17);"{N} * {G}":GOTO3500
                                              :rem 188
3050 PRINTSPC(18);"{T}{+}{T}":GOTO3500
                                              :rem 155
3060 PRINTSPC(18);"{3 +}":GOTO3500            :rem 162
3070 PRINTSPC(16);"{A}{2 +}{RVS}E{OFF}{2 +}
     {S}":GOTO3500                            :rem 142
3080 PRINTSPC(16);"_ {RVS}{3 SPACES}{OFF} _":GOTO3
     500                                       :rem 14
3090 PRINTSPC(16);"{E} {3 +} {E}":GOTO3500     :rem 5
3100 PRINTSPC(18);"{+} {+}":GOTO3500          :rem 247
3110 PRINTSPC(17);"{£}{+} {+}{£}":rem 12
3500 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15
     :POKEMC+24,15:POKEVC+33,0                :rem 209
3505 POKEMC+1,20                             :rem 118
3510 POKEMC+4,17:FORY=1TO300:NEXTY           :rem 107
3520 POKEMC+4,16:POKEVC+33,15:POKEMC+24,0     :rem 134
3530 POKES1+OF%,X-64:POKES2+OF%,0:OF%=OF%+1
                                              :rem 244
3540 RETURN                                   :rem 172
4000 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15
     :POKEMC+24,15                            :rem 222
4010 FORX=2TO15:POKEVC+33,X:POKEMC+1,(X*5):POKEMC+
     4,17                                       :rem 8
4020 FORY=1TO40:NEXTY:POKEMC+4,16:NEXTX        :rem 9
4030 POKEMC+24,0                             :rem 115
4040 RETURN                                   :rem 168
5000 DATA6430,6069,6430,7217,8101,8583,8101,7217,6
     430,6069,5407,5728                       :rem 136
5010 DATA4817,6430,5407,4291                  :rem 165
10000 DATAACTINIUM,ALUMINUM,AMERICIUM,ANTIMONY,ARG
      ON                                      :rem 255
10010 DATAARSENIC,ASTATINE,BARIUM,BERKELIUM,BERYLL
      IUM                                      :rem 47
10020 DATABISMUTH,BORON,BROMINE,CADMIUM,CALCIUM
                                              :rem 99
10030 DATACALIFORNIUM,CARBON,CERIUM,CESIUM,CHLORIN
      E                                       :rem 139
10040 DATACHROMIUM,COBALT,COPPER,CURIUM,DYSPROSIUM
                                              :rem 149
10050 DATAEINSTEINIUM,ERBIUM,EUROPIUM,FERMIUM,FLUO
      RINE                                    :rem 189
```

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```
10060 DATAFRANCIUM,GADOLINIUM,GALLIUM,GERMANIUM,GO
      LD                                        :rem 213
10070 DATAHAFNIUM,HELIUM,HOLMIUM,HYDROGEN,INDIUM
                                                :rem 207
10080 DATAIODINE,IRIDIUM,IRON,KRYPTON,LANTHANUM
                                                :rem 165
10090 DATALAWRENCIUM,LEAD,LITHIUM,LUTETIUM,MAGNESI
      UM                                        :rem 12
10100 DATAMANGANESE,MENDELEVIUM,MERCURY,MOLYBDENUM
      ,NEODYMIUM                                :rem 96
10110 DATANEON,NEPTUNIUM,NICKEL,NIOBIUM,NITROGEN
                                                :rem 225
10120 DATANOBELIUM,OSMIUM,OXYGEN,PALLADIUM,PHOSPHO
      RUS                                       :rem 129
10130 DATAPLATINUM,PLUTONIUM,POLONIUM,POTASSIUM,PR
      ASEODYMIUM                                :rem 205
10140 DATAPROMETHIUM,PROTACTINIUM,RADIUM,RADON,RHE
      NIUM                                      :rem 183
10150 DATARHODIUM,RUBIDIUM,RUTHENIUM,SAMARIUM,SCAN
      DIUM                                      :rem 174
10160 DATASELENIUM,SILICON,SILVER,SODIUM,STRONTIUM
                                                :rem 176
10170 DATASULFUR,TANTALUM,TECHNETIUM,TELLURIUM,TER
      BIUM                                      :rem 219
10180 DATATHALLIUM,THORIUM,THULIUM,TIN,TITANIUM
                                                :rem 202
10190 DATATUNGSTEN,URANIUM,VANADIUM,XENON,YTTERBIU
      M
10200 DATAYTTRIUM,ZINC,ZIRCONIUM                :rem 151
11000 DATA"AC",89,"AL",13,"AM",95,"SB",51,"AR",18
                                                :rem 69
11010 DATA"AS",33,"AT",85,"BA",56,"BK",97,"BE",4
                                                :rem 15
11020 DATA"BI",83,"B",5,"BR",35,"CD",48,"CA",20
                                                :rem 176
11030 DATA"CF",98,"C",6,"CE",58,"CS",55,"CL",17
                                                :rem 206
11040 DATA"CR",24,"CO",27,"CU",29,"CM",96,"DY",66
                                                :rem 113
11050 DATA"ES",99,"ER",68,"EU",63,"FM",100,"F",9
                                                :rem 38
11060 DATA"FR",87,"GD",64,"GA",31,"GE",32,"AU",79
                                                :rem 81
11070 DATA"HF",72,"HE",2,"HO",67,"H",1,"IN",49
                                                :rem 170
11080 DATA"I",53,"IR",77,"FE",26,"KR",36,"LA",57
                                                :rem 32
11090 DATA"LR",103,"PB",82,"LI",3,"LU",71,"MG",12
                                                :rem 107
```

```
11100 DATA"MN",25,"MD",101,"HG",80,"MO",42,"ND",60
                                           :rem 131
11110 DATA"NE",10,"NP",93,"NI",28,"NB",41,"N",7
                                           :rem 231
11120 DATA"NO",102,"OS",76,"O",8,"PD",46,"P",15
                                           :rem 233
11130 DATA"PT",78,"PU",94,"PO",84,"K",19,"PR",59
                                           :rem 101
11140 DATA"PM",61,"PA",91,"RA",88,"RN",86,"RE",75
                                           :rem 132
11150 DATA"RH",45,"RB",37,"RU",44,"SM",62,"SC",21
                                           :rem 131
11160 DATA"SE",34,"SI",14,"AG",47,"NA",11,"SR",38
                                           :rem 103
11170 DATA"S",16,"TA",73,"TC",43,"TE",52,"TB",65
                                           :rem 44
11180 DATA"TL",81,"TH",90,"TM",69,"SN",50,"TI",22
                                           :rem 154
11190 DATA"W",74,"U",92,"V",23,"XE",54,"YB",70
                                           :rem 187
11200 DATA"Y",39,"ZN",30,"ZR",40           :rem 22
```

4

Four by Four

Skill area: Memory and Logic
Level: 4
Equipment required: None
Modification: Yes

The Race
You're dreaming again, and anything can happen in a dream. This time you're the smartest person on earth, and you're on television to match wits with a computer. In your dream, you need to know something about every subject imaginable. You also must be able to come up with your answers quickly. You can't hope to beat a computer unless you're fast.

How to Play
The computer will select four categories and four letters of the alphabet. In each category you then enter a word that begins with the letter the computer has picked. An asterisk (*) indicates you can use any letter to begin a word. For example, the computer has chosen the letters A, *, K, and W, and the first category is mammals. For the letter A, you select aardvark. The * is a wild card, so you can type in the name of any animal. At first you can't think of an animal whose name begins with a K, so you skip K for now by pressing the RETURN key. (The computer will return to this question later.) For the W, you type wombat. Then the next category appears.

After you've gone through all four categories, the unanswered questions will appear again. The categories will repeat until one of three things happens:

- You've answered all the questions.
- Your four-minute time limit is up.
- You type QUIT instead of entering an answer.

Good spelling is not essential for playing "Four by Four." As long as you enter a word beginning with the correct letter, the computer will consider the answer correct. This puts the responsibility on you to answer the questions honestly. You could cheat, but that is not the object of the game.

When a category asks for people's names, type the person's

last name. For example, when asked for the name of a United States president, you can't put Zachary Taylor's name in the Z column. If you draw Z in the U.S. Presidents category, you'll have to leave that space blank because there are no presidents whose surnames begin with the letter Z.

Scoring

After you've answered all the questions, run out of time, or quit the round, your score will appear. The score is based on the number of correct answers you entered (*correct* means the answer began with the right letter), along with the time it took you to finish the round.

The computer will also give the high score on all rounds of Four by Four you've played in this session. You may only be playing against a computer in your dream, but in reality you can play against yourself or against another person. If you're playing Four by Four with a friend, you can play a round and then tell the computer to give your friend the same categories and letters. Then you'll see who's the quickest to come up with answers.

Four by Four

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM FOUR BY FOUR                              :rem 40
10 VC=53248:POKEVC+32,14:POKEVC+33,1:PRINTCHR$(147
   )                                            :rem 5
20 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX     :rem 20
50 DIMC$(34),L$(27),A$(3,3),C%(3),L%(3),NT%(29):X=
   RND(-TI)                                    :rem 222
60 M=((PEEK(53272)AND240)/16)*1024            :rem 251
70 C=55296-M                                   :rem 108
80 FORX=0TO29:READZ:NT%(X)=Z:NEXTX            :rem 228
100 PRINT"{BLU}{14 SPACES}{RVS}FOUR BY FOUR{OFF}"
                                               :rem 56

110 PRINT"{2 DOWN} THE COMPUTER DISPLAYS FOUR CATE
    GORIES{3 SPACES}AND FOUR LETTERS."    :rem 192
120 PRINT"{DOWN} ENTER AN ANSWER THAT MATCHES THE"
                                               :rem 105

130 PRINT" CATEGORY AND STARTS WITH THE REQUESTED
    {2 SPACES}LETTER ('*' = ANY LETTER)."   :rem 2
140 PRINT"{DOWN} PRESS {RVS}RETURN{OFF} TO SKIP A
    {SPACE}QUESTION AND{6 SPACES}GO BACK TO IT LAT
    ER."                                      :rem 123
```

```
150 PRINT"{DOWN} TYPE {RVS}QUIT{OFF} TO STOP THE G
    AME BEFORE THE{3 SPACES}FOUR MINUTE TIME LIMIT
    ."                                          :rem 3
160 PRINT"{DOWN} SCORING IS BASED ON CORRECT ANSWE
    RS{5 SPACES}AND THE TOTAL TIME USED."    :rem 33
165 GOSUB7500                                :rem 232
170 PRINT"{3 DOWN}{12 SPACES}(PRESS ANY KEY){BLK}"
                                             :rem 219
180 FORX=0TO34:READX$:C$(X)=X$:NEXTX:FORX=0TO27:RE
    ADX$:L$(X)=X$:NEXTX:HS=0                 :rem 216
190 GETX$:IFX$=""THEN190                     :rem 133
200 FORX=0TO3                                 :rem 20
210 Y=INT(RND(1)*35):IFX=0THENGOTO235        :rem 237
220 QQ=0:FORZ=0TOX-1:IFC%(Z)=YTHENQQ=1       :rem 149
230 NEXTZ:IFQQ=1THEN210                      :rem 201
235 C%(X)=Y                                   :rem 65
240 NEXTX                                     :rem 45
250 FORX=0TO3                                 :rem 25
260 Y=INT(RND(1)*28):IFX=0THEN285            :rem 192
270 QQ=0:FORZ=0TOX-1:IFL%(Z)=YTHENQQ=1       :rem 163
280 NEXTZ:IFQQ=1THEN260                      :rem 211
285 L%(X)=Y                                   :rem 79
290 NEXTX                                     :rem 50
300 FORX=0TO3:FORY=0TO3:A$(X,Y)="":NEXTY,X:TI$="00
    0000"                                     :rem 18
400 HC=0:X=0                                 :rem 139
405 Y=0                                       :rem 95
410 FORZ=0TO3:IFA$(X,Z)=""THENY=1            :rem 237
420 NEXTZ:IFY=0THEN700                       :rem 132
430 HC=1:PRINT"{CLR}{2 DOWN}{RED}{2 SPACES}";C$(C%
    (X));"{BLK}"                             :rem 127
440 FORY=0TO3:PRINT"{3 DOWN}{2 SPACES}{RED}";L$(L%
    (Y));"{BLK}":NEXTY                       :rem 109
450 X$="{BLK}{HOME}{6 DOWN}":FORY=0TO3:PRINTX$;"
    {5 RIGHT}";A$(X,Y):X$=X$+"{4 DOWN}":NEXTY
                                             :rem 113
500 Y=0                                       :rem 91
505 IFA$(X,Y)<>""THEN600                      :rem 63
507 QQ=0                                      :rem 171
510 GOSUB7000                                :rem 221
515 IFQQ=1THEN800                              :rem 1
520 IFI$="QUIT"THEN800                        :rem 30
530 IFL$(L%(Y))="*"ANDLEN(I$)>0THEN550       :rem 85
540 IFLEN(I$)=0ORLEFT$(I$,1)<>L$(L%(Y))THEN600
                                             :rem 88
550 A$(X,Y)=I$                               :rem 215
600 Y=Y+1:IFY<=3THEN505                      :rem 120
700 X=X+1:IFX<=3THEN405                      :rem 117
710 IFHC=1THEN400                            :rem 227
```

```
800 S=0:FORX=0TO3:W=0:FORY=0TO3                  :rem 207
810 IFA$(X,Y)<>""THENW=W+1                       :rem 239
820 NEXTY:S=S+(W*W):NEXTX                         :rem 116
830 FORX=0TO3:W=0:FORY=0TO3                       :rem 216
840 IFA$(Y,X)<>""THENW=W+1                        :rem 242
850 NEXTY:S=S+(W*W):NEXTX:Y=0:IFS<16THEN870 :rem 4
860 Y=INT((240-(TI/60))/4):IFY<0THENY=0          :rem 237
870 S=S+Y:Z=0:IFS>HSTHENHS=S:Z=1                  :rem 88
900 PRINT"{CLR}{BLK}{DOWN}{15 SPACES}{RVS}GAME OVE
    R!{OFF}{DOWN}"                                :rem 202
910 PRINT"{DOWN}{5 SPACES}YOUR SCORE =";S   :rem 18
920 PRINT"{DOWN}{5 SPACES}HIGH SCORE =";HS :rem 44
930 IFZ=1THENPRINT"{DOWN}{5 SPACES}{RVS}YOU SET A
    {SPACE}NEW HIGH!{OFF}"                        :rem 253
940 PRINT"{3 DOWN}{5 SPACES}ENTER REPLAY OPTION:"
                                                 :rem 255
950 PRINT"{2 DOWN}{7 SPACES}{RVS}E{OFF} END THE GA
    ME"                                           :rem 76
960 PRINT"{DOWN}{7 SPACES}{RVS}S{OFF} REPLAY WITH
    {SPACE}THE SAME SETUP"                        :rem 25
970 PRINT"{DOWN}{7 SPACES}{RVS}N{OFF} REPLAY WITH
    {SPACE}A NEW SETUP"                           :rem 57
980 GETX$:IFX$=""THEN980                          :rem 147
990 IFX$="S"THEN300                               :rem 67
1000 IFX$="N"THEN200                              :rem 92
1010 IFX$<>"E"THEN980                             :rem 160
1020 GOSUB7500                                    :rem 15
1030 PRINTCHR$(147)                               :rem 63
1040 END                                          :rem 156
7000 I$="":J=245+(Y*160)+M:POKEJ,160:POKEJ+C,0
                                                 :rem 18
7010 GETX$:IFTI$>"000400"THENQQ=1:RETURN    :rem 173
7020 IFX$<>""THEN7030                             :rem 139
7022 TL$=MID$(TI$,3,2)+"."+MID$(TI$,5,2)     :rem 48
7024 PRINT"{HOME}";SPC(17);"{RVS}{BLU}";TL$;"{BLK}
     {OFF}";                                      :rem 22
7026 GOTO7010                                     :rem 208
7030 L=ASC(X$):IFL<>20THEN7100                    :rem 223
7040 IFLEN(I$)=0THEN7010                          :rem 91
7050 X$=LEFT$(I$,LEN(I$)-1):I$=X$:POKEJ+LEN(I$),16
     0:POKEJ+LEN(I$)+1,32                         :rem 191
7060 POKEJ+C+LEN(I$),0:POKEJ+C+LEN(I$)+1,1:GOTO701
     0                                            :rem 181
7100 IFL=13THENPOKEJ+LEN(I$),32:POKEJ+C+LEN(I$),1:
     RETURN                                       :rem 165
7150 IFL>63THENL=L-64                             :rem 234
7160 POKEJ+LEN(I$),L:POKEJ+C+LEN(I$),0:I$=I$+X$
                                                 :rem 196
7170 POKEJ+LEN(I$),160:POKEJ+C+LEN(I$),0:GOTO7010
                                                 :rem 83
```

```
7500 REM *** PLAY THE SONG ***            :rem 250
7510 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
     9:POKEMC+24,15                       :rem 39
7520 FORX=0TO29                           :rem 136
7530 Y=INT(NT%(X)/256)                    :rem 221
7540 POKEMC+0,NT%(X)-(256*Y)              :rem 36
7550 POKEMC+1,Y:POKEMC+4,17               :rem 93
7560 FORY=1TO200:NEXTY:POKEMC+4,16        :rem 114
7570 FORY=1TO20:NEXTY,X:POKEMC+24,0       :rem 194
7580 RETURN                               :rem 180
8000 DATA7217,5728,4291,4291,5728,7217,7217,7217,6
     430,5407,4291,4291                   :rem 147
8010 DATA5407,6430,6430,6430,7217,5728,4291,4291,5
     728                                  :rem 151
8020 DATA7217,7217,7217,8583,8583,7217,6430,5728,5
     728                                  :rem 177
9000 DATA"NAMES OF U.S. CITIES","NAMES OF U.S. STA
     TES","NAMES OF FRUITS"               :rem 156
9010 DATA"NAMES OF VEGETABLES","FAMOUS SINGERS","C
     HEMICAL ELEMENTS"                    :rem 108
9020 DATA"U.S. PRESIDENTS","NAMES OF BIRDS":rem 27
9030 DATA"NAMES OF FLOWERS","FAMOUS WOMEN","FAMOUS
     MEN"                                 :rem 49
9040 DATA"MUSICAL INSTRUMENTS","ORGANS OF THE BODY
     "                                    :rem 131
9050 DATA"NAMES OF ANIMALS","NATIONS OF THE WORLD"
     ,"NAMES OF OCCUPATIONS"              :rem 133
9060 DATA"FAMOUS SONG TITLES","NAMES OF CARS","NAM
     ES OF SPICES"                        :rem 230
9070 DATA"NAMES OF INSECTS","FAMOUS BOOK TITLES","
     BOOKS OF THE BIBLE"                  :rem 77
9080 DATA"FAMOUS AUTHORS","WEIGHTS AND MEASURES"
                                          :rem 227
9090 DATA"WORLD LEADERS","NAMES OF MAMMALS","NAMES
     OF COLORS"                           :rem 132
9100 DATA"NAMES OF FISH","BREEDS OF DOG","MAGAZINE
     NAMES"                               :rem 31
9110 DATA"CORPORATION NAMES"              :rem 237
9120 DATA"MOVIE ACTORS","MOVIE ACTRESSES","NAMES O
     F MOVIES"                            :rem 95
9130 DATA"NAMES OF T.V. SHOWS"            :rem 206
9500 DATAA,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P,R,S,T,U,V
     ,W,Y,Z,*,*,*,*                       :rem 106
```

Heavenly Bodies

Skill area: Science
Level: 4
Equipment required: None
Modification: Yes

Exploring the Solar System

"Heavenly Bodies" is a question-and-answer game designed to teach the planets of the solar system. Points are given if you correctly identify a planet from a clue given.

How to Play

The game consists of 100 questions, each of which pertains to one of the nine known planets or the Planet X of astronomical theory. You indicate your answer by entering the first letter of the planet. If you enter an incorrect answer, the correct answer will flash on the computer screen before play resumes.

You can quit playing at any time by pressing the f1 key. Your percentage score will not be affected if you quit before all 100 questions have been asked.

Scoring

You will receive ten points for each correct answer, and one point will be deducted for each incorrect response. A score, based on the number of questions asked and the number of questions answered correctly, will be shown at the end of the game. You will be given both a numerical score and your percentage score.

Heavenly Bodies

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM HEAVENLY BODIES                           :rem 39
100 NQ=100:S=((PEEK(53272)AND240)/16)*1024:rem 211
110 CB=828:X=RND(-TI):VC=53248:MC=54272    :rem 229
112 FORX=54272TO54296:POKEX,0:NEXTX         :rem 175
115 POKEVC+32,6:POKEVC+33,0                  :rem 64
120 PRINTCHR$(147);"{WHT}{DOWN}{RVS}{11 SPACES}HEA
    VENLY{2 SPACES}BODIES{13 SPACES}{OFF}";
                                            :rem 148
125 READX$:IFX$<>"$SPECIAL"THEN125          :rem 31
```

```
127 DIM NT%(26,1):FORX=0TO26:FORY=0TO1:READZ:NT%(X
    ,Y)=Z:NEXTY,X                            :rem 201
128 FORX=832TO832+63:READZ:POKEX,Z:NEXTX    :rem 80
130 PRINT"{2 DOWN}YOU WILL BE PRESENTED WITH FACTS
     ABOUT"                                 :rem 21
140 PRINT"EACH OF THE PLANETS IN THE SOLAR SYSTEM.
    ";                                      :rem 75
150 PRINT"{DOWN}YOU MUST INDICATE THE PLANET TO WH
    ICH{3 SPACES}THAT FACT APPLIES."        :rem 69
160 PRINT"{2 DOWN}{14 SPACES}--SCORING--"   :rem 83
170 PRINT"{DOWN}{12 SPACES}CORRECT{3 SPACES}=
    {2 SPACES}+10":PRINT"{12 SPACES}INCORRECT =
    {3 SPACES}-1"                           :rem 164
175 PRINT"{DOWN}{9 SPACES}PRESS {RVS}F1{OFF} TO QU
    IT EARLY"                               :rem 138
180 PRINT"{2 DOWN}{15 SPACES}{RVS}GOOD LUCK!{OFF}"
                                            :rem 169
185 GOSUB8000                               :rem 230
190 PRINT"{2 DOWN}{8 SPACES}(PRESS ANY KEY TO STAR
    T){YEL}"                                :rem 11
195 GETX$:IFX$=""THEN195                    :rem 143
200 S%=0:QA=0:QC=0:FORX=1TONQ                :rem 20
210 POKECB+X,0:NEXTX:PRINT"{DOWN}{4 SPACES}(GAME W
    ILL START IN TEN SECONDS){WHT}";        :rem 17
220 FORX=1TONQ                              :rem 131
230 Y=0                                     :rem 91
240 Z=INT(RND(1)*NQ)+1:IFPEEK(CB+Z)=0THEN290
                                            :rem 116
250 Y=Y+1:IFY<6THEN240                      :rem 59
260 Z=1                                     :rem 96
270 IFPEEK(CB+Z)=0THEN290                   :rem 223
280 Z=Z+1:GOTO270                           :rem 243
290 POKECB+Z,X:NEXTX:POKEVC+33,15:PRINTCHR$(147)
                                            :rem 3
300 X=1                                     :rem 89
305 Y=PEEK(CB+X)-1                          :rem 10
310 RESTORE:IFY=0THEN330                    :rem 12
320 FORZ=1TOY:READQ$,A$:NEXTZ              :rem 111
330 READQ$,A$                               :rem 184
400 PRINTCHR$(147);"{BLK}{24 DOWN}";SPC(15);"SCORE
    =";S%;                                  :rem 180
403 PRINT"{HOME}{RVS}**********{2 SPACES}HEAVENLY
    {2 SPACES}BODIES{2 SPACES}**********{OFF}";
                                            :rem 180
405 FORZ=1TO8:PRINT"{BLU}{RVS}{40 SPACES}{OFF}";:N
    EXTZ                                    :rem 255
410 PRINT"{BLK}{2 DOWN}{3 SPACES}ENTER YOUR ANSWER
    :"                                      :rem 239
420 PRINT"{DOWN}{4 SPACES}M = MERCURY"      :rem 41
```

```
430 PRINT"{4 SPACES}V = VENUS"               :rem 140
440 PRINT"{4 SPACES}E = EARTH"               :rem 95
450 PRINT"{4 SPACES}A = MARS"                :rem 27
460 PRINT"{4 SPACES}J = JUPITER"             :rem 21
470 PRINT"{4 SPACES}S = SATURN"              :rem 217
480 PRINT"{4 SPACES}U = URANUS"              :rem 221
490 PRINT"{4 SPACES}N = NEPTUNE"             :rem 24
500 PRINT"{4 SPACES}P = PLUTO"               :rem 135
510 PRINT"{4 SPACES}X = PLANET X"            :rem 24
600 PRINT"{BLU}{RVS}{HOME}{4 DOWN}";Q$;".{OFF}"
                                             :rem 222
610 POKE198,0                                :rem 196
620 GETX$:IFX$=""THEN620                     :rem 129
630 IFASC(X$)=133THEN910                     :rem 105
635 QA=QA+1                                  :rem 91
637 IFX$=A$THEN820                           :rem 22
640 IFX$="M"ORX$="V"ORX$="E"ORX$="A"ORX$="J"ORX$="
    U"ORX$="S"THEN670                        :rem 193
650 IFX$="N"ORX$="P"ORX$="X"THEN670          :rem 37
660 GOTO620                                  :rem 109
670 Y=1:IFA$="V"THENY=2                      :rem 96
680 IFA$="E"THENY=3                          :rem 80
690 IFA$="A"THENY=4                          :rem 78
700 IFA$="J"THENY=5                          :rem 80
710 IFA$="S"THENY=6                          :rem 91
720 IFA$="U"THENY=7                          :rem 95
730 IFA$="N"THENY=8                          :rem 90
740 IFA$="P"THENY=9                          :rem 94
750 IFA$="X"THENY=10                         :rem 143
760 Y=(Y*40)+484+S                           :rem 180
770 POKEMC+0,0:POKEMC+5,15:POKEMC+6,15:POKEMC+24,1
    5:POKEVC+32,2                            :rem 247
780 FORZ=1TO4:POKEMC+1,10:POKEMC+4,17        :rem 243
790 FORW=YTOY+30:POKEW,PEEK(W)+128:NEXTW:FORW=1TO1
    0:NEXTW                                  :rem 7
800 POKEMC+1,15:FORW=YTOY+30:POKEW,PEEK(W)-128:NEX
    TW:POKEMC+4,16:NEXTZ                     :rem 236
810 POKEMC+24,0:POKEVC+32,6:S%=S%-1:GOTO900:rem 10
820 POKEMC+0,0:POKEMC+5,15:POKEMC+6,15:POKEMC+1,0:
    POKEMC+24,15                            :rem 180
830 FORW=4TO15:POKEVC+33,W:POKEMC+1,W*2:POKEMC+4,1
    7:FORZ=1TO60:NEXTZ                       :rem 78
840 POKEMC+4,16:NEXTW:POKEMC+24,0            :rem 3
850 S%=S%+10:QC=QC+1                         :rem 81
900 X=X+1:IFX<=NQTHEN305                     :rem 226
910 PRINTCHR$(147);"{BLK}{2 DOWN}{15 SPACES}{RVS}G
    AME OVER!{OFF}"                          :rem 97
920 PRINT"{3 DOWN}{7 SPACES}# QUESTIONS =";QA
                                             :rem 151
```

```
930 PRINT"{DOWN}{7 SPACES}# CORRECT{3 SPACES}=";QC
                                        :rem 191
940 IFQA=0THENQA=1                      :rem 90
950 X=INT((QC*100)/QA)                  :rem 208
960 PRINT"{DOWN}{7 SPACES}% CORRECT{3 SPACES}=";X;
    "{LEFT}%"                           :rem 201
970 PRINT"{3 DOWN}{9 SPACES}SCORE ="S%  :rem 213
980 PRINT"{3 DOWN}{7 SPACES}PLAY AGAIN? ({RVS}Y
    {OFF} OR {RVS}N{OFF})"              :rem 91
990 GETX$:IFX$=""THEN990                :rem 149
1000 IFX$="Y"THEN200                    :rem 103
1010 IFX$<>"N"THEN940                   :rem 165
1020 PRINTCHR$(147):END                 :rem 79
2000 DATA"THE SECOND-SMALLEST KNOWN PLANET, ITS
     {3 SPACES}DIAMETER IS 3100 MILES",M   :rem 90
2010 DATA"IT MOVES AROUND THE SUN AT 30 MILES PER
     {SPACE}SECOND",M                   :rem 118
2020 DATA"IT CIRCLES THE SUN EVERY 88 'EARTH'
     {5 SPACES}DAYS",M                  :rem 2
2030 DATA"IT TAKES 59 'EARTH' DAYS TO TURN ONCE ON
     ITS AXIS",M                        :rem 229
2040 DATA"ITS SUN SIDE IS 800 DEGREES FAHRENHEIT",
     M                                  :rem 185
2050 DATA"THE SIDE AWAY FROM THE SUN MAY BE ABOUT
     {SPACE}ROOM TEMPERATURE",M         :rem 85
2060 DATA"IT MAY HAVE A THIN ATMOSPHERE OF
     {8 SPACES}HYDROGEN AND HELIUM",M   :rem 63
2070 DATA"IT HAS A PERMANENT MAGNETIC FIELD
     {7 SPACES}DESPITE ITS SLOW ROTATION",M:rem 99
2080 DATA"IT IS APPROXIMATELY 36 MILLION MILES
     {4 SPACES}FROM THE SUN",M          :rem 203
2090 DATA"IT IS THE NEAREST PLANET TO THE SUN",M
                                        :rem 12
2100 DATA"IT IS USUALLY THE 2ND PLANET FROM THE
     {3 SPACES}SUN",V                   :rem 127
2110 DATA"ITS APPROXIMATE DISTANCE FROM THE SUN IS
     67 MILLION MILES",V                :rem 203
2120 DATA"ONCE EVERY 19 MONTHS, IT IS THE NEAREST
     {SPACE}PLANET TO THE SUN",V        :rem 46
2130 DATA"EXCEPT FOR THE SUN AND OUR MOON, IT IS
     {2 SPACES}THE SKY'S BRIGHTEST OBJECT",V
                                        :rem 73
2140 DATA"ITS BRIGHTNESS IS CAUSED BY ITS THICK,
     {2 SPACES}WHITE CLOUD COVER",V     :rem 130
2150 DATA"ITS ATMOSPHERE IS PROBABLY COMPOSED OF
     {2 SPACES}SULPHURIC ACID",V        :rem 70
2160 DATA"ITS SURFACE TEMPERATURE IS 600 DEGREES
     {2 SPACES}FAHRENHEIT",V            :rem 255
2170 DATA"ITS CARBON DIOXIDE ATMOSPHERE IS 100
     {4 SPACES}TIMES EARTH'S PRESSURE",V    :rem 99
```

```
2180 DATA"ITS DAY IS 117.4 'EARTH' DAYS, AND ITS
     {2 SPACES}YEAR IS 225 DAYS",V          :rem 137
2190 DATA"IT HAS HIGH ALTITUDE WINDS OF 200 M.P.H"
     ,V                                     :rem 142
2200 DATA"THE 5TH LARGEST PLANET, ITS DIAMETER IS
     {SPACE}ALMOST 8,000 MILES",E            :rem 92
2210 DATA"ITS CORE IS PROBABLY A SOLID METALLIC
     {3 SPACES}AND MAGNETIC SUBSTANCE",E  :rem 110
2220 DATA"EVERY 200 FEET BELOW ITS SURFACE, THE
     {3 SPACES}TEMPERATURE RISES 1 DEGREE",E:rem 6
2230 DATA"ITS ATMOSPHERE CONSISTS OF OXYGEN,
     {6 SPACES}HYDROGEN AND ARGON",E        :rem 57
2240 DATA"ITS ATMOSPHERE EXTENDS 300,000 FEET
     {5 SPACES}ABOVE THE PLANET'S SURFACE",E
                                           :rem 162
2250 DATA"THE AVERAGE DAY IS 23 HOURS, 56 MINUTES
     {SPACE}OF 'EARTH' TIME",E              :rem 38
2260 DATA"ONE OF ITS OCEANS COVERS MORE THAN 125%
     {SPACE}OF ITS LAND MASS",E            :rem 126
2270 DATA"ITS MOST PREVALENT LIFE FORM IS INSECT",
     E                                      :rem 52
2280 DATA"IT IS THE THIRD PLANET FROM THE SUN",E
                                           :rem 255
2290 DATA"WATER VAPOR ACCOUNTS FOR UP TO 4% OF ITS
     ATMOSPHERIC VOLUME",E                  :rem 43
2300 DATA"IT IS THE 4TH PLANET FROM THE SUN, AND
     {2 SPACES}THE 1ST PLANET BEYOND EARTH",A
                                           :rem 250
2310 DATA"ITS YEAR IS 687 'EARTH' DAYS LONG",A
                                            :rem 22
2320 DATA"ITS DIAMETER IS 4,200 MILES",A  :rem 213
2330 DATA"ITS DAY IS 24 HOURS AND 37 MINUTES LONG
     {SPACE}IN 'EARTH' TIME",A              :rem 14
2340 DATA"ITS APPROXIMATE DISTANCE FROM THE SUN IS
     141 MILLION MILES",A                  :rem 228
2350 DATA"ITS CARBON DIOXIDE ATMOSPHERE IS 1-2%
     {3 SPACES}THE PRESSURE OF EARTH'S",A :rem 102
2360 DATA"MOST OF ITS SURFACE IS A DESERT OF
     {6 SPACES}REDDISH SAND AND ROCK",A    :rem 203
2370 DATA"ITS MYSTERIOUS 'CANALS' MAY BE GIANT
     {4 SPACES}CANYONS",A                  :rem 167
2380 DATA"IT HAS TWO MOONS-- DEIMOS AND PHOBOS",A
                                            :rem 80
2390 DATA"IT HAS A VOLCANIC SURFACE BUT WAS ONCE
     {2 SPACES}PROBABLY COVERED WITH WATER",A
                                           :rem 200
2400 DATA"ITS 88,000-MILE DIAMETER MAKES IT THE
     {3 SPACES}LARGEST KNOWN PLANET",J     :rem 167
2410 DATA"ONE OF ITS DAYS IS ONLY 10 'EARTH' HOURS
     LONG",J                              :rem 245
```

```
2420 DATA"ITS APPROXIMATE DISTANCE FROM THE SUN IS
     480 MILLION MILES",J                    :rem 242
2430 DATA"ITS YEAR IS NEARLY 12 'EARTH' YEARS
     {5 SPACES}LONG",J                       :rem 254
2440 DATA"NO KNOWN LIFE FORM COULD SURVIVE ITS
     {4 SPACES}ATMOSPHERE OF METHANE",J      :rem 70
2450 DATA"IT IS COVERED WITH CLOUDS OF AMMONIA ICE
     CRYSTALS",J                            :rem 195
2460 DATA"IT MAY BE A GASEOUS PLANET WITH NO SOLID
     CORE",J                                 :rem 68
2470 DATA"IT HAS AT LEAST 16 MOONS, 4 OF WHICH ARE
     ALMOST MERCURY'S SIZE",J                 :rem 7
2480 DATA"ITS MASS IS DOUBLE THAT OF ALL THE OTHER
     PLANETS COMBINED",J                    :rem 119
2490 DATA"ITS MOST FAMOUS MOONS ARE IO AND
     {8 SPACES}GANYMEDE",J                  :rem 186
2500 DATA"IT IS LOCATED 1.8 BILLION MILES FROM THE
     SUN",U
2510 DATA"ITS YEAR IS 84 'EARTH' YEARS LONG",U
                                             :rem 70
2520 DATA"ITS DAY IS 15.5 'EARTH' HOURS LONG",U
                                             :rem 94
2530 DATA"ITS DIAMETER IS 32,000 MILES",U   :rem 27
2540 DATA"IT WAS DISCOVERED IN 1781 BY SIR WILLIAM
     HERSCHEL",U                            :rem 104
2550 DATA"ITS NORTH POLE IS TILTED 98 DEGREES OFF
     {SPACE}A PERPENDICULAR ORBIT",U        :rem 146
2560 DATA"IT HAS AT LEAST FIVE MOONS AND EIGHT
     {4 SPACES}RINGS ALONG ITS EQUATOR",U   :rem 50
2570 DATA"ITS SURFACE IS PROBABLY ROCKY WITH AN
     {3 SPACES}ICY CRUST",U                 :rem 102
2580 DATA"ITS EXTREME TILT CAUSES 'SUMMER' TO BE
     {2 SPACES}42 'EARTH' YEARS LONG",U     :rem 230
2590 DATA"ITS WAS THE FIRST PLANET DISCOVERED
     {5 SPACES}AFTER BODE'S THEORY",U       :rem 128
2600 DATA"IT IS 900 MILLION MILES FROM THE SUN--
     {2 SPACES}TWICE JUPITER'S DISTANCE",S:rem 206
2610 DATA"ITS EQUATORIAL DIAMETER IS 71,000 MILES"
     ,S                                      :rem 18
2620 DATA"ITS DAY IS 10 'EARTH' HOURS LONG",S
                                            :rem 245
2630 DATA"ITS ATMOSPHERE AND SURFACE RESEMBLE A
     {3 SPACES}COLDER VERSION OF JUPITER",S
                                            :rem 147
2640 DATA"OF ITS KNOWN 16 MOONS, SIX WERE
     {9 SPACES}DISCOVERED AFTER 1979",S     :rem 53
2650 DATA"ITS RINGS ARE 170,000 MILES IN DIAMETER"
     ,S                                     :rem 165
2660 DATA"THE THICKNESS OF ITS RINGS IS ONLY 10
     {3 SPACES}MILES",S                     :rem 249
```

```
2670 DATA"ITS RINGS ARE COMPOSED OF MATERIAL THAT
     {SPACE}MAY BE A SHATTERED MOON",S     :rem 242
2680 DATA"ITS YEAR IS 29.5 'EARTH' YEARS LONG",S
                                          :rem 174
2690 DATA"ITS MOON TITAN IS UNIQUE BECAUSE IT HAS
     {SPACE}AN ATMOSPHERE",S               :rem 194
2700 DATA"IT IS USUALLY CLOSER TO THE SUN THAN
     {4 SPACES}PLUTO",N                    :rem 10
2710 DATA"UNTIL 1989, IT WILL BE FARTHEST FROM THE
     SUN OF THE KNOWN PLANETS",N           :rem 23
2720 DATA"ITS DISTANCE FROM THE SUN IS ABOUT 2.8
     {2 SPACES}BILLION MILES",N            :rem 27
2730 DATA"ITS YEAR IS 165 'EARTH' YEARS LONG",N
                                          :rem 115
2740 DATA"IT HAS AT LEAST 3 MOONS, THE LARGEST OF
     {SPACE}WHICH IS TRITON",N             :rem 142
2750 DATA"LIKE JUPITER, IT MAY PRODUCE HEAT
     {7 SPACES}INDEPENDENTLY OF THE SUN",N :rem 17
2760 DATA"ITS INCREASE IN BRIGHTNESS MAY HINT HUGE
     SURFACE STORMS",N                     :rem 165
2770 DATA"ITS DIAMETER IS ABOUT 30,000 MILES",N
                                          :rem 147
2780 DATA"IT HAS A DAY OF 16 'EARTH' HOURS",N
                                          :rem 144
2790 DATA"ASTRONOMERS FOUND IT AFTER LOOKING LESS
     {SPACE}THAN 30 MINUTES",N             :rem 143
2800 DATA"IT IS USUALLY ABOUT 5,900 BILLION MILES
     {SPACE}FROM THE SUN",P                :rem 15
2810 DATA"ITS ERRATIC ORBIT MAY BRING IT CLOSER
     {3 SPACES}TO THE SUN THAN NEPTUNE",P :rem 161
2820 DATA"IT TAKES 247.7 'EARTH' YEARS TO CIRCLE
     {2 SPACES}THE SUN",P                  :rem 47
2830 DATA"ITS DAY IS 6.4 'EARTH' DAYS LONG",P
                                          :rem 204
2840 DATA"USING MATHEMATICAL COMPUTATION, IT WAS
     {2 SPACES}DISCOVERED IN 1930",P       :rem 235
2850 DATA"IT HAS AT LEAST ONE MOON, CHARON",P
                                          :rem 50
2860 DATA"ITS DIAMETER IS ABOUT 1,500 MILES",P
                                          :rem 104
2870 DATA"IT WAS DISCOVERED BY AMERICAN CLYDE
     {5 SPACES}TOMBAUGH",P                 :rem 190
2880 DATA"IT MAY HAVE ONCE BEEN A MOON OF NEPTUNE"
     ,P                                    :rem 193
2890 DATA"IT TAKES SUNLIGHT 5.5 HOURS TO REACH
     {4 SPACES}THIS PLANET",P              :rem 91
2900 DATA"CLYDE TOMBAUGH WAS LOOKING FOR THIS
     {5 SPACES}PLANET WHEN HE FOUND PLUTO",X
                                          :rem 37
```

```
2910 DATA"ITS MASS IS ESTIMATED AT 286 TIMES THAT
     {SPACE}OF EARTH",X                       :rem 255
2920 DATA"ITS YEAR IS ABOUT 464 'EARTH' YEARS",X
                                              :rem 203
2930 DATA"BODE'S LAW ESTIMATES IT IS 7,172 MILLION
     MILES FROM THE SUN",X                    :rem 166
2940 DATA"IT HAS A FAMILY OF 16 COMETS",X :rem 244
2950 DATA"ITS ORBIT IS ESTIMATED TO BE 120 DEGREES
     OFF PERPENDICULAR",X                     :rem 195
2960 DATA"ITS MASS IS THREE TIMES THAT OF SATURN",
     X                                         :rem 16
2970 DATA"IT LIES IN THE SAME GENERAL DIRECTION AS
     CASSIOPEIA",X                             :rem 48
2980 DATA"IT HAS NEVER BEEN SEEN WITH THE NAKED
     {3 SPACES}EYE, OR WITH A TELESCOPE",X :rem 68
2990 DATA"IT MADE NEPTUNE AND URANUS DEVIATE FROM
     {SPACE}THEIR CALCULATED ORBITS",X     :rem 145
8000 POKEVC+0,160:POKEVC+1,0:Z=9:POKEVC+16,0
                                              :rem 98
8010 POKEVC+23,0:POKEVC+27,0:POKEVC+28,0     :rem 98
8020 POKEVC+29,1:POKEVC+39,7:POKE2040,13     :rem 64
8030 POKEMC+5,79:POKEMC+6,129:POKEMC+0,0:POKEMC+1,
     1                                        :rem 10
8040 POKEMC+24,15:POKEVC+21,1                :rem 155
8050 FORX=0TO26:Z=Z+9:POKEVC+1,Z             :rem 247
8060 Y=INT(NT%(X,0)/256):POKEMC+1,Y           :rem 18
8070 POKEMC+0,NT%(X,0)-(Y*256):POKEMC+4,17:rem 107
8080 FORY=1TONT%(X,1)*70:NEXTY:POKEMC+4,16    :rem 60
8090 FORY=1TO20:NEXTY,X                      :rem 218
8100 POKEVC+21,0:POKEMC+24,0                  :rem 97
8110 RETURN                                  :rem 170
9000 DATA"$SPECIAL"                           :rem 76
9010 DATA1204,4,0,.5,1607,4,2025,4,1607,4,1351,2,1
     607,2,1607,1,1351,1                      :rem 85
9020 DATA1607,1,1351,1,1607,2,1607,2,1351,1,1204,2
     ,0,2,1204,4,1607,4,2025,4                :rem 115
9030 DATA1607,4,2408,2,2025,2,2025,1,1607,1,1804,1
     ,1570,1,1607,8                           :rem 114
9100 DATA128,248,8,67,254,16,39,255,32,15,255,128,
     31,255,192,63,255,224,63,255              :rem 80
9110 DATA224,120,112,240,124,249,240,255,223,248,2
     55,223,248,255,143,248                    :rem 14
9120 DATA251,254,248,121,252,240,126,115,240,63,14
     3,224,31,255,192,15                      :rem 111
9130 DATA255,128,39,255,32,67,254,16,128,248,8,0
                                              :rem 127
```

Mother Earth

Skill area: Social Studies
Level: 4
Equipment required: None
Modification: Yes

Exploring the World

"Mother Earth" is actually two games — one a question-and-answer game concerning the world's major countries, and the other a similar game concerning countries that are not as prominent in world affairs. More than 120 countries are represented in Mother Earth, but geography buffs will note that other smaller countries (many of them possessions of Great Britain) are not mentioned in the game. If you want to include other countries, you should refer to the Programmer's Notes.

Typing Mother Earth

Mother Earth has been divided into three separate programs. All three programs can be merged to make one very large program and will function as one program with all the countries. The second option for entering it is to create two separate programs.

To create two separate programs, first type in and SAVE Program 1, the Main Listing. The Main Listing will be used with both sets of data programs. Once Program 1 has been SAVEd to disk or tape, LOAD it back into memory. Then type in Program 2 and SAVE the whole program (Programs 1 and 2) to disk or tape. If all goes well you will have a complete working version of Mother Earth which includes only the countries listed in group 1.

To create the second version of Mother Earth, containing the information about the other group, simply reLOAD Program 1 and add to it Program 3. Once you have Program 1 and Program 3 together in memory, SAVE it to disk or tape.

How to Play

After loading Mother Earth 1 or Mother Earth 2 into the computer, you'll be asked to choose the area of the world you wish to cover. These include:

   A Europe
   B North Africa and the Middle East

Level

4

C Africa
D Asia and the Pacific
E Western Hemisphere

Questions will be asked about the countries in the area you choose. Points are given depending on how fast you identify a country from the clues given.

You'll be asked up to five questions about each country. Identify the country by typing in the name. Because these names must be spelled correctly for the computer to count the answers correct, the spellings appear alphabetically, by game, below:

Mother Earth 1

Afghanistan	Germany	Lebanon	Spain
Argentina	Ghana	Liberia	Sudan
Australia	Great Britain	Libya	Sweden
Austria	Greece	Mexico	Switzerland
Brazil	India	Namibia	Syria
Cambodia	Iran	Norway	Taiwan
Canada	Iraq	Pakistan	Turkey
Chile	Ireland	Panama	Uganda
China	Israel	Paraguay	United States
Cuba	Italy	Peru	Uruguay
Denmark	Ivory Coast	Saudi Arabia	USSR
Egypt	Japan	Scotland	Venezuela
Ethiopia	Jordan	Senegal	Vietnam
Finland	Kenya	South Africa	Zimbabwe
France	Korea		

Mother Earth 2

Albania	Congo	Honduras
Algeria	Costa Rica	Hungary
Angola	Cyprus	Iceland
Bahamas	Czechoslovakia	Indonesia
Bangladesh	Dominican Republic	Jamaica
Belgium	Ecuador	Kuwait
Benin	El Salvador	Lesotho
Bolivia	Gabon	Luxembourg
Botswana	The Gambia	Madagascar
Bulgaria	Guatemala	Mauritania
Burma	The Guianas	Morocco
Cameroon	Guinea	Mozambique
Colombia	Haiti	The Netherlands

New Zealand	Rumania	Tunisia
Nicaragua	Sierra Leone	U. Arab Emirates
Oman	Somalia	Yemen
Philippines	South Yemen	Yugoslavia
Poland	Sri Lanka	Zaire
Portugal	Tanzania	Zambia
Puerto Rico	Thailand	
Qatar	Togo	

The countries represented in Mother Earth 1 and Mother Earth 2 are divided according to the relative importance of the country *in the geographical section of the world where it is located.* You may argue that Guatemala or Poland isn't in the same class as Togo or South Yemen, but the former countries occupy the same relative status in the Western Hemisphere and Europe as the latter countries do in Africa and the Middle East.

If a question is asked that you don't know the answer to, you should make a guess or press the RETURN key. Up to five questions will be asked randomly about each country; one of the five questions will always be the country's capital or capitals. The last question will always be a multiple-choice question.

You can quit playing at any time by typing END and pressing RETURN. Your percentage score will not be affected if you quit before all questions have been asked.

Scoring
Points will be awarded as follows:

If the question is answered after 1 clue, 5 points.

If the question is answered after 2 clues, 4 points.

If the question is answered after 3 clues, 3 points.

If the question is answered after 4 clues, 2 points.

If the question is answered after 5 clues, 1 point.

If the computer has to answer the question for you, −5 points.

At the end of the game, a numerical score will be shown. A percentage score will also be given to let you know the grade you earned. You will then be asked if you want to play again.

Program 1. Mother Earth – Main Listing
Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

Level

4

```
1 REM MOTHER EARTH                              :rem 88
100 CB=828:MP=1017                              :rem 210
110 VC=53248:MC=54272                           :rem 121
120 POKEVC+32,9:POKEVC+33,12                     :rem 114
130 PRINTCHR$(147)                              :rem 15
140 DIM QT$(29,4),NT%(37,2)                     :rem 96
150 READX$:IFX$<>"$SONG"THEN150                  :rem 81
160 FORX=0TO37:FORY=0TO2:READZ                   :rem 188
170 NT%(X,Y)=Z:NEXTY,X                          :rem 122
200 GOSUB700                                    :rem 169
205 GOSUB1000:S%=0:FORX=1TONE:POKECB+X,0:NEXTX
                                                :rem 178
210 FORX=1TONE:GOSUB800:POKECB+Z,X:NEXTX        :rem 144
300 X=1                                         :rem 89
310 Y=PEEK(CB+X)-1                              :rem 6
340 FORW=0TO3:RS(W)=0:NEXTW                      :rem 220
350 FORW=1TO4                                   :rem 27
360 V=INT(RND(1)*4):IFRS(V)<>0THEN360            :rem 179
370 RS(V)=W:NEXTW                               :rem 74
400 W=0                                         :rem 88
410 PRINTCHR$(147);"{BLK}{23 DOWN}";SPC(15);"SCORE
    =";S%;                                      :rem 164
415 PRINT"{HOME}{3 DOWN}{3 SPACES}QUESTION #";W+1
                                                :rem 58
420 X$=QT$(Y,RS(W)-1)                           :rem 153
430 PRINT"{3 DOWN}";X$;".{3 DOWN}"              :rem 50
440 GOSUB900:IFX$="Q"THEN500                     :rem 12
445 IFX$="END"THEN600                           :rem 197
450 W=W+1:IFW<=3THEN410                          :rem 112
460 W=4:GOSUB2000                               :rem 222
470 IFX$="Q"THEN500                             :rem 188
475 IFX$="END"THEN600                           :rem 200
480 PRINT"{WHT}{3 DOWN}{3 SPACES}";QT$(Y,4):S%=S%-
    5                                           :rem 124
490 FORW=1TO2500:NEXTW                          :rem 131
495 GOTO580                                     :rem 120
500 REM ***** CORRECT ANSWER *****              :rem 255
510 S%=S%+(5-W)                                 :rem 248
520 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15
                                                :rem 149
530 POKEMC+24,15:RP=10:FORV=6TO12                :rem 228
540 POKEVC+33,V:POKEMC+1,RP:POKEMC+4,17          :rem 131
550 FORDR=1TO50:NEXTDR:POKEMC+4,16              :rem 135
560 RP=RP+10:NEXTV                              :rem 119
570 POKEMC+24,0                                 :rem 72
580 X=X+1:IFX<=NETHEN310                        :rem 214
600 PRINT"{BLK}{CLR}{DOWN}{15 SPACES}{RVS}TEST OVE
    R!{OFF}"                                    :rem 220
610 PRINT"{3 DOWN}{4 SPACES}YOUR SCORE = ";S%
                                                :rem 86
```

```
620 IFS%<ØTHENS%=Ø                                :rem 31
625 X=X-1:IFX<1THENX=1                            :rem 107
630 X=INT((S%*100)/(X*5))                         :rem 37
640 PRINT"{DOWN}{4 SPACES}YOUR GRADE = ";X;"{LEFT}
    %"                                            :rem 63
650 PRINT"{3 DOWN} PLAY AGAIN?":PRINT"{DOWN} ENTER
    {RVS}Y{OFF} OR {RVS}N{OFF}"                   :rem 158
660 GETX$:IFX$=""THEN660                          :rem 137
670 IFX$="Y"THEN205                               :rem 72
680 IFX$<>"N"THEN660                              :rem 128
690 GOSUB1500:PRINTCHR$(147):END                  :rem 171
700 PRINTCHR$(147):PRINT"{BLK}{RVS}{14 SPACES}MOTH
    ER EARTH{14 SPACES}{OFF}";                    :rem 207
705 PRINT"{2 DOWN}YOU WILL BE ASKED UP TO 5 QUESTI
    ONS"                                          :rem 251
706 PRINT"ABOUT SELECTED NATIONS OF THE EARTH."
                                                  :rem 102
710 PRINT"{2 DOWN}POINTS WILL BE GIVEN DEPENDING U
    PON HOW MANY QUESTIONS YOU NEED:"             :rem 177
715 PRINT"{2 DOWN}{3 SPACES}1 QUESTION{2 SPACES}=
    {2 SPACES}5.":PRINT"{3 SPACES}2 QUESTIONS =
    {2 SPACES}4."                                 :rem 128
720 PRINT"{3 SPACES}3 QUESTIONS ={2 SPACES}3."
                                                  :rem 6
730 PRINT"{3 SPACES}4 QUESTIONS ={2 SPACES}2.":PRI
    NT"{3 SPACES}5 QUESTIONS ={2 SPACES}1."
                                                  :rem 174
740 PRINT"{DOWN}{3 SPACES}ALL MISSED{2 SPACES}= -5
    ."                                            :rem 232
750 PRINT"{2 DOWN}TYPE {RVS}END{OFF} TO STOP THE G
    AME EARLY."                                   :rem 219
760 GOSUB1500                                     :rem 227
785 PRINT"{2 DOWN}{8 SPACES}(PRESS ANY KEY TO STAR
    T)";                                          :rem 178
790 GETX$:IFX$=""THEN790                          :rem 145
795 RETURN                                        :rem 133
800 W=Ø                                           :rem 92
810 Z=INT((RND(1)*NE)+1):IFPEEK(CB+Z)=ØTHENRETURN
                                                  :rem 1
820 W=W+1:IFW<9THEN810                            :rem 62
830 Z=1                                           :rem 99
840 IFPEEK(CB+Z)=ØTHENRETURN                      :rem 39
850 Z=Z+1:GOTO840                                 :rem 249
900 X$="":POKE198,Ø:INPUT" ";X$:IFX$=QT$(Y,4)THENX
    $="Q":RETURN                                  :rem 46
905 IFX$="END"THENRETURN                          :rem 16
910 REM ** INCORRECT ANSWER **                    :rem 159
920 IFW<>4THENPOKEVC+33,Ø                         :rem 19
930 POKEMC+Ø,49:POKEMC+1,14                       :rem 53
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139

```
950 POKEMC+24,15                            :rem 128
960 FORV=1TO100:NEXTV:POKEMC+4,16           :rem 56
965 IFW<>4THENPRINTCHR$(147)                :rem 226
970 POKEMC+24,0:POKEVC+33,12                :rem 110
980 RETURN                                  :rem 129
1000 PRINTCHR$(147);"{3 DOWN} ENTER DESIRED CATEGO
     RY:{2 DOWN}":PRINT"{3 SPACES}{RVS}A{OFF} EURO
     PE"                                    :rem 230
1010 PRINT"{DOWN}{3 SPACES}{RVS}B{OFF} NORTH AFRIC
     A / MIDDLE EAST":PRINT"{DOWN}{3 SPACES}{RVS}C
     {OFF} AFRICA"                          :rem 111
1020 PRINT"{DOWN}{3 SPACES}{RVS}D{OFF} ASIA / THE
     {SPACE}PACIFIC":PRINT"{DOWN}{3 SPACES}{RVS}E
     {OFF} WESTERN HEMISPHERE"              :rem 193
1050 GETX$:IFX$=""THEN1050                  :rem 221
1060 IFX$<"A"ORX$>"E"THEN1050               :rem 108
1065 PRINT"{2 DOWN}{4 SPACES}(GAME WILL START IN T
     EN SECONDS)"                           :rem 125
1070 RESTORE:NE=0                           :rem 38
1080 READA$:IFA$>X$THENRETURN               :rem 65
1090 IFX$=A$THEN1130                        :rem 107
1120 FORX=1TO5:READA$:NEXTX:GOTO1080        :rem 17
1130 FORX=0TO4:READA$:QT$(NE,X)=A$:NEXTX:NE=NE+1:G
     OTO1080                                :rem 22
1500 POKEMC+5,79:POKEMC+6,129:POKEMC+24,15:rem 191
1510 FORX=0TO37                             :rem 128
1520 POKEMC+0,NT%(X,0)                      :rem 218
1530 POKEMC+1,NT%(X,1)                      :rem 221
1540 POKEMC+4,33                            :rem 122
1550 FORY=1TONT%(X,2)*60:NEXTY              :rem 76
1560 POKEMC+4,32:FORY=1TO20:NEXTY,X         :rem 190
1570 POKEMC+24,0                            :rem 121
1580 RETURN                                 :rem 174
2000 MC$(0)=QT$(Y,4)                        :rem 7
2010 X1=INT(RND(1)*NE):IFX1=YTHEN2010       :rem 194
2020 MC$(1)=QT$(X1,4)                       :rem 58
2030 X2=INT(RND(1)*NE):IFX2=X1ORX2=YTHEN2030
                                            :rem 185
2040 MC$(2)=QT$(X2,4)                       :rem 62
2050 FORX1=0TO2:POKEMP+X1,0:NEXTX1          :rem 145
2060 FORX1=1TO3                             :rem 124
2070 X2=INT(RND(1)*3):IFPEEK(MP+X2)<>0THEN2070
                                            :rem 194
2080 POKE(MP+X2),X1:NEXTX1                  :rem 83
2090 PRINTCHR$(147);"{BLK}{23 DOWN}";SPC(15);"SCOR
     E =";S%;                               :rem 218
2095 PRINT"{HOME}{3 DOWN}{3 SPACES}QUESTION # 5
     {2 DOWN}"                              :rem 217
2100 PRINT"{DOWN}{3 SPACES}MULTIPLE CHOICE:"
                                            :rem 246
```

```
2110 FORX1=0TO2                              :rem 118
2120 X2=PEEK(MP+X1)                          :rem 83
2130 PRINT"{DOWN}{5 SPACES}";MC$(X2-1)       :rem 208
2140 NEXTX1:PRINT"{DOWN}":GOSUB900:RETURN    :rem 24
9000 DATAZ,"$SONG"                           :rem 8
9010 DATA15,67,2,99,56,2,15,67,2,15,67,4,99,56,1,9
     9,56,2,193,44,2                         :rem 200
9020 DATA15,67,2,99,56,1,15,67,2,15,67,2,99,56,2,9
     9,56,2,165,31,1,165,31,1                :rem 118
9030 DATA60,50,2,165,31,1,62,42,2,62,42,1,165,31,1
     ,15,67,2                                :rem 53
9040 DATA15,67,2,62,42,2,15,67,4,99,56,1,193,44,2,
     99,56,1,15,67,2                         :rem 187
9050 DATA99,56,1,15,67,2,15,67,2,15,67,2,99,56,2
                                             :rem 124
9060 DATA15,67,2,15,67,2,165,31,1,60,50,2,193,44,4
                                             :rem 194
```

Program 2. Mother Earth – DATA 1

```
3000 DATAA,"THE THAMES RIVER RUNS THROUGH ITS
     {7 SPACES}CAPITAL"                      :rem 16
3010 DATA"ITS CAPITAL IS LONDON"             :rem 118
3020 DATA"IT IS THE HOME OF STONEHENGE AND KING
     {3 SPACES}ARTHUR"                       :rem 189
3030 DATA"IT RULES SCOTLAND, WHICH OCCUPIES 37% OF
     ITS MAJOR ISLAND"                       :rem 230
3035 DATA"GREAT BRITAIN"                     :rem 165
3040 DATAA,"ONLY PART OF THIS DIVIDED COUNTRY IS
     {4 SPACES}RULED BY BRITAIN"             :rem 193
3050 DATA"ITS TWO CAPITALS ARE BELFAST AND DUBLIN"
                                             :rem 203
3060 DATA"CATHOLIC AND PROTESTANT WARS DIVIDE THE
     {SPACE}COUNTRY"                         :rem 92
3070 DATA"THE 1846 POTATO FAMINE DECIMATED THE
     {4 SPACES}COUNTRY",IRELAND              :rem 35
3080 DATAA,"VIKINGS FROM HERE MAY HAVE BEATEN
     {7 SPACES}COLUMBUS TO AMERICA"          :rem 194
3090 DATA"ITS NORTH SEA PRODUCES THE WORLD'S
     {6 SPACES}BIGGEST FISH CATCH"           :rem 88
3100 DATA"ONE THIRD OF THE POPULATION WORKS IN THE
     LUMBER INDUSTRY"                        :rem 87
3110 DATA"THE CAPITAL OF THIS SCANDINAVIAN COUNTRY
     IS OSLO",NORWAY                         :rem 87
3120 DATAA,"THIS HAS THE LARGEST POPULATION OF ALL
     {2 SPACES}THE SCANDINAVIAN NATIONS"     :rem 125
3125 DATA"THE CAPITAL OF THIS NATION IS STOCKHOLM"
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Level

4

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3130 DATA"THE 'MIDDLE WAY' BETWEEN GOVERNMENT AND
     {SPACE}PRIVATE INDUSTRY"            :rem 115
3140 DATA"LAPLAND OCCUPIES THE FAR NORTH OF THIS
     {2 SPACES}COUNTRY",SWEDEN           :rem 181
3150 DATAA,"THIS NATION IS KNOWN FOR FINE DAIRY
     {5 SPACES}PRODUCTS AND FURNITURE"   :rem 75
3160 DATA"THE CAPITAL OF THIS NATION IS{11 SPACES}
     COPENHAGEN"                         :rem 17
3170 DATA"GREENLAND IS HELD BY THIS COUNTRY"
                                         :rem 121
3180 DATA"DAIRY COOPERATIVES IMPROVE THE QUALITY
     {2 SPACES}OF ITS DAIRY PRODUCTS",DENMARK
                                         :rem 3
3230 DATAA,"ORIGINALLY, ITS PEOPLE CAME FROM ASIA"
                                         :rem 214
3240 DATA"THE CAPITAL OF THIS NATION IS HELSINKI"
                                         :rem 143
3250 DATA"SWEDISH IS CONSIDERED THE COUNTRY'S
     {5 SPACES}SECOND LANGUAGE"          :rem 74
3260 DATA"RUSSIA TOOK MOST OF THIS COUNTRY AFTER
     {2 SPACES}WORLD WAR II",FINLAND     :rem 31
3390 DATAA,"NAPOLEON BECAME THIS COUNTRY'S EMPEROR
     "                                   :rem 147
3400 DATA"IT IS A CENTER OF ART, FOOD AND FASHION"
                                         :rem 11
3410 DATA"IT WAS THE BIRTHPLACE OF DEBUSSY AND
     {4 SPACES}LOUIS PASTEUR"            :rem 164
3420 DATA"THE CAPITAL OF THIS NATION IS PARIS",FRA
     NCE                                 :rem 146
3430 DATAA,"IT WAS DIVIDED AMONG FOUR COUNTRIES
     {5 SPACES}AFTER WORLD WAR II"       :rem 246
3440 DATA"THE USSR CONTROLS ONE-FOURTH OF ITS
     {5 SPACES}CITIZENS"                 :rem 160
3450 DATA"ITS MAJOR RIVERS ARE THE DANUBE, THE
     {4 SPACES}ODER AND THE RHINE"       :rem 55
3460 DATA"ITS TWO CAPITALS ARE BONN AND EAST
     {6 SPACES}BERLIN",GERMANY           :rem 102
3470 DATAA,"IT IS DIVIDED INTO 22 STATES, KNOWN AS
     {2 SPACES}'CANTONS'"                :rem 238
3480 DATA"ITS PEOPLE SPEAK FRENCH, GERMAN AND
     {5 SPACES}ITALIAN"                  :rem 199
3490 DATA"ITS NEUTRALITY MAKES IT A CENTER OF
     {5 SPACES}DIPLOMACY"                :rem 118
3500 DATA"THE CAPITAL OF THIS NATION IS BERN",SWIT
     ZERLAND                             :rem 225
3510 DATAA,"IT WAS ONCE THE CENTER OF AN EASTERN
     {4 SPACES}EUROPEAN EMPIRE"          :rem 58
3520 DATA"THE GEOGRAPHY OF THE LAND IS SIMILAR TO
     {SPACE}SWITZERLAND'S"               :rem 101
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3530 DATA"ADOLPH HITLER WAS BORN HERE AND LATER
     {3 SPACES}DEFEATED THE COUNTRY"        :rem 123
3540 DATA"THE CAPITAL OF THIS NATION IS VIENNA",AU
     STRIA                                  :rem 65
3550 DATAA,"IT WAS RULER OF THE WORLD UNTIL DEFEAT
     EDBY GERMANY IN 500 A.D"               :rem 243
3560 DATA"IT WAS THE CENTER OF THE{16, SPACES}RENAI
     SSANCE"                                :rem 248
3570 DATA"ITS CITIES OF VENICE AND FLORENCE ARE
     {3 SPACES}CENTERS OF ART"              :rem 182
3580 DATA"THE CAPITAL OF THIS NATION IS ROME",ITAL
     Y                                      :rem 33
3582 DATAA,"WESTERN CIVILIZATION DEVELOPED FROM TH
     ISNATION'S CULTURE"                    :rem 197
3584 DATA"IT IS SURROUNDED BY THE MEDITERRANEAN,
     {2 SPACES}ALGEAN AND IONIC SEAS"       :rem 246
3590 DATA"POSSESSIONS OF THIS COUNTRY INCLUDE
     {5 SPACES}CRETE AND RHODES"            :rem 168
3600 DATA"THE CAPITAL OF THIS NATION IS ATHENS",GR
     EECE                                   :rem 210
3610 DATAA,"THE ROMANS KNEW IT AS CALEDONIA":rem 44
3620 DATA"ITS CITY OF GLASGOW IS THE CHIEF
     {8 SPACES}INDUSTRIAL CENTER OF BRITAIN"
                                            :rem 53
3630 DATA"IT OCCUPIES THE NORTHERN 37% OF THE ISLE
     OF GREAT BRITAIN"                      :rem 182
3640 DATA"BRITAIN RULES IT, BUT IT MAINTAINS
     {6 SPACES}EDINBURGH AS ITS CAPITAL"    :rem 206
3645 DATA"SCOTLAND"                         :rem 136
3650 DATAA,"THE 1917 REVOLUTION CHANGED ITS FORM O
     F GOVERNMENT"                          :rem 11
3660 DATA"THE COUNTRY IS A LARGE PLAIN DIVIDED BY
     {SPACE}THE URAL MOUNTAINS"             :rem 101
3670 DATA"ITS MAJOR PORTS ARE ON THE SHORE OF THE
     {SPACE}BLACK SEA"                      :rem 178
3680 DATA"THE CAPITAL OF THIS NATION IS MOSCOW",US
     SR                                     :rem 145
3970 DATAA,"IT COVERS MOST OF THE IBERIAN PENINSUL
     A,BUT HAS NO MAJOR HARBORS"            :rem 137
3980 DATA"A MOORISH PALACE, THE ALHAMBRA, RESIDES
     {SPACE}IN ITS CITY OF GRENADA"          :rem 1
3990 DATA"ITS ROCK OF GIBRALTAR IS ACTUALLY OWNED
     {SPACE}BY BRITAIN"                     :rem 155
4000 DATA"THE CAPITAL OF THIS NATION IS MADRID",SP
     AIN                                    :rem 139
4050 DATAB,"THE BIBLICAL MOUNT ARARAT IS LOCATED I
     N THIS COUNTRY"                        :rem 145
4060 DATA"IT CONTROLS THE ONLY PASSAGE BETWEEN THE
     MEDITERRANEAN AND BLACK SEAS"          :rem 102
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4070 DATA"THOUGH IT IS MOSLEM, MOST OF ITS
     {8 SPACES}TRADITIONS ARE EUROPEAN"      :rem 42
4075 DATA"THE CAPITAL OF THIS NATION IS ANKARA",TU
     RKEY                                    :rem 253
4120 DATAB,"ITS LAND FORMED THE ANCIENT COUNTRY OF
     {2 SPACES}PALESTINE"                    :rem 176
4130 DATA"MORE THAN 85% OF ITS POPULATION IS
     {6 SPACES}JEWISH"                       :rem 12
4140 DATA"WATERS FROM THE JORDAN RIVER IRRIGATE
     {3 SPACES}ITS NEGEV DESERT"             :rem 219
4150 DATA"THE CAPITAL OF THIS NATION IS JERUSALEM"
     ,ISRAEL                                 :rem 205
4160 DATAB,"THIS FORMER OTTOMAN NATION WAS RULED B
     Y FRANCE UNTIL 1945"                    :rem 149
4170 DATA"IT LOST THE GOLAN HEIGHTS TO ISRAEL IN
     {2 SPACES}THE 'SEVEN-DAY WAR'"          :rem 6
4180 DATA"IT HAS BEEN RULED BY THE SOCIALIST BAATH
     PARTY SINCE 1963"                       :rem 150
4190 DATA"THE CAPITAL OF THIS NATION IS DAMASCUS",
     SYRIA                                   :rem 66
4200 DATAB,"IT BROKE FROM SYRIA MAINLY FOR RELIGIO
     USREASONS"                              :rem 221
4210 DATA"BOTH CHRISTIANS AND MOSLEMS HAVE LEADERS
     IN THE GOVERNMENT"                      :rem 222
4220 DATA"ITS LANGUAGES ARE ARABIC, FRENCH AND
     {4 SPACES}ARMENIAN"                     :rem 39
4230 DATA"THE CAPITAL OF THIS NATION IS BEIRUT",LE
     BANON                                   :rem 46
4240 DATAB,"IT SHARES THE DEAD SEA WITH ITS ENEMY
     {3 SPACES}ISRAEL"                       :rem 43
4250 DATA"IT IS HOME FOR MANY ARABS DISPLACED BY
     {2 SPACES}THE CREATION OF PALESTINE" :rem 164
4260 DATA"ITS ONLY PORT IS ON THE AQABA GULF"
                                             :rem 63
4270 DATA"THE CAPITAL OF THIS NATION IS AMMAN",JOR
     DAN                                     :rem 144
4280 DATAB,"IN ANCIENT TIMES, IT WAS CALLED BY THE
     {2 SPACES}NAME OF MESOPOTAMIA"          :rem 127
4290 DATA"THE TIGRIS AND EUPHRATES RIVERS MEET
     {4 SPACES}HERE"                         :rem 142
4300 DATA"THE HANGING GARDENS OF BABYLON WERE
     {5 SPACES}LOCATED HERE"                 :rem 245
4310 DATA"THE 'ARABIAN NIGHTS' IS SET IN ITS
     {6 SPACES}CAPITAL OF BAGHDAD",IRAQ    :rem 230
4320 DATAB,"RESIDENTS SPEAK MANY LANGUAGES, BUT TH
     E OFFICIAL TONGUE IS FARSI"             :rem 158
4330 DATA"IT HAS THE WORLD'S 3RD LARGEST RESERVE
     {2 SPACES}OF CRUDE OIL"                 :rem 103
4340 DATA"A 1979 REVOLUTION MADE AN ISLAMIC
     {7 SPACES}LEADER ITS RULER"             :rem 42
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4350 DATA"THE CAPITAL OF THIS NATION IS TEHERAN",I
     RAN                                    :rem 152
4360 DATAB,"IT OCCUPIES ABOUT 80% OF THE ARABIAN
     {4 SPACES}PENINSULA"                   :rem 172
4370 DATA"THE COUNTRY IS NAMED FOR ITS FOUNDER,
     {3 SPACES}IBN SAUD"                    :rem 94
4380 DATA"THE MOSLEM SHRINES OF MECCA AND MEDINA
     {2 SPACES}ARE HERE"                    :rem 98
4390 DATA"THE CAPITAL OF THIS NATION IS RIYADH","S
     AUDI ARABIA"                           :rem 134
4640 DATAB,"THE 1ST WORLD RULER IS TODAY AN
     {9 SPACES}UNDEVELOPED COUNTRY"         :rem 128
4650 DATA"THE MAIN POPULATION CENTERS ARE ON THE
     {2 SPACES}BANKS OF THE NILE RIVER"     :rem 61
4660 DATA"THE ASWAN DAM AND THE SUEZ CANAL ARE
     {4 SPACES}BOTH FOUND HERE"             :rem 90
4670 DATA"THE CAPITAL OF THIS NATION IS CAIRO",EGY
     PT                                     :rem 99
4680 DATAB,"FORMERLY RULED BY CARTHAGE, ROME, ITAL
     Y,BRITAIN AND FRANCE"                  :rem 41
4690 DATA"THOUGH A MONARCHY IN 1952, IT BECAME
     {4 SPACES}SOCIALIST IN 1969"           :rem 139
4700 DATA"ITS LOW-SULPHUR OIL RESERVES ARE IN
     {5 SPACES}GREAT DEMAND"                :rem 73
4710 DATA"THE CAPITAL OF THIS NATION IS TRIPOLI",L
     IBYA                                   :rem 251
4880 DATAC,"ITS CAPITAL CITY WAS THE CAPITAL OF
     {5 SPACES}FRENCH WEST AFRICA"          :rem 198
4890 DATA"IT CONTAINS THE BEST SEAPORT IN WEST
     {4 SPACES}AFRICA"                      :rem 220
4900 DATA"OF THE FRENCH-SPEAKING AFRICAN NATIONS,
     {SPACE}IT IS THE MOST DEMOCRATIC"      :rem 74
4910 DATA"THE CAPITAL OF THIS NATION IS DAKAR",SEN
     EGAL                                   :rem 203
4960 DATAC,"IT IS THE MOST PROSPEROUS OF AFRICA'S
     {3 SPACES}TROPICAL NATIONS"            :rem 78
4970 DATA"IT IS LOCATED BETWEEN GHANA AND LIBERIA
     {SPACE}ON THE GULF OF GUINEA"          :rem 149
4980 DATA"THIS PRO-WESTERN AFRICAN NATION IMPORTS
     {SPACE}20% OF ITS WORKERS"             :rem 213
4990 DATA"THE CAPITAL OF THIS NATION IS ABIDJAN","
     IVORY COAST"                           :rem 177
5160 DATAC,"ITS NAMESAKE WAS AN AFRICAN NATION THA
     T LASTED 800 YEARS"                    :rem 15
5170 DATA"IT WAS FORMERLY THE GOLD COAST, A
     {7 SPACES}BRITISH COLONY"              :rem 250
5180 DATA"IT LEADS THE WORLD IN CACAO PRODUCTION,
     {SPACE}FROM WHICH CHOCOLATE IS MADE" :rem 168
5190 DATA"THE CAPITAL OF THIS NATION IS ACCRA",GHA
     NA                                     :rem 35
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5320 DATAC,"BLACK FREEDMEN FOUNDED THIS NATION IN
     {3 SPACES}1822"                        :rem 164
5330 DATA"IT IS THE OLDEST AFRICAN REPUBLIC"
                                            :rem 88
5340 DATA"THE GOVERNMENT IS SIMILAR TO THAT OF THE
     UNITED STATES"                         :rem 164
5350 DATA"THE CAPITAL OF THIS NATION IS MONROVIA",
     LIBERIA                                :rem 203
5360 DATAC,"IT WAS ANCIENTLY KNOWN AS NUBIA"
                                            :rem 90
5370 DATA"THE WHITE AND BLUE NILE RIVERS CONVERGE
     {SPACE}AT THE NATION'S CAPITAL"        :rem 157
5380 DATA"IT IS THE LARGEST COUNTRY IN AFRICA"
                                            :rem 203
5390 DATA"THE CAPITAL OF THIS NATION IS KHARTOUM",
     SUDAN                                  :rem 82
5400 DATAC,"IT WAS ANCIENTLY CALLED ABYSSINIA"
                                            :rem 13
5410 DATA"ITS LANGUAGE, AMHARIC, IS UNIQUE AND
     {4 SPACES}COMPLEX"                     :rem 7
5420 DATA"EXCEPT FOR SIX YEARS, IT HAS NEVER BEEN
     {SPACE}RULED BY A FOREIGN POWER"       :rem 127
5430 DATA"THE CAPITAL OF THIS NATION IS ADDIS
     {5 SPACES}ABABA",ETHIOPIA              :rem 102
5480 DATAC,"TOURISTS HUNTING BIG GAME BUILT ITS
     {5 SPACES}LARGE TOURIST INDUSTRY"      :rem 203
5490 DATA"THE NILE'S SOURCE IS FOUND BETWEEN THIS
     {SPACE}NATION AND UGANDA"              :rem 42
5500 DATA"IT WON INDEPENDENCE AFTER THE MAU MAU
     {3 SPACES}UPRISING"                    :rem 165
5510 DATA"THE CAPITAL OF THIS NATION IS NAIROBI",K
     ENYA                                   :rem 226
5560 DATAC,"BILHARZIASIS IS A COMMON DISEASE DUE T
     O THE LARGE AMOUNTS OF WATER"          :rem 210
5570 DATA"IT IS BORDERED BY LAKES VICTORIA, EDWARD
     AND ALBERT"                            :rem 139
5580 DATA"IDI AMIN EXPELLED 45,000 UNDESIRABLES
     {3 SPACES}FROM HERE IN 1972"           :rem 230
5590 DATA"THE CAPITAL OF THIS NATION IS KAMPALA",U
     GANDA                                  :rem 21
5720 DATAC,"THOUGH MAINLY BLACK, IT ONLY RECENTLY
     {3 SPACES}GOT A BLACK GOVERNMENT"      :rem 143
5730 DATA"ITS MAIN GEOGRAPHIC FEATURE IS VICTORIA
     {SPACE}FALLS"                          :rem 150
5740 DATA"IT BECAME THE 154TH UNITED NATIONS
     {6 SPACES}MEMBER IN 1980"              :rem 133
5750 DATA"THE CAPITAL OF THIS NATION IS SALISBURY"
     ,ZIMBABWE                              :rem 123
5880 DATAC,"ITS OFFICIAL TONGUES ARE ENGLISH AND
     {4 SPACES}AFRIKAANS"                   :rem 57
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5890 DATA"IT'S THE WORLD LEADER IN DIAMOND, GOLD
     {2 SPACES}AND URANIUM PRODUCTION"      :rem 65
5900 DATA"APARTHEID SUBJUGATES ITS BLACK MAJORITY
     {SPACE}TO THE WHITE MINORITY"          :rem 247
5910 DATA"ITS CAPITAL CITIES ARE CAPE TOWN AND
     {4 SPACES}BLOEMFONTEIN","SOUTH AFRICA":rem 19
6000 DATAC,"IT WAS FORMERLY CALLED SOUTH-WEST
     {7 SPACES}AFRICA"                      :rem 217
6010 DATA"THE U.N. SEPARATED IT FROM SOUTH AFRICA
     {SPACE}TO FREE IT FROM APARTHEID"      :rem 208
6020 DATA"IT HAS BEEN WITHOUT AN OFFICIAL FORM OF
     {SPACE}GOVERNMENT SINCE 1968"          :rem 209
6030 DATA"THE CAPITAL OF THIS NATION IS WINDHOEK",
     NAMIBIA                               :rem 174
6040 DATAD,"IT'S THE 2ND LARGEST NATION IN THE
     {6 SPACES}WORLD, BASED ON POPULATION" :rem 98
6050 DATA"IT IS THE LARGEST DEMOCRATIC COUNTRY IN
     {SPACE}THE ORIENT"                     :rem 173
6060 DATA"THE TAJ MAHAL IS FOUND WITHIN THIS
     {6 SPACES}FORMER BRITISH POSSESSION" :rem 102
6070 DATA"THE CAPITAL OF THIS NATION IS NEW DELHI"
     ,INDIA                                 :rem 29
6120 DATAD,"IT WAS FOUNDED AS A RELIGIOUS HAVEN FO
     R MOSLEMS"                             :rem 37
6130 DATA"IT WAS FAMOUS FOR THE INDUS VALLEY
     {6 SPACES}CIVILIZATION"                :rem 40
6140 DATA"ITS FORMER EASTERN TERRITORY IS NOW
     {5 SPACES}BANGLADESH"                  :rem 35
6150 DATA"THE CAPITAL OF THIS NATION IS ISLAMABAD"
     ,PAKISTAN                              :rem 64
6200 DATAD,"IT WAS CALLED 'THE HERMIT KINGDOM' DUE
     {2 SPACES}TO ITS UNFRIENDLINESS"       :rem 94
6210 DATA"IT WAS FORMERLY CALLED ARIANA, BACTRIA
     {2 SPACES}AND KHORASAN"                :rem 188
6220 DATA"IT'S SURROUNDED BY IRAN, PAKISTAN AND
     {3 SPACES}THE USSR"                    :rem 151
6230 DATA"THE CAPITAL OF THIS NATION IS KABUL",AFG
     HANISTAN                               :rem 249
6240 DATAD,"20% OF THE WORLD'S PEOPLE--MORE THAN A
     {2 SPACES}BILLION--LIVE HERE"          :rem 14
6250 DATA"THE GREAT WALL WAS BUILT HERE TO PROTECT
     FARMERS FROM INVADERS"                 :rem 162
6260 DATA"THE YANGTZE RIVER WAS THE CENTER OF ITS
     {SPACE}ANCIENT CIVILIZATION"           :rem 96
6270 DATA"THE CAPITAL OF THIS NATION IS PEKING",CH
     INA                                    :rem 139
6280 DATAD,"THIS ISLAND IS ALSO KNOWN AS FORMOSA"
                                            :rem 148
6290 DATA"ASIANS HAVE USED THIS ISLAND AS A REFUGE
     FOR CENTURIES"                         :rem 98
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6300 DATA"CHINA CONSIDERS THIS ISLAND PART OF
     {5 SPACES}THEIR COUNTRY"               :rem 163
6310 DATA"THE CAPITAL OF THIS NATION IS TAIPEI",TA
     IWAN                                   :rem 229
6320 DATAD,"OKINAWA AND IWO JIMA ARE POSSESSIONS O
     F THIS ISLAND COUNTRY"                 :rem 131
6330 DATA"ITS MOST PROMINENT GEOGRAPHICAL FEATURE
     {SPACE}IS MOUNT FUJI"                  :rem 232
6340 DATA"THIS FORMER SILK CAPITAL IS NOW FAMOUS
     {2 SPACES}FOR ELECTRONICS AND AUTOS"   :rem 59
6350 DATA"THE CAPITAL OF THIS NATION IS TOKYO",JAP
     AN                                     :rem 105
6360 DATAD,"THIS PENINSULAR NATION HAS BEEN RULED
     {SPACE}BYCHINA, JAPAN AND THE USSR"    :rem 166
6370 DATA"THE 38TH PARALLEL DIVIDES THIS COUNTRY
     {2 SPACES}INTO TWO SECTIONS"           :rem 115
6380 DATA"THE NORTH SECTION DOES MANUFACTURING,
     {3 SPACES}WHILE THE SOUTH FARMS"       :rem 65
6390 DATA"IT HAS TWO CAPITALS-- PYONGYANG AND
     {5 SPACES}SEOUL",KOREA                 :rem 3
6480 DATAD,"WARS WITH VIETNAM AND THAILAND HAVE
     {5 SPACES}TAKEN MOST OF ITS LAND"      :rem 195
6490 DATA"LAKE TONLE SAP PROVIDES THE FISH TO FEED
     THIS COUNTRY"                          :rem 78
6500 DATA"90% OF THE POPULATION ARE DESCENDED FROM
     THE KHMER EMPIRE"                      :rem 221
6510 DATA"THE CAPITAL OF THIS NATION IS PHNOM
     {5 SPACES}PENH",CAMBODIA               :rem 68
6520 DATAD,"A 22-YEAR DIVISION OF THIS COUNTRY END
     EDIN 1976"                             :rem 210
6530 DATA"THIS COUNTRY DEFEATED KUBLAI KHAN'S
     {5 SPACES}ARMIES IN 1288"              :rem 73
6540 DATA"THE U.S. FOUGHT HERE FROM 1956-1973 IN A
     LOSING BATTLE WITH RUSSIA"             :rem 128
6550 DATA"THE CAPITAL OF THIS NATION IS HANOI",VIE
     TNAM                                   :rem 238
6640 DATAD,"THIS IS THE ONLY CONTINENT OCCUPIED BY
      ASINGLE NATION"                       :rem 250
6650 DATA"IT WAS SETTLED BY DEPORTED BRITISH
     {6 SPACES}CRIMINALS"                   :rem 117
6660 DATA"IT WAS ORIGINALLY PEOPLED BY ABORIGINES"
                                            :rem 57
6670 DATA"THE CAPITAL OF THIS NATION IS CANBERRA",
     AUSTRALIA                              :rem 82
6720 DATAE,"THE MAYAS, TOLTECS AND AZTECS RULED
     {5 SPACES}HERE"                        :rem 129
6730 DATA"HERNANDO CORTEZ CONQUERED THE COUNTRY IN
     1519"                                  :rem 118
6740 DATA"IT CLAIMED WHAT IS NOW TEXAS UNTIL 1836"
                                            :rem 98
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6750 DATA"THE CAPITAL OF THIS NATION IS MEXICO
     {4 SPACES}CITY",MEXICO                   :rem 48
6960 DATAE,"BALBOA FIRST SIGHTED THE PACIFIC OCEAN
     {2 SPACES}FROM HERE"                     :rem 99
6970 DATA"THE SHORTEST DISTANCE BETWEEN ATLANTIC
     {2 SPACES}AND PACIFIC OCEANS IS HERE":rem 113
6980 DATA"U.S. TROOPS WILL BE REMOVED FROM ITS
     {4 SPACES}CANAL BY 1999"                :rem 235
6990 DATA"THE CAPITAL OF THIS NATION IS PANAMA",PA
     NAMA                                    :rem 207
7040 DATAE,"COLUMBUS FIRST REACHED SOUTH AMERICA
     {4 SPACES}HERE, IN 1498"                :rem 186
7050 DATA"PETROLEUM AND IRON MAKE IT ONE OF THE
     {3 SPACES}AREA'S RICHEST NATIONS"       :rem 198
7060 DATA"THE WORLD'S HIGHEST WATERFALL, ANGEL
     {4 SPACES}FALLS, IS FOUND HERE"         :rem 41
7070 DATA"THE CAPITAL OF THIS NATION IS CARACAS",V
     ENEZUELA                                :rem 6
7120 DATAE,"THIS COMMUNIST NATION IS ONLY 90 MILES
     {2 SPACES}FROM FLORIDA"                 :rem 79
7130 DATA"ITS CAPITAL IS THE LARGEST CITY IN THE
     {2 SPACES}WEST INDIES"                  :rem 86
7140 DATA"ITS CHIEF EXPORTS ARE SUGAR AND FINE
     {4 SPACES}CIGARS"                       :rem 182
7150 DATA"THE CAPITAL OF THIS NATION IS HAVANA",CU
     BA                                      :rem 50
7160 DATAE,"THIS LARGE NATION IS BIGGER THAN
     {8 SPACES}AMERICA'S 'LOWER 48'"         :rem 47
7170 DATA"THE AMAZON RIVER IS LOCATED HERE":rem 24
7180 DATA"THIS NATION IS LOCATED DUE SOUTH OF
     {5 SPACES}GREENLAND"                    :rem 93
7190 DATA"THE CAPITAL OF THIS NATION IS BRASILIA",
     BRAZIL                                  :rem 119
7200 DATAE,"ITS CAPITAL CITY CATHEDRAL CORNERSTONE
     {2 SPACES}WAS LAID BY PIZARRO"          :rem 96
7210 DATA"IT IS FAMOUS FOR THE ANDES MOUNTAINS AND
     FOR ITS LLAMAS"                         :rem 129
7220 DATA"IT IS THE NUMBER ONE FISHING NATION OF
     {2 SPACES}THE WORLD"                    :rem 189
7230 DATA"THE CAPITAL OF THIS NATION IS LIMA",PERU
                                             :rem 198
7240 DATAE,"IT AND BOLIVA ARE SOUTH AMERICA'S TWO
     {3 SPACES}LANDLOCKED NATIONS"           :rem 135
7250 DATA"IT LOST 60% OF ITS POPULATION IN THE WAR
     OF TRIPLE ALLIANCE"                     :rem 38
7260 DATA"MUCH OF ITS LAND WAS WON FROM BOLIVA IN
     {SPACE}THE CHACO WAR"                   :rem 142
7270 DATA"THE CAPITAL OF THIS NATION IS ASUNCION",
     PARAGUAY                                :rem 37
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7280 DATAE,"IT PRODUCES 10% OF THE WORLD'S COPPER"
                                          :rem 105
7290 DATA"IT PRODUCES HALF OF THE WORLD'S IODINE"
                                          :rem 125
7300 DATA"IT SHARES THE ISLAND OF TIERRA DEL FUEGO
     WITH ARGENTINA"                      :rem 163
7310 DATA"THE CAPITAL OF THIS NATION IS SANTIAGO",
     CHILE                                :rem 33
7320 DATAE,"IT HAS LATIN AMERICA'S HIGHEST PER
     {6 SPACES}CAPITA INCOME"             :rem 88
7330 DATA"EUROPEANS MAKE UP 97% OF THIS COUNTRY'S
     {SPACE}POPULATION"                   :rem 187
7340 DATA"ITS PAMPAS ARE SIMILAR TO THE U.S. GRAIN
     BELT"                                :rem 231
7350 DATA"THE CAPITAL OF THIS NATION IS BUENOS
     {4 SPACES}AIRES",ARGENTINA           :rem 67
7360 DATAE,"CHARUGA INDIANS LIVED HERE UNTIL THE
     {4 SPACES}SPANISH ARRIVED IN 1624"   :rem 44
7370 DATA"FLOODS AND DROUGHT RAISED ITS COST OF
     {3 SPACES}LIVING 1200% IN NINE YEARS" :rem 82
7380 DATA"IT IS BORDERED BY BRAZIL, ARGENTINA AND
     {SPACE}THE ATLANTIC OCEAN"           :rem 62
7390 DATA"THE CAPITAL OF THIS NATION IS{11 SPACES}
     MONTEVIDEO",URUGUAY                  :rem 154
7400 DATAE,"IT WON INDEPENDENCE FROM GREAT BRITAIN
     {2 SPACES}IN 1776"                   :rem 169
7410 DATA"IT IS BORDERED BY CANADA, MEXICO AND TWO
     OCEANS"                              :rem 84
7420 DATA"THE MISSISSIPPI RIVER DIVIDES THE
     {7 SPACES}COUNTRY"                   :rem 14
7430 DATA"THE CAPITAL OF THIS NATION IS WASHINGTON
     D.C","UNITED STATES"                 :rem 1
7440 DATAE,"IN LAND AREA, IT IS THE WORLD'S SECOND
     {2 SPACES}LARGEST COUNTRY"           :rem 183
7450 DATA"MOST OF ITS PEOPLE LIVE NEAR THE U.S.
     {3 SPACES}BORDER"                    :rem 180
7460 DATA"ITS FRENCH-SPEAKING PEOPLE HAVE TRIED TO
     SECEDE FROM THE NATION"              :rem 223
7470 DATA"THE CAPITAL OF THIS NATION IS OTTAWA",CA
     NADA                                 :rem 213
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Program 3. Mother Earth – DATA 2

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3190 DATAA,"THE CITY OF REYKJAVIK BORDERS THE ARCT
     IC CIRCLE"                           :rem 81
3200 DATA"IT WAS A TERRITORY OF DENMARK UNTIL
     {5 SPACES}1944"                      :rem 181
3210 DATA"THE WATER IN THE HOMES IS HEATED BY
     {5 SPACES}GEYSERS"                   :rem 128
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3220 DATA"THIS ISLAND HAS A VOLCANO AND EUROPE'S
     {2 SPACES}LARGEST GLACIER",ICELAND    :rem 137
3270 DATAA,"'GOD MADE THE EARTH, BUT THE DUTCH MAD
     E THE COUNTRY'"                        :rem 199
3280 DATA"A COMMON NAME FOR THIS COUNTRY MEANS
     {4 SPACES}'HOLLOW LAND'"               :rem 95
3290 DATA"ITS WINDMILLS PUMP WATER BACK INTO THE
     {2 SPACES}SEA"                         :rem 153
3300 DATA"ITS CAPITAL IS A MAJOR DIAMOND CENTER","
     THE NETHERLANDS"                       :rem 174
3310 DATAA,"THE ARDENNES PLATEAU IS A CENTER OF ZI
     NCAND COAL PRODUCTION"                 :rem 47
3320 DATA"THE CAPITAL OF THIS NATION IS BRUSSELS"
                                            :rem 170
3330 DATA"THE CONGO (ZAIRE) USED TO BE A COLONY OF
     THIS COUNTRY"                          :rem 187
3340 DATA"ITS LANGUAGE IS A MIXTURE OF FLEMISH AND
     FRENCH",BELGIUM                        :rem 190
3350 DATAA,"THOUGH SMALL IN SIZE, IT PRODUCES A LO
     T OF STEEL"                            :rem 32
3360 DATA"THE CAPITAL OF THIS NATION IS{11 SPACES}
     LUXEMBOURG"                            :rem 69
3370 DATA"IT IS RULED BY A GRAND DUKE AND A PRIME
     {SPACE}MINISTER"                       :rem 77
3380 DATA"IT LOST TO GERMANY IN BOTH WORLD WARS",L
     UXEMBOURG                              :rem 128
3690 DATAA,"THE LACK OF NATURAL BOUNDARIES MAKES
     {4 SPACES}ITS SHAPE CHANGE OFTEN"      :rem 37
3700 DATA"IT HAS BEEN OVERRUN BY AUSTRIA, PRUSSIA
     {SPACE}AND RUSSIA"                     :rem 157
3710 DATA"GERMANY INVADED THIS COUNTRY TO START
     {3 SPACES}WORLD WAR II"                :rem 216
3720 DATA"THE CAPITAL OF THIS NATION IS WARSAW",PO
     LAND                                   :rem 250
3730 DATAA,"IT IS DIVIDED INTO THREE REGIONS, ONE
     {SPACE}OFWHICH IS BOHEMIA"             :rem 58
3740 DATA"IT HAS HAD RESTRICTED FREEDOM SINCE
     {5 SPACES}RUSSIA INVADED IT IN 1968"   :rem 189
3750 DATA"IT CONTAINS THE ELBE RIVER AND THE
     {6 SPACES}CARPATHIAN MOUNTAINS"        :rem 247
3760 DATA"THE CAPITAL OF THIS NATION IS PRAGUE",CZ
     ECHOSLOVAKIA                           :rem 69
3770 DATAA,"IT WAS RULED BY TURKS AND OTHER INVADE
     RSUNTIL 1867"                          :rem 231
3780 DATA"ITS FIRST KING ALSO WAS CO-RULER OF
     {5 SPACES}AUSTRIA"                     :rem 226
3790 DATA"THE COUNTRY WAS OVERRUN BY RUSSIA IN
     {4 SPACES}1956"                        :rem 64
3800 DATA"THE CAPITAL OF THIS NATION IS BUDAPEST",
     HUNGARY                                :rem 220
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3810 DATAA,"ITS PLOESTI OIL FIELDS ARE AMONG THE
     {4 SPACES}RICHEST IN EUROPE"          :rem 230
3820 DATA"COMMUNISTS TOOK OVER THIS NATION IN
     {5 SPACES}1947"                        :rem 35
3830 DATA"AGAINST SOVIET WISHES, IT REMAINS
     {7 SPACES}FRIENDLY TO WESTERN NATIONS"
                                           :rem 252
3840 DATA"THE CAPITAL OF THIS NATION IS BUCHAREST"
     ,RUMANIA                              :rem 24
3850 DATAA,"IT OCCUPIES THE EASTERN PART OF THE
     {5 SPACES}BALKAN PENINSULA"           :rem 139
3860 DATA"ITS MANY MOUNTAINS CAUSE IT TO HAVE VERY
     LITTLE ARABLE LAND"                   :rem 193
3870 DATA"ONE OF ITS IMPORTANT EXPORTS IS ROSE OIL
     FOR PERFUME"                          :rem 62
3880 DATA"THE CAPITAL OF THIS NATION IS SOFIA",BUL
     GARIA                                 :rem 39
3890 DATAA,"ITS NAME MEANS 'LAND OF THE SOUTHERN
     {4 SPACES}SLAVS'"                      :rem 8
3900 DATA"ITS LANGUAGES INCLUDE SLOVENIAN,
     {8 SPACES}MACEDONIAN AND SERBO-CROATIAN"
                                           :rem 43
3910 DATA"ITS RULER, TITO, KEPT THIS COMMUNIST
     {4 SPACES}COUNTRY SEPARATE FROM RUSSIA"
                                           :rem 252
3920 DATA"THE CAPITAL OF THIS NATION IS BELGRADE",
     YUGOSLAVIA                            :rem 163
3930 DATAA,"THOUGH A SOVIET SATELLITE, IT USUALLY
     {3 SPACES}SIDES WITH CHINA"           :rem 58
3940 DATA"ITS CHIEF PRODUCTS ARE MARKETED MAINLY
     {2 SPACES}BY CHINA"                   :rem 222
3950 DATA"IT WAS RULED BY THE TURKS FOR OVER 400
     {2 SPACES}YEARS"                      :rem 131
3960 DATA"THE CAPITAL OF THIS NATION IS TIRANA",AL
     BANIA                                 :rem 20
4010 DATAA,"MOZAMBIQUE AND ANGOLA WERE FORMERLY
     {5 SPACES}RULED BY THIS COUNTRY"      :rem 53
4020 DATA"MADEIRA AND THE AZORES ARE BOTH RULED BY
     THIS COUNTRY"                         :rem 39
4030 DATA"THE COUNTRY IS DIVIDED BY THE TAGUS
     {5 SPACES}RIVER"                      :rem 87
4040 DATA"THE CAPITAL OF THIS NATION IS LISBON",PO
     RTUGAL                                :rem 152
4080 DATAB,"THIS MEDITERRANEAN ISLAND WAS CONTROLL
     EDBY BRITAIN UNTIL 1960"              :rem 43
4090 DATA"BOTH GREECE AND TURKEY HAVE FOUGHT FOR
     {2 SPACES}CONTROL OF THIS COUNTRY"    :rem 180
4100 DATA"THE CONSTITUTION CALLS FOR BOTH GREEK
     {3 SPACES}AND TURKISH LEADERS"        :rem 165
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4110 DATA"THE CAPITAL OF THIS NATION IS NICOSIA",C
     YPRUS                                    :rem 77
4400 DATAB,"ONE OF FEW MID-EAST NATIONS WITH ENOUG
     H RAINFALL FOR FARMING"               :rem 115
4410 DATA"IT WAS ONCE PART OF SHEBA, WHOSE QUEEN
     {2 SPACES}ACHIEVED BIBLICAL FAME"     :rem 183
4420 DATA"ITS PEOPLE GET MONEY FROM OIL-RICH
     {6 SPACES}RELATIVES IN OTHER NATIONS":rem 148
4430 DATA"THE CAPITAL OF THIS NATION IS SANAA",YEM
     EN                                       :rem 72
4440 DATAB,"ITS CAPITAL SUPPLIED INCENSE, SILK AND
     {2 SPACES}SPICES IN BIBLICAL TIMES"    :rem 53
4450 DATA"IT CONTROLS THE ISLANDS OF SOCOTRA,
     {5 SPACES}KAMARAN AND PERIM"            :rem 82
4460 DATA"ITS BIGGEST ASSET IS THE GULF OF ADEN
     {3 SPACES}SEAPORT"                      :rem 23
4470 DATA"THE CAPITAL AND ONLY MAJOR CITY IS ADEN"
     ,"SOUTH YEMEN"                           :rem 8
4480 DATAB,"IT OCCUPIES THE EASTERN CORNER OF THE
     {3 SPACES}ARABIAN PENINSULA"            :rem 99
4490 DATA"IT RULED ZANZIBAR UNTIL THE 1861 BRITISH
     INTERVENTION"                          :rem 160
4500 DATA"IT IS RULED BY A SULTAN"         :rem 143
4510 DATA"THE CAPITAL OF THIS NATION IS MUSKAT",OM
     AN                                      :rem 101
4520 DATAB,"IT WAS FORMED FROM 3 BRITISH SHEIKDOMS
     {2 SPACES}AND THE 7 TRUCIAL STATES"   :rem 210
4530 DATA"OIL GIVES IT ONE OF THE HIGHEST PER
     {5 SPACES}CAPITA INCOMES IN THE WORLD":rem 52
4540 DATA"QATAR SECEDED FROM THE FEDERATION IN
     {4 SPACES}1971"                        :rem 240
4550 DATA"THE CAPITAL OF THIS NATION IS ABU DHABI"
     ,"U. ARAB EMIRATES"                    :rem 208
4560 DATAB,"LACK OF SKILLED LABOR RESTRICTS ITS PE
     R CAPITA INCOME TO $18,000"            :rem 182
4570 DATA"IT BECAME INDEPENDENT OF THE UNITED ARAB
     EMIRATES IN 1971"                      :rem 174
4580 DATA"IT WAS CONQUERED BY BAHRAIN, TURKEY AND
     {SPACE}GREAT BRITAIN"                   :rem 76
4590 DATA"THE CAPITAL OF THIS NATION IS DOHA",QATA
     R                                        :rem 2
4600 DATAB,"THOUGH A SMALL NATION, IT RANKS 7TH IN
     {2 SPACES}THE WORLD IN OIL PRODUCED"  :rem 212
4610 DATA"IT IS BORDERED BY IRAQ, SAUDI ARABIA,
     {3 SPACES}AND THE PERSIAN GULF"        :rem 211
4620 DATA"IT HAS BEEN RULED BY THE AL-SABAH
     {7 SPACES}DYNASTY SINCE 1759"           :rem 66
4630 DATA"THE CAPITAL OF THIS NATION IS KUWAIT",KU
     WAIT                                    :rem 18
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4720 DATAB,"IT IS LOCATED BETWEEN LIBYA AND ALGERI
     A"                                    :rem 17
4730 DATA"THANKS TO FRENCH CONTROL, IT HAS GOOD
     {3 SPACES}PORTS AND RAILROADS"        :rem 73
4740 DATA"THE ANCIENT POWER OF CARTHAGE WAS
     {7 SPACES}LOCATED HERE"              :rem 124
4750 DATA"THE CAPITAL OF THIS NATION IS TUNIS",TUN
     ISIA                                 :rem 27
4760 DATAB,"IT WAS PART OF THE FRENCH NATION, NOT
     {SPACE}A COLONY"                     :rem 131
4770 DATA"25% OF THE POPULATION SPEAKS BERBER
     {5 SPACES}DIALECTS"                  :rem 255
4780 DATA"IT IS BORDERED BY TUNISIA, LIBYA AND
     {4 SPACES}MOROCCO"                   :rem 235
4790 DATA"THE CAPITAL OF THIS NATION IS ALGIERS",A
     LGERIA                               :rem 107
4800 DATAB,"ITS CITY OF TANGIER IS ONE OF THE
     {7 SPACES}WORLD'S GREAT FREE PORTS"  :rem 131
4810 DATA"ITS MOST FAMOUS CITIES ARE CASABLANCA
     {3 SPACES}AND MARRAKECH"             :rem 220
4820 DATA"ITS PORTS WERE RULED BY SPAIN, BUT THE
     {2 SPACES}COUNTRY WAS RULED BY FRANCE":rem 86
4830 DATA"THE CAPITAL OF THIS NATION IS RABAT",MOR
     OCCO                                 :rem 230
4840 DATAC,"LOCATED SOUTH OF MOROCCO, THIS STATE I
     S PEOPLED WITH NOMADS"               :rem 91
4850 DATA"IT ANNEXED THE SOUTH PART OF THE SPANISH
     SAHARA IN 1976"                      :rem 36
4860 DATA"IN 1980, IT GAVE ITS SHARE OF THE
     {7 SPACES}SPANISH SAHARA TO MOROCCO" :rem 217
4870 DATA"THE CAPITAL OF THIS NATION IS{11 SPACES}
     NOUAKCHOTT",MAURITANIA               :rem 89
4920 DATAC,"GUINEA-BISSAU ACHIEVED INDEPENDENCE FR
     OMTHIS NATION IN 1976"               :rem 135
4930 DATA"IT CONTAINS UP TO HALF OF THE WORLD'S
     {3 SPACES}BAUXITE"                   :rem 23
4940 DATA"IT BROKE FROM FRANCE, THEN BECAME
     {7 SPACES}COMMUNIST TO GET RUSSIAN AID"
                                          :rem 79
4950 DATA"THE CAPITAL OF THIS NATION IS CONAKRY",G
     UINEA                                :rem 61
5000 DATAC,"ITS ECONOMY HAS BEEN HELPED BY THE
     {6 SPACES}CALCIUM PHOSPHATE INDUSTRY":rem 236
5010 DATA"ITS POPULATION IS MADE UP OF BANTU AND
     {2 SPACES}HAMITIC TRIBES"            :rem 33
5020 DATA"THIS FRENCH TERRITORY WAS LOST BY THE
     {3 SPACES}GERMANS IN WORLD WAR II"   :rem 56
5030 DATA"THE CAPITAL OF THIS NATION IS LOME",TOGO
                                          :rem 201
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5040 DATAC,"THE COUNTRY WAS KNOWN AS DAHOMEY UNTIL
     {2 SPACES}1975"                         :rem 32
5050 DATA"THE FORMER KINGDOM OF ABOMEY BECAME A
     {3 SPACES}SOCIALIST STATE IN 1974"    :rem 165
5060 DATA"THE PORT OF COTONOU IS ITS GREATEST
     {5 SPACES}ASSET"                       :rem 118
5070 DATA"IT HAS TWO CAPITALS -- PORTO-NOVO AND
     {3 SPACES}COTONOU",BENIN               :rem 221
5080 DATAC,"IT WAS CONTROLLED BY BOTH THE FRENCH A
     NDTHE BRITISH UNTIL 1960"              :rem 156
5090 DATA"ITS OFFICIAL LANGUAGES ARE FRENCH AND
     {3 SPACES}ENGLISH"                      :rem 91
5100 DATA"HALF OF ITS BRITISH SECTOR WAS ANNEXED
     {2 SPACES}TO NIGERIA IN 1961"          :rem 161
5110 DATA"THE CAPITAL OF THIS NATION IS YAOUNDE",C
     AMEROON                                :rem 203
5120 DATAC,"THE ALBERT SCHWEITZER LAMBARENE HOSPIT
     ALIS LOCATED HERE"                     :rem 223
5130 DATA"MUCH OF ITS WEALTH HAS COME FROM ITS
     {4 SPACES}HARDWOOD FORESTS"             :rem 64
5140 DATA"HUGE DEPOSITS OF URANIUM AND MANGANESE
     {2 SPACES}HAVE BEEN FOUND HERE"        :rem 178
5150 DATA"THE CAPITAL OF THIS NATION IS{11 SPACES}
     LIBREVILLE",GABON                      :rem 183
5240 DATAC,"BRITAIN ESTABLISHED ITS CAPITAL AS A
     {4 SPACES}FREE SLAVE SANCTUARY"        :rem 227
5250 DATA"MORE THAN 60,000 DESCENDANTS OF SLAVES
     {2 SPACES}(CREOLES) LIVE HERE"         :rem 235
5260 DATA"IT IS LOCATED ON THE ATLANTIC, BETWEEN
     {2 SPACES}LIBERIA AND GUINEA"          :rem 232
5270 DATA"THE CAPITAL OF THIS NATION IS FREETOWN",
     "SIERRA LEONE"                          :rem 80
5280 DATAC,"IT BECAME BRITAIN'S FIRST AFRICAN
     {7 SPACES}POSSESSION IN 1588"           :rem 88
5290 DATA"IT IS SURROUNDED BY SENEGAL ON THREE
     {4 SPACES}SIDES"                       :rem 153
5300 DATA"ITS CROPS OF PEANUTS AND RICE ARE GROWN
     {SPACE}ALONG THE GAMBIA RIVER"          :rem 40
5310 DATA"THE CAPITAL OF THIS NATION IS BANJUL","T
     HE GAMBIA"                             :rem 230
5440 DATAC,"IT IS LOCATED ON THE EASTERN HORN OF
     {4 SPACES}AFRICA"                      :rem 209
5450 DATA"MANY OF ITS NOMAD PEOPLE LIVE OUTSIDE
     {3 SPACES}THE COUNTRY'S BORDERS"         :rem 7
5460 DATA"A SMALL AREA IS STILL CONTROLLED BY THE
     {SPACE}FRENCH"                          :rem 76
5470 DATA"THE CAPITAL OF THIS NATION IS MOGADISHU"
     ,SOMALIA                               :rem 18
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5520 DATAC,"IT WAS CREATED WHEN TANGANYIKA AND
     {6 SPACES}ZANZIBAR MERGED"            :rem 26
5530 DATA"MOUNT KILIMANJARO IS LOCATED IN THIS
     {4 SPACES}NATION"                     :rem 31
5540 DATA"ITS ISLAND OF ZANZIBAR WAS ONCE THE
     {5 SPACES}CENTER OF ARAB SLAVE TRADING"
                                          :rem 174
5550 DATA"THIS NATION'S CAPITAL IS DAR-ES-SALAAM",
     TANZANIA                             :rem 60
5600 DATAC,"ITS PREVIOUS NAME WAS THE BELGIAN CONG
     O"                                   :rem 90
5610 DATA"ONE OF THE WORLD'S LARGEST RIVERS, THE
     {2 SPACES}ZAIRE, IS HERE"           :rem 229
5620 DATA"TWO-THIRDS OF THE WORLD'S COBALT COMES
     {2 SPACES}FROM HERE"                 :rem 28
5630 DATA"THE CAPITAL OF THIS NATION IS KINSHASA",
     ZAIRE                                :rem 54
5640 DATAC,"IT SHARES THE NAME OF AFRICA'S SECOND
     {3 SPACES}LARGEST RIVER"             :rem 12
5650 DATA"THOUGH A FRENCH SPEAKING COUNTRY, IT IS
     {SPACE}A SOCIALIST NATION"          :rem 148
5660 DATA"IT CONSISTS OF A STRIP OF LAND BETWEEN
     {2 SPACES}GABON AND ZAIRE"           :rem 29
5670 DATA"THE CAPITAL OF THIS NATION IS{11 SPACES}
     BRAZZAVILLE",CONGO                   :rem 41
5680 DATAC,"IT WAS CALLED NORTHERN RHODESIA UNTIL
     {3 SPACES}ITS INDEPENDENCE IN 1964" :rem 213
5690 DATA"IT GOT INDEPENDENCE FROM BRITAIN ALONG
     {2 SPACES}WITH RHODESIA AND MALAWI" :rem 226
5700 DATA"IT IS THE WORLD'S FOURTH LARGEST COPPER
     {SPACE}PRODUCER"                     :rem 93
5710 DATA"THE CAPITAL OF THIS NATION IS LUSAKA",ZA
     MBIA                                :rem 221
5760 DATAC,"ITS MAIN GEOGRAPHICAL FEATURE IS THE
     {4 SPACES}ZAMBEZI RIVER"             :rem 61
5770 DATA"IT WAS CONTROLLED BY PORTUGAL FROM 1505
     {SPACE}TO 1975"                      :rem 48
5780 DATA"ITS NEW MAOIST LEADERS HAVE CLOSED
     {6 SPACES}PRIVATE SCHOOLS"          :rem 237
5790 DATA"THE CAPITAL OF THIS NATION IS MAPUTO",MO
     ZAMBIQUE                             :rem 64
5800 DATAC,"A PORTUGUESE COLONY UNTIL 1975, IT'S 1
     2 TIMES THE SIZE OF PORTUGAL"       :rem 107
5810 DATA"IT WAS UNSETTLED UNTIL RECENTLY, WHEN
     {3 SPACES}400,000 PORTUGUESE MOVED IN":rem 49
5820 DATA"ITS MARXIST GOVERNMENT WAS STARTED WITH
     {SPACE}HELP FROM THE USSR AND CUBA"    :rem 1
5830 DATA"THE CAPITAL OF THIS NATION IS LUANDA",AN
     GOLA                                :rem 210
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5840 DATAC,"THIS INDIAN ISLAND NATION IS THE SIZE
     {SPACE}OFTEXAS"                         :rem 223
5850 DATA"IT SUPPLIES 80% OF THE WORLD'S VANILLA"
                                            :rem 78
5860 DATA"THE NATION'S PEOPLE ARE OF INDONESIAN
     {3 SPACES}DESCENT"                      :rem 117
5870 DATA"THE CAPITAL OF THIS NATION IS{11 SPACES}
     ANTANANARIVO",MADAGASCAR                :rem 181
5920 DATAC,"IT WAS A BRITISH PROTECTORATE KNOWN AS
     {2 SPACES}BECHUANALAND UNTIL 1966"     :rem 240
5930 DATA"AFRICA'S BUSHMEN MAKE THEIR HOME HERE"
                                            :rem 72
5940 DATA"IT WAS CREATED BY THE BRITISH TO PROTECT
     TRIBESMEN FROM THEIR ENEMIES"          :rem 100
5950 DATA"THE CAPITAL OF THIS NATION IS GABORONE",
     BOTSWANA                               :rem 26
5960 DATAC,"IT'S COMPLETELY SURROUNDED BY SOUTH
     {5 SPACES}AFRICA"                       :rem 149
5970 DATA"MORE THAN HALF OF ITS WORKING POPULATION
     WORKS IN SOUTH AFRICA"                 :rem 195
5980 DATA"ITS MOUNTAIN TERRAIN HAS PROTECTED IT
     {3 SPACES}FROM SOUTH AFRICA"            :rem 52
5990 DATA"THE CAPITAL OF THIS NATION IS MASERU",LE
     SOTHO                                  :rem 93
6080 DATAD,"IT WAS FORMERLY KNOWN AS EAST PAKISTAN
     "                                      :rem 61
6090 DATA"THE MOUTH OF THE GANGES RIVER IS FOUND
     {2 SPACES}HERE"                         :rem 138
6100 DATA"IT IS ALMOST ENTIRELY SURROUNDED BY
     {5 SPACES}INDIA"                        :rem 165
6110 DATA"THE CAPITAL OF THIS NATION IS DACCA",BAN
     GLADESH                                :rem 120
6160 DATAD,"IN RECENT HISTORY, THIS COUNTRY WAS
     {5 SPACES}KNOWN AS CEYLON"              :rem 147
6170 DATA"IT WAS ONCE CALLED SERENDIP, THE ROOT
     {3 SPACES}WORD OF 'SERENDIPITY'"        :rem 152
6180 DATA"IT IS AN ISLAND OFF THE SOUTHERN TIP OF
     {SPACE}INDIA"                           :rem 203
6190 DATA"THE CAPITAL OF THIS NATION IS COLUMBO","
     SRI LANKA"                             :rem 21
6400 DATAD,"THE IRAWADDY RIVER CAN BE NAVIGATED FO
     R 900 MILES IN THIS COUNTRY"           :rem 63
6410 DATA"CONQUERED BY BRITAIN THREE TIMES, IT WAS
     RULED BY THEM UNTIL 1937"              :rem 198
6420 DATA"ITS CHIEF RESOURCES ARE RUBIES AND
     {6 SPACES}TEAKWOOD"                     :rem 7
6430 DATA"THE CAPITAL OF THIS NATION IS RANGOON",B
     URMA                                   :rem 243
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6440 DATAD,"EACH MAN HERE MUST BE A BUDDHIST MONK
     {3 SPACES}FOR PART OF HIS LIFE"          :rem 1
6450 DATA"IT WAS FORMERLY CALLED SIAM"        :rem 244
6460 DATA"NO EUROPEAN COUNTRY HAS EVER CONTROLLED
     {SPACE}THIS SOUTHEAST ASIAN COUNTRY" :rem 250
6470 DATA"ITS CAPITAL OF BANGKOK HAS MORE CANALS
     {2 SPACES}THAN VENICE",THAILAND         :rem 198
6560 DATAD,"THIS ARCHIPELAGO EXTENDS INTO BOTH THE
     {2 SPACES}INDIAN AND PACIFIC OCEANS" :rem 135
6570 DATA"THE CHIEF OF ITS 13,000 ISLANDS IS JAVA"
                                            :rem 225
6580 DATA"THE ISLAND OF JAVA CONTAINS 1,500
     {7 SPACES}PERSONS PER SQUARE MILE"     :rem 222
6590 DATA"THE CAPITAL OF THIS NATION IS JAKARTA",I
     NDONESIA                               :rem 7
6600 DATAD,"THE SPANISH FOUNDED ITS MAIN CITY, AND
     {2 SPACES}ITS CURRENCY IS THE PESO"   :rem 242
6610 DATA"ITS ISLANDS BEAR THE NAME OF KING PHILIP
     II OF SPAIN"                          :rem 107
6620 DATA"ITS MAIN LANGUAGES ARE FILIPINO, ENGLISH
     AND SPANISH"                           :rem 41
6630 DATA"ITS CAPITAL IS QUEZON CITY AND ITS CHIEF
     CITY IS MANILA",PHILIPPINES           :rem 236
6680 DATAD,"CAPTAIN COOK CLAIMED THIS ISLAND GROUP
     {2 SPACES}FOR BRITAIN IN 1769"        :rem 155
6690 DATA"IT WAS SETTLED FIRST BY MAORIS AND THEN
     {SPACE}BY THE BRITISH"                 :rem 81
6700 DATA"IT CONSISTS OF THE SOUTHERNMOST ISLANDS
     {SPACE}OF POLYNESIA"                   :rem 198
6710 DATA"THE CAPITAL OF THIS NATION IS{11 SPACES}
     WELLINGTON","NEW ZEALAND"             :rem 153
6760 DATAE,"THE NATION OF BELIZE IS CLAIMED BY THI
     S COUNTRY"                             :rem 46
6770 DATA"IT IS LOCATED BETWEEN MEXICO AND
     {8 SPACES}HONDURAS"                    :rem 109
6780 DATA"IT HAS THE LARGEST POPULATION OF ALL THE
     CENTRAL AMERICAN NATIONS"              :rem 94
6790 DATA"THE CAPITAL OF THIS NATION IS GUATEMALA
     {SPACE}CITY",GUATEMALA                 :rem 204
6800 DATAE,"COLUMBUS ARRIVED HERE ON HIS FINAL
     {6 SPACES}VOYAGE IN 1502"              :rem 77
6810 DATA"ITS MESTIZO POPULATION SPEAKS SPANISH
     {3 SPACES}AND ENGLISH"                 :rem 13
6820 DATA"IT IS BORDERED BY GUATEMALA, NICARAGUA
     {2 SPACES}AND EL SALVADOR"             :rem 81
6830 DATA"THE CAPITAL OF THIS NATION IS{11 SPACES}
     TEGUCIGALPA",HONDURAS                  :rem 246
6840 DATAE,"IT'S CENTRAL AMERICA'S SMALLEST NATION
     "                                      :rem 91
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6850 DATA"IT'S THE ONLY CENTRAL AMERICAN COUNTRY
     {2 SPACES}WITH NO SEACOAST"              :rem 20
6860 DATA"ITS WORKERS IN HONDURAS HAVE CAUSED
     {5 SPACES}PROBLEMS WITH THAT COUNTRY" :rem 40
6870 DATA"THE CAPITAL OF THIS NATION IS SAN
     {7 SPACES}SALVADOR","EL SALVADOR"      :rem 223
6880 DATAE,"IT HAS THE LARGEST LAND MASS OF ALL TH
     E CENTRAL AMERICAN NATIONS"            :rem 24
6890 DATA"THE U.S. WANTS AN ATLANTIC-TO-PACIFIC
     {3 SPACES}CANAL TO BE BUILT HERE"      :rem 159
6900 DATA"IT IS BETWEEN HONDURAS AND CENTRAL
     {6 SPACES}AMERICA"                     :rem 162
6910 DATA"THE CAPITAL OF THIS NATION IS MANAGUA",N
     ICARAGUA                              :rem 240
6920 DATAE,"ITS 90% LITERACY RATE IS THE HIGHEST I
     N CENTRAL AMERICA"                     :rem 194
6930 DATA"ITS STANDARD OF LIVING IS HIGHEST OF ANY
     CENTRAL AMERICAN NATION"               :rem 6
6940 DATA"ITS ECONOMY IS BASED MAINLY ON SMALL
     {4 SPACES}INDEPENDENT FARMS"           :rem 189
6950 DATA"THE CAPITAL OF THIS NATION IS SAN JOSE",
     "COSTA RICA"                           :rem 95
7000 DATAE,"THESE 3 NORTH COAST COUNTRIES ARE FORM
     ERBRITISH COLONIES"                    :rem 23
7010 DATA"THEY ARE COMPOSED OF FRENCH GUIANA,
     {5 SPACES}SURINAM AND GUYANA"          :rem 117
7020 DATA"ONE OF THESE 3 NATIONS USED TO BE A
     {5 SPACES}FRENCH PRISON COLONY"        :rem 103
7030 DATA"ITS CAPITALS ARE GEORGETOWN, CAYENNE,
     {3 SPACES}AND PARAMARIBO","THE GUIANAS"
                                            :rem 167
7080 DATAE,"THE ONLY SOUTH AMERICAN COUNTRY WITH
     {4 SPACES}ATLANTIC AND PACIFIC COASTS"
                                            :rem 227
7090 DATA"ONLY BRAZIL PRODUCES MORE COFFEE THAN
     {3 SPACES}THIS COUNTRY"                :rem 11
7100 DATA"IT PRODUCES 95% OF THE WORLD'S EMERALDS"
                                            :rem 128
7110 DATA"THE CAPITAL OF THIS NATION IS BOGOTA",CO
     LOMBIA                                :rem 102
8120 DATAE,"IT OCCUPIES THE WEST HALF OF THE ISLAN
     D OF HISPANIOLA"                       :rem 127
8130 DATA"ITS ECONOMY IS BASED ON RUM, MOLASSES
     {3 SPACES}AND TOURISM"                 :rem 89
8140 DATA"ITS CITIZENS ARE DESCENDED FROM AFRICAN
     {SPACE}SLAVES"                         :rem 209
8150 DATA"THE CAPITAL OF THIS NATION IS{11 SPACES}
     PORT-AU-PRINCE",HAITI                  :rem 206
8160 DATAE,"IT SHARES THE ISLAND OF HISPANIOLA WIT
     H HAITI"                               :rem 197
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8170 DATA"COLUMBUS'S ASHES ARE HERE"        :rem 130
8180 DATA"IT BOASTS THE WORLD'S LARGEST SUGAR
     {5 SPACES}MILL"                         :rem 61
8190 DATA"THE CAPITAL OF THIS NATION IS SANTO
     {5 SPACES}DOMINGO"                      :rem 211
8195 DATA"DOMINICAN REPUBLIC"               :rem 29
8200 DATAE,"IF THE U.S. EVER ADDS ANOTHER STATE,
     {4 SPACES}THIS WILL BE IT"             :rem 173
8210 DATA"IT SENDS A NON-VOTING REPRESENTATIVE TO
     {SPACE}THE U.S. CONGRESS"              :rem 144
8220 DATA"ITS CITIZENS ARE ALSO CITIZENS OF THE
     {3 SPACES}U.S"                         :rem 63
8230 DATA"THE CAPITAL OF THIS NATION IS SAN JUAN",
     "PUERTO RICO"                          :rem 200
8240 DATAE,"IT IS SELF-GOVERNING, THOUGH UNDER
     {6 SPACES}BRITISH CONTROL"             :rem 139
8250 DATA"THE ARAWAK INDIANS WHO LIVED HERE WERE
     {2 SPACES}KILLED BY SPAIN"             :rem 79
8260 DATA"IT SPEAKS ENGLISH, BUT TIES ITSELF WITH
     {SPACE}CUBA AND RUSSIA"                :rem 176
8270 DATA"THE CAPITAL OF THIS NATION IS KINGSTON",
     JAMAICA                                :rem 191
8280 DATAE,"THEY ARE A GROUP OF 700 ISLANDS EAST O
     F FLORIDA"                             :rem 126
8290 DATA"COLUMBUS FIRST REACHED THE NEW WORLD
     {4 SPACES}HERE"                        :rem 134
8300 DATA"THEIR INCOME COMES FROM TOURISM, RUM,
     {3 SPACES}DRUGS AND BANKING"           :rem 220
8310 DATA"THE CAPITAL OF THIS NATION IS NASSAU",BA
     HAMAS                                  :rem 31
8320 DATAE,"ITS NAME IS SPANISH FOR 'EQUATOR'"
                                            :rem 181
8330 DATA"IT IS THE WORLD'S LARGEST PRODUCER OF
     {3 SPACES}BANANAS"                     :rem 71
8340 DATA"THE WORLD'S MAIN PRODUCER OF BALSA WOOD"
                                            :rem 202
8350 DATA"THE CAPITAL OF THIS NATION IS QUITO",ECU
     ADOR
8360 DATAE,"ONLY MALAYSIA PRODUCES MORE TIN THAN
     {4 SPACES}THIS COUNTRY"                :rem 77
8370 DATA"THE ANDES MOUNTAINS FORM ITS WESTERN
     {4 SPACES}BORDER"                      :rem 68
8380 DATA"CHILE CAPTURED THIS COUNTRY'S PACIFIC
     {3 SPACES}COAST"                       :rem 61
8390 DATA"THE CAPITAL OF THIS NATION IS LA PAZ",BO
     LIVIA                                  :rem 237
```

Mr. President

Skill area: Social Studies
Level: 4
Equipment required: None
Modification: Yes

"Mr. President" is designed to teach facts about the United States presidents. You are given clues and then asked to identify the president from the clues. Points are given depending on how many clues you need to identify a president.

How to Play
You will be given up to four questions that can be answered with the name of a particular president. To begin the game, hit any key and wait ten seconds for the computer to organize the questions.

When a question is asked by the computer, answer it by typing the name of the president as it appears below. The computer will count any misspelling as an incorrect answer, so make sure to enter the names exactly. If you don't know the answer to a clue, take a guess, or press the RETURN key.

Here are the United States presidents whose names you'll be using:

J Adams	J Garfield	L Johnson	F Roosevelt
Q Adams	U Grant	J Kennedy	T Roosevelt
C Arthur	W Harding	A Lincoln	W Taft
J Buchanan	B Harrison	J Madison	Z Taylor
J Carter	W Harrison	W McKinley	H Truman
G Cleveland	R Hayes	J Monroe	J Tyler
C Coolidge	H Hoover	R Nixon	M Van Buren
D Eisenhower	A Jackson	F Pierce	G Washington
M Fillmore	T Jefferson	J Polk	W Wilson
G Ford	A Johnson	R Reagan	

You'll notice a few things about this list. First, the men are listed by first initial rather than first name. Second, there is no period after the initial as it is written for the computer. Third, because there are two presidents with the name J Adams, John Adams and John Quincy Adams, the two presidents have been distinguished by referring to the latter as Q Adams. Pay close attention to these rules. If you know the answer to a question is

Level

4

Abraham Lincoln and you enter the words Abraham Lincoln or even A. Lincoln, the computer will count your answer incorrect.

If you still haven't discovered the name of a president after four questions, the name will appear on the screen. A second or two after the name flashes, the game continues.

You can quit playing at any time by entering END on the keyboard. Your percentage score will not be affected if you quit before all questions have been asked.

Scoring

Points will be awarded as follows:

If you guess correctly after only 1 clue, 4 points.

If you guess correctly after 2 clues, 3 points.

If you guess correctly after 3 clues, 2 points.

If you guess correctly after 4 clues, 1 point.

If the computer has to show you the correct answer, -5 points.

Your score is shown at the end of the game. You will also see a percentage score.

Mr. President

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM MR PRESIDENT                            :rem 98
100 NP=39:CB=828:VC=53248:MC=54272            :rem 151
105 POKEVC+32,6:POKEVC+33,12:PRINTCHR$(147):rem 39
110 FORX=54272TO54296:POKEX,0:NEXTX           :rem 173
120 F1$="{BLU}{RVS} * * * * * * {RED}{27 SPACES}
    {OFF}":F2$="{BLU}{RVS}{2 SPACES}* * * * *
    {2 SPACES}{OFF}"                          :rem 118
130 F3$="{RED}{RVS}{40 SPACES}{OFF}"          :rem 114
140 DIM NT%(31)                               :rem 235
150 READX$:IFX$<>"$SONG"THEN150               :rem 81
160 FORX=0TO31:READZ:NT%(X)=Z:NEXTX           :rem 12
170 SM=((PEEK(53272)AND240)/16)*1024:CM=55296
                                              :rem 146
180 GOSUB700                                  :rem 176
200 S%=0:FORX=1TONP:POKECB+X,0:NEXTX:PRINTCHR$(147
    );:POKEVC+32,12:POKEVC+33,1               :rem 62
210 FORX=1TONP:GOSUB800:POKECB+Z,X:NEXTX      :rem 155
300 X=1                                       :rem 89
305 Y=PEEK(CB+X):Y=(Y-1)*5                    :rem 227
310 RESTORE:IFY=0THEN330                      :rem 12
320 FORW=1TOY:READX$:NEXTW                    :rem 223
330 FORW=1TO5:READX$:QT$(W-1)=X$:NEXTW        :rem 126
```

```
400 W=0                                        :rem 88
405 GOSUB3000                                  :rem 220
407 POKEVC+33,1                                :rem 81
408 PRINT"{BLK}{HOME}{23 DOWN}";SPC(15);"SCORE =";
    S%;                                        :rem 149
410 PRINT"{HOME}{10 DOWN}{2 SPACES}QUESTION #";W+1
                                               :rem 172
420 PRINT"{2 DOWN}HE ";QT$(W);".{2 DOWN}" :rem 145
430 X$="":POKE198,0:INPUTX$:IFX$=QT$(4)THEN500
                                               :rem 213
435 IFX$="END"THEN600                          :rem 196
440 POKEMC+0,0:POKEMC+1,10:POKEMC+4,17:POKEMC+5,15
    :POKEMC+6,15:POKEMC+24,15                  :rem 207
445 POKEVC+33,0:FORV=1TO100:NEXTV:POKEMC+4,16
                                               :rem 37
450 POKEMC+24,0:W=W+1:IFW<=3THEN405            :rem 90
455 GOSUB3000                                  :rem 225
460 POKEVC+33,1:PRINT"{RED}{HOME}{13 DOWN} ANSWER
    {SPACE}= ";QT$(4):S%=S%-5                  :rem 198
465 PRINT"{BLK}{HOME}{23 DOWN}";SPC(15);"SCORE =";
    S%;                                        :rem 152
470 FORW=1TO2500:NEXTW:GOTO560                 :rem 143
480 GOTO600                                    :rem 107
500 S%=S%+4-W                                  :rem 165
510 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15:
    W=20:POKEMC+24,8                           :rem 178
520 FORV=12TO1STEP-1:POKEVC+33,V:POKEMC+4,17
                                               :rem 227
530 POKEMC+1,W:W=W+5:FORX1=1TO50:NEXTX1   :rem 221
540 POKEMC+4,16:NEXTV                          :rem 25
550 POKEMC+24,0                                :rem 70
560 X=X+1:IFX<=NPTHEN305                       :rem 227
600 PRINTCHR$(147);"{BLK}{DOWN}{15 SPACES}{RVS}TES
    T OVER!{OFF}"                              :rem 114
610 PRINT"{3 DOWN}{2 SPACES}YOUR SCORE = ";S%
                                               :rem 86
620 IFS%<0THENS%=0                             :rem 31
625 X=X-1:IFX<1THENX=1                         :rem 107
630 X=INT((S%*100)/(X*4))                      :rem 36
640 PRINT"{2 DOWN}{2 SPACES}YOUR GRADE = ";X;"
    {LEFT}%"                                   :rem 80
650 PRINT"{3 DOWN}{2 SPACES}PLAY AGAIN?":PRINT"
    {DOWN}{2 SPACES}ENTER {RVS}Y{OFF} OR {RVS}N
    {OFF}"                                     :rem 158
660 GETX$:IFX$=""THEN660                       :rem 137
670 IFX$="Y"THEN200                            :rem 67
680 IFX$<>"N"THEN660                           :rem 128
690 GOSUB3500:PRINTCHR$(147)                   :rem 156
695 END                                        :rem 123
```

```
700 PRINT"{BLK}{DOWN}{8 SPACES}*** MISTER PRESIDEN
    T ***"                            :rem 135
705 PRINT"{WHT}{2 DOWN}YOU WILL BE GIVEN UP TO FOU
    R QUESTIONS{2 SPACES}ABOUT EACH U.S. PRESIDENT
    ."                                :rem 132
710 PRINT"{2 DOWN}POINTS WILL BE GIVEN DEPENDING U
    PON HOW MANY QUESTIONS YOU NEED:"  :rem 177
715 PRINT"{2 DOWN}{3 SPACES}1 QUESTION{2 SPACES}=
    {2 SPACES}4.":PRINT"{3 SPACES}2 QUESTIONS =
    {2 SPACES}3."                     :rem 126
720 PRINT"{3 SPACES}3 QUESTIONS ={2 SPACES}2.":PRI
    NT"{3 SPACES}4 QUESTIONS ={2 SPACES}1."
                                      :rem 171
725 PRINT"{DOWN}{3 SPACES}ALL MISSED{2 SPACES}= -5
    ."                                :rem 235
728 PRINT"{2 DOWN} TYPE {RVS}END{OFF} TO END THE G
    AME EARLY."                       :rem 113
730 GOSUB3500                         :rem 226
785 PRINT"{2 DOWN}{12 SPACES}(PRESS ANY KEY)";
                                      :rem 129
790 GETX$:IFX$=""THEN790              :rem 145
795 RETURN                            :rem 133
800 W=0                                :rem 92
810 Z=INT((RND(1)*NP)+1):IFPEEK(CB+Z)=0THENRETURN
                                       :rem 12
820 W=W+1:IFW<10THEN810               :rem 102
830 Z=1                                :rem 99
840 IFPEEK(CB+Z)=0THENRETURN           :rem 39
850 Z=Z+1:GOTO840                     :rem 249
1000 DATA"SERVED FROM 1789 TO 1797"   :rem 112
1005 DATA"WAS THE ONLY PRESIDENT ELECTED{7 SPACES}
     UNANIMOUSLY"                      :rem 58
1010 DATA"MAY HAVE DIED FROM BEING BLED TO
     {5 SPACES}DEATH BY LEECHES"      :rem 142
1020 DATA"HAD JOHN ADAMS FOR A VICE-PRESIDENT","G
     {SPACE}WASHINGTON"               :rem 102
1030 DATA"WAS THE FIRST TO BE DEFEATED FOR
     {5 SPACES}REELECTION"            :rem 163
1040 DATA"WAS THE FIRST TO LIVE IN THE WHITE
     {3 SPACES}HOUSE"                 :rem 199
1050 DATA"ERRONEOUSLY SAID ON HIS DEATHBED,
     {4 SPACES}'JEFFERSON STILL LIVES'" :rem 133
1055 DATA"SERVED FROM 1797 TO 1801"   :rem 107
1060 DATA"J ADAMS","WAS THE SECOND PRESIDENT BORN
     {SPACE}IN{5 SPACES}VIRGINIA"     :rem 156
1070 DATA"BEAT CHARLES PINCKNEY IN A{11 SPACES}REE
     LECTION"                         :rem 103
1075 DATA"DIED ON AMERICA'S 50TH ANNIVERSARY"
                                      :rem 157
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```
1080 DATA"SERVED FROM 1801 TO 1809","T JEFFERSON"
                                          :rem 201
1090 DATA"WAS CALLED THE 'FATHER OF THE{8 SPACES}C
     ONSTITUTION'"                        :rem 202
1100 DATA"HAD BOTH OF HIS VICE-PRESIDENTS DIE
     {2 SPACES}IN OFFICE"                 :rem 253
1110 DATA"DECIDED TO ENTER THE WAR OF 1812","SERVE
     D FROM 1809 TO 1817"                   :rem 3
1115 DATA"J MADISON"                      :rem 123
1120 DATA"WAS A STUDENT OF THOMAS JEFFERSON"
                                          :rem 120
1130 DATA"WAS BOTH SECRETARY OF STATE AND
     {6 SPACES}SECRETARY OF WAR"            :rem 7
1140 DATA"WAS THE FOURTH PRESIDENT BORN IN
     {5 SPACES}VIRGINIA"                  :rem 151
1150 DATA"SERVED FROM 1817 TO 1825","J MONROE"
                                          :rem 240
1160 DATA"WAS SECRETARY TO RUSSIA'S U.S.{7 SPACES}
     MINISTER AT AGE 14"                  :rem 237
1170 DATA"WON HIS OFFICE THANKS TO HENRY CLAY"
                                          :rem 198
1180 DATA"PUBLISHED POETRY","SERVED FROM 1825 TO18
     29","Q ADAMS"                        :rem 134
1190 DATA"WAS THE 1ST TO EXPERIENCE AN{9 SPACES}AS
     SASSINATION ATTEMPT"                 :rem 230
1200 DATA"WAS THE HERO OF THE BATTLE OF NEW
     {4 SPACES}ORLEANS"                   :rem 224
1210 DATA"WAS OUR 7TH PRESIDENT","WAS NICKNAMED 'O
     LD HICKORY'","A JACKSON"             :rem 105
1220 DATA"RAN TWICE AS A DEMOCRAT, AND ONCE AS A '
     FREE SOIL' CANDIDATE"                :rem 193
1230 DATA"LOST POPULARITY DUE TO THE DEPRESSION
     {3 SPACES}OF 1837"                    :rem 69
1240 DATA"WAS VICE-PRESIDENT UNDER ANDREW
     {6 SPACES}JACKSON"                    :rem 90
1250 DATA"WAS OUR 8TH PRESIDENT, AND SERVED
     {4 SPACES}FROM 1837 TO 1841","M VAN BUREN"
                                          :rem 231
1260 DATA"WAS THE OLDEST MAN EVER TO BE MADE
     {3 SPACES}PRESIDENT, EXCEPT FOR REAGAN"
                                           :rem 69
1270 DATA"DIED FROM A COLD CAUGHT DURING HIS
     {3 SPACES}INAUGURAL ADDRESS"         :rem 236
1280 DATA"WAS THE FIRST TO DIE IN OFFICE"  :rem 53
1290 DATA"WAS OUR 9TH PRESIDENT, AND SERVED
     {4 SPACES}FOR ONLY 31 DAYS","W HARRISON"
                                           :rem 65
1300 DATA"HAD THE NICKNAME IN OFFICE OF 'OLD
     {3 SPACES}VETO'                       :rem 55
```

```
1310 DATA"WAS THE 1ST PRESIDENT IN DANGER OF
     {3 SPACES}IMPEACHMENT"                 :rem 125
1320 DATA"WAS THE 1ST PRESIDENT TO TAKE{8 SPACES}O
     FFICE AFTER A PRESIDENT'S DEATH"       :rem 43
1330 DATA"WAS OUR 10TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1841 TO 1845","J TYLER":rem 58
1340 DATA"BEAT HENRY CLAY BY 38,000 VOTES" :rem 68
1350 DATA"ANNEXED TEXAS AND OREGON TO THE U.S"
                                           :rem 166
1360 DATA"HAD GEORGE DALLAS AS HIS{13 SPACES}VICE-
     PRESIDENT"                            :rem 217
1370 DATA"WAS OUR 11TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1845 TO 1849","J POLK":rem 237
1380 DATA"HAD THE NICKNAME OF 'OLD ROUGH AND
     {3 SPACES}READY'"                      :rem 173
1390 DATA"WAS A 2ND COUSIN OF JAMES MADISON"
                                           :rem 252
1400 DATA"DIED FROM EATING TOO MANY CHERRIES"
                                           :rem 161
1410 DATA"WAS OUR 12TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1849 TO 1850","Z TAYLOR"
                                           :rem 154
1420 DATA"BEGAN HIS CAREER AS AN APPRENTICE
     {4 SPACES}WOOLCARDER"                  :rem 24
1430 DATA"SERVED AS MEDIATOR IN A GUANO{8 SPACES}D
     ISPUTE"                               :rem 72
1440 DATA"SERVED AS VICE-PRESIDENT TO ZACHARY
     {2 SPACES}TAYLOR"                      :rem 22
1450 DATA"WAS OUR 13TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1850 TO 1853","M FILLMORE"
                                           :rem 12
1460 DATA"WAS A BRIGADIER GENERAL IN THE{7 SPACES}
     MEXICAN WAR"                          :rem 67
1470 DATA"WAS THE YOUNGEST U.S. SENATOR AT AGE 33"
                                           :rem 92
1480 DATA"HAD WILLIAM R. KING AS HIS{11 SPACES}VIC
     E-PRESIDENT"                          :rem 42
1490 DATA"WAS OUR 14TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1853 TO 1857","F PIERCE"
                                           :rem 111
1500 DATA"OPPOSED FREEING THE SLAVES BECAUSE
     {3 SPACES}THEY WOULD TAKE OVER THE SOUTH"
                                           :rem 127
1510 DATA"TRIED 3 TIMES BEFORE FINALLY BEING
     {3 SPACES}NOMINATED AS PRESIDENT"      :rem 90
1520 DATA"WAS OUR 15TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1857 TO 1861"           :rem 251
1530 DATA"WAS OUR ONLY BACHELOR PRESIDENT","J BUCH
     ANAN"                                 :rem 50
```

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1540 DATA"BEAT STEPHEN DOUGLAS IN A FAMOUS
     {5 SPACES}SENATORIAL RACE"              :rem 26
1550 DATA"WAS THE 1ST PRESIDENT TO BE{10 SPACES}AS
     SASSINATED"                            :rem 40
1560 DATA"WAS OUR 16TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1861 TO 1865"           :rem 255
1570 DATA"WAS KNOWN AS THE 'GREAT EMANCIPATOR'","A
     LINCOLN"                               :rem 204
1580 DATA"WAS A SOUTHERN SENATOR WITH NORTHERN LOY
     ALTIES DURING THE CIVIL WAR"           :rem 89
1590 DATA"WAS OUR 17TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1865 TO 1869"           :rem 11
1600 DATA"WAS VICE-PRESIDENT UNDER LINCOLN"
                                            :rem 159
1610 DATA"WAS IMPEACHED AND ACQUITTED","A JOHNSON"
                                            :rem 216
1620 DATA"WAS A TEETOTALER, BUT SMOKED 20
     {6 SPACES}CIGARS EACH DAY"             :rem 48
1630 DATA"WAS HELPED TO ELECTION BY THE NEWLY
     {2 SPACES}FREED SLAVES"                :rem 250
1640 DATA"WAS KNOWN AS AMERICA'S GREATEST WAR
     {2 SPACES}HERO"                        :rem 24
1650 DATA"WAS OUR 18TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1869 TO 1877","U GRANT":rem 77
1660 DATA"HAD A WIFE WITH THE NICKNAME OF
     {6 SPACES}'LEMONADE LUCY'"             :rem 44
1670 DATA"WON THE PRESIDENCY WITH 250,000 VOTES
     {3 SPACES}LESS THAN HIS OPPONENT"      :rem 208
1680 DATA"WON THE PRESIDENCY BY 1 ELECTORAL
     {4 SPACES}VOTE"                        :rem 157
1690 DATA"WAS OUR 19TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1877 TO 1881","R HAYES":rem 71
1700 DATA"WAS A FORMER LAY MINISTER AND{8 SPACES}E
     VANGELIST"                             :rem 51
1710 DATA"WAS OPPOSED TO WAR OR SLAVERY BECAUSE
     {3 SPACES}OF HIS RELIGION"             :rem 74
1720 DATA"WAS THE 2ND PRESIDENT TO BE{10 SPACES}AS
     SASSINATED"                            :rem 19
1730 DATA"WAS OUR 20TH PRESIDENT, AND SERVED
     {3 SPACES}DURING 1881","J GARFIELD"    :rem 17
1740 DATA"WAS FROM VERMONT, BUT MAY HAVE BEEN
     {2 SPACES}BORN IN CANADA"              :rem 16
1750 DATA"HAD NO VICE-PRESIDENT"            :rem 151
1760 DATA"WAS VICE-PRESIDENT TO JOHN GARFIELD"
                                            :rem 41
1770 DATA"WAS OUR 21ST PRESIDENT, AND SERVED
     {3 SPACES}FROM 1881 TO 1885","C ARTHUR"
                                            :rem 150
1780 DATA"WAS A BACHELOR WHEN ELECTED, BUT
     {5 SPACES}MARRIED WHILE IN OFFICE"     :rem 153
```

```
1790 DATA"SAID 'I HAVE TRIED SO HARD TO DO
     {5 SPACES}RIGHT'"                       :rem 248
1800 DATA"SERVED FROM 1885 TO 1889 AND FROM
     {4 SPACES}1893 TO 1897"                 :rem 207
1810 DATA"WAS BOTH OUR 22ND AND 24TH PRESIDENT","G
     CLEVELAND"                              :rem 244
1820 DATA"HAD LEVI P. MORTON AS HIS{12 SPACES}VICE
     -PRESIDENT"                             :rem 253
1830 DATA"HAD A GRANDFATHER WHO HAD BEEN{7 SPACES}
     PRESIDENT BEFORE HIM"                   :rem 114
1840 DATA"DEFEATED GROVER CLEVELAND AND WAS
     {4 SPACES}DEFEATED BY HIM"               :rem 41
1850 DATA"WAS OUR 23RD PRESIDENT, AND SERVED
     {3 SPACES}FROM 1889 TO 1893","B HARRISON"
                                              :rem 28
1860 DATA"TWICE DEFEATED WILLIAM JENNINGS BRYAN
     {3 SPACES}FOR THE PRESIDENCY"           :rem 128
1870 DATA"SERVED 6 TERMS IN THE HOUSE OF{7 SPACES}
     REPRESENTATIVES"                        :rem 205
1880 DATA"WAS OUR 25TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1897 TO 1901"             :rem 4
1890 DATA"WAS ASSASSINATED BY ANARCHIST LEON
     {3 SPACES}CZOLGOSZ","W MCKINLEY"        :rem 162
1900 DATA"BECAME PRESIDENT AFTER MCKINLEY'S
     {4 SPACES}ASSASSINATION"                :rem 155
1910 DATA"WAS OUR 26TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1901 TO 1909"            :rem 249
1920 DATA"WAS THE FOUNDER OF THE NATIONAL PARK SYS
     TEM"                                    :rem 232
1930 DATA"ORGANIZED THE 'ROUGH RIDERS'","T ROOSEVE
     LT"                                     :rem 210
1940 DATA"WAS SECRETARY OF WAR UNDER TEDDY
     {5 SPACES}ROOSEVELT"                     :rem 3
1950 DATA"BECAME CHIEF JUSTICE OF THE SUPREME
     {2 SPACES}COURT AFTER BEING PRESIDENT"
                                             :rem 233
1960 DATA"WAS OUR 27TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1909 TO 1913"             :rem 2
1970 DATA"WAS OUR FATTEST PRESIDENT, WEIGHING
     {2 SPACES}325 POUNDS WHEN ELECTED"      :rem 242
1980 DATA"W TAFT"                            :rem 182
1985 DATA"CALLED RACIAL SEGREGATION 'NOT{7 SPACES}
     HUMILIATING BUT A BENEFIT'"              :rem 97
1990 DATA"USED THE REELECTION SLOGAN 'HE KEPT
     {2 SPACES}US OUT OF WAR'"                :rem 31
2000 DATA"WAS OUR 28TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1913 TO 1921"            :rem 239
2010 DATA"IS OFTEN ASSOCIATED WITH THE LEAGUE
     {2 SPACES}OF NATIONS","W WILSON"         :rem 61
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```
2020 DATA"SAID 'I AM NOT FIT FOR THIS OFFICE
     {3 SPACES}AND NEVER SHOULD HAVE BEEN HERE'"
                                          :rem 139
2030 DATA"WAS OUR 29TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1921 TO 1923"         :rem 244
2040 DATA"DIED AMIDST CORRUPTION AND MAY HAVE
     {2 SPACES}BEEN POISONED"             :rem 106
2050 DATA"WAS LINKED WITH THE TEAPOT DOME
     {6 SPACES}SCANDAL","W HARDING"        :rem 144
2060 DATA"WAS FAMOUS FOR BREAKING BOSTON'S
     {5 SPACES}POLICE STRIKE"             :rem 227
2070 DATA"WAS OUR 30TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1923 TO 1929"         :rem 248
2080 DATA"WAS 'WEANED ON A PICKLE,' ACCORDING
     {2 SPACES}TO ALICE LONGWORTH"         :rem 38
2090 DATA"WAS KNOWN AS 'SILENT CAL'","C COOLIDGE"
                                           :rem 27
2100 DATA"LATER WORKED UNDER PRESIDENTS TRUMAN AND
     EISENHOWER"                          :rem 135
2110 DATA"WAS A MINING ENGINEER BEFORE ENTERING
     {3 SPACES}POLITICS"                  :rem 211
2120 DATA"WAS OUR 31ST PRESIDENT, AND SERVED
     {3 SPACES}FROM 1929 TO 1933"           :rem 1
2130 DATA"LOST HIS REELECTION BID BECAUSE OF
     {3 SPACES}THE GREAT DEPRESSION","H HOOVER"
                                          :rem 107
2140 DATA"WAS OUR 32ND PRESIDENT, BEGINNING
     {4 SPACES}HIS TERM IN 1933"          :rem 235
2150 DATA"IS CREDITED WITH SAVING AMERICA FROM THE
     GREAT DEPRESSION"                    :rem 128
2160 DATA"WAS PRESIDENT DURING MOST OF WORLD
     {3 SPACES}WAR II"                    :rem 101
2170 DATA"SERVED BEFORE PRESIDENTS WERE{8 SPACES}A
     LLOWED ONLY TWO TERMS"               :rem 167
2175 DATA"F ROOSEVELT"                     :rem 54
2180 DATA"WAS THE ONLY 20TH CENTURY PRESIDENT
     {2 SPACES}WHO NEVER WENT TO COLLEGE"  :rem 87
2190 DATA"WAS OUR 33RD PRESIDENT, AND SERVED
     {3 SPACES}FROM 1945 TO 1953"         :rem 249
2200 DATA"WAS A HABERDASHER BEFORE ENTERING
     {4 SPACES}POLITICS"                  :rem 221
2210 DATA"WAS PRESIDENT WHEN ATOMIC BOMBS WERE DRO
     PPED ON JAPAN","H TRUMAN"            :rem 245
2220 DATA"WAS WANTED BY BOTH PARTIES AS A
     {6 SPACES}PRESIDENTIAL CANDIDATE"    :rem 136
2230 DATA"PLAYED FOOTBALL FOR WEST POINT" :rem 235
2240 DATA"WAS OUR 34TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1953 TO 1961"         :rem 250
```

```
2250 DATA"WAS THE ONLY PRESIDENT TO BE A{7 SPACES}
     5-STAR GENERAL","D EISENHOWER"          :rem 149
2260 DATA"LIVED A SHORTER LIFE THAN ANY OTHER
     {2 SPACES}PRESIDENT"                    :rem 103
2270 DATA"WAS THE YOUNGEST MAN EVER ELECTED
     {4 SPACES}PRESIDENT"                     :rem 37
2280 DATA"MAY HAVE BEEN ELECTED BECAUSE HE
     {5 SPACES}LOOKED GOOD ON T.V"            :rem 38
2290 DATA"WAS OUR 35TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1961 TO 1963","J KENNEDY"
                                            :rem 201
2300 DATA"BECAME SENATE DEMOCRAT LEADER DURING HIS
     1ST SENATE TERM"                       :rem 249
2310 DATA"WAS PRESIDENT DURING THE VIETNAM WAR ESC
     ALATION"                                :rem 72
2320 DATA"WAS OUR 36TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1963 TO 1969"             :rem 4
2330 DATA"WAS KNOWN FOR THE 'GREAT SOCIETY'","L JO
     HNSON"                                  :rem 34
2340 DATA"WAS PRESIDENT WHEN THE VOTING AGE WAS
     {3 SPACES}LOWERED TO 18"               :rem 128
2350 DATA"WAS PRESIDENT WHEN MAN SET FOOT ON
     {3 SPACES}THE MOON"                    :rem 170
2360 DATA"WAS OUR 37TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1969 TO 1974"            :rem 11
2370 DATA"WAS THE ONLY PRESIDENT TO RESIGN IN
     {2 SPACES}THE MIDDLE OF A TERM","R NIXON"
                                            :rem 212
2380 DATA"WAS BORN WITH THE NAME OF LESLIE
     {5 SPACES}LYNCH KING, JR"               :rem 71
2390 DATA"WAS NEVER ELECTED PRESIDENT OR{7 SPACES}
     VICE-PRESIDENT"                        :rem 222
2400 DATA"WAS A MALE MODEL AND FOOTBALL PLAYER BEF
     ORE ENTERING POLITICS"                  :rem 73
2410 DATA"WAS OUR 38TH PRESIDENT, AND SERVED FROM
     {SPACE}1974 TO 1977","G FORD"          :rem 233
2420 DATA"MAY HAVE LOST HIS REELECTION DUE TO
     {2 SPACES}PROBLEMS IN THE MIDDLE EAST"
                                            :rem 122
2430 DATA"WAS PRESIDENT DURING THE IRAN HOSTAGE
     {3 SPACES}CRISIS"                      :rem 108
2440 DATA"WAS OUR 39TH PRESIDENT, AND SERVED
     {3 SPACES}FROM 1977 TO 1981"             :rem 9
2450 DATA"WAS A PEANUT FARMER, AND HAD ABROTHER
     {3 SPACES}NAMED BILLY","J CARTER"       :rem 94
2460 DATA"STARTED HIS CAREER AS AN ILLINOIS
     {4 SPACES}LIFE-GUARD"                   :rem 29
2470 DATA"WAS THE 1ST PRESIDENT TO HAVE BEEN
     {3 SPACES}DIVORCED"                    :rem 174
```

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2480 DATA"RAN ON A PLATFORM OF 'NEW{12 SPACES}FEDE
     RALISM'"                             :rem 249
2490 DATA"WAS OUR 40TH PRESIDENT, AND TOOK
     {5 SPACES}OFFICE IN 1981","R REAGAN" :rem 126
2899 DATA"$SONG"                          :rem 149
2900 DATA4817,6430,6430,7217,8101,6430,8101,7217,4
     817,6430                             :rem 131
2910 DATA6430,7217,8101,6430,0,6069,4817,6430,6430
     ,7217,8101                           :rem 225
2920 DATA8583,8101,7217,6430,6069,4817,5407,6069,6
     430,0,6430                           :rem 247
3000 PRINTCHR$(147);:FORX1=1TO4           :rem 104
3010 PRINTF1$;F2$:NEXTX1:F4$=LEFT$(F3$,41):rem 168
3020 PRINTF1$;"{13 DOWN}";F3$;"{DOWN}";F4$;"{OFF}"
     ;                                    :rem 214
3030 POKESM+999,160:POKECM+999,2          :rem 91
3040 RETURN                               :rem 167
3500 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
     9:POKEMC+24,15                       :rem 34
3510 FORX1=0TO31:X2=INT(NT%(X1)/256)      :rem 87
3520 POKEMC+0,NT%(X1)-(X2*256)            :rem 128
3530 POKEMC+1,X2:POKEMC+4,17              :rem 136
3540 FORX2=1TO150:NEXTX2:POKEMC+4,16      :rem 210
3550 FORX2=1TO20:NEXTX2,X1                :rem 105
3560 POKEMC+24,0                          :rem 122
3570 RETURN                               :rem 175
```

4

Movers and Shakers

Skill area: Social Studies
Level: 4
Equipment required: None
Modification: Yes

People of the Past

"Movers and Shakers" is a question-and-answer game designed to acquaint you with the heroes and villains of world history. You will be asked up to three questions about selected men and women of history. Points are determined by the number of questions you need to identify a particular character.

How to Play

This game is divided into eight categories:

A. World Leaders
B. Artists and Thinkers
C. Famous Women
D. American Heroes
E. Villains and Outlaws
F. Scientists
G. Religious Leaders
H. Random Selections

There are 63 historical characters, but they may appear in more than one category. For example, Adolph Hitler would appear in Category A, but he would also appear in Category E. All characters are included in Category H.

To choose a category, type the letter of the category you wish to play. Wait ten seconds for the data to load and the game to begin.

You will be asked three questions about each character. Since the computer will count misspellings as incorrect answers, here are the correctly spelled names of the characters:

Alexander the Great
Ethan Allen
Thomas Aquinas
Attila the Hun
Aristotle
Benedict Arnold
Clara Barton
Ludwig van Beethoven
Alexander Graham Bell
Napoleon Bonaparte
John Wilkes Booth
Johannes Brahms
Caligula
John Calvin
George Washington Carver
Catherine II
Frederic Chopin
Cleopatra
Marie Curie
Benjamin Disraeli
Mary Baker Eddy
Thomas Edison
Albert Einstein
Enrico Fermi
Henry Ford
Benjamin Franklin
Sigmund Freud
Mohandas Gandhi
Paul Gauguin
Johann von Goethe
Alexander Hamilton
King Henry VIII

Adolph Hitler
Edward Jenner
John Paul Jones
Carl Jung
Martin Luther King
Robert E. Lee
Nikolai Lenin
Louis XIV
Martin Luther
Guglielmo Marconi
Karl Marx
Wolfgang Mozart
Benito Mussolini
Sir Issac Newton
Friedrich Nietzsche
Florence Nightingale
Louis Pasteur
Eva Peron
Pablo Picasso
Plato
Grigori Rasputin
Rembrandt van Rijn
Peter Paul Rubens
Socrates
Petr Tchaikovsky
Mao Tse-Tung
Vincent van Gogh
Pancho Villa
Booker T. Washington
Duke of Wellington
Brigham Young

You can quit playing anytime by entering END as an answer. Your percentage score will not be affected if you quit before all questions have been asked.

Scoring
Points are awarded as follows:

3 points if the correct answer is given after 1 clue.

2 points if the correct answer is given after 2 clues.

1 point if the correct answer is given after 3 clues.

Level

4

If all questions are missed, 3 points will be deducted from the score.

At the end of the game, you'll be shown your total number of points, as well as your percentage score.

Movers and Shakers

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM MOVERS AND SHAKERS                      :rem 213
100 NS=63:CB=828                              :rem 118
103 DIM QT$(24,3),NT%(21,1)                   :rem 81
105 VC=53248:POKEVC+32,6:POKEVC+33,15:PRINTCHR$(14
    7)                                        :rem 64
110 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX     :rem 68
120 READX$:IFX$<>"$"THEN120                   :rem 20
130 FORX=0TO21:FORY=0TO1:READZ:NT%(X,Y)=Z:NEXTY,X
                                              :rem 205
200 GOSUB700                                  :rem 169
205 GOSUB1000:S%=0:FORX=1TONE:POKECB+X,0:NEXTX
                                              :rem 178
210 FORX=1TONE:GOSUB800:POKECB+Z,X:NEXTX      :rem 144
300 X=1                                       :rem 89
310 Y=PEEK(CB+X)-1                             :rem 6
340 FORW=0TO2:RS(W)=0:NEXTW                   :rem 219
350 FORW=1TO3                                 :rem 26
360 V=INT(RND(1)*3):IFRS(V)<>0THEN360         :rem 178
370 RS(V)=W:NEXTW                             :rem 74
400 W=0                                       :rem 88
405 PRINTCHR$(147);"{BLK}{23 DOWN}";SPC(15);"SCORE
    =";S%;                                    :rem 168
410 PRINT"{HOME}{2 DOWN}{3 SPACES}QUESTION #";W+1
                                              :rem 36
420 X$=QT$(Y,RS(W))                           :rem 59
430 PRINT"{3 DOWN}";X$;".{3 DOWN}"            :rem 50
440 GOSUB900:IFX$="Q"THEN500                  :rem 12
445 IFX$="END"THEN600                         :rem 197
450 W=W+1:IFW<=2THEN405                       :rem 115
480 PRINT"{RED}{2 DOWN}{3 SPACES}";QT$(Y,0):S%=S%-
    3                                         :rem 124
490 FORW=1TO2500:NEXTW                        :rem 131
495 X=X+1:IFX<=NETHEN310                      :rem 219
498 GOTO600                                   :rem 116
500 REM *** CORRECT ANSWER ***                :rem 87
510 S%=S%+(3-W)                               :rem 246
520 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15:
    POKEMC+24,9                               :rem 132
530 FORY=5TO15                                :rem 83
```

174

```
540 POKEVC+33,Y:POKEMC+1,Y*3:POKEMC+4,33    :rem 152
550 FORZ=1TO50:NEXTZ                        :rem 36
560 POKEMC+4,32:FORZ=1TO30:NEXTZ,Y:POKEMC+24,0
                                            :rem 119
570 X=X+1:IFX<=NETHEN310                    :rem 213
600 PRINT"{BLK}{CLR}{DOWN}{15 SPACES}{RVS}TEST OVE
    R!{OFF}"                                :rem 220
610 PRINT"{3 DOWN}{4 SPACES}YOUR SCORE = ";S%
                                            :rem 86
620 IFS%<0THENS%=0                          :rem 31
625 X=X-1:IFX<1THENX=1                      :rem 107
630 X=INT((S%*100)/(X*3))                   :rem 35
640 PRINT"{DOWN}{4 SPACES}YOUR GRADE = ";X;"{LEFT}
    %"                                      :rem 63
650 PRINT"{3 DOWN}{4 SPACES}PLAY AGAIN?":PRINT"
    {DOWN}{4 SPACES}ENTER {RVS}Y{OFF} OR {RVS}N
    {OFF}"                                  :rem 158
660 GETX$:IFX$=""THEN660                    :rem 137
670 IFX$="Y"THEN205                         :rem 72
680 IFX$<>"N"THEN660                        :rem 128
690 GOSUB2000:PRINTCHR$(147)                :rem 150
695 END                                     :rem 123
700 PRINT"{BLK}{DOWN} {RVS}{9 SPACES}MOVERS AND SH
    AKERS{11 SPACES}{OFF}"                  :rem 109
705 PRINT"{2 DOWN} YOU WILL BE ASKED UP TO 3 QUEST
    IONS"                                   :rem 249
706 PRINT" ABOUT SELECTED FAMOUS PEOPLE."   :rem 240
710 PRINT"{2 DOWN} POINTS WILL BE AWARDED BASED UP
    ON HOW{3 SPACES}MANY QUESTIONS YOU NEED:"
                                            :rem 1
715 PRINT"{2 DOWN}{3 SPACES}1 QUESTION{2 SPACES}=
    {2 SPACES}3.":PRINT"{3 SPACES}2 QUESTIONS =
    {2 SPACES}2."                           :rem 124
720 PRINT"{3 SPACES}3 QUESTIONS ={2 SPACES}1."
                                            :rem 4
725 PRINT"{3 SPACES}ALL MISSED{2 SPACES}= -3."
                                            :rem 216
730 PRINT"{2 DOWN} TYPE {RVS}END{OFF} TO STOP THE
    {SPACE}GAME EARLY."                     :rem 217
740 GOSUB2000                               :rem 221
785 PRINT"{DOWN}{8 SPACES}(PRESS ANY KEY TO START)
    "                                       :rem 102
790 GETX$:IFX$=""THEN790                    :rem 145
795 RETURN                                  :rem 133
800 W=0                                     :rem 92
810 Z=INT((RND(1)*NE)+1):IFPEEK(CB+Z)=0THENRETURN
                                            :rem 1
820 W=W+1:IFW<9THEN810                      :rem 62
830 Z=1                                     :rem 99
```

```
835  IFPEEK(CB+Z)=0THENRETURN                    :rem 43
840  Z=Z+1:GOTO835                               :rem 252
900  X$="":POKE198,0:INPUT" ";X$:IFX$=QT$(Y,0)THENX
     $="Q":RETURN                                :rem 42
905  IFX$="END"THENRETURN                        :rem 16
910  POKEVC+33,0:POKEMC+0,0:POKEMC+1,10:POKEMC+4,33
     :POKEMC+5,15                                :rem 182
920  POKEMC+6,15:POKEMC+24,9                     :rem 60
930  FORZ=1TO200:NEXTZ:POKEMC+4,32               :rem 60
940  FORZ=1TO30:NEXTZ:POKEMC+24,0                :rem 11
950  IFW<>2THENPRINTCHR$(147)                    :rem 218
960  POKEVC+33,15                                :rem 138
970  RETURN                                      :rem 128
1000 PRINT"{CLR}{2 DOWN}{2 SPACES}ENTER DESIRED CA
     TEGORY:{2 DOWN}":PRINT" {RVS}A{OFF} - WORLD L
     EADERS"                                     :rem 36
1010 PRINT"{DOWN} {RVS}B{OFF} - ARTISTS AND THINKE
     RS":PRINT"{DOWN} {RVS}C{OFF} - FAMOUS WOMEN"
                                                 :rem 157
1020 PRINT"{DOWN} {RVS}D{OFF} - AMERICAN HEROES":P
     RINT"{DOWN} {RVS}E{OFF} - VILLAINS AND
     {SHIFT-SPACE}OUTLAWS"                       :rem 246
1030 PRINT"{DOWN} {RVS}F{OFF} - SCIENTISTS AND THI
     NKERS":PRINT"{DOWN} {RVS}G{OFF} - RELIGIOUS L
     EADERS"                                     :rem 232
1040 PRINT"{DOWN} {RVS}H{OFF} - RANDOM SELECTIONS"
                                                 :rem 122
1050 GETX$:IFX$=""THEN1050                       :rem 221
1060 IFX$<"A"ORX$>"H"THEN1050                    :rem 111
1070 RESTORE:NE=0:IFX$="H"GOTO1200               :rem 48
1080 READA$:X=LEN(A$):Y=1:IFA$="$"THENRETURN
                                                 :rem 145
1090 IFX$=MID$(A$,Y,1)THEN1130                   :rem 156
1100 Y=Y+1:IFY<=XTHEN1090                        :rem 249
1120 FORX=1TO4:READA$:NEXTX:GOTO1080             :rem 16
1130 FORX=0TO3:READA$:QT$(NE,X)=A$:NEXTX:NE=NE+1:G
     OTO1080                                     :rem 21
1200 X=INT(RND(1)*(NS-19)):X=X*5:IFX=0THEN1220
                                                 :rem 181
1210 FORY=1TOX:READA$:NEXTY                      :rem 250
1220 FORX=0TO19:READA$:FORY=0TO3:READA$:QT$(X,Y)=A
     $:NEXTY,X:NE=20:RETURN                      :rem 96
2000 REM *** PLAY SONG ***                       :rem 15
2010 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
     9:POKEMC+24,15                              :rem 29
2020 FORX=0TO21                                  :rem 118
2030 Y=INT(NT%(X,0)/256)                         :rem 47
2040 POKEMC+0,NT%(X,0)-(Y*256)                   :rem 118
2050 POKEMC+1,Y:POKEMC+4,17                      :rem 83
```

```
2060 FORY=1TONT%(X,1)*100:NEXTY          :rem 115
2070 POKEMC+4,16:FORY=1TO30:NEXTY,X:POKEMC+24,0
                                         :rem 164
2080 RETURN                             :rem 170
3000 DATAB,"SIGMUND FREUD"              :rem 28
3010 DATA"HE WAS THE FATHER OF PSYCHOANALYSIS,
     {4 SPACES}BORN IN 1856"            :rem 204
3020 DATA"THE NAZIS BURNED HIS BOOKS AND CALLED
     {3 SPACES}THEM 'JEWISH PORNOGRAPHY'" :rem 194
3030 DATA"HE COINED THE TERMS ID, EGO, AND
     {8 SPACES}SUPEREGO"                :rem 204
3040 DATAB,"CARL JUNG"                  :rem 233
3050 DATA"BORN IN 1875, HE CREATED ANALYTICAL
     {5 SPACES}PSYCHOLOGY"              :rem 103
3060 DATA"HE WAS KNOWN AS 'THE SAGE OF ZURICH'"
                                        :rem 121
3070 DATA"HE BELIEVED ALL PEOPLE WERE INTROVERTS
     {2 SPACES}OR EXTROVERTS"           :rem 173
3080 DATACF,"MARIE CURIE"               :rem 196
3090 DATA"SHE AND HER HUSBAND DISCOVERED POLONIUM
     {SPACE}AND RADIUM"                 :rem 177
3100 DATA"SHE WAS THE FIRST WOMAN TO RECEIVE THE
     {2 SPACES}NOBEL PRIZE"             :rem 89
3110 DATA"BORN IN 1867, SHE DIED OF LEUKEMIA
     {6 SPACES}CAUSED BY WORKING WITH RADIUM"
                                        :rem 52
3120 DATAF,"ALBERT EINSTEIN"            :rem 175
3130 DATA"BORN IN 1879, HE WAS CONSIDERED RETARDED
     BY HIS PARENTS"                    :rem 49
3140 DATA"HE DEVELOPED THE 'THEORY OF RELATIVITY'"
                                        :rem 247
3150 DATA"ONE OF HISTORY'S GREATEST THINKERS, HE
     {2 SPACES}REVOLUTIONIZED PHYSICS"  :rem 48
3160 DATAF,"GUGLIELMO MARCONI"          :rem 72
3170 DATA"HIS ATTIC IN ITALY WAS THE WORLD'S FIRST
     RADIO STATION"                     :rem 131
3180 DATA"BORN IN 1874, HE HAD INVENTED A WIRELESS
     TRANSMITTER BY THE AGE OF 21"      :rem 246
3190 DATA"HIS INVENTION SHOWED ITS IMPORTANCE WHEN
     THE TITANIC SANK"                  :rem 193
3200 DATAF,"SIR ISAAC NEWTON"           :rem 191
3210 DATA"BORN IN 1642, HE WAS THE DISCOVERER OF
     {2 SPACES}GRAVITY"                 :rem 239
3220 DATA"HE WAS A BRITISH MATHEMATICIAN AND
     {6 SPACES}ASTRONOMER"              :rem 133
3230 DATA"HIS CONCEPT OF AN ORDERLY UNIVERSE
     {6 SPACES}INFLUENCED MEN FOR CENTURIES"
                                        :rem 34
3240 DATAB,"KARL MARX"                  :rem 247
```

Level
4

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3250 DATA"HE CALLED RELIGION 'THE OPIUM OF THE
     {4 SPACES}MASSES'"                        :rem 174
3260 DATA"HE WROTE 'DAS KAPITAL' AND NEW YORK
     {5 SPACES}DAILY TRIBUNE EDITORIALS"  :rem 241
3270 DATA"HE WROTE THE 'COMMUNIST MANIFESTO'
     {6 SPACES}WHILE{2 SPACES}LIVING IN PARIS"
                                          :rem 52
3280 DATAB,"FRIEDRICH NIETZSCHE"          :rem 214
3290 DATA"THOUGH ASSOCIATED WITH NAZISM, HE HATED
     {SPACE}THE NAZI IDEAL"               :rem 122
3300 DATA"THE FATHER OF THE 'SUPERMAN' THEORY, HE
     {SPACE}EVENTUALLY WENT INSANE"       :rem 135
3310 DATA"HIS GREATEST WORK WAS 'THUS SPAKE'
     {7 SPACES}ZARATHUSTRA"               :rem 245
3320 DATADF,"ALEXANDER GRAHAM BELL"       :rem 63
3330 DATA"HE WAS THE INVENTOR OF THE TELEPHONE"
                                          :rem 15
3340 DATA"HE TAUGHT HELEN KELLER TO SPEAK":rem 196
3350 DATA"HIS FATHER INVENTED 'VISIBLE SPEECH'
     {4 SPACES}COMMUNICATION FOR THE DEAF":rem 230
3360 DATAF,"ENRICO FERMI"                 :rem 207
3370 DATA"HE STUDIED THE EFFECT OF SLOW NEUTRONS
     {2 SPACES}ON NUCLEAR REACTIONS"      :rem 255
3380 DATA"SOME CONSIDER HIM TO BE THE FATHER OF
     {3 SPACES}THE ATOMIC BOMB"           :rem 173
3390 DATA"HE ACHIEVED THE FIRST SELF-SUSTAINING
     {3 SPACES}NUCLEAR REACTION"          :rem 23
3400 DATAF,"EDWARD JENNER"                :rem 16
3410 DATA"HE DEVELOPED VACCINATIONS"      :rem 205
3420 DATA"HE HELPED TO ERADICATE SMALLPOX":rem 251
3430 DATA"HIS STUDIES OF THE CUCKOO HAVE BENEFITED
     ORNITHOLOGY"                         :rem 111
3440 DATAD,"ROBERT E. LEE"                :rem 176
3450 DATA"HE OPPOSED SLAVERY AND WAR, BUT LED THE
     {SPACE}CONFEDERATE ARMY"             :rem 218
3460 DATA"HIS APPOMATTOX SURRENDER ENDED THE CIVIL
     WAR"                                 :rem 120
3470 DATA"HE WAS ASKED BY ABE LINCOLN TO LEAD THE
     {SPACE}UNION ARMY"                   :rem 218
3480 DATAF,"LOUIS PASTEUR"                :rem 79
3490 DATA"HE PROVED DISEASE IS CAUSED BY BACTERIA"
                                          :rem 176
3500 DATA"HIS FERMENTATION WORK SAVED FRANCE'S
     {4 SPACES}BEER AND SILK INDUSTRIES"  :rem 163
3510 DATA"HE INVENTED PASTEURIZATION"     :rem 83
3520 DATAB,"PAUL GAUGUIN"                 :rem 216
3530 DATA"VAN GOGH LIVED WITH HIM IN FRANCE'S
     {5 SPACES}'YELLOW HOUSE'"            :rem 47
3540 DATA"HE IS FAMOUS FOR HIS PAINTINGS OF
     {7 SPACES}PRIMITIVE POLYNESIAN LIFE"  :rem 6
```

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3550 DATA"HE LEFT HIS FAMILY TO END HIS LIFE IN
     {3 SPACES}THE SOUTH SEAS"              :rem 62
3560 DATAB,"VINCENT VAN GOGH"              :rem 187
3570 DATA"'THE POTATO EATERS' IS ONE OF HIS MOST
     {2 SPACES}FAMOUS WORKS"               :rem 146
3580 DATA"ONLY ONE OF HIS PAINTINGS SOLD DURING
     {3 SPACES}HIS LIFETIME"               :rem 166
3590 DATA"HE CUT OFF HIS EAR FOR JEALOUSY OF
     {6 SPACES}GAUGUIN"                    :rem 55
3600 DATAB,"PABLO PICASSO"                :rem 21
3610 DATA"HIS FATHER STOPPED PAINTING WHEN HE SAW
     {SPACE}HIS SON'S TALENT"              :rem 255
3620 DATA"HE SIGNED HIS ART WITH HIS MOTHER'S
     {5 SPACES}MAIDEN NAME"                :rem 115
3630 DATA"HE FOUNDED THE CUBIST MOVEMENT IN ART"
                                          :rem 80
3640 DATAB,"REMBRANDT VAN RIJN"           :rem 80
3650 DATA"'THE NIGHT WATCH' IS HIS MOST FAMOUS
     {4 SPACES}PAINTING"                   :rem 52
3660 DATA"HE WAS A FAMOUS DUTCH PORTRAIT PAINTER"
                                          :rem 177
3670 DATA"HIS PAINTINGS ARE UNEXCELLED IN THEIR
     {3 SPACES}TREATMENT OF LIGHT"         :rem 84
3680 DATAB,"JOHANNES BRAHMS"              :rem 176
3690 DATA"HE BEGAN HIS CAREER PLAYING PIANO IN
     {4 SPACES}RED-LIGHT DISTRICT BARS"    :rem 224
3700 DATA"WHILE IN AUSTRIA, HE COMPOSED THE
     {7 SPACES}'GERMAN REQUIEM'"           :rem 101
3710 DATA"HIS MOST FAMOUS WORK IS A LULLABY"
                                          :rem 80
3720 DATAB,"FREDERIC CHOPIN"              :rem 157
3730 DATA"HE WAS POLAND'S MUSICAL PRODIGY"  :rem 7
3740 DATA"HIS 'DEATH MARCH' IS A FAMILIAR REFRAIN
     {SPACE}OF DOOM"                       :rem 28
3750 DATA"HIS MUSIC INFLUENCED LISZT, WAGNER AND
     {2 SPACES}DEBUSSY"                    :rem 231
3760 DATAB,"WOLFGANG MOZART"              :rem 206
3770 DATA"HE WROTE MORE THAN 600 MUSICAL
     {10 SPACES}COMPOSITIONS"              :rem 246
3780 DATA"HIS 'DON GIOVANNI' IS CONSIDERED ONE OF
     {SPACE}THE MOST PERFECT OPERAS"       :rem 136
3790 DATA"HE BEGAN COMPOSING AT THE AGE OF 5 AND
     {2 SPACES}DIED WHEN HE WAS 35"        :rem 210
3800 DATAB,"PETR TCHAIKOVSKY"             :rem 34
3810 DATA"HE COMPOSED 'SWAN LAKE' AND 'THE
     {8 SPACES}NUTCRACKER'"                :rem 169
3820 DATA"THE 'PATHETIQUE' IS HIS SIXTH SYMPHONY"
                                          :rem 235
3830 DATA"HE IS THE MOST FAMOUS RUSSIAN COMPOSER"
                                          :rem 209
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3840 DATAAC,CLEOPATRA                           :rem 52
3850 DATA"ALTHOUGH A GREEK, SHE WAS THE LAST QUEEN
     OF EGYPT"                                  :rem 225
3860 DATA"SHE LOVED BOTH MARK ANTONY AND JULIUS
     {3 SPACES}CAESAR"                          :rem 24
3870 DATA"SHE KILLED HERSELF RATHER THAN BE A
     {5 SPACES}ROMAN CAPTIVE"                   :rem 16
3880 DATAB,"PETER PAUL RUBENS"                  :rem 32
3890 DATA"HE INVENTED THE FLEMISH STYLE OF BAROQUE
     PAINTING"                                  :rem 148
3900 DATA"ROYALTY FAVORED HIS PAINTINGS, MAKING
     {3 SPACES}HIM A RICH MAN"                  :rem 250
3910 DATA"HE WAS KNIGHTED BY CHARLES I"     :rem 215
3920 DATAB,"JOHANN VON GOETHE"                   :rem 7
3930 DATA"HE WAS CALLED THE 'GERMAN SHAKESPEARE'"
                                                :rem 95
3940 DATA"HIS MOST FAMOUS WORK WAS THE DRAMA
     {6 SPACES}'FAUST'"                         :rem 101
3950 DATA"HE WROTE A NOVEL THAT CAUSED SUICIDES
     {3 SPACES}ALL OVER EUROPE"                 :rem 54
3960 DATAA,"LOUIS XIV"                          :rem 32
3970 DATA"HE WAS KNOWN AS THE 'SUN KING'"   :rem 24
3980 DATA"HE BUILT A PALACE AT VERSAILLES BECAUSE
     {SPACE}HE HATED PARIS"                     :rem 31
3990 DATA"HIS EXCESSIVE TAXES CAUSED THE FRENCH
     {3 SPACES}REVOLUTION"                      :rem 174
4000 DATAA,"NAPOLEON BONAPARTE"                 :rem 135
4010 DATA"HE WAS THE FIRST EMPEROR OF FRANCE"
                                                :rem 98
4020 DATA"HE WAS EXILED FROM FRANCE AFTER THE DUKE
     OF WELLINGTON DEFEATED HIM"                :rem 94
4030 DATA"THE NATION OF FRANCE TRACES ITS ROOTS TO
     HIM"                                       :rem 221
4040 DATAA,"KING HENRY VIII"                    :rem 115
4050 DATA"HIS COUNTRY ADOPTED A NEW RELIGION SO HE
     COULD GET DIVORCED"                        :rem 154
4060 DATA"HE MARRIED SIX WIVES AND DIVORCED OR
     {4 SPACES}KILLED FOUR OF THEM"             :rem 179
4070 DATA"HE HELPED INTRODUCE THE RENAISSANCE TO
     {2 SPACES}GREAT BRITAIN"                   :rem 65
4080 DATAA,"BENITO MUSSOLINI"                   :rem 27
4090 DATA"KNOWN AS 'IL DUCE', HE WAS DICTATOR OF
     {2 SPACES}ITALY FOR 20 YEARS"              :rem 51
4100 DATA"HE WAS AN EXPELLED SOCIALIST WHO STARTED
     THE FACIST PARTY"                          :rem 88
4110 DATA"HE SUPPORTED HITLER IN WW II, BUT HIS
     {3 SPACES}COUNTRY FELL TO THE ALLIES":rem 166
4120 DATAAB,"MAO TSE-TUNG"                       :rem 8
4130 DATA"HE AND KARL MARX WERE COMMUNISM'S
     {7 SPACES}LEADING PHILOSOPHERS"            :rem 225
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4140 DATA"HE RULED A FOURTH OF THE EARTH'S PEOPLE
     {SPACE}FOR 25 YEARS"                       :rem 68
4150 DATA"HE ESTABLISHED THE PEOPLE'S REPUBLIC OF
     {SPACE}CHINA IN 1949"                      :rem 185
4160 DATAAC,"EVA PERON"                         :rem 57
4170 DATA"SHE WAS PROBABLY THE MOST POWERFUL WOMAN
     IN ARGENTINA'S HISTORY"                    :rem 70
4180 DATA"THE 'SHIRTLESS ONES' CALLED HER A SAINT
     {SPACE}FOR HER SOCIAL PROGRAMS"            :rem 128
4190 DATA"A RADIO ACTRESS, SHE LATER BECAME LABOR
     {SPACE}MINISTER OF ARGENTINA"              :rem 27
4200 DATAD,"JOHN PAUL JONES"                    :rem 116
4210 DATA"THIS SCOT WAS A NAVAL HERO DURING THE
     {3 SPACES}REVOLUTIONARY WAR"               :rem 249
4220 DATA"HE SAID 'I HAVE NOT YET BEGUN TO FIGHT'"
                                                :rem 248
4230 DATA"LATER IN HIS LIFE HE BECAME AN ADMIRAL
     {2 SPACES}IN THE RUSSIAN NAVY"             :rem 200
4240 DATAAC,"CATHERINE II"                      :rem 253
4250 DATA"THIS RUSSIAN RULER WAS A GERMAN
     {9 SPACES}PRINCESS, EDUCATED IN FRANCE"
                                                :rem 14
4260 DATA"SHE DEFEATED HER HUSBAND PETER FOR THE
     {2 SPACES}RUSSIAN THRONE"                  :rem 93
4270 DATA"SHE ADDED MORE THAN 200,000 SQUARE MILES
     TO RUSSIA DURING HER REIGN"                :rem 235
4280 DATAAB,"BENJAMIN DISRAELI"                 :rem 108
4290 DATA"HE WROTE SEVERAL NOVELS BASED ON HIS
     {4 SPACES}FRIENDS' SCANDALS"               :rem 143
4300 DATA"HE WAS THE FATHER OF THE CONSERVATIVE
     {3 SPACES}PARTY IN GREAT BRITAIN"          :rem 234
4310 DATA"A JEWISH STATESMAN, HE SERVED TWICE AS
     {2 SPACES}PRIME MINISTER OF BRITAIN" :rem 249
4320 DATAABG,"MOHANDAS GANDHI"                  :rem 19
4330 DATA"HIS IDEA OF 'MILITANT NONVIOLENCE' LED
     {2 SPACES}TO INDIA'S INDEPENDENCE"         :rem 93
4340 DATA"HE LIVED IN SOUTH AFRICA FOR 21 YEARS,
     {2 SPACES}LEADING THE INDIANS THERE"       :rem 71
4350 DATA"HE WAS ASSASSINATED WHILE WORKING FOR A
     {SPACE}HINDU-MUSLIM TRUCE"                 :rem 230
4360 DATAAE,"ADOLPH HITLER"                     :rem 93
4370 DATA"HE HEADED THE NATIONAL SOCIALIST GERMAN
     {SPACE}WORKERS' PARTY"                     :rem 212
4380 DATA"HE WAS DICTATOR OF GERMANY FOR 13
     {7 SPACES}FATEFUL YEARS"                   :rem 125
4390 DATA"MORE THAN 6 MILLION JEWS DIED UNDER HIS
     {SPACE}ORDERS"                             :rem 86
4400 DATAAA,"NIKOLAI LENIN"                     :rem 16
4410 DATA"HE WAS THE FIRST HEAD OF THE USSR AFTER
     {SPACE}THE REVOLUTION"                     :rem 71
```

Level 4

```
4420 DATA"HIS BROTHER WAS EXECUTED FOR TRYING TO
     {2 SPACES}ASSASSINATE A CZAR"          :rem 123
4430 DATA"HE DIRECTED THE BOLSHEVIK UPRISING FOR
     {2 SPACES}22 YEARS WHILE IN EXILE"      :rem 73
4440 DATAE,"PANCHO VILLA"                   :rem 204
4450 DATA"HE WAS A GUERILLA LEADER DURING THE
     {5 SPACES}MEXICAN REVOLUTION"          :rem 172
4460 DATA"HE ROBBED FROM RICH LANDOWNERS AND GAVE
     {SPACE}TO THE POOR"                     :rem 120
4470 DATA"HE WENT BY THE NAME OF A FAMOUS BANDIT,
     {SPACE}AND WAS HIMSELF A BANDIT"        :rem 205
4480 DATAA,"DUKE OF WELLINGTON"              :rem 92
4490 DATA"HE IS FAMOUS FOR THE DEFEAT OF NAPOLEON
     {SPACE}AT WATERLOO"                     :rem 135
4500 DATA"HE WAS RESPONSIBLE FOR BRITAIN'S
     {8 SPACES}CATHOLIC EMANCIPATION ACT" :rem 230
4510 DATA"THIS 'IRON DUKE' WAS BURIED UNDER THE
     {3 SPACES}SAINT PAUL'S CATHEDRAL DOME"
                                            :rem 236
4520 DATADF,"HENRY FORD"                    :rem 144
4530 DATA"THIS SCHOOL DROPOUT CHANGED THE FACE OF
     {SPACE}AMERICAN INDUSTRY"              :rem 136
4540 DATA"HE CREATED THE FIVE DAY WORKWEEK" :rem 8
4550 DATA"HE DEVELOPED THE FIRST MASS-PRODUCTION
     {2 SPACES}AUTO"                         :rem 91
4560 DATACG,"MARY BAKER EDDY"               :rem 167
4570 DATA"SHE FOUNDED THE CHRISTIAN SCIENCE
     {7 SPACES}CHURCH"                       :rem 80
4580 DATA"HER BOOK WAS 'SCIENCE AND HEALTH WITH
     {3 SPACES}KEY TO THE SCRIPTURES'"      :rem 178
4590 DATA"SHE FOUNDED THE 'CHRISTIAN SCIENCE
     {6 SPACES}MONITOR'"                     :rem 11
4600 DATAEG,"GRIGORI RASPUTIN"              :rem 105
4610 DATA"HE TAUGHT THAT MAN MUST SIN BEFORE HE
     {3 SPACES}COULD BE FORGIVEN"            :rem 97
4620 DATA"HIS SUPPOSED HEALING POWERS ATTRACTED
     {3 SPACES}THE CZARINA TO HIM"           :rem 95
4630 DATA"HIS NEGATIVE INFLUENCE MAY HAVE HELPED
     {2 SPACES}CAUSE THE RUSSIAN REVOLUTION"
                                             :rem 70
4640 DATADG,"BRIGHAM YOUNG"                 :rem 111
4650 DATA"HE LED THE MORMON CHURCH FOR 33 YEARS"
                                            :rem 214
4660 DATA"HE WAS THE LEADER OF A RELIGIOUS EXODUS
     {SPACE}TO UTAH"                         :rem 106
4670 DATA"HE IS MOST OFTEN ASSOCIATED WITH THE
     {4 SPACES}PRACTICE OF POLYGAMY"        :rem 102
4680 DATAG,"MARTIN LUTHER"                   :rem 66
4690 DATA"HIS '95 THESES' CAUSED THIS MONK TO BE
     {2 SPACES}EXCOMMUNICATED"              :rem 255
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4700 DATA"HIS REBELLION STARTED THE PROTESTANT
     {4 SPACES}REFORMATION"                    :rem 251
4710 DATA"HE HELPED NUNS ESCAPE FROM NUNNERIES,
     {3 SPACES}AND MARRIED ONE OF THEM"    :rem 241
4720 DATAD,"BOOKER T. WASHINGTON"           :rem 225
4730 DATA"THIS SON OF A SLAVE FOUNDED TUSKEGEE
     {4 SPACES}INSTITUTE"                     :rem 208
4740 DATA"HE STARTED THE NATIONAL NEGRO BUSINESS
     {2 SPACES}LEAGUE IN 1900"                  :rem 3
4750 DATA"HE CHAMPIONED EDUCATION FOR BLACKS AND
     {2 SPACES}AMERICAN INDIANS"              :rem 223
4760 DATAAE,"ATTILA THE HUN"                 :rem 108
4770 DATA"HE WAS THE KING OF THE HUNS STARTING IN
     {SPACE}433 A.D"                          :rem 182
4780 DATA"THOUGH HE CONQUERED MOST OF THE WORLD,
     {2 SPACES}ITALY DEFEATED HIM TWICE"   :rem 175
4790 DATA"HIS NICKNAME WAS THE 'SCOURGE OF GOD'"
                                             :rem 253
4800 DATAA,"ALEXANDER THE GREAT"            :rem 127
4810 DATA"AS KING OF MACEDONIA, HE CONQUERED THE
     {2 SPACES}EASTERN WORLD IN THREE YEARS"
                                             :rem 107
4820 DATA"HE SPREAD GREEK CIVILIZATION THROUGH
     {4 SPACES}MOST OF THE WORLD"            :rem 221
4830 DATA"HIS DREAM WAS TO CONQUER THE WORLD AND
     {2 SPACES}THEN UNITE IT"                :rem 178
4840 DATAB,ARISTOTLE                         :rem 15
4850 DATA"THIS GREEK SCIENTIST WAS EDUCATED BY
     {4 SPACES}PLATO FOR 20 YEARS"           :rem 157
4860 DATA"HE IS CONSIDERED THE FATHER OF PHYSICAL
     {SPACE}SCIENCE"                          :rem 192
4870 DATA"HE FOUNDED THE SCIENCE OF DEDUCTIVE
     {5 SPACES}LOGIC"                          :rem 62
4880 DATAD,"ETHAN ALLEN"                     :rem 126
4890 DATA"HE ORGANIZED THE GREEN MOUNTAIN BOYS"
                                              :rem 93
4900 DATA"HE HELPED BENEDICT ARNOLD CAPTURE FORT
     {2 SPACES}TICONDEROGA IN 1775"           :rem 81
4910 DATA"HE FOUGHT AGAINST CANADA IN THE AMERICAN
     REVOLUTION"                             :rem 244
4920 DATAE,"BENEDICT ARNOLD"                 :rem 156
4930 DATA"HE HELPED CAPTURE ST. JOHNS, QUEBEC,
     {4 SPACES}DURING THE REVOLUTIONARY WAR"
                                             :rem 124
4940 DATA"GEORGE WASHINGTON MADE HIM COMMANDER OF
     {SPACE}WEST POINT"                       :rem 215
4950 DATA"THIS BRITISH SPY WAS CALLED AMERICA'S
     {3 SPACES}BIGGEST TRAITOR"              :rem 159
4960 DATACD,"CLARA BARTON"                    :rem 13
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4970 DATA"SHE FOUNDED THE AMERICAN RED CROSS
     {6 SPACES}SOCIETY"                         :rem 189
4980 DATA"SHE SEARCHED FOR MISSING SOLDIERS AFTER
     {SPACE}THE CIVIL WAR"                      :rem 108
4990 DATA"SHE AIDED VICTIMS OF THE JOHNSTOWN FLOOD
     AND THE BOER WAR"                           :rem 4
5000 DATAE,"JOHN WILKES BOOTH"                  :rem 14
5010 DATA"HE WAS ONE OF A FAMILY OF FAMOUS ACTORS"
                                                :rem 66
5020 DATA"HE WANTED TO KIDNAP AND KILL THE
     {8 SPACES}PRESIDENT AND VICE-PRESIDENT"
                                                :rem 50
5030 DATA"HE WAS SHOT FOR THE MURDER OF ABRAHAM
     {3 SPACES}LINCOLN"                          :rem 3
5040 DATAD,"MARTIN LUTHER KING"                 :rem 95
5050 DATA"THIS BAPTIST PREACHER WON THE NOBEL
     {5 SPACES}PEACE PRIZE IN 1968"             :rem 93
5060 DATA"HIS NON-VIOLENT WORK WITH BLACK CIVIL
     {3 SPACES}RIGHTS LED TO HIS DEATH"         :rem 44
5070 DATA"HE ORGANIZED THE SOUTHERN CHRISTIAN
     {5 SPACES}LEADERSHIP CONFERENCE"           :rem 17
5080 DATAG,"JOHN CALVIN"                        :rem 138
5090 DATA"A FRENCH PROTESTANT, HIS ORIGINAL
     {7 SPACES}AVOCATION WAS LAW"               :rem 15
5100 DATA"HIS BOOK PROPOSED A SCRIPTURAL BASIS
     {4 SPACES}FOR ALL CHRISTIAN DOCTRINE" :rem 24
5110 DATA"HIS CREED FORMED THE CHURCH OF SCOTLAND
     {SPACE}AND OTHER PRESBYTERIAN GROUPS":rem 129
5120 DATAE,CALIGULA                             :rem 149
5130 DATA"THE SON OF AGRIPPINA, HIS REAL NAME WAS
     {SPACE}GAIUS CAESAR"                       :rem 144
5140 DATA"AFTER MAKING HIS HORSE A CONSUL, HE WAS
     {SPACE}ASSASSINATED AT THE AGE OF 29" :rem 53
5150 DATA"A MENTAL ILLNESS CAUSED HIM TO KILL AND
     {SPACE}TORTURE PEOPLE AT DINNER"          :rem 201
5160 DATADF,"GEORGE WASHINGTON CARVER"          :rem 94
5170 DATA"HE WAS RANSOMED FROM RACIST NIGHT RIDERS
     FOR A $300 HORSE"                         :rem 153
5180 DATA"HE DEVELOPED MORE THAN 300 PRODUCTS FROM
     PEANUTS"                                   :rem 10
5190 DATA"HE DEVELOPED MORE THAN 115 PRODUCTS FROM
     SWEET POTATOES"                           :rem 230
5200 DATAB,SOCRATES                             :rem 179
5210 DATA"HE WAS A SCULPTOR, BUT BECAME INTERESTED
     IN PHILOSOPHY"                            :rem 172
5220 DATA"HE FOUNDED THE CYNIC AND STOIC SCHOOLS
     {2 SPACES}OF PHILOSOPHY"                   :rem 36
5230 DATA"HE WAS SENTENCED TO DEATH FOR CORRUPTING
     THE MORALS OF YOUTH"                       :rem 19
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5240 DATAB,PLATO                              :rem 211
5250 DATA"'THE REPUBLIC' WAS HIS GREATEST
     {9 SPACES}PHILOSOPHICAL WORK"            :rem 239
5260 DATA"HIS ACADEMY MADE ATHENS THE INTELLECTUAL
     CENTER OF GREECE"                         :rem 69
5270 DATA"HE BELIEVED THAT GOD WAS THE ABSOLUTE
     {3 SPACES}IDEA OF GOOD"
5280 DATAB,"LUDWIG VAN BEETHOVEN"             :rem 236
5290 DATA"MOZART SAID TO 'KEEP YOUR EYE ON HIM'"
                                              :rem 239
5300 DATA"HE WROTE THE NINTH SYMPHONY AFTER HE WAS
     DEAF"                                     :rem 39
5310 DATA"HE SURPASSED MOZART AND HAYDN IN THE
     {4 SPACES}DEVELOPMENT OF THE SONATA" :rem 137
5320 DATAC,"FLORENCE NIGHTINGALE"             :rem 15
5330 DATA"SHE WAS MOST FAMOUS AS A CRIMEAN WAR
     {4 SPACES}NURSE"                          :rem 77
5340 DATA"HER SCHOOL OF NURSING WAS THE FIRST
     {5 SPACES}FORMAL TRAINING FOR NURSES":rem 196
5350 DATA"SHE WAS CALLED 'THE LADY WITH THE LAMP'"
                                              :rem 59
5360 DATABG,"THOMAS AQUINAS"                  :rem 191
5370 DATA"HE WAS THE 'DUMB OX WHOSE BELLOW FILLED
     {SPACE}THE WORLD'"                         :rem 7
5380 DATA"HE TAUGHT THAT MAN LEARNED TRUTH FROM
     {3 SPACES}BOTH FAITH AND HIS SENSES" :rem 124
5390 DATA"HE ORGANIZED THE DOMINICAN SCHOOL OF
     {4 SPACES}CATHOLIC FAITH"                :rem 226
5400 DATADF,"THOMAS EDISON"                   :rem 107
5410 DATA"HE INVENTED OVER 1000 PRODUCTS, BUT HAD
     {SPACE}VERY LITTLE SCHOOLING"             :rem 33
5420 DATA"HE INVENTED THE PHONOGRAPH AND THE
     {6 SPACES}MOTION PICTURE MACHINE"        :rem 133
5430 DATA"HIS GREATEST INVENTION WAS THE ELECTRIC
     {SPACE}LIGHT BULB"                       :rem 219
5440 DATABDF,"BENJAMIN FRANKLIN"              :rem 188
5450 DATA"HE WORKED AS A PRINTER AND PUBLISHED HIS
     OWN ALMANAC"                             :rem 182
5460 DATA"HE PERFORMED ELECTRICAL EXPERIMENTS WITH
     KITES"                                    :rem 70
5470 DATA"HE STARTED THE POSTAL SERVICE IN THE 13
     {SPACE}COLONIES"                         :rem 207
5480 DATAD,"ALEXANDER HAMILTON"               :rem 143
5490 DATA"HE WAS THE FIRST U.S. SECRETARY OF THE
     {2 SPACES}TREASURY"                      :rem 188
5500 DATA"HE ADVOCATED A U.S. GOVERNMENT BASED ON
     {SPACE}PROPERTY AND WEALTH"              :rem 163
5510 DATA"HIS DOCTRINE OF 'IMPLIED POWERS' STILL
     {2 SPACES}INFLUENCES THE SUPREME COURT"
                                              :rem 47
```

```
5600 DATA"$"                              :rem 77
6000 REM *** SONG DATA ***               :rem 247
6010 DATA8583,1,8583,2,8101,1,7217,2,5728,2,5728,2
     ,7217,1,7217,2                      :rem 155
6020 DATA8101,1,8583,2,11457,2,11457,2,8583,1,8583
     ,2,8101,1                          :rem 153
6030 DATA7217,2,5728,2,5728,2,5728,1,5728,2,4291,1
     ,5728,4                            :rem 76
```

Skeleton

Skill area: Science
Level: 4
Equipment required: None
Modification: Yes

That Old Bag of Bones

You've heard people say their family has a "skeleton in the closet." Usually they mean Aunt Mildred is a bit peculiar, or Uncle Fred has a very strange hobby. But there's another way to get a skeleton in your closet: lose this game, and you'll have a skeleton sitting right on your closet floor.

Do you want a skeleton in your closet? Of course not! But if you know your bones, you won't have any problem with this knock-kneed character.

How to Play

"Skeleton" is designed to teach you parts of the basic skeletal structure. The computer will pick a name of a bone which you must guess. The computer will also give you a clue.

Determine the bone by trying one letter at a time. If you pick more than 11 incorrect letters, you'll find a skeleton sitting in your closet.

Hit any key to begin. Then pick your level of play and wait ten seconds. The computer will ask you to enter a letter. If it's a letter that's found in the word the computer has in mind, the computer will show you that letter's position in the word. If you guess incorrectly, the screen will go black, the incorrect letter you've tried will appear at the bottom of the screen, and part of the skeleton will appear in your closet.

The names included in Skeleton appear below. Familiarize yourself with the list, but try not to use it during play. You may find it easier if you use the list, but you won't have as much fun.

Beginning List

Clavicle	Fibula	Carpal Bones
Humerus	Femur	Metacarpal Bones
Ulna	Metatarsal Bones	Phalanges
Radius	Tarsal Bones	Coccyx
Tibia	Patella	Ilium

4

Pubis	Vertebrae	Scapula
Ischium	Ribs	Mandible
Sacrum	Sternum	Cranium

Advanced List

Parietal Bone	Maxilla
Sphenoid	Zygomatic Bone
Temporal Bone	Nasal Bone
Occipital Bone	Frontal Bone
Mastoid Process	Sacroiliac Joint
Pubic Symphysis	Axis
Lumbar Vertebrae	Atlas
Thoracic Vertebrae	Axis
Cervical Vertebrae	Atlas

Scoring

At the end of a round, the computer will ask if you want the name of another bone. Press the letter Y for yes or the letter N for no. After you've finished playing Skeleton, the computer will tell you how many words you correctly identified, as well as how many you missed.

Skeleton

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM SKELETON                            :rem 122
100 CB=828:NW%=43                         :rem 157
105 VC=53248:POKEVC+32,6:POKEVC+33,13:PRINTCHR$(14
    7)                                    :rem 62
110 DIM NT%(19),WT$(NW%-1),WI$(19),CC$(NW%-1)
                                          :rem 92
115 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX :rem 73
120 S1=((PEEK(53272)AND240)/16)*1024:S2=55296
                                          :rem 102
130 FORX=0TO19:READZ:NT%(X)=Z:NEXTX:FORX=1TONW%:RE
    ADX$,XX$                              :rem 53
135 WT$(X-1)=X$:CC$(X-1)=XX$:NEXT X       :rem 245
140 PRINT"{CLR}{BLK}{2 SPACES}{RVS}{9 SPACES}S K E
    L E T O N{12 SPACES}{OFF}{DOWN}"      :rem 163
142 GOSUB8000                             :rem 223
146 PRINT" THIS GAME TEACHES YOU THE NAMES OF THE
    {2 SPACES}BONES IN THE HUMAN SKELETON:"
                                          :rem 138
150 PRINT"{6 DOWN} THE COMPUTER WILL SELECT THE NA
    MES OF"                               :rem 255
```

```
160 PRINT" THE BONES, AND PRESENT THEM TO YOU."
                                            :rem 220
170 PRINT"{DOWN} YOU MUST DETERMINE THE BONE BY"
                                            :rem 253
175 PRINT" GUESSING ONE LETTER AT A TIME.":rem 184
180 PRINT"{DOWN} IF YOU PICK MORE THAN 11 INCORREC
    T"                                      :rem 151
190 PRINT" LETTERS, A SKELETON WILL HANG IN YOUR
    {3 SPACES}CLOSET!!"                     :rem 168
200 PRINT"{2 DOWN}{7 SPACES}(PRESS ANY KEY TO STAR
    T)":GOSUB2500                           :rem 230
210 PRINT "{CLR}{6 DOWN}{9 SPACES}DO YOU WISH TO P
    LAY"                                    :rem 1
214 PRINT"{DOWN}{8 SPACES}{RVS}B{OFF}EGINNERS OR
    {RVS}A{OFF}DVANCED?"                    :rem 116
215 GET Q$:IF Q$<>"B" AND Q$<>"A" THEN 215 :rem 57
216 IF Q$="A" THEN NW%=43                   :rem 252
217 IF Q$="B" THEN NW%=25                   :rem 254
219 PRINT"{9 DOWN}{9 SPACES}(TEN SECOND DELAY)";
                                            :rem 164
220 FORX=1TONW%:POKECB+X,0:NEXTX            :rem 76
230 FORX=1TONW%:GOSUB800:POKECB+Z,X:NEXTX:POKEVC+3
    3,15:PRINTCHR$(147)                     :rem 163
300 FORLC=1TONW%                            :rem 228
310 X=PEEK(CB+LC):WO$=WT$(X-1):SY$=CC$(X-1)
                                            :rem 237
320 LW%=LEN(WO$)                            :rem 148
330 SC=0:FORX=0TOLW%-1                      :rem 72
340 WI$(X)=MID$(WO$,X+1,1):IFASC(WI$(X))=32THENSC=
    SC+1                                    :rem 139
345 NEXTX                                   :rem 51
350 LC%=0:OF%=881:SO=640:BC%=0:GOSUB1000:LW%=LW%-1
                                            :rem 111
400 GETX$:IFX$=""THEN400                    :rem 121
410 X=ASC(X$):IFX<65ORX>90THEN400           :rem 249
500 HI=0:FORY=0TOLW%:IFWI$(Y)<>X$THEN530    :rem 217
510 HI=1:WI$(Y)="$":POKES1+SO+CC+Y*2,X-64   :rem 72
520 LC%=LC%+1                               :rem 152
530 NEXTY:IFHI=1THEN560                     :rem 194
540 GOSUB3000:BC%=BC%+1                     :rem 3
550 IFBC%>10THENGOSUB2000:LO%=LO%+1:FORX=1TO5000:N
    EXTX:GOTO700                            :rem 96
560 IF(LC%+SC)<=LW%THEN400                  :rem 244
570 GOSUB4000:WI%=WI%+1                     :rem 61
700 PRINT"{CLR}{BLU}{2 DOWN}{13 SPACES}{RVS}ANOTHE
    R BONE ?{OFF}":PRINT"{2 DOWN}{5 SPACES}ENTER
    {RVS}Y{OFF} OR {RVS}N{OFF}"             :rem 143
720 GETX$:IFX$=""THEN720                    :rem 131
730 IFX$="Y"THENNEXTLC:GOTO220              :rem 131
740 IFX$<>"N"THEN720                        :rem 122
```

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```
750 PRINT"{BLK}{3 DOWN}{5 SPACES}NUMBER CORRECT ="
    ;WI%                                        :rem 72
760 PRINT"{2 DOWN}{5 SPACES}NUMBER MISSED
    {2 SPACES}=";LO%                            :rem 86
770 PRINT"{2 DOWN}{5 SPACES}FINAL SCORE{4 SPACES}=
    ";INT((WI%*100)/(WI%+LO%));"{LEFT}%"        :rem 109
780 END                                        :rem 118
800 Y=0                                         :rem 94
810 Z=INT(RND(1)*NW%)+1:IFPEEK(CB+Z)=0THENRETURN
                                                :rem 231
820 Y=Y+1:IFY<10THEN810                         :rem 108
830 Z=1                                         :rem 99
840 IFPEEK(CB+Z)=0THENRETURN                    :rem 39
850 Z=Z+1:GOTO840                               :rem 249
1000 PRINT"{CLR}{BLK}{DOWN}{12 SPACES}S K E L E T
     {SPACE}O N"                                :rem 43
1110 PRINT"{12 DOWN}"                           :rem 96
1500 PRINT"{2 DOWN}
     ****************************************** ";
                                                :rem 244
1502 QX=LEN(SY$)/2:QQ=INT(QX):IFQQ<>QX THEN QQ=QQ+
     1                                          :rem 167
1504 QQ=20-QQ                                   :rem 218
1505 PRINT SPC(QQ);SY$                          :rem 60
1510 PRINT"{DOWN} ENTER A LETTER:";             :rem 173
1515 CC=INT((40-(LW%*2-1))/2)                   :rem 225
1520 Z=0:FORY=0TO((LW%-1)*2)STEP2:X=70:IFASC(WI$(Z
     ))=32THENX=32                              :rem 12
1540 POKES1+SO+CC+Y,X:IFX=70THENPOKES2+SO+CC+Y,6
                                                :rem 15
1550 Z=Z+1:NEXTY                                :rem 234
1560 Z=WI%+LO%:IFZ=0THENZ=.1                    :rem 200
1570 PRINT"{HOME}{24 DOWN}";SPC(13);"SCORE =";
                                                :rem 146
1580 PRINTINT((WI%*100)/Z);"{LEFT}%";           :rem 109
1590 RETURN                                     :rem 175
2000 FORX=0TOLW%:IFWI$(X)="$"THEN2020           :rem 167
2010 Y=ASC(WI$(X)):IFY=32THEN2020               :rem 165
2015 POKES1+SO+CC+X*2,Y-64                      :rem 244
2020 NEXTX                                      :rem 91
2030 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15
     :POKEMC+24,8                               :rem 177
2040 FORY=80TO20STEP-10                         :rem 122
2050 POKEMC+1,Y:POKEMC+4,17:FORX=1TO60:NEXTX
                                                :rem 20
2060 POKEMC+4,16:FORX=1TO30:NEXTX,Y             :rem 188
2070 POKEMC+24,0                                :rem 117
2080 RETURN                                     :rem 170
2500 REM *** SPRITE AND SONG ***               :rem 136
```

```
2505 X=5:Y=Ø:POKEMC+24,15:POKEVC+21,1        :rem 159
2510 Z=INT(NT%(Y)/256)                       :rem 216
2520 POKEMC+Ø,NT%(Y)-(Z*256)                  :rem 31
2530 POKEMC+1,Z:POKEMC+4,17                   :rem 87
2540 Y=Y+1:IFY>19THENY=Ø                     :rem 213
2550 POKEVC+Ø,X:X=X+1Ø                        :rem 38
2560 IFX>6ØAND(PEEK(VC+16)AND1)=1THENX=5:POKEVC+16
     ,Ø:POKEVC+Ø,X                            :rem 89
2570 IFX>255THENX=5:POKEVC+16,1:POKEVC+Ø,X :rem 9Ø
2580 IFPEEK(2Ø4Ø)=13THENPOKE2Ø4Ø,14:GOTO26ØØ
                                             :rem 43
2590 POKE2Ø4Ø,13                             :rem 85
2600 FORZ=1TO12Ø:NEXTZ:POKEMC+4,16          :rem 1Ø7
2610 FORZ=1TO2Ø:NEXTZ                        :rem 8Ø
2620 GETX$:IFX$=""THEN251Ø                  :rem 227
2630 POKEMC+24,Ø:POKEVC+21,Ø                 :rem 99
2640 RETURN                                 :rem 172
3000 PRINT"{BLK}";                           :rem 95
3005 ON(BC%+1)GOTO3Ø1Ø,3Ø2Ø,3Ø3Ø,3Ø4Ø,3Ø5Ø,3Ø6Ø,3Ø
     7Ø,3Ø8Ø,3Ø9Ø,31ØØ,311Ø,312Ø            :rem 48
3010 PRINT"{HOME}{3 DOWN}";SPC(18);"{RVS}£ {*}
     {OFF}":GOTO35ØØ                        :rem 156
3020 PRINTSPC(18);"{RVS}Q Q{OFF}":GOTO35ØØ:rem 242
3030 PRINTSPC(18);"{RVS} - {OFF}":GOTO35ØØ :rem 46
3040 PRINTSPC(18);"{*}{RVS} {OFF}£":GOTO35ØØ
                                            :rem 218
3050 PRINTSPC(14);"{RVS}{B}{OFF}{4 SPACES}{RVS}-
     {OFF}{4 SPACES}{B}":GOTO35ØØ           :rem 158
3060 PRINTSPC(15);"M{3 SPACES}-{3 SPACES}N":GOTO35
     ØØ                                      :rem 37
3070 PRINTSPC(16);"M{2 P}{E}{2 P}N":GOTO35ØØ
                                            :rem 183
3080 PRINTSPC(18);"*+*":GOTO35ØØ             :rem 13
3090 PRINTSPC(18);"*+*":GOTO35ØØ             :rem 14
3100 PRINTSPC(15);"NM{2 SPACES}+{2 SPACES}NM":GOTO
     35ØØ                                   :rem 185
3110 PRINTSPC(13);"MN{2 SPACES}M{RVS}Q Q{OFF}N
     {2 SPACES}MN"                          :rem 131
3500 POKEMC+Ø,Ø:POKEMC+1,5:POKEMC+4,33:POKEMC+5,15
     :POKEMC+6,15:POKEMC+24,8               :rem 163
3505 POKEVC+33,Ø                            :rem 13Ø
3510 FORY=1TO1ØØ:NEXTY:POKEMC+4,32          :rem 1Ø2
3520 FORY=1TO3Ø:NEXTY:POKEMC+24,Ø:POKEVC+33,15
                                             :rem 91
3530 POKES1+OF%,X-64:POKES2+OF%,Ø:OF%=OF%+2
                                            :rem 245
3540 RETURN                                 :rem 172
4000 REM *** FLASH ON A WIN ***             :rem 222
4010 POKEMC+Ø,Ø:POKEMC+1,Ø:POKEMC+5,15:POKEMC+6,15
     :POKEMC+24,12                          :rem 22Ø
```

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4020 FORX=8TO15                              :rem 131
4030 POKEVC+33,X                             :rem 164
4040 POKEMC+1,X*4:POKEMC+4,17                :rem 177
4050 FORY=1TO50:NEXTY                        :rem 81
4060 POKEMC+4,16:FORY=1TO30:NEXTY,X          :rem 191
4070 POKEMC+24,0                             :rem 119
4080 RETURN                                  :rem 172
5000 DATA1072,1607,1804,1804,1607,1432,1204,1432,1
     204,1432,1072,1072                      :rem 67
5010 DATA1432,1804,2145,1804,2145,1607,1204,1072
                                             :rem 111
6000 REM *** LOAD THE SPRITES ***            :rem 209
6020 .                                       :rem 246
7000 DATA"CLAVICLE","COLLARBONE","HUMERUS","UPPER
     {SPACE}ARM"                             :rem 46
7005 DATA"ULNA","FOREARM","RADIUS","FOREARM","TIBI
     A","SHIN"                               :rem 5
7010 DATA"FIBULA","CALF","FEMUR","THIGH"     :rem 50
7015 DATA"METATARSAL BONES","FOOT (SOLE)","TARSAL
     {SPACE}BONES","FOOT (ANKLE)"            :rem 206
7020 DATA"PATELLA","KNEECAP","CARPAL BONES","HAND
     {SPACE}(WRIST)","METACARPAL BONES"      :rem 97
7025 DATA"HAND (KNUCKLE)","PHALANGES","FINGERS","P
     HALANGES","TOES","COCCYX"               :rem 13
7030 DATA"TAILBONE","ILIUM","PELVIS (HIP)","PUBIS"
     ,"PELVIS (GROIN)","ISCHIUM"             :rem 99
7035 DATA"PELVIS (SEAT)","SACRUM","BASE OF SPINE",
     "VERTEBRAE","SPINE","RIBS"              :rem 247
7040 DATA"CHEST","STERNUM","BREASTBONE","SCAPULA",
     "SHOULDER BLADE","MANDIBLE"             :rem 230
7045 DATA"JAW","CRANIUM","BRAIN CASE","PARIETAL BO
     NE","TOP OF YOUR HEAD"                  :rem 198
7050 DATA"SPHENOID","THE BASE OF THE SKULL","TEMPO
     RAL BONE"                               :rem 233
7055 DATA"ALONGSIDE YOUR HEAD","OCCIPITAL BONE","T
     HE BACK OF THE HEAD"                    :rem 60
7060 DATA"MASTOID PROCESS","TUCKED BEHIND THE EAR"
     ,"PUBIC SYMPHYSIS"                      :rem 170
7065 DATA"PELVIC CONNECTION (GROIN)","LUMBAR VERTE
     BRAE","THE LOWER SPINE"                 :rem 223
7070 DATA"THORACIC VERTEBRAE","THE MIDDLE OF THE B
     ACK","CERVICAL VERTEBRAE"               :rem 249
7075 DATA"A PAIN IN THE NECK","MAXILLA","STIFF UPP
     ER LIP","ZYGOMATIC BONE"                :rem 83
7077 DATA"CHEEK","NASAL BONE","NOSE","FRONTAL BONE
     ","FOREHEAD"                            :rem 147
7080 DATA"SACROILIAC JOINT","THE PELVIC CONNECTION
     (HIP)","AXIS"                           :rem 102
7085 DATA"TURN YOUR HEAD","ATLAS","HOLD UP YOUR HE
     AD"                                     :rem 94
```

```
7090 DATA"AXIS","SECOND NECK BONE","ATLAS","TOP NE
     CK BONE"                              :rem 97
8000 REM *** LOAD THE SPRITES ***         :rem 211
8010 FORX=832TO832+127:READZ:POKEX,Z:NEXTX:rem 175
8020 POKEVC+0,0:POKEVC+1,93:POKEVC+16,0:POKEVC+21,
     0:POKEVC+23,1                        :rem 10
8030 POKEVC+27,0:POKEVC+28,0:POKEVC+29,1:POKEVC+39
     ,0:POKE2040,13                       :rem 31
8040 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
     9                                    :rem 10
8050 RETURN                               :rem 173
8900 DATA0,56,0,0,84,0,0,56,0,0,16,0,48,124,0,8,14
     6,0,5,125,0,2,16,128                 :rem 111
8910 DATA0,124,64,0,16,32,0,124,192,0,186,0,0,68,0
     ,0,130,0,1,1,0,2,0,128               :rem 192
8920 DATA1,1,0,0,130,0,1,131,0,0,0,0,0,0,0,0
                                          :rem 77
8930 DATA0,56,0,0,84,0,0,56,0,0,16,0,0,124,0,1,147
     ,0,2,124,128,4,16,64,2,124           :rem 137
8940 DATA128,4,16,64,2,124,128,0,186,0,0,68,0,0,68
     ,0,0,68,0,0,0,0,0,68                 :rem 126
8950 DATA0,0,68,0,0,68,0,0,130,0,0,0,0,0  :rem 172
```

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Unicorn

Skill area: Social Studies
Level: 4
Equipment required: None
Modification: Yes

Mythology

"Unicorn" is a history game of people who never were. The 37 characters whose lives are presented here lived only in the minds of the ancient Greeks and Romans. These are the heroes and heroines of Greek and Roman mythology.

You'll be asked up to 5 questions about each of 37 Greek and Roman mythological heroes. The questions will be presented in random order, so every game of Unicorn is different. Points are given depending on how many questions you use to identify the hero or heroine in question.

How to Play

To begin the game, hit any key. Because of the amount of data in Unicorn, there will be a ten-second delay after the key is pressed before the game begins.

When a question is asked by the computer, type the name of the mythological hero or heroine on the keyboard. If you can't guess the name of the character from the clue provided, hit the RETURN key.

Abbreviations and misspellings are incorrect answers, so you must write out the full name of the character. Many of these characters have both Greek and Roman names. For example, the Greek god Hermes is identical to the Roman god known as Mercury. Unless otherwise specified, Unicorn uses the Greek name, and the Roman name is considered an incorrect answer.

If you are unable to guess the hero or heroine's name after the first four questions have been presented, the fifth is a multiple-choice question. The correct name will then flash on the screen if you still can't identify the character.

Anytime you wish to end the game early, type END instead of making a guess on any question. You will not be penalized if you end the game before all questions have been asked.

The names of the 37 mythological characters depicted in Unicorn are listed below as a spelling aid:

Achilles	Daedalus	Mars	Persephone
Aeneas	Dionysus	Medea	Perseus
Agamemnon	Echo	Medusa	Phaeton
Andromeda	Hades	Narcissus	Poseidon
Aphrodite	Hecate	Odysseus	Prometheus
Apollo	Helen	Oedipus	Sisyphus
Artemis	Heracles	Orpheus	Tantalus
Athena	Hermes	Pandora	Theseus
Cassandra	Jason	Pelops	Zeus
Circe			

Scoring

Points are given in Unicorn as follows:

If you get the right name after only 1 question, 5 points.

If you guess after 2 questions, 4 points.

If you guess after 3 questions, 3 points.

If you guess after 4 questions, 2 points.

If you guess after 5 questions, 1 point.

If you are still unable to guess the name of the mythological character, −5 points.

At the end of the game, you will see the total number of points, as well as a percentage score.

Unicorn

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM UNICORN                                       :rem 51
100  NS=37:CB=900:VC=53248                          :rem 132
110  PRINTCHR$(147):POKEVC+32,6:POKEVC+33,12:rem 35
120  DIM QT$(7),NT%(16,1)                           :rem 198
130  READX$:IFX$<>"$"THEN130                        :rem 22
140  FORX=0TO16:READZ,Y:NT%(X,0)=Z:NT%(X,1)=Y:NEXTX
                                                    :rem 139
150  FORX=54272TO54295:POKEX,0:NEXTX                :rem 176
160  SX=54272:POKESX+5,17                           :rem 139
170  FL$="{RVS}{40 SPACES}{OFF}"                    :rem 115
180  POKESX+6,129                                   :rem 156
200  GOSUB700                                       :rem 169
205  S%=0:FORX=1TONS:POKECB+X,0:NEXTX               :rem 69
210  FORX=1TONS:GOSUB800:POKECB+Z,X:NEXTX           :rem 158
```

195

```
300  X=1                                       :rem 89
305  Y=PEEK(CB+X):Y=(Y-1)*8                     :rem 230
310  RESTORE:IFY=0THEN330                       :rem 12
320  FORW=1TOY:READX$:NEXTW                     :rem 223
330  FORW=1TO8:READX$:QT$(W-1)=X$:NEXTW         :rem 129
340  W=VAL(QT$(7))+3:AN$=QT$(W):FORW=0TO3:RS(W)=0:N
     EXTW                                       :rem 40
350  FORW=1TO4                                  :rem 27
360  V=INT(RND(1)*4):IFRS(V)<>0THEN360          :rem 179
370  RS(V)=W:NEXTW                              :rem 74
400  W=0                                        :rem 88
405  GOSUB4300                                  :rem 224
410  PRINT"{3 SPACES}QUESTION #";W+1            :rem 239
420  X$=QT$(RS(W)-1)                            :rem 20
430  PRINT"{2 DOWN}";X$;".{2 DOWN}":PRINT" ";
                                                :rem 86
440  GOSUB900:IFX$="Q"THEN500                   :rem 12
442  IFX$="END"THEN600                          :rem 194
445  W=W+1:IFW<=3THEN405                        :rem 120
448  GOSUB4300                                  :rem 231
450  PRINT"{3 SPACES}QUESTION # 5":PRINT"{2 DOWN}
     {3 SPACES}CHOOSE ONE OF THE FOLLOWING:{DOWN}"
                                                :rem 124
460  PRINT"{3 SPACES}";QT$(4):PRINT"{3 SPACES}";QT$
     (5):PRINT"{3 SPACES}";QT$(6);"{DOWN}":PRINT" "
     ;:W=4                                      :rem 247
470  GOSUB900:IFX$="Q"THEN500                   :rem 15
475  IFX$="END"THEN600                          :rem 200
480  PRINT"{DOWN}{3 SPACES}ANSWER=";AN$:S%=S%-5
                                                :rem 66
490  FORW=1TO2500:NEXTW:GOTO540                 :rem 143
500  S%=S%+(5-W):POKE54296,15:POKEVC+0,65       :rem 240
510  POKEVC+16,0:POKEVC+21,1:J=8:POKESX+0,65:rem 56
520  FORV=65TO255STEP10:GOSUB550:NEXTV          :rem 123
530  POKEVC+21,0:POKE54296,0                    :rem 25
540  X=X+1:IFX<=NSTHEN305                        :rem 228
545  GOTO600                                    :rem 109
550  POKEVC+29,0:POKEVC+0,V:POKESX+1,J:POKESX+4,17:
     FORK=1TO20:NEXTK                           :rem 195
560  POKEVC+29,1:POKESX+4,16:FORK=1TO5:NEXTK:J=J+3
                                                :rem 59
570  RETURN                                     :rem 124
600  PRINT"{BLK}{CLR}{DOWN}{15 SPACES}{RVS}TEST OVE
     R!{OFF}"                                   :rem 220
610  PRINT"{3 DOWN} YOUR SCORE = ";S%           :rem 86
620  IFS%<0THENS%=0                             :rem 31
625  X=X-1:IFX<1THENX=1                         :rem 107
630  X=INT((S%*100)/(X*5))                      :rem 37
640  PRINT"{2 DOWN} YOUR GRADE = ";X;"{LEFT}%"
                                                :rem 80
```

```
650 PRINT"{3 DOWN} PLAY AGAIN?":PRINT"{DOWN} ENTER
    {RVS}Y{OFF} OR {RVS}N{OFF}"                    :rem 158
660 GETX$:IFX$=""THEN660                           :rem 137
670 IFX$="Y"THEN205                                 :rem 72
680 IFX$<>"N"THEN660                               :rem 128
690 GOSUB4000:PRINTCHR$(147):END                   :rem 169
700 PRINT"{BLK}";FL$;                               :rem 36
702 PRINT"{DOWN}* * * * *{4 SPACES}U N I C O R N
    {5 SPACES}* * * * *";                          :rem 120
704 PRINT"{DOWN}";FL$;                             :rem 169
705 PRINT"{DOWN}YOU WILL BE ASKED UP TO FIVE QUEST
    IONS"                                          :rem 223
706 PRINT"ABOUT SELECTED MYTHOLOGICAL CHARACTERS."
                                                   :rem 204
710 PRINT"{2 DOWN}POINTS WILL BE AWARDED DEPENDING
     ON HOW MANY QUESTIONS YOU NEED:{DOWN}"
                                                   :rem 156
715 PRINT"{4 SPACES}1 QUESTION{2 SPACES}=
    {2 SPACES}5.":PRINT"{4 SPACES}2 QUESTIONS =
    {2 SPACES}4."                                   :rem 94
720 PRINT"{4 SPACES}3 QUESTIONS ={2 SPACES}3.":PRI
    NT"{4 SPACES}4 QUESTIONS ={2 SPACES}2."
                                                   :rem 173
722 PRINT"{4 SPACES}5 QUESTIONS ={2 SPACES}1."
                                                    :rem 8
725 PRINT"{4 SPACES}ALL MISSED{2 SPACES}= -5."
                                                   :rem 218
728 PRINT"{DOWN}TYPE {RVS}END{OFF} TO STOP THE GAM
    E EARLY."                                      :rem 207
730 GOSUB4000                                      :rem 222
740 FORX=832TO832+63:READZ:POKEX,Z:NEXTX    :rem 80
785 PRINT"{DOWN}{8 SPACES}(PRESS ANY KEY TO START)
    ";                                             :rem 161
787 POKEVC+39,11:POKEVC+23,0:POKEVC+28,0    :rem 116
788 POKE2040,13:POKEVC+1,80                        :rem 30
790 GETX$:IFX$=""THEN790                           :rem 145
795 RETURN                                         :rem 133
800 W=0                                             :rem 92
810 Z=INT((RND(1)*NS)+1):IFPEEK(CB+Z)=0THENRETURN
                                                    :rem 15
820 W=W+1:IFW<9THEN810                              :rem 62
830 Z=1                                             :rem 99
840 IFPEEK(CB+Z)=0THENRETURN                        :rem 39
850 Z=Z+1:GOTO840                                  :rem 249
900 X$="":POKE198,0:INPUTX$:IFX$=AN$THENX$="Q":RET
    URN                                            :rem 143
903 IFX$="END"THENRETURN                            :rem 14
905 POKESX+5,15                                    :rem 106
```

```
910 POKE54296,15:POKEVC+33,0:POKESX+0,31:POKESX+1,
    17                                        :rem 87
920 POKESX+4,17:FORJ=1TO400:NEXTJ            :rem 59
930 POKESX+4,16:FORJ=1TO050:NEXTJ:POKESX+5,17
                                              :rem 68
935 IFW<>4THENPRINTCHR$(147)                 :rem 223
940 POKEVC+33,12:POKE54296,0:RETURN          :rem 110
1000 DATA"SHE WAS THE GREEK GODDESS OF WITCHCRAFT"
                                              :rem 198
1010 DATA"THIS TITAN KEPT HER POWERS WHEN ZEUS
     {4 SPACES}RULED THE UNIVERSE"            :rem 18
1020 DATA"SHE IS USUALLY SHOWN AS HAVING 3 HEADS"
                                              :rem 68
1030 DATA"HOWLING DOGS WERE ASSOCIATED WITH HER
     {3 SPACES}SPELL"                         :rem 21
1040 DATAHECATE,ARTEMIS,MEDUSA,1              :rem 18
1050 DATA"SHE WAS THE WORLD'S MOST BEAUTIFUL
     {6 SPACES}WOMAN"                         :rem 56
1060 DATA"PARIS SEDUCED HER AWAY FROM MENELAUS,
     {3 SPACES}HER HUSBAND"                   :rem 80
1070 DATA"THE TROJAN WAR WAS FOUGHT TO RECLAIM
     {4 SPACES}HER"                           :rem 246
1080 DATA"SHE RETURNED TO HER HUSBAND AFTER PARIS
     {SPACE}WAS SLAIN"                        :rem 74
1090 DATAMEDEA,HELEN,CIRCE,2                  :rem 200
1100 DATA"HE WAS KNOWN TO THE ROMANS AS MERCURY,
     {2 SPACES}THE MESSENGER GOD"             :rem 196
1110 DATA"HE GUARDED TRAVELERS, SHEPHERDS AND
     {5 SPACES}TRADERS"                       :rem 28
1120 DATA"A TRICKSTER WHO HELPED ROBBERS COMMIT
     {3 SPACES}CRIMES"                        :rem 89
1130 DATA"HE USED A WINGED CAP AND WINGED ANKLES
     {2 SPACES}FOR TRAVELING"                 :rem 150
1140 DATAMARS,ACHILLES,HERMES,3              :rem 211
1150 DATA"HIS SONS WERE ROMULUS AND REMUS, TWIN
     {3 SPACES}FOUNDERS OF ROME"              :rem 177
1160 DATA"HE WAS THE ROMAN GOD OF WAR"        :rem 85
1170 DATA"THE WARRIOR GODDESS BELLONE TRAVELED AT
     {SPACE}HIS SIDE"                         :rem 45
1180 DATA"HE WAS THE ROMAN GOD OF AGRICULTURE AND
     {SPACE}SPRING"                           :rem 90
1190 DATAMARS,ZEUS,JASON,1                    :rem 143
1200 DATA"HE INVENTED THE TROJAN HORSE"       :rem 59
1210 DATA"HIS TRIP HOME FROM THE TROJAN WAR TOOK
     {2 SPACES}TWENTY YEARS"                  :rem 231
1220 DATA"HE RECLAIMED HIS WIFE PENELOPE BY
     {7 SPACES}KILLING HER 100 SUITORS"       :rem 235
1230 DATA"THE ROMANS CALLED HIM ULYSSES"      :rem 144
1240 DATAHERMES,ODYSSEUS,ZEUS,2               :rem 33
```

```
1250 DATA"THE GREEK GOD OF THE SEA, KNOWN TO THE
     {2 SPACES}ROMANS AS NEPTUNE"            :rem 94
1260 DATA"HIS FATHER SWALLOWED HIM, BUT ZEUS FREED
     HIM"                                   :rem 247
1270 DATA"HE CREATED THE HORSE"             :rem 15
1280 DATA"HE WON HIS KINGDOM OF THE SEA BY
     {8 SPACES}CHOOSING LOTS"               :rem 29
1290 DATAAGAMEMNON,HERMES,POSEIDON,3        :rem 85
1300 DATA"HE WAS GOD OF THE WIND, THE SON OF
     {6 SPACES}AEOLUS"                      :rem 119
1310 DATA"IN LIFE, HE WAS THE KING OF CORINTH"
                                            :rem 52
1320 DATA"HE WAS A CRAFTY AND EVIL MAN"     :rem 133
1330 DATA"HIS ETERNAL PUNISHMENT WAS PUSHING A
     {4 SPACES}BOULDER UPHILL"              :rem 68
1340 DATASISYPHUS,DIONYSUS,ARTEMIS,1        :rem 178
1350 DATA"HE WAS THE SON OF ZEUS AND THE FATHER OF
     PELOPS"                                :rem 34
1360 DATA"HE SINNED BY REVEALING THE SECRETS OF
     {3 SPACES}ZEUS"                        :rem 132
1370 DATA"HE KILLED HIS SON PELOPS AND SERVED HIM
     {SPACE}AT A BANQUET"                   :rem 114
1380 DATA"HE WAS PUNISHED BY ETERNAL HUNGER AND
     {3 SPACES}THIRST"                      :rem 34
1390 DATAHERACLES,TANTALUS,SISYPHUS,2       :rem 216
1400 DATA"AS THE GOD OF GODS, HE RULED OLYMPUS"
                                            :rem 162
1410 DATA"HE USED THE CYCLOPES TO HELP DEFEAT THE
     {SPACE}TITANS"                         :rem 78
1420 DATA"HE GAVE AWAY THE SEA AND THE UNDERWORLD,
     BUT KEPT THE HEAVENS"                  :rem 177
1430 DATA"HIS ROMAN NAME IS JUPITER"        :rem 103
1440 DATAPOSEIDON,APOLLO,ZEUS,3             :rem 9
1450 DATA"HIS FATHER SERVED HIM AS A MAIN COURSE
     {2 SPACES}AT A BANQUET"                :rem 30
1460 DATA"HIS SHOULDER WAS EATEN BY A GODDESS, BUT
     WAS REPLACED WITH IVORY"               :rem 199
1470 DATA"HE WAS RESTORED TO LIFE AND WON HIS
     {5 SPACES}BRIDE IN A CHARIOT RACE"     :rem 219
1480 DATA"HE WAS CURSED FOR CHEATING IN A CHARIOT
     {SPACE}RACE"                           :rem 144
1490 DATAPELOPS,DAEDALUS,HERMES,1           :rem 119
1500 DATA"A TITAN, HIS NAME MEANS 'FORETHOUGHT'"
                                            :rem 39
1510 DATA"HE CREATED MANKIND"               :rem 172
1520 DATA"HE STOLE FIRE FROM HEAVEN TO GIVE TO
     {4 SPACES}MAN"                         :rem 152
1530 DATA"HE WAS CHAINED TO A MOUNTAIN FOR THEFT,
     {SPACE}AND RESCUED BY HERCULES         :rem 26
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1540 DATAPHAETON,PROMETHEUS,PELOPS,2        :rem 136
1550 DATA"SHE WAS CREATED BY ZEUS TO THWART MAN"
                                           :rem 39
1560 DATA"HER NAME MEANS 'GIFT OF ALL' BECAUSE SHE
     GOT GIFTS FROM ALL GODS"              :rem 253
1570 DATA"SHE MARRIED EPIMETHEUS -- CREATOR OF
     {4 SPACES}ANIMALS"                    :rem 12
1580 DATA"BY OPENING A JAR, SHE UNLEASHED EVIL ON
     {SPACE}THE WORLD"                     :rem 208
1590 DATAATHENA,ECHO,PANDORA,3             :rem 117
1600 DATA"HIS PRIDE ALMOST DESTROYED THE EARTH"
                                           :rem 85
1610 DATA"HIS DREAM WAS TO BE RECOGNIZED AS
     {7 SPACES}APOLLO'S SON"               :rem 55
1620 DATA"HE DROVE THE CHARIOT OF THE SUN TOO NEAR
     THE EARTH"                            :rem 248
1630 DATA"ZEUS KILLED HIM TO SAVE EARTH FROM THE
     {2 SPACES}BURNING SUN"                :rem 104
1640 DATAPHAETON,AENEAS,MARS,1             :rem 137
1650 DATA"KNOWN TO THE ROMANS AS PLUTO, HE WAS GOD
     OF THE UNDERWORLD"                    :rem 45
1660 DATA"APHRODITE TOLD EROS TO SHOOT HIM WITH
     {3 SPACES}ARROWS SO HE WOULD KNOW LOVE"
                                           :rem 142
1670 DATA"HE FELL IN LOVE WITH PERSEPHONE AND
     {5 SPACES}KIDNAPPED HER"              :rem 32
1680 DATA"AS LONG AS HE KEEPS PERSEPHONE, THE
     {5 SPACES}EARTH IS DARK AND COLD"     :rem 183
1690 DATAZEUS,HADES,MARS,2                 :rem 127
1700 DATA"SHE WAS CAPTURED BY HADES TO BE HIS
     {5 SPACES}BRIDE"                      :rem 189
1710 DATA"EATING POMEGRANATE SEEDS FORCED HER TO
     {2 SPACES}LIVE WITH HADES"            :rem 140
1720 DATA"HER MOTHER MADE EARTH BARREN UNTIL SHE
     {2 SPACES}WAS RECLAIMED"              :rem 248
1730 DATA"THE FOUR MONTHS SHE LIVES WITH HADES ARE
     CALLED WINTER"                        :rem 121
1740 DATACASSANDRA,ECHO,PERSEPHONE,3       :rem 69
1750 DATA"SHE ALWAYS HAD TO HAVE THE LAST WORD"
                                           :rem 193
1760 DATA"SHE PROTECTED ZEUS FROM HERA BY TRAPPING
     HER IN CONVERSATION"                  :rem 98
1770 DATA"SHE WAS CURSED BY NEVER BEING ABLE TO
     {3 SPACES}SPEAK FIRST"                :rem 241
1780 DATA"SHE WASTED AWAY TO NOTHING BUT A VOICE
     {2 SPACES}FOR LOVE OF NARCISSUS"      :rem 209
1790 DATAECHO,ATHENA,HELEN,1               :rem 220
1800 DATA"HE LOVED NO MAN OR WOMAN"        :rem 202
1810 DATA"A WHITE FLOWER WITH A PURPLE HEART BEARS
     HIS NAME"                             :rem 244
```

```
1820 DATA"HE BROKE THE HEART OF ECHO AND CAUSED
     {3 SPACES}HER END"                        :rem 112
1830 DATA"HE FELL IN LOVE WITH HIS OWN REFLECTION"
                                               :rem 166
1840 DATASISYPHUS,NARCISSUS,JASON,2            :rem 91
1850 DATA"HE WAS A POET AND A SINGER"          :rem 249
1860 DATA"HE LOVED ONLY EURYDICE AND SHE DIED"
                                               :rem 153
1870 DATA"HE BEGGED HADES AND PERSEPHONE TO GIVE
     {2 SPACES}HIS BRIDE LIFE"                 :rem 194
1880 DATA"HE LOST EURYDICE AGAIN BECAUSE HE TURNED
     TO LOOK BACK"                             :rem 248
1890 DATAAGAMEMNON,DIONYSUS,ORPHEUS,3          :rem 218
1900 DATA"AN ORACLE PROPHESIED HE WOULD KILL HIS
     {2 SPACES}GRANDFATHER"                    :rem 174
1910 DATA"HIS GOAL WAS TO GET THE HEAD OF MEDUSA"
                                               :rem 229
1920 DATA"HE CUT OFF THE HEAD OF MEDUSA AND
     {7 SPACES}ESCAPED UNHARMED"               :rem 225
1930 DATA"HERMES GAVE HIM MAGIC GIFTS TO HELP HIM
     {SPACE}GET MEDUSA"                        :rem 23
1940 DATAPERSEUS,PROMETHEUS,HERACLES,1         :rem 23
1950 DATA"SHE WAS ONE OF THREE UGLY SISTERS"
                                               :rem 85
1960 DATA"SHE WAS THE ONLY ONE OF THREE SISTERS
     {3 SPACES}WHO COULD BE KILLED"            :rem 217
1970 DATA"PEOPLE WHO LOOKED UPON HER WERE TURNED
     {2 SPACES}TO STONE"                       :rem 242
1980 DATA"HER BLOOD DROPLETS ARE NOW POISONOUS
     {4 SPACES}DESERT SNAKES"                  :rem 19
1990 DATAMEDEA,MEDUSA,ATHENA,2                 :rem 111
2000 DATA"SHE WAS THE DAUGHTER OF CASSIOPEIA"
                                               :rem 150
2010 DATA"SHE WAS CHAINED TO A ROCK BECAUSE HER
     {3 SPACES}MOTHER WAS BEAUTIFUL AND VAIN"
                                               :rem 30
2020 DATA"SHE WAS OFFERED AS A SACRIFICE TO THE
     {3 SPACES}SEA GOD NEREUS"                 :rem 79
2030 DATA"PERSEUS SAVED HER, AND SHE BECAME HIS
     {3 SPACES}BRIDE"                          :rem 98
2040 DATAATHENA,ARTEMIS,ANDROMEDA,3            :rem 232
2050 DATA"HIS NAME MEANT 'GLORY OF HERA,' BUT HERA
     WANTED HIM KILLED"                        :rem 188
2060 DATA"HE DID 12 IMPOSSIBLE TASKS TO PLEASE
     {4 SPACES}KING EURYSTHEUS"                :rem 11
2070 DATA"CALLED HERCULES BY THE ROMANS, HE WENT
     {2 SPACES}TO MOUNT OLYMPUS AFTER DEATH"
                                               :rem 177
2080 DATA"HE WAS KILLED BY THE BLOOD OF A CENTAUR"
                                               :rem 41
```

```
2090 DATAHERACLES,HADES,HERMES,1          :rem 10
3000 DATA"HE WAS RAISED BY A CENTAUR, CHIRON"
                                          :rem 46
3010 DATA"HE ORGANIZED A QUEST TO FIND THE GOLDEN
     {SPACE}FLEECE"                       :rem 39
3020 DATA"HIS SHIP WAS THE ARGO AND HIS WARRIORS
     {2 SPACES}WERE ARGONAUTS"            :rem 71
3030 DATA"HE WON THE FLEECE, BUT NOT THE THRONE OF
     HIS KINGDOM"                        :rem 101
3040 DATAAENEAS,JASON,APOLLO,2            :rem 134
3050 DATA"HER POTION GOT JASON THE GOLDEN FLEECE"
                                          :rem 129
3060 DATA"SHE DELIVERED HER OWN BROTHER TO JASON
     {2 SPACES}TO BE KILLED"              :rem 129
3070 DATA"SHE KILLED KING PELIAS TO HELP JASON
     {4 SPACES}BECOME KING"               :rem 191
3080 DATA"SHE KILLED JASON'S WIFE TO AVENGE HIS
     {3 SPACES}BETRAYAL"                  :rem 111
3090 DATAMEDUSA,ARTEMIS,MEDEA,3           :rem 205
3100 DATA"HE WAS EARTH'S BEST ARCHITECT AND
     {7 SPACES}SCULPTOR"                  :rem 156
3110 DATA"HE KILLED HIS NEPHEW BECAUSE TALUS HAD
     {2 SPACES}MORE TALENT THAN HE DID"   :rem 226
3120 DATA"THE MINOTAUR NOR ITS VICTIMS COULD
     {6 SPACES}ESCAPE THE LABYRINTH HE MADE"
                                          :rem 204
3130 DATA"HE MADE HUMAN WINGS, BUT HIS SON ICARUS
     {SPACE}FELL TO EARTH AND DIED"       :rem 159
3140 DATADAEDALUS,THESEUS,PHAETON,1       :rem 10
3150 DATA"BECAUSE HIS FATHER TRIED TO KILL HIM,
     {3 SPACES}HIS NAME MEANS 'SWOLLEN FOOT'"
                                          :rem 49
3160 DATA"HE UNKNOWINGLY KILLED HIS FATHER, AS AN
     {SPACE}ORACLE PREDICTED"             :rem 6
3170 DATA"HE SOLVED THE RIDDLE OF THE SPHINX AND
     {2 SPACES}MARRIED JOCASTA"           :rem 68
3180 DATA"HE BLINDED HIMSELF AFTER LEARNING
     {8 SPACES}JOCASTA WAS HIS MOTHER"    :rem 22
3190 DATATHESEUS,OEDIPUS,APOLLO,2         :rem 158
3200 DATA"HE WANTED TO BE A HERO LIKE COUSIN
     {6 SPACES}HERACLES"                  :rem 73
3210 DATA"MEDEA TRIED TO KILL HIM BEFORE AEGUS
     {4 SPACES}NAMED HIM AS SON AND HEIR" :rem 143
3220 DATA"HE WAS CHOSEN AS A SACRIFICE TO THE
     {5 SPACES}MINOTAUR"                  :rem 174
3230 DATA"HE SLEW THE MINOTAUR AND ESCAPED THE
     {4 SPACES}LABYRINTH"                 :rem 148
3240 DATASISYPHUS,PROMETHEUS,THESEUS,3    :rem 79
3250 DATA"HE WAS THE MOST FAMOUS GREEK WHO FOUGHT
     {SPACE}IN THE TROJAN WAR"            :rem 232
```

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3260 DATA"HE COULD NOT BE HURT BECAUSE HIS MOTHER
     {SPACE}DIPPED HIM IN THE RIVER STYX" :rem 127
3270 DATA"HE KILLED THE TROJAN LEADER HECTOR AT
     {3 SPACES}THE SCAEAN GATE"            :rem 207
3280 DATA"HE WAS KILLED BY AN ARROW THAT PIERCED
     {2 SPACES}HIS VULNERABLE HEEL"         :rem 44
3290 DATAACHILLES,AGAMEMNON,AENEAS,1        :rem 34
3300 DATA"HE WAS A TROJAN PRINCE AND SON OF
     {7 SPACES}APHRODITE"                  :rem 100
3310 DATA"HE KILLED TURNUS OVER THE LOVE OF
     {7 SPACES}LAVINIA"                     :rem 68
3320 DATA"THE CAESARS TRACED THEIR ORIGIN TO HIM"
                                           :rem 129
3330 DATA"HE WAS THE ANCESTRAL HERO OF ROME":rem 19
3340 DATAMARS,AENEAS,HERMES,2               :rem 62
3350 DATA"HE WAS THE KING WHO LED THE ACHAEANS IN
     {SPACE}THE TROJAN WAR"                :rem 179
3360 DATA"CLYTEMNESTRA, PRINCESS OF SPARTA, WAS
     {3 SPACES}HIS FAITHLESS WIFE"         :rem 129
3370 DATA"HE SACRIFICED A WOMAN TO SAVE HIS FLEET
     {SPACE}FROM A WINDSTORM"              :rem 170
3380 DATA"HE WAS KILLED BY THE LOVER OF{11 SPACES}
     CLYTEMNESTRA"                         :rem 141
3390 DATAAPOLLO,ACHILLES,AGAMEMNON,3        :rem 63
3400 DATA"SHE WAS THE GODDESS OF LOVE, CALLED
     {5 SPACES}VENUS BY THE ROMANS"         :rem 83
3410 DATA"SHE WAS FATHERED BY OURANOS AFTER HIS
     {3 SPACES}CASTRATION"                  :rem 68
3420 DATA"SHE WAS THE GODDESS OF INTELLECTUALISM
     {2 SPACES}AND ALSO OF THE SKY"         :rem 79
3430 DATA"SHE WAS HONORED AS THE MOTHER OF AENEAS"
                                           :rem 136
3440 DATAAPHRODITE,ARTEMIS,ATHENA,1
3450 DATA"HE WAS THE GOD OF PROPHECY AND LIGHT"
                                           :rem 167
3460 DATA"ARCHERS, PHYSICIANS, AND MUSICIANS
     {6 SPACES}CALLED HIM THEIR PATRON"    :rem 216
3470 DATA"AESCULAPIUS, GOD OF MEDICINE, WAS HIS
     {3 SPACES}SON"                         :rem 47
3480 DATA"HIS JOB WAS TO DRIVE THE CHARIOT OF THE
     {SPACE}SUN ACROSS THE SKY"            :rem 238
3490 DATAPERSEUS,APOLLO,DIONYSUS,2          :rem 12
3500 DATA"APOLLO'S TWIN, SHE WAS GODDESS OF THE
     {3 SPACES}MOON AND OF BIRTH"           :rem 57
3510 DATA"HER ROMAN COUNTERPART WAS DIANA" :rem 34
3520 DATA"SHE WAS GUARDIAN OF FORESTS AS WELL AS
     {2 SPACES}OF WILD ANIMALS"             :rem 31
3530 DATA"BECAUSE HE CHALLENGED HER TO A DISCUS
     {3 SPACES}-THROWING CONTEST, ORION DIED"
                                           :rem 139
```

```
3540 DATAATHENA,ANDROMEDA,ARTEMIS,3         :rem 238
3550 DATA"SHE WAS KNOWN TO ROME AS MINERVA,
     {7 SPACES}GODDESS OF WAR AND WISDOM"   :rem 89
3560 DATA"SHE WAS FULLY ARMED FOR WAR AT BIRTH"
                                            :rem 203
3570 DATA"SHE WON ATHENS IN A CONTEST WITH
     {8 SPACES}POSEIDON"                    :rem 89
3580 DATA"HER TEMPLE IS THE PARTHENON"
3590 DATAATHENA,APHRODITE,CASSANDRA,1       :rem 129
3600 DATA"APOLLO GAVE HER THE GIFT OF PROPHECY"
                                            :rem 250
3610 DATA"SHE WAS CURSED THAT NO ONE WOULD BELIEVE
     HER PREDICTIONS"                       :rem 19
3620 DATA"AGAMEMNON CAPTURED HER AFTER TROY FELL"
                                            :rem 214
3630 DATA"SHE WAS MURDERED BY CLYTEMNESTRA"
                                            :rem 131
3640 DATACIRCE,CASSANDRA,HECATE,2           :rem 61
3650 DATA"A FAMOUS SEER, SHE WAS A DAUGHTER OF THE
     SUN"                                   :rem 95
3660 DATA"SHE WAS BANISHED TO THE ISLE OF AEAEA
     {3 SPACES}FOR KILLING HER HUSBAND"     :rem 158
3670 DATA"SHE RESTORED FRIENDS OF ODYSSEUS WHO HAD
     BEEN TURNED INTO PIGS"                 :rem 169
3680 DATA"LIVING WITH ODYSSEUS FOR A YEAR, SHE HAD
     HIS SON"                               :rem 185
3690 DATAHECATE,CASSANDRA,CIRCE,3           :rem 67
3700 DATA"THE GOD OF WINE, HE WAS CALLED BACCHUS
     {2 SPACES}BY THE ROMANS"               :rem 57
3710 DATA"A PARTY ANIMAL, HIS ORGIES WERE ATTENDED
     BY SATYRS AND NYMPHS"                  :rem 52
3720 DATA"HIS SACRED ANIMALS WERE THE BULL, GOAT
     {2 SPACES}AND SERPENT"                 :rem 83
3730 DATA"HE WAS WORSHIPPED AS A GOD OF DRUNKEN-
     {2 SPACES}NESS ALL OVER THE KNOWN WORLD"
                                            :rem 116
3740 DATADIONYSUS,ZEUS,HADES,1              :rem 199
4000 POKE54296,15:FORX=0TO16                :rem 127
4010 POKESX+0,NT%(X,1):POKESX+1,NT%(X,0)    :rem 91
4020 POKESX+4,33:FORY=1TO150:NEXTY          :rem 132
4030 POKESX+4,32:FORY=1TO25:NEXTY,X         :rem 217
4040 POKE54296,0:RETURN                     :rem 119
4100 DATA"$",67,15,63,75,56,99,63,75,56,99,50,60,5
     6,99,50,60,44,193,50,60                :rem 49
4110 DATA56,99,42,62,44,193,50,60,56,99,63,75,67,1
     5                                      :rem 28
4200 DATA0,0,2,0,1,4,0,3,248,0,1,208,0,3,248,0,7,1
     56,0,15,0,0,30,0,31,254                :rem 219
```

```
4210 DATA0,127,252,0,95,252,0,79,252,0,74,10,0,20,
     5,0,20,2,0,40,5,0,40,10                :rem 237
4220 DATA0,80,4,0,80,8,0,160,0,0,160,0,0,0  :rem 8
4300 PRINTCHR$(147);"{23 DOWN}";SPC(15);"SCORE =";
     S%;                                    :rem 70
4310 PRINT"{HOME}";SPC(13);"{DOWN}U N I C O R N
     {8 DOWN}"                              :rem 184
4320 RETURN                                 :rem 169
```

Just for Fun
When the
<u>Home</u>work's Done

Asteroid Blast

Skill area: Coordination
Level: 2, 3, 4
Equipment required: Joystick handy, but not essential
Modification: No

Asteroid Cluster

You are commander of Space Station Omega, but your command and life are in jeopardy. A cluster of asteroids is on the way. As the asteroids surround the space station, the future of hundreds of people is in your hands.

How to Play

The computer will fire missiles from the left edge of the screen. You can cause each missile to climb or dive by using the joystick or the keyboard. If you use the keyboard, press W or f5 to cause the missiles to climb; press X or f7 to cause the missiles to dive. The object of the game is to clear all the asteroids with the missiles, saving your space station from destruction. Be careful not to hit your space station with a missile.

Control your game by choosing three options:

A. The number of asteroids in the asteroid cluster;
B. The speed of your missiles;
C. The number of warheads each missile can fire.

The computer will ask how many asteroids you want. Type a number from 10 to 200 and press the RETURN key. Next, you'll be asked how fast you want the missiles to go; press a number from 1 to 9, followed by the RETURN key, to indicate missile speed — 1 is the fastest, and 9 is the slowest missile speed. Third, you'll be asked how many shots you want each missile to be capable of firing. Press 1, 2, 3, 4, or 5, and then the RETURN key.

The computer fires each missile, one by one. You control each missile's path by moving it up or down to hit the asteroids and avoid the space station.

Scoring

At the end of a game, the computer will tell you how many asteroids you destroyed, together with how many missiles it took. You will then be given a rank, ranging from private all the way to

4-star general. To increase your rank, you may want to choose a
higher number of asteroids, a faster missile speed, and only one
or two warheads per missile.

Asteroid Blast

Remember, do not type the checksum number at the end of each line. For example, do
not type ":rem 123." Please read the article about the "Automatic Proofreader" in
Appendix E.

```
1 REM ASTEROID BLAST                         :rem 230
100 DIMRT$(9),NT%(21,1),PT%(39,1),CH%(3),C%(3),DN$
    (23)                                     :rem 226
105 P1=((PEEK(53272)AND240)/16)*1024:P2=55296:VC=5
    3248:XC=54272:K1=960                     :rem 33
110 CH%(0)=8:CH%(1)=10:CH%(2)=12:CH%(3)=14:FOR I=0
    TO 3:C%(I)=CH%(I)*1024:NEXT              :rem 57
115 RC%=PEEK(53272):FOR I=0 TO 3:CH%(I)=(RC%AND240
    )ORCH%(I):NEXT:GOSUB 6100                :rem 206
120 FORX=0TO9:READX$:RT$(X)=X$:NEXTX         :rem 36
130 FORX=54272TO54296:POKEX,0:NEXTX          :rem 175
140 FORX=0TO21:FORY=0TO1:READZ:NT%(X,Y)=Z:NEXTY,X:
    GOSUB5000                                :rem 77
150 GOSUB2000:PRINTCHR$(147):MC=0:UC=0       :rem 3
155 FORX=0TO24:POKEP1+(X*40),160:POKEP2+(X*40),0:N
    EXTX                                     :rem 217
160 GOSUB1000                                :rem 216
170 Y=INT(RND(1)*25):MC=MC+1:L1=(Y*40)+1+P1:L2=(Y*
    40)+1+P2:HC%=0                           :rem 21
180 X=0:IF X1=0 THEN X1=L1:X2=L2              :rem 14
185 A=PEEK(L1+X):IFA=41THEN400                :rem 1
190 IFA>36ANDA<41THEN500                      :rem 138
200 POKE X1,32:POKE X2,1                      :rem 43
205 POKE L1+X,42:POKEL2+X,2:FORZ=1TOSP%:KK=KK+1:IF
    KK>3THENKK=0                             :rem 117
210 POKE 53272,CH%(KK):NEXT                   :rem 1
215 X1=L1+X:X2=L2+X                            :rem 96
220 AX=PEEK(197):IFAX=9 ORAX=6 OR(PEEK(56321)AND1)
    =0THEN600                                :rem 165
230 IFAX=23 ORAX=3 OR(PEEK(56321)AND2)=0THEN650
                                             :rem 174
235 IFAX=1THEN GOSUB 900                      :rem 120
240 X=X+1:IFX<=38THEN185                       :rem 177
250 GOSUB6500                                 :rem 226
260 GOTO170                                   :rem 105
400 UC=UC+1:POKE X1,32:POKEX2,1:POKEL1+X,43:POKEL2
    +X,4                                     :rem 246
410 POKEXC+0,0:POKEXC+1,30:POKEXC+4,129:POKEXC+5,1
    5:POKEXC+6,15:POKEXC+24,10               :rem 63
420 FORQ=1TO50:NEXT:POKEXC+4,128               :rem 231
430 FORQ=1TO5:NEXT:POKEXC+24,0                 :rem 127
```

```
440 IFUC=TC%THEN3000                           :rem 170
450 POKEL1+X,32:POKEL2+X,1:HC%=HC%+1:IFHC%=MW%THEN
    GOSUB6500:GOTO170                          :rem 87
460 GOTO200                                    :rem 101
500 POKE 53272,RC%:PRINT"{CLR}"DN$(7)TAB(11)"{RVS}
    STARBASE DESTROYED{OFF}"                   :rem 3
510 POKEXC+0,0:POKEXC+1,0:POKEXC+5,15:POKEXC+6,15:
    POKEXC+24,15:Y=50                          :rem 28
520 FORX=15TO1STEP-1                           :rem 231
530 POKEXC+1,Y:Y=Y-3:POKEXC+4,17               :rem 195
540 POKEVC+33,X:FORZ=1TO100:NEXTZ:POKEXC+4,16:NEXT
    X                                          :rem 45
550 POKEXC+24,0:POKE198,0                      :rem 184
560 DD%=(SP%+5)/2:GOTO3000                     :rem 149
600 IFY<1THEN240                               :rem 176
610 Y=Y-1:L1=L1-40:L2=L2-40:GOTO240            :rem 243
650 IFY>23THEN240                              :rem 235
660 Y=Y+1:L1=L1+40:L2=L2+40:GOTO240            :rem 242
900 FOR I=0 TO 399:NEXT                        :rem 247
910 IF PEEK(197)=64THEN 910                    :rem 176
920 RETURN                                     :rem 123
1000 KK=0:POKE53272,CH%(KK)                    :rem 243
1010 FOR I=0 TO 9-SP%                          :rem 48
1020 Y=3*INT(RND(1)*8)                         :rem 186
1030 Z=3*INT(RND(1)*9)+10                      :rem 73
1080 IFPEEK(P1+Z+40*Y)<>32THEN1020             :rem 183
1090 PRINTDN$(Y)TAB(Z)"{BLK}"SS$:NEXT          :rem 80
1100 FORX=1TOTC%                               :rem 206
1110 KK=KK+1:IFKK>3THENKK=0                    :rem 138
1120 POKE53272,CH%(KK)                         :rem 185
1130 Y=INT(RND(1)*25)                          :rem 142
1140 Z=INT(RND(1)*30)+10                       :rem 24
1150 Y=(Y*40)+Z                                :rem 26
1160 IFPEEK(P1+Y)<>32THEN1130                  :rem 165
1170 POKEP1+Y,41:POKEP2+Y,6:NEXT               :rem 216
1180 FORX=0 TO 999:NEXT                        :rem 61
1190 PRINTDN$(23):RETURN                       :rem 222
2000 PRINTCHR$(147)"{2 DOWN}{3 SPACES}ENTER NUMBER
     OF ASTEROIDS:{14 SPACES}(10 TO 200)" :rem 78
2010 INPUT"{DOWN} ";X$:TC%=VAL(X$):IFTC%<10 ORTC%>
     200THEN2010                               :rem 131
2020 PRINT"{2 DOWN}{3 SPACES}ENTER MISSILE SPEED:
     {20 SPACES}(1=FAST -TO- 9=SLOW)"    :rem 155
2030 INPUT"{DOWN} ";X$:SP%=VAL(X$):IFSP%<1 ORSP%>9
     THEN2030                                  :rem 34
2040 PRINT"{2 DOWN}{3 SPACES}ENTER NUMBER OF WARHE
     ADS:{15 SPACES}(1 TO 5 PER MISSILE)" :rem 117
2050 INPUT"{DOWN} ";X$:MW%=VAL(X$):IFMW%<1 ORMW%>5
     THEN2050                                  :rem 37
2060 RETURN                                    :rem 168
```

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```
3000 POKE53272,RC%:PRINTCHR$(147);"{2 DOWN}"SPC(15
     );"{RVS}GAME{2 SPACES}OVER{OFF}"       :rem 71
3010 PRINT"{2 DOWN}{3 SPACES}NUMBER OF ASTEROIDS =
     ";UC:POKE198,0                         :rem 58
3020 PRINT"{2 DOWN}{3 SPACES}NUMBER OF MISSILES
     {2 SPACES}=";MC                        :rem 135
3030 X=INT(10*((UC/(MC*MW%)+(UC/TC%))/2))-DD%-INT(
     3*(SP%/9))                             :rem 224
3040 IFX<0THENX=0                           :rem 14
3050 IFX>9THENX=9                           :rem 35
3060 PRINT"{3 DOWN}{3 SPACES}YOUR RANK IS: ";RT$(X
     )                                      :rem 204
3080 PRINT"{4 DOWN}{9 SPACES}PLAY AGAIN?" :rem 181
3085 PRINT"{DOWN}{2 SPACES}{RVS}S{OFF}AME GAME":PR
     INT"{DOWN}{2 SPACES}{RVS}N{OFF}EW GAME":PRINT
     "{DOWN}{2 SPACES}{RVS}Q{OFF}UIT"       :rem 93
3090 GETX$:IFX$=""THEN3090                  :rem 233
3100 DD%=0:IFX$="N"THEN150                  :rem 183
3110 IFX$="S"THENMC=0:UC=0:PRINT"{CLR}":POKE53272,
     CH%(0):GOTO 155                        :rem 132
3120 IFX$="Q"THENGOSUB7000:PRINTCHR$(147):END
                                            :rem 223
3130 GOTO 3090                             :rem 204
5000 POKEVC+32,8:POKEVC+33,1               :rem 113
5005 PRINTCHR$(147);"{BLK}{DOWN}{RVS}{13 SPACES}AS
     TEROID BLAST{13 SPACES}{OFF}";         :rem 21
5010 PRINT"{3 DOWN}YOU MUST SAVE YOUR SPACE STATIO
     N FROM A"                              :rem 145
5020 PRINT"GROUP OF ASTEROIDS SURROUNDING IT."
                                            :rem 147
5030 PRINT"{2 DOWN}YOUR SHIP'S COMPUTER FIRES MISS
     ILES FROM";                            :rem 120
5035 PRINT"THE LEFT SIDE OF THE SCREEN."    :rem 51
5040 PRINT"{2 DOWN}YOU CAN CAUSE EACH MISSILE TO C
     LIMB OR"                               :rem 206
5050 PRINT"DIVE BY USING THE JOYSTICK OR KEYBOARD:
     "                                      :rem 97
5060 PRINT"{2 DOWN}{5 SPACES}({RVS}W OR F5{OFF}=CL
     IMB{3 SPACES}{RVS}X OR F7{OFF}=DIVE)":IFPEEK(
     653)>1THEN 5150                        :rem 143
5065 GOSUB 7000:GOSUB 6000                 :rem 151
5070 PRINTCHR$(147);"{3 DOWN}IF YOU CAUSE A MISSIL
     E TO HIT YOUR"                         :rem 36
5080 PRINT"SPACE STATION, THE GAME WILL BE OVER."
                                            :rem 124
5090 PRINT"{2 DOWN}YOU CAN CONTROL THE DIFFICULTY
     {SPACE}OF EACH{2 SPACES}GAME BY THREE FACTORS
     :"                                     :rem 164
```

```
5100 PRINT"{DOWN}{2 SPACES}Q NUMBER OF ASTEROIDS":
     PRINT"{DOWN}{2 SPACES}Q MISSILE SPEED"
                                           :rem 249
5105 PRINT"{DOWN}{2 SPACES}Q NUMBER OF MISSILE WAR
     HEADS"                                :rem 65
5110 PRINT"{2 DOWN}A MISSILE WITH MORE THAN 1 WARH
     EAD CAN"                             :rem 170
5120 PRINT"DESTROY MULTIPLE ASTEROIDS PER FLIGHT."
     :GOSUB6000                            :rem 48
5150 FORI=0TO 3:FORJ=C%(I)+296TOC%(I)+343:READZ:PO
     KEJ,Z:NEXT                           :rem 128
5155 FORJ=C%(I)+256TOC%(I)+263:POKEJ,0:NEXT
                                          :rem 251
5160 FORJ=C%(I)+1280TOC%(I)+1287:POKEJ,255:NEXT
                                          :rem 200
5165 FORJ=C%(I)+344TOC%(I)+351:POKEJ,INT(RND(9)*25
     6):NEXT:NEXT                         :rem 178
5180 SS$="%&{DOWN}{2 LEFT}'(":IFPEEK(653)>1THENRET
     URN                                   :rem 89
5190 PRINT "{CLR}"DN$(12)TAB(17)"MISSILE":GOSUB550
     0                                     :rem 11
5200 PRINT DN$(12)TAB(16)"{PUR}* * * * *":GOSUB551
     0                                    :rem 132
5210 PRINT DN$(12)TAB(16)"{BLK}ASTEROID":GOSUB5500
                                           :rem 1
5220 PRINT DN$(12)TAB(16)"{BLU}) ) ) )":GOSUB551
     0                                     :rem 4
5230 PRINT DN$(12)TAB(16)"{BLK}STARBASE":GOSUB5500
                                          :rem 253
5240 PRINT DN$(11)TAB(19)SS$:GOSUB5510:RETURN
                                          :rem 188
5500 FORI=0TO 999:NEXT:POKE53272,CH%(0):PRINT"
     {CLR}":RETURN                        :rem 175
5510 FORI=0TO 9:FORKK=0TO 3:POKE53272,CH%(KK):FORJ
     =0TO 19:NEXT:NEXT:NEXT               :rem 189
5520 POKE 53272,RC%:PRINT"{CLR}":RETURN   :rem 156
6000 PRINT DN$(23)"{12 SPACES}(PRESS ANY KEY)";
                                          :rem 237
6010 GETX$:IFX$=""THEN6010                :rem 223
6020 RETURN                               :rem 168
6100 DN$(0)="{HOME}":FORI=1TO 23:DN$(I)=DN$(I-1)+"
     {DOWN}":NEXT:RETURN                  :rem 250
6500 POKE X1,32:POKEX2,1:X1=X1-40:X2=X2-40:REM *SC
     ROLL*                                :rem 219
6510 FORX=0TO39                           :rem 135
6520 PT%(X,0)=PEEK(P1+X)                  :rem 82
6530 PT%(X,1)=PEEK(P2+X)                  :rem 85
6540 NEXT:PRINT"{DOWN}";                  :rem 101
6550 FORX=0TO39                           :rem 139
```

```
6560 POKEP1+K1+X,PT%(X,0)                    :rem 165
6570 POKEP2+K1+X,PT%(X,1)                    :rem 168
6580 NEXT                                    :rem 18
6590 RETURN                                  :rem 180
7000 POKEXC+0,0:POKEXC+1,0:POKEXC+5,79:POKEXC+6,12
     9:POKEXC+24,15                          :rem 88
7010 FORX=0TO21                              :rem 122
7020 Y=INT(NT%(X,0)/256)                     :rem 51
7030 POKEXC+0,NT%(X,0)-(Y*256)               :rem 133
7040 POKEXC+1,Y:POKEXC+4,17                  :rem 109
7050 FORY=1TONT%(X,1)*60:NEXTY               :rem 76
7060 POKEXC+4,16:NEXTX:POKEXC+24,0           :rem 75
7070 RETURN                                  :rem 174
9000 DATA PRIVATE,SERGEANT,LIEUTENANT,CAPTAIN,MAJO
     R,COLONEL                               :rem 177
9010 DATA "* GENERAL","** GENERAL","*** GENERAL","
     **** GENERAL"                           :rem 20
9100 DATA6430,2,5407,2,6430,4,6430,2,5407,2,6430,4
     ,6430,2,5407,2,6430,2                    :rem 212
9110 DATA7217,2,6430,2,5407,2,6430,4,5407,2,5728,2
     ,6430,2,5728,4                           :rem 145
9120 DATA4817,2,6430,2,5728,4,4817,2,4291,8
                                             :rem 143
63000 DATA0,7,31,56,56,100,98,97             :rem 90
63001 DATA0,224,248,28,220,230,70,134        :rem 64
63002 DATA97,98,103,59,56,31,7,0             :rem 98
63003 DATA134,70,38,28,28,248,224,0          :rem 238
63004 DATA0,48,122,127,31,62,126,112         :rem 15
63005 DATA0,0,240,28,31,28,240,0             :rem 64
63006 DATA0,7,31,57,49,97,97,97              :rem 65
63007 DATA0,224,248,28,12,38,54,254          :rem 240
63008 DATA127,108,100,48,56,31,7,0           :rem 181
63009 DATA134,134,134,140,156,248,224,0      :rem 175
63010 DATA0,204,238,254,124,120,124,24       :rem 109
63011 DATA0,0,240,28,47,28,240,0             :rem 68
63012 DATA0,7,31,56,56,100,110,109           :rem 168
63013 DATA0,224,248,28,28,38,70,134          :rem 239
63014 DATA97,98,100,56,56,31,7,0             :rem 95
63015 DATA182,118,38,28,28,248,224,0         :rem 39
63016 DATA14,126,124,248,254,94,12,0         :rem 28
63017 DATA0,0,240,28,79,28,240,0             :rem 79
63018 DATA0,7,31,57,51,103,97,97             :rem 97
63019 DATA0,224,248,28,12,6,6,254            :rem 139
63020 DATA127,96,96,48,56,31,7,0             :rem 99
63021 DATA134,134,230,204,156,248,224,0      :rem 167
63022 DATA24,62,30,62,127,119,51,0           :rem 175
63023 DATA0,0,240,28,143,28,240,0            :rem 116
```

Black Hole

Skill area: Coordination
Level: 2, 3, 4
Equipment required: Joystick handy, but not essential
Modification: No

Space Fleet
You are a star fleet captain, and you're in a tight spot. Your ships must get to Espilon Eridani, but between the fleet and the star is a series of black holes. Any ship that enters a black hole is lost forever. Your assignment is to get as many ships as possible through the field of black holes and reach Espilon Eridani on schedule.

How to Play
Each ship, launched by the computer, travels from left to right. Manipulate your ship around the black holes towards the right edge of the screen, using the joystick or the keyboard. When using the keyboard, pressing W or f5 causes your ship to climb; pressing X or f7 causes it to dive.

You can control the game by choosing three options:

A. The number of starships in your fleet;
B. The speed your starships will travel;
C. The number of black holes that will block your path.

The computer first asks how many starships you want. Type any number from 10 to 50 and then press the RETURN key. Next, you'll be asked how fast you want your ships to travel. Type any number from 1 (the fastest speed) to 9 (the slowest speed), and hit RETURN. Third, indicate how many black holes you want. Type any number from 50 to 200 and then press RETURN.

If you wish to speed past the introductory screens, just hold down the Commodore key when the program first starts running.

Scoring
Your score is based on the number of starships in your fleet, as well as the number that successfully navigate the field of black holes. You will also receive points for unsuccessful trips based on how far you did travel. You will be awarded a rank from private to 4-star general, depending on your navigational prowess. To increase your chances of a high ranking, you may want to choose a

larger number of starships, a fast starship speed, and a large number of black holes.

Black Hole

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM BLACK HOLE                                    :rem 154
100 DIMRT$(9),NT%(44,1),PT%(39,1),CH%(3),C%(3),DN$
    (23)                                            :rem 231
105 VC=53248:MC=54272:K1=960                        :rem  15
110 CH%(0)=8:CH%(1)=10:CH%(2)=12:CH%(3)=14:RC%=PEE
    K(53272):GOSUB 5600                             :rem 142
115 FOR I=0 TO 3:C%(I)=1024*CH%(I):CH%(I)=(RC%AND2
    40)ORCH%(I):NEXT                                :rem  87
120 FORX=54272TO54296:POKEX,0:NEXTX                 :rem 174
125 P1=((PEEK(53272)AND240)/16)*1024:P2=55296
                                                    :rem 101
130 FORX=0TO9:READX$:RT$(X)=X$:NEXTX                :rem  37
135 FORX=0TO44:FORY=0TO1:READZ:NT%(X,Y)=Z:NEXTY,X
                                                    :rem 215
140 GOSUB5000                                       :rem 218
150 GOSUB2000:PRINTCHR$(147):SD%=0                  :rem 240
155 FORX=0TO24:POKEP1+(X*40),160:POKEP2+(X*40),0:N
    EXTX                                            :rem 217
160 GOSUB1000                                       :rem 216
165 FOREC=1TOEC%                                    :rem 201
170 Y=INT(RND(1)*25):L1=(Y*40)+1+P1:L2=(Y*40)+1+P2
                                                    :rem 203
180 X=0                                             :rem  94
190 IFPEEK(L1+X)=81THEN400                          :rem   8
200 POKE L2+X,2:POKEX1,32:POKEL1+X,90               :rem 161
205 FOR KK=0 TO 3:POKE 53272,CH%(KK):NEXT KK
                                                    :rem 149
210 FOR Z=0 TO SP%:NEXTZ:POKE53272,CH%(0)           :rem  72
220 A=PEEK(197):IF A=6 OR A=9 OR(PEEK(56321)AND1)=
    0THEN600                                        :rem 157
230 IF A=23 OR A=3 OR(PEEK(56321)AND2)=0THEN650
                                                    :rem 254
235 X1=L1+X                                         :rem  96
240 X=X+1:IFX<=38THEN190                            :rem 173
250 GOSUB6500:NEXTEC:GOTO3000                       :rem  25
400 POKE X1,32                                      :rem 221
405 SD%=SD%+1:POKEMC+0,0:POKEMC+1,10                :rem  60
410 POKEMC+5,15:POKEMC+6,15:POKEMC+4,17             :rem  30
420 POKEVC+32,0:POKEVC+33,0:POKEMC+24,9             :rem  40
430 FORQ=1TO200:NEXTQ:POKEMC+4,16                   :rem  39
440 POKEMC+24,0:POKEVC+32,2:POKEVC+33,15            :rem  89
```

```
450 GOTO250                              :rem 105
600 POKE X1,32:IFY<1THEN235              :rem 55
605 X1=L1+X                              :rem 97
610 Y=Y-1:L1=L1-40:L2=L2-40:GOTO240      :rem 243
650 POKE X1,32:IFY>23THEN235             :rem 114
655 X1=L1+X                              :rem 102
660 Y=Y+1:L1=L1+40:L2=L2+40:GOTO240      :rem 242
1000 FORX=1TOBH%                         :rem 192
1010 Y=INT(RND(1)*25)                    :rem 139
1020 Z=INT(RND(1)*30)+10                 :rem 21
1030 Y=(Y*40)+Z                          :rem 23
1040 A=PEEK(P1+Y):IFA<>32THEN1010        :rem 152
1050 POKEP1+Y,81:POKE P2+Y,0:NEXTX       :rem 43
1060 FORX=1TO1000:NEXTX                  :rem 169
1070 PRINTDN$(23)                        :rem 193
1080 RETURN                             :rem 169
2000 PRINTCHR$(147);"{2 DOWN}{3 SPACES}ENTER # OF
     {SPACE}STARSHIPS{2 SPACES}(10 TO 50)":rem 143
2010 INPUT"{DOWN} ";X$:EC%=VAL(X$):IFEC%<10OREC%>5
     0THEN2010                          :rem 41
2020 PRINT"{2 DOWN}{3 SPACES}ENTER STARSHIP SPEED"
     :PRINT"{3 SPACES}(0=FAST -TO- 9=SLOW)"
                                        :rem 195
2030 INPUT"{DOWN} ";X$:SP%=VAL(X$):IFSP%<0ORSP%>9T
     HEN2030                            :rem 33
2040 PRINT"{2 DOWN}{3 SPACES}ENTER # OF BLACK HOLE
     S":PRINT"{3 SPACES}(50 TO 200)"     :rem 189
2050 INPUT"{DOWN} ";X$:BH%=VAL(X$):IFBH%<50ORBH%>2
     00THEN2050                         :rem 104
2060 SP%=SP%*7                           :rem 246
2070 RETURN                             :rem 169
3000 POKE 53272,RC%:PRINTCHR$(147);SPC(11);"
     {2 DOWN}{RVS}G A M E{4 SPACES}O V E R{OFF}"
                                        :rem 255
3002 X$=STR$(EC%)                        :rem 153
3004 IFLEN(X$)<4THENX$=" "+X$:GOTO3004   :rem 127
3005 PRINT"{3 DOWN} NUMBER OF STARSHIPS =";X$:POKE
     198,0                             :rem 70
3006 X$=STR$(SD%)                        :rem 172
3008 IFLEN(X$)<4THENX$=" "+X$:GOTO3008   :rem 135
3010 PRINT"{DOWN} NUMBER DESTROYED{4 SPACES}=";X$
                                        :rem 22
3012 PRINT "{DOWN} AVERAGE SURVIVAL ="STR$(INT(SC/
     EC%))" PARSEC(S)"                  :rem 30
3030 X=INT(SC/(4*EC%)):X=INT(X/(200/(BH%+(200-BH%)
     /2)+((SP%/7)-1)/4))               :rem 99
3035 IF EC%=SD% AND SC<5 THEN X=0        :rem 206
3040 IFX<0THENX=0                        :rem 14
3050 IFX>9THENX=9                        :rem 35
```

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```
3060 PRINT"{2 DOWN}{9 SPACES}YOUR RANK IS:{DOWN}":
     PRINTSPC(9);RT$(X)                        :rem 3
3080 PRINT"{2 DOWN}{9 SPACES}PLAY AGAIN?" :rem 147
3085 PRINT"{DOWN}{4 SPACES}{RVS}S{OFF}AME GAME":PR
     INT"{DOWN}{4 SPACES}{RVS}N{OFF}EW GAME":PRINT
     "{DOWN}{4 SPACES}{RVS}Q{OFF}UIT"       :rem 93
3090 GETX$:IFX$=""THEN3090                 :rem 233
3100 IFX$="N"THENSC=0:GOTO 150             :rem 217
3110 IFX$="Q"THENGOSUB7000:PRINTCHR$(147):END
                                           :rem 222
3120 IFX$="S"THENSC=0:SD%=0:PRINT "{CLR}":GOTO 155
                                           :rem 230
3130 GOTO 3090                             :rem 204
5000 POKEVC+32,2:POKEVC+33,15              :rem 160
5005 PRINTCHR$(147);"{DOWN}{BLK}{RVS}{10 SPACES}B
     {SPACE}L A C K{4 SPACES}H O L E{10 SPACES}
     {OFF}";                               :rem 201
5010 PRINT"{2 DOWN}YOU MUST PILOT A FLEET OF STARS
     HIPS"                                 :rem 142
5020 PRINT"ACROSS SPACE, AVOIDING THE BLACK HOLES.
     "                                      :rem 51
5030 PRINT"{2 DOWN}EACH SHIP TRAVELS FROM THE LEFT
      SIDE OF THE SCREEN TO THE RIGHT."    :rem 236
5040 PRINT"{2 DOWN}YOU CAN CAUSE EACH SHIP TO CLIM
     B OR DIVE";                            :rem 79
5050 PRINT"BY USING THE JOYSTICK OR THE KEYBOARD:"
                                            :rem 26
5060 PRINT"{2 DOWN}{4 SPACES}({RVS}W OR F5{OFF}=CL
     IMB{3 SPACES}{RVS}X OR F7{OFF}=DIVE)" :rem 73
5070 IF PEEK(653)>1 THEN 5090             :rem 219
5080 GOSUB 7000:GOSUB 6000                :rem 148
5090 PRINT"{CLR}{2 DOWN}YOU CAN CONTROL THE DIFFIC
     ULTY OF THE{3 SPACES}GAME BY THREE FACTORS:"
                                            :rem 7
5100 PRINT"{2 DOWN}{3 SPACES}+ NUMBER OF STARSHIPS
     ":PRINT"{DOWN}{3 SPACES}+ STARSHIP SPEED"
                                           :rem 41
5120 PRINT"{DOWN}{3 SPACES}+ NUMBER OF BLACK HOLES
     "                                      :rem 11
5130 FOR I=0 TO 3:FOR J=C%(I)+256 TO C%(I)+263:POK
     E J,0:NEXTJ                           :rem 235
5135 FOR J=C%(I)+1280 TO C%(I)+1287:POKE J,255:NEX
     TJ                                     :rem 20
5140 FOR J=C%(I)+648 TO C%(I)+655:READ ZZ:POKE J,Z
     Z:NEXTJ                               :rem 215
5145 FOR J=C%(I)+720 TO C%(I)+727:READ ZZ:POKE J,Z
     Z:NEXTJ,I                             :rem 72
5150 IF PEEK(653)>1 THEN RETURN           :rem 236
5160 GOSUB 6000                            :rem 18
```

```
5175 PRINT "{CLR}"DN$(12)TAB(16)"{BLK}STARSHIPS":G
     OSUB 5500                                    :rem 72
5180 PRINT DN$(12)TAB(16)"{RED}Z{2 SPACES}Z
     {2 SPACES}Z{2 SPACES}Z":GOSUB 5510     :rem 161
5185 PRINT DN$(12)TAB(15)"{BLK}BLACK HOLES":GOSUB
     {SPACE}5500                                  :rem 136
5190 PRINT DN$(12)TAB(14)"{BLK}Q{2 SPACES}Q
     {2 SPACES}Q{2 SPACES}Q{2 SPACES}Q"      :rem 60
5195 GOSUB 5510:RETURN                            :rem 57
5500 FOR I=0 TO 999:NEXT:PRINT "{CLR}":POKE 53272,
     CH%(0):RETURN                               :rem 175
5510 FOR I=0 TO 9:FOR KK=0 TO 3:POKE 53272,CH%(KK)
     :FOR J=0 TO 19:NEXTJ,KK,I                    :rem 76
5520 PRINT "{CLR}":POKE 53272,RC%:RETURN    :rem 156
5600 DN$(0)="{HOME}":FOR I=1 TO 23:DN$(I)=DN$(I-1)
     +"{DOWN}":NEXTI:RETURN                       :rem 71
6000 PRINTDN$(23)TAB(12)"(PRESS ANY KEY)";:rem 120
6010 GETX$:IFX$=""THEN6010                        :rem 223
6020 RETURN                                       :rem 168
6500 REM *** SCROLL THE SCREEN ***               :rem 27
6505 SC=SC+X-8-10*(X=39)                          :rem 43
6515 POKE X1,32:IFEC=EC%THENRETURN               :rem 100
6520 FORX=0TO39                                   :rem 136
6525 PT%(X,0)=PEEK(P1+X)                          :rem 87
6530 PT%(X,1)=PEEK(P2+X)                          :rem 85
6540 NEXTX                                        :rem 102
6550 PRINT"{DOWN}";                               :rem 237
6560 FORX=0TO39                                   :rem 140
6570 POKEP1+K1+X,PT%(X,0)                         :rem 166
6580 POKEP2+K1+X,PT%(X,1)                         :rem 169
6590 NEXTX                                        :rem 107
6600 RETURN                                       :rem 172
7000 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
     9:POKEMC+24,15                               :rem 33
7010 FORX=0TO44                                   :rem 127
7020 Y=INT(NT%(X,0)/256):Z=NT%(X,0)-(Y*256)
                                                  :rem 110
7030 POKEMC+0,Z:POKEMC+1,Y:POKEMC+4,17      :rem 48
7040 FORZ=1TONT%(X,1)*75:NEXTZ                    :rem 83
7050 POKEMC+4,16:FORZ=1TO10:NEXTZ,X         :rem 193
7060 POKEMC+24,0                                  :rem 121
7070 RETURN                                       :rem 174
9000 DATA PRIVATE,SERGEANT,LIEUTENANT,CAPTAIN,MAJO
     R,COLONEL                                    :rem 177
9010 DATA "* GENERAL","** GENERAL","*** GENERAL","
     **** GENERAL"                               :rem 20
9100 DATA2145,2,0,.3,2145,2,2864,2,2864,2,2864,2,2
     864,2,3215,2,0,.3,4291,2,3823                :rem 89
```

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```
9110 DATA2,3608,2,2864,2,0,3,2145,2,2408,2,4817,2,
     4291,2,3823,2,3608,2,3215,2              :rem 251
9120 DATA2864,2,2864,4,2703,2,3215,1,3215,2,3215,2
     ,3215,2,3215,2,3215,2,3608,2             :rem 38
9130 DATA4050,2,4291,2,3215,2,0,3,4291,2,4050,2,36
     08,2,3215,2,2864,2                       :rem 51
9140 DATA2703,2,2408,2,3215,2,2025,2,2145,4
                                              :rem 106
63000 DATA0,124,254,254,254,254,254,124       :rem 172
63001 DATA0,248,28,31,28,248,0,0               :rem 76
63002 DATA0,68,254,124,124,124,254,68          :rem 80
63003 DATA0,248,28,47,28,248,0,0               :rem 85
63004 DATA0,0,68,56,56,56,68,0                 :rem 248
63005 DATA0,248,28,79,28,248,0,0               :rem 92
63006 DATA0,0,0,40,16,40,0,0                   :rem 108
63007 DATA0,248,28,143,28,248,0,0              :rem 134
```

Earthworms

Skill area: Coordination
Level: 3, 4
Equipment required: Joystick
Modification: Yes

The Algae Pit
You are an earthworm, and you love eating algae. The best algae
in the world are found in the algae pit. Unfortunately for you, the
algae pit is owned by a person who doesn't like earthworms. In
order to protect his precious supply of algae from you, he has
sprinkled the pit with pebbles and encircled it with an electric
fence. You got inside the fence during a power outage, but now
that the power is on, you don't want to touch the fence. Running
into a pebble will cause you indigestion. Finally, you are so hun-
gry for algae that you must eat algae with every move you make,
or you won't be able to go on. This means you won't be able to
backtrack over territory you've covered before. It isn't an easy
task, but it's your life.

How to Play
You can choose one of five skill levels. Level 1 is the easiest. When
the computer asks which skill level you prefer, type the number
you want and wait, joystick in hand, for the game to start.
   As soon as "Earthworms" begins, the earthworm will begin
moving on its own. You must control the movement to eat algae
balls or avoid the pebbles with the joystick. Be careful not to run
into the fence around the border, or the game is over. Before using
the joystick, wait to see which way the earthworm is moving. If
you backtrack over a path you've already made, the game is over.

Scoring
Scoring is simple. You are awarded 10 points for each algae ball
eaten. Because hitting pebbles, running into the fence, or back-
tracking over your trail ends the game, no points are deducted for
those moves.

Earthworms

Remember, do not type the checksum number at the end of each line. For example, do
not type ":rem 123." Please read the article about the "Automatic Proofreader" in
Appendix E.

```
1 REM EARTHWORMS                               :rem 33
100 MC=54272:VC=53248:POKEVC+32,6:POKEVC+33,15
                                               :rem 145
110 PRINTCHR$(147):M=((PEEK(53272)AND240)/16)*1024
    :C=55296                                   :rem 161
150 PRINT"{BLK}{DOWN}{RVS}{14 SPACES}EARTHWORMS
    {16 SPACES}{OFF}{DOWN}";                   :rem 4
155 GOSUB2300                                  :rem 224
160 PRINT"{DOWN}AS YOU CRAWL THROUGH THE DIRT YOU
    {SPACE}MUST{2 SPACES}EAT ALGAE ({GRN}Q{BLK}) A
    ND AVOID"                                  :rem 72
170 PRINT"SHARP PEBBLES ({BLU}Z{BLK})."        :rem 236
175 PRINT"{DOWN}HITTING PEBBLES OR THE BORDER OF T
    HE"                                        :rem 73
180 PRINT"SCREEN OR CROSSING A PREVIOUS TUNNEL
    {4 SPACES}WILL END THE GAME."              :rem 255
185 GOSUB2400                                  :rem 228
190 PRINT"{DOWN}CONTROL DIRECTION WITH THE JOYSTIC
    K."                                        :rem 249
200 PRINT"{DOWN}TEN POINTS FOR EACH ALGAE BALL YOU
     EAT."                                     :rem 170
210 GOSUB2500:GOSUB2000                        :rem 86
220 PRINTCHR$(147);"{DOWN}{2 SPACES}ENTER SKILL LE
    VEL:":PRINT"{3 DOWN}{3 SPACES}{RVS}1{OFF} BEGI
    NNER"                                      :rem 171
225 PRINT"{2 DOWN}{5 SPACES}-TO-":PRINT"{2 DOWN}
    {3 SPACES}{RVS}5{OFF} ADVANCED"            :rem 197
230 GETX$:IFX$=""THEN230                       :rem 123
240 SC=0:SL=VAL(X$):IFSL<1ORSL>5THEN230        :rem 171
245 LT=(11-(SL*2)):IFLT>7THENLT=7              :rem 197
250 PRINTCHR$(147):FORY=1TO(SL*6):GOSUB2100:POKEM+
    X,90:POKEC+X,6:NEXTY                       :rem 155
260 AC=SL*20:FORY=1TOAC:GOSUB2100:POKEM+X,81:POKEC
    +X,5:NEXTY                                 :rem 64
270 H1=20:V1=12:POKEM+500,160:POKEC+500,2      :rem 21
275 {21 SPACES}                                :rem 158
280 H2=0:V2=0:X=1:IFRND(1)>.5THENX=-1          :rem 162
290 LC=0:H2=X:IFRND(1)>.5THENH2=0:V2=X          :rem 29
300 H3=0:V3=0:GOSUB2200:IFV3<>0ORH3<>0THENH2=H3:V2
    =V3:GOTO360                                :rem 224
340 LC=LC+1:IFLC<LTTHEN300                     :rem 68
350 LC=0                                       :rem 148
360 H1=H1+H2:V1=V1+V2:IFH1<0ORH1>39ORV1<0ORV1>24TH
    EN700                                      :rem 61
370 X=PEEK(M+H1+(V1*40))                       :rem 39
```

```
380 IFX=32ORX=81THENPOKEM+H1+(V1*40),160:POKEC+H1+
    (V1*40),2:GOTO410                        :rem 173
390 IFX=160ORX=90THEN700                     :rem 188
400 GOTO300                                  :rem 96
410 IFX=32THEN300                            :rem 224
420 REM ***** EAT ALGAE                      :rem 128
430 POKEMC+0,0:POKEMC+1,0:POKEMC+24,15       :rem 218
440 FORX=50TO10STEP-10                       :rem 71
445 POKEMC+1,X:POKEMC+4,129                  :rem 92
450 FORY=1TO10:NEXTY:POKEMC+4,128:NEXTX      :rem 13
460 POKEMC+24,0                              :rem 70
470 SC=SC+10:AC=AC-1                         :rem 109
480 IFAC<1THEN250                            :rem 226
490 GOTO300                                  :rem 105
700 REM ***** GAME OVER                      :rem 163
701 POKEMC+0,0:POKEMC+1,20:POKEMC+4,17:POKEMC+24,1
    5                                        :rem 249
702 FORY=1TO500:NEXTY:POKEMC+4,16:POKEMC+24,0
                                             :rem 34
710 PRINTCHR$(147);"{3 DOWN}{15 SPACES}{RVS}GAME O
    VER!{OFF}"                               :rem 224
720 PRINT"{3 DOWN}{4 SPACES}SCORE =";SC      :rem 39
730 PRINT"{5 DOWN}{4 SPACES}REPLAY? ({RVS}Y{OFF} O
    R {RVS}N{OFF})"                          :rem 173
740 GETX$:IFX$=""THEN740                     :rem 135
750 IFX$="Y"THEN220                          :rem 68
760 IFX$<>"N"THEN740                         :rem 126
770 GOSUB2400:GOSUB2500                      :rem 101
780 PRINTCHR$(147)                           :rem 26
790 END                                      :rem 119
2000 PRINT"{HOME}{23 DOWN}{8 SPACES}(PRESS ANY KEY
     TO START)"                              :rem 13
2010 GETX$:IFX$=""THEN2010                   :rem 215
2020 RETURN                                  :rem 164
2100 X=INT(RND(1)*1000):IFPEEK(M+X)<>32THEN2100
                                             :rem 197
2110 RETURN                                  :rem 164
2200 REM ***** READ JOYSTICK                  :rem 6
2210 X=PEEK(56321)                           :rem 209
2220 IF(XAND1)=0THENV3=-1                     :rem 194
2230 IF(XAND2)=0THENV3=1                      :rem 151
2240 IF(XAND4)=0THENH3=-1                     :rem 185
2250 IF(XAND8)=0THENH3=1                      :rem 145
2260 RETURN                                  :rem 170
2300 REM ***** LOAD SPRITE DEFINITIONS       :rem 174
2310 FORX=832TO832+63:POKEX,0:NEXTX          :rem 161
2320 FORX=896TO896+63:READZ:POKEX,Z:NEXTX    :rem 144
2330 FORX=832+48TO832+56:READZ:POKEX,Z:NEXTX:RETUR
     N                                        :rem 48
```

```
2400  REM ***** SETUP FOR SPRITE & NOTES      :rem 122
2410  FORX=54272TO54296:POKEX,0:NEXTX         :rem 226
2420  POKEMC+1,10:POKEMC+4,17:POKEMC+5,15     :rem 71
2430  POKEMC+6,15                             :rem 123
2440  POKEVC+0,0:POKEVC+1,200:POKEVC+16,0     :rem 85
2450  POKEVC+23,1:POKEVC+28,0:POKEVC+29,0     :rem 103
2460  POKEVC+39,2:POKE2040,13                 :rem 72
2470  RETURN                                  :rem 173
2500  REM ***** DRAW SPRITE                   :rem 130
2510  POKEMC+24,15:POKEVC+21,1:X=5:Z=25       :rem 211
2520  POKE2040,13:FORY=1TO50:NEXTY:POKEMC+4,16
                                              :rem 251
2525  POKEVC+0,Z:Z=Z+10                        :rem 46
2530  POKE2040,14                              :rem 80
2540  POKEMC+1,X:X=X+3:POKEMC+4,17            :rem 219
2550  IFZ=265THENPOKEVC+0,0:POKEVC+16,1:Z=0    :rem 47
2560  IFZ<>100THEN2520                        :rem 185
2570  POKEMC+24,0:POKEVC+21,0                 :rem 102
2580  RETURN                                  :rem 175
3000  DATA0,62,0,0,99,0,0,99,0,0,65,0,0,193,128,0,1
      93,128,0,128,128,1,128,192             :rem 166
3010  DATA1,128,192,1,0,64,3,0,96,3,0,96,2,0,32,6,0
      ,48,6,0,48,4,0,16,4,0                  :rem 155
3020  DATA16,4,0,16,252,0,31,0,0,0,0,0,0,0   :rem 202
3030  DATA0,60,0,0,102,0,255,195,255         :rem 208
```

224

Ladybug

Skill area: Coordination
Level: 2, 3, 4
Equipment required: None
Modification: No

Life in the Compost Heap

You're a ladybug, and always hungry. The best food in town is in Mrs. Woodstock's compost heap. It's just full of wonderful, juicy, rotting tomato leaves. It's your joy in life to run around the wire fence that holds all that tasty food. Whenever you see a particularly ripe tomato leaf, you jump for it.

But Mrs. Woodstock broke a mirror last week; not thinking, she threw the pieces in the compost heap. Now she's forgotten about the mirror, but those mirror pieces mean seven years of bad luck for you. Now, quite often when you see what looks like a nutritious tomato leaf, you'll jump for it and end up bouncing all over that compost heap. What you thought was a leaf turns out to be just a reflection in a piece of the mirror. Even if you could eat it, it wouldn't taste good.

How to Play

You run around the compost heap waiting for your lunch. You signal lunchtime by pressing the space bar. Eat as many leaves as you can in as few lunchtimes as possible.

There are ten skill levels in "Ladybug," ranging from 0 (easy) to 9 (hard). Press the number of the skill level you want and wait for the game to begin. Whenever you see a good cluster of leaves, press the space bar. If you hit a mirror fragment, you may bounce out of the compost heap. If you're lucky, the mirror fragment will bounce you into another tomato leaf or two along the way.

Keep eating leaves until there aren't any left. If a leaf seems impossible to reach, you can either press SHIFT to increase the number of mirror fragments or you can end the game by pressing f1.

Scoring

At the end of a game, the computer will tell you four things:

How many leaves were in the compost heap;

How many leaves you ate;

How many lunchtimes it took you to eat the leaves; and

What is your numerical score.

Numerical scores are issued by the computer on the basis of how efficiently you attacked the compost heap. The low score is 0, and if you're good you can probably get scores of a hundred or more.

Ladybug

Remember, do not type the checksum number at the end of each line. For example, do not type ":rem 123." Please read the article about the "Automatic Proofreader" in Appendix E.

```
1 REM LADYBUG                                 :rem 29
100 PRINTCHR$(147):VC=53248:MC=54272          :rem 45
110 DIMDT%(3,1),BT%(3,3,1),BV(3),NT%(37,1),CH%(1),
    C%(1)                                     :rem 248
120 S=((PEEK(53272)AND240)/16)*1024:C=55296-S
                                              :rem 115
130 FORX=54272TO54296:POKEX,0:NEXTX           :rem 175
140 POKEVC+32,6:POKEVC+33,12                  :rem 113
150 FORW=0TO37:FORX=0TO1:READZ:NT%(W,X)=Z:NEXTX,W
                                              :rem 208
160 GOSUB2000                                 :rem 217
170 L%=27:LF%=28                              :rem 71
200 PRINTCHR$(147);"{3 DOWN}{2 SPACES}ENTER SKILL
    {SPACE}LEVEL:"                            :rem 110
210 PRINT"{3 DOWN}{5 SPACES}{RVS}1{OFF} BEGINNER":
    PRINT"{2 DOWN}{7 SPACES}--TO--"           :rem 58
220 PRINT"{2 DOWN}{5 SPACES}{RVS}9{OFF} ADVANCED"
                                              :rem 154
230 GETX$:IFX$=""THEN230                      :rem 123
240 SK=VAL(X$):IFSK<1ORSK>9THEN230            :rem 111
250 POKEVC+33,1:P1=160:P2=7:PRINTCHR$(147):HI=0:BC
    =0                                        :rem 37
260 FORW=0TO960STEP40:GOSUB3000:NEXTW         :rem 114
270 FORW=961TO998:GOSUB3000:NEXTW             :rem 78
280 FORW=999TO39STEP-40:GOSUB3000:NEXTW       :rem 233
290 FORW=38TO1STEP-1:GOSUB3000:NEXTW          :rem 60
300 FORY=1TOSK*4+5                            :rem 64
310 W=INT(RND(1)*836)+82                      :rem 42
320 IFPEEK(S+W-1)<>32 ORPEEK(S+W)<>32 ORPEEK(S+W+1
    )<>32THEN310                              :rem 97
325 IFPEEK(S+W+40)<>32 ORPEEK(S+W-40)<>32THEN310
                                              :rem 1
330 P1=BV(INT(RND(1)*4)):P2=6:GOSUB3000:NEXTY
                                              :rem 187
340 NT=INT(SK*10+10):P1=LF%:P2=5:FORY=1TONT
                                              :rem 113
```

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```
350 W=INT(RND(1)*918)+41:IFPEEK(S+W)<>32THEN350
                                          :rem 228
360 GOSUB3000:NEXTY                       :rem 174
400 CP=S                                  :rem 183
410 IFCP=S THENI=40:X=1                    :rem 96
420 IFCP=S+39THENI=-1:X=4                 :rem 245
430 IFCP=S+960THENI=1:X=2                 :rem 250
435 IFCP=S+999THENI=-40:X=3               :rem 108
440 XP=CP:CP=CP+I:POKE XP+C,7:POKEXP,160:POKE CP,L
    %:POKE CP+C,2                          :rem 56
455 IFPEEK(197)=4THEN900                  :rem 125
460 KK=-(KK=0):POKE 53272,CH%(KK):IF PEEK(197)=60
    {SPACE}THEN 500                       :rem 100
465 IF PEEK(653)>0 THEN GOSUB 1500         :rem 37
470 QT=0:FORZ=1TO(10-SK):IFPEEK(197)=60THENQT=1
                                          :rem 123
480 NEXTZ:IFQT=0THEN410                   :rem 212
500 IFCP=SORCP=S+39ORCP=S+960ORCP=S+999THEN410
                                          :rem 142
505 BC=BC+1:PK=7                          :rem 134
510 I=DT%(X-1,0):CD=DT%(X-1,1)             :rem 91
520 Z=32:IFPK=7THENZ=160                  :rem 200
530 POKECP,Z:POKECP+C,PK:PK=1              :rem 84
540 CP=CP+I:Y=PEEK(CP)                     :rem 73
545 KK=-(KK=0):POKE 53272,CH%(KK)          :rem 33
550 IFY=32THEN630                         :rem 236
560 IFY=LF%THEN600                         :rem 60
570 IFY=160THEN660                         :rem 35
580 GOTO700                               :rem 109
600 GOSUB4000:HI=HI+1                     :rem 207
630 POKECP,L%:POKECP+C,2:FORZ=1TO(20-SK):NEXTZ:IFH
    I>=NTTHEN900                          :rem 220
640 GOTO520                               :rem 106
660 POKECP,L%:POKECP+C,2:IFI=-40THENI=-1:X=4:GOTO4
    10                                    :rem 193
670 IFI=40THENI=1:X=2:GOTO410              :rem 5
680 IFI=1THENI=-40:X=3:GOTO410            :rem 52
690 I=40:X=1:GOTO410                      :rem 145
700 Z=9:FORW=0TO3:IFBV(W)=YTHENZ=W        :rem 222
710 NEXTW:IFZ>3THEN630                    :rem 138
720 X=BT%(Z,CD-1,0):CP=CP+BT%(Z,CD-1,1):GOSUB4100
                                           :rem 28
725 IFPEEK(CP)=LF%THENGOSUB4000:HI=HI+1    :rem 146
730 POKECP,L%:POKECP+C,2:GOTO510          :rem 202
900 PRINTCHR$(147);"{WHT}{2 DOWN}{15 SPACES}{RVS}G
    AME OVER!{OFF}":POKEVC+33,12:POKE198,0 :rem 94
910 PRINT"{3 DOWN}{5 SPACES}# LEAVES{2 SPACES}=";N
    T                                     :rem 155
920 PRINT"{DOWN}{5 SPACES}# EATEN{3 SPACES}=";HI
                                           :rem 22
```

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```
930 PRINT"{DOWN}{5 SPACES}# LUNCHES =";BC :rem 176
940 IFBC=0THENBC=1                          :rem 64
950 X=(HI-BC)*5+40:X=X-(2*(9-SK)):IFX<1THENX=1
                                            :rem 142
955 IFHI<10THENX=1                          :rem 85
960 PRINT"{2 DOWN}{7 SPACES}SCORE{3 SPACES}=";X
                                            :rem 222
970 PRINT"{3 DOWN}{5 SPACES}PLAY AGAIN? ({RVS}Y
    {OFF} OR {RVS}N{OFF})"                   :rem 90
980 GETX$:IFX$=""THEN980                     :rem 147
990 IFX$="Y"THEN200                          :rem 72
1000 IFX$<>"N"THEN980                        :rem 168
1010 GOSUB5000:PRINTCHR$(147)                :rem 188
1020 END                                     :rem 154
1500 FOR QQ=0 TO 12:EN=0                      :rem 252
1510 W=INT(RND(1)*836)+82:EN=EN+1:IF EN>25 THEN QQ
     =12:NEXT:RETURN                          :rem 91
1520 IF PEEK(S+W-1)<>32 ORPEEK(S+W)<>32 ORPEEK(S+W
     +1)<>32 THEN 1510                        :rem 199
1530 IFPEEK(S+W+40)<>32 OR PEEK(S+W-40)<>32 THEN 1
     510                                      :rem 99
1540 P1=BV(INT(RND(1)*4)):P2=6:GOSUB 3000:NEXT QQ
                                             :rem 56
1550 BC=BC+10:RETURN                         :rem 184
2000 PRINT"{DOWN}{WHT}{RVS}{13 SPACES}L A D Y B U
     {SPACE}G{14 SPACES}{OFF}";               :rem 144
2010 PRINT"{2 DOWN}THE LADYBUG RUNS AROUND THE SCR
     EEN{6 SPACES}WAITING FOR HER LUNCH." :rem 210
2020 PRINT"{DOWN}YOU SIGNAL LUNCH TIME BY PRESSING
      THE{3 SPACES}SPACE BAR."                :rem 96
2030 PRINT"{DOWN}END THE GAME BY EATING ALL THE LE
     AVES ORBY PRESSING THE {RVS}F1{OFF} KEY."
2040 PRINT"{DOWN}EAT AS MANY LEAVES AS POSSIBLE PE
     R LUNCHFOR A HIGHER SCORE."              :rem 234
2050 PRINT "{DOWN}ADD MORE OBSTACLES BY PRESSING
     {RVS}SHIFT{OFF}"                         :rem 109
2060 GOSUB5000                               :rem 13
2070 FORX=0TO3:FORY=0TO1:READZ:DT%(X,Y)=Z:NEXTY,X
                                             :rem 200
2080 FORW=0TO3:FORX=0TO3:FORY=0TO1:READZ:BT%(W,X,Y
     )=Z:NEXTY,X,W                           :rem 136
2090 FORW=0TO3:READZ:BV(W)=Z:NEXTW          :rem 221
2100 PRINT "{DOWN}JUST 20 SECONDS WHILE I GET MYSE
     LF IN{3 SPACES}SHAPE . . ."              :rem 96
2120 CH%(0)=12:CH%(1)=14:FOR I=0 TO 1:C%(I)=1024*C
     H%(I):NEXT                              :rem 124
2130 POKE 56334,PEEK(56334)AND254:POKE 1,PEEK(1)AN
     D251                                    :rem 231
2140 FOR I=0 TO 1:FOR J=8 TO 215:POKE C%(I)+J,PEEK
     (VC+J):NEXTJ                            :rem 166
```

```
2150 FOR J=C%(I)+216 TO C%(I)+271:READZ:POKEJ,Z:NE
     XTJ                                       :rem 18
2160 FOR J=280 TO 511:POKE C%(I)+J,PEEK(VC+J):NEXT
     J                                         :rem 94
2170 FOR J=1024 TO 1487:POKE C%(I)+J,PEEK(VC+J):NE
     XTJ,I                                     :rem 62
2180 POKE 1,PEEK(1)OR4:POKE 56334,PEEK(56334)OR1
                                               :rem 186
2190 FOR I=0 TO 1:CH%(I)=(PEEK(53272)AND240)ORCH%(
     I):NEXT:POKE 53272,CH%(0)                 :rem 94
2200 PRINT"{DOWN}{8 SPACES}(PRESS ANY KEY TO START
     )"                                        :rem 134
2210 GETX$:IFX$=""THEN2210                     :rem 219
2220 RETURN                                    :rem 166
3000 POKES+W,P1:POKES+C+W,P2:RETURN            :rem 232
4000 REM *** SONG TO EAT LEAVES BY             :rem 53
4010 POKEMC+24,15:POKEMC+4,129                 :rem 199
4020 FORV1=50TO10STEP-10:POKEMC+1,V1:NEXTV1
                                               :rem 172
4030 POKEMC+4,128:FORV1=1TO4:NEXTV1            :rem 153
4040 POKEMC+24,0                               :rem 116
4050 RETURN                                    :rem 169
4100 REM *** SONG TO HIT BARRIERS BY           :rem 219
4110 POKEMC+24,15:POKEMC+4,17                  :rem 148
4120 POKEMC+1,20:FORV1=1TO40:NEXTV1            :rem 141
4130 POKEMC+4,16:FORV1=1TO10:NEXTV1            :rem 147
4140 POKEMC+24,0                               :rem 117
4150 RETURN                                    :rem 170
5000 REM *** PLAY THE SONG                     :rem 117
5010 POKEMC+5,79:POKEMC+6,129:POKEMC+0,0:POKEMC+1,
     0:POKEMC+24,15                            :rem 32
5020 FORX=0TO37:Y=NT%(X,0):Z=INT(Y/256)        :rem 78
5030 Y=Y-Z*256:POKEMC+0,Y:POKEMC+1,Z           :rem 185
5040 POKEMC+4,17:FORY=1TONT%(X,1)*70:NEXTY     :rem 54
5050 POKEMC+4,16:FORY=1TO15:NEXTY,X:POKEMC+24,0:PO
     KEMC+0,0:POKEMC+5,15                      :rem 67
5055 POKE MC+6,15                              :rem 129
5060 RETURN                                    :rem 171
9000 DATA6430,2,7217,2,7217,2,8583,3,7217,1,6430,2
     ,5728,1,5407,2,7217,2                     :rem 236
9010 DATA7217,2,7217,2,8583,2,8101,2,7217,2,6430,2
     ,7217,2,5728,2,5407,2,5728,2              :rem 75
9020 DATA6430,2,5728,2,7217,1,5407,2,6430,1,4817,2
     ,5407,2,5728,2,6430,2                     :rem 233
9030 DATA7217,2,8101,2,8583,2,6430,1,6430,2,7217,2
     ,5728,2,5407,1,4291,2,4291,1              :rem 63
10000 DATA1,3,-40,1,-1,4,40,2                  :rem 141
10010 DATA4,40,3,-1,2,-40,1,1                  :rem 142
10020 DATA4,40,1,1,3,-1,2,-40                  :rem 143
10030 DATA1,1,2,-40,3,-1,4,40                  :rem 144
```

```
10040 DATA3,-1,2,-40,4,40,1,1              :rem 145
10050 DATA29,30,31,33                      :rem  44
63000 DATA0,36,24,190,125,24,36,0          :rem 119
63001 DATA12,24,111,223,95,46,24,16        :rem 224
63002 DATA1,3,3,7,15,31,127,255            :rem  23
63003 DATA128,192,192,224,240,248,254,255  :rem  32
63004 DATA255,254,248,240,224,192,192,128  :rem  33
63005 DATA0,0,0,0,0,0,0,0                   :rem 204
63006 DATA255,127,31,15,7,3,3,1?           :rem  27
63007 DATA8,16,90,60,60,90,8,16            :rem  42
63008 DATA48,24,111,223,95,46,24,8         :rem 193
63009 DATA0,1,7,15,31,63,63,127            :rem  30
63010 DATA0,128,224,240,248,252,252,254    :rem 172
63011 DATA254,252,252,248,240,224,128,0    :rem 173
63012 DATA0,0,0,0,0,0,0,0                   :rem 202
63013 DATA127,63,63,31,15,7,1,0            :rem  25
```

Build a Quiz

Build a Quiz

Skill area: Any Category
Level: 2, 3, 4
Equipment required: None
Modification: Yes

Build a Quiz

This book contains many programs that will teach your kids a
wide assortment of things as they play games. However, no two
kids are alike, and even one child's needs change from day to day.
"Build a Quiz" will help you keep on top of those needs.

Build a Quiz comes with two options. You can build a quiz on
any subject and write it out to tape or disk, or you can give your
child (or yourself) a test on any subject for which you've previ-
ously written a quiz.

If your child isn't doing well in civics, say, and there's a big
test coming up, you can make up a sample test from the child's
textbook or class notes. Because this is your test, you can make it
as general or specific as you wish. You can use Build a Quiz to
create a test about the United States Constitution or about the
history of your local government. Whatever your child needs can
be covered with Build a Quiz, and you can create tests using
multiple-choice, true-false, or completion questions, or a combi-
nation of the three.

Build a Quiz has another function, too — fun. Maybe your
teen-age son has told you he'll pass your quiz on geometry if you
pass a quiz he makes up about rock stars. Both tests can be con-
structed with this program.

Who knows? Now that you have Build a Quiz, maybe the
whole family will learn something about a variety of unusual
subjects.

Build a Quiz

Remember, do not type the checksum number at the end of each line. For example, do
not type ":rem 123." Please read the article about the "Automatic Proofreader" in
Appendix E.

```
1 REM BUILD A QUIZ                           :rem 15
100 DI=8:TA=1:REM ** DEVICE NUMBERS **       :rem 98
110 VC=53248:POKEVC+32,0:POKEVC+33,11:PRINTCHR$(14
    7)                                       :rem 50
```

```
120 Z$=CHR$(13):DP=0:PS=0                    :rem 137
130 DIM NT%(30)                              :rem 233
140 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX    :rem 71
150 FORX=0TO30:READZ:NT%(X)=Z:NEXTX          :rem 10
160 M=((PEEK(53272)AND240)/16)*1024          :rem 44
170 C=55296                                  :rem 35
200 PRINT"{WHT}{2 DOWN} {RVS}{6 SPACES}B U I L D
    {4 SPACES}A{4 SPACES}Q U I Z{7 SPACES}{OFF}"
                                             :rem 40
210 PRINT"{2 DOWN} OPTION 1 OF THIS PROGRAM WILL B
    UILD A"                                  :rem 94
215 PRINT" QUIZ AND SAVE IT ON TAPE OR DISK."
                                             :rem 18
220 PRINT"{2 DOWN} OPTION 2 ALLOWS YOU RECALL AN E
    XISTING"                                 :rem 14
225 PRINT" QUIZ AND TEST YOURSELF."          :rem 109
227 GOSUB9000                                :rem 228
230 PRINT"{2 DOWN}{3 SPACES}ENTER OPTION:" :rem 25
240 PRINT"{DOWN}{3 SPACES}{RVS}1{OFF} CREATE A QUI
    Z":PRINT"{DOWN}{3 SPACES}{RVS}2{OFF} TAKE A QU
    IZ"                                      :rem 44
245 PRINT"{DOWN}{3 SPACES}{RVS}3{OFF} END PROGRAM"
                                             :rem 67
250 GETX$:IFX$=""THEN250                     :rem 127
260 X=VAL(X$):ONXGOTO300,700,280             :rem 97
270 GOTO250                                  :rem 105
280 PS=0:GOSUB9000:PRINTCHR$(147)            :rem 226
290 END                                      :rem 114
300 NQ=0:GOSUB9200:GOSUB7500:PRINTCHR$(147):rem 95
310 OPEN9,DV,1,QN$:PRINTCHR$(147):PRINT#9,X$;Z$;
                                             :rem 133
320 NQ=NQ+1:PRINT"{CLR}{2 DOWN}{3 SPACES}ENTER QUE
    STION TYPE:{2 DOWN}"                     :rem 192
330 PRINT"{2 DOWN}{3 SPACES}{RVS}1{OFF} TRUE/FALSE
    ":PRINT"{2 DOWN}{3 SPACES}{RVS}2{OFF} MULTIPLE
    CHOICE"                                  :rem 82
335 PRINT"{2 DOWN}{3 SPACES}{RVS}3{OFF} COMPLETION
    "                                        :rem 95
340 PRINT"{2 DOWN}{3 SPACES}{RVS}4{OFF} (ALL DONE)
    "                                        :rem 178
350 GETX$:IFX$=""THEN350                     :rem 129
360 IFX$="4"THENT$=X$:GOTO550                :rem 198
365 IFX$<"1"ORX$>"3"THEN350                  :rem 243
370 PRINT"{CLR}{DOWN}{3 SPACES}QUESTION #";NQ;
                                             :rem 191
380 X=VAL(X$):T$=X$:ONXGOTO400,450,500       :rem 205
390 GOTO350                                  :rem 109
400 PRINT"(TRUE/FALSE)":O=240:L=80:GOSUB8000:A$=X$
                                             :rem 241
```

234

```
410 PRINT"{10 DOWN}{3 SPACES}ENTER CORRECT ANSWER
    {SPACE}({RVS}T{OFF} OR {RVS}F{OFF})"      :rem 68
420 GETX$:IFX$=""THEN420                       :rem 125
430 IFX$<>"T"ANDX$<>"F"THEN420                 :rem 204
435 PRINTCHR$(147)                             :rem 23
440 PRINT#9,T$;Z$;A$;Z$;X$;Z$;:GOTO320         :rem 234
450 PRINT"(MULTIPLE CHOICE)":O=240:L=80:GOSUB8000
                                               :rem 219
455 Q$=X$:PRINT"{8 DOWN} A.":O=404:L=76:GOSUB8000
                                               :rem 222
460 A$=X$:PRINT"{2 DOWN} B.":O=524:GOSUB8000:B$=X$
                                               :rem 145
465 PRINT"{2 DOWN} C.":O=644:GOSUB8000:C$=X$
                                               :rem 67
470 PRINT"{2 DOWN} D.":O=764:GOSUB8000:D$=X$
                                               :rem 68
480 PRINT"{3 DOWN}{4 SPACES}ENTER CORRECT ANSWER (
    {RVS}A{OFF},{RVS}B{OFF},{RVS}C{OFF} OR {RVS}D
    {OFF})"                                    :rem 228
485 GETX$:IFX$=""THEN485                       :rem 147
490 IFX$<"A"ORX$>"D"THEN485                    :rem 28
495 PRINTCHR$(147)                             :rem 29
497 PRINT#9,T$;Z$;Q$;Z$;A$;Z$;B$;Z$;C$;Z$;D$;Z$;X$
    ;Z$;                                       :rem 104
499 GOTO320                                    :rem 116
500 PRINT"(COMPLETION)":O=240:L=80:GOSUB8000:Q$=X$
                                               :rem 34
505 PRINT"{10 DOWN}{3 SPACES}ENTER CORRECT ANSWER:
    "                                          :rem 175
510 O=600:L=80:GOSUB8000                       :rem 101
520 PRINTCHR$(147)                             :rem 18
530 PRINT#9,T$;Z$;Q$;Z$;X$;Z$;                 :rem 242
540 GOTO320                                    :rem 103
550 PRINTCHR$(147)                             :rem 21
560 PRINT#9,T$;Z$;                             :rem 28
570 CLOSE9                                     :rem 75
580 GOTO200                                    :rem 104
700 GOSUB9200:GOSUB7500:PRINTCHR$(147)         :rem 29
730 OPEN9,DV,0,QN$:GOSUB6000                   :rem 150
740 IFLEN(X$)>39THEN760                        :rem 76
750 A$=" "+X$:X$=A$+" ":GOTO740                :rem 254
760 PRINT"{CLR}{2 DOWN}":FORX=1TO11:PRINTX$;:PRINT
    " ":NEXTX:GOSUB7000:FORX=1TO1500:NEXTX :rem 11
770 PRINTCHR$(147):NQ=0:CQ=0                   :rem 154
800 INPUT#9,X$                                 :rem 44
810 IFX$="4"THEN2000                           :rem 74
820 IFX$<"1"ORX$>"3"THEN800                    :rem 239
830 NQ=NQ+1:X=VAL(X$)                          :rem 241
850 ONXGOTO900,1000,1100                       :rem 63
```

```
860  GOTO800                              :rem 111
900  GOSUB6000:Q$=X$:GOSUB6000:R$=X$       :rem 48
902  PRINT"{CLR}{DOWN}{3 SPACES}QUESTION #";NQ
                                          :rem 133
904  PRINT"{3 DOWN}";Q$                   :rem 81
910  PRINT"{4 DOWN}{3 SPACES}ENTER {RVS}T{OFF} FOR
     {SPACE}TRUE"                         :rem 76
920  PRINT"{2 DOWN}{3 SPACES}ENTER {RVS}F{OFF} FOR
     {SPACE}FALSE"                        :rem 72
940  GETA$:IFA$=""THEN940                 :rem 93
950  IFA$<>"T"ANDA$<>"F"THEN940           :rem 172
960  IFA$<>R$THEN1200                     :rem 117
970  GOTO1300                             :rem 157
1000 GOSUB6000:Q$=X$:GOSUB6000:A$=X$:GOSUB6000:B$=
     X$:GOSUB6000:C$=X$                   :rem 250
1002 GOSUB6000:D$=X$:GOSUB6000:R$=X$       :rem 77
1006 PRINT"{CLR}{DOWN}{3 SPACES}QUESTION #";NQ
                                          :rem 177
1008 PRINT"{3 DOWN}";Q$:PRINT"{2 DOWN} A. ";A$:X$=
     A$:GOSUB6700                         :rem 152
1010 PRINT" B. ";B$:X$=B$:GOSUB6700:PRINT" C. ";C$
     :X$=C$:GOSUB6700                     :rem 131
1020 PRINT" D. ";D$:X$=D$:GOSUB6700       :rem 139
1030 PRINT"{12 SPACES}ENTER {RVS}A{OFF},{RVS}B
     {OFF},{RVS}C{OFF} OR {RVS}D{OFF}"    :rem 166
1040 GETA$:IFA$=""THEN1040                :rem 173
1050 IFA$<"A"ORA$>"D"THEN1040             :rem 59
1060 IFA$<>R$THEN1200                     :rem 157
1070 GOTO1300                             :rem 197
1100 GOSUB6000:Q$=X$:GOSUB6000:R$=X$       :rem 89
1102 PRINT"{CLR}{DOWN}{3 SPACES}QUESTION #";NQ
                                          :rem 174
1110 PRINT"{3 DOWN}";Q$                   :rem 119
1120 O=480:L=80:GOSUB8000                 :rem 153
1130 IFX$<>R$THEN1200                     :rem 178
1140 GOTO1300                             :rem 195
1200 GOSUB7200:PRINT"{CLR}{3 DOWN}CORRECT ANSWER:
     {3 DOWN}":PRINTR$                    :rem 105
1210 FORX=1TO1500:NEXTX:PRINTCHR$(147):GOTO800
                                          :rem 107
1300 CQ=CQ+1:GOSUB7000                     :rem 6
1310 PRINTCHR$(147)                       :rem 64
1320 GOTO800                              :rem 151
2000 PRINT"{CLR}{2 DOWN}{15 SPACES}{RVS}QUIZ OVER!
     {OFF}"                               :rem 146
2010 PRINT"{2 DOWN}{3 SPACES}NUMBER OF QUESTIONS =
     ";NQ                                 :rem 246
2020 PRINT"{2 DOWN}{3 SPACES}NUMBER CORRECT
     {6 SPACES}=";CQ                      :rem 158
```

```
2030 IFNQ=0THENNQ=1                          :rem 156
2040 X=INT((CQ*100)/NQ)                       :rem 5
2050 PRINT"{2 DOWN}{3 SPACES}YOUR SCORE{10 SPACES}
     =";X;"{LEFT}%"                           :rem 150
2060 PRINT"{3 DOWN}{12 SPACES}(PRESS ANY KEY)"
                                              :rem 123
2070 GETX$:IFX$=""THEN2070                    :rem 227
2080 PRINTCHR$(147)                           :rem 69
2090 CLOSE 9                                  :rem 122
2100 GOTO200                                  :rem 142
6000 X$=""                                    :rem 195
6010 GET#9,R$                                 :rem 165
6020 IFR$=""THEN6010                          :rem 68
6030 IFASC(R$)=13THEN6060                     :rem 146
6040 X$=X$+R$                                 :rem 160
6050 GOTO6010                                 :rem 203
6060 RETURN                                   :rem 172
6700 X=LEN(X$):IFX=36ORX=76THEN6720           :rem 118
6710 PRINT"{SHIFT-SPACE}"                     :rem 63
6720 RETURN                                   :rem 175
7000 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15
     :POKEMC+24,10                            :rem 220
7010 FORX=2TO11                               :rem 123
7020 POKEVC+33,X:POKEMC+1,X*5:POKEMC+4,33     :rem 200
7030 FORY=1TO50:NEXTY                         :rem 82
7040 POKEMC+4,32:FORY=1TO10:NEXTY,X           :rem 188
7050 POKEMC+24,0                              :rem 120
7060 RETURN                                   :rem 173
7200 POKEMC+0,0:POKEMC+1,30:POKEMC+4,33:POKEMC+5,1
     5:POKEMC+6,15                            :rem 228
7210 POKEVC+33,0:POKEMC+24,10                 :rem 150
7220 FORX=1TO500:NEXTX                        :rem 129
7230 POKEMC+4,32:FORX=1TO20:NEXTX             :rem 56
7240 POKEMC+24,0:POKEVC+33,11                 :rem 154
7250 RETURN                                   :rem 174
7500 PRINT"{CLR}{3 DOWN}{3 SPACES}ENTER QUIZ NAME:
     ":PRINT"{DOWN}{3 SPACES}(1-37 LETTERS)"
                                              :rem 221
7510 O=323:L=38:GOSUB8000:IFLEN(X$)>37THEN7500
                                              :rem 185
7520 QN$=X$:IFLEN(X$)>11THENQN$=LEFT$(X$,11)
                                              :rem 56
7530 QN$="QUIZ/"+QN$                          :rem 121
7540 PRINT"{6 DOWN}{3 SPACES}PREPARE ";DV$:PRINT"
     {DOWN}{3 SPACES}THEN PRESS {RVS}RETURN{OFF}"
                                              :rem 107
7550 GETE$:IFE$=""THEN7550                    :rem 205
7560 IFASC(E$)<>13THEN7550                    :rem 208
7570 RETURN                                   :rem 179
```

```
8000 X$="":POKEM+O,160:POKEC+O,1              :rem 59
8010 GETY$:IFY$=""THEN8010                    :rem 229
8020 X=ASC(Y$):IFX=13THEN8150                 :rem 195
8030 IFX=20THEN8100                           :rem 73
8040 Y=LEN(X$):X$=X$+Y$:IFX>63THENX=X-64      :rem 160
8050 POKEM+O+Y,X:POKEC+O+Y,1:POKEM+O+Y+1,160:POKEC
     +O+Y+1,1:IFLEN(X$)<LTHEN8010             :rem 253
8060 GOTO8150                                 :rem 213
8100 Y=LEN(X$):IFY<1THEN8010                  :rem 146
8110 POKEM+O+Y,32:POKEC+O+Y,11:POKEM+O+Y-1,160:POK
     EC+O+Y-1,1                               :rem 71
8120 Y$=LEFT$(X$,Y-1):X$=Y$:GOTO8010          :rem 48
8150 Y=LEN(X$):POKEM+O+Y,32:POKEC+O+Y,11      :rem 141
8160 RETURN                                   :rem 175
9000 IFPS=1THEN9080                           :rem 105
9005 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
     9:POKEMC+24,15                           :rem 40
9010 FORX=0TO30                               :rem 124
9020 Y=INT(NT%(X)/256)                        :rem 217
9030 POKEMC+0,NT%(X)-(Y*256)                  :rem 32
9040 POKEMC+1,Y:POKEMC+4,17                   :rem 89
9050 FORY=1TO70:NEXTY                         :rem 88
9060 POKEMC+4,16:FORY=1TO10:NEXTY,X           :rem 194
9070 POKEMC+24,0:PS=1                         :rem 199
9080 RETURN                                   :rem 177
9200 IFDP=1THEN9280                           :rem 94
9205 PRINTCHR$(147);"{4 DOWN} DO YOU WANT TO USE D
     ISK OR TAPE FOR"                         :rem 69
9210 PRINT"{DOWN} SAVING/LOADING QUIZZES?"    :rem 29
9220 PRINT"{5 DOWN} ENTER {RVS}D{OFF} OR {RVS}T
     {OFF}"                                   :rem 242
9230 GETX$:IFX$=""THEN9230                    :rem 237
9240 IFX$="D"THENDV=DI:DV$="DISK":GOTO9270    :rem 27
9250 IFX$="T"THENDV=TA:DV$="TAPE":GOTO9270    :rem 51
9260 GOTO9230                                 :rem 216
9270 DP=1                                     :rem 212
9280 RETURN                                   :rem 179
9900 DATA6430,6430,6430,4817,8101,8101,8101,6430,6
     430,8101,9634,9634                       :rem 121
9910 DATA8583,8101,7217,0,7217,8101,8583,8583,8101
     ,7217                                    :rem 2
9920 DATA8101,6430,6430,8101,7217,4817,6069,7217,6
     430                                      :rem 148
```

Appendix A:
A Beginner's
Guide to
Typing In Programs
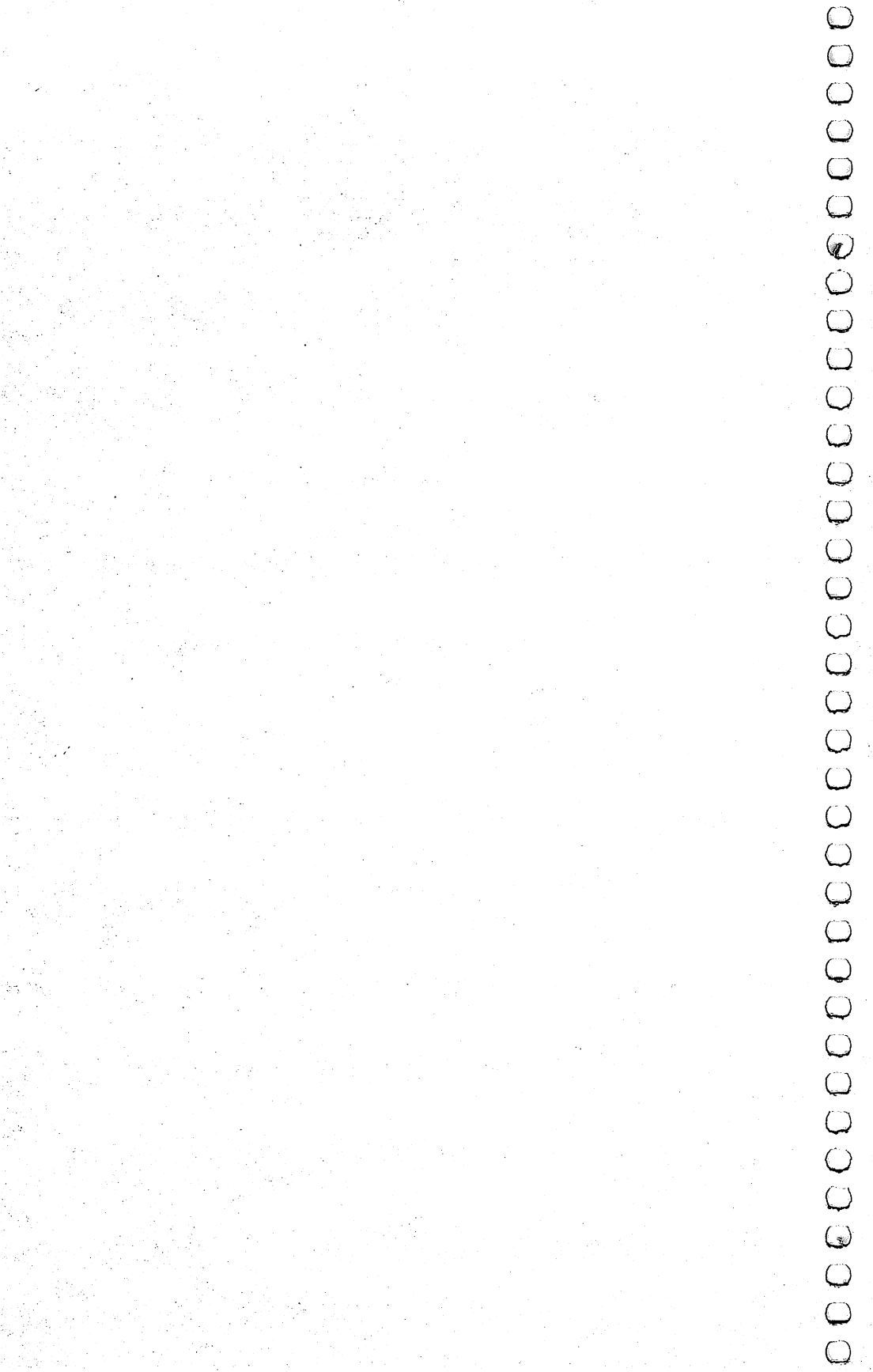
A Beginner's Guide to Typing In Programs

What Is a Program?

A computer cannot perform any task by itself. Like a car without gas, a computer has *potential*, but without a program, it isn't going anywhere. Most of the programs published in this book are written in a computer language called BASIC. BASIC is easy to learn and is built into all Commodore 64s.

BASIC Programs

Computers can be picky. Unlike the English language, which is full of ambiguities, BASIC usually has only one right way of stating something. Every letter, character, or number is significant. A common mistake is substituting a letter such as O for the numeral 0, a lowercase l for the numeral 1, or an uppercase B for the numeral 8. Also, you must enter all punctuation such as colons and commas just as they appear in the book. Spacing can be important. To be safe, type in the listings *exactly* as they appear.

Braces and Special Characters

The exception to this typing rule is when you see the braces, such as { DOWN }. Anything within a set of braces is a special character or characters that cannot easily be listed on a printer. When you come across such a special statement, refer to "How to Type In Programs."

About DATA Statements

Some programs contain a section or sections of DATA statements. These lines provide information needed by the program. Some DATA statements contain actual programs (called machine language); others contain graphics codes. These lines are especially sensitive to errors.

If a single number in any one DATA statement is mistyped, your machine could lock up, or crash. The keyboard and STOP key may seem dead, and the screen may go blank. Don't panic — no damage is done. To regain control, you have to turn off your computer, then turn it back on. This will erase whatever program

was in memory, *so always SAVE a copy of your program before you RUN it.* If your computer crashes, you can LOAD the program and look for your mistake.

Sometimes a mistyped DATA statement will cause an error message when the program is RUN. The error message may refer to the program line that READs the data. *The error is still in the DATA statements, though.*

Get to Know Your Machine

You should familiarize yourself with your computer before attempting to type in a program. Learn the statements you use to store and retrieve programs from tape or disk. You'll want to save a copy of your program, so that you won't have to type it in every time you want to use it. Learn to use your machine's editing functions. How do you change a line if you made a mistake? You can always retype the line, but you at least need to know how to backspace. Do you know how to enter reverse video, lowercase, and control characters? It's all explained in your computer's manuals.

A Quick Review

1) Type in the program a line at a time, in order. Press RETURN at the end of each line. Use backspace or the back arrow to correct mistakes.

2) Check the line you've typed against the line in the book. You can check the entire program again if you get an error when you RUN the program.

Appendix B:
How to
Type In Programs
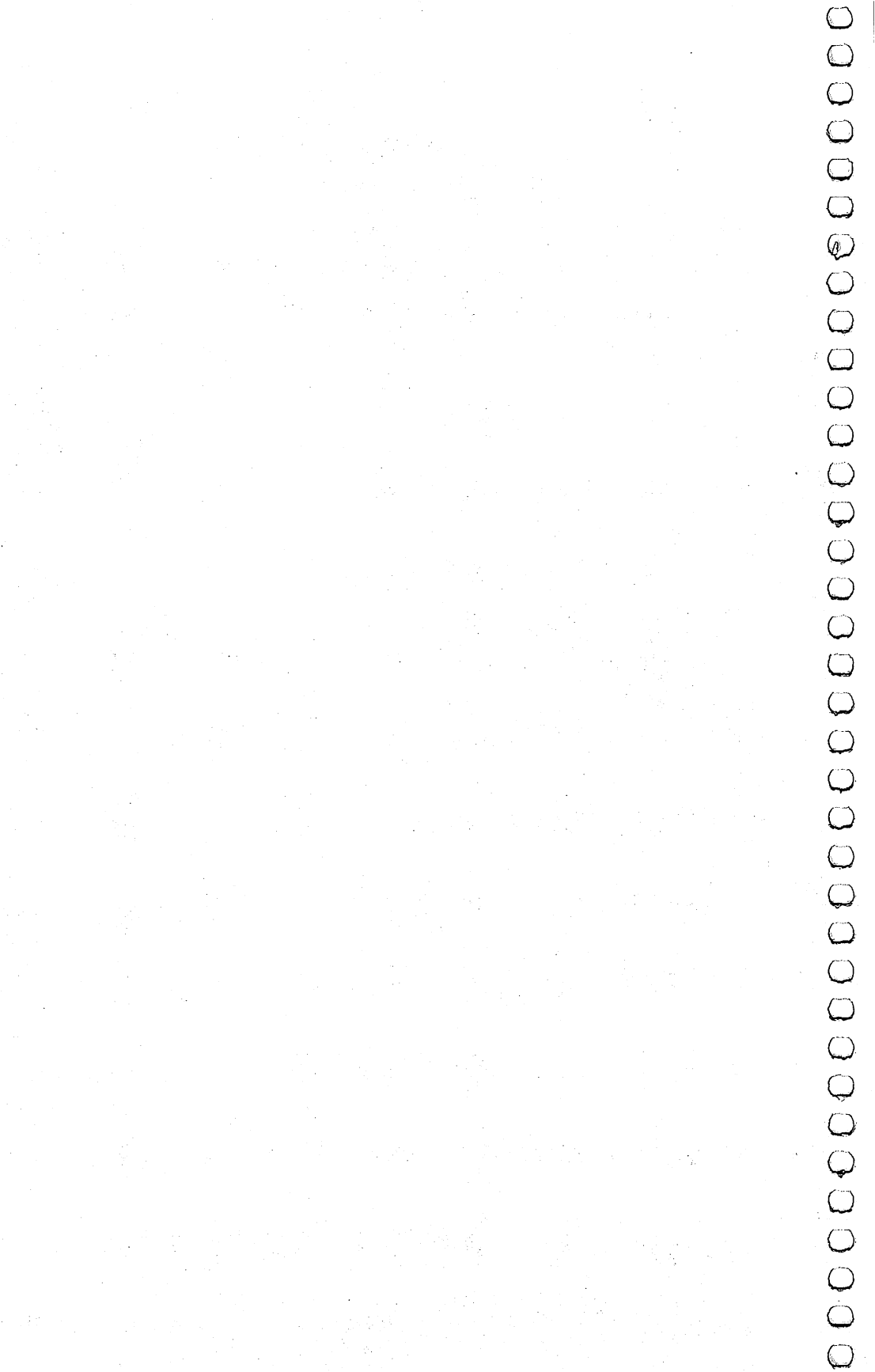
How to Type In Programs

To make it easy to know exactly what to type when entering one of these programs into your computer, we have established the following listing conventions.

Generally, Commodore 64 program listings will contain words within braces which spell out any special characters: {DOWN} would mean to press the cursor down key. {5 SPACES} would mean to press the space bar five times.

To indicate that a key should be *shifted* (hold down the SHIFT key while pressing the other key), the key would be underlined in our listings. For example, S would mean to type the S key while holding the shift key. This would appear on your screen as a heart symbol. If you find an underlined key enclosed in braces (e.g., {10 N}), you should type the key as many times as indicated (in our example, you would enter ten shifted N's).

If a key is enclosed in special brackets, ⟨ ⟩, you should hold down the *Commodore key* while pressing the key inside the special brackets. (The Commodore key is the key in the lower left corner of the keyboard.) Again, if the key is preceded by a number, you should press the key as many times as necessary.

Rarely, you'll see a solitary letter of the alphabet enclosed in braces. These characters can be entered by holding down the CTRL key while typing the letter in the braces. For example, {A} would indicate that you should press CTRL-A.

About the *quote mode*: You know that you can move the cursor around the screen with the CRSR keys. Sometimes a programmer will want to move the cursor under program control. That's why you see all the {LEFT}'s, {HOME}'s, and {BLU}'s in our programs. The only way the computer can tell the difference between direct and programmed cursor control is the quote mode.

Once you press the quote (the double quote, SHIFT-2), you are in the quote mode. If you type something and then try to change it by moving the cursor left, you'll only get a bunch of reverse-video lines. These are the symbols for cursor left. The only editing key that isn't programmable is the DEL key; you can still use DEL to back up and edit the line. Once you type another quote, you are out of quote mode.

You also go into quote mode when you INSerT spaces into a line. In any case, the easiest way to get out of quote mode is to just

245

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B

press RETURN. You'll then be out of quote mode and you can cursor up to the mistyped line and fix it.

Use the following table when entering cursor and color control keys:

When You Read:	Press:		See:	When You Read:	Press:		See:
{CLEAR}	SHIFT	CLR/HOME		[1]	COMMODORE	1	
{HOME}		CLR/HOME		[2]	COMMODORE	2	
{UP}	SHIFT	↕ CRSR ↕		[3]	COMMODORE	3	
{DOWN}		↕ CRSR ↕		[4]	COMMODORE	4	
{LEFT}	SHIFT	← CRSR →		[5]	COMMODORE	5	
{RIGHT}		← CRSR →		[6]	COMMODORE	6	
{RVS}	CTRL	9		[7]	COMMODORE	7	
{OFF}	CTRL	0		[8]	COMMODORE	8	
{BLK}	CTRL	1		{F1}	f1		
{WHT}	CTRL	2		{F2}	f2		
{RED}	CTRL	3		{F3}	f3		
{CYN}	CTRL	4		{F4}	f4		
{PUR}	CTRL	5		{F5}	f5		
{GRN}	CTRL	6		{F6}	f6		
{BLU}	CTRL	7		{F7}	f7		
{YEL}	CTRL	8		{F8}	f8		
				£	£		

Appendix C: Program Information
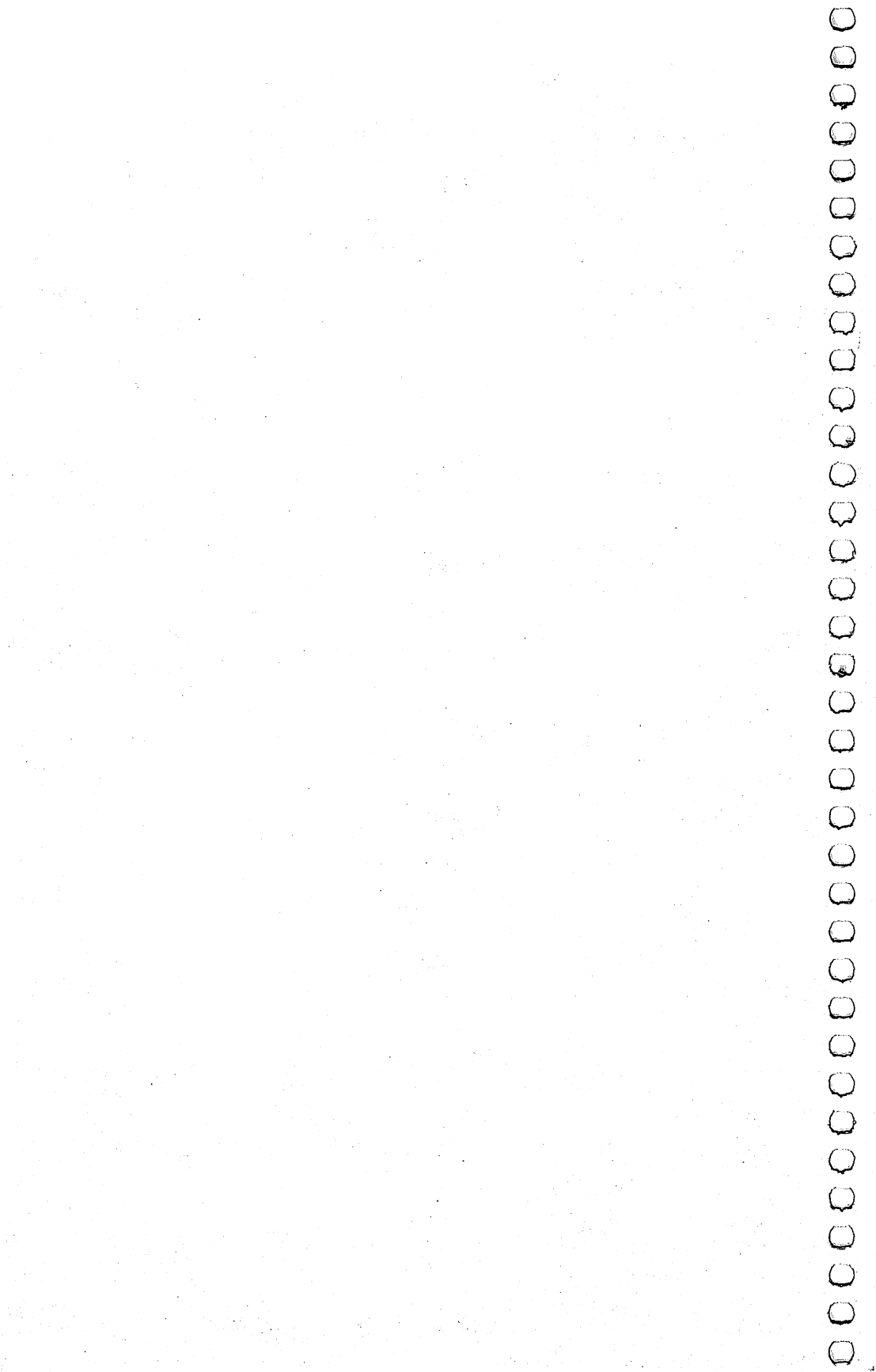
Program Information

Contents, Sorted by Age Level

Level 1 Games:
A-Maze-Ing
Count the Spots
Counting Game
Get the Treasure
Hidden Picture

Level 2 Games:
A-Maze-Ing
Asteroid Blast
Black Hole
Counting Game
Ladybug
Matchmaker
Notecrafter
Personal Story
Spelling Bee
Spend Your Allowance
Word Scramble

Level 3 Games:
Alphabet Soup
Asteroid Blast
Black Hole
Earthworms
Ladybug
Lawn Mower
Matchmaker
Notecrafter
Plan a Menu
Spelling Bee

Spend Your Allowance
State of the Union
Stargazer
Wise Shopper
Word Scramble

Level 4 Games:
Alphabet Soup
Asteroid Blast
Black Hole
Earthworms
Element Man
Four by Four
Heavenly Bodies
Ladybug
Lawn Mower
Matchmaker
Mother Earth
Mr. President
Notecrafter
Plan a Menu
Movers and Shakers
Skeleton
Spelling Bee
Spend Your Allowance
State of the Union
Stargazer
Unicorn
Wise Shopper
Word Scramble

Games Sorted by Subject

Coordination
A-Maze-Ing
Asteroid Blast
Black Hole
Earthworms
Get the Treasure
Hidden Picture
Ladybug

Memory and Logic
Four by Four
Matchmaker
Notecrafter

Science
Element Man   Skeleton
Heavenly Bodies   Stargazer
Plan a Menu

Appendix

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Language Arts
Alphabet Soup
Personal Story
Spelling Bee
Word Scramble

Mathematics
Count the Spots
Counting Game
Lawn Mower
Spend Your Allowance
Wise Shopper

Social Studies
Mother Earth
Mr. President
Movers and Shakers
State of the Union
Unicorn

Appendix D: Programmer's Notes
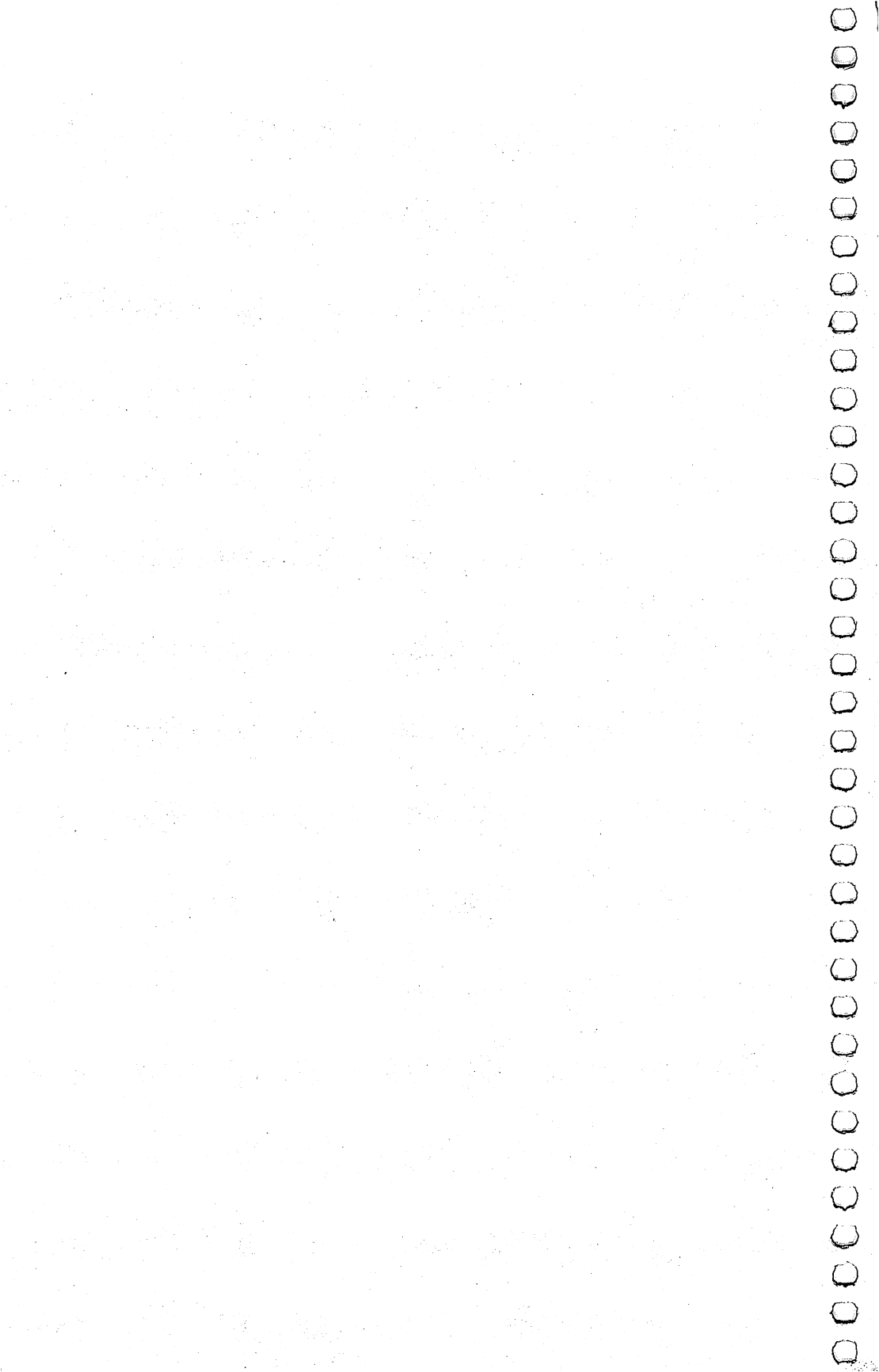
Programmer's Notes

This appendix explains some of the changes you may wish to make to the games in this book. These changes are optional, but could be used to make the games more suitable to your needs.

Changes can be made either as you enter the program into the computer or after the program has been entered.

All of the changes accomplish one of two things:

1. Cause the program to accept input from the keyboard, rather than a joystick.
2. Revise the questions in a game after all the old questions and answers have been memorized.

Most of the games in this book read their data from DATA statements near the end of the program. For example, in the game "Spelling Bee," all of the words in the game are obtained from DATA statements. This allows the user to substitute a complete new set of words by changing only a few statements. If you're uncertain about the syntax of the DATA statement, please read Chapter 8 in the *Commodore 64 User's Guide* (the book that came with your Commodore 64). Note also that the values defined by DATA statements in this book sometimes have extra spaces in them. This may appear strange in print, but it is designed so that the data will print correctly on the Commodore 64 and not wrap around the screen.

The modifications in this appendix that convert a joystick game to use the keyboard assume that the following keys will be used:

W = UP
Z = DOWN
A = LEFT
S = RIGHT

A-Maze-Ing
If you wish to change the two-minute time limit, change the "000200" value (HHMMSS) in line 8000.

The subroutine starting at line 9000 builds the maze. This is a modification of the "Maze Generator" (*COMPUTE!'s First Book of Commodore 64 Games*).

Replace the following lines to adapt the game for a keyboard rather than a joystick:

```
8005 J1=PEEK(197):IF J1=9 THEN R2=R2-1      :rem 40
8010 IF J1=33 THEN R2=R2+1                  :rem 70
8020 IF J1=17 THEN C2=C2-1                  :rem 45
8030 IF J1=41 THEN C2=C2+1                  :rem 41
```

Build a Quiz
The program is written to write/read quiz data to/from either disk or tape. The program assumes device number 1 for tape and device number 8 for disk. If you wish to change these defaults, change the variables DI = 8 and TA = 1 in line 100.

Quiz files written by the program have a name of "QUIZ/" followed by the first 11 characters of the quiz name. Be careful not to create files with duplicate names. You may change this name structure by changing the subroutine starting at line 7500.

Earthworms
This game may be modified to use the keyboard instead of a joystick. Replace the following lines in the program:

```
2210 KP=PEEK(197)                          :rem 180
2220 IF KP=9 THEN V3=-1                     :rem 185
2230 IF KP=12 THEN V3=1                     :rem 183
2240 IF KP=10 THEN H3=-1                    :rem 213
2250 IF KP=13 THEN H3=1                     :rem 172
```

Element Man
The number of chemical elements is defined by the variable NW% = 103 in line 100. Change this number if you add or delete any elements.

The element names are defined with DATA statements in lines 10000 through 10200. Elements may be added or deleted from this list as desired. The maximum size of an element name is 20 characters.

Four by Four
Lines 9000 through 9130 define 35 different question categories used in the game. You may modify these as desired, but there *must* always be 35.

Line 9500 defines the letters of the alphabet that will be used in the game, plus any wild letters (shown as an asterisk). You may change these if you wish, but the number of letters *must* always be 28.

An answer will be ignored if the first letter entered does not match the letter requested by the program (except for wild letters). All names of people should be entered as "LAST, FIRST".

Get the Treasure
Ten different treasures are defined on line 10000. These numbers correspond with the screen codes defined in Appendix E of the *Commodore 64 User's Guide*. You may wish to change this so that the treasures are letters, numbers, etc., but there *must* always be ten treasures.

The six colors of the treasures are defined by line 10010. These correspond with the codes in Appendix G of the *Commodore 64 User's Guide*. You may change them if desired, but there *must* always be six.

This game is designed for young children who would have a hard time using the keyboard, but if you want to change the program to use the keyboard:

```
420 J2=J1:K2=K1:KP=PEEK(197)                    :rem 99
425 IF KP=9 THEN J2=J2-1                         :rem 253
430 IF KP=12 THEN J2=J2+1                        :rem 33
440 IF KP=10 THEN K2=K2-1                        :rem 36
450 IF KP=13 THEN K2=K2+1                        :rem 38
```

Heavenly Bodies
One hundred different questions are defined starting with line 2000. If you add or delete any questions, you must change the variable NQ = 100 in line 100. Each question is composed of two different items:

1. The question itself, which must be contained in one DATA statement.

2. The answer to the question, expressed as a one-letter planet code (the same code a player uses when answering questions in this game).

Hidden Picture
Modify the program to use a keyboard instead of a joystick with the following lines:

```
8000 J1=PEEK(197)                               :rem 151
8010 IF J1=9 THEN C2=C2-1                        :rem 253
8020 IF J1=12 THEN C2=C2+1                        :rem 38
8030 IF J1=10 THEN R2=R2-1                        :rem 69
8040 IF J1=13 THEN R2=R2+1                        :rem 71
8050 IF J1=4 THEN JF=1                            :rem 117
8060 RETURN                                       :rem 174
```

The routine shown above will also allow you to select the next picture by pressing the f1 key instead of the fire button on the joystick.

Program lines 4900 through 7999 are reserved for defining extra pictures. Use the following procedure to do this:

1. Line 4000 generates a random number from 1 to 4 to determine which of the four pictures to draw. Change this to reflect the new number of pictures after you have added yours.

2. Line 4010 branches to a print routine, depending on the number picked in step 1. Add the line number of your new print routine(s) to this list. The first line number in the reserved area is line 4900.

3. Add a print routine starting at the line specified on statement 4010. Use PRINT statements to clear the screen (SHIFT/CLR) and then draw your picture.

4. When your picture is complete, branch (GOTO) statement 250.

Mother Earth
The data for the questions in these programs begin at line 3000 (Mother Earth-1) and 3190 (Mother Earth-2). You may add, delete, or change questions in this game, but there must always be at least 3 nations defined per category, and there cannot be more than 30 nations in any single category.

Each question is composed of six parts:

1. Category (a letter, A through E).
2. Clue 1.
3. Clue 2.
4. Clue 3.
5. Clue 4.
6. Answer (name of the nation).

The multiple-choice question is not entered in a DATA statement, but it is generated by the program.

Mr. President
The variable NP in line 100 defines the number of presidents, and the DATA statements in lines 1000 through 2490 provide the clues and answers. If you wish to add an entry, increase NP by 1 and add the new data after line 2490. The data for each president are defined as follows:

1. Clue 1.
2. Clue 2.
3. Clue 3.
4. Clue 4.
5. President's name.

Please note that the program prefixes each clue with a value of HE.

Even though the presidents are selected in a random order during the game, the clues for each president are always given in the same order. If you wish to change this to use random selection, make the following changes:

```
331 FOR W=0 TO 3                                    :rem 24
332 RT%(W)=0:NEXT W                                 :rem 72
333 FOR W=1 TO 4                                    :rem 28
334 Y=INT(RND(1)*4)                                 :rem 48
335 IF RT%(Y)<>0 THEN 334                           :rem 18
336 RT%(Y)=W:NEXT W                                 :rem 117
420 PRINT CHR$(17);CHR$(17);"HE ";QT$(RT%(W)-1);".
    ";CHR$(17);CHR$(17)                             :rem 155
```

Plan a Menu

The foods used in this game are defined starting with line 4000. There are six categories of foods, but more could be added. The categories must be in the correct order in the DATA statements, as they are presented in the same order during the game. Each category of items has the following structure:

1. The name of the food.
2. The number of calories per serving.

Items 3 through 10 are numbers which express the percentage of your daily nutritional requirements which this food supplies:

3. Protein.
4. Vitamin A.
5. Vitamin C.
6. Thiamin.
7. Riboflavin.
8. Niacin.
9. Calcium.
10. Iron.

Movers and Shakers

The questions and answers used in this game are defined by
DATA statements in lines 3000 through 5510. You may add new
people to the game, as long as the number of people in any one
category does not exceed 25. Also, the variable NS = 63 in line 100
must be adjusted to reflect the total number of people in the
game.

The data for each person in the quiz are composed of five
parts:

1. The category code(s) (A-G).
2. The person's name.
3. Clue 1.
4. Clue 2.
5. Clue 3.

The category code may reflect multiple categories if a person
is famous in a number of areas (ACD). Notice that category H
should not be specified, as it is done automatically by the
program.

Skeleton

The number of bones in the program is defined by the variable
NW% = 43 in line 100. This should be adjusted if the number of
bones is increased or decreased. The bones themselves are
named in DATA statements in lines 7000 through 7090. Note that
the name of a bone cannot exceed 20 characters.

Spelling Bee

The variable NW% = 40 in line 100 defines the total number of
words in each skill level (40 times 3, or 120 total). If you change the
value of NW% you must also change the number of words in
each skill level. The words are defined by DATA statements in the
following line number ranges:

Beginning Words   6000 through 6999.
Intermediate Words   7000 through 7999.
Advanced Words   8000 through 8999.

Any new words should not be longer than 20 letters.

Spend Your Allowance

Lines 3100 through 3600 define 100 different items that may be
purchased. Each item is composed of three parts:

1. The name of the item.

2. The cost of the item (500 = $5.00).

3. The prudence factor (1-5). (1 = poor purchase, 5 = wise purchase).

The prudence factors for the 4 items purchased each month are added together and divided by 4. If the resulting answer (that is, the average prudence factor) is 4 or greater, and the current balance is not a negative number, the allowance will be increased by $1. This is done by lines 905-910 of the program.

If the average prudence factor is less than 2, the allowance will be reduced by $1, but only if the resulting monthly allowance is not less than $5. This is done in lines 2000-2010 of the program.

Lines 4000 through 4300 contain 30 surprises which may occur during the game. Each surprise consists of three items:

1. Description of the surprise.

2. Amount to adjust cash on hand (500 = $5.00).

3. Good or bad surprise (1 = Good; −1 = Bad).

Stargazer

There are 32 constellations in the game, defined by the variable NS = 32 in line 100. The data for each constellation start in line 9100 and are composed of six parts per constellation:

1. Name of the constellation.

2. Name of best viewing month.

3. Direction in the sky.

4. Clue.

5. A variable set of numbers which defines each star in the constellation. These numbers are added to the address of screen memory to determine where a star should appear. (Refer to Appendix G in the *Commodore 64 User's Guide*.)

6. A numeric value of 0 to indicate the end of the stars.

State of the Union

The number of states is defined by the variable NS = 50 in line 100. The information about the states themselves is defined by DATA statements in lines 1000 through 2970. Each entry consists of four clues, followed by the name of the state, and a number representing the location of the state on the United States map. This number is added to the screen origin to determine where to place the black square on the map. (Refer to Appendix G in the *Commodore 64 User's Guide*.)

Although the states are presented in a random order, the clues within a given state are always in the same order. To change this to a random selection, make the following changes:

```
331 FOR W=0 TO 3                                     :rem 24
332 RT%(W)=0:NEXT W                                  :rem 72
333 FOR W=1 TO 4                                     :rem 28
334 Y=INT(RND(1)*4)                                  :rem 48
335 IF RT%(Y)<>0 THEN 334                            :rem 18
336 RT%(Y)=W:NEXT W                                  :rem 117
420 PRINT CHR$(17);CHR$(17);CHR$(17):QT$(RT%(W)-1)
    ;".";                                            :rem 212
430 PRINT CHR$(17);CHR$(17);CHR$(17)                 :rem 200
```

Unicorn
The mythological characters are defined by lines 1000 through 3740, with the total number of characters being represented by the variable NS in line 100. Each character is represented by four clues, followed by a three-name multiple-choice list, and the number 1, 2, or 3 to indicate which of the three names is correct. For example, the following lines could be added to create a question about Heracles:

3750 DATA "CLUE 1"
3760 DATA "CLUE 2"
3770 DATA "CLUE 3"
3780 DATA "CLUE 4"
3790 DATA ZEUS,MARS,HERACLES,3

Wise Shopper
The number of ounces purchased of each item is calculated on lines 300 through 310. The price per ounce is calculated by lines 320 through 330.

The names of the 20 possible purchase items (only 10 are selected per game) are defined by DATA statements in lines 9100 through 9130. Each name has two parts ("corn," "flakes") but one-part names can be used by setting the second name to a blank ("rice," "   "). Each word should not exceed six characters.

Users may modify any product name, but there should always be 20 products defined.

Word Scramble
The variable TS = 50 in line 100 defines the number of words in each skill level (50 times 3 = 150 total words). You may add, delete, or change words as desired, provided the number of words in

each skill level matches the value of TS.

Words are defined by DATA statements in the following lines:

9000-9040 BEGINNER'S WORDS
9100-9140 INTERMEDIATE WORDS
9200-9300 ADVANCED WORDS

Appendix E:
Automatic
Proofreader

The Automatic Proofreader

"The Automatic Proofreader" will help you type in program listings in this book without typing mistakes. It is a short error-checking program that hides itself in memory. When activated, it lets you know immediately after typing a line from a program listing if you have made a mistake. Please read these instructions carefully before typing any programs.

Preparing the Proofreader

1. Using the listing below, type in the Proofreader. Watch out for typing an I instead of a 1, or an O instead of a 0, extra commas, etc.

2. SAVE it on tape or disk at least twice *before running it for the first time.* If you mistype the Proofreader, it may cause a system crash when you first run it. By SAVEing a copy beforehand, you can reLOAD it and hunt for your error. Also, you'll want a backup copy of the Proofreader. Future COMPUTE! Books as well as COMPUTE!'s GAZETTE will use the Proofreader.

3. RUN the Proofreader. It will be POKEd into a relatively safe area of memory, the cassette buffer.

4. Type RUN to activate the Proofreader. If you ever need to reactivate it, just enter the command SYS 886 and press RETURN.

Using the Proofreader

All the listings in this book have a *checksum number* appended to the end of each line, for example ":rem 123". *Don't enter this statement when typing in a program.* It is just for your information. The rem makes the number harmless if someone does type it in. It will, however, use up memory if you enter it, and it will confuse the Proofreader, even if you entered the rest of the line correctly.

When you type a line from a program listing and press RETURN, the Proofreader displays a number at the top of your screen. *This checksum number must match the checksum number in the printed listing.* If it doesn't, it means you typed the line differently than the way it is listed. Immediately recheck your typing. Remember, don't type the rem statement with the checksum number; it is published only so you can check it against the number which appears on your screen.

E

The Proofreader is not picky with spaces. It will not notice extra spaces or missing ones. This is for your convenience, since spacing is generally not important. But occasionally proper spacing *is* important, so be extra careful with spaces, since the Proofreader will catch practically everything else that can go wrong.

There's another thing to watch out for: if you enter the line by using abbreviations for commands, the checksum will not match up. But there is a way to make the Proofreader check it. After entering the line, LIST it. This eliminates the abbreviations. Then move the cursor up to the line and press RETURN. It should now match the checksum. You can check whole groups of lines this way.

When you're done with the Proofreader, disable it by pressing RUN/STOP-RESTORE (hold down the RUN/STOP key and press RESTORE). If you need it again, enter SYS 886. It will then be ready once again to act as your personal typing aid. However, sometimes the Proofreader can be wiped out of memory. In this case, you'll have to reLOAD the Proofreader from tape or disk.

Automatic Proofreader

```
100 PRINT"{CLR}PLEASE WAIT...":FORI=886TO1018:READ
    A:CK=CK+A:POKEI,A:NEXT
110 IF CK<>17539 THEN PRINT"{DOWN}YOU MADE AN ERRO
    R":PRINT"IN DATA STATEMENTS.":END
120 SYS886:PRINT"{CLR}{2 DOWN}PROOFREADER ACTIVATE
    D.":NEW
886 DATA 173,036,003,201,150,208
892 DATA 001,096,141,151,003,173
898 DATA 037,003,141,152,003,169
904 DATA 150,141,036,003,169,003
910 DATA 141,037,003,169,000,133
916 DATA 254,096,032,087,241,133
922 DATA 251,134,252,132,253,008
928 DATA 201,013,240,017,201,032
934 DATA 240,005,024,101,254,133
940 DATA 254,165,251,166,252,164
946 DATA 253,040,096,169,013,032
952 DATA 210,255,165,214,141,251
958 DATA 003,206,251,003,169,000
964 DATA 133,216,169,019,032,210
970 DATA 255,169,018,032,210,255
976 DATA 169,058,032,210,255,166
982 DATA 254,169,000,133,254,172
```

```
988 DATA 151,003,192,087,208,006
994 DATA 032,205,189,076,235,003
1000 DATA 032,205,221,169,032,032
1006 DATA 210,255,032,210,255,173
1012 DATA 251,003,133,214,076,173
1018 DATA 003
```

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