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

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64 GAMES FOR KIDS

Clark and Kathy H. Kidd
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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.
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 Misissippi 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

This book is dedicated to Uncle O, without whom it wouldn’t have been written, and to the word processor, without which the writing would have been torture.

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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 fl.

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.
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 DIM RT(3), NT%(17, 1, 1), JT%(10, 1): RT(0)=2: RT(1)=80: RT(2)=80: LS=40 :rem 126
110 VC=53248: POKE VC+32, 6: POKE VC+33, 1: PRINT CHR$(147) :rem 7
120 MC=54272: FOR X=MC TO 54296: POKE X, 0: NEXT X: rem 69
130 M=((PEEK(53272) AND 240)/16)*1024: rem 41
140 C=55296 :rem 32
200 FOR W=0 TO 1: X=0: rem 16
220 NEXT W: FOR Y=0 TO 10: F OR Z=0 TO 1: READ Z: JT%(Y, Z)=Z: NEXT Z: rem 148
300 PRINT "{CLR}{RED}{DOWN}{15 SPACES}{RVS}A-MAZE-ING{OFF}" :rem 110
305 PRINT "{2 DOWN} RUN AROUND THE APPLE ORCHARD" :rem 87
310 PRINT "ALL YOU CAN BEFORE YOUR TIME IS UP."
320 PRINT "{2 DOWN} USE THE JOYSTICK TO MOVE AROUND THE {5 SPACES} ORCHARD MAZE." :rem 168
325 PRINT "{2 DOWN} YOU HAVE TWO MINUTES TO EAT ALL YOU"
327 PRINT " CAN, OR USE {RVS}F1{OFF} TO QUIT EARLY."
330 PRINT "{2 DOWN} YOU MAY NOT BE ABLE TO REACH ALL OF {5 SPACES} THE APPLES IN THE ORCHARD!"
340 PRINT "{3 DOWN}{9 SPACES}(HIT ANY KEY TO START)"
350 X=0: GOSUB 9500 :rem 211
360 GET X$: IF X$="" THEN 360 :rem 229
370 GOSUB 9000: FOR W=1 TO 40: GOSUB 8500: POKE W+X, 81: POKE W+C+X, 2: NEXT W: rem 130
380 GOSUB 8500: POKE X, 86: POKE C, X :rem 74
390 RL=INT(X/LS): CL=X-(RL*LS): T i S="000000": AC=0
400 C2=C1: R2=RL: rem 146
410 GOSUB 8500: I FC 1=C2 AND R1=2: THEN 410 :rem 167
420 I FC 2<0: THEN C2=0 :rem 23
430 IF C2>39: THEN C2=39 :rem 146
440 IF R2<0: THEN R2=0 :rem 55
450 IF R2>24: THEN R2=24 :rem 166
460 X=PEEK(M+(R2*LS)+C2) :rem 91
470 IF X<>32: AND X<>81: THEN 400 :rem 50
480 $OD=(R1*LS)+C1;ND=(R2*LS)+C2;IFX=81THEN600 
:rem 123
500 POKEM+OD,32:POKEC+OD,1:POKEM+ND,86:POKEC+ND,4 
:rem 253
510 C1=C2;R1=R2;GOTO410 
:rem 66
600 POKEMC+0,0;POKEMC+1,0;POKEMC+5,15;POKEMC+6,15: 
POKEMC+4,129;POKEMC+24,5 
:rem 159
610 FORY=40TO60STEP5:POKEMC+1,Y:FORW=1TO5:NEXTW,Y 
:rem 223
615 POKEMC+4,128;POKEMC+24,0 
:rem 103
617 POKEMC+ND,86;POKEC+ND,4 
:rem 58
620 POKEM+OD,32:POKEC+OD,1 
:rem 42
640 C1=C2;R1=R2;GOTO410 
:rem 25
650 IFAC>39THENGOTO800 
:rem 88
660 Y=(PEEK(VC+32)AND15)+1:IFY>15THENY=2 
:rem 116
670 POKEVC+32,Y 
:rem 122
680 GOTO410 
:rem 108
800 POKEV3+32,6:PRINT"[CLR]{RED}{DOWN}{14SPACES} 
{RVS}{HAPPY EATING}{OFF}" 
:rem 251
810 PRINT"[3 DOWN] YOU ATE";AC;"APPLES." :rem 165
820 PRINT"[DOWN] YOUR SCORE IS";INT(AC*10/4);" 
{LEFT}";W=INT(TI/60):X=INT(W/60) 
:rem 64
830 Y=W-(X*60):X$=STR$(X):Y$=RIGHT$(X$,1)+"." :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"THEN370 
: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
Level 1

9030 \[Y = \text{INT}(4 \times \text{RND}(1)); Z = Y; \text{POKEMC} + 1, \text{INT}((\text{RND}(1) \times 10) + 1 \times \text{POKEMC} + 4, 17)\] :rem 178
9040 \[W = X + RT(Y); \text{IFPEEK}(W) = 160\text{THENPOKEW}, Y; \text{POKEX} + RT(Y) / 2, 32; X = W; \text{GOTO} 9030\] :rem 107
9045 \[\text{POKEMC} + 4, 16\] :rem 131
9050 \[Y = Y + 1; \text{IF} Y > 3, \text{THEN} Y = 0\] :rem 161
9060 \[\text{IF} Y < 4, \text{X} = \text{RT}(Y); \text{GOTO} 9030\] :rem 107
9070 \[Y = \text{PEEK}(X); \text{POKEX}, 32\] :rem 134
9080 \[\text{IF} Y < 4, \text{THENX} = X - \text{RT}(Y); \text{GOTO} 9030\] :rem 107
9090 \[\text{POKEMC} + 24, 0; \text{FOR} X = 0 \text{TO} 999; \text{IF} \text{PEEK}(M + X) \\text{NOT} 160; \text{THENPOKE}(M + X), 32\] :rem 226
9100 \[\text{NEXTX}; \text{RETURN}\] :rem 123
9500 \[\text{POKEMC} + 0, 0; \text{POKEMC} + 1, 0; \text{POKEMC} + 5, 79; \text{POKEMC} + 6, 12\] :rem 40
9510 \[W = \text{INT}(\text{NT}((Y, X, 0) / 256))\] :rem 188
9520 \[\text{POKEMC} + 0, \text{NT}((Y, X, 0) - (W \times 256))\] :rem 3
9530 \[\text{POKEMC} + 1, W; \text{POKEMC} + 4, 17\] :rem 91
9540 \[\text{FOR} W = 1 \text{TO} \text{NT}((Y, X, 1) \times 4) \text{NEXTW}\] :rem 254
9550 \[\text{POKEMC} + 4, 16; \text{FOR} W = 1 \text{TO} 20; \text{NEXTW}\] :rem 63
9560 \[\text{IF} \text{NT}((Y, X, 0)) \neq 0; \text{THEN} Y = Y + 1; \text{GOTO} 9510\] :rem 26
9570 \[\text{POKEMC} + 24, 0\] :rem 129
9580 \[\text{RETURN}\] :rem 182
10000 \[\text{DATA} 6430, 2, 6430, 2, 6430, 2, 4917, 2, 5407, 2, 5407, 2, 4917, 4, 8101, 2\] :rem 170
10010 \[\text{DATA} 8101, 2, 7217, 2, 7217, 2, 6430, 4, 0, 0\] :rem 251
10020 \[\text{DATA} 6430, 2, 6430, 2, 7217, 2, 5728, 2, 6430, 1, 7217, 2, 8101, 2, 8101, 2\] :rem 163
10030 \[\text{DATA} 8583, 2, 8101, 2, 7217, 1, 6430, 2, 8583, 2\] :rem 171
10040 \[\text{DATA} 6430, 2, 5728, 2, 6430, 8, 0, 0\] :rem 175
10500 \[\text{DATA} 0, 0, -1, 0, 1, 0, 0, 0, -1, 1, 0, 0, 0, 1\] :rem 230
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.
Level 1

1 REM COUNT THE SPOTS: rem 24
10 VC=53248:POKEVC+32,0:POKEVC+33,1:PRINTCHR$(147): rem 208
20 MC=54272:FORX=MC-54296:POKEX,0:NEXTX: rem 20
50 DIMDI$(5),DI%(5,2),S%(11,1): rem 236
60 A$="[RVS]{40 SPACES}{OFF}11": rem 240
70 B$="[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}M": rem 145
110 FORX=0TO5:FORY=0TO2:READZ:DI%(X#Y)=Z:NEXTY#X:
S=0:rem 203
120 PRINT"[RED]{CLR}{2 DOWN}{13 SPACES}{RVS}COUNT
{SPACE}THESPOTS": rem 74
125 PRINT"[2 DOWN] EACH GAME CONSISTS OF TEN ROLLS
130 PRINT"[2 DOWN] THE PLAYER MUST COUNT THE NUMBE
R OF"
:rem 70
135 PRINT" SPOTS ON BOTH[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 LUCKI{OFF}"
:rem 183
160 X=RND(-TI):POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:PO
OKEMC+6,129:POKEMC+24,15:POKEMC+4,16: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=1TO5: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$,Y,1):rem 103
330 PRINT"{CLR}";X$;";FORX=0TO4:PRINTA$;";NEXTX;FORY
=0TO8:PRINTB$;";NEXTY:rem 223
335 FORY=0TO4:PRINTA$;";NEXTY:rem 88
340 Z$="{BLK}{HOME}{6 DOWN}";FORX=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
430 FORZ=8TO1STEP-1
   :rem 171
440 POKEVC+33,Z:POKEMC+1,(10-Z)*5:POKEMC+4,17
   :rem 124
450 FORY=1TO50:NEXTY,POKEMC+4,16
460 FORY=1TO10:NEXTY,Z
470 POKEMC+24,0
500 NEXTX
500 NEXTX
600 Z=0:IFS>HSTHENHS=S:Z=1
610 PRINT"{BLU}{CLR}{2DOWN}{15SPACES}{RVS}GAME O
VER1{OFF}{DOWN}" :rem 104
620 PRINT"{2 DOWN}{5SPACES}YOUR SCORE =";S:rem 33
630 PRINT"{2 DOWN}{5SPACES}HIGH SCORE =";HS
640 IFZ=1THENPRINT"{2 DOWN}{5 SPACES}{RVS}YOU SET
   {SPACE}A NEW HIGH1{OFF}"
650 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,129
   :POKEMC+24,15
660 FORX=0TO11:Y=INT(S%(X,0)/256)
665 POKEMC+0,%,X,0) -(Y*256)
670 POKEMC+1,Y:POKEMC+4,17
675 FORY=1TO30:NEXTY,X
680 FORY=1TO30:NEXTY,Z
685 POKEMC+24,0
690 PRINT"{BLK}{3 DOWN}{5 SPACES}PRESS {RVS}Y{OFF}
   TO REPLAY"
700 PRINT"{2 DOWN}{5 SPACES}PRESS {RVS}N{OFF} TO Q
UIT"
710 GETX$:IFX$=""THEN710
720 IFX$="Y"THEN300
730 IFX$<>"N"THEN710
740 PRINTCHR$(147)
750 END

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 DATA0,1,0,2,0,3,2,1,3,4,0,4,1,4,5,0,5
   :rem 80
Level
1

2020 DATA 4817, 300, 5407, 300, 4291, 300, 2145, 300, 3215, 600, -1, -1 : rem 107
2030 DATA 4817, 175, 0, 5, 4817, 175, 0, 5, 4817, 175, 5407, 100 : rem 65
2040 DATA 6069, 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
100 DIM NT$(4,10,1), W1$(18), W2$(7): rem 148
110 FOR Y = 0 TO 4: FOR Z = 0 TO 10, FOR X = 0 TO 1: rem 188
120 READ NT$(X,Y,Z) = W: NEXT Z,Y,X: rem 43
130 FOR X = 0 TO 18: READ X$: W1$(X) = X$: NEXT X: rem 55
140 FOR X = 0 TO 7: READ X$: W2$(X) = X$: NEXT X; G$ = "Q*ASZW": C $ = "{BLK}\{RED}\{PUR}\{GRN}\{BLU}m": rem 20
150 VC = 53248: POKE VC + 32, 14: POKE VC + 33, 1: PRINT CHR$(147): X = RND(-TI): rem 8
160 MC = 54272: FOR X = MCTO54296: POKE X, 0: NEXT X: rem 73
200 PRINT "{BLK}\{DOWN}{13 SPACES}{RVS}COUNTING {2 SPACES}GAME{OFF}": rem 41
210 PRINT "{3 DOWN} THIS GAME TEACHES YOU TO RECOGNIZE THE {2 SPACES} NUMBERS FROM 1 TO 99." : rem 209
220 PRINT "{2 DOWN} EACH NUMBER PICKED IS SHOWN" : rem 60
230 PRINT " REPRESENTED AS A WORD AND AS A NUMBER {3 SPACES}OF OBJECTS." : rem 246
235 PRINT "{2 DOWN} YOU MUST ENTER THE NUMBER REPRESENTED." : rem 106
240 PRINT "{2 DOWN} A GAME CAN CONSIST OF FROM 1 TO 500\{5 SPACES\}QUESTIONS." : rem 4
250 X = INT(RND(1)*5): GOSUB 8000: rem 175
260 PRINT "{3 DOWN}\{7 SPACES\}(PRESS ANY KEY TO START)" : rem 124
270 GET X$: IF X$ = "THEN270" : rem 131
300 PRINTCHR$(147): "{3 DOWN} WHAT IS THE MAXIMUM NUMBER TO BE USED?" : rem 242
304 PRINT " (ENTER A NUMBER FROM 1 TO 99)" : rem 187
310 X$ = "": INPUT "{3 DOWN} " ; X$ : rem 137
320 RG = VAL(X$): IF RG < 1 OR RG > 99 THEN 300 : rem 150
400 PRINT "\{CLR}\{3 DOWN\} HOW MANY QUESTIONS SHOULD \{SPACE\}BE ASKED IN\{3 SPACES\} THIS GAME?" : rem 255
410 PRINT " (ENTER A VALUE FROM 1 TO 500)" : rem 144
420 X$ = "": INPUT "{3 DOWN} " ; X$ : rem 139
430 NQ = VAL(X$): IF NQ < 1 OR NQ > 500 THEN 400 : rem 206
440 NC = 0 : rem 150
500 FOR LC = 1 TO NQ: PN = INT(RND(1)*RG) + 1: rem 145
510 IF PN < 20 THEN X$ = W1$(PN-1): GOTO 550 : rem 79
530 IF Y = THEN 550 : rem 182
540 X$ = 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$):IFX=PNTHEN700 :rem 161
650  POKEVC+33,0:POKEMC+0,0:POKEMC+1,20:POKEMC+4,33 :rem 205
655  POKEMC+5,15:POKEMC+6,15:POKEMC+24,8 :rem 43
660  FORX=1TO30:NEXTX:POKEMC+4,32 :rem 57
670  FORX=1TO30:NEXTX:POKEMC+24,0 :rem 7
680  PRINTCHR$(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}{2DOWN}{14SPACES}{REV}GAME{2SPACES}OVER{OFF}" :rem 25
910  PRINT"{3 DOWN}{3 SPACES}NUMBER OF QUESTIONS=" :rem 222
920  PRINT"{DOWN}{3 SPACES}NUMBER CORRECT{6 SPACES}" :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? {REV}Y{OFF}/{REV}N{OFF}" :rem 247
960  GETX$;IFX$=""THEN960 :rem 143
970  IFX$="Y"THEN300 :rem 71
980  IFX$<>"N"THEN960 :rem 134
990  PRINTCHR$(147) :rem 29
1000  END :rem 152
8000  REM *** PLAY SONGS *** :rem 104
8010  POKEVC+0,0;POKEMC+1,0;POKEMC+5,79;POKEMC+6,12 :rem 35
8020  9;POKEMC+24,15 :rem 123
8030  FORY=0TO10 :rem 187
8040  Z=INT((NT$%(X,Y,0)/256) :rem 2
8050  POKEVC+0,NT$%(X,Y,0)-(Z*256) :rem 90
8060  FORZ=1TO16:POKEMC+4,16:Z:FORZ=1TO20:POKEMC+4,16 :rem 214
8070  FORZ=1TO16:POKEMC+4,16:Z:NEXTZ,Y :rem 198
8080  POKEVC+24,0 :rem 124
8090  RETURN :rem 177
9000  DATA4050,2,5407,2,5407,2,5407,2,5407,2,5728,1,6430,2 :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 DATA4291,2,4291,2,4291,2,4291,2,4291,2,4817,1,5407,2,5407,2 :rem 222
9090 DATA4817,1,5407,2,5728,1,6430,4,0,1 :rem 232
9200 DATAONE,TWO,THREE,FOUR,FIVE,SIX,SEVEN,EIGHT,NINE,TEN :rem 34
9210 DATASEVEN,ELEVEN,TWELVE,THIRTEEN,FOURTEEN,FIFTEEN,SIXTEEN :rem 68
9215 DATASEVENTEEN,EIGHTEEN,NINETEEN :rem 143
9220 DATATWENTY,THIRTY,FOURTY,FIFTY,SIXTY,SEVENTY,EIGHTY,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:POKE VC+32,6:POKE VC+33,1:PRINT CHR$(147) :rem 128
105 LS=40:rem 72
110 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX :rem 32
120 S1=((PEEK(53272)AND240)/16)*1024+160:rem 131
125 CL(5),FT(9,1),NT%(11,1):rem 61
130 DIMT(9),CL(5),FT(9,1),NT%(11,1):rem 61
135 T(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 :rem 106
240 PRINT"{CLR}{RVSH}{BLU}**********GET THE TREASURE**********{OFF}{BLK}" ;rem 80
250 PRINT"{2 DOWN}CCCC***************CCCCCCCCCCCC" :rem 4
260 PRINT"{17 DOWN}**********{RED}TREASURE CHEST**********{BLK}" ;rem 86
300 FORX=0TO9:GOSUB2000:POKES1+X,FT(Y,0):POKEC1+X,FT(Y,1):NEXTX ;rem 211
310 GOSUB2000:POKES1+X,42:POKEC1+X,0:J1=INT(X/LS):rem 245
320 KS="000000" :rem 247
400 FORX=0TO9 :rem 28
410 PRINT"{HOME}{2 DOWN}{2 SPACES}FIND->":POKES1-69,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+4,0: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$<""""THEN840 :rem 128
870 Gosub3000:PRINTCHR$(147) :rem 151
880 END :rem 119
1000 PRINT"{CLR}{BLU}{DOWN}{RVS}{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
1050 PRINT "[2 DOWN] GET ALL TEN ITEMS IN THE CHEST
AND[6 SPACES]YOU WIN!" :rem 169
1060 GOSUB 3000: PRINT "[DOWN][8 SPACES](PRESS ANY KE
Y TO START)";
1070 GETX$: IFX$ = "" THEN 1070
1080 RETURN
2000 X = INT(RND(1) * 680): Z = PEEK(S1 + X)
2010 IF Z <> 32 THEN 2000
2020 RETURN
3000 POKEMC + 0, 0: POKEMC + 1, 0: POKEMC + 5, 79: POKEMC + 6, 12
39: POKEMC + 24, 15
3010 FOR X = 0 TO 11: 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
3050 FOR Y = 1 TO NT% (X, 1) * 80: NEXT Y
3060 POKEMC + 4, 16: FOR Y = 1 TO 30: NEXT Y
3070 NEXT X: POKEMC + 24, 0
3080 RETURN
10000 DATA 81, 83, 160, 90, 65, 88, 81, 95, 105, 102 : rem 70
10010 DATA 0, 2, 4, 5, 6, 12
10020 DATA 6430, 2, 6430, 2, 6430, 2, 4817, 2, 5407, 2, 5407,
2
10030 DATA 4817, 4, 8101, 2, 8101, 2, 7217, 2, 7217, 2, 6430,
4
18
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, camouflaged 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 DIM CC%(9,1), NT%(22,1), JT%(10,1) : rem 19
110 VC=53248: POKE VC+32, 6: POKE VC+33, 12: PRINT CHR$(14) 7 : rem 57
114 CT$="{BLK}{WHT}{RED}{CYN}{PUR}{GRN}{BLU}{YEL}" : rem 134
: LS=40 : rem 210
118 MC=54272: FOR X=0 TO 54296: POKE X, MCT: FOR Y=0 TO 1: READ Z: NT%(X,Y)=Z : rem 76
120 FOR X=0 TO 9: FOR Y=0 TO 1: READ Z: CC%(X,Y)=Z : rem 134
125 FOR X=0 TO 22: FOR Y=0 TO 1: READ Z: NT%(X,Y)=Z : rem 210
Level 1

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"{7 SPACES}(PRESS ANY KEY TO STAR
T)" :rem 245
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<0THENEC2=0 :rem 26
370 IFC2>24:THENEC2=24 :rem 137
380 IFR2<0THENR2=0 :rem 58
390 IFR2>39:THENR2=39 :rem 181
400 IFC1=2ANDR1=2THEN300 :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" :rem 72
1025 PRINT"[2 DOWN][4 SPACES]PRESS {RVS}N
{OFF} FOR NO" :rem 72
20
1030 GETX$: IFX$="" THEN 1030
1040 IFX$="Y" THEN 200
1050 IFX$="N" THEN 1030
1060 PRINTCHR$(147)
1070 END
2000 REM *** PLAY A SONG ***
2010 POKEMC+0,0: POKEMC+1,0: POKEMC+5,79: POKEMC+6,12

9: POKEMC+24,15
2020 FOR X=0 TO 22
2030 Y=INT (NT%(X,0)/256)
2040 POKEMC+0,NT%(X,0)-(Y*256)
2050 POKEMC+1,Y: POKEMC+4,17
2060 FORT=1 TONT%(X,1)*90:NEXT Y
2070 POKEMC+4,16:FORT=1 TONT%(X,1)*90:NEXT Y,X
2080 POKEMC+24,0
2090 RETURN
4000 K=INT (RND(1)*4)+1
4010 ONK GOTO 4100,4300,4500,4700
4100 PRINT"{CLR}{DOWN}{10 SPACES}TULIPS AND WINDMILL
LLS[2 DOWN]"
4110 PRINTSPC(19);"£+3"
4120 PRINTSPC(19);"£+3"
4130 PRINTSPC(19);"£+3"
4140 PRINTSPC(18);"U£+3I"
4150 PRINTSPC(12);"£7+3+£7+3"
4160 PRINTSPC(18);"£G+3H"
4170 PRINTSPC(18);"£G+3H"
4180 PRINTSPC(18);"G£+3H"
4190 PRINTSPC(18);"G£+3H"
4200 PRINTSPC(18);"G H"
4205 PRINTSPC(18);"G H"
4207 PRINTSPC(18);"G H"
4210 PRINT"{2 SPACES}X{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"
4230 PRINT"{40 U}";
4240 PRINT"{3 DOWN}{12 SPACES}DECORATE HOLLAND"
4250 GOTO 250
4300 PRINT"{CLR}{DOWN}{5 SPACES}*{8 SPACES}*{8 SPACES}*{8 SPACES}"
4310 PRINT"{2 SPACES}*{6 SPACES}*{9 SPACES}*{2 SPACES}*{4 SPACES}*{7 SPACES}*{3 SPACES}"
4320 PRINT"{7 SPACES}*{8 SPACES}*{9 SPACES}*{4 SPACES}*{5 SPACES}"
Level 1

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][F]+[9 SPACES]" :rem 70
4390 PRINT"[6 SPACES][2 +][5 SPACES][+] [2 SPACES]+[6 SPACES]+[7 SPACES]<" :rem 195
4400 PRINT"[6 SPACES][2 +][5 SPACES][+] [2 SPACES][+] [2 SPACES][X][3 SPACES][+] [7 SPACES][2 +]" :rem 251
4410 PRINT"[3 SPACES][+][2 +][5 SPACES][+] [2 SPACES][+] [2 SPACES][+] [3 SPACES][+] [4 SPACES][V][2 SPACES][2 +][3 SPACES][V]
[2 SPACES]" :rem 44
4420 PRINT"[3 SPACES][2 +][2 +][2 SPACES][A][2 SPACES][+] [2 SPACES][+] [3 SPACES][+] [4 SPACES][+] [2 SPACES]
[2 +][3 SPACES][+] [+] " :rem 36
4430 PRINT"[2 SPACES][3 +][2 +][2 SPACES][+] [2 SPACES][2 +][2 SPACES][2 +][2 SHIFT-SPACE][2 +][2 SPACES][2 +][2]
[2 +][2 SHIFT-SPACE][2 +][+] " :rem 153
4440 PRINT"[2 SPACES][3 +][SHIFT-SPACE][2 +][2 +]
[5 +][2 +][2 +][6 +][4 +][3 +][4 +][+] " :rem 231
4450 PRINT"[38 +][+]" :rem 66
4460 PRINT"[40 U][+]" ; :rem 154
4470 PRINT"[2 DOWN]" ; SPC(11) ; "MOON OVER MANHATTAN"
:rem 38
4480 GOTO250 :rem 160
[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].[3 SPACES].
[2 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
[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".3 SPACES].3 SPACES].3 SPACES].
[2 SPACES].S][W][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].
[2 SPACES].6 SPACES]":rem 166
4590 PRINT".3 SPACES].3 SPACES].3 SPACES].
[3 SPACES].J*K.2 SPACES].2 SPACES].
[3 SPACES]":rem 80
4600 PRINT"[2 SPACES].3 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].O
****][W][5 SPACES]Q][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"30 U3";":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
4700 PRINT"[CLR][3 DOWN][12 SPACES][16 @]":rem 162
4710 PRINT"[11 SPACES]NNN NNN NNNN NNN NNN NNN":rem 24
Level 1

4720 PRINT "[10 SPACES]NNNNNNNNNNNNNNNNNNNNNNNN
[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][J][3 +]
[5 SPACES][J][3 +][2 SPACES][J][2 SPACES]
[L]"
:rem 166
4770 PRINT "[10 SPACES][J][2 SPACES][J][3 +]
[5 SPACES][J][3 +][2 SPACES][J][2 SPACES]
[L]"
:rem 167
4780 PRINT "[10 SPACES][J][10 SPACES][J][3 +]
[2 SPACES][J][2 SPACES][L]"
:rem 182
4790 PRINT "[10 SPACES][J][10 SPACES][J][3 +]
[2 SPACES][J][2 SPACES][L]"
:rem 183
4800 PRINT "[10 SPACES][J][10 SPACES][J][3 +]
[2 SPACES][J][2 SPACES][L]"
:rem 175
4810 PRINT "[3 SPACES][J][34 Y]"
:rem 236
4820 PRINT "[2 DOWN][3 SPACES]DO YOU LIVE IN A HOUSE 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)=0 THEN JF=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,-1,-1,-1,1,0,0,1,
-1,1,1,1
:rem 188
Level 2: Games for Early Readers
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.

```Basic
1 REM MATCHMAKER
100 DIMHT(1,3),ST(9),CT(3),S%(7),NT%(20):CB=828:VC
   =53248:MC=54272
110 SM=((PEEK(53272)AND240)/16)*1024:CO=55296-SM
   :rem 91
120 FORX=54272TO54296:POKEX,Ø:NEXTX
   :rem 174
130 FORX=ØTO3:READZ:CT(X)=Z:NEXTX:FORX=ØTO9:READZ:
   ST(X)=Z:NEXTX
   :rem 12
140 FORX=ØTO20: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";PRINT
   :rem 70
210 PRINT"[DOWN]{3 SPACES}{RVS}4{OFF} - ADVANCED"
   :rem 176
220 GETX$:IXS$="THEN220
   :rem 121
230 IFIX$<"1"ORX$="4"THEN220
   :rem 231
240 SL=VAL(X$)
   :rem 34
250 PRINT"[3 DOWN] ENTER NUMBER OF PLAYERS (1 TO 8)
   )"
   :rem 244
252 GETX$:IXS$="THEN252
   :rem 131
253 IFIX$<"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)=Ø:NEXTX:FORX=1TO(SL*20):POK
   ECB+X-1,Ø:NEXTX
   :rem 127
270 FORX=1TOSL:FORX=ØTO9:FORZ=1TO2
   :rem 9
```

280 GOSUBL000: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 GOSUBL000: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,
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 6b
710 FORX=1TOMP:PRINT"[2 SPACES]PLAYER #";X;"=";S%(X-1);
PRINT"[DOWN]";NEXTX :rem 178
720 GOSUBL000 :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"

750 GETX$:IFX$=""THEN750

760 IFX$="Y"THEN200

770 IFX$="N"THEN750

780 PRINTCHR$(147)

790 END

800 REM *** PLAY SONG

810 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,129

:POKEMC+24,15

820 FORX=0TO20

830 Y=INT(NT%(X)/256)

840 POKEMC+0,NT%(X)-(Y*256):POKEMC+1,Y:

850 POKEMC+1,Y:POKEMC+4,17

860 FORY=1TO150:NEXTY:POKEMC+4,16

870 FORY=1TO10:NEXTY,X:POKEMC+24,0

880 RETURN

1000 W=0

1010 R1=INT(RND(1)*(SL*20)):IFPEEK(CB+R1)=0THENRE

1020 W=W+1:IFW<5THEN1010

1030 R1=0

1040 IFPEEK(CB+R1)=0THENRETURN

1050 R1=R1+1:GOTO1040

2000 REM *** READ JOYSTICK

2005 JQ=PEEK(56321):IF(JQAND16)=0THEN2200

2010 Z=AP:IF(JQAND1)=0THENZ=Z-40

2020 IF(JQAND2)=0THENZ=Z+40

2030 IF(JQAND4)=0THENZ=Z-1

2040 IF(JQAND8)=0THENZ=Z+1

2050 IFAP=ZORZ=240ZORZ=839THEN2000

2060 IFPEEK(SM+Z)=160THEN2000

2070 POKESM+AP,32:POKESM+CO+AP,1:POKESM+Z,30:POKES

M+CO+Z,0

2080 AP=Z:GOTO2000

2200 IFPEEK(SM+AP-40)<160THEN2000

2210 Z=AP-245:R=INT(Z/80):C=Z-(R*80)

2220 C=INT(C/3)

2230 RETURN

4000 PRINT"{2 DOWN}{12 SPACES}{PRESS ANY KEY}"

4010 GOSUB8800

4015 POKE198,0

4020 GETX$:IFX$=""THEN4020

4030 RETURN

8000 POKEVC+32,6:POKEVC+33,1:PRINTCHR$(147) ;

8005 PRINT"{BLK}{DOWN} {RVS}{11 SPACES}** MATCHMAKER **{11 SPACES}{OFF}"
8100 PRINT"[2 DOWN] MATCHMAKER IS A MEMORY GAME FOR 1 TO 8"
8105 PRINT"PLAYERS, WITH FOUR SKILL LEVELS."
8110 PRINT"[2 DOWN] EACH PLAYER MUST UNCOVER TWO SQUARES AND"
8115 PRINT"TRY TO MATCH THE SHAPES UNDER THEM."
8120 PRINT"SKILL LEVELS 2-4 MUST ALSO MATCH THE [4 SPACES] OBJECTS' COLOR."
8140 PRINT"[2 DOWN] MOVE UNDER A SQUARE WITH THE JOYSTICK,"
8145 PRINT"AND EXPOSE IT WITH THE FIRE BUTTON."
8150 GOSUB 4000
8160 RETURN
9000 DATA 0#8,5,14,65,42,81,83,86,87,78,90,95,105
9010 DATA 4291,5407,5728,6430,7217,8101,7217,6430,7217,6430,5728,6430,4291
9020 DATA 291,4291
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 you 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.

```assembly
Level 2

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

Level

2

230 POKE VC+33, 15: PRINT "{CLR}{BLK}{3 DOWN} [12 SPACES] COMPUTER'S NOTE:" : rem 58
240 X = CN: GOSUB 2000: FOR X = 1 TO 1000: NEXTX : rem 84
250 PRINT"{3 DOWN}{13 SPACES}PLAYER'S NOTE:" : rem 82
260 X = PN: GOSUB 2000
300 PRINT"{CLR}{2 DOWN} ENTER OPTION ---{2 DOWN}"
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 MATCHES ***" : rem 154
350 PRINT"{2 DOWN}{3 SPACES}{RVS}7{OFF} RAISE PITCH A SMALL AMOUNT" : rem 224
360 PRINT"{DOWN}{3 SPACES}{RVS}8{OFF} RAISE PITCH A MEDIUM AMOUNT" : rem 25
370 PRINT"{DOWN}{3 SPACES}{RVS}9{OFF} RAISE PITCH A LARGE AMOUNT" : rem 197
400 X = PEEK(197): IF X = 64 THEN 400
410 IF X = 56 THEN PN = PN - 1: GOTO 500
420 IF X = 59 THEN PN = PN - 5: GOTO 500
430 IF X = 8 THEN PN = PN - 10: GOTO 500
440 IF X = 16 THEN 700
450 IF X = 24 THEN PN = PN + 1: GOTO 500
460 IF X = 27 THEN PN = PN + 5: GOTO 500
470 IF X = 32 THEN PN = PN + 10: GOTO 500
480 GOTO 400
500 IF PN < 10 THEN PN = 10: rem 205
510 IF PN > 70 THEN PN = 70: rem 218
610 IF PN > 70 THEN PN = 70: rem 218
620 X = PN: GOSUB 2000: GOTO 400
700 IF PN IN CN THEN 800
710 PRINT"{CLR}{2 DOWN}{12 SPACES} CONGRATULATIONS! " : rem 188
720 PRINT"{3 DOWN}{2 SPACES} YOU PICKED THE VERY SAME NOTE AS" : rem 97
725 PRINT SPC(11); "{DOWN} THE COMPUTER DID!!"
730 PRINT"{3 DOWN}{3 SPACES} YOU MUST BE A VERY GOOD MUSICIAN!!" : rem 183
740 PRINT "{3 DOWN}{8 SPACES} PRESS ANY KEY TO CONTINUE" : 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
Level 2

805 X=CN:GOSUB 2000:FOR X=1 TO 1000:NEXT X:rem 91
810 PRINT"{3 DOWN}{13 SPACES}PLAYER'S NOTE:"; rem 84
815 X=PN:GOSUB 2000:rem 77
820 IF PN<CN THEN X=CN-PN:GOTO 840:rem 195
830 X=CN:rem 140
840 Y=100-INT((X*100)/60):IF Y>1 THEN Y=1:rem 170
850 PRINT"{3 DOWN}{11 SPACES}YOUR SCORE IS";Y;"{LEFT}"$:rem 221
860 X=INT((100-Y)/10):IF X<0 THEN X=0:rem 232
870 IF X<5 THEN 900:rem 193
880 PRINT"{3 DOWN}{9 SPACES}YOUR EAR FOR MUSIC IS";X$:rem 53
885 IF LEN(X$)<3 THEN X$=""+X$+:GOTO 885:rem 225
890 PRINTX$:rem 229
900 PRINT"{4 DOWN}{11 SPACES}PLAY AGAIN (YES) OR (NO)";Y:rem 37
910 GETX$:IF X$="" THEN 910:rem 133
920 IF X$="Y" THEN 200:rem 65
930 IF X$="N" THEN 910:rem 124
940 PRINT CHR$(147):rem 24
950 END:rem 117
1000 FOR X=832 TO 832+63:READ Z:POKE X,Z:NEXT X:rem 118
1010 POKEVC+6,0:POKEVC+2,120:POKEVC+4,200:POKEVC+6,22:rem 165
1020 POKEVC+1,40:POKEVC+3,30:POKEVC+5,20:POKEVC+7,10:rem 71
1030 POKEVC+16,8:POKEVC+23,15:POKEVC+27,15:POKEVC+28,0:POKEVC+29,15:rem 235
1040 FOR X=0 TO 3:POKE X+2,X+2:NEXT X:rem 21
1050 FOR X=0 TO 3:POKE 2040+X,13:NEXT X:rem 91
1100 FOR X=0 TO 37:READ Z:NT%(X,Y)=Z:NEXT X,Y:rem 2
1110 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKE MC+6,12:rem 1
1120 RETURN:rem 164
1150 POKEVC+21,15:POKEVC+24,15:rem 201
1155 X=INT(NT%(X,0)/256):rem 49
1150 POKEVC+1,NT%(X,0):rem 120
1160 POKEVC+4,17:rem 85
1140 FOR Z=0 TO 100:NT%(X,1)=Z:NEXT Z:rem 119
1150 X=X+10:IF Z<37 THEN X=0:rem 209
1150 POKEVC+4,16:rem 125
1157 FOR Z=0 TO 32:STEP 2:rem 196
1160 POKEVC+Z,Y:rem 120
1195 NEXT Z:rem 161
1200 GETX$:IF X$="" THEN 1510:rem 109
1210 POKEVC+24,0:POKEVC+21,0:rem 223
1215 FOR Z=0 TO 32:STEP 2:rem 96
1620 PRINTCHR$(147) : rem 68
1630 FOR X=1 TO 1000: NEXT X : rem 172
1640 RETURN : rem 171
1700 DATA 1,255,248,1,255,248,1,255,248,1,192,56,1,
192,56,1,255,248,1,192 : rem 15
1710 DATA 56,1,192,56,1,192,56,1,192,56,1,192,56,1,
192,56,1,192,56,1,192,56 : rem 114
1720 DATA 15,193,248,31,195,248,63,199,248,127,143,
240,255,31,224,254 : rem 95
1730 DATA 31,192,124,15,128,0 : rem 137
1800 DATA 8101,2,8583,2,10814,2,5728,1,5728,2,5728,
2,5728,2,6430,2,5728,1 : rem 42
1810 DATA 56,1,192,56,1,192,56,1,192,56,1,192,56,1,
192,56,1,192,56,1,192,56 : rem 230
1820 DATA 15,193,248,31,195,248,63,199,248,127,143,
240,255,31,224,254 : rem 95
1830 DATA 31,192,124,15,128,0 : rem 137
1840 DATA 8101,2,8101,1,7217,1,7217,2,8101,3,8101,2 : rem 92
1900 DATA "EXCELLENT","VERY GOOD","GOOD","ABOVE AVERAGE",
"NORMAL","NOT BAD" : rem 177
2000 POKE MC+0,0 : POKE MC+1,X : POKE MC+4,17 : POKE MC+5,15
 : POKE MC+6,15 : rem 212
2010 POKE MC+24,5 : rem 116
2020 FOR X=1 TO 800: NEXT X : POKE MC+4,16 : rem 104
2030 FOR X=1 TO 50 : NEXT X : rem 75
2040 POKE MC+24,0 : rem 114
2050 RETURN : rem 167
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.
Level 2

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.

```plaintext
1 REM PERSONAL STORY :rem 26
100 DIM NT%(14,1,7):MC=54272:VC=53248 :rem 201
105 POKEVC+32,4:POKEVC+33,1:PRINTCHR$(147):rem 243
110 FORX=0TO7:Y=0 :rem 24
130 NEXTX:C$="{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$)>40 THEN175 :rem 64
170 Y$="{SHIFT-SPACE}"+X$:X$="{SHIFT-SPACE}""{SHIFT-SPACE}""NO160 :rem 102
175 X$=RIGHT$(X$,LEN(X$)-1) :rem 251
180 PRINT"{BLK}{7 DOWN}";SPC(11);"THIS IS YOUR LIFE";PRINT"{HOME}":FORY=0TO998:X=INT(RND(1)*7)+1:X$=MID$(C$,X,1):rem 165
200 PRINTX$;SS=2:GOSUB8000: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}{3SPACES}";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$;" YEARS OLD." :rem 11
250 PRINT"{3 DOWN}{13 SPACES}{YEL}Q{SHIFT-SPACE}Q{SHIFT-SPACE}Q{SHIFT-SPACE}Q{BLK}{3 SPACES}HAPPY" :rem 254
260 PRINT"{13 SPACES}{SHIFT-SPACE}Q{SHIFT-SPACE}Q{3 SPACES}BIRTHDAY" :rem 151
270 PRINT"{12 SPACES}{RVS}{RED}{7 SPACES}{OFF} {2 SPACES}";N1$:rem 8
```
280 PRINT"[12 SPACES]{RVS}{RED}{7 SPACES}{OFF}
{2 SPACES})))),"N2$","[BLK]:"
:rem 58
290 SS=3:GOSUB8000:GOSUB7800
:rem 188
300 POKEVC+32,2:PRINT"{CLR}{BLK}{2 DOWN}";SPC(11);
N1$" 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}RRRRRRRR
":rem 225
320 PRINTSPC(11);"{4 SPACES}NMMMMMM" :rem 10
330 PRINTSPC(11);"{3 SPACES}1{2 SPACES}MMMMMM" :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 +]1{2 SPACES}1+3{BLU}{3 SPACES}T" :rem 104
360 PRINTSPC(11);"{2 SPACES}Y{3 SPACES}={BLK}
[2 +]1{2 SPACES}1+3{BLU}{3 SPACES}T" :rem 105
370 PRINTSPC(11);"{2 SPACES}Y{3 SPACES}={5 SPACES}
[BLK]1+3{BLU}[3 SPACES]T" :rem 30
380 PRINTSPC(10);"EEEEEEEEE...{BLK}" ;PRINT
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$" SMILE."
:rem 205
420 PRINTSPC(11);"{RED}{3 DOWN}" :rem 138
430 PRINTSPC(11);"{3 SPACES}{O2}{O2}{DOWN}"
:rem 191
440 PRINTSPC(11);"{3 SPACES}Q{SHIFT-SPACE}Q
[7 SPACES]F1$" :rem 85
445 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
E1" :rem 177
490 SS=6:GOSUB8000:GOSUB7800
:rem 193
500 PRINT"{CLR}{BLK}{2 DOWN}";SPC(12);F1$;" WILL" ;PR
INTSPC(12);"SOMETIMES CALL" :rem 132
505 PRINTSPC(12);N1$;" 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$;PRINT"{CL}
{DOWN}AND ";N1$ :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}";PRINTSF
C(9);CT$;"." : rem 25
620 PRINT"{2 DOWN}{4 SPACES}*{8 SPACES}*{5 SPACES}
*{6 SPACES}*{4 SPACES}*{4 SPACES}":rem 135
625 PRINT"{2 DOWN}{6 SPACES}*{2 SPACES}*{7 SPACES}*{4 SPACES}*
{4 SPACES}" :rem 148
628 PRINT"{3 SPACES}*{2 SPACES}*{6 SPACES}*
{2 SPACES}*{5 SPACES}*{3 SPACES}UIC{4 SPACES}*
{4 SPACES}" : rem 95
630 PRINT"{3 SPACES}*{6 SPACES}*{3 SPACES}*
{5 SPACES}*{2 SPACES}*{3 SPACES}JK *{3 SPACES}
*{4 SPACES}" :rem 79
640 PRINT"{5 SPACES}E+3{SHIFT-SPACE}E+3[{2 SHIFT-SP
ACE}E+3 E+3 [{4 SPACES}E+3 {5 SPACES}E+3{SHIFT-SP
ACE}E+3 [E+3 {2 SPACES}E+3{2 SHIFT-SPACE}E2 +3
{SHIFT-SPACE}E+3]"
 :rem 147
650 PRINT"{3 SPACES}E+3 E3 +3 E2 +3 E2 +3
{2 SHIFT-SPACE}E3 +3{4 SHIFT-SPACE}E5 +3
{2 SPACES}E2 +3{SHIFT-SPACE}E2 +3
{SHIFT-SPACE}E+3"
 :rem 10
660 PRINT"{3 SPACES}E34 +3" :rem 121
670 SS=0:GOSUB8000:GOSUB7800 :rem 187
700 POKEVC+32,13:POKEVC+33,1:PRINT"{CLR}{BLK}
{2 DOWN}";SPC(9);"IF ",F1$ :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}" :rem 178
850 PRINTSpc(9);"{8 SPACES}{RVS}" :rem 43
860 PRINTSpc(9);"{7 SPACES}{RVS}" :rem 180
870 PRINTSpc(9);"{7 SPACES}{RVS}" :rem 45
875 PRINTSpc(9);"{7 SPACES}{RVS}" :rem 50
880 PRINTSpc(9);"{6 SPACES}{RVS}" :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]" :rem 225
990 FORZ=1TO75:NEXTZ,X :rem 183
1000 POKEVC+33,0:POKEVC+21,0:SS=.3 :rem 224
1010 POKEVC+0,0:POKEVC+1,0:POKEVC+5,11:POKEVC+6,13 :rem 96
1020 FORX=1TO111 :rem 166
1030 POKEVC+1,INT(Y):Y=Y+SS:POKEVC+4,17 :rem 134
1040 Z=INT(RND(1)*6)+2:X$=MID$(C$,Z,1) :rem 71
1050 PRINTX$;"THE END" :rem 44
1055 IFX>55THENSS=-.3 :rem 250
1060 NEXTX :rem 94
1070 POKEVC+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 PRINT"{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)>0THEN=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 4817,2,7217,2 :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 DATA4817,2,5407,2,6430,2,6430,2,6430,2,6430,2,6430,2 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 DATA6430,2,6430,2,6430,2,4817,2,5407,2,5407,2,5407,2 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 DATA10814,3,9634,3,1,1,8101,2,8101,2,8101,2 217,2,6430,2,8101,2 :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 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"
10060 DATA "1605 MAPLE STREET WEST"
10070 DATA "NEW YORK CITY"
10080 DATA "SANDRA"
10090 DATA "582-1234"
10100 DATA "ELECTRIC TRAIN"
20000 DATA 60,0,24,124,0,24,130,0,25,171,0,24,146
    ,0,24,130,0,24,124
    :rem 150
20010 DATA 6,24,16,0,31,255,0,15,255,0,0,59,0,0,59,0,0,59,128,0,59,128
    :rem 25
20020 DATA 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.

```plaintext
1 REM SPELLING BEE
100 NW%=40:VC=53248:MC=54272
105 POKEVC+32,15:POKEVC+33,1:PRINTCHR$(147)
106 FORX=54272TO54296:POKEX,0:NEXTX
110 DIM NT%(11),WT$(NW%-1),WI$(19)
120 S1=((PEEK(53272)AND240)/16)*1024:S2=55296
130 FORX=0TO11:READZ:NT%(X)=Z:NEXTX
140 PRINTm{BLK}{D0WN}{RVS}{14 SPACES}SPELLING BEE
150 PRINT"{2 DOWN}THE COMPUTER WILL SELECT A WORD"{SPACE}{OFF}AND SHOW";
160 PRINT"YOU THE NUMBER OF LETTERS IT CONTAINS."
170 PRINT"{2 DOWN}YOU MUST GUESS THE WORD BY SELECTING ONELETTER AT A TIME."
180 PRINT"{2 DOWN}IF YOU PICK MORE THAN 11 INCORRECT"
190 PRINT"LETTERS, THE SPELLING BEE WILL DISAPPEAR AND YOU WILL LOSE THAT ROUND."
200 GOSUB2500:PRINT"{2 DOWN}{8 SPACES}(PRESS ANY KEY TO START)"
210 GETX$:IFX$=""THEN210
220 PRINTCHR$(147);"{3 DOWN}{2 SPACES}ENTER SKILL"{SPACE}LEVEL:"
230 PRINT"{3 DOWN}{4 SPACES}{RVS}1{OFF} BEGINNER":PRINT"{3 DOWN}{4 SPACES}{RVS}2{OFF} INTERMEDIATE"
240 PRINT"{3 DOWN}{4 SPACES}{RVS}3{OFF} ADVANCED"
250 GETPS$:IFPS=""THEN250
260 IFPS<"1"ORPS="3"THEN250
270 X=(VAL(P$)-1)*NW$:IFX=0THEN290
280 FORX=1TOX:READX$:NEXTX
290 FORX=1TONW%:READX$:WT$(X-1)=X$:NEXTX:WU=0
300 WU=WU+1
310 X=INT(RND(1)*NW%):WO$=WT$(X):IFWO$=""THEN310
```

45
320 \text{WT}(X)\text{"} = \text{"} : \text{LW} = \text{LEN(WO$}) \quad \text{rem 235}
330 \text{FORX} = \text{\&TOLW\textasciitilde -1} \quad \text{rem 11}
340 \text{WI}(X) = \text{MID}(WO$, X + 1, 1) : \text{NEXTX} \quad \text{rem 104}
350 \text{LC} = 0 : \text{OF} = 921 : \text{BC} = 0 : \text{GOSUB} 1000 : \text{LW} = \text{LW\textasciitilde -1} \\
\text{rem 183}
400 \text{GET} X$ : \text{IFX$"} = "\text{THEN400} \quad \text{rem 121}
410 X = \text{ASC(X$) : IFX<65ORX>90THEN400} \quad \text{rem 249}
500 \text{HI} = 0 : \text{FORX} = \text{\&TOLW\% : IFWI$(Y) <> X$ THEN530} \quad \text{rem 217}
510 \text{HI} = 1 : \text{WI$(Y)"} = \text{"} : \text{POKES}1 + \text{720 + UL} + (Y*2), X - 64 \\
\text{rem 104 r} 
520 \text{LC} = \text{LC} + 1 \quad \text{rem 152}
530 \text{NEXTY} : \text{IFHI = 1 THEN560} \quad \text{rem 194}
540 \text{GOSUB} 3000 : \text{EXTX} = \text{GOTO} 700 \quad \text{rem 3}
550 \text{IFBC} = 1 \text{THEN GOSUB} 2000 : \text{LO} = \text{LO} + 1 : \text{FORX} = \text{1 TO} 200 : \text{N} \quad \text{rem 93}
560 \text{IFLC} = \text{\&LTHEN400} \quad \text{rem 226}
570 \text{GOSUB} 4000 : \text{WI} = \text{WI} + 1 : \text{GOTO} 700 \quad \text{rem 71}
700 \text{IFWU = NW\% THEN PRINT} \{\text{CLR}\} \{\text{RED}\} \{\text{2 DOWN}\} \text{"} : \text{GOTO} 750 \\
\text{rem 104 r} 
710 \text{PRINTCHR$(147) ; \"[BLK\{3 DOWN\}12 SPACES\{RVS} A} \text{NO TIME} \text{ ? \{OFF\} \text{"} \quad \text{rem 133}
715 \text{PRINT}\{2 DOWN\} \{13 SPACES\} \text{ENTER \{RVS}\{Y\{OFF\} OR \{SPACE\} \{RVS\}\{N\{OFF\} \text{"} \quad \text{rem 158}
720 \text{GETX$ : IFX$"} = "\text{THEN720} \quad \text{rem 131}
730 \text{IFX$"} = "\text{Y" THEN300} \quad \text{rem 65}
740 \text{IFX$"} = "\text{N" THEN720} \quad \text{rem 122}
750 \text{PRINT}\{3 DOWN\} \{7 SPACES\} \# \text{ CORRECT = } \"; \text{WI} \text{"} \quad \text{rem 18}
760 \text{PRINT}\{2 DOWN\} \{7 SPACES\} \# \text{ MISSED}\{2 SPACES\} = \"; \text{L O\%} \quad \text{rem 176}
770 \text{GOSUB} 2500 : \text{FORX} = \text{1 TO} 1000 : \text{NEXTX} \quad \text{rem 1}
780 \text{PRINTCHR$(147) \quad \text{rem 26}
790 \text{END} \quad \text{rem 119}
1000 \text{POKEVC+32,6; POKEVC+33,12} \quad \text{rem 157}
1005 \text{PRINTCHR$(147) ; \"[BLK\{DOWN\}8 SPACES\}S P E E L} \text{SPACE\{L I N S \{4 SPACES\}B E E \{2 DOWN\}} \quad \text{rem 173}
1010 \text{PRINTSPC(20) ; \"[BLK\{9\}+3\}+3\} \quad \text{rem 121}
1020 \text{PRINTSPC(20) ; \"[E2 +3\} \quad \text{rem 180}
1030 \text{PRINTSPC(16) ; \"[M\{2 SPACES\}E2 +3\} \quad \text{rem 43}
1040 \text{PRINTSPC(18) ; \"[M \{9\}+3\}+3\}+3\} \quad \text{rem 103}
1050 \text{PRINTSPC(18) ; \"[RVS]\{YEL\} [BLK] [YEL]+3\} [OFF]\{BLK\}N N\} \quad \text{rem 150}
1060 \text{PRINTSPC(16) ; \"[C\{RVS\}\{YEL\} [BLK] [YEL] [BLK] [YEL] [BLK] [OFF]\} \quad \text{rem 51}
1070 \text{PRINTSPC(18) ; \"[YEL]\{BLK\}M M\} \quad \text{rem 150}
1080 \text{PRINTSPC(16) ; \"[N \{9\}+3\}+3\}+3\} \quad \text{rem 108}
1090 \text{PRINTSPC(16) ; \"[N\}+3\}+3\}+3\} \quad \text{rem 49}
1100 \text{PRINTSPC(20) ; \"[E2 +3\} \quad \text{rem 179}
1110 PRINTSPC(20);"{I+3}@-3" :rem 234
1500 PRINT"{5 DOWN}{BLK}"

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1510 PRINT" ENTER A LETTER:" :rem 183
1520 UL=INT((40-(LW%-2)-1))/2 :rem 97
1525 X=(LW%-1)*2 :rem 73
1530 FORY=0TOXSTEP2 :rem 53
1540 POKES1+720+UL+Y,121:POKES2+720+UL+Y,1:NEYTY :rem 223
1550 RETURN :rem 130
2000 REM **** WORD MISSED / SHOW IT :rem 171
2005 FORX=0TOLW%:IFWI$(X)="$"THEN2020 :rem 92
2010 Y=ASC(WI$(X)):POKES1+720+UL+(X*2),Y-64 :rem 172
2020 NEXTX :rem 183
2030 POKEMC+0,0:POKEMC+1,1:POKEMC+5,15:POKEMC+6,15 :rem 91
2040 POKEMC+24,15:FORY=80TO10STEP-5 :rem 196
2050 POKEMC+1,Y:POKEMC+4,17:FORX=1TO50:NEXTX :rem 105
2060 POKEMC+4,16:NEXTY:POKEMC+24,0 :rem 19
2070 RETURN :rem 49
2500 REM *** PLAY A LITTLE SONG :rem 169
2510 POKEMC+5,79:POKEMC+6,129:POKEMC+24,15:rem 165
2520 FORX=0TO11;Y=INT(X)/256:Z=INT(Y/256) :rem 193
2530 Y=Y-(Z*256):POKEMC+0,Y:POKEMC+1.Z :rem 236
2540 POKEMC+4,17:FORY=1TO100:NEXTY :rem 12
2550 POKEMC+4,16:FORY=1TO40:NEXTY :rem 107
2560 NEXTX:POKEMC+24,0 :rem 62
2570 RETURN :rem 74
3000 REM *** BLANK OUT PART OF THE BEE :rem 174
3002 PRINT"{HOME}{2 DOWN}";FORY=0TOBC%;PRINT" "{NEYTY :rem 254
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 :rem 205
 :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, PRESIDENT :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, ANNOUNCE :rem 74
8060 DATAGARBAGE, ALARM, FARMER, SNEEZE, GENERAL :rem 115
8070 DATASPOON, WEIGHT, CONTAIN, FAMILY, MYSELF :rem 142
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.
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 $10.00 AL LOWANCE[2 SPACES]PER MONTH." :rem 98
170 PRINT"[2 DOWN] YOUR PARENTS MAY RAISE OR LOWER YOUR" :rem 203
175 PRINT "ALLOWANCE, BASED ON HOW WISELY YOU
{6 SPACES}SPEND IT."
:rem 57
180 PRINT "{2 DOWN} UNEXPECTED THINGS CAN SOMETIMES
HAPPEN" :rem 146
185 PRINT "WHICH WILL INCREASE OR DECREASE THE"
:rem 34
190 PRINT "MONEY YOU HAVE."
:rem 66
200 PRINT "{2 DOWN} A GAME CONSISTS OF 12 MONTHS, W
ITH"
:rem 143
205 PRINT "FOUR SPENDING DECISIONS PER MONTH."
:rem 56
210 FOR X=0 TO 12: FORY=0 TO 1: READ Z: ST%(X,Y)=Z: NEXT Y,X
:rem 209
220 GOSUB 1100: FORX=0 TO 11: READ X$: MT$(X)=X$: NEXT X: GO
SUB 1000
:rem 64
300 CB=0: AA=1000: IQ=0 :rem 128
310 RESTORE :rem 184
320 READX$: IFX$ <> "$" THEN 320
:rem 24
330 FORX=0 TO 99: FORY=0 TO 2: READX$: BT$(X,Y)=X$ : NEXT Y, X
:rem 22
340 FORX=0 TO 29: FORY=0 TO 2: READX$: CT$(X,Y)=X$: NEXT X, Y
:rem 17
400 FOR L1=0 TO 11: GOSUB 900: IQ=0
:rem 254
410 FOR L2=0 TO 3
:rem 61
420 IF L2=0 THEN 500
:rem 212
430 IF RND(1) > .10 THEN 500
:rem 29
440 X=INT(RND(1)*30): X$=CT$(X,0): IFX$="." THEN 440
:rem 202
450 PRINT "{CLR}" : CT$(X,0)="." :rem 166
452 POKE MC+0,0: POKE MC+1,0: IQ=0
:rem 181
460 FORZ=1 TO 30: NEXT Z: POKE MC+4,0 :rem 197
470 Y=VAL(CT$(X,1)): Z=VAL(CT$(X,2)): PRINT "{HOME}
{3 DOWN}" ; X$ ; ":" ; X$ = STR$(Y)
:rem 92
480 GOSUB 1200: IFZ < 0 THEN PRINT "{3 DOWN} YOU SPEND "; X$
:rem 207
485 IFZ > 0 THEN PRINT "{3 DOWN} YOU MAKE "; X$
:rem 253
490 CB=CB+(Y*Z): GOSUB 1000
:rem 184
500 FORX=0 TO 2
:rem 22
510 Y=INT(RND(1)*100): IFBT$(Y,0)="." THEN 510
:rem 134
520 RT(X)=Y: NEXT X
:rem 77
530 IFRT(Ø)=RT(1) OR RT(Ø)=RT(2) OR RT(1)=RT(2) THEN 500
:rem 212
540 PRINT "{CLR} {DOWN} "; MT$(L1): PRINT "{DOWN} DECISION 
#"; 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$):IFX<10RX>3THEN590 :rem 160
610 Y=VAL(BT$(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=1TO3: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
980 RETURN
1000 PRINT"{HOME}{24 DOWN}{12 SPACES}(PRESS ANY KE
Y)";
1010 GETX$:IFX$=""THEN1010
1020 RETURN
1100 POKEMC+0,0;POKEMC+1,0;POKEMC+5,79;POKEMC+6,12
9;POKEMC+24,15
1110 FORX=0TO12
1120 Y=INT(ST%(X,0)/256)
1130 POKEMC+0,ST%(X,0)-(Y*256)
1140 POKEMC+1,Y;POKEMC+4,17
1150 FORY=1TOST%(X,1)*75:NEXTY
1160 POKEMC+4,16:FORY=1TO20:NEXTY,X
1170 POKEMC+24,0
1180 RETURN
1200 X=VAL(X$):X$=STR$(X):X=LEN(X$):IFX>3THEN1230
1210 IFX=2THENY$=LEFT$(X$,-1)+"$0.0"+RIGHT$(X$,-1):GO
TO1280
1220 Y$=LEFT$(X$,1)+"$0."+RIGHT$(X$,2):GOTO1280
1230 X=X-3;Y$=LEFT$(X$,1)+"$"+MID$(X$,2,X)+"."+RIG
HT$(X$,2)
1280 X$=Y$;IFLEN(X$)>7THENRETURN
1290 Y$=""+Y$;GOTO1280
2000 IFX=>2ORAA<600ORIQ=0THEN960
2005 AA=AA-100
2100 PRINT"{2 DOWN} UNWISE SPENDING HAS CAUSED YOU
R"
2050 PRINT"{2 DOWN} UNWISE SPENDING HAS CAUSED YOU
R"
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 67
3130 DATA "SODA POP", 50, 1, "FIRECRACKERS", 100, 1
  :rem 67
3140 DATA "STINK BOMB", 150, 1, "PET MOUSE", 125, 1
  :rem 67
3150 DATA "WHITE RAT", 200, 1, "LOCKPICKING SET", 75, 1
  :rem 67
3160 DATA "PET SPIDER", 100, 1, "PELLET GUN", 250, 1
  :rem 50
3170 DATA "BUBBLE GUM", 50, 1, "MOTHER AND BABY RABBIT"
  :rem 212
3180 DATA "BROKEN ROLLER SKATE", 200, 1, "DRUM SET", 30
  :rem 254
3190 DATA "BUBBLE GUM", 50, 1, "MOTHER AND BABY RABBIT"
  :rem 212
3200 DATA "HOT FUDGE SUNDAE", 150, 2, "PET GOLDFISH", 1
  :rem 44
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
3230 DATA "BAKE OFF CHOCOLATES", 200, 2, "BUMPER STICKER"
  , 100, 2
3240 DATA "PAIR OF DICE", 100, 2, "PEN KNIFE", 100, 2
  :rem 243
3250 DATA "COMIC BOOK", 50, 2, "NOISY ROCK RECORD", 200
  , 2
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 DATA "HARMONICA", 100, 3, "HULA HOOP", 75, 3
  :rem 86
3320 DATA "ROLLER SKATES", 300, 3, "CHAMPION YO-YO", 20
  , 3
3330 DATA "T-BACK", 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
  , 3
3360 DATA "ICE CREAM CONE", 75, 3, "BUBBLE STUFF", 50, 3
  :rem 33
3370 DATA "BANJO", 400, 3, "CAP GUN", 200, 3
  :rem 187
3380 DATA FOOTBALL, 300, 3, "CATCHER'S MITT", 400, 3
3390 DATA "BASEBALL BAT", 250, 3, "BUG COLLECTION", 200, 3
3400 DATA "CAMPING TENT", 350, 3, "CANTEEN", 150, 3
3410 DATA "STAMP COLLECTION", 200, 4, "POSTAGE STAMPS", 200, 4
3420 DATA "BICYCLE PUMP", 300, 4, "TENNIS SHOES", 500, 4
3430 DATA "FROZEN YOGURT", 200, 4, "PENCILS", 175, 4
3440 DATA KITE, 300, 4, "DOG FOOD", 500, 4
3450 DATA "CAMPING TENT", 350, 4, "FILM DEVELOPING", 350, 4
3460 DATA "FINGER PAINTS", 350, 4, "COIN COLLECTION", 500, 4
3470 DATA "SHELL COLLECTION", 300, 4, "ELECTRIC TRAIN", 500, 4
3480 DATA "CHECKER SET", 275, 4, "SCOUT KNIFE", 300, 4
3490 DATA "MICKEY MOUSE WATCH", 500, 4, "COMPASS", 250, 4
3500 DATA "BOOK OF MAGIC", 300, 4, "TOY TYPEWRITER", 50, 4
3510 DATA "BIRTHDAY CARD", 150, 5, "NOTEBOOK", 300, 5
3520 DATA "DICTIONARY", 600, 5, "POCKET CALCULATOR", 650, 5
3530 DATA "SILVER DOLLAR", 700, 5, "DIARY", 400, 5
3540 DATA "TOM SAWYER BOOK", 300, 5, "CHESS SET", 450, 5
3550 DATA "DOMINOES", 400, 5, "SAVINGS ACCOUNT", 500, 5
3560 DATA "GET-WELL PRESENT", 300, 5, "BIRTHDAY PRESENT", 350, 5
3570 DATA "WEDDING PRESENT", 500, 5, "FLEA COLLAR", 250, 5
3580 DATA "KITTEN LITTER", 350, 5, "ANT FARM", 500, 5
3590 DATA "DRAWING PAPER", 550, 5, "GIFT FOR MOM", 600, 5
3600 DATA "GIFT FOR DAD", 600, 5, "WATERCOLOR SET", 575, 5
4000 DATA "GRANDMA SENDS YOU A CHECK FOR YOUR BIRTHDAY", 500, 1
4010 DATA "MOM PAYS YOU FOR BABYSITTING YOUR LITTLE BROTHER", 300, 1
4020 DATA "YOU SELL YOUR BASEBALL GLOVE TO YOUR FRIEND TOMMY", 400, 1
Level 2

4030 DATA" YOU MOW YOUR NEIGHBOR'S LAWN TO GET [5 SPACES]EXTRA MONEY", 300, 1 : rem 9
4040 DATA" MOM PAYS YOU FOR CLEANING 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]LEMONADE 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 [4 SPACES]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 loose 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
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 DATA 400, -1 :rem 255
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 cockroaches 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
100 TS=50
110 DIMWT$(TS-1),R%(20),NT%(30,1)
120 VC=53248:POKEVC+32,14:POKEVC+33,12:PRINTCHR$(1)
130 Z=((PEEK(53272)AND240)/16)*1024:M=Z+603:C=5529
6+603
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$=""THEN290 :rem 135
300 PRINT"{CLR}{3 DOWN}{2 SPACES}ENTER SKILL LEVEL
" :rem 217
310 PRINT"{2 DOWN}{6 SPACES}{RVS}1{OFF}
{SHIFT−SPACE}- BEGINNER":PRINT"{10 SPACES}(4 L
ETTERS)"
:rem 38
```
320 PRINT"[2 DOWN]{6 SPACES}{RVS}2{OFF} - INTERMED";PRINT"[10 SPACES]{5-6 LETTERS}" :rem 29
330 PRINT"[2 DOWN]{6 SPACES}{RVS}3{OFF}"
    {SHIFT-SPACE} - ADVANCED";PRINT"[10 SPACES]{7-9 LETTERS}" :rem 127
335 PRINT"[2 DOWN]{2 SPACES}{ENTER1,2 OR 3}":rem 192
340 GETX$: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$ :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$):FORY=1TOX:R%(Y)=0:NEXTY :rem 140
530 Z=INT(RND(1)*X)+1:IFR%(Z)<=0THEN530 :rem 11
540 R%(Z)=Y:NEXTX:SW$="":FORY=1TOX:SW$=SW$+MIDS(UW$,%(Y),1):NEXTY :rem 184
550 IPTh$<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$:;"{WHT}" ; :rem 208
600 GOSUB8000 :rem 222
605 IFUW$="Q"THEN680 :rem 23
610 IFUW$<>UW$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:POKEMC+33,X :rem 153
650 FORX=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$="Y"THEN300 :rem 66
750 IF X$ <> "N" THEN 730
760 GOSUB 6000: PRINT CHR$(147)
770 END

6000 REM *** PLAY THE SONG ***
6010 POKEMC+0, 0: POKEMC+1, 0: POKEMC+5, 39: POKEMC+6, 12
9: POKEMC+24, 8
6020 FORX=0 TO 30
6030 Y=INT(NT%(X, 0)/256)
6040 POKEMC+0, NT%(X, 0)-(Y*256)
6050 POKEMC+1, Y: POKEMC+4, 33
6060 FORY=1 TO NT%(X-1)*60: NEXT Y
6070 POKEMC+4, 32: FORY=1 TO 20: NEXT Y
6080 POKEMC+24, 0
6090 RETURN

6200 REM *** FIX THE TITLE ***
6210 Z=Z+52: X$="WORD{2 SPACES}SCRAMBLE"
6220 POKEMC+0, 0: POKEMC+1, 0: POKEMC+5, 15: POKEMC+6, 15
6230 FORX=1 TO 14
6240 POKEM+X, Y: PRINT X*3: POKEMC+4, 33
6250 Y=ASC(MID$(X$, X, 1))
6260 IF Y<>32 THEN Y=Y-64
6270 POKEZ+X, Y
6280 FORY=1 TO 40: NEXT Y
6290 FORY=1 TO 10: NEXT Y
6295 RETURN

7000 REM *** BAD ANSWER - BEEP IT ***
7010 POKEMC+0, 0: POKEMC+1, 10: POKEMC+4, 33: POKEMC+5, 1
5: POKEMC+6, 15: POKEMC+24, 5
7020 FORY=1 TO 50: NEXT Y
7030 POKEMC+4, 32
7040 FORY=1 TO 100: NEXTY
7050 PRINT "{HOME}{6 DOWN}{3 RIGHT}SCORE = " SC"
{5 SPACES}";
7060 RETURN

8000 SW$="": FORX=0 TO 19: POKEM+X, 32: POKEC+X, 0: NEXTX:
POKEM, 160
8010 GETX$: IF X$ < TI$ THEN 700
8020 Y$=MID$(TI$, 3, 2)+"."+MID$(TI$, 5, 2): PRINT
{HOME}{4 DOWN}{11 RIGHT}"; Y$
8025 IF X$="THEN$8010
8030 X=ASC(X$)
8040 IF X$<>133 THEN 8045
8042 PRINT "{6 DOWN}{11 RIGHT}{BLK}"; UW$=FORX=1 TO 15
00: NEXTX: PRINT "{WHT}{CLR}": SW$="Q": RETURN
8045 IF X$=13 THEN RETURN
8050 IF X$=20 THEN 8100
8055 IF X$<65 OR X$>90 THEN 8010

61
Level

2

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, QUIT, 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  DATA 2864,2,3608,2,4817,2,4817,2,4291,1,3608,2,4291,1,4817,2,4050,2 :rem 21
20030  DATA 3215,2,3608,2,4050,2,3608,2,2864,2,2408,2,2703,1,2864,2 :rem 170
20040  DATA 3608,2,4050,2,3608,2,2864,1,2408,2 :rem 162
Level 3: Intermediate Games (Grades 6-8)
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 computer 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 return 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 spelling 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 soup bowl 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 soup bowl, 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
100 VC=53248: MC=54272: POKEVC+32,3: POKEVC+33,1
102 PRINTCHR$(147): CB=828
104 LP=((PEEK(53272)AND240)/16)*1024: LP=LP+44
106 CO=55296-LP+44: CP=LP+840
108 FOR X=54272 TO 54296: POKE X,0: NEXT X
120 DIM L%(25, 2), W$(7): X=RND(-TI)
130 PRINT "{BLK}{11 SPACES}{RVS}* ALPHABET
{2 SPACES}SOUP {*OFF}"
140 PRINT "{2 DOWN}16 RANDOM LETTERS AND THEIR POINT VALUES WILL BE PRINTED."
150 PRINT "{2 DOWN}BUILD WORDS OF 2 OR MORE LETTERS EACH."
160 PRINT "{2 DOWN}END A ROUND EARLY BY USING ALL 16"
165 PRINT "LETTERS OR BY PRESSING {RVS}FL{OFF}".
170 PRINT "{2 DOWN}CANCEL A WORD BY USING '"O' FOLLOWED BY {2 SPACES}THE WORD."
180 PRINT "{2 DOWN}YOUR SCORE IS BASED ON WORD LENGTH AND {2 SPACES}LETTER VALUES."
185 GOSUB 7000
190 PRINT "{2 DOWN}{8 SPACES}(PRESS ANY KEY TO START T)
200 FOR W=0 TO 25: REAX,Y,Z: L& (W,0)=X: L& (W,1)=Y: L& (W, 2)=Z: NEXT W
210 GETX$: IFX$= "THEN210"
220 PRINTCHR$(147); "{3 DOWN} HOW MANY MINUTES SHOULD EACH GAME LAST??"; rem 240
225 PRINT "{3 DOWN} {7 SPACES} ENTER A NUMBER FROM {RVS}1{OFF} TO {RVS}4{OFF}";
230 GETRL$: 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 FOW=0 TO25 rem 77
310 FORX=1 TO4(W,1):POKE+LC,L$(W,0):LC=LC+1:NEXT
320 FORY=0 TO7:W$(X)= ":.NEXTX rem 249
330 FORX=0 TO30STEP2 rem 182
340 Y=INT(RND(1)*LC):Z=PEEK(CB+Y):IFZ=0 THEN340 :rem 46
350 POKECB+Y,0:POKELP+X,Z:POKELP+X+CO,0:W=L$(Z-1,2)+48 rem 24
360 POKELP+X+40,L:POKELP+X+40+CO,6:NEXTX rem 26
370 POKECP-1,62:POKECP-1+CO,4:TIS="000000":rem 97
400 WB$="#":LE=0:D$=0 rem 26
410 IFTI$>TL$:THEN000 rem 174
415 JS=MIDS(TIS,3,2)+ ":.MIDS(TIS,5,2)
416 PRINT "{HOME}{23 DOWN}";SPC(17);J$; rem 196
420 GETX$: IFX$="" THEN410 rem 124
430 X=ASC(X$):IFX=13 THEN600 rem 87
435 IFX=133 THEN800 rem 30
437 IFX=20 THEN1700 rem 27
440 IFX$="#"ANDLE=0 ANDD$=0 ANDWC=0 THEN410 rem 199
450 IFX<65 ORX=90 THEN GOTO1800:GOTO410 rem 71
455 IFD$=1 THEN490 rem 208
460 W=0 rem 94
465 IFPEEK(LP+W)=(X-64) THEN480 rem 10
470 W=W+2:IFW<32 THEN465 rem 114
475 GOSUB1800:GOTO410 rem 241
480 POKELP+W,32:POKELP+W+CO,1:POKELP+W+40,32:POKELP+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<17 THEN410 rem 191
600 X=LEN(WB$):IFX<2 THEN1800:GOTO410 rem 39
610 IFD$<>1 THEN700 rem 84
645 PRINT"{HOME}";X$;"{38 SPACES}" :rem 185
650 WC=WC-1:FOR Y=1 TO X:Z=0 :rem 78
660 IF PEEK(LP+Z)=32 THEN 665 :rem 49
670 Z=Z+2:GOTO 665 :rem 250
680 X$=MID$(WB$, Y, 1): W=ASC(X$)-64:POKE LP+Z,W :rem 254
690 P+Z+CO,0 :rem 64
700 PRINT"{DOWN}" ;X$ ;"{4 SPACES}" ;WB$ ; :rem 84
710 X=0 :rem 92
720 IF X$="." THEN 720 :rem 198
730 PRINT"{PRIVATE}";X$;"{4 SPACES}";WB$; :rem 94
740 PRINT"{DOWN}" ;X$ ;"{4 SPACES}" ;WB$ ; :rem 134
750 PRINT"{DOWN}" ;TOTAL SCORE =";W :rem 74
760 PRINT"{DOWN}" ;REPLAY OPTION?{3 SPACES} {RVS} Y :rem 43
770 PRINT"{DOWN}" ;REPLAY OPTION?{3 SPACES} {RVS} R :rem 44
780 GET X$: IF X$="" THEN 940 :rem 139
790 IF X$="Y" THEN 300 :rem 69
800 IF X$="R" THEN 220 :rem 68
810 IF X$="N" THEN 940 :rem 130
820 PRINTCHR$(147) ;"{2 SPACES}" ;SCORE" :rem 57
830 PRINT"{DOWN}" ;TOTAL SCORE =";W :rem 74
840 PRINT"{DOWN}" ;REPLAY OPTION?{3 SPACES} {RVS} Y :rem 43
850 PRINT"{DOWN}" ;REPLAY OPTION?{3 SPACES} {RVS} R :rem 44
860 PRINT"{DOWN}" ;TOTAL SCORE =";W :rem 74
870 PRINT"{DOWN}" ;REPLAY OPTION?{3 SPACES} {RVS} Y :rem 43
880 PRINT"{DOWN}" ;REPLAY OPTION?{3 SPACES} {RVS} R :rem 44
890 PRINT"{DOWN}" ;TOTAL SCORE =";W :rem 74
900 PRINT"{DOWN}" ;REPLAY OPTION?{3 SPACES} {RVS} Y :rem 43
910 PRINT"{DOWN}" ;REPLAY OPTION?{3 SPACES} {RVS} R :rem 44
920 PRINT"{DOWN}" ;TOTAL SCORE =";W :rem 74
930 PRINT"{DOWN}" ;REPLAY OPTION?{3 SPACES} {RVS} Y :rem 43
940 PRINT"{DOWN}" ;REPLAY OPTION?{3 SPACES} {RVS} R :rem 44
950 PRINT"{DOWN}" ;TOTAL SCORE =";W :rem 74
960 PRINT"{DOWN}" ;REPLAY OPTION?{3 SPACES} {RVS} Y :rem 43
970 PRINT"{DOWN}" ;REPLAY OPTION?{3 SPACES} {RVS} R :rem 44
980 END :rem 120
1700 IF X$="" THEN 940 :rem 213
1710 LE=LE-1 :rem 134
1720 X=PEEK(CP+LE):POKECP+LE,32:POKECP+LE+CO,1 :rem 63
1725 IFD%=1 THEN 1760: rem 50
1730 W=0: rem 143
1735 IF PEEK(LP+W)=32 THEN 1750: rem 145
1740 W=W+2: IF W<32 THEN 1735: rem 212
1750 POKELP+W,X: POKELP+W+CO,0: POKELP+W+40,L%(X-1,2)
(X-1,2)+48: POKELP+W+40+CO,6: rem 34
1760 IF LE=0 THEN WB$="": D%=0: GOTO 410: rem 224
1770 X$=LEFT$(WB$,LE): WB$=X$: GOTO 410: 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 FOR W=0 TO 200: NEXT W: POKEMC+4,16: rem 102
1830 FOR W=1 TO 20: NEXT W: POKEMC+24,0: rem 51
1840 RETURN: rem 173
7000 POKEMC+5,79: POKEMC+6,129: POKEMC+24,15: rem 192
7010 READ X,Y: IF X<0 THEN 7050: 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 FOR Z=1 TO (Y*75): NEXT Z: POKEMC+4,32: FOR Z=1 TO 20: NEXT
EXTZ: GOTO 7010: rem 21
7050 POKEMC+24,0: rem 120
7060 RETURN: rem 173
7100 DATA 4291,2,4291,1,4050,1,3608,2,3608,1,3608,1,
3608,1,3608,1,
: rem 202
7110 DATA 3215,1,2864,1,3215,1,3608,1,2864,4,-1,0
: rem 92
8000 DATA 4,9,1,2,2,3,3,2,3,4,4,2,3,2,3,4,4,2,5,2,6,2,7,3,
2,8,2,4,9,9,1
8010 DATA 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 DATA 19,4,1,20,6,1,21,4,1,22,2,4,23,2,4,24,1,8,
25,2,4,26,1,9: rem 59
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.

```plaintext
1 REM LAWN MOWER
100 VC=53248:POKEVC+32,13:POKEVC+33,6:PRINTCHR$(14
7)
110 DIMMT$(4),ST%(20,1)
120 FORX=0TO20:FORY=0TO1:READZ:ST%(X,Y)=Z:NEXTX,X
130 FORX=0TO4:READX$:MT$(X)=X$:NEXTX
140 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX
150 GOSUB4000
160 PRINT"[WHT]{7 DOWN} DAD LOANS YOU $15 SO YOU CAN RUN A"
170 PRINT" LAWN MOWING SERVICE FOR THE SUMMER."
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 $5 FOR EACH LAWN YOU MOW,
BUT"
185 PRINT" YOU MUST DEDUCT EXPENSES SUCH AS:" :rem 218
190 PRINT"{2 DOWN}{3 SPACES}GAS FOR THE MOWER"
193 PRINT"{3 SPACES}OIL FOR THE MOWER"
195 PRINT"{3 SPACES}LAWN AND LEAF BAGS"
200 PRINT"{3 SPACES}MOWER SHARPENING"
210 GOSUBL000:GOSUBL100
220 PRINT"{CLR}{2 DOWN} IF YOU RUN OUT OF SUPPLIES DURING THE"
225 PRINT" MONTH OR IF YOUR MOWER GETS DULL FROM"
230 PRINT" LACK OF SHARPENING, YOU Loose YOUR"
240 PRINT" INCOME FOR THE REST OF THAT MONTH."
250 PRINT"{2 DOWN} THE OBJECT OF THE GAME IS TO BUY YOUR"
255 PRINT" SUPPLIES WISELY SO THAT YOU CAN EARN"
260 PRINT" AS MUCH AS POSSIBLE DURING THE SUMMER."
270 GOSUBL100:POKEVC+33,15:PRINT"{BLK}";CHR$(147)
```

73
300 MO=1500:GA=0:OA=0:BA=0:SA=0  :rem 253
310 FOR L=0 TO 4:LM=0:MM=0  :rem 189
320 X=INT(RND(1)*71)+80:D1$="GAS";D2$="GALLON";GOSUB 1200  :rem 175
330 IF Y=0 THEN 350  :rem 178
340 GA=GA+(Y*100):MO=MO-(X*Y)  :rem 124
350 X=INT(RND(1)*51)+90:D1$="OIL";D2$="QUART";GOSUB 1200  :rem 138
360 IF Y=0 THEN 380  :rem 184
370 OA=OA+(Y*100):MO=MO-(X*Y)  :rem 143
380 X=INT(RND(1)*151)+200:D1$="LAWN BAGS";D2$="DOZEN";GOSUB 1200  :rem 69
390 IF Y=0 THEN 410  :rem 181
400 BA=BA+(Y*12):MO=MO-(X*Y)  :rem 65
410 X=INT(RND(1)*201)+400;GOSUB 1300:PRINT"{CLR}[2 DOWN][3 SPACES]MONTH = ;";MT$(L1):rem 23
420 PRINT"{2 DOWN}[3 SPACES]DO YOU WANT TO HAVE YOUR MOWER[10 SPACES]SHARPENED?"  :rem 204
422 PRINT"{2 DOWN}[3 SPACES]COST{2 SPACES}=";X$:rem 184
430 PRINT"{2 DOWN}[3 SPACES]ENTER {RVS}Y{OFF} OR {RVS}N{OFF}"  :rem 152
440 GET X$: IF X$="" THEN 440  :rem 129
450 IF X$="N" THEN 500  :rem 55
460 IF X$<>"Y" THEN 440  :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 IF MO<0 THEN GC=GC*2;OC=OC*2;BC=BC*2  :rem 222
530 X=1:IF (GA-GC)<0 THEN 700  :rem 233
540 X=2:IF (OA-OC)<0 THEN 700  :rem 251
550 X=3:IF (BA-BC)<0 THEN 700  :rem 227
560 X=4:IF (SA-1)<0 THEN 700  :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$(L1):PRINT"{2 DOWN}[3 SPACES]LAWN NUMBER";LM :rem 230
610 X=MM;GOSUB 1300:PRINT"{2 DOWN}[3 SPACES]MONEY MADE = ";X$:rem 4
620 PRINT"{2 DOWN}[3 SPACES]GAS LEFT{3 SPACES}= ";INT((GA+100)/100)  :rem 154
625 PRINT"{2 DOWN}[3 SPACES]OIL LEFT{3 SPACES}= ";INT((OA+100)/100)  :rem 176
630 PRINT"{2 DOWN}[3 SPACES]BAGS LEFT{2 SPACES}=";BA  :rem 207
640 FOR X=2 TO 0 STEP -2:GOSUB 660:NEXT X  :rem 225
650 FOR X=10 TO 0 STEP -2:GOSUB 660:NEXT X:GOTO 500  :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
675 POKEMC+24,X:POKEMC+8,40:POKEMC+4,129:POKEMC+10
 ,17
 :rem 155
680 FOR Y=1 TO 100:NEXT Y
 :rem 82
685 POKEMC+4,128:POKEMC+10,16
690 FOR Y=1 TO 20:NEXT Y
 :rem 36
695 RETURN
 :rem 132
700 POKEMC+0,0:POKEMC+1,25:POKEMC+7,0:POKEMC+8,0:POKEMC+5,15:POKEMC+6,15
 :rem 59
710 POKEMC+24,9:POKEMC+4,33:FOR Y=1 TO 500:NEXT Y
 :rem 41
715 POKEMC+4,32:FOR Y=1 TO 20:NEXT Y:POKEMC+24,0:PRINT
 CHR$(147); 
 :rem 225
720 ON X:GOTO 730,740,750,760
 :rem 185
730 PRINT"{2 DOWN}{3 SPACES}OUT OF GAS!":GOTO 770
 :rem 39
740 PRINT"{2 DOWN}{3 SPACES}OUT OF OIL!":GOTO 770
 :rem 49
750 PRINT"{2 DOWN}{3 SPACES}OUT OF LAWN BAGS!":GOTO 0770
 :rem 157
760 PRINT"{2 DOWN}{3 SPACES}MOWER NOT SHARP!"
 :rem 170
770 PRINT"{2 DOWN}{3 SPACES}LAWNS MOWED = ";LM
 :rem 163
 :rem 76
785 PRINT"{2 DOWN}{3 SPACES}MONEY MADE{2 SPACES}=
 {2 SPACES}";X$
 :rem 42
790 MO=MO+MM:X=MO:GOSUB 1300:PRINT"{2 DOWN}
 {3 SPACES}BALANCE{5 SPACES}={2 SPACES}";X$
 :rem 202
795 GOSUB 1100:NEXT L1
 :rem 221
800 PRINT"{CLR}{2 DOWN}";SPC(14);"SUMMER OVER!";X=
 MO:GOSUB 1300
 :rem 147
805 PRINT"{2 DOWN}{3 SPACES}CASH ON HAND = ";X$
 :rem 91
810 X=1500:GOSUB 1300:PRINT"{2 DOWN}{3 SPACES}LESS
 {SPACE}LOAN{4 SPACES}= ";X$
 :rem 244
820 MO=MO-1500:X=MO:GOSUB 1300: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 GET X$: IF X$=""THEN 840 
 :rem 137
850 IF X$="" THEN 300
 :rem 68
860 IF X$="" THEN 840
 :rem 128
870 PRINTCHR$(147)
 :rem 26
880 END
 :rem 119
1000 POKEMC+24,15:POKEVC+21,1
 :rem 144
FORX=0TO20:TT$=RIGHT$(TT$,LEN(TT$)-2):TT$=TT$ +"{2 SPACES}"
PRINT"{HOME}{5 DOWN};TT$; :rem 126
Y=INT(ST$(X,0)/256) :rem 54
POKEMC+0,ST$(X,0)-(Y*256) :rem 120
POKEMC+1,Y:POKEMC+4,17 :rem 84
Y=PEEK(VC+0)-14 :rem 86
IFY<1THENY=255:POKEVC+0,Y:POKEVC+16,0 :rem 81
POKEVC+0,Y :rem 109
PORY=1TOTST$(X,1)*60:NEXTY :rem 79
POKEMC+4,X:POKEMC+24,0:POKEVC+21,0 :rem 99
PRINT"{HOME}{3 DOWN}";SPC(15);"{RVS}LAWN MOE R[OFF]"; :rem 208
RETURN :rem 168
PRINT"{HOME}{24 DOWN}{12 SPACES}(PRESS ANY KE Y)"; :rem 40
GETX$:IFX$="THEN1110 :rem 215
RETURN :rem 164
PRINT"{CLR}{2 DOWN}{3 SPACES}MONTH = ";MT$(L1 ) :rem 88
GOSUB1300
PRINT"{2 DOWN}{3 SPACES}ITEM{2 SPACES}= ";D1$: :rem 140
PRINT"{2 DOWN}{3 SPACES}COST{2 SPACES}= ";X$: :rem 140
" PER ";D2$: :rem 140
PRINT"{2 DOWN}{3 SPACES}HOW MANY DO YOU WANT? :rem 97
":PRINT"{2 DOWN}{3 SPACES}ENTER {RVS}OF{OFF} T HROUGH {RVS}OF{OFF} T HROUGH {RVS}{OFF}"
IFZ<3THENX$=LEFT$(X$,1)+"$0.0"+RIGHT$(X$,1);GOTO1370 :rem 212
IFZ<4THENX$=LEFT$(X$,1)+"$0."+RIGHT$(X$,2);GOTO1370 :rem 167

3000 DATA8583,2,4291,2,4291,2,5407,1,5728,2,10814, :rem 240
2,10814,2,9634,2
3010 DATA8583,1,7217,2,8583,2,4291,2,4291,2,5407,2 :rem 140
6430,2,6430,2
3020 DATA6430,2,7217,2,8101,2,8101,2,8583,2 :rem 111
DATAMAY,JUNE,JULY,AUGUST,SEPTEMBER :rem 107
3200 DATA0,0,0,0,0,0,0,0,0,0,0,0,0,0,3,128,0,7,128,0 :rem 93
3,128,0,1,0,0,3
3210 DATA1,28,0,3,128,0,31,128,0,35,128,0,67,128,0,131,128:rem7
3220 DATA1,3,128,2,3,128,4,2,64,8,4,32,80,8,16,224,4,8,80,2,4,0:rem38
4000 REM *** SETUP FOR SPRITE ***:rem243
4010 FORX=832TO832+63:READZ:POKEX,Z:NEXTX:rem122
4020 POKEVC+0,60:POKEVC+1,55:POKEVC+16,1:POKEVC+23,1:POKEVC+28,0:rem66
4030 POKEVC+29,1:POKEVC+39,0:POKE2040,13:rem54
4040 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
9:rem6
4050 TT$="{24 SPACES}LAWN MOWER":rem210
4060 RETURN:rem170
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 DIM NT%(16,1), CT%(2,7,1), HT(18,8), VT(8), DT$(8),
    GT$(4) :rem 152
110 FOR X=0 TO 16:FORY=0 TO 1 :rem 3
120 READ Z:NT%(X,Y)=Z:NEXTY,X:rem 37
130 VC=53248:MC=54272 :rem 123
140 FORX=54272TO54296:POKEX,Ø:NEXTX :rem 176
150 POKEVC+32,6:POKEVC+33,11 :rem 113
160 SM=((PEEK(53272)AND240)/16)*1024 :rem 127
200 PRINTCHR$(147);"{WHT}{DOWN}*******************
    ft********************":rem 109
202 PRINT"{8 SPACES}PLAN{4SPACES}a{4SPACES}M
    ENU":rem 6
204 print11****************************************
    M;:rem50
210 PRINT"{2 DOWN}YOU WILL BE SHOWN A NUMBER OF FO
    ODS FROM SIX DIFFERENT FOOD GROUPS." :rem 224
220 PRINT"{DOWN}YOU MAY SELECT AS MANY ITEMS AS Yo
    U WANT FROM EACH GROUP." :rem 48
230 PRINT"{DOWN}IF DESIRED, YOU MAY BYPASS A GROUP
    AND{2 SPACES}NOT PICK ANYTHING FROM IT." :rem 2
240 PRINT"{DOWN}WHEN YOUR MENU IS COMPLETE, IT WIL
    L BE" :rem 171
250 PRINT"ANALYZED FOR ITS NUTRITIONAL VALUE." :rem 171
260 GOSUB1000 :rem 155
270 FOR X=0TO2:FORY=0TO7:FORW=ØTO1 :rem 148
280 READ Z:CT$(X,Y,W)=Z:NEXTW,Y,X :rem 39
290 FORX=ØTO8:READX$:DT$(X)X$:NEXTX :rem 29
300 FORX=ØTO4:READX$:GT$(X)X$:NEXTX :rem 20
310 PRINT"{2 DOWN}{8 SPACES}{PRESS ANY KEY TO STAR
    T}" :rem 103
Level 3

320 GETX$: IFX$ = "THEN320" : rem 123
330 RESTORE : rem 186
340 READX$: IFX$ <> "$" THEN340 : rem 28
400 REM ** MAIN LOOP ** : rem 127
410 FOR X = 0 TO 8: VT(X) = 0: NEXT X : rem 231
420 PRINT CHR$(147); " {3 DOWN} PLEASE ENTER YOUR SEX: " : rem 116
430 PRINT " {DOWN} {4 SPACES} ENTER {YEL}M {WHT} FOR MALE OR {YEL}F {WHT} FOR FEMALE " : rem 8
440 S$ = "" : POKE198, 0: INPUT " {DOWN} {2 SPACES} " ; S$ : rem 200
450 IF S$ <> "M" AND S$ <> "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$): IF X < 1 THEN X = 1 : rem 100
490 IF X > 99 THEN X = 99 : rem 106
500 IF X < 10 THEN S$ = "X" : rem 152
510 IF S$ = "M" THEN Y = 1 : rem 96
520 IF S$ = "F" THEN Y = 2 : rem 91
530 Z = 0 : rem 95
540 IF X <= CT%(Y, Z, 0) THEN560 : rem 11
550 Z = Z + 1: GOTO 540 : rem 243
560 CL$ = CT%(Y, Z, 1) : rem 213
600 PRINT CHR$(147); : READ X$ : rem 30
610 IF X$ = " $$$ " THEN800 : rem 86
620 PRINT " {DOWN} {RVS} " ; X$ ; " {OFF} [DOWN] " ; X = 0 : rem 159
630 READ X$: IF X$ = "$" THEN700 : rem 5
640 S$ = CHR$(X$ + 65) : rem 142
650 PRINT " {RVS} " ; S$ ; " {OFF} - " ; X$ : rem 37
660 FOR Y = 0 TO 8: READ Z: HT(X, Y) = Z: NEXT Y : rem 65
670 X = X + 1: GOTO 630 : rem 242
700 PRINT " {DOWN} {RVS} Z[OFF] - (GO TO NEXT CATEGORY) " : rem 203
710 GETX$: IFX$ = "THEN710" : rem 129
720 IF X$ = " A " OR X$ = " Z " THEN710 : rem 37
725 IFX$ = "Z" THEN600 : rem 73
730 Y = ASC(X$) + 64 : rem 105
740 IH = 0: FORX = SM + 120TOM + 960STEPM40 : rem 90
750 IF PEEK(X) = YTHENIH = X : rem 228
760 NEXT Y: IFIH = $THEN710 : rem 194
770 FOR Y = 0 TO 39: POKE1(IH + Z), 32: NEXT Y : rem 143
780 FORX = 0 TO 8: VT(X) = VT(X) + HT(Y-129, X): NEXT X : rem 210
790 GOTO 710 : rem 113
800 PRINT " {2 DOWN} THREE MEALS A DAY SIMILAR TO THE ONE YOU"; : rem 67
810 PRINT"JUST SELECTED WOULD FILL THESE NEEDS:
{2 DOWN}" :rem 239
820 Y=0:FOR X=0 TO 8 :rem 33
830 X$=DT$(X) :rem 185
840 IF LEN(X$)<10 THEN X$=X$+"{SHIFT-SPACE}" :GOTO 840 :rem 246
850 Z=VT(X)*3 :IF X=0 THEN Z=(Z*100)/CL% :rem 169
855 IF X>0 AND Z>100 THEN Y+1 :rem 170
860 GOSUB 1100 :PRINT"{3 SPACES}";X$;"-";S$ :rem 4
870 NEXT X :rem 54
880 X=ABS(W-100) :Y=INT(X/20) :IF Y<0 THEN Y=0 :rem 53
890 IF Y>4 THEN Y=4 :rem 244
900 PRINT"{2 DOWN} THE NUTRITIONAL VALUE OF THIS ME
NU WOULD BE RATED ",GT$(Y);"." :rem 24
910 PRINT"{2 DOWN}{12 SPACES}{PRESS ANY KEY}" :rem 60
920 GET X$ :IF X$="" THEN 920 :rem 135
930 X=CL%*7 :Y=VT(0)*21 :IF X=Y THEN X=-1 :GOTO 970 :rem 76
940 IF X>Y THEN X$="LOSE" :Z=X-Y :GOTO 960 :rem 59
950 X$="GAIN" :Z=Y-X :rem 105
960 X=INT(Z/3500) :IF X<1 THEN X=1 :rem 68
970 GOSUB 1200 :rem 227
980 PRINT"{3 DOWN}{2 SPACES} WANT TO PLAN ANOTHER ME
NU?{2 SPACES}({RVS}Y{OFF} OR {RVS}N{OFF})" :rem 19
995 IF X="Y" THEN 330 :rem 76
998 END :rem 130
1000 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12 :rem 9
1010 POKEMC+24,15 :rem 255
1020 FORX=0 TO 16 :POKEMC+4,17 :rem 164
1030 Y=INT(Y/256) :Y=Y-(Z*256) :rem 101
1040 POKEMC+0,Y:POKEMC+1,Z :rem 32
1050 FORY=1 TO T%$(X,1)*100:NEXTY :rem 63
1060 POKEMC+4,Y:FORY=1 TO 20 :NEXTY,X :rem 113
1070 POKEMC+24,0 :rem 132
1080 RETURN :rem 116
1090 S$=STR$(INT(Y))+"%" :rem 169
1100 IF Y>0 THEN RETURN :rem 14
1110 IF Y<0 THEN RETURN :rem 186
1120 S$="{SHIFT-SPACE}"+S$:GOTO 1110 :rem 52
1200 PRINT CHR$(147);"{3 DOWN} FOLLOWING A MENU LIKE
THE ONE JUST SHOWN" :rem 15
1210 IF X>0 THEN 1220 :rem 13
Level 3

1215 PRINT"WOULD CAUSE YOU TO KEEP YOUR SAME
[7 SPACES]WEIGHT LEVEL.":RETURN :rem 88
1220 PRINT"WOULD CAUSE YOU TO ";X$;X; "POUNDS"
:rem 212
1230 PRINT"EACH WEEK." :rem 2
1240 RETURN :rem 167
3000 DATA8101,2,7217,2,6430,4,8101,2,7217,2,6430,4
,6430,2,6430,2,6430,2 :rem 198
3010 DATA6430,2,7217,2,7217,2,7217,2,7217,2,8101,2
,7217,2,6430,4 :rem 125
3100 DATA1,1100,2,1250,3,1400,5,1600,7,2000,9,2200
,0,0,0,0 :rem 9
3110 DATA11,2500,13,2700,17,3000,21,2800,34,2800,5
,4,2600,99,2400,0,0 :rem 27
3120 DATA11,2250,13,2300,15,2400,17,2300,21,2000,3
,4,2000,54,1850,99,1700 :rem 224
3200 DATACALORIES,PROTEIN,"VITAMIN A","VITAMIN C",
"THIAMIN","RIBOFLAVIN" :rem 232
3210 DATANACIN,CALCIUM,IRON :rem 32
3300 DATAFAIR,AVERAGE,G00D,"VERY GOOD",EXCELLENT
:rem 45
3400 DATA"$" :rem 73
4000 DATA"[8 SPACES]MAIN[4 SPACES]COURS"ES
{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",193,36,0,6,5,8,3,6
: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"TUNAFISH",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

82
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
        :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}VEGETABLES{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, 1, .4, 0
        :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, 1.1
        :rem 153
4600 DATA "CORN ON THE COB", 114, 6, 10, 18, 10, 8, 9, 4, 4
        :rem 54
4610 DATA "BLACK EYE 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

83
4690 DATA "LETTUCE SALAD",13,1,1,28,43,2,2,1.5,3,3
   :rem 91
4700 DATA "$$"
   :rem 113
5000 DATA "{6 SPACES}GRAIN{4 SPACES}:rem 8
5010 DATA "BAGEL",165,9,6.0,9,6,6,.9,7
   :rem 183
5020 DATA "BISCUIT",103,3,0,0,5,5,4,3,2
   :rem 238
5030 DATA "WHITE BREAD",61,3,0,0,6,4,4,1.9,3
   :rem 244
5040 DATA "WHEAT BREAD",55,4,0,0,4,1.8,3,2,3
   :rem 235
5050 DATA "CORNBREAD",191,9,5,1.7,9,12,5,9,7
   :rem 36
5060 DATA "CORN FLAKES",72,2,0,0,5,4,3,2,3
   :rem 238
5070 DATA "HOMINY GRITS",62,2,1.5,0,3,2,3,1,2
   :rem 135
5080 DATA "EGG NOODLES",100,5,1,1,0,7,4,5,.8,4
   :rem 94
5090 DATA "OATMEAL",66,4,0,0,7,1,2,5,1,1,4
   :rem 170
5100 DATA "PANCAKE",61,3,1,4,0,4,5,1.5,6,1.7
   :rem 201
5110 DATA "COOKED RICE",112,3,0,0,7,4,5,1,5,15
   :rem 182
5120 DATA "DINNER ROLL",156,8,0,0,13,7,9,2,7
   :rem 28
5130 DATA "WHITE TOAST",61,3,0,0,6,4,4,1.9,3
   :rem 34
5140 DATA "CORN TORTILLA",63,2,1,0,3,1,2,1.5,6,5
   :rem 62
5150 DATA "WAFFLES",130,7,2,0,6,8,3,11,3
   :rem 32
5160 DATA "$$
   :rem 114
5500 DATA "{15 SPACES}FRUITS{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 "GRAPE",48,.6,1,4,5,3,1,2,1,9,1,7
   :rem 6
5570 DATA "MEDIUM ORANGE",65,2,5,110,9,3,3,3,5,3
   :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,.6,1,2,15,7,1,2,1,1,1
   ,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
5630 DATA "STRAWBERRIES",28,.8,.9,73,1.3,3,2,1.6,4
5640 DATA "WATERMELON",52,1.5,24,23,4,4,2,1.4,6
5650 DATA "APPLESAUCE",116,.5,1,1.7,2,.6,0,.5,3
5660 DATA "DRIED APRICOTS",39,1.2,33,3,0,1.2,3,1.0,4
5670 DATA "$$
6000 DATA "{15 SPACES}DRINKS"{14 SPACES}"
6010 DATA "BUTTERMILK",99,18,1.6,4,6,22,.7,29,.7
6020 DATA "HOT COCOA",64,15,5,3,5,19,1.4,22,3:rem 3
6030 DATA "WHOLE MILK",150,18,6,4,6,23,1,29,.7
6040 DATA "CHOCOLATE MILK",208,18,6,4,6,24,1.6,28,3
6050 DATA "2% LOWFAT MILK",121,18,10,4,6,24,1.1,30,.7
6060 DATA "SKIM MILK",86,19,10,4,6,20,1.1,30,6
6070 DATA "CHOCOLATE MILKSHAKE",356,20,5,0,9,39,1.9,40,5
6080 DATA "ORANGE JUICE",56,1.4,5,93,7,.6,2,1.1,.6
6090 DATA "TOMATO JUICE",26,1.7,19,32,4,2,5,.9,6
6100 DATA "BLACK COFFEE",2,0,0,0,0,3,.3,1.1
6110 DATA "COLA SOFT DRINK",96,0,0,0,0,0,0,0
6120 DATA "BEER",151,1.7,0,0,0,6,11,1.8,0
6130 DATA "WATER",0,0,0,0,0,0,0,0
6140 DATA "$$
6500 DATA "{12 SPACES}DESSERTS"{13 SPACES}"
6510 DATA "VANILLA ICE CREAM",135,5,5,.6,1.7,10,.3,9,.3
6520 DATA "STRAWBERRY YOGURT",225,20,2,2,5,22,1,31,.8
6530 DATA "AMERICAN CHEESE",106,14,7,0,5,6,1,17,6
6540 DATA "SWISS CHEESE",107,18,5,0,4,6,1,27,.3
6550 DATA "SALTED PEANUTS",211,14,0,0,8,3,31,3,4
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3

6560 DATA "COTTAGE CHEESE",109,29,3,0,1.5,10,.7,6,8 :rem 205
6570 DATA "GRAHAM CRACKERS",54,1.7,0,7,1.8,1,.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",89,1.9,0,3,2,2,1.6,1.7 :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,.6,.5,1.1,1.2 :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
The Stargazer
You are the emperor’s stargazer. The emperor expects you to foretell 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”:
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.

<table>
<thead>
<tr>
<th>Constellation</th>
<th>Constellation</th>
<th>Constellation</th>
<th>Constellation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andromeda</td>
<td>Cassiopeia</td>
<td>Hercules</td>
<td>Pisces</td>
</tr>
<tr>
<td>Aquarius</td>
<td>Cepheus</td>
<td>Hydra</td>
<td>Sagittarius</td>
</tr>
<tr>
<td>Aquila</td>
<td>Cetus</td>
<td>Leo</td>
<td>Scorpius</td>
</tr>
<tr>
<td>Aries</td>
<td>Corona Borealis</td>
<td>Lepus</td>
<td>Serpens</td>
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<tr>
<td>Bootes</td>
<td>Cygnus</td>
<td>Libra</td>
<td>Taurus</td>
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<tr>
<td>Cancer</td>
<td>Draco</td>
<td>Orion</td>
<td>Ursa Major</td>
</tr>
<tr>
<td>Canis Major</td>
<td>Eridanus</td>
<td>Pegasus</td>
<td>Ursa Minor</td>
</tr>
<tr>
<td>Capricornus</td>
<td>Gemini</td>
<td>Perseus</td>
<td>Virgo</td>
</tr>
</tbody>
</table>

1 REM STARGAZER
100 NS=32  :rem 200
110 DIMCT$(NS-1,3),ST$(NS-1,19),NT%(14,2)  :rem 212
120 PRINTCHR$(147):VC=53248:MC=54272  :rem 187
124 C$="{40 SPACES}"  :rem 47
126 POKEVC+32,6:POKEVC+33,15  :rem 127
130 FORX=0TO14:FORY=0TO2:READZ:NT%(X,Y)=Z:NEXTX  :rem 158
140 PRINT"[BLK][RVS][15 SPACES]STARGAZER!  :rem 158
150 PRINT"[DOWN]YOU WILL BE ASKED TO NAME  :rem 169
   ATIONS IN THE NIGHT SKY."  :rem 169
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160 PRINT"[DOWN]THE SKY DIRECTION AND OPTIMUM VIEWING{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 EXTRA{2 SPACES}CLUE." :rem 204
195 PRINT"[DOWN]TYPE {RVS}END{OFF} TO STOP THE GAME EARLY." :rem 205
200 GOSUB1000 :rem 206
210 CB=828:M=((PEEK(53272)AND240)/16)*1024:CC=5529
6 :rem 206
215 PRINT"{DOWN}{3 SPACES}(PRESS ANY KEY -- 10 SECOND 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"{BLK}{RVS}{40 SPACES}{OFF}"; :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"{BLK}{HOME}{13 DOWN}{RVS}";X$;"{OFF}"; :rem 144
480 X=0 :rem 97
490 Y=ST%(CI,X):IFY=0THEN510 :rem 180
500 POKEM+Y,174;X=X+1:GOTO490 :rem 240
510 PRINT"{2 DOWN}{BLK}{2 SPACES}CONSTELLATION? " :rem 72
520 X=10:GOSUB3000 :rem 10
530 IFX$="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 =";
            :rem 156
S%;
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
            :rem 218
E OVER!{OFF}"
630 PRINT"{3 DOWN}{4 SPACES}TOTAL POINTS{2 SPACES}"
            :rem 156
";S%
640 PRINT"{3 DOWN}{4 SPACES}TOTAL SCORE{2 RIGHT}=";
            :rem 200
X;"{LEFT}%"
660 PRINT"{3 DOWN}{4 SPACES}PLAY AGAIN? {{RVS}Y
            :rem 86
{OFF} OR {RVS}N{OFF}}";
670 GETX$;IFX$=""THEN670
            :rem 139
680 IFX$="Y"THEN300
            :rem 69
690 IFX$="N"THEN670
            :rem 130
700 GOSUBL000
            :rem 216
710 PRINTCHR$(147);END
            :rem 36
1000 POKEMC+24,15:POKEMC+5,79:POKEMC+6,129
            :rem 186
rem 186
1010 FORX=0TO14
            :rem 118
1020 POKEMC+0,NT%(X,0)
            :rem 213
1030 POKEMC+1,NT%(X,1)
            :rem 216
1040 POKEMC+4,17
            :rem 119
1050 FORY=1TONT%(X,2)*80:NEXTY
            :rem 73
1060 POKEMC+4,16:FORY=1TO30:NEXTY,X
            :rem 188
1070 POKEMC+24,0
            :rem 116
1080 RETURN
            :rem 169
2000 Y=0
            :rem 136
2010 Z=INT(RND(1)*NS)+1:IFPEEK(CB+Z)=0THENRETURN
            :rem 232
2020 Y=Y+1:IFY<9THEN2010
            :rem 152
2030 Z=1
            :rem 141
2040 IFPEEK(CB+Z)=0THENRETURN
            :rem 81
2050 Z=Z+1:GOTO2040
            :rem 77
3000 X$="";POKE198,0;INPUTX$
            :rem 109
3010 IFX$=CT$(CI,0)THEN3100
            :rem 243
3015 IFX$="END"THENRETURN
            :rem 59
3020 POKEVC+33,0;POKEMC+24,15;POKEMC+0,49;POKEMC+1
            :rem 110
,28
3030 POKEMC+5,15;POKEMC+6,15;POKEMC+4,17
            :rem 79
3040 FOR Y = 1 TO 100: NEXT Y; POKE MC + 4, 16 : REM 102
3050 PRINT "{HOME}{14 DOWN}"; C$; C$; C$; C$; C$; C$; C$; C$; C$;
$; C$; : REM 135
3060 POKE MC + 24, 0: POKE VC + 33, 1 : REM 101
3070 RETURN : REM 170
3100 X$ = "Q"; S$ = S$ + X : REM 124
3110 POKE MC + 24, 15: POKE MC + 0, 0: POKE MC + 5, 15: POKE MC + 6,
15: POKE MC + 1, 0 : REM 223
3120 FOR X = 15 TO 1 STEP -1 : REM 22
3130 POKE VC + 33, X: POKE MC + 1, Y: POKE MC + 4, 17 : REM 106
3140 FOR Z = 1 TO 50: NEXT Z: POKE MC + 4, 16 : REM 61
3150 Y = Y + 10: NEXT X : REM 21
3160 POKE MC + 24, 0 : REM 118
3170 RETURN : REM 171
9000 DATA 104, 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 DATA 143, 12, 2, 143, 12, 2, 218, 11, 2, 218, 11, 2, 143, 1
0, 2, 143, 10, 2, 104, 9, 8 : REM 104
9100 DATA CEPHEUS, JUNE, NORTH : REM 6
9110 DATA "THE PULSATING STARS, OR CEPHEIDS, FIND
{2 SPACES}THEIR PROTOTYPE HERE" : REM 35
9120 DATA 100, 170, 147, 300, 309, 0 : REM 230
9130 DATA CASSIOPEIA, JUNE, NORTH : REM 221
9140 DATA "TYCHO BRAHE OBSERVED A NOVA HERE IN
{5 SPACES}1572" : REM 22
9150 DATA 129, 107, 294, 178, 301, 0 : REM 252
9160 DATA BOOTES, JUNE, SOUTH : REM 211
9170 DATA "IT WAS ERRONEOUSLY CALLED 'ORION' IN
{4 SPACES}AMOS 5:8" : REM 6
9180 DATA 14, 61, 172, 221, 258, 383, 420, 427, 0 : REM 231
9190 DATA ARA, JUNE, SOUTH : REM 116
9200 DATA "ITS STARS WERE ONCE KNOWN AS SCORPIO'S
{2 SPACES}CLAWS" : REM 50
9210 DATA 16, 132, 183, 380, 0 : REM 250
9220 DATA DRACO, JUNE, NORTH : REM 101
9230 DATA "ITS BODY WINDS BETWEEN THE BIG AND THE
{2 SPACES}LITTLE DIPPERS" : REM 37
9240 DATA 16, 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 DATA 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"

9300 DATA 18, 96, 101, 180, 301, 378, 454, 0 : REM 241
9310 DATA CYGNUS, JUNE, EAST : REM 32
9310 DATA CYGNUS, 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 :rem 27
9370 DATA"CORONA BOREALIS",JUNE,EAST :rem 251
9380 DATA"BACCHUS GAVE ARIADNE THIS WREATH OF [5 SPACES]GEMS" :rem 6
9390 DATASAGITTARIUS,JULY,SOUTH :rem 142
9400 DATA"ANTARES IS ONE REASON IT SHINES SO [6 SPACES]BRIGHTLY" :rem 238
9410 DATA29,32,74,149,158,185,223,234,296,298,301,334,341,372,421,454,460,0 :rem 190
9420 DATA"THE MAINSAIL' STAR GROUP RIDES ON THIS [SPACE]SERPENT'S BACK" :rem 107
9430 DATA1,40,129,94,176,220,345,36,478,0 :rem 121
9440 DATASAGITTARIUS,JULY,SOUTH :rem 111
9450 DATA"THE CENTAUR LOOKS MORE LIKE A TEAPOT IN
[SPACE]THE SKY" :rem 124
9460 DATA29,32,74,149,158,185,223,234,296,298,301,334,341,372,421,454,460,0 :rem 188
9470 DATA"ITS MANE IS FORMED BY 'THE SICKLE' STAR [SPACE]GROUP"
9480 DATA"THE WATER FROM HIS JAR FEEDS THE
[8 SPACES]'SOUTHERN FISH'" :rem 232
9500 DATA5,9,47,89,52,178,203,267,325,361,403,0 :rem 221
9510 DATASAGITTARIUS,JULY,SOUTH :rem 83
9520 DATASAGITTARIUS,JULY,SOUTH :rem 176
9530 DATA"IT IS AESCULAPIUS' SNAKE, THE SYMBOL OF
[SPACE]MEDICINE" :rem 252
9540 DATASAGITTARIUS,JULY,SOUTH :rem 82
9550 DATASAGITTARIUS,JULY,SOUTH
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 DATASAGITTARIUS,JULY,SOUTH :rem 82
9590 DATA"THE WATER FROM HIS JAR FEEDS THE
[8 SPACES]'SOUTHERN FISH'" :rem 232
9600 DATA5,9,47,89,52,178,203,267,325,361,403,0 :rem 80
9610 DATASAGITTARIUS,JULY,SOUTH :rem 83
9620 DATASAGITTARIUS,JULY,SOUTH :rem 4
9630 DATA29, 32, 65, 109, 105, 125, 143, 147, 165, 169, 210, 260, 292, 298, 374, 376, 454, 0 :rem 193
9640 DATAACAPRICORNUS, 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 DATALTAURUS, 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 DATAS50, 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 DATAS3, 47, 129, 136, 140, 210, 294, 336, 343, 381, 0 :rem 18
9760 DATAORION, NOVEMBER, EAST :rem 90
9770 DATA"BETELGEUSE AND RIGEL ARE FOUND HERE"
:rem 216
9780 DATAS92, 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 DATAS109, 170, 187, 330, 343, 349, 429, 0 :rem 145
9820 DATAARIAS, OCTOBER, EAST :rem 244
9830 DATA"ITS GOLDEN FLEECE WAS WORN BY JASON"
:rem 198
9840 DATAS212, 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 DATAS132, 149, 218, 263, 0 :rem 60
9880 DATACETUS, DECEMBER, SOUTH :rem 153
9890 DATA"DENEBKAI I T S THE 'SEA MONSTER'S'
{5 SPACES}MAJOR STAR" :rem 90
9900 DATAS1, 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 DATAS25, 220, 229, 261, 250, 292, 336, 338, 458, 0 :rem 235
9940 DATA"CANSIS MAJOR", JANUARY, SOUTH :rem 32
Level 3

9950 DATA "'SIRIUS' ASTRONOMY STUDENTS WILL RECOGNIZE THIS"
   {8 SPACES} :rem 190
9960 DATA 18, 61, 105, 220, 298, 336, 347, 381, 414, 423, 0
   {8 SPACES} :rem 127
9970 DATA LEPUS, JANUARY, SOUTH
   {6 SPACES} :rem 129
9980 DATA "THIS RABBIT IS FLEEING FROM ORION,
   {6 SPACES} 'THE HUNTER'"
   {6 SPACES} :rem 166
9990 DATA 92, 136, 220, 187, 294, 336, 301, 345, 389, 0
   {6 SPACES} :rem 249
10000 DATA ERIANUS, JANUARY, SOUTH
   {6 SPACES} :rem 107
10010 DATA "'THE RIVER' IS THOUGHT TO REPRESENT
   {5 SPACES} CHINA'S RIVER PO"
   {5 SPACES} :rem 37
10020 DATA 14, 50, 56, 100, 141, 134, 296, 338, 381, 460, 0
   {5 SPACES} :rem 94
10030 DATA PEGASUS, DECEMBER, SOUTH
   {6 SPACES} :rem 72
10040 DATA "THREE STARS OF THE 'GREAT SQUARE' FORM
   {2 SPACES} ITS TORSO"
   {2 SPACES} :rem 27
10050 DATA 12, 105, 178, 185, 149, 298, 349, 316, 378, 463, 0
   {2 SPACES} :rem 233
“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
Kentucky, North Dakota, Wyoming
If you are still unable to name a state after the first four questions, a map of the continental United States will be shown, with the state in question indicated. Your final question will be to identify the state from its location.

If you are still unable to identify the state after seeing its location 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 receive 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.

```plaintext
1 REM STATE. UNION
100 NS=50:CB=828
110 VC=53248:POKEVC+32,2:POKEVC+33,6:PRINTCHR$ (147 )
120 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX
130 DIM QT$(5),NT%(22,1)
140 READX$:IFX$<>"$SONG" THEN140
150 FORX=0TO22:FORY=0TO1:READZ:NT%(X,Y)=Z:NEXTY,X
160 SM=((PEEK(53272)AND240)/16)*1024
170 CM=55296
200 GOSUB790
205 S%=0:FORX=1TONS:POKECB+X,0:NEXTX:POKEVC+32,6:POKEVC+33,15:PRINTCHR$ (147 )
210 FORX=1TONS:GOSUB800:POKECB+Z,X:NEXTX
300 X=1
305 Y=PEEK(CB+X):Y=(Y-1)*6
310 RESTORE:IFY=0 THEN330
```
320 FOR W=1 TO Y: READ X$: NEXT W
330 FOR W=1 TO 6: READ X$: QT$(W-1)=X$: NEXT W: rem 127
400 W=0: rem 88
405 PRINT CHR$(147); "[BLK]{23 DOWN}\"; SPC(15); "SCORE ="; S%;: rem 168
410 PRINT "[HOME]{2 DOWN}{3 SPACES}QUESTION \#"; W+1: rem 36
420 PRINT "[3 DOWN]\"; QT$(W); "[3 DOWN]\": rem 38
430 X$="": POKE 198, 0: INPUT X$: IF X$=QT$(4) THEN 500
435 IF X$="END" THEN 600: rem 196
440 POKE VC+33, 0: POKE MC+0, 0: POKE MC+1, 20: POKE MC+4, 33: rem 161
450 POKE MC+5, 15: POKE MC+6, 15: rem 161
452 POKE MC+4, 32: FOR V=1 TO 200: NEXT V: rem 54
454 POKE MC+24, 1: PRINT CHR$(147); "[BLK]{2 DOWN}{3 SPACES}STATE="; QT$(4); "[BLK]\"; S%=(S%+5) : rem 208
455 IF W=4 THEN 465: rem 195
456 W=W+1: IF W<4 THEN 405: rem 62
457 GOSUB 4000: rem 228
458 IF X$=QT$(4) THEN 500: rem 251
459 IF X$="END" THEN 600: rem 202
460 W=4: GOTO 440: rem 109
465 PRINT "[BLU]{2 DOWN}{3 SPACES}STATE="; QT$(4); "[BLK]\"; S%=(S%+5): rem 208
470 FOR W=1 TO 1500: NEXT W: rem 128
480 GOTO 590: rem 115
500 S%=S%+(5-W): rem 247
510 POKE MC+9, 0: POKE MC+1, 0: POKE MC+5, 15: POKE MC+6, 15: POKE MC+24, 9: rem 131
520 FOR W=1 TO 15: rem 78
530 POKE VC+33, V: POKE MC+1, V*3: POKE MC+4, 33: rem 145
540 FOR W=1 TO 30: NEXT W: POKE MC+4, 32: rem 4
550 FOR W=1 TO 10: NEXT W: rem 26
560 NEXT W: rem 48
570 POKE MC+24, 0: rem 72
590 X=INT((S%*100)/(X*5)): rem 233
600 PRINT CHR$(147); "[DOWN]{15 SPACES}TEST OVER R1[OFF]\": rem 226
610 PRINT "[3 DOWN]{4 SPACES}YOUR SCORE = "; S%: rem 86
620 IF S%<0 THEN S%=-0: rem 31
625 X=X-1: IF X=1 THEN X=1: rem 107
630 X=INT((S%*100)/(X*5)): rem 37
640 PRINT "[DOWN]{4 SPACES}YOUR GRADE = "; X; "[LEFT]\": rem 63
660 GET X$: IF X$="THEN 660": rem 137
670 IFX$="Y" THEN 205  : rem 72
680 IFX$="N" THEN 660  : rem 128
690 GOSUB 900: PRINTCHR$(147)  : rem 109
695 END  : rem 123
700 PRINT"{WHITE}{2 SPACES}{REVERSE}{9 SPACES}STATE OF THE UNION{9 SPACES}{OFF}"  : rem 145
705 PRINT"{DOWN} YOU WILL BE ASKED UP TO 5 QUESTIONS ABOUT EACH U.S. STATE." : rem 41
710 PRINT"{DOWN} POINTS WILL BE GIVEN DEPENDING UPON" : rem 95
712 PRINT" HOW MANY QUESTIONS YOU NEED:" : rem 172
715 PRINT"{2 DOWN}{2 SPACES}1 QUESTION{2 SPACES}= {2 SPACES}5." : rem 128
720 PRINT"{2 SPACES}3 QUESTIONS ={2 SPACES}3." : rem 173
722 PRINT"{2 SPACES}5 QUESTIONS ={2 SPACES}1." : rem 8
725 PRINT"{2 SPACES}ALL MISSED{2 SPACES}= -5." : rem 218
730 PRINT"{2 DOWN} TYPE {REVERSE}END{OFF} TO QUIT EARLY." : rem 219
785 PRINT"{DOWN}{10 SPACES}(PRESS ANY KEY TO START)" : rem 136
786 GOSUB 900 : rem 190
787 RETURN : rem 83
790 GETX$ : IFX$="" THEN 790 : rem 145
795 RETURN : rem 133
800 W=0  : rem 92
810 Z=INT((RND(1)*NS)+1) : IF PEEK(CB+Z)=0 THEN RETURN : rem 62
820 W=W+1 IF W<9 THEN 810 : rem 15
830 Z=1  : rem 99
840 IF PEEK(CB+Z)=0 THEN RETURN : rem 39
850 Z=Z+1: GOTO 840  : rem 249
900 POKEMC+0,0: POKEMC+1,0: POKEMC+5,79: POKEMC+6,129 : rem 243
905 POKEMC+24,15  : rem 41
910 FOR X=0 TO 22  : rem 5
920 Y=INT(NT%(X,0)/256)  : rem 76
930 POKEMC+0, NT%(X,0)-(Y*256)  : rem 41
940 POKEMC+1, Y: POKEMC+4,17  : rem 28
950 FOR Y=1 TO NT%(X,1)*40: NEXT Y  : rem 121
960 POKEMC+4,16: FOR Y=1 TO 20: NEXT Y, X: POKEMC+24,0  : rem 128
970 RETURN  : rem 64
1000 DATA "JEFFFERSON DAVIS BECAME PRESIDENT OF THE {SPACE}CONFEDERACY HERE" : rem 64
1010 DATA"THE SOUTH'S LARGEST STEEL PRODUCING STATE":rem 201
1020 DATA"IT'S FAMOUS FOR MAGNOLIAS, COTTON, AND 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 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 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 :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", ARKANSAS, 583 :rem 106
1160 DATA"THE MOST POPULOUS OF THE STATES":rem 27
1170 DATA"IT CONTAINS THE LOWEST ELEVATION IN NORTH AMERICA":rem 157
1180 DATA"THERE WAS 'GOLD IN THEM THAR HILLS'":rem 111
1190 DATA"THE STATE CAPITAL IS SACRAMENTO", CALIFORNIA, 444 :rem 222
1200 DATA"THE STATE WITH THE HIGHEST OVERALL ELEVATION":rem 104
1210 DATA"IT PRODUCES 72% OF THE WORLD'S MOLYBDENUM":rem 38
1220 DATA"ITS NAME MEANS 'COLORED RED' IN SPANISH":rem 134
1230 DATA"THE STATE CAPITAL IS DENVER", COLORADO, 41 :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", CONNECTICUT, 275 :rem 179
THE FIRST STATE TO RATIFY THE CONSTITUTION

IT IS SOMETIMES CALLED THE 'CHEMICAL CAPITAL OF THE WORLD'

AMERICA'S SECOND SMALLEST STATE

THE STATE CAPITAL IS DOVER, DELAWARE

ITS COASTLINE MEASURES 1,350 MILES

THE SOUTHERNMOST OF THE CONTINENTAL U.S.

THE HOME OF CAPE CANAVERAL

AMERICA'S SMALLEST STATE

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THE SOUTHERNMOST OF THE CONTINENTAL U.S.
1540 DATA "THE STATE CAPITAL IS INDIANAPOLIS", INDIANA, 427
1550 DATA "THIS FARMING STATE PRODUCES 10% OF AMERICA'S FOOD"
1560 DATA "IT IS THE LEADING LOG STATE IN THE U.S"
1570 DATA "IT IS BORDERED BY SIX FARMING AND TWO GREAT LAKE STATES"
1580 DATA "IT PRODUCES MORE WHEAT THAN ANY OTHER STATE"
1590 DATA "IT HAD ITS OWN CIVIL WAR OVER SLAVERY IN 1821"
1600 DATA "LEAVENWORTH FEDERAL PENITENTIARY IS HERE"
1610 DATA "THE STATE CAPITAL IS TOPEKA", KANSAS, 459
1620 DATA "PRESIDENTS OF BOTH CIVIL WAR FACTIONS CAME FROM THIS STATE"
1630 DATA "IT IS THE SITE OF THE WORLD'S MOST FAMOUS HORSE RACE"
1640 DATA "MAMMOTH CAVE AND FORT KNOX ARE HERE", KENTUCKY, 468
1650 DATA "IT CONTAINS THE NATION'S SECOND BUSIEST SEAPORT"
1660 DATA "IT IS DIVIDED INTO PARishes, AND NOT COUNTIES"
1670 DATA "THE State CAPITAL IS BATON ROUGE", LOUISIANA, 704
1680 DATA "THE HOME OF CAJUNS, CRAWFISH AND MARDI GRAS"
1690 DATA "THIS STATE HAD A 'TEA PARTY' BUT NOT IN SPACE BOSTON"
1700 DATA "IT WAS A PART OF MASSACHUSETTS UNTIL 1820"
1710 DATA "THE STATE CAPITAL IS AUGUSTA"
1720 DATA "IT IS FAMOUS FOR ITS LOBSTER", MAINE, 116
1730 DATA "THE ONLY STATE WITH A STATE SPORT -- JOUSTING"
1740 DATA "THE FIRST STATE TO RATIFY THE CONSTITUTION"
1750 DATA "IT STRADDLES ChesAPEAKE BAY"
1760 DATA "THE STATE CAPITAL IS ANnapolis", MARYLAND, 393
1770 DATA "THE PILGRIMS FIRST LANDED HERE"
1780 DATA "HOME OF THE INFAMOUS SALEM WITCH TRIALS"
1810 DATA"THE HOME OF HARVARD UNIVERSITY" :rem 241
1820 DATA"THE STATE CAPITAL IS BOSTON", MASSACHUSETTS, 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} 'LARGERIVER'" :rem 149
1930 DATA"THE STATE CAPITAL IS JACKSON", MISSISSIPPI, 
1,625 :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", MISSOURI, 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
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
     :rem 112
Evada, 407
2100 DATA "IT SHARED A GOVERNOR WITH MASSACHUSETTS
     :rem 83
{SPACE} FROM 1699-1741"
2110 DATA "AS THE 9TH STATE TO RATIFY, IT MADE THE
     :rem 56
{SPACE} CONSTITUTION LEGAL"
2120 DATA "PUBLIC PARK LANDS COMPRISE ONE-FIFTH OF
     :rem 178
{2 SPACES} THIS STATE"
2130 DATA "THE STATE CAPITAL IS CONCORD", "NEW HAMPS
     :rem 238
HIRE", 195
2140 DATA "ONE OF ITS CITIES WAS USED AS A PATTERN
     :rem 9
{SPACE} FOR THE MONOPOLY BOARD"
2150 DATA "THE STATE CAPITAL IS TRENTON":rem 76
2160 DATA "THE HOME OF PRINCETON AND RUTGERS
     :rem 33
{7 SPACES} UNIVERSITIES"
2170 DATA "THE SITE OF 'AMERICA'S OTHER LAS VEGAS'
     , "NEW JERSEY", 314
     :rem 85
2180 DATA "IT LEADS THE NATION IN URANIUM
     :rem 152
{10 SPACES} PRODUCTION"
2190 DATA "THE FIRST ATOMIC BOMB WAS PRODUCED AND
     :rem 253
{2 SPACES} EXPLODED HERE"
2200 DATA "THE STATE CAPITAL IS SANTA FE":rem 32
2210 DATA "CARLSBAD Caverns is its major tourist
     :rem 614
{3 SPACES} ATTRACTION", "NEW MEXICO", 614
2220 DATA "ITS LARGEST CITY WAS THE FIRST U.S.
     :rem 143
{5 SPACES} CAPITOL"
2230 DATA "IT LEADS THE NATION IN MANUFACTURING"
     :rem 195
2240 DATA "IT CONTAINS THE NATION'S LARGEST CITY
     :rem 64
{3 SPACES} AND PORT"
2250 DATA "THE STATE CAPITAL IS ALBANY", "NEW YORK",
     :rem 169
233
2260 DATA "THE WRIGHT BROTHERS' FIRST PLANE FLEW
     :rem 184
{3 SPACES} HERE"
2270 DATA "HOME OF THE NEW WORLD'S 'LOST COLONY'
     :rem 24
2280 DATA "IT LEADS THE NATION IN TOBACCO
     :rem 115
{10 SPACES} PRODUCTION"
2290 DATA "THE STATE CAPITAL IS RALEIGH", "NORTH CAR
     :rem 46
OLINA", 551
2300 DATA "THE BIRTHPLACE OF ULYSSES GRANT AND SIX
     :rem 117
{SPACE} OTHER PRESIDENTS"
2310 DATA "THE ABOLITIONIST MOVEMENT BEGAN HERE"
     :rem 130
2320 DATA "IT LEADS THE NATION IN LIME PRODUCTION"
     :rem 154
2330 DATA "THE STATE CAPITAL IS COLUMBUS", OHIO, 389
2340 DATA "90% OF THIS RURAL STATE IS DEVOTED TO
   FARM LAND"
2350 DATA "HOME OF THE BADLANDS"
2360 DATA "SITE OF THE RED RIVER VALLEY"
2370 DATA "THE STATE CAPITAL IS BISMARCK", "NORTH DAKOTA", 178
2380 DATA "IT WAS THE BIRTHPLACE OF WILL ROGERS"
2390 DATA "IT WAS PART OF INDIAN TERRITORY DURING
   THE 19TH CENTURY"
2400 DATA "INDIANS WANTED PART OF ITS LAND TO
   BECOME THE STATE OF SEQUOYA"
2410 DATA "THE STATE CAPITAL IS OKLAHOMA CITY", OKLAHOMA, 620
2420 DATA "IN 1811 JOHN JACOB ASTOR FOUNDED A FUR
   DEPOT HERE"
2430 DATA "IT BOASTS THE NATION'S DEEPEST LAKE,
   CRATER LAKE"
2440 DATA "IT LEADS THE NATION IN LUMBER PRODUCTION"
2450 DATA "THE STATE CAPITAL IS SALEM", OREGON, 205
2460 DATA "BENJAMIN FRANKLIN IS ITS MOST FAMOUS
   SON"
2470 DATA "THE HOME OF THE 1ST RADIO STATION
   -- KDKA"
2480 DATA "VALLEY FORGE AND GETTYSBURG ARE BOTH IN
   THIS STATE"
2490 DATA "THE STATE CAPITAL IS HARRISBURG", PENNSYLVANIA, 312
2500 DATA "ROGER WILLIAMS STARTED THE STATE'S FIRST
   SETTLEMENT IN 1636"
2510 DATA "IT WAS THE LAST OF THE ORIGINAL COLONIES
   TO RATIFY THE CONSTITUTION"
2520 DATA "IT IS THE NATION'S SMALLEST STATE, AND
   IS NOT AN ISLAND"
2530 DATA "THE STATE CAPITAL IS PROVIDENCE", "RHODE ISLAND", 276
2540 DATA "THE CIVIL WAR STARTED HERE"
2550 DATA "IT WAS THE 1ST STATE TO SECEDE FROM THE
   UNION"
2560 DATA "IT IS THE BIGGEST PEACH-PRODUCING STATE
   EAST OF CALIFORNIA"
2570 DATA "THE STATE CAPITAL IS COLUMBIA", "SOUTH CAROLINA", 551
2580 DATA "IT CONTAINS THE GEOGRAPHICAL CENTER OF
   THE U.S"
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 DAKOTA", 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", TENNESSEE 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 FUGHT 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 "BRIIGHAM YOUNG LED THE FIRST MORMON [6 SPACES] SETTLERS HERE"
:rem 101
2730 DATA "THE STATE CAPITAL IS SALT LAKE CITY", UTAH, 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 VIRGINIA", 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
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,
294 :rem 156
3900 DATA "$SONG" :rem 133
3910 DATA 6430,2,5407,2,6430,4,6430,2,5407,2,6430,4
,6430,2,5407,2,6430,2 :rem 215
3920 DATA 7217,2,6430,2,5407,2,6430,4,0,1,5407,2,57
28,2,6430,2,5728,4 :rem 77
3930 DATA 4817,2,6430,2,5728,4,4817,2,4291,8
:rem 146
4000 V = VAL(QT$(5)) :rem 218
4002 POKE VC+33,6 :rem 129
4008 PRINTCHR$(147); "[WHT][DOWN][4 SPACES][D]
[RVS][U][Y][U][OFF][I][O]" :rem 25;
"[RVS][OFF][K]" :rem 75
4010 PRINT "[4 SPACES][L][RVS][7 SPACES][2 T]
[2 Y][2 U][OFF][O][2 P][OFF]
[13 SPACES][RVS][2 SPACES][OFF][K]" :rem 41
4020 PRINT "[4 SPACES][RVS][17 SPACES][C][OFF]
[11 SPACES][RVS][2 SPACES][OFF]"
" :rem 237
4030 PRINT "[3 SPACES][RVS][19 SPACES][E][E]
[E][U][*][OFF][4 SPACES][RVS][
[3 SPACES][OFF][K]"
" :rem 170
4040 PRINT "[2 SPACES][RVS][22 SPACES][OFF]
[7 SPACES][RVS][4 SPACES][C][OFF]"
" :rem 239
4050 PRINT "[2 SPACES][RVS][24 SPACES][OFF] [RVS]
[4][OFF][2 SPACES][RVS][V][4 SPACES][OFF]
[5U]" :rem 219
4060 PRINT"{2 SPACES}{RVS}24 SPACES}{OFF}{RVS}
   {2 SPACES}{OFF}{RVS}3 SPACES}{OFF}¥€K"
   :rem 209
4070 PRINT"{2 SPACES}{RVS}H23 SPACES}{U}¥
   {8 SPACES}{OFF}"
   :rem 172
4080 PRINT"{2 SPACES}{L}31 SPACES}{OFF}¥€"  
   :rem 160
4090 PRINT"{2 SPACES}{N}31 SPACES}{OFF}¥V"  
   :rem 170
4100 PRINT"{3 SPACES}{*}30 SPACES}{OFF}{F}"  
   :rem 212
4120 PRINT"{4 SPACES}{*}28 SPACES}{OFF}¥€
   {V}¥"  :rem 130
4130 PRINT"{5 SPACES}{*}27 SPACES}{OFF}¥V"  
   :rem 218
4140 PRINT"{6 SPACES}{RVS}{F}25 SPACES}{OFF}¥€
   :rem 162
4150 PRINT"{7 SPACES}{Y}¥*{RVS}22 SPACES}
   {N}{OFF}"  :rem 127
4160 PRINT"{10 SPACES}{C}2 U{RVS}19 SPACES}
   {OFF}"
   :rem 108
4170 PRINT"{13 SPACES}{*}{RVS}11 SPACES}{U}
   {Y}{OFF} {*}{RVS}3 SPACES}{OFF}"
   :rem 18
4180 PRINT"{14 SPACES}{Y}{*}{RVS}6 SPACES}
   {OFF}2 U{6 SPACES}{*}{RVS}¥€
   :rem 24
4190 PRINT"{16 SPACES}{*}{RVS}2 SPACES}{OFF}¥€
   {10 SPACES}{L}3 SPACES}{*}{OFF}"
   :rem 4
4200 PRINT"{17 SPACES}{*}{RVS}¥*{RVS}¥{OFF}
   {11 SPACES}{*}{RVS}¥L}{OFF}"
   :rem 50
4210 PRINT"{32 SPACES}{C}¥"  :rem 84
4220 POKE SM+V#160,POKE CM+V,0  :rem 177
4230 INPUT"{DOWN}WHICH STATE";X$  :rem 89
4240 PRINT"{BLK}";  :rem 102
4250 POKE VC+33,15  :rem 182
4260 RETURN

Level 3
Level 3

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$="\{CYN}{PUR}{GRN}{BLU}{YEL}\" :rem 119
106 MC=54272:FORX=MCT054296:POKEX,Ø:NEXTX :rem 73
108 B1$="\{RVS}\{40 SPACES}\{OFF\}" :rem 85
110 B2$="\{RVS}\{15 SPACES}\{OFF\}\{10 SPACES\}\{RVS\} \{15 SPACES\}\{OFF\}" :rem 243
120 PRINT"\{BLK}\{DOWN\} \{RVS\}\{6 SPACES\}\{OFF\}" :rem 106
125 PRINT"\{3 DOWN\} YOU ARE GOING TO THE STORE TO BUY TEN\{3 SPACES\}ITEMS.." :rem 32
130 PRINT"\{DOWN\} AS YOU BUY EACH ITEM YOU MUST CHOOSE" :rem 62
135 PRINT" BETWEEN BRAND \{RVS\}A\{OFF\} AND BRAND \{RVS\}B\{OFF\}" :rem 14
140 PRINT"\{DOWN\} YOU MUST SELECT THE BRAND WHICH IS THE\{2 SPACES\}BEST BARGAIN." :rem 5
150 PRINT"\{DOWN\} DETERMINE THIS BY CALCULATING THE UNIT\{2 SPACES\}COST PER OUNCE." :rem 248
160 FORX=ØTO17;FORY=ØTO1:READZ;NT%(X,Y)=Z:NEXTY,X :rem 213
170 GOSUB1000 :rem 217
180 PRINT"\{3 DOWN\}\{8 SPACES\}\{PRESS ANY KEY TO START\}" :rem 125
190 GETX$:IFX$=""THEN190 :rem 133
195 FORX=ØTO19:READX$,Y$:P$(X#0)=X$:P$(X,1)=Y$:NEX TX :rem 126
200 EC=Ø:RC=Ø:XS=Ø :rem 21
210 FORX=ØTO19:PT%(X)=Ø:NEXTX :rem 54
300 QA=INT(RND(1)*7)+3 :rem 195
310 QB=INT(RND(1)*7)+3:IFQA=QBTHEN310 :rem 179
320 PA=INT(RND(1)*11)+30:X=INT(RND(1)*5)+1:IFRND(1 )>0.5THENX=X*-1 :rem 191
330 PB=PA+X :rem 121
340 X=INT(RND(1)*20):IFPT%(X)=1THEN340 :rem 201
350 X$=P$(X,Ø):Y$=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;" ":rem 164
500 GETX$:IFX$=""THEN500 :rem 123
510 IFX$<>"A"ANDX$<>"BT_THEN500 :rem 179
520 IFX$="B"ANDPB>PATHEN600 :rem 94
530 IFX$="B"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=1TO300: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$(147)
 rem 24
950 END
 rem 117
1000 REM *** PLAY THE SONG ***
 rem 239
1010 POKEM+0,0,POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
9:POKEMC+24,15
 rem 28
1020 FORX=0 TO 17
 rem 122
1030 Y=INT(NT%(X,0)/256)
 rem 46
1040 POKEM+0,NT%(X,0)-(Y*256)
 rem 117
1050 POKEM+1,Y:POKEMC+4,17
 rem 82
1060 FORY=1 TO NT%(X,1)*50:NEXTY
 rem 70
1070 POKEM+4,16:FORX=1 TO30:NEXTY,X
 rem 189
1080 POKEM+24,0
 rem 117
1090 RETURN
 rem 170
8000 Y$=STR$(X):X=LEN(Y$):ONXGOTO8010,8020#8030:rem215
8010 X$="$0.0"+RIGHT$(Y$/1):RETURN:rem138
8020 X$="$0."+RIGHT$(Y$/2):RETURN:rem92
8030 X$="$"+MID$(Y$,2,1)+"."+RIGHT$(Y$/,2):RETURN
 rem 78
9000 DATA8583,2,8583,2,7647,1,7217,1,7217,2,6812,1
 rem 162
9010 DATA6812,1,7217,1,7217,2,6812,1,7217,1,8583,2
 rem 152
9020 DATA7647,4,6430,2
 rem 116
9100 DATACORN,FLAKES,DISH,SOAP,CAKE,MIX,GINGER,SNA
 rem 32
9110 DATARICE," ",BROWN,SUGAR,SUGAR,CUBES,OAT,MEAL
 rem 42
9120 DATACORN,CHIPS,POTATO,FLAKES,FUDGE,MIX,PIZZA,
 rem 47
9130 DATAPASTA," ",BAKING,SODA,BAKING,POWDER,WAFPL
 rem 103
E,MIX,RED,BEANS

111
Level 4: Advanced Games (Grades 9-12)
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
amerarium  bismuth  cesium  erbium
antimony  boron  chlorine  europium
argon  bromine  chromium  fermium
arsenic  cadmium  cobalt  fluorine
astatine  calcium  copper  francium
barium  Californium  curium  gadolinium
### 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.

```plaintext
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$(NW%-1) :rem 228
120 S1=((PEEK(53272)AND240)/16)*1024:S2=55296:POKE VC+32,6:POKEVC+33,15 :rem 127
125 FORX=54272TO54296:POKEX,6:NEXTX :rem 179
130 FORX=0TO15:READ2:NT%(X)=Z:NEXTX:FORX=1TONW$: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
```

<table>
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<tr>
<th>gallium</th>
<th>manganese</th>
<th>potassium</th>
<th>tantalum</th>
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<td>germanium</td>
<td>mendelevium</td>
<td>praseodymium</td>
<td>technetium</td>
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<td>gold</td>
<td>mercury</td>
<td>promethium</td>
<td>tellurium</td>
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<tr>
<td>hafnium</td>
<td>molybdenum</td>
<td>protactinium</td>
<td>terbium</td>
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<td>thallium</td>
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<tr>
<td>holmium</td>
<td>neon</td>
<td>radon</td>
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<td>hydrogen</td>
<td>neptunium</td>
<td>rhenium</td>
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<td>rhodium</td>
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<td>zinc</td>
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<td>plutonium</td>
<td>strontium</td>
<td>zirconium</td>
</tr>
<tr>
<td>magnesium</td>
<td>polonium</td>
<td>sulfur</td>
<td></td>
</tr>
</tbody>
</table>
**Level 4**

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 CHEMICAL"
 :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 SELECTING ONE LETTER AT A TIME." :rem 225
180 PRINT"{2 DOWN} IF YOU PICK MORE THAN 11 INCORRECT"
 :rem 40
190 PRINT" LETTERS, THE FORMIDABLE ELEMENT MAN
{5 SPACES}WILL APPEAR!1" :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%;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$) :rem 148
330 FORX=1TONW% :rem 11
340 WI$(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$):IFX<65ORX>90THEN400 :rem 249
500 HI=0:FORY=0TONW%:IFWI$(Y)<>X$:THEN530
 :rem 217
510 HI=1:WI$(Y)="$";POKESl+600+CC+(Y*2),X-64
 :rem 194
520 LC%=LC%+1
 :rem 141
530 NEXTY:IFHI=1THEN560 :rem 152
540 GOSUB30000:BC%=BC%+1 :rem 194
550 IFBC%>10THENGOSUB2000:LO%=LO%+1:FORX=1TO30000:N
 :rem 3
560 EXTX=GOTO700 :rem 94
570 IFLC%<=LW%THEN400 :rem 226
700 PRINTCHR$(147);SPC(11);"{BLK}{3 DOWN}ANOTHER ELEMENT?" :rem 71
710 PRINT"{2 DOWN}";SPC(13);"ENTER {RVS}Y{OFF} OR
{SPACE}{RVS}{OFF}" :rem 130
720 GETX$:IFX$=""THEN720 :rem 110
730 IFX$=""THENNEXTLC:POKE198,1:GOTO220 :rem 131
740 IFX$<>"N"THEN720 :rem 235
750 PRINT"{3 DOWN}{11 SPACES}NUMBER CORRECT =";WI% :rem 122
 :rem 184
Level 4

760 PRINT"{2 DOWN}{11 SPACES}NUMBER MISSED
{2 SPACES}=";LO
:rem 86
770 GOSUB2500:FORX=1TO500:NEXTX:PRINTCHR$(147)
:rem 138
775 POKE53272,21
:rem 100
780 END
:rem 118
800 Y=0
:rem 94
810 Z=INT(RND(1)*NW%)+1:IFPEEK(CB+Z)=0THENRETURN
:rem 231
820 Y=Y+1:IFY<10THEN810
830 Z=1
:rem 99
840 IFPEEK(CB+Z)=0THENRETURN
:rem 39
850 Z=Z+1:GOTO840
:rem 249
1000 PRINT"{CLR}{BLK}{DOWN}{9 SPACES}ELEMENT
{3 SPACES}MAN"
:rem 172
1110 PRINT"{7 DOWN}£YMBOL:"SY$"{2 DOWN}
:rem 209
1120 PRINT"ATOMIC":PRINT"NUMBER:"XZ$
:rem 54
1500 PRINT"{2 DOWN}{BLK}
******************************************************************************
"
:rem 131
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 91
2000 FORX=0TOLW%:IFW$(X)="$"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 FORX=1TO75:NEXTX:POKEMC+4,16
:rem 70
2560 FORX=1TO15:NEXTX,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
70,3090,3090,3090,3100,3110,3120 :rem 48
3010 PRINT"{HOME}{3 DOWN}";SPC(18);"{REX}X{.REX}";G
OTO3500 :rem 144
3020 PRINTSPC(17);"[M]O{OFF}G";GOTO3500 :rem 85
3030 PRINTSPC(17);"< - >";GOTO3500 :rem 3
3040 PRINTSPC(17);"{NR} * {G}";GOTO3500 :rem 188
3050 PRINTSPC(18);"[*] + [*]";GOTO3500 :rem 155
3060 PRINTSPC(18);"[£] (+)";GOTO3500 :rem 162
3070 PRINTSPC(16);"[£][£] [RVS][E] {OFF}[£][£] [S][£]";GOTO3500 :rem 142
3080 PRINTSPC(16);"[RVS]{3 SPACES}{OFF} - ";GOTO3
500 :rem 14
3090 PRINTSPC(16);"[£][£] [£] [£][£]";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 POKE$1+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 DATAARSENIUM,ASTATINE,BARIUM,BERKELIUM,BERYLL
IUM :rem 47
10020 DATABISMUTH,BORON,BROMINE,CADMIUM,CALCIUM :rem 99
10030 DATACALIFORNNIUM,CARBON,CERIUM,CESIUM,CHLORIN
E :rem 139
10040 DATACHROMIUM,COBALT,COPPER,CURIUM,DYSPROSIUM :rem 149
10050 DATAEINSTEINIUM,ERBIUM,EUROPIUM,FERMIUM,FLUO
RINE :rem 189
Level

4

10060 DATA FRANCIUM, GADOLINIUM, GALLIUM, GERMANIUM, GOLD
10070 DATA HAFNIUM, HELIUM, HOLMIUM, HYDROGEN, INDIUM
10080 DATA IODINE, IRIDIUM, IRON, KRYPTON, LANTHANUM
10090 DATA LAWRENCIUM, LEAD, LITHIUM, LUTETIUM, MAGNESIUM
10100 DATA MANGANESE, MENDANESE, MERCURY, MOLYBDENUM, NEODYMIUM
10110 DATA NEON, NEPTUNIUM, NICKEL, NIOBIUM, NITROGEN
10120 DATA NOBELIUM, OSMIUM, OXYGEN, PALLADIUM, PHOSPHORUS
10130 DATA PLATINUM, PLUTONIUM, POLONIUM, POTASSIUM, PSEUDOMIUM
10140 DATA PROMETHIUM, PROTACTINUM, RADIUM, RADON, RHENIUM
10150 DATA RHODIUM, RUBIDIUM, RUTHENIUM, SAMARIUM, SCANDIUM
10160 DATA SELENIUM, SILICON, SILVER, SODIUM, STRONTIUM
10170 DATA SULFUR, TANTALUM, TECHNETIUM, TELLURIUM, TERTIUM
10180 DATA THALLIUM, THORIUM, THULIUM, TIN, TITANIUM
10190 DATA TUNGSTEN, URANIUM, VANADIUM, XENON, YTTERBIUM
10200 DATA YTTRIUM, ZINC, ZIRCONIUM
11000 DATA "AC", 89, "Al", 13, "AM", 95, "SB", 51, "AR", 18
11010 DATA "AS", 33, "AT", 85, "BA", 56, "BK", 97, "BE", 4
11040 DATA "CR", 24, "CO", 27, "CU", 29, "CM", 96, "DY", 66
11050 DATA "ES", 99, "ER", 68, "EU", 63, "FM", 100, "F", 9
11060 DATA "FR", 87, "GD", 64, "GA", 31, "GE", 32, "AU", 79
11070 DATA "HF", 72, "HE", 2, "HO", 67, "H", 1, "IN", 49
11090 DATA "LR", 103, "PB", 82, "LI", 3, "LU", 71, "MG", 12

120
Level
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 CATEGORIES 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 LATER." :rem 123
```
Level

4

: rem 3
160 PRINT"[DOWN] SCORING IS BASED ON CORRECT ANSWERS [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=0THENGETO235
: 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$(X,Y)="":NEXTY,X:TI$="0000"
: rem 18
400 HC=0:X=0
: rem 139
405 Y=0
: rem 95
410 FORX=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$(X,Y)<""THEN600
: rem 63
507 QQ=0
: rem 171
510 GOSUB7000
: rem 221
515 IFQQ=1THEN800
: rem 1
520 IFY$="QUIT"THEN800
: rem 30
530 IFL$(L%(Y))=""ANDLEN(I$)>0THEN550
: rem 85
540 IFLEN(I$)=0ORLEFT$(I$,1)<L$(L%(Y))THEN800
: 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=0 TO 3:W=0:FORY=0 TO 3 :rem 207
810 IF A$(X,Y) <> "":THEN W=W+1 :rem 239
820 NEXTY:S=S+(W*W):NEXTX :rem 116
830 FOR X=0 TO 3:W=0:FORY=0 TO 3 :rem 216
840 IF A$(Y,X) <> "":THEN W=W+1 :rem 242
850 NEXTY:S=S+(W*W):NEXTX:Y=0:IFS<16 THEN 870 :rem 4
860 Y=INT((240-(TI/60))/4):IFY<0 THEN Y=0 :rem 237
870 S=S+Y:Z=0:IFS>HSTHEN HS=S:Z=1 :rem 88
900 PRINT "[CLR][BLK][DOWN][15 SPACES][RVS]GAME OVER" :rem 202
910 PRINT "[DOWN][5 SPACES]YOUR SCORE =";S :rem 18
920 PRINT "[DOWN][5 SPACES]HIGH SCORE =";HS :rem 44
930 IF Z=1THEN PRINT "[DOWN][5 SPACES][RVS]YOU SET A" :rem 253
940 PRINT "[3 DOWN][5 SPACES]ENTER REPLAY OPTION:" :rem 255
950 PRINT "[2 DOWN][7 SPACES][RVS][OFF] END THE GAME" :rem 76
960 PRINT "[DOWN][7 SPACES][RVS][OFF] REPLAY WITH" :rem 25
970 PRINT "[DOWN][7 SPACES][RVS][OFF] REPLAY WITH" :rem 57
980 GET X$:IF X$= "":THEN 980 :rem 147
990 IF X$= "S" THEN 300 :rem 67
1000 IF X$= "N" THEN 200 :rem 92
1010 IF X$= "E" THEN 980 :rem 160
1020 GOSUB 7500 :rem 15
1030 PRINT CHR $(147) :rem 63
1040 END :rem 156
7000 I$= "":J=245+(Y*160)+M:POKE J,160:POKE J+C,0 :rem 18
7010 GET X$:IFTI$>"000400"THEN QQ=1:RETURN :rem 173
7020 IFS="THEN 7830 :rem 139
7022 T L$= MID $(TI$ #3 #2)+"."+MID $(TI$ #5 #2) :rem 48
7024 PRINT "[HOME]";SPC(17);"[RVS][BLU]";TL$;"[BLK]" :rem 22
7026 GOTO 7010 :rem 208
7030 L=ASC(X$):IFL<20 THEN 7100 :rem 223
7040 IFLEN(I$)=8 THEN 7010 :rem 91
7050 X$=LEFT$(I$,LEN(I$)-1):I$=X$:POKEJ+LEN(I$),16 :rem 191
7060 POKEJ+C+LEN(I$),0:POKEJ+C+LEN(I$)+1,1:GOTO 7010 :rem 181
7100 IFL=13 THEN POKEJ+LEN(I$),32:POKEJ+C+LEN(I$),1: :rem 185
7150 IF L>63 THEN 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:GOTO 7010 :rem 83
LEVEL 4

7500 REM *** PLAY THE SONG ***  :rem 250
7510 POKEMC+5,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
 :rem 39
9:POKEMC+24,15
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=1TO20: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
 :rem 147
430,5407,4291,4291
8010 DATA5407,6430,6430,6430,7217,5728,4291,4291,5
 :rem 151
728
8020 DATA7217,7217,7217,8583,8583,7217,6430,5728,5
 :rem 177
728
9000 DATA"NAMES OF U.S. CITIES","NAMES OF U.S. STATES","NAMES OF FRUITS" :rem 156
9010 DATA"NAMES OF VEGETABLES","FAMOUS SINGERS","CHEMICAL 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","NAMES 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 OF MOVIES" :rem 95
9130 DATA"NAMES OF T.V. SHOWS" :rem 206
 :rem 106
 ,W,Y,Z,*,**,***
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 NO=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$(147);"[WHT][DOWN][RVS][11 SPACES]HEA
VENLY[2 SPACES]BODIES[13 SPACES][CFF]"; :rem 148
125 READX$:IFX$<>"$SPECIAL"THEN125 :rem 31
```
Level

127 DIM NT%(26,1):FORX=0TO26:FORY=0TO1:READZ:NT%(X,Y)=Z:NEXTX,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 WHICH[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=":rem 164
175 PRINT"[DOWN]{9 SPACES}PRESS {RVS}F1{OFF} TO QUIT 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 START 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 WILL 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 BODIES{2 SPACES}*********{OFF}" :rem 180
405 FORZ=1TO8;PRINT"{BLU}{RVS}{40 SPACES}{OFF}";NEXTZ :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"{BLK}{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$="X"THENY=10 :rem 143
760 Y=(Y*40)+484+S :rem 180
770 POKEMC+0,0;POKEMC+5,15;POKEMC+6,15;POKEMC+24,15;POKEVC+32,2 :rem 247
780 FORZ=1TO4;POKEMC+1,10;POKEMC+4,17 :rem 243
790 FORW=YTOY+30;POKEW,PEEK(W)+128:NEXTW:FORW=1TO10 :rem 7
800 POKEMC+1,15;FORW=YTOY+30;POKEW,PEEK(W)-128:NEXTW :rem 236
810 POKEMC+4,16:NEXTZ :rem 236
820 POKEMC+5,15;POKEMC+6,15;POKEMC+1,0 :rem 180
830 FORW=1TO15;POKEVC+32,6;S=S-1:GOTO900 :rem 10
840 POKEVC+24,15 :rem 180
850 S=S+10:QC=QC+1 :rem 3
860 S=S+10:QC=QC+1 :rem 81
870 X=X+1:IFX<=NQTHEN305 :rem 226
900 PRINTCHR$(147);"{BLK}{2 DOWN}{15 SPACES}{RVS}G AME OVER!{OFF}" :rem 97
910 PRINT"{3 DOWN}{7 SPACES}# QUESTIONS =";QA :rem 151
920 PRINT"{3 DOWN}{7 SPACES}# QUESTIONS =";QA
Level 4

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

130
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
Level 4

2420 DATA"ITS APPROXIMATE DISTANCE FROM THE SUN IS 480 MILLION MILES"  rem 242
2430 DATA"ITS YEAR IS NEARLY 12 'EARTH' YEARS" rem 243
2440 DATA"NO KNOWN LIFE FORM COULD SURVIVE ITS ATMOSPHERE OF METHANE" rem 245
2450 DATA"IT IS COVERED WITH CLOUDS OF AMMONIA ICE CRYSTALS"  rem 246
2460 DATA"IT MAY BE A GASEOUS PLANET WITH NO SOLID CORE" rem 247
2470 DATA"IT HAS AT LEAST 16 MOONS, 4 OF WHICH ARE ALMOST MERCURY'S SIZE" rem 248
2480 DATA"ITS MASS IS DOUBLE THAT OF ALL THE OTHER PLANETS COMBINED"  rem 249
2490 DATA"ITS MOST FAMOUS MOONS ARE IO AND GANYMEDE" rem 250
2500 DATA"IT IS LOCATED 1.8 BILLION MILES FROM THE SUN" rem 251
2510 DATA"ITS YEAR IS 84 'EARTH' YEARS LONG" rem 252
2520 DATA"ITS DAY IS 15.5 'EARTH' HOURS LONG" rem 253
2530 DATA"ITS DIAMETER IS 32,000 MILES" rem 254
2540 DATA"IT WAS DISCOVERED IN 1781 BY SIR WILLIAM HERSHEY"  rem 255
2550 DATA"ITS NORTH POLE IS TILTED 98 DEGREES OFF A PERPENDICULAR ORBIT" rem 256
2560 DATA"IT HAS AT LEAST FIVE MOONS AND EIGHT RINGS ALONG ITS EQUATOR" rem 257
2570 DATA"ITS SURFACE IS PROBABLY ROCKY WITH AN ICY CRUST" rem 258
2580 DATA"ITS EXTREME TILT CAUSES 'SUMMER' TO BE 42 'EARTH' YEARS LONG" rem 259
2590 DATA"ITS WAS THE FIRST PLANET DISCOVERED AFTER BODE'S THEORY" rem 260
2600 DATA"IT IS 900 MILLION MILES FROM THE SUN-- TWICE JUPITER'S DISTANCE" rem 261
2610 DATA"ITS EQUATORIAL DIAMETER IS 71,000 MILES" rem 262
2620 DATA"ITS DAY IS 10 'EARTH' HOURS LONG"  rem 263
2630 DATA"ITS ATMOSPHERE AND SURFACE RESEMBLE A COLDER VERSION OF JUPITER" rem 264
2640 DATA"OF ITS KNOWN 16 MOONS, SIX WERE DISCOVERED AFTER 1979" rem 265
2650 DATA"ITS RINGS ARE 170,000 MILES IN DIAMETER" rem 266
2660 DATA"THE THICKNESS OF ITS RINGS IS ONLY 10 MILES" rem 267
DATA "ITS RINGS ARE COMPOSED OF MATERIAL THAT MAY BE A SHATTERED MOON", S :rem 242
DATA "ITS YEAR IS 29.5 'EARTH' YEARS LONG", S :rem 174
DATA "ITS MOON TITAN IS UNIQUE BECAUSE IT HAS AN ATMOSPHERE", S :rem 194
DATA "IT IS USUALLY CLOSER TO THE SUN THAN [4 SPACES]PLUTO", N :rem 10
DATA "UNTIL 1989, IT WILL BE FARTHEST FROM THE SUN OF THE KNOWN PLANETS", N :rem 23
DATA "ITS DISTANCE FROM THE SUN IS ABOUT 2.8 [2 SPACES]BILLION MILES", N :rem 27
DATA "ITS YEAR IS 165 'EARTH' YEARS LONG", N :rem 115
DATA "IT HAS AT LEAST 3 MOONS, THE LARGEST OF [SPACE]WHICH IS TRITON", N :rem 142
DATA "LIKE JUPITER, IT MAY PRODUCE HEAT [7 SPACES]INDEPENDENTLY OF THE SUN", N :rem 17
DATA "ITS INCREASE IN BRIGHTNESS MAY HINT HUGE SURFACE STORMS", N :rem 165
DATA "ITS DIAMETER IS ABOUT 30,000 MILES", N :rem 147
DATA "IT HAS A DAY OF 16 'EARTH' HOURS", N :rem 144
DATA "ASTRONOMERS FOUND IT AFTER LOOKING LESS [SPACE]THAN 30 MINUTES", N :rem 143
DATA "IT IS USUALLY ABOUT 5,900 BILLION MILES [SPACE]FROM THE SUN", P :rem 15
DATA "ITS ERRATIC ORBIT MAY BRING IT CLOSER [3 SPACES]TO THE SUN THAN NEPTUNE", P :rem 161
DATA "IT TAKES 247.7 'EARTH' YEARS TO CIRCLE [2 SPACES]THE SUN", P :rem 47
DATA "ITS DAY IS 6.4 'EARTH' DAYS LONG", P :rem 204
DATA "USING MATHEMATICAL COMPUTATION, IT WAS [2 SPACES]DISCOVERED IN 1930", P :rem 235
DATA "IT HAS AT LEAST ONE MOON, CHARON", P :rem 50
DATA "ITS DIAMETER IS ABOUT 1,500 MILES", P :rem 104
DATA "IT WAS DISCOVERED BY AMERICAN CLYDE [5 SPACES]TOMBAUGH", P :rem 190
DATA "IT MAY HAVE ONCE BEEN A MOON OF NEPTUNE", P :rem 193
DATA "IT TAKES SUNLIGHT 5.5 HOURS TO REACH [4 SPACES]THIS PLANET", P :rem 91
DATA "CLYDE TOMBAUGH WAS LOOKING FOR THIS [5 SPACES]PLANET WHEN HE FOUND PLUTO", X :rem 37
DATA"ITS MASS IS ESTIMATED AT 286 TIMES THAT
SPACE OF EARTH",X  :rem 255
DATA"ITS YEAR IS ABOUT 464 'EARTH' YEARS",X  :rem 203
DATA"BODE'S LAW ESTIMATES IT IS 7,172 MILLION
MILES FROM THE SUN",X  :rem 166
DATA"IT HAS A FAMILY OF 16 COMETS",X  :rem 244
DATA"ITS ORBIT IS ESTIMATED TO BE 120 DEGREES
OFF PERPENDICULAR",X  :rem 195
DATA"ITS MASS IS THREE TIMES THAT OF SATURN",X  :rem 16
DATA"IT LIES IN THE SAME GENERAL DIRECTION AS
CASSIOPEIA",X  :rem 48
DATA"IT HAS NEVER BEEN SEEN WITH THE NAKED
SPACE EYE, OR WITH A TELESCOPE",X  :rem 68
DATA"IT MADE NEPTUNE AND URANUS DEVIATE FROM
SPACE THEIR CALCULATED ORBITS",X  :rem 145
POKEVC+0,160:POKEVC+1,0;Z=9:POKEVC+16,0  :rem 98
POKEVC+23,0;POKEVC+27,0;POKEVC+28,0  :rem 98
POKEVC+29,1;POKEVC+39,7;POKE2040,13  :rem 64
POKEMC+5,79;POKEMC+6,129;POKEMC+0,0;POKEMC+1,1 :rem 10
POKEMC+24,15;POKEVC+21,1  :rem 155
POKEVC+1607,4,0,1607,4,2025,4,1607,4,1351,2,1  :rem 170
607,2,1607,1,1351,1  :rem 85
DATA1204,4,0,5,1607,4,2025,4,1607,4,1351,2,1
DATA1607,5,1607,2,1607,2,1607,2,1351,1,1204,2
,0,2,1204,4,1607,4,2025,4  :rem 115
DATA1607,4,2408,2,2025,2,2025,1,1607,1,1804,1
,1,1570,1,1607,8  :rem 114
DATA128,248,8,67,254,16,39,255,32,15,255,128,
31,255,192,63,255,224,63,255  :rem 80
DATA224,120,112,240,124,249,240,255,223,248,2
55,223,248,255,143,248  :rem 14
DATA251,254,248,121,252,240,126,115,240,63,14
3,224,31,255,192,15  :rem 111
DATA255,128,39,255,32,67,254,16,128,248,8,0  :rem 127
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
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 “:rem123.” Please read the article about the “Automatic Proofreader” in Appendix E.
4 REM MOTHER EARTH :rem 88
100 CB=828:MP=1817 :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$(X,Y)=Z:NEXTX,X :rem 122
200 GOSUB700:rem 169
205 GOSUB1000:S%=0:FORX=1TO1:POKECB+X,0:NEXTX :rem 178
210 FORX=1TO6:GOSUB800:POKECB+Z,X:NEXTX :rem 144
300 X=1 :rem 89
310 Y=PEEK(CB+X)-1 :rem 6
340 FORW=0TO32:RS(W)=0:NEXTW :rem 220
350 FORW=1TO4 :rem 27
360 V=INT(RND(1)*4):IFRS(V)<>0THEN360 :rem 179
370 RS(V)=W:NEXTW :rem 74
400 W=0 :rem 88
410 PRINTCHR$(147);"{BLK}{23 DOWN}";SPC(15);"SCORE LESS THAN 5";W+1 :rem 164
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-W :rem 124
490 FORW=1TO2500:NEXTW :rem 131
495 GOTO590 :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+1:NEXTV :rem 119
570 POKEMC+24,0 :rem 72
580 X=X+1:IFX<NETHEOM310 :rem 214
600 PRINT"{BLK}{CLR}{DOWN}{15 SPACES}{RVS}TEST OVERN{OFF}{BLK}{CLR}{DOWN}{15 SPACES}{RVS}" :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*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}MOTHER 
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=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
840 IFPEEK(CB+Z)=0THENRETURN :rem 39
850 Z=Z+1:GOTO840 :rem 249
900 X$="";POKE198,0:INPUT" ";X$:IFX$=QT$(Y,4)THENX 
$="Q";RETURN :rem 46
905 IFX$="END"THENRETURN :rem 16
910 REM ** INCORRECT ANSWER ** :rem 159
920 IFW<>4THENPOKEVC+33,0 :rem 19
930 POKEMC+0,49;POKEMC+1,14 :rem 53
Level 4

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 CATEGORY [2 DOWN]";PRINT"[3 SPACES]{RVS}A{OFF} EUROPE"  :rem 230
1010 PRINT"{DOWN}[3 SPACES]{RVS}B{OFF} NORTH AFRICA / 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"{DOWN}{3SPACES}{RVS}A{OFF} EUROPE";rem 111
1110 PRINT"{DOWN}{3SPACES}{RVS}B{OFF} NORTH AFRICA";PRINT"{DOWN}{3SPACES}{RVS}C {OFF} AFRICA"  :rem 111
1120 PRINT"{DOWN}{3SPACES}{RVS}D{OFF} ASIA / THE SPACE PACIFIC";PRINT"{DOWN}{3SPACES}{RVS}E {OFF} WESTERN HEMISPHERE"  :rem 193
1130 PRINT"{DOWN}{3SPACES}{RVS}D{OFF} ASIA / THE SPACE PACIFIC";PRINT"{DOWN}{3SPACES}{RVS}E {OFF} WESTERN HEMISPHERE"  :rem 193
1150 GETX$;IFX$=""THEN1050  :rem 221
1160 IFX$<"A"ORX$"E"THEN1050  :rem 108
1170 PRINT"{DOWN}{3SPACES}{RVS}A{OFF} EUROPE";rem 111
1200 PRINT"{DOWN}{3SPACES}{RVS}B{OFF} NORTH AFRICA";PRINT"{DOWN}{3SPACES}{RVS}C {OFF} AFRICA"  :rem 111
1220 PRINT"{DOWN}{3SPACES}{RVS}D{OFF} ASIA / THE SPACE PACIFIC";PRINT"{DOWN}{3SPACES}{RVS}E {OFF} WESTERN HEMISPHERE"  :rem 193
1250 GETX$;IFX$=""THEN1050  :rem 221
1260 IFX$<"A"ORX$"E"THEN1050  :rem 108
1270 PRINT"{DOWN}{3SPACES}{RVS}A{OFF} EUROPE";rem 111
1300 PRINT"{DOWN}{3SPACES}{RVS}B{OFF} NORTH AFRICA";PRINT"{DOWN}{3SPACES}{RVS}C {OFF} AFRICA"  :rem 111
1320 PRINT"{DOWN}{3SPACES}{RVS}D{OFF} ASIA / THE SPACE PACIFIC";PRINT"{DOWN}{3SPACES}{RVS}E {OFF} WESTERN HEMISPHERE"  :rem 193
1350 GETX$;IFX$=""THEN1050  :rem 221
1360 IFX$<"A"ORX$"E"THEN1050  :rem 108
1370 PRINT"{DOWN}{3SPACES}{RVS}A{OFF} EUROPE";rem 111
1400 PRINT"{DOWN}{3SPACES}{RVS}B{OFF} NORTH AFRICA";PRINT"{DOWN}{3SPACES}{RVS}C {OFF} AFRICA"  :rem 111
1430 PRINT"{DOWN}{3SPACES}{RVS}D{OFF} ASIA / THE SPACE PACIFIC";PRINT"{DOWN}{3SPACES}{RVS}E {OFF} WESTERN HEMISPHERE"  :rem 193
1450 GETX$;IFX$=""THEN1050  :rem 221
1460 IFX$<"A"ORX$"E"THEN1050  :rem 108
1470 PRINT"{DOWN}{3SPACES}{RVS}A{OFF} EUROPE";rem 111
1500 PRINT"{DOWN}{3SPACES}{RVS}B{OFF} NORTH AFRICA";PRINT"{DOWN}{3SPACES}{RVS}C {OFF} AFRICA"  :rem 111
1520 PRINT"{DOWN}{3SPACES}{RVS}D{OFF} ASIA / THE SPACE PACIFIC";PRINT"{DOWN}{3SPACES}{RVS}E {OFF} WESTERN HEMISPHERE"  :rem 193
1550 GETX$;IFX$=""THEN1050  :rem 221
1560 IFX$<"A"ORX$"E"THEN1050  :rem 108
1570 PRINT"{DOWN}{3SPACES}{RVS}A{OFF} EUROPE";rem 111
1600 PRINT"{DOWN}{3SPACES}{RVS}B{OFF} NORTH AFRICA";PRINT"{DOWN}{3SPACES}{RVS}C {OFF} AFRICA"  :rem 111
1620 PRINT"{DOWN}{3SPACES}{RVS}D{OFF} ASIA / THE SPACE PACIFIC";PRINT"{DOWN}{3SPACES}{RVS}E {OFF} WESTERN HEMISPHERE"  :rem 193
1650 GETX$;IFX$=""THEN1050  :rem 221
1660 IFX$<"A"ORX$"E"THEN1050  :rem 108
1670 PRINT"{DOWN}{3SPACES}{RVS}A{OFF} EUROPE";rem 111
1700 PRINT"{DOWN}{3SPACES}{RVS}B{OFF} NORTH AFRICA";PRINT"{DOWN}{3SPACES}{RVS}C {OFF} AFRICA"  :rem 111
1720 PRINT"{DOWN}{3SPACES}{RVS}D{OFF} ASIA / THE SPACE PACIFIC";PRINT"{DOWN}{3SPACES}{RVS}E {OFF} WESTERN HEMISPHERE"  :rem 193
1750 GETX$;IFX$=""THEN1050  :rem 221
1760 IFX$<"A"ORX$"E"THEN1050  :rem 108
1770 PRINT"{DOWN}{3SPACES}{RVS}A{OFF} EUROPE";rem 111
1800 PRINT"{DOWN}{3SPACES}{RVS}B{OFF} NORTH AFRICA";PRINT"{DOWN}{3SPACES}{RVS}C {OFF} AFRICA"  :rem 111
1820 PRINT"{DOWN}{3SPACES}{RVS}D{OFF} ASIA / THE SPACE PACIFIC";PRINT"{DOWN}{3SPACES}{RVS}E {OFF} WESTERN HEMISPHERE"  :rem 193
1850 GETX$;IFX$=""THEN1050  :rem 221
1860 IFX$<"A"ORX$"E"THEN1050  :rem 108
1870 PRINT"{DOWN}{3SPACES}{RVS}A{OFF} EUROPE";rem 111
1900 PRINT"{DOWN}{3SPACES}{RVS}B{OFF} NORTH AFRICA";PRINT"{DOWN}{3SPACES}{RVS}C {OFF} AFRICA"  :rem 111
1920 PRINT"{DOWN}{3SPACES}{RVS}D{OFF} ASIA / THE SPACE PACIFIC";PRINT"{DOWN}{3SPACES}{RVS}E {OFF} WESTERN HEMISPHERE"  :rem 193
1950 GETX$;IFX$=""THEN1050  :rem 221
1960 IFX$<"A"ORX$"E"THEN1050  :rem 108
1970 PRINT"{DOWN}{3SPACES}{RVS}A{OFF} EUROPE";rem 111
2000 PRINT"{DOWN}{3SPACES}{RVS}B{OFF} NORTH AFRICA";PRINT"{DOWN}{3SPACES}{RVS}C {OFF} AFRICA"  :rem 111
2020 PRINT"{DOWN}{3SPACES}{RVS}D{OFF} ASIA / THE SPACE PACIFIC";PRINT"{DOWN}{3SPACES}{RVS}E {OFF} WESTERN HEMISPHERE"  :rem 193
2050 GETX$;IFX$=""THEN1050  :rem 221
2060 IFX$<"A"ORX$"E"THEN1050  :rem 108
2070 PRINT"{DOWN}{3SPACES}{RVS}A{OFF} EUROPE";rem 111
2100 PRINT"{DOWN}{3SPACES}{RVS}B{OFF} NORTH AFRICA";PRINT"{DOWN}{3SPACES}{RVS}C {OFF} AFRICA"  :rem 111
2120 PRINT"{DOWN}{3SPACES}{RVS}D{OFF} ASIA / THE SPACE PACIFIC";PRINT"{DOWN}{3SPACES}{RVS}E {OFF} WESTERN HEMISPHERE"  :rem 193
2150 GETX$;IFX$=""THEN1050  :rem 221
2160 IFX$<"A"ORX$"E"THEN1050  :rem 108
2170 PRINT"{DOWN}{3SPACES}{RVS}A{OFF} EUROPE";rem 111
2110 FOR X1=0 TO 2 : rem 118
2120 X2=PEEK(MP+X1) : rem 83
2130 PRINT"{DOWN}{5 SPACES}";MC$(X2-1) : rem 208
2140 NEXT X1:PRINT"{DOWN}":GOSUB 900:RETURN : rem 24
9000 DATA 2,"$SONG" : rem 8
9,56,2,193,44,2 : rem 200
9020 DATA 15,67,2,99,56,1,15,67,2,15,67,2,99,56,2,9
9,56,2,165,31,1,165,31,1 : rem 118
9030 DATA 60,50,2,165,31,1,62,42,2,62,42,1,165,31,1
15,67,2 : rem 53
9040 DATA 15,67,2,62,42,2,15,67,4,99,56,1,193,44,2,
99,56,1,15,67,2 : rem 187
9050 DATA 99,56,1,15,67,2,15,67,2,15,67,2,99,56,2
: rem 124
9060 DATA 15,67,2,15,67,2,165,31,1,60,50,2,193,44,4
: rem 194

Program 2. Mother Earth – DATA 1
3000 DATA A,"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 DATA A,"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 DATA A,"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 DATA A,"THIS HAS THE LARGEST POPULATION OF ALL
2 SPACES\THE SCANDINAVIAN NATIONS" : rem 125
3125 DATA "THE CAPITAL OF THIS NATION IS STOCKHOLM"
: rem 238

141
DATA "THE 'MIDDLE WAY' BETWEEN GOVERNMENT AND PRIVATE INDUSTRY" :rem 115
DATA "LAPLAND OCCUPIES THE FAR NORTH OF THIS COUNTRY", SWEDEN :rem 181
DATAA, "THIS NATION IS KNOWN FOR FINE DAIRY PRODUCTS AND FURNITURE" :rem 75
DATA "THE CAPITAL OF THIS NATION IS COPENHAGEN" :rem 17
DATA "GREENLAND IS HELD BY THIS COUNTRY" :rem 121
DATA "DAIRY COOPERATIVES IMPROVE THE QUALITY OF ITS DAIRY PRODUCTS", DENMARK :rem 3
DATAA, "ORIGINALLY, ITS PEOPLE CAME FROM ASIA" :rem 214
DATA "THE CAPITAL OF THIS NATION IS HELSINKI" :rem 143
DATA "SWEDISH IS CONSIDERED THE COUNTRY'S SECOND LANGUAGE" :rem 74
DATA "RUSSIA TOOK MOST OF THIS COUNTRY AFTER WORLD WAR II", FINLAND :rem 31
DATAA, "NAPOLEON BECAME THIS COUNTRY'S EMPEROR" :rem 147
DATA "IT IS A CENTER OF ART, FOOD AND FASHION" :rem 11
DATA "IT WAS THE BIRTHPLACE OF DEBUSSY AND LOUIS PASTEUR" :rem 164
DATA "THE CAPITAL OF THIS NATION IS PARIS", FRANCE :rem 146
DATA "IT WAS DIVIDED AMONG FOUR COUNTRIES AFTER WORLD WAR II" :rem 246
DATA "THE USSR CONTROLS ONE-FOURTH OF ITS CITIZENS" :rem 160
DATA "ITS MAJOR RIVERS ARE THE DANUBE, THE ODER AND THE RHINE" :rem 55
DATA "ITS TWO CAPITALS ARE BONN AND EAST BERLIN", GERMANY :rem 102
DATAA, "IT IS DIVIDED INTO 22 STATES, KNOWN AS CANTONS" :rem 238
DATA "ITS PEOPLE SPEAK FRENCH, GERMAN AND ITALIAN" :rem 199
DATA "ITS NEUTRALITY MAKES IT A CENTER OF DIPLOMACY" :rem 118
DATA "THE CAPITAL OF THIS NATION IS BERN", SWITZERLAND :rem 225
DATAA, "IT WAS ONCE THE CENTER OF AN EASTERN EUROPEAN EMPIRE" :rem 58
DATA "THE GEOGRAPHY OF THE LAND IS SIMILAR TO SWITZERLAND'S" :rem 101
ADOLF HITLER WAS BORN HERE AND LATER DEFEATED THE COUNTRY.

THE CAPITAL OF THIS NATION IS VIENNA, AUSTRIA.

"IT WAS RULER OF THE WORLD UNTIL DEFEATED BY GERMANY IN 500 A.D."

"IT WAS THE CENTER OF THE RENAISSANCE".

ITS CITIES OF VENICE AND FLORENCE ARE CENTERS OF ART.

THE CAPITAL OF THIS NATION IS ROME, ITALY.

WESTERN CIVILIZATION DEVELOPED FROM THIS NATION'S CULTURE.

IT IS SURROUNDED BY THE MEDITERRANEAN, ALGAEAN AND IONIC SEAS.

POSSESSIONS OF THIS COUNTRY INCLUDE CRETE AND RHODES.

"THE CAPITAL OF THIS NATION IS ATHENS", GREECE.

"THE ROMANS KNEW IT AS CALEDONIA".

"ITS CITY OF GLASGOW IS THE CHIEF INDUSTRIAL CENTER OF BRITAIN".

IT OCCUPIES THE NORTHERN 37% OF THE ISLE OF GREAT BRITAIN.

BRITAIN RULES IT, BUT IT MAINTAINS EDINBURGH AS ITS CAPITAL.

"THE 1917 REVOLUTION CHANGED ITS FORM OF GOVERNMENT".

"THE COUNTRY IS A LARGE PLAIN DIVIDED BY THE URAL MOUNTAINS".

ITS MAJOR PORTS ARE ON THE SHORE OF THE BLACK SEA.

"THE CAPITAL OF THIS NATION IS MOSCOW", USSR.

"IT COVERS MOST OF THE IBERIAN PENINSULA, BUT HAS NO MAJOR HARBORS".

"A MOORISH PALACE, THE ALHAMBRA, RESIDES IN ITS CITY OF GRENADA".

"ITS ROCK OF GIBRALTAR IS ACTUALLY OWNED BY BRITAIN".

"THE CAPITAL OF THIS NATION IS MADRID", SPAIN.

"THE BIBLICAL MOUNT ARARAT IS LOCATED IN THIS COUNTRY".

"IT CONTROLS THE ONLY PASSAGE BETWEEN THE MEDITERRANEAN AND BLACK SEAS".
4070 DATA "THOUGH IT IS MOSLEM, MOST OF ITS TRADITIONS ARE EUROPEAN":rem 42
4075 DATA "THE CAPITAL OF THIS NATION IS ANKARA", TURKEY :rem 253
4120 DATAB, "ITS LAND FORMED THE ANCIENT COUNTRY OF PALESTINE":rem 176
4130 DATA "MORE THAN 85% OF ITS POPULATION IS JEWISH":rem 12
4140 DATA "WATERS FROM THE JORDAN RIVER IRRIGATE THE NEGEV DESERT":rem 6
4150 DATAB, "THE CAPITAL OF THIS NATION IS JERUSALEM", ISRAEL :rem 205
4160 DATAB, "THIS FORMER OTTOMAN NATION WAS RULED BY FRANCE UNTIL 1945":rem 149
4170 DATA "IT LOST THE GOLAN HEIGHTS TO ISRAEL IN THE "SEVEN-DAY WAR":rem 6
4180 DATA "IT HAS BEEN RULED BY THE SOCIALIST BAATH PARTY SINCE 1963":rem 150
4190 DATAB, "THE CAPITAL OF THIS NATION IS DAMASCUS", SYRIA :rem 66
4200 DATAB, "IT BROKE FROM SYRIA MAINLY FOR RELIGIOUS REASONS":rem 221
4210 DATA "BOTH CHRISTIANS AND MOSLEMS HAVE LEADERS IN THE GOVERNMENT":rem 222
4220 DATA "ITS LANGUAGES ARE ARABIC, FRENCH AND ARMENIAN":rem 39
4230 DATAB, "THE CAPITAL OF THIS NATION IS BEIRUT", LEBANON :rem 46
4240 DATAB, "IT SHARES THE DEAD SEA WITH ITS ENEMY ISRAEL":rem 43
4250 DATA "IT IS HOME FOR MANY ARABS DISPLACED BY THE CREATION OF PALESTINE":rem 164
4260 DATA "ITS ONLY PORT IS ON THE AQABA GULF":rem 63
4270 DATAB, "THE CAPITAL OF THIS NATION IS AMMAN", JORDAN :rem 144
4280 DATAB, "IN ANCIENT TIMES, IT WAS CALLED BY THE NAME OF MESOPOTAMIA":rem 127
4290 DATAB, "THE TIGRIS AND EUPHRATES RIVERS MEET HERE":rem 142
4300 DATAB, "THE HANGING GARDENS OF BABYLON WERE LOCATED HERE":rem 245
4310 DATAB, "THE 'ARABIAN NIGHTS' IS SET IN ITS CAPITAL OF BAGHDAD", IRAQ :rem 230
4320 DATAB, "RESIDENTS SPEAK MANY LANGUAGES, BUT THE OFFICIAL TONGUE IS Farsi":rem 158
4330 DATAB, "IT HAS THE WORLD'S 3RD LARGEST RESERVE OF CRUDE OIL":rem 103
4340 DATAB, "A 1979 REVOLUTION MADE AN ISLAMIC LEADER ITS RULER":rem 42
4350 DATA "THE CAPITAL OF THIS NATION IS TEHERAN", IRAN :rem 152
4360 DATA "IT OCCUPIES ABOUT 80% OF THE ARABIAN PENINSULA" :rem 172
4370 DATA "THE COUNTRY IS NAMED FOR ITS FOUNDER, IBN SAUD" :rem 94
4380 DATA "THE MOSLEHM SHRINES OF MECCA AND MEDINA ARE HERE" :rem 98
4390 DATA "THE CAPITAL OF THIS NATION IS RIYADH", SAUDI ARABIA :rem 134
4640 DATA "THE 1ST WORLD RULER IS TODAY AN UNDEVELOPED COUNTRY" :rem 128
4650 DATA "THE MAIN POPULATION CENTERS ARE ON THE BANKS OF THE NILE RIVER" :rem 61
4660 DATA "THE ASWAN DAM AND THE SUEZ CANAL ARE BOTH FOUND HERE" :rem 90
4670 DATA "THE CAPITOL OF THIS NATION IS CAIRO", EGYPT :rem 99
4680 DATA "FORMERLY RULED BY CARTHAGE, ROME, ITALY, BRITAIN AND FRANCE" :rem 41
4690 DATA "THOUGH A MONARCHY IN 1952, IT BECAME SOCIALIST IN 1969" :rem 139
4700 DATA "ITS LOW-SULPHUR OIL RESERVES ARE IN GREAT DEMAND" :rem 73
4710 DATA "THE CAPITAL OF THIS NATION IS TRIPOLI", LIBYA :rem 251
4880 DATA "ITS CAPITAL WAS THE CAPITAL OF FRENCH WEST AFRICA" :rem 198
4890 DATA "IT CONTAINS THE BEST SEAPORT IN WEST AFRICA" :rem 220
4900 DATA "OF THE FRENCH-SPEAKING AFRICAN NATIONS, IT IS THE MOST DEMOCRATIC" :rem 74
4910 DATA "THE CAPITAL OF THIS NATION IS DAKAR", SENEGAL :rem 203
4960 DATA "IT IS THE MOST PROSPEROUS OF AFRICA'S TROPICAL NATIONS" :rem 78
4970 DATA "IT IS LOCATED BETWEEN GHANA AND LIBERIA ON THE GULF OF GUINEA" :rem 149
4980 DATA "THIS PRO-WESTERN AFRICAN NATION IMPORTS 20% OF ITS WORKERS" :rem 213
4990 DATA "THE CAPITAL OF THIS NATION IS ABIDJAN", IVORY COAST :rem 177
5160 DATA "ITS NAMESAKE WAS AN AFRICAN NATION THAT LASTED 800 YEARS" :rem 15
5170 DATA "IT WAS FORMERLY THE GOLD COAST, A BRITISH COLONY" :rem 250
5180 DATA "IT LEADS THE WORLD IN CACAO PRODUCTION, FROM WHICH CHOCOLATE IS MADE" :rem 168
5190 DATA "THE CAPITAL OF THIS NATION IS ACCRA", GHANA :rem 35

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LJ
5320 Data,"Black Freedmen founded this nation in 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 Data,"It was anciently known as Nubia" :rem 90
5370 Data,"The White and Blue Nile rivers converge 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 Data,"It was anciently called Abyssinia" :rem 13
5410 Data,"Its language, Amharic, is unique and complex" :rem 7
5420 Data,"Except for six years, it has never been ruled by a foreign power" :rem 127
5430 Data,"The capital of this nation is Addis Ababa", Ethiopia :rem 102
5440 Data,"Tourists hunting big game built its large tourist industry" :rem 203
5450 Data,"The Nile's source is found between this nation and Uganda" :rem 42
5500 Data,"It won independence after the Mau Mau Uprising" :rem 165
5510 Data,"The capital of this nation is Nairobi", Kenya :rem 226
5540 Data,"Bilharziasis is a common disease due to 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 from here in 1972" :rem 230
5590 Data,"The capital of this nation is Kampala", Uganda :rem 21
5720 Data,"Though mainly black, it only recently got a black government" :rem 143
5730 Data,"Its main geographic feature is Victoria Falls" :rem 150
5740 Data,"It became the 154th United Nations member in 1980" :rem 133
5750 Data,"The capital of this nation is Salisbury", Zimbabwe :rem 123
5880 Data,"Its official tongues are English and Afrikaans" :rem 57
DATA "IT'S THE WORLD LEADER IN DIAMOND, GOLD [2 SPACES] AND URANIUM PRODUCTION" :rem 65
DATA "APARTHEID SUBJUGATES ITS BLACK MAJORITY [SPACE] TO THE WHITE MINORITY" :rem 247
DATA "ITS CAPITAL CITIES ARE CAPE TOWN AND [4 SPACES] BLOEMFONTEIN", "SOUTH AFRICA" :rem 19
6000 DATA "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 DATA D "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 DATA D "IT WAS FOUNDED AS A RELIGIOUS HAVEN FOR 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 DATA D "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", AFGHANISTAN :rem 249
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", CHINA :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
6300 DATA"CHINA CONSIDERS THIS ISLAND PART OF THEIR COUNTRY" :rem 163
6310 DATA"THE CAPITAL OF THIS NATION IS TAIPEI", TAIWAN :rem 229
6320 DATA,"OKINAWA AND IWO JIMA ARE POSSESSIONS OF THIS ISLAND COUNTRY" :rem 131
6330 DATA"ITS MOST PROMINENT GEOGRAPHICAL FEATURE IS MOUNT FUJI" :rem 232
6340 DATA"THIS FORMER SILK CAPITAL IS NOW FAMOUS FOR ELECTRONICS AND AUTOS" :rem 59
6350 DATA"THE CAPITAL OF THIS NATION IS TOKYO", JAPAN :rem 105
6360 DATA,"THIS PENINSULAR NATION HAS BEEN RULED BY CHINA, JAPAN AND THE USSR" :rem 166
6370 DATA"THE 38TH PARALLEL DIVIDES THIS COUNTRY INTO TWO SECTIONS" :rem 115
6380 DATA"THE NORTH SECTION DOES MANUFACTURING, WHILE THE SOUTH FARMS" :rem 65
6390 DATA"IT HAS TWO CAPITALS-- PYONGYANG AND SEOUL", KOREA :rem 3
6480 DATA,"WARS WITH VIETNAM AND THAILAND HAVE 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 PENH", CAMBODIA :rem 68
6520 DATA,"A 22-YEAR DIVISION OF THIS COUNTRY ENDED IN 1976" :rem 210
6530 DATA"THIS COUNTRY DEFEATED KUBLAI KHAN'S 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", VIETNAM :rem 238
6560 DATA,"THIS IS THE ONLY CONTINENT OCCUPIED BY A SINGLE NATION" :rem 250
6570 DATA"IT WAS SETTLED BY DEPORTED BRITISH CRIMINALS" :rem 117
6580 DATA"IT WAS ORIGINALLY PEOPLED BY ABORIGINES" :rem 57
6590 DATA"THE CAPITAL OF THIS NATION IS CANBERRA", AUSTRALIA :rem 82
6600 DATA,"THE MAYAS, TOLTECS AND AZTECS RULED HERE" :rem 129
6610 DATA"HERNANDO CORTEZ CONQUERED THE COUNTRY IN 1519" :rem 118
6620 DATA"IT CLAIMED WHAT IS NOW TEXAS UNTIL 1836" :rem 98
6750 DATA "THE CAPITAL OF THIS NATION IS MEXICO CITY", MEXICO :rem 48
6960 DATAE, "BALBOA FIRST SIGHTED THE PACIFIC OCEAN FROM HERE" :rem 99
6970 DATA "THE SHORTEST DISTANCE BETWEEN ATLANTIC AND PACIFIC OCEANS IS HERE" :rem 113
6980 DATA "U.S. TROOPS WILL BE REMOVED FROM ITS CANAL BY 1999" :rem 235
6990 DATA "THE CAPITAL OF THIS NATION IS PANAMA", PANAMA :rem 207
7040 DATAE, "COLUMBUS FIRST REACHED SOUTH AMERICA HERE, IN 1498" :rem 186
7050 DATA "PETROLEUM AND IRON MAKE IT ONE OF THE AREA'S RICHEST NATIONS" :rem 198
7060 DATA "THE WORLD'S HIGHEST WATERFALL, ANGEL FALLS, IS FOUND HERE" :rem 41
7070 DATA "THE CAPITAL OF THIS NATION IS CARACAS", VENEZUELA :rem 6
7120 DATAE, "THIS COMMUNIST NATION IS ONLY 90 MILES FROM FLORIDA" :rem 79
7130 DATA "ITS CAPITAL IS THE LARGEST CITY IN THE WEST INDIES" :rem 86
7140 DATA "ITS CHIEF EXPORTS ARE SUGAR AND FINE CIGARS" :rem 182
7150 DATA "THE CAPITAL OF THIS NATION IS HAVANA", CUBA :rem 50
7160 DATAE, "THIS LARGE NATION IS BIGGER THAN 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 GREENLAND" :rem 93
7190 DATA "THE CAPITAL OF THIS NATION IS BRASILIA", BRAZIL :rem 119
7200 DATAE, "ITS CAPITAL CITY CATHEDRAL CORNERSTONE 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 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 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 THE CHACO WAR" :rem 142
7270 DATA "THE CAPITAL OF THIS NATION IS ASUNCION", PARAGUAY :rem 37
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 DATAE,"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 DATAE"ITS FRENCH-SPEAKING PEOPLE HAVE TRIED TO
SECede FROM THE NATION"
:rem 223
7470 DATA"THE CAPITAL OF THIS NATION IS OTTAWA", CAN
NADA
:rem 213

Program 3. Mother Earth – DATA 2

3190 DATAE,"THE CITY OF REYKJAVIK BORDERS THE ARCT
IC CIRCLE"
:rem 81
3200 DATA"IT WAS A TERRITORY OF DENMARK UNTIL
{5 SPACES}1844"
:rem 181
3210 DATAE"THE WATER IN THE HOMES IS HEATED BY
{5 SPACES}GEYSERS"
:rem 128
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 MADE 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 DATAAA, "THE ARDENNES PLATEAU IS A CENTER OF ZINC AND 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 DATAAA, "THOUGH SMALL IN SIZE, IT PRODUCES A LOT 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", LUXEMBOURG : rem 128
3690 DATAAA, "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", POLAND : rem 250
3730 DATAAA, "IT IS DIVIDED INTO THREE REGIONS, ONE [SPACE] OF WHICH 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] CARPATIAN MOUNTAINS" : rem 247
3760 DATA "THE CAPITAL OF THIS NATION IS PRAGUE", CZECHOSLOVAKIA : rem 69
3770 DATAAA, "IT WAS RULED BY TURKS AND OTHER INVADES [6 SPACES] UNTIL 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
4

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
ED BY BRITAIN UNTIL 1960"  :rem 43
4090 DATA"BOTH GREECE AND TURKEY HAVE FUGHT FOR
[2 SPACES]CONTROL OF THIS COUNTRY"  :rem 180
4100 DATA"THE CONSTITUTION CALLS FOR BOTH GREEK
[3 SPACES]AND TURKISH LEADERS"  :rem 165
4110 DATA "THE CAPITAL OF THIS NATION IS NICOSIA", CYPRUS :rem 77
4400 DATA, "ONE OF FEW MID-EAST NATIONS WITH ENOUGH 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", YEMEN :rem 72
4440 DATA, "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 DATA, "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", OMAN :rem 101
4520 DATA, "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 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 DATA, "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", QATAR :rem 2
4600 DATA, "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", KUWAIT :rem 18
4720 DATA,"IT IS LOCATED BETWEEN LIBYA AND ALGERIA"  :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 DATA,"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 DATA,"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 IS
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 FROM
THIS 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", GUINEA  :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
The Former Kingdom of Abomey became a Socialist State in 1974.
The port of Cotonou is its greatest asset.
It has two capitals -- Porto-Novo and Cotonou, Benin.
It was controlled by both the French and the British until 1960.
Its official languages are French and English.
Half of its British sector was annexed to Nigeria in 1961.
The capital of this nation is Younde, Cameroon.
The Albert Schweitzer Lambarene Hospital is located here.
Much of its wealth has come from its hardwood forests.
Huge deposits of uranium and manganese have been found here.
The capital of this nation is Libreville, Gabon.
Britain established its capital as a free slave sanctuary.
More than 60,000 descendants of slaves (Creoles) live here.
It is located on the Atlantic, between Liberia and Guinea.
The capital of this nation is Freetown, Sierra Leone.
It became Britain's first African possession in 1588.
It is surrounded by Senegal on three sides.
Its crops of peanuts and rice are grown along the Gambia River.
The capital of this nation is Banjul, The Gambia.
It is located on the eastern horn of Africa.
Many of its nomad people live outside the country's borders.
A small area is still controlled by the French.
The capital of this nation is Mogadishu, Somalia.
5520 DATA "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 DATA "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 DATA "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 DATA "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 DATA "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 DATA "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
DATA,"THIS INDIAN ISLAND NATION IS THE SIZE OF TEXAS"
DATA,"IT SUPPLIES 80% OF THE WORLD'S VANILLA"
DATA,"THE NATION'S PEOPLE ARE OF INDONESIAN DESCENT"
DATA,"THE CAPITAL OF THIS NATION IS ANTANANARIVO, MADAGASCAR"
DATA,"IT WAS A BRITISH PROTECTORATE KNOWN AS BECHUANALAND UNTIL 1966"
DATA,"AFRICA'S BUSHMEN MAKE THEIR HOME HERE"
DATA,"IT WAS CREATED BY THE BRITISH TO PROTECT TRIBESMEN FROM THEIR ENEMIES"
DATA,"THE CAPITAL OF THIS NATION IS GABORONE", BOTSWANA
DATA,"IT'S COMPLETELY SURROUNDED BY SOUTH AFRICA"
DATA,"MORE THAN HALF OF ITS WORKING POPULATION WORKS IN SOUTH AFRICA"
DATA,"ITS MOUNTAIN TERRAIN HAS PROTECTED IT FROM SOUTH AFRICA"
DATA,"THE CAPITAL OF THIS NATION IS MASERU", LESOTHO
DATA,"IT WAS FORMERLY KNOWN AS EAST PAKISTAN"
DATA,"THE MOUTH OF THE GANGES RIVER IS FOUND HERE"
DATA,"IT IS ALMOST ENTIRELY SURROUNDED BY INDIA"
DATA,"THE CAPITAL OF THIS NATION IS DACCA", BANGLADESH
DATA,"IN RECENT HISTORY, THIS COUNTRY WAS KNOWN AS CEYLON"
DATA,"IT WAS ONCE CALLED SERENDIP, THE ROOT WORD OF 'SERENDIPITY'"
DATA,"IT IS AN ISLAND OFF THE SOUTHERN TIP OF INDIA"
DATA,"THE CAPITAL OF THIS NATION IS COLUMBO", "SRI LANKA"
DATA,"THE IRAWADDY RIVER CAN BE NAVIGATED FOR 900 MILES IN THIS COUNTRY"
DATA,"CONQUERED BY BRITAIN THREE TIMES, IT WAS RULED BY THEM UNTIL 1937"
DATA,"ITS CHIEF RESOURCES ARE RUBIES AND TEAKWOOD"
DATA,"THE CAPITAL OF THIS NATION IS RANGOON", BURMA
Level 4

6440 DATA "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
6490 DATA "THE ISLAND OF JAVA CONTAINS 1,500 [7 SPACES] PERSONS PER SQUARE MILE" :rem 222
6500 DATA "THE CAPITAL OF THIS NATION IS JAKARTA", INDONESIA :rem 7
6510 DATA "IT WAS SETTLED FIRST BY MAORIS AND THEN [SPACE] BY THE BRITISH" :rem 81
6520 DATA "IT CONSISTS OF THE SOUTHERNMOST ISLANDS [SPACE] OF POLYNESIA" :rem 198
6530 DATA "IT IS LACED BETWEEN MEXICO AND [8 SPACES] HONDURAS" :rem 109
6540 DATA "IT HAS THE LARGEST POPULATION OF ALL THE CENTRAL AMERICAN NATIONS" :rem 94
6550 DATA "THE CAPITAL OF THIS NATION IS GUATEMALA [SPACE] CITY", GUATEMALA :rem 204
6560 DATA "COLUMBUS ARRIVED HERE ON HIS FINAL [6 SPACES] VOYAGE IN 1502" :rem 77
6570 DATA "ITS MESTIZO POPULATION SPEAKS SPANISH [3 SPACES] AND ENGLISH" :rem 13
6580 DATA "IT IS BORDERED BY GUATEMALA, NICARAGUA [2 SPACES] AND EL SALVADOR" :rem 81
6600 DATA "IT'S CENTRAL AMERICA'S SMALLEST NATION " :rem 91
DATA "IT'S THE ONLY CENTRAL AMERICAN COUNTRY WITH NO SEACOAST" :rem 20
DATA "ITS WORKERS IN HONDURAS HAVE CAUSED PROBLEMS WITH THAT COUNTRY" :rem 40
DATA "THE CAPITAL OF THIS NATION IS SAN SALVADOR", "EL SALVADOR" :rem 223
DATA "IT HAS THE LARGEST LAND MASS OF ALL THE CENTRAL AMERICAN NATIONS" :rem 24
DATA "THE U.S. WANTS AN ATLANTIC-TO-PACIFIC CANAL TO BE BUILT HERE" :rem 159
DATA "IT IS BETWEEN HONDURAS AND CENTRAL AMERICA" :rem 162
DATA "THE CAPITOL OF THIS NATION IS MANAGUA", "NICARAGUA" :rem 240
DATA "ITS 90% LITERACY RATE IS THE HIGHEST IN CENTRAL AMERICA" :rem 194
DATA "ITS STANDARD OF LIVING IS HIGHEST OF ANY CENTRAL AMERICAN NATION" :rem 6
DATA "ITS ECONOMY IS BASED MAINLY ON SMALL INDEPENDENT FARMS" :rem 189
DATA "THE CAPITAL OF THIS NATION IS SAN JOSE", "COSTA RICA" :rem 95
DATA "THESE 3 NORTH COAST COUNTRIES ARE FORMER BRITISH COLONIES" :rem 23
DATA "THEY ARE COMPOSED OF FRENCH GUIANA, SURINAM AND GUYANA" :rem 117
DATA "ONE OF THESE 3 NATIONS USED TO BE A FRENCH PRISON COLONY" :rem 103
DATA "ITS CAPITALS ARE GEORGETOWN, CAYENNE, AND PARAMARIBO", "THE GUIANAS" :rem 167
DATA "THE ONLY SOUTH AMERICAN COUNTRY WITH ATLANTIC AND PACIFIC COASTS" :rem 227
DATA "ONLY BRAZIL PRODUCES MORE COFFEE THAN THIS COUNTRY" :rem 11
DATA "IT PRODUCE 95% OF THE WORLD'S EMERALDS" :rem 128
DATA "THE CAPITAL OF THIS NATION IS BOGOTA", "COLOMBIA" :rem 102
DATA "IT OCCUPIES THE WEST HALF OF THE ISLAND OF HISPANIOLA" :rem 127
DATA "ITS ECONOMY IS BASED ON RUM, MOLASSES AND TOURISM" :rem 89
DATA "ITS CITIZENS ARE DESCENDED FROM AFRICAN SLAVES" :rem 209
DATA "THE CAPITOL OF THIS NATION IS PORT-AU-PRINCE", "HAITI" :rem 206
DATA "IT SHARES THE ISLAND OF HISPANIOLA WITH HAITI" :rem 197
DATA "COLUMBUS'S ASHES ARE HERE": rem 130
DATA "IT BOASTS THE WORLD'S LARGEST SUGAR MILL": rem 61
DATA "THE CAPITAL OF THIS NATION IS SANTO DOMINGO": rem 211
DATA "DOMINICAN REPUBLIC": rem 29
DATA "IF THE U.S. EVER ADDS ANOTHER STATE, THIS WILL BE IT": rem 173
DATA "IT SENDS A NON-VOTING REPRESENTATIVE TO THE U.S. CONGRESS": rem 144
DATA "ITS CITIZENS ARE ALSO CITIZENS OF THE U.S.": rem 63
DATA "THE CAPITAL OF THIS NATION IS SAN JUAN": rem 200
DATA "PUERTO RICO": rem 188
DATA "IT IS SELF-GOVERNING, THOUGH UNDER BRITISH CONTROL": rem 139
DATA "THE ARAWAK INDIANS WHO LIVED HERE WERE KILLED BY SPAIN": rem 79
DATA "IT SPEAKS ENGLISH, BUT TIES ITSELF WITH CUBA AND RUSSIA": rem 176
DATA "THE CAPITAL OF THIS NATION IS KINGSTON", JAMAICA: rem 191
DATA "THEY ARE A GROUP OF 700 ISLANDS EAST OF FLORIDA": rem 126
DATA "COLUMBUS FIRST REACHED THE NEW WORLD": rem 134
DATA "THEIR INCOME COMES FROM TOURISM, RUM, DRUGS AND BANKING": rem 220
DATA "THE CAPITAL OF THIS NATION IS NASSAU", BAHAMAS: rem 31
DATA "ITS NAME IS SPANISH FOR 'EQUATOR'": rem 181
DATA "IT IS THE WORLD'S LARGEST PRODUCER OF BANANAS": rem 71
DATA "THE WORLD'S MAIN PRODUCER OF BALSA WOOD": rem 202
DATA "THE CAPITAL OF THIS NATION IS QUITO", ECUADOR: rem 77
DATA "ONLY MALAYSIA PRODUCES MORE TIN THAN THIS COUNTRY": rem 68
DATA "THE ANDES MOUNTAINS FORM ITS WESTERN BORDER": rem 61
DATA "CHILE CAPTURED THIS COUNTRY'S PACIFIC COAST": rem 237
DATA "THE CAPITAL OF THIS NATION IS LA PAZ", BOLIVIA: rem 237
"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
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.

```rem
1 REM MR PRESIDENT
100 NP=39:CB=828:VC=53248:MC=54272
105 POKEVC+32,6:POKEVC+33,12:PRINTCHR$(147) ; rem 151
110 FORX=54272TO54296:POKEX,Ø:NEXTX ; rem 173
120 FI$="{BLU}{RVS}* * * * * [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$:IFX$<>"$SONG"THEN150 ; rem 81
160 FORX=ØTO31:READZ:NT%$(X)=Z:NEXTX ; rem 12
170 SM=((PEEK(53272)AND240)/16)*1024:CM=55296 ; rem 146
180 GOSUB700 ; rem 176
200 S%=Ø:FORX=1TONP:POKECB+X,Ø:NEXTX:PRINTCHR$(147 ) ; rem 62
210 FORX=1TONP:GOSUB800:POKECB+Z,X:NEXTX ; rem 155
300 X=1 ; rem 89
305 Y=PEEK(CB+X):Y=(Y-1)*5 ; rem 227
310 RESTORE:IFY=ØTHEN330 ; rem 12
320 FORW=1TOY:READX$:NEXTW ; rem 223
330 FORW=1TO5:READX$:QT$(W-1)=X$:NEXTW ; rem 126
```

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Level 4

400 \textbf{W}=\emptyset \quad \text{:rem 88}
405 \text{GOSUB3000} \quad \text{:rem 220}
407 \text{POKEVC}+33,1 \quad \text{:rem 81}
408 \text{PRINT}[\text{BLK}][\text{HOME}][23 \text{ DOWN}]";SPC(15);"\text{SCORE} = ";
\text{S\%}; \quad \text{:rem 149}
410 \text{PRINT}[\text{HOME}][10 \text{ DOWN}][2 \text{ SPACES}]\text{QUESTION} ";\text{W}+1
\quad \text{:rem 172}
420 \text{PRINT}[2 \text{ DOWN}]\text{HE }";\text{QT$(W)}"\cdot[2 \text{ DOWN}]" \quad \text{:rem 145}
430 \text{X$}="\text{POKE198,0};\text{INPUTX$};\text{IFX$}=\text{QT$(4)}\text{THEN500}
\quad \text{:rem 213}
435 \text{IFX$}="\text{END}"\text{THEN600}
\quad \text{:rem 196}
440 \text{POKEMC}+0,0;\text{POKEMC}+1,10;\text{POKEMC}+4,17;\text{POKEMC}+5,15
\quad \text{:rem 207}
445 \text{POKEVC}+33,0;\text{FORV}=1\text{TO100};\text{NEXTV};\text{POKEMC}+4,16
\quad \text{:rem 37}
450 \text{POKEMC}+24,0;\text{W}=\text{W}+1;\text{IFW}<=3\text{THEN405}
\quad \text{:rem 90}
455 \text{GOSUB3000}\quad \text{:rem 225}
460 \text{POKEVC}+33,1;\text{PRINT}[\text{RED}][\text{HOME}][13 \text{ DOWN}] \text{ANSWER}
\quad \text{SPACE}=";\text{QT$(4)};\text{S\%}=\text{S\%}-5
\quad \text{:rem 198}
465 \text{PRINT}[\text{BLK}][\text{HOME}][23 \text{ DOWN}]";SPC(15);"\text{SCORE} = ";
\text{S\%}; \quad \text{:rem 152}
470 \text{FORW}=1\text{TO2500};\text{NEXTW};\text{GOTO560}
\quad \text{:rem 143}
490 \text{GOTO600}
\quad \text{:rem 107}
500 \text{S\%}=\text{S\%}+4-W \quad \text{:rem 165}
510 \text{POKEMC}+0,0;\text{POKEMC}+1,0;\text{POKEMC}+5,15;\text{POKEMC}+6,15
\quad \text{W}=20;\text{POKEMC}+24,8
\quad \text{:rem 178}
520 \text{FORV}=12\text{TO1STEP}-1;\text{POKEVC}+33,V;\text{POKEMC}+4,17
\quad \text{:rem 227}
530 \text{POKEMC}+1,W;\text{W}=\text{W}+5;\text{FORX1}=1\text{TO50};\text{NEXTX1}
\quad \text{:rem 221}
540 \text{POKEMC}+4,16;\text{NEXTV}
\quad \text{:rem 25}
550 \text{POKEMC}+24,0 \quad \text{:rem 70}
560 \text{X}=\text{X}+1;\text{IFX$}<=\text{NPTHEN305}
\quad \text{:rem 227}
600 \text{PRINTCHR$(147)};"[\text{BLK}][\text{DOWN}][15 \text{ SPACES}][\text{RVS}]\text{TEST}
\quad \text{OVER}!\text{OFF}"
\quad \text{:rem 114}
610 \text{PRINT}[3 \text{ DOWN}][2 \text{ SPACES}]\text{YOUR \text{SCORE} = ";S\%}
\quad \text{:rem 86}
620 \text{IFS\%}<0\text{THENS\%=0}
\quad \text{:rem 31}
625 \text{X}=\text{X}-1;\text{IFX<1\text{THENX}=1}
\quad \text{:rem 107}
630 \text{X}=\text{INT}((\text{S\%}*100)/(\text{X}*4)) \quad \text{:rem 36}
640 \text{PRINT}[2 \text{ DOWN}][2 \text{ SPACES}]\text{YOUR \text{GRADE} = ";X;"}
\quad \text{[LEFT]\$}; \quad \text{:rem 80}
650 \text{PRINT}[3 \text{ DOWN}][2 \text{ SPACES}]\text{PLAY AGAIN?";PRINT}
\quad \text{[DOWN]}[2 \text{ SPACES}]\text{ENTER \{RVS\}Y\{OFF\} OR \{RVS\}N}
\quad \text{[OFF]}
\quad \text{:rem 158}
660 \text{GETX$};\text{IFX$}="\text{THEN660}
\quad \text{:rem 137}
670 \text{IFX$}="Y"\text{THEN200}
\quad \text{:rem 67}
680 \text{IFX$}="N"\text{THEN660}
\quad \text{:rem 128}
690 \text{GOSUB3500};\text{PRINTCHR$(147)}
\quad \text{:rem 156}
695 \text{END}
\quad \text{:rem 123}
700 PRINT "[BLK][DOWN]{8 SPACES}*** MISTER PRESIDENT ****" :rem 135
705 PRINT "[WHT][2 DOWN]YOU WILL BE GIVEN UP TO FOUR QUESTIONS[2 SPACES]ABOUT EACH U.S. PRESIDENT ." :rem 132
710 PRINT "[2 DOWN]POINTS WILL BE GIVEN DEPENDING UPON HOW MANY QUESTIONS YOU NEED:" :rem 177
725 PRINT "[DOWN]{3 SPACES}ALL MISSED[2 SPACES]= -5" :rem 235
728 PRINT "[2 DOWN] TYPE [RVS]END[OFF] TO END THE GAME EARLY." :rem 113
730 GOSUB 3500 :rem 226
735 PRINT "[2 DOWN]{12 SPACES}(PRESS ANY KEY);" ;V :rem 129
740 GETX$ :IF X$ = "" THEN 790 :rem 145
745 RETURN :rem 133
800 W = 0 :rem 92
810 Z = INT((RND(1) * NP) + 1) : IF PEEK(CB + Z) = 0 THEN RETURN :rem 102
820 W = W + 1 : IF W < 10 THEN 810 : rem 99
830 Z = 1 :rem 39
840 IF PEEK(CB + Z) = 0 THEN RETURN :rem 249
850 Z = Z + 1 : GOTO 840 :rem 112
1000 DATA "SERVED FROM 1789 TO 1797" :rem 107
1005 DATA "WAS THE ONLY PRESIDENT ELECTED UNANIMOUSLY" :rem 58
1010 DATA "MAY HAVE DIED FROM BEING BLED TO DEATH BY LEECHES" :rem 142
1015 DATA "HAD JOHN ADAMS FOR A VICE-PRESIDENT","G. WASHINGTON" :rem 102
1020 DATA "WAS THE FIRST TO BE DEFEATED FOR REELECTION" :rem 163
1025 DATA "WAS THE FIRST TO LIVE IN THE WHITE HOUSE" :rem 199
1030 DATA "ERRORONEOUSLY SAID ON HIS DEATHBED, 'JEFFERSON STILL LIVES]' " :rem 133
1035 DATA "SERVED FROM 1797 TO 1801" :rem 107
1040 DATA "J. ADAMS", "WAS THE SECOND PRESIDENT BORN IN VIRGINIA" :rem 156
1045 DATA "BEAT CHARLES PINCKNEY IN A[11 SPACES]REELECTION" :rem 103
1050 DATA "DIED ON AMERICA'S 50TH ANNIVERSARY" :rem 157
DATA "SERVED FROM 1801 TO 1809", "T JEFFERSON"

DATA "WAS CALLED THE 'FATHER OF THE CONSTITUTION'"

DATA "HAD BOTH OF HIS VICE-PRESIDENTS DIE"

DATA "DECIDED TO ENTER THE WAR OF 1812"

DATA "WAS CALLED THE 'FATHER OF THE CONSTITUTION'"

DATA "HAD BOTH OF HIS VICE-PRESIDENTS DIE"

DATA "DECIDED TO ENTER THE WAR OF 1812"

DATA "WAS A STUDENT OF THOMAS JEFFERSON"

DATA "WAS BOTH SECRETARY OF STATE AND SECRETARY OF WAR"

DATA "WAS THE FOURTH PRESIDENT BORN IN VIRGINIA"

DATA "SERVED FROM 1817 TO 1825"

DATA "WAS A STUDENT OF THOMAS JEFFERSON"

DATA "WAS BOTH SECRETARY OF STATE AND SECRETARY OF WAR"

DATA "WAS THE FOURTH PRESIDENT BORN IN VIRGINIA"

DATA "SERVED FROM 1817 TO 1825"

DATA "WASTHE 1ST TO EXPERIENCE AN ASSASSINATION ATTEMPT"

DATA "WAS THE HERO OF THE BATTLE OF NEW ORLEANS"

DATA "WAS OUR 7TH PRESIDENT", "WAS NICKNAMED 'OLD HICKORY'", "A JACKSON"

DATA "WAS OUR 7TH PRESIDENT", "WAS NICKNAMED 'OLD HICKORY'", "A JACKSON"

DATA "WAS OUR 8TH PRESIDENT, AND SERVED FOR ONLY 31 DAYS"

DATA "WAS THE OLDEST MAN EVER TO BE MADE PRESIDENT, EXCEPT FOR REAGAN"

DATA "DIED FROM A COLD CAUGHT DURING HIS INAUGURAL ADDRESS"

DATA "WAS THE FIRST TO DIE IN OFFICE"

DATA "WAS OUR 9TH PRESIDENT, AND SERVED FOR ONLY 31 DAYS"

DATA "HAD THE NICKNAME IN OFFICE OF 'OLD VETO'"
DATA"WAS THE 1ST PRESIDENT IN DANGER OF [3 SPACES]IMPEACHMENT" :rem 125
DATA"WAS THE 1ST PRESIDENT TO TAKE[8 SPACES]OFFICE AFTER A PRESIDENT'S DEATH" :rem 43
DATA"WAS OUR 10TH PRESIDENT, AND SERVED [3 SPACES]FROM 1841 TO 1845","J TYLER":rem 58
DATA"BEAT HENRY CLAY BY 38,000 VOTES" :rem 68
DATA"ANNEXED TEXAS AND OREGON TO THE U.S" :rem 166
DATA"HAD GEORGE DALLAS AS HIS[13 SPACES]VICE-PRESIDENT" :rem 217
DATA"WAS OUR 11TH PRESIDENT, AND SERVED [3 SPACES]FROM 1845 TO 1849","J POLK":rem 237
DATA"HAD THE NICKNAME OF 'OLD ROUGH AND [3 SPACES]READY'" :rem 173
DATA"WAS A 2ND COUSIN OF JAMES MADISON" :rem 252
DATA"DIED FROM EATING TOO MANY CHERRIES" :rem 161
DATA"WAS OUR 12TH PRESIDENT, AND SERVED [3 SPACES]FROM 1849 TO 1850","Z TAYLOR" :rem 154
DATA"BEGAN HIS CAREER AS AN APPRENTICE [4 SPACES]WOOLCARDER" :rem 24
DATA"SERVED AS MEDIATOR IN A GUANO[8 SPACES]D ISPUTE" :rem 72
DATA"SERVED AS VICE-PRESIDENT TO ZACHARY [2 SPACES]TAYLOR" :rem 22
DATA"WAS OUR 13TH PRESIDENT, AND SERVED [3 SPACES]FROM 1850 TO 1853","M PILLMORE" :rem 12
DATA"WAS A BRIGADIER GENERAL IN THE[7 SPACES]MEXICAN WAR" :rem 67
DATA"WAS THE YOUNGEST U.S. SENATOR AT AGE 33" :rem 92
DATA"WAS OUR 14TH PRESIDENT, AND SERVED [3 SPACES]FROM 1853 TO 1857","F PIERCE" :rem 111
DATA"OPPOSED FREEING THE SLAVES BECAUSE [3 SPACES]THEY WOULD TAKE OVER THE SOUTH" :rem 127
DATA"TRIED 3 TIMES BEFORE FINALLY BEING [3 SPACES]NOMINATED AS PRESIDENT" :rem 90
DATA"WAS OUR 15TH PRESIDENT, AND SERVED [3 SPACES]FROM 1857 TO 1861" :rem 251
DATA"WAS OUR ONLY BACHELOR PRESIDENT","J BUCH ANAN" :rem 50
Level 4

1540 DATA"BEAT STEPHEN DOUGLAS IN A FAMOUS SENATORIAL RACE"
[rem 26]
1550 DATA"WAS THE 1ST PRESIDENT TO BE ASASSINATED"
[rem 40]
1560 DATA"WAS OUR 16TH PRESIDENT, AND SERVED 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 LOYALTIES DURING THE CIVIL WAR"
[rem 89]
1590 DATA"WAS OUR 17TH PRESIDENT, AND SERVED 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 CIGARS EACH DAY"
[rem 48]
1630 DATA"WAS HELPED TO ELECTION BY THE NEWLY FREED SLAVES"
[rem 250]
1640 DATA"WAS KNOWN AS AMERICA'S GREATEST WAR HERO"
[rem 24]
1650 DATA"WAS OUR 18TH PRESIDENT, AND SERVED FROM 1869 TO 1877","U GRANT"
[rem 77]
1660 DATA"HAD A WIFE WITH THE NICKNAME OF 'LEMONADE LUCY'"
[rem 44]
1670 DATA"WON THE PRESIDENCY WITH 250,000 VOTES LESS THAN HIS OPPONENT"
[rem 208]
1680 DATA"WON THE PRESIDENCY BY 1 ELECTORAL VOTE"
[rem 157]
1690 DATA"WAS OUR 19TH PRESIDENT, AND SERVED FROM 1877 TO 1881","R HAYES"
[rem 71]
1700 DATA"WAS A FORMER LAY MINISTER AND EVANGELIST"
[rem 51]
1710 DATA"WAS OPPOSED TO WAR OR SLAVERY BECAUSE OF HIS RELIGION"
[rem 74]
1720 DATA"WAS THE 2ND PRESIDENT TO BE ASASSINATED"
[rem 19]
1730 DATA"WAS OUR 20TH PRESIDENT, AND SERVED DURING 1881","J GARFIELD"
[rem 17]
1740 DATA"WAS FROM VERMONT, BUT MAY HAVE BEEN 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 FROM 1881 TO 1885","C ARTHUR"
[rem 150]
1780 DATA"WAS A BACHELOR WHEN ELECTED, BUT MARRIED WHILE IN OFFICE"
Level 4

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
TERM":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
2020 DATA "SAID 'I AM NOT FIT FOR THIS OFFICE
AND NEVER SHOULD HAVE BEEN HERE''

2030 DATA "WAS OUR 29TH PRESIDENT, AND SERVED
FROM 1921 TO 1923"

2040 DATA "DIED AMIDST CORRUPTION AND MAY HAVE BEEN POISONED"

2050 DATA "WAS LINKED WITH THE TEAPOT DOME SCANDAL, "W HARDING"

2060 DATA "WAS FAMOUS FOR BREAKING BOSTON'S POLICE STRIKE"

2070 DATA "WAS OUR 30TH PRESIDENT, AND SERVED FROM 1923 TO 1929"

2080 DATA "WAS 'WEANED ON A PICKLE,' ACCORDING TO ALICE LONGWORTH"

2090 DATA "WAS KNOWN AS 'SILENT CAL,' "C COOLIDGE"

2100 DATA "LATER WORKED UNDER PRESIDENTS TRUMAN AND EISENHOWER"

2110 DATA "WAS A MINING ENGINEER BEFORE ENTERING POLITICS"

2120 DATA "WAS OUR 31ST PRESIDENT, AND SERVED FROM 1929 TO 1933"

2130 DATA "LOST HIS REELECTION BID BECAUSE OF THE GREAT DEPRESSION", "H HOOVER"

2140 DATA "WAS OUR 32ND PRESIDENT, BEGINNING HIS TERM IN 1933"

2150 DATA "IS CREDITED WITH SAVING AMERICA FROM THE GREAT DEPRESSION"

2160 DATA "WAS PRESIDENT DURING MOST OF WORLD WAR II"

2170 DATA "SERVED BEFORE PRESIDENTS WERE ALLOWED ONLY TWO TERMS"

2175 DATA "F ROOSEVELT"

2180 DATA "WAS THE ONLY 20TH CENTURY PRESIDENT WHO NEVER WENT TO COLLEGE"

2190 DATA "WAS OUR 33RD PRESIDENT, AND SERVED FROM 1945 TO 1953"

2200 DATA "WAS A HABERDASHER BEFORE ENTERING POLITICS"

2210 DATA "WAS PRESIDENT WHEN ATOMIC BOMBS WERE DROPPED ON JAPAN", "H TRUMAN"

2220 DATA "WAS WANTED BY BOTH PARTIES AS A PRESIDENTIAL CANDIDATE"

2230 DATA "PLAYED FOOTBALL FOR WEST POINT"

2240 DATA "WAS OUR 34TH PRESIDENT, AND SERVED FROM 1953 TO 1961"
DATA"WAS THE ONLY PRESIDENT TO BE A 5-STAR GENERAL","D EISENHOWER"

DATA"LIVED A SHORTER LIFE THAN ANY OTHER PRESIDENT"

DATA"WAS THE YOUNGEST MAN EVER ELECTED"

DATA"MAY HAVE BEEN ELECTED BECAUSE HE LOOKED GOOD ON T.V."

DATA"WAS OUR 35TH PRESIDENT, AND SERVED FROM 1961 TO 1963","J KENNEDY"

DATA"BECAME SENATE DEMOCRAT LEADER DURING HIS 1ST SENATE TERM"

DATA"WAS PRESIDENT DURING THE VIETNAM WAR ESCALATION"

DATA"WAS OUR 36TH PRESIDENT, AND SERVED FROM 1963 TO 1969"

DATA"WAS KNOWN FOR THE 'GREAT SOCIETY', "L J OHNSON"

DATA"WAS PRESIDENT WHEN THE VOTING AGE WAS LOWERED TO 18"

DATA"WAS PRESIDENT WHEN MAN SET FOOT ON THE MOON"

DATA"WAS OUR 37TH PRESIDENT, AND SERVED FROM 1969 TO 1974"

DATA"WAS THE ONLY PRESIDENT TO RESIGN IN THE MIDDLE OF A TERM","R NIXON"

DATA"WAS BORN WITH THE NAME OF LESLIE LYNCH KING, JR"

DATA"WAS NEVER ELECTED PRESIDENT OR "VICE-PRESIDENT"

DATA"WAS A MALE MODEL AND FOOTBALL PLAYER BEFORE ENTERING POLITICS"

DATA"WAS OUR 38TH PRESIDENT, AND SERVED FROM 1974 TO 1977","G FORD"

DATA"MAY HAVE LOST HIS REELECTION DUE TO PROBLEMS IN THE MIDDLE EAST"

DATA"WAS PRESIDENT DURING THE IRAN HOSTAGE CRISIS"

DATA"WAS OUR 39TH PRESIDENT, AND SERVED FROM 1977 TO 1981"

DATA"WAS A PEANUT FARMER, AND HAD A BROTHER NAMED BILLY","J CARTER"

DATA"STARTED HIS CAREER AS AN ILLINOIS LIFE-GUARD"

DATA"WAS THE 1ST PRESIDENT TO HAVE BEEN DIVORCED"
2480 DATA "RAN ON A PLATFORM OF 'NEW[12 SPACES]FEDERALISM'"
2490 DATA "WAS OUR 40TH PRESIDENT, AND TOOK
{5 SPACES}OFFICE IN 1981", "R REAGAN"
2899 DATA "$SONG"
2900 DATA 4817, 6430, 6430, 7217, 8101, 6430, 8101, 7217, 4
817, 6430
2910 DATA 6430, 7217, 8101, 6430, 0, 6069, 4817, 6430, 6430
, 7217, 8101
2920 DATA 8583, 8101, 7217, 6430, 6069, 4817, 5407, 6069, 6
430, 0, 6430
3000 PRINTCHR$ (147); : FOR X1 = 1 TO 4: rem 104
3010 PRINTF1$ ; F2$ ; NEXT X1: F4$ = LEFT$(F3$, 41): rem 104
3020 PRINTF1$ ; "{13 DOWN}" ; F3$ ; "{DOWN}" ; F4$ ; "{OFF}" 
; : rem 214
3030 POKE SM+999, 160: POKE CM+999, 2
3040 RETURN : rem 91
3050 POKE CM+0, 0: POKE CM+1, 0: POKE CM+5, 79: POKE CM+6, 12
9: POKE CM+24, 15 : rem 167
3500 FOR X1 = 0 TO 31: X2 = INT(NT%(X1)/256) : rem 87
3520 POKE CM+0, NT%(X1) - (X2*256) : rem 128
3530 POKE CM+1, X2: POKE CM+4, 17 : rem 136
3540 FOR X2 = 1 TO 150: NEXT X2: POKE CM+4, 16 : rem 210
3550 FOR X2 = 1 TO 20: NEXT X2, X1 : rem 105
3560 POKE CM+24, 0 : rem 122
3570 RETURN : rem 175
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.
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.

```plaintext
1 REM MOVERS AND SHAKERS
100 NS=63:CB=828
103 DIM QT$(24,3),NT%(21,1)
105 VC=53248:POKEVC+32,6:POKEVC+33,15:PRINTCHR$(14)
    7):
110 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX
120 READX$:IFX$<"$:THEN120
130 FORX=0TO21:FORY=0TO1:READZ:NT%(X,Y)=Z:NEXTX,Y
    :rem 205
200 GOSUB700
205 GOSUB1000:S%=0:FORX=1TON:POKECB+X,0:NEXTX
    :rem 178
210 FORX=1TON:GOSUB800:POKECB+Z,X:NEXTX
300 X=1
310 Y=PEEK(CB+X)-1
340 FORW=0TO2500:NEXTW:rem 219
350 FORW=1TO3
360 V=INT(RND(1)*3):IFRS(V)<0TH360
370 RS(V)=W:NEXTW
400 W=0
405 PRINTCHR$(147);"{BLK}{23 DOWN}";SPC(15);"SCORE=*-%
    :rem 168
410 PRINT"{HOME}{2 DOWN}{3 SPACES}QUESTION #";W+1
    :rem 36
420 X$=QT$(Y,RS(W))
430 PRINT"[3 DOWN]";X$;"{3 DOWN}"
440 GOSUB900:IFX$="Q"THEN500
445 IFX$="END"THEN500
450 W=W+1:IFW=2THEN405
480 PRINT"{RED}{2 DOWN}{3 SPACES}";QT$(Y,0):S%=S%-
    3
490 FORW=1TO2500:NEXTW
495 X=X+1:IFX=NETH310
498 GOTO600
500 REM *** CORRECT ANSWER ***
510 S%=S%+(3-W)
520 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15:
    POKEMC+24,9
530 FORY=5TO15
```
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<=NETTHEN310 :rem 213
600 PRINT"[BLK][CLR][DOWN][15 SPACES][RVS]TEST OVER" :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
660 GETX$:IFX$=""THEN660 :rem 137
670 IFX$="Y"THEN205 :rem 72
680 IFX$<>"N"THEN660 :rem 128
690 GOSUB2000:PRINTCHR$(147) :rem 150
695 END :rem 123
700 PRINT"[BLK][DOWN] [RVS][9 SPACES]MOVERS AND SHAKERS[11 SPACES][OFF]" :rem 109
705 PRINT"[2 DOWN] YOU WILL BE ASKED UP TO 3 QUESTIONS" :rem 249
706 PRINT"ABOUT SELECTED FAMOUS PEOPLE." :rem 240
710 PRINT"[2 DOWN] POINTS WILL BE AWARDED BASED UPON HOW[3 SPACES]MANY QUESTIONS YOU NEED:" :rem 1
720 PRINT"[3 SPACES]3 QUESTIONS = [2 SPACES]1." :rem 4
725 PRINT"[3 SPACES]ALL MISSED[2 SPACES]= -3." :rem 216
740 GOSUB2000 :rem 221
785 PRINT"[DOWN][8 SPACES]PRESS ANY KEY TO START" :rem 102
790 GETX$: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
Level 4

835 IF PEEK(CB+Z) = 0 THEN RETURN : rem 43
840 Z = Z + 1: GOTO 835 : rem 252
900 X$ = ""; POKE 198, 0; INPUT " "; IF X$ = QT$(Y, 0) THEN X$ = "Q"; RETURN : rem 42
905 IF X$ = "END" THEN RETURN : rem 16
910 POKE VC+33, 0; POKE MC+0, 0; POKE MC+1, 10; POKE MC+4, 33 : rem 182
920 POKE MC+5, 15 : rem 60
930 FOR Z = 1 TO 200: NEXT Z : rem 60
940 FOR Z = 1 TO 30: NEXT Z : rem 11
950 IF W <> 2 THEN PRINT CHR$(147) : rem 218
960 POKE VC+33, 15 : rem 138
970 RETURN : rem 128
1000 PRINT "{CLR} {2 DOWN} {2 SPACES} ENTER DESIRED CATEGORY: "{2 DOWN} : PRINT " {RVS} A{OFF} - WORLD LEADERS" : rem 36
1010 PRINT "{DOWN} {RVS} B{OFF} - ARTISTS AND THINKERS" : PRINT "{DOWN} {RVS} C{OFF} - FAMOUS WOMEN" : rem 157
1020 PRINT "{DOWN} {RVS} D{OFF} - AMERICAN HEROES" : PRINT "{DOWN} {RVS} E{OFF} - VILLAINS AND OUTLAWS" : rem 246
1030 PRINT "{DOWN} {RVS} F{OFF} - SCIENTISTS AND THINKERS" : PRINT "{DOWN} {RVS} G{OFF} - RELIGIOUS LEADERS" : rem 232
1040 PRINT "{DOWN} {RVS} H{OFF} - RANDOM SELECTIONS" : rem 122
1050 GET X$: IF X$ = "" THEN 1050 : rem 221
1060 IF X$ = "A" OR X$ = "H" THEN 1050 : rem 111
1070 RESTORE: NE = 0: IF X$ = "H" GOTO 1200 : rem 48
1090 IF X$ = MID$(A$, Y, 1) THEN 1130 : rem 156
1100 Y = Y + 1: IF Y = X THEN 1090 : rem 249
1120 FOR X = 1 TO 4: READ A$: NEXT X : rem 16
1130 FOR X = 0 TO 19: READ A$: QT$(NE, X) = A$: NEXT X: NE = NE + 1: GOTO 1200 : rem 21
1200 X = INT (RND(1) * (NS-19)): IF X = 0 THEN 1220 : rem 181
1210 FOR Y = 1 TO 4: READ A$: NEXT Y : rem 250
1220 FOR X = 0 TO 19: READ A$: FOR Y = 0 TO 3: READ A$: QT$(X, Y) = A$: NEXT Y: NEXT X: RETURN : rem 96
2000 REM *** PLAY SONG *** : rem 15
2010 POKE MC+0, 0; POKE MC+1, 0; POKE MC+5, 79; POKE MC+6, 12 : rem 29
2020 FOR X = 0 TO 21 : rem 118
2030 Y = INT (NT$(X, 0) / 256) : rem 47
2040 POKE MC+0, NT$(X, 0) - (Y*256) : rem 118
2050 POKE MC+1, Y: POKE MC+4, 17 : rem 83
2060 FORY=1TONT$(X,1)*100:NEXTY :rem 115
2070 POKEMC+4,16: FORY=1T030: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 DATAB,"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 121
3120 DATAB, "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 DATAB, "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 DATAB, "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

177
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 DATA ", "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 DATA "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 DATA ", "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 DATA "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 DATA "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 DATA "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 DATA "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
3550 DATA "HE LEFT HIS FAMILY TO END HIS LIFE IN [3 SPACES] THE SOUTH SEAS": rem 62
3560 DATA "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 DATA "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 DATA "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 PORTAIT PAINTER": rem 177
3670 DATA "HIS PAINTINGS ARE UNEXCELLED IN THEIR [3 SPACES] TREATMENT OF LIGHT": rem 84
3680 DATA "JOHANNES BRAHMS": rem 176
3690 DATA "HE BEGAN HIS CAREER PLAYING PIANO IN [SPACE] 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 DATA "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 DATA "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 DATA "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
DATA "CLEOPATRA"
[3 SPACES] CAESAR"
DATA "SHE LOVED BOTH MARK ANTONY AND JULIUS"
DATA "SHE KILLED HERSELF RATHER THAN BE A"
[5 SPACES] ROMAN CAPTIVE"
DATA "PETER PAUL RUBENS"
DATA "HE INVENTED THE FLEMISH STYLE OF BAROQUE PAINTING"
DATA "ROYALTY FAVORED HIS PAINTINGS, MAKING"
[3 SPACES] HIM A RICH MAN"
DATA "HE WAS KNIGHTED BY CHARLES I"
DATA "JOHANN VON GOETHE"
DATA "HE WAS CALLED THE 'GERMAN SHAKESPEARE'"
DATA "HIS MOST FAMOUS WORK WAS THE DRAMA"
[6 SPACES] 'FAUST'"
DATA "HE WROTE A NOVEL THAT CAUSED SUICIDES"
[3 SPACES] ALL OVER EUROPE"
DATA "LOUIS XIV"
DATA "HE WAS KNOWN AS THE 'SUN KING'"
DATA "HE BUILT A PALACE AT VERSAILLES BECAUSE"
[SPACE] HE HATED PARIS"
DATA "HIS EXCESSIVE TAXES CAUSED THE FRENCH"
[3 SPACES] REVOLUTION"
DATA "NAPOLEON BONAPARTE"
DATA "HE WAS THE FIRST EMPEROR OF FRANCE"
DATA "HE WAS EXILED FROM FRANCE AFTER THE DUKE OF WELLINGTON DEFEATED HIM"
DATA "THE NATION OF FRANCE TRACES ITS ROOTS TO HIM"
DATA "KING HENRY VIII"
DATA "HIS COUNTRY ADOPTED A NEW RELIGION SO HE COULD GET DIVORCED"
DATA "HE MARRIED SIX WIVES AND DIVORCED OR"
[4 SPACES] KILLED FOUR OF THEM"
DATA "HE HELPED INTRODUCE THE RENAISSANCE TO"
[2 SPACES] GREAT BRITAIN"
DATA "BENITO MUSSOLINI"
DATA "KNOWN AS 'IL DUCE', HE WAS DICTATOR OF"
[2 SPACES] ITALY FOR 20 YEARS"
DATA "HE WAS AN EXPelled SOCIALIST WHO STARTED"
[SPACE] THE FACIST PARTY"
DATA "HE SUPPORTED HITLER IN WW II, BUT HIS"
[3 SPACES] COUNTRY FELL TO THE ALLIES"
DATA "MAO TSE-TUNG"
DATA "HE AND KARL MARX WERE COMMUNISM'S"
[7 SPACES] LEADING PHILOSOPHERS"
DATA "HE RULED A FOURTH OF THE EARTH'S PEOPLE FOR 25 YEARS"
DATA "HE ESTABLISHED THE PEOPLE'S REPUBLIC OF CHINA IN 1949"
DATAAC "EVA PERON"
DATA "SHE WAS PROBABLY THE MOST POWERFUL WOMAN IN ARGENTINA'S HISTORY"
DATA "THE 'SHIRTLESS ONES' CALLED HER A SAINT FOR HER SOCIAL PROGRAMS"
DATA "A RADIO ACTRESS, SHE LATER BECAME LABOR MINISTER OF ARGENTINA"
DATA "THIS SCOT WAS A NAVAL HERO DURING THE REVOLUTIONARY WAR"
DATA "HE SAID 'I HAVE NOT YET BEGUN TO FIGHT'"
DATA "LATER IN HIS LIFE HE BECAME AN ADMIRAL IN THE RUSSIAN NAVY"
DATAAC "CATHERINE II"
DATA "THIS RUSSIAN RULER WAS A GERMAN PRINCESS, EDUCATED IN FRANCE"
DATA "SHE DEFEATED HER HUSBAND PETER FOR THE RUSSIAN THRONE"
DATA "SHE ADDED MORE THAN 200,000 SQUARE MILES TO RUSSIA DURING HER REIGN"
DATAAB "BENJAMIN DISRAELI"
DATA "HE WROTE SEVERAL NOVELS BASED ON HIS FRIENDS' SCANDALS"
DATA "HE WAS THE FATHER OF THE CONSERVATIVE PARTY IN GREAT BRITAIN"
DATA "A JEWISH STATESMAN, HE SERVED TWICE AS PRIME MINISTER OF BRITAIN"
DATAABG "MOHANDAS GANDHI"
DATA "HIS IDEA OF 'MILITANT NONVIOLENCE' LED TO INDIA'S INDEPENDENCE"
DATA "HE LIVED IN SOUTH AFRICA FOR 21 YEARS, LEADING THE INDIANS THERE"
DATA "HE WAS ASSASSINATED WHILE WORKING FOR A HINDU-MUSLIM TRUCE"
DATAAE "ADOLPH HITLER"
DATA "HE HEADED THE NATIONAL SOCIALIST GERMAN WORKERS' PARTY"
DATA "HE WAS DICTATOR OF GERMANY FOR 13 FATEFUL YEARS"
DATA "MORE THAN 6 MILLION JEWS DIED UNDER HIS ORDERS"
DATA "HE WAS THE FIRST HEAD OF THE USSR AFTER THE REVOLUTION"
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 GUERRILLA 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 DROP OUT CHANGED THE FACE OF
   {SPACE}AMERICAN INDUSTRY" :rem 136
4540 DATA"HE CREATED THE FIVE DAY WORK WEEK" :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 DATAGA,"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
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 DATA , "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 DATA , "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'
  [SPACE]" :rem 253
4800 DATA , "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 DATA , "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 DATA , "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 DATA , "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 DATA , "CLARA BARTON" :rem 13
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 DATA, "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 DATAG, 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 DATAS, 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
DATAB, PLATO:rem211
DATA "THE REPUBLIC" WAS HIS GREATEST [9 SPACES] PHILOSOPHICAL WORK" :rem 239
DATAB, "HIS ACADEMY MADE ATHENS THE INTELLECTUAL CENTER OF GREECE" :rem 69
DATAB, "HE BELIEVED THAT GOD WAS THE ABSOLUTE [3 SPACES] IDEA OF GOOD" :rem 236
DATAB, "LUDWIG VAN BEETHOVEN" :rem 239
DATAB, "MOZART SAID TO 'KEEP YOUR EYE ON HIM'" :rem 39
DATAB, "HE WROTE THE NINTH SYMPHONY AFTER HE WAS DEAF" :rem 137
DATAB, "FLORENCE NIGHTINGALE" :rem 77
DATAB, "SHE WAS MOST FAMOUS AS A CRIMEAN WAR [4 SPACES] NURSE" :rem 196
DATAB, "THE LADY WITH THE LAMP" :rem 59
DATAB,G, "THOMAS AQUINAS" :rem 191
DATAB, "HE WAS THE 'DUMB OX WHOSE BELLOW FILLED [SPACE] THE WORLD'" :rem 7
DATAB, "HE TAUGHT THAT MAN LEARNED TRUTH FROM [3 SPACES] BOTH FAITH AND HIS SENSES" :rem 124
DATAB,F, "THOMAS EDISON" :rem 107
DATAB,F, "BENJAMIN FRANKLIN" :rem 182
DATAB, "HE WORKED AS A PRINTER AND PUBLISHED HIS OWN ALMANAC" :rem 188
DATAB, "HE PERFORMED ELECTRICAL EXPERIMENTS WITH KITES" :rem 47
DATAB, "HE STARTED THE POSTAL SERVICE IN THE 13 [SPACE] COLONIES" :rem 207
DATAB, "ALEXANDER HAMILTON" :rem 143
DATAB, "HE ADVOCATED A U.S. GOVERNMENT BASED ON [SPACE] PROPERTY AND WEALTH" :rem 163
DATAB, "HIS DOCTRINE OF 'IMPLIED POWERS' STILL [2 SPACES] INFLUENCES THE SUPREME COURT" :rem 47
Level 4

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
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

<table>
<thead>
<tr>
<th>Clavicle</th>
<th>Fibula</th>
<th>Carpal Bones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humerus</td>
<td>Femur</td>
<td>Metacarpal Bones</td>
</tr>
<tr>
<td>Ulna</td>
<td>Metatarsal Bones</td>
<td>Phalanges</td>
</tr>
<tr>
<td>Radius</td>
<td>Tarsal Bones</td>
<td>Coccyx</td>
</tr>
<tr>
<td>Tibia</td>
<td>Patella</td>
<td>Ilium</td>
</tr>
</tbody>
</table>
Level

4

Pubis
Ischium
Sacrum
Vertebrae
Ribs
Sternum
Scapula
Mandible
Cranium

Parietal Bone
Sphenoid
Temporal Bone
Occipital Bone
Mastoid Process
Pubic Symphysis
Lumbar Vertebrae
Thoracic Vertebrae
Cervical Vertebrae

Maxilla
Zygomatic Bone
Nasal Bone
Frontal Bone
Sacroiliac Joint
Axis
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
100 CB=828+NW%=43
105 VC=53248:POKEVC+32,6:POKEVC+33,13:PRINTCHR$(14)
110 DIM NT%(19),WT$(NW%-1),WI$(19),CC$(NW%-1)
115 MC=54272:FORX=MCTO54296:POKEX,0:NEXTX
120 S1=((PEEK(53272)AND240)/16)*1024:S2=55296
130 FORX=0TO19:READZ:NT%(X)=Z:NEXTX:FORX=1TONW%:RE
135 ADX$,XX$
140 PRINT"{CLR}{BLK}{2SPACES}{RVS}{9SPACES}SKE
142 LLETON{12SPACES}{OFF}{DOWN}11" :rem 122
146 PRINT" THIS GAME TEACHES YOU THE NAMES OF THE
150 PRINT"{6 DOWN} THE COMPUTER WILL SELECT THE NA
163 MES OF" :rem 223
173 :rem 138
183 :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 INCORRECT"
   :rem 151
190 PRINT" LETTERS, A SKELETON WILL HANG IN YOUR"
   :rem 168
200 PRINT"{2 DOWN}{7 SPACES}{PRESS ANY KEY TO START"
   :rem 230
210 PRINT "{CLR}{6 DOWN}{9 SPACES}DO YOU WISH TO PLAY"
   :rem 1
214 PRINT"{DOWN} {8 SPACES}BEGINNERS OR {RVS} ADVANCED?"
   :rem 116
215 GET Q$: IF Q$<>"B" AND Q$<>"A" THEN 215
216 IF Q$="A" THEN NW%=43
217 IF Q$="B" THEN NW%=25
219 PRINT"{9 DOWN}{9 SPACES} (TEN SECOND DELAY)";
   :rem 164
220 FORX=1TONW%: POKE CB+X,0:NEXTX
   :rem 76
230 FORX=1TONW%: POKE CB+Z,X:NEXTX: POKE VC+3,15: PRINT CHR$(147)
   :rem 163
300 FOR LC=1TONW%
   :rem 228
310 X=PEEK(CB+LC): WO$=WT$(X-1): SY$=CC$(X-1)
   :rem 237
320 LW%=LEN(WO$)
   :rem 148
330 SC=0: FORX=0TOLW%-1
   :rem 72
340 W$I$(X)=MID$(WO$,X+1,1): IF ASC(W$I$(X))=32 THEN SC=
   :rem 139
   SC+1
345 NEXTX
   :rem 51
350 LC%=0: OF%=881: SO=640: BC%=0: GOSUB 1000: LW%=LW%-1
   :rem 111
400 GETX$: IF X$="" THEN 400
   :rem 121
410 X=ASC(X$): IF X<65 OR X>90 THEN 400
   :rem 249
500 HI=0: FORY=0TOLW%: IF W$I$(Y)<X$ THEN 530
   :rem 217
510 HI=1: W$I$(Y)="": POKES1+SO+CC+Y*2,X-64
   :rem 72
520 LC%=LC%+1
   :rem 152
530 NEXTY: IF HI=1 THEN 560
   :rem 194
540 GOSUB 3000: BC%=BC%+1
   :rem 3
550 IF BC%=10 THEN GOSUB 2000: LO%=LO%+1: FORX=1 TO 5000: NEXTX
   :rem 96
560 IF (LC%+SC)<=LW% THEN 400
   :rem 244
570 GOSUB 4000: W$I%=W$I%+1
   :rem 61
700 PRINT"{CLR}{BLU}{2 DOWN}{13 SPACES}{RVS} ANOTHER BONE ?{OFF}"; PRINT"{2 DOWN}{5 SPACES} ENTER {RVS}{Y}{OFF} OR {RVS}{N}{OFF}"
   :rem 143
720 GETX$: IF X$="" THEN 720
   :rem 131
730 IF X$="Y" THEN NEXT LC: GOTO 220
   :rem 131
740 IF X$<>"N" THEN 720
   :rem 122
750 PRINT"{BLK}{3 DOWN}{5 SPACES}NUMBER CORRECT =";
    :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)=0 THEN RETURN
    :rem 231
820 Y=Y+1:IF Y<10 THEN 810
rem 108
830 Z=1
rem 99
840 IFPEEK(CB+Z)=0 THEN RETURN
rem 39,
850 Z=Z+1:GOTO840
rem 249
1000 PRINT"{CLR}{BLK}{DOWN}{12 SPACES}SKELETON"
rem 43
1110 PRINT"{12 DOWN}*****************************************
rem 96
1500 PRINT"{2 DOWN}
rem 60
***************************************************************************";
rem 244

1502 QX=LEN(SYS$)/2:QQ=INT(QX):IFQQ<QX THEN QQ=QQ+1
rem 167
1504 QQ=20-QQ
rem 218
1505 PRINT SPC(QQ);SYS$ :rem 60
1510 PRINT"{DOWN} ENTER A LETTER:" ;rem 173
1515 CC=INT((40-(LW%*2-1))/2)
rem 225
1520 Z=0:FOR Y=0 TO ((LW%*2)-1)*2 STEP 2: X=70: IF ASC(WI$(Z,,)
rem 12
1540 POKES1+SO+CC+Y,X:IF X=70 THEN POKES2+SO+CC+Y,6
rem 20
1550 Z=Z+1:NEXT Y :rem 234
1560 Z=WI%+LO%:IF Z=0 THEN Z=1
rem 200
1570 PRINT"{HOME}{24 DOWN}";SPC(13);"SCORE =";
rem 200
1580 PRINTINT((WI%*100)/Z);"{LEFT}%";
rem 109
1590 RETURN
rem 175
2000 FOR X=0 TO LW%:IF WI$(X)="$" THEN 2020
rem 167
2010 Y=ASC(WI$(X)):IF Y=32 THEN 2020
rem 165
2015 POKES1+SO+CC+X*2,Y-64
rem 244
2020 NEXTX
rem 91
2030 POKEMC+6,0,POKEMC+1,0:POKEMC+5,15:POKEMC+6,15
rem 177
2040 FOR X=0 TO 29 STEP -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
Level 4

2505 X=5:Y=0:POKEMC+24,15:POKEVC+21,1   :rem 159
2510 Z=INT(NT%(Y)/256)   :rem 216
2520 POKEMC+0,NT%(Y)-(Z*256)   :rem 31
2530 POKEMC+1,Z:POKEMC+4,17   :rem 87
2540 Y=Y+1:IF Y>19 THEN Y=0   :rem 213
2550 POKEVC+0,X:X=X+10   :rem 38
2560 IF X>60 AND (PEEK(VC+16) AND 1)=1 THEN X=5:POKEVC+16   
   \0:POKEVC+0,X   :rem 89
2570 IF X>255 THEN X=5:POKEVC+16,1:POKEVC+0,X   :rem 90
2580 IF PEKE(2040)=13 THEN POKE2040,14=GO TO 2600   
   :rem 43
2590 POKE240,13   :rem 85
2600 FORZ=1 TO120:NEXTZ:POKEMC+4,16   :rem 107
2610 FORZ=1 TO20:NEXTZ   :rem 80
2620 GETXS$:IFXS"" THEN 2510   :rem 227
2630 POKEMC+24,0:POKEVC+21,0   :rem 99
2640 RETURN   :rem 172
3000 PRINT"{BLK}";   :rem 95
3005 ON(BC%+1) GOTO3010,3020,3030,3040,3050,3060,30    
   70,3080,3090,3100,3110,3120   :rem 48
3010 PRINT"{HOME}{3 DOWN}";SPC(18);"{RVS}£E*3"   
   {OFF}:{GOTO3500   :rem 156
3020 PRINTSPC(18);"{RVS}Q{OFF}";GOTO3500:rem 242
3030 PRINTSPC(18);"{RVS}=-{OFF}";GOTO3500 :rem 46
3040 PRINTSPC(18);"*";}{OFF}"{GOTO3500   :rem 218
3050 PRINTSPC(14);"{RVS}B{OFF}"{4 SPACES}{RVS}-   
   {OFF}4 SPACES}"{B}";GOTO3500   :rem 158
3060 PRINTSPC(15);"M{3 SPACES}-{3 SPACES}N";GOTO35   
   00   :rem 37
3070 PRINTSPC(16);"M{2 P}E{2 P}N":GOTO3500   
   :rem 183
3080 PRINTSPC(18);"**":GOTO3500   :rem 13
3090 PRINTSPC(18);"##":GOTO3500   :rem 14
3100 PRINTSPC(15);"NM{2 SPACES}+[2 SPACES]NM";GOTO   
   3500   :rem 185
3110 PRINTSPC(13);"MN{2 SPACES}M{RVS}Q{OFF}N   
   {2 SPACES}MN"   :rem 131
3500 POKEMC+0,0:POKEMC+1,5:POKEMC+4,33:POKEMC+5,15   
   :POKEMC+6,15:POKEMC+24,8   :rem 163
3505 POKEVC+33,0   :rem 130
3510 FORY=1 TO100:NEXTY:POKEMC+4,32   :rem 102
3520 FORY=1 TO30:NEXTY:POKEMC+24,0:POKEVC+33,15   
   :rem 91
3530 POKES1+OF%,X-64:POKES2+OF%,0:OF%=OF%+2   
   :rem 245
3540 RETURN   :rem 172
4000 REM *** FLASH ON A WIN ***   :rem 222
4010 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15   
   :POKEMC+24,12   :rem 220

191
4020 FOR X=8 TO 15: REM 131
4030 POKE VC+33, X: REM 164
4040 POKE MC+1, X*4: POKE MC+4, 17: REM 177
4050 FOR Y=1 TO 50: NEXT Y: REM 81
4060 POKE MC+4, 16: FOR Y=1 TO 30: NEXT Y, X: REM 191
4070 POKE MC+24, 0: REM 119
4080 RETURN: REM 172
5000 DATA 1072, 1607, 1804, 1804, 1607, 1432, 1204, 1432, 1204, 1432, 1204, 1072: REM 67
5010 DATA 1432, 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 SPINE", "ARM": REM 46
7005 DATA "ULNA", "FOREARM", "RADIUS", "FOREARM", "TIBIA", "SHIN": REM 5
7010 DATA "FIBULA", "CALF", "FEMUR", "THIGH": REM 50
7015 DATA "METATARSAL BONES", "FOOT (SOLE)", "TARSAL SPINE", "FOOT (ANKLE)": REM 206
7020 DATA "PATELLA", "KNEE CAP", "CARPAL BONES", "HAND SPINE", "WRIST", "METACARPAL BONES": REM 97
7025 DATA "HAND (KNUCKLE)", "PHALANGES", "FINGERS", "PALM", "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 Bone", "TOP OF YOUR HEAD": REM 198
7050 DATA "SPHENOID", "THE BASE OF THE SKULL", "TEMPORAL BONE": REM 233
7055 DATA "ALONGSIDE YOUR HEAD", "OCCIPITAL BONE", "THE BACK OF THE HEAD": REM 60
7060 DATA "MASTOID PROCESS", "TUCKED BEHIND THE EAR", "PUBIC SYMPHYSIS": REM 170
7065 DATA "PELVIC CONNECTION (GROIN)", "LUMBAR VERTEBRAE", "THE LOWER SPINE": REM 223
7070 DATA "THORACIC VERTEBRAE", "THE MIDDLE OF THE BACK", "CERVICAL VERTEBRAE": REM 249
7075 DATA "A PAIN IN THE NECK", "MAXILLA", "STIFF UPPER 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 HEAD": REM 94
7090 DATA "AXIS", "SECOND NECK BONE", "ATLAS", "TOP NECK BONE"

8000 REM *** LOAD THE SPRITES ***
8010 FOR X = 832 TO 832 + 127: READ Z: POKE X, Z: NEXT X: rem 175
8020 POKE VC + 0, 0: POKE VC + 1, 93: POKE VC + 16, 0: POKE VC + 21, 0: POKE VC + 23, 1: rem 10
8030 POKE VC + 27, 0: POKE VC + 28, 0: POKE VC + 29, 1: POKE VC + 39, 0: POKE 2040, 13: rem 31
8040 POKE MC + 0, 0: POKE MC + 1, 0: POKE MC + 5, 79: POKE MC + 6, 12: rem 10
8050 RETURN: rem 173
8900 DATA 0, 56, 0, 0, 84, 0, 0, 56, 0, 0, 16, 0, 48, 124, 0, 8, 14
8910 DATA 2, 5, 125, 0, 2, 16, 128, 6, 0, 56, 0, 0, 84, 0, 0, 56, 0, 0, 16, 0, 48, 124, 0, 8, 14
8910 DATA 0, 124, 64, 0, 16, 32, 0, 124, 192, 0, 186, 0, 0, 68, 0, 0, 130, 0, 1, 0, 2, 0, 128: rem 192
8920 DATA 1, 0, 1, 0, 130, 0, 1, 131, 0, 0, 0, 0, 0, 0, 0, 0: rem 77
8930 DATA 0, 56, 0, 0, 84, 0, 0, 56, 0, 0, 16, 0, 124, 0, 1, 147
8940 DATA 0, 2, 2, 124, 128, 4, 16, 64, 2, 124
8950 DATA 0, 128, 4, 16, 64, 2, 124, 128, 0, 186, 0, 0, 68, 0, 0, 68, 0, 0, 68: rem 126
8960 DATA 0: rem 172
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 Unicorns 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 Unicorns 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
Level 4

300 X=1
305 Y=PEEK(CB+X);Y=(Y-1)*8
310 RESTORE;IF Y=0 THEN 330
320 FORW=1TOY;READX$;NEXTW
330 FORW=1TO8;READX$;QT$(W-1)=X$;NEXTW
340 W=VAL(QT$(7))+3;AN$=QT$(W);FORW=0TO3;RS(W)=0
EXTW
350 FORW=1TO4
360 V=INT(RND(1)*4);IFRS(V)<0 THEN 360
370 RS(V)=W;NEXTW
380 W=0
390 GOSUB4300
410 PRINT"{3 SPACES}QUESTION #";W+1
420 X$=QT$(RS(W)-1)
430 PRINT"{2 DOWN}";X$;"{2 DOWN}";PRINT"

440 GOSUB900;IFX$="Q" THEN 500
442 IFX$="END" THEN 600
445 W=W+1;IF W<4 THEN 405
448 GOSUB4300
450 PRINT"{3 SPACES}QUESTION # 5";PRINT"{2 DOWN}
{3 SPACES} CHOOSE ONE OF THE FOLLOWING:{DOWN}
460 PRINT"{3 SPACES}";QT$(4);PRINT"{3 SPACES}";QT$(5);PRINT"{3 SPACES}";QT$(6);"{DOWN}";PRINT"

470 GOSUB900;IFX$="Q" THEN 500
475 IFX$="END" THEN 600
480 PRINT"{DOWN}{3 SPACES}ANSWER=";AN$;S%=S%-5
490 FORW=1TO2500;NEXTW;GOTO540
500 S%=S%+(5-W);POKE54296,15;POKEVC+0,65
510 POKEVC+16,0;POKEVC+21,1;J=8;POKESX+0,65;REM 56
520 FORV=65TO255STEP16;GOSUB530;NEXTV
530 POKEVC+21,0;POKEVC+21,0
540 X=X+1;IF X<1 THEN 305
545 GOTO600
550 POKEVC+29,0;POKEVC+0,V;POKEVC+1,0;POKEVC+4,17
560 FORK=1TO5;NEXTK
570 RETURN
580 PRINT"{BLK}{CLR}{DOWN}{15 SPACES}{RVS}TEST OVER {OFF}";REM 59
600 PRINT"{3 DOWN} YOUR SCORE = ";S%
610 PRINT"{3 DOWN} YOUR SCORE = ";S%
620 IF S%<0 THEN S%=0
630 X=INT((S%*100)/(X*5))
640 PRINT"{2 DOWN} YOUR GRADE = ";X;"{LEFT}"

196
   :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$;
   :rem 169
705 PRINT"[DOWN]YOU WILL BE ASKED UP TO FIVE QUESTIONS"
   :rem 223
706 PRINT"ABOUT SELECTED MYTHOLOGICAL CHARACTERS."
   :rem 204
710 PRINT"[2 DOWN] POINTS WILL BE AWARDED DEPENDING ON HOW MANY QUESTIONS YOU NEED:
   :rem 156
   :rem 94
720 PRINT"[4 SPACES]3 QUESTIONS ={2 SPACES}3.";PRINT"[4 SPACES]4 QUESTIONS ={2 SPACES}2."
   :rem 173
722 PRINT"[4 SPACES]5 QUESTIONS ={2 SPACES}1.";
   :rem 8
725 PRINT"[4 SPACES]ALL MISSED{2 SPACES}= -5."
   :rem 218
728 PRINT"[DOWN]TYPE [RVS]END[OFF] TO STOP THE GAME EARLY."
   :rem 207
730 GOSUB4000
   :rem 222
740 FORX=832TO832+63:READZ:POKEX,Z:NEXTX
   :rem 80
785 PRINT"[DOWN]{8 SPACES}(PRESS ANY KEY TO START)"
   :rem 161
787 POKEVC+39,11:POKEVC+23,0:POKEVC+28,0
   :rem 116
788 POKE2040,13:POKEVC+1,80
   :rem 30
790 GETX$: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":RETURN
   :rem 143
903 IFX$="END"THENRETURN
   :rem 14
905 POKEEX+5,15
   :rem 106
910 POKE54296,15:POKEVC+33,0:POKESX+0,31:POKESX+1,17 :rem 87
920 POKESX+4,17:FORJ=1TO400:NEXTJ :rem 59
930 POKESX+4,16:FORJ=1TO050:NEXTJ:POKESX+5,17
935 IFW<4THENPRINTCHR$(147) :rem 68
940 POKESX+4,16:FORJ=1TO050:NEXTJ:POKESX+5,17 :rem 68
1000 DATA"SHE WAS THE GREEK GODDESS OF WITCHCRAFT"
1010 DATA"THIS TITAN KEPT HER POWERS WHEN ZEUS
{4 SPACES}RULED THE UNIVERSE" :rem 198
1020 DATA"SHE IS USUALLY SHOWN AS HAVING 3 HEADS"
1030 DATA"HOWLING DOGS WERE ASSOCIATED WITH HER
{3 SPACES}SPELL" :rem 21
1040 DATAHECAT,ARTEMIS,MEDUSA,1 :rem 18
1050 DATA"SHE WAS THE WORLD'S MOST BEAUTIFUL
{6 SPACES}WOMAN" :rem 56
1060 DATA"PARISSEDUCED 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 PENELlope BY
{7 SPACES}KILLING HER 100 SuitORS" :rem 235
1230 DATA"THE ROMANS CALLED HIM ULYSSES" :rem 144
1240 DATAHERMES,ODYSEUS,ZEUS,2 :rem 33
DATA "THE GREEK GOD OF THE SEA, KNOWN TO THE ROMANS AS NEPTUNE"

DATA "HIS FATHER SWALLOWED HIM, BUT ZEUS FREED HIM"

DATA "HE CREATED THE HORSE"

DATA "HE WON HIS KINGDOM OF THE SEA BY CHOOSING LOTS"

DATA "HE WAS GOD OF THE WIND, THE SON OF AEOLUS"

DATA "IN LIFE, HE WAS THE KING OF CORINTH"

DATA "HE WAS A CRAFTY AND EVIL MAN"

DATA "HIS ETERNAL PUNISHMENT WAS PUSHING A BOULDER UPHILL"

DATA "HE WAS THE SON OF ZEUS AND THE FATHER OF PELOPS"

DATA "HE SINNED BY REVEALING THE SECRETS OF ZEUS"

DATA "HE KILLED HIS SON PELOPS AND SERVED HIM AT A BANQUET"

DATA "HE WAS PUNISHED BY ETERNAL HUNGER AND THIRST"

DATA "HE WAS THE SON OF ZEUS AND THE FATHER OF PELOPS"

DATA "HE USED THE CYCLOPES TO HELP DEFEAT THE TITANS"

DATA "HE GAVE AWAY THE SEA AND THE UNDERWORLD, BUT KEPT THE HEAVENS"

DATA "HIS ROMAN NAME IS JUPITER"

DATA "HE WAS RESTORED TO LIFE AND WON HIS [5 SPACES] BRIDE IN A CHARIOT RACE"

DATA "HE WAS CURSED FOR CHEATING IN A CHARIOT RACE"

DATA "A TITAN, HIS NAME MEANS 'FORETHOUGHT'"

DATA "HE CREATED MANKIND"

DATA "HE STOLE FIRE FROM HEAVEN TO GIVE TO MAN"

DATA "HE WAS CHAINED TO A MOUNTAIN FOR THEFT, AND RESCUED BY HERCULES"
1540 DATA PHAETON, 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 DATA ATHENA, 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 DATA PHAETON, 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 DATA ZEUS, 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 DATA CASSANDRA, 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 DATA ECHO, 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

200
DATA "HE BROKE THE HEART OF ECHO AND CAUSED HER END" :rem 112
DATA "HE FELL IN LOVE WITH HIS OWN REFLECTION" :rem 166
DATA "HE WAS A POET AND A SINGER" :rem 249
DATA "HE LOVED ONLY EURYDICE AND SHE DIED" :rem 153
DATA "HE BEGGED HADES AND PERSEPHONE TO GIVE HIS BRIDE LIFE" :rem 194
DATA "HE LOST EURYDICE AGAIN BECAUSE HE TURNED TO LOOK BACK" :rem 248
DATA "AN ORACLE PROPHESIED HE WOULD KILL HIS GRANDFATHER" :rem 174
DATA "HIS GOAL WAS TO GET THE HEAD OF MEDUSA" :rem 229
DATA "HE CUT OFF THE HEAD OF MEDUSA AND ESCAPED UNHARMED" :rem 225
DATA "HERMES GAVE HIM MAGIC GIFTS TO HELP HIM GET MEDUSA" :rem 23
DATA "SHE WAS ONE OF THREE UGLY SISTERS" :rem 85
DATA "SHE WAS THE ONLY ONE OF THREE SISTERS WHO COULD BE KILLED" :rem 217
DATA "PEOPLE WHO LOOKED UPON HER WERE TURNED TO STONE" :rem 242
DATA "HER BLOOD DROPLETS ARE NOW POISONOUS DESERT SNAKES" :rem 19
DATA "SHE WAS THE DAUGHTER OF CASSIOPEIA" :rem 150
DATA "SHE WAS CHAINED TO A ROCK BECAUSE HER MOTHER WAS BEAUTIFUL AND VAIN" :rem 30
DATA "SHE WAS OFFERED AS A SACRIFICE TO THE SEA GOD NEREUS" :rem 79
DATA "PERSEUS SAVED HER, AND SHE BECAME HIS BRIDE" :rem 98
DATA "ATHENA, ARTEMIS, ANDROMEDA, " :rem 232
DATA "HIS NAME MEANT 'GLORY OF HERA,' BUT HERA WANTED HIM KILLED" :rem 188
DATA "HE DID 12 IMPOSSIBLE TASKS TO PLEASE KING EURYSTHEUS" :rem 11
DATA "CALLED HERCULES BY THE ROMANS, HE WENT TO MOUNT OLYMPUS AFTER DEATH" :rem 177
DATA "HE WAS KILLED BY THE BLOOD OF A CENTAUR" :rem 41
DATA "HERACLES, HADES, HERMES, 1"
DATA "HE WAS RAISED BY A CENTAUR, CHIRON"
DATA "HE ORGANIZED A QUEST TO FIND THE GOLDEN FLEECE"
DATA "HIS SHIP WAS THE ARGO AND HIS WARRIORS"
DATA "HE WON THE FLEECE, BUT NOT THE THRONE OF HIS KINGDOM"
DATA "HE WAS RAISED BY A CENTAUR, CHIRON"
DATA "HE ORGANIZED A QUEST TO FIND THE GOLDEN FLEECE"
DATA "HIS SHIP WAS THE ARGO AND HIS WARRIORS"
DATA "HE WON THE FLEECE, BUT NOT THE THRONE OF HIS KINGDOM"
DATA "HE DELIVERED HER OWN BROTHER TO JASON"
DATA "SHE DELIVERED HER OWN BROTHER TO JASON"
DATA "SHE KILLED KING PELIAS TO HELP JASON"
DATA "SHE KILLED JASON'S WIFE TO Avenge HIS"
DATA "SHE KILLED JASON'S WIFE TO Avenge HIS"
DATA "HE WAS EARTH'S BEST ARCHITECT AND"
DATA "HE KILLED HIS NEPHEW BECAUSE TALUS HAD"
DATA "THE MINOTAUR NOR ITS VICTIMS COULD"
DATA "HE MADE HUMAN WINGS, BUT HIS SON Icarus"
DATA "HE KILLED HIS NEPHEW BECAUSE TALUS HAD"
DATA "HE KILLED HIS NEPHEW BECAUSE TALUS HAD"
DATA "HE UNKNOWINGLY KILLED HIS FATHER, AS AN"
DATA"HE COULD NOT BE HURT BECAUSE HIS MOTHER DIPPED HIM IN THE RIVER STYX"
DATA"HE KILLED THE TROJAN LEADER HECTOR AT THE SCAEAN GATE"
DATA"HE WAS KILLED BY AN ARROW THAT PIERCED HIS VULNERABLE HEEL"
DATA"HE WAS A TROJAN PRINCE AND SON OF APHRODITE"
DATA"HE KILLED TURNUS OVER THE LOVE OF LAVINIA"
DATA"THE CAESARS TRACED THEIR ORIGIN TO HIM"
DATA"HE WAS THE ANCESTRAL HERO OF ROME"
DATA"HE WAS THE KING WHO LED THE ACHAEBANS IN THE TROJAN WAR"
DATA"HE WAS THE KING WHO LED THE ACHAEBANS IN THE TROJAN WAR"
DATA"HE SACRIFICED A WOMAN TO SAVE HIS FLEET FROM A WINDSTORM"
DATA"HE WAS KILLED BY THE LOVER OF CLYTEMNESTRA"
DATA"HE WAS THE GODDESS OF LOVE, CALLED VENUS BY THE ROMANS"
DATA"HE WAS THE GODDESS OF INTELLECTUALISM AND ALSO OF THE SKY"
DATA"HE WAS THE GOD OF PROPHECY AND LIGHT"
DATA"ARCHERS, PHYSICIANS, AND MUSICIANS CALLED HIM THEIR PATRON"
DATA"AESCUAPIUS, GOD OF MEDICINE, WAS HIS SON"
DATA"HIS JOB WAS TO DRIVE THE CHARIOT OF THE SUN ACROSS THE SKY"
DATA"HER ROMAN COUNTERPART WAS DIANA"
DATA"SHE WAS GUARDIAN OF FORESTS AS WELL AS OF WILD ANIMALS"
DATA"BECAUSE HE CHALLENGED HER TO A DISCUS-THROWING CONTEST, ORION DIED"
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=0 TO 16
4010 POKE SX+0, NT%(X, 1) : POKE SX+1, NT%(X, 0) : rem 91
4020 POKE SX+4, 33 : FORY=1 TO 150 : NEXTY, X : rem 132
4030 POKE SX+4, 32 : FORY=1 TO 25 : NEXTY, X : rem 217
4040 POKE54296, 0 : RETURN : rem 119
4100 DATA "$", 67, 15, 63, 75, 56, 99, 63, 75, 56, 99, 50, 60, 5 
    6, 99, 50, 60, 44, 193, 50, 60 : rem 49
4110 DATA56, 99, 42, 62, 44, 193, 50, 60, 56, 99, 63, 75, 67, 1 
    5 : rem 28
4200 DATA0, 0, 2, 0, 1, 4, 0, 3, 248, 0, 1, 208, 0, 3, 248, 0, 7, 1 
    56, 0, 15, 0, 0, 30, 0, 31, 254 : rem 219
4210 DATAØ,127,252,0,95,252,0,79,252,0,74,10,0,20,
5,0,20,2,0,40,5,0,40,10 :rem 237
4220 DATAØ,80,4,0,80,8,0,160,0,0,160,0,0,0 :rem 8
4300 PRINTCHR$(147);"{23 DOWN}";SPC(15);"SCORE =";
S%:rem 70
4310 PRINT"{HOME}";SPC(13);"{DOWN}UNICORN
{8 DOWN}" :rem 184
4320 RETURN :rem 169
Just for Fun
When the Homework’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.

```basic
1 REM ASTEROID BLAST
100 DIM RT$(9), NT$(21,1), PT$(39,1), CH$(3), C$(3), DNS$(23)
105 P1=(((PEEK(53272) AND 240)/16)*1024: P2=55296: VC=5:
3248: XC=54272: K1=960
110 CH$(0)=8: CH$(1)=10: CH$(2)=12: CH$(3)=14: FOR I=0
3 TO 3: CT$(I)=CH$(I)*1024: NEXT
115 RC%=PEEK(53272): FOR I=0 TO 3: CH$(I)=(RC% AND 240,40)
) OR CH$(I): NEXT: GOSUB 6100
120 FOR X=0 TO 9: READ X$: RT$(X)=X$: NEXT X:
130 FOR X=54272 TO 54296: POKEX, 0: NEXT X:
140 FOR X=0 TO 21: FOR Y=0 TO 1: READ Z: NT$(X,Y)=Z: NEXT Y, X:
GOSUB 5000
150 GOSUB 2000: PRINT CHR$(147): MC=0: UC=0
155 FOR X=0 TO 24: POKEX+(X*40), 160: POKEX+(X*40), 0:
NEXT X: GOSUB 1000
160 Y=INT(RND(1)*25): MC=MC+1: L1=(Y*40)+1+P1: L2=(Y*40)+1+P2:
HC%=0
165 X=0: IF X1=0 THEN X1=L1: X2=L2
170 A=PEEK(L1+X): IF A=41 THEN 400
175 A=PEEK(L1+X): IF A=41 THEN 400
180 OR FOR X=0 TO 24: POKE P1+(X*40), 1: POKE P2+(X*40), 0:
NEXT X: GOSUB 5000
190 UC=UC+1: FOR Z=1 TO UC: NEXT Z:
200 POKE X1, 32: POKE X2, 1
205 POKE L1+X, 42: POKE L2+X, 2: FORZ=1 TO SP$: KK=KK+1: IF
210 KK>3 THEN KK=0
215 AX=PEEK(197): IF AX=9 THEN ORAX=6 OR (PEEK(56321) AND 1)
220 =0 THEN 600
225 IFAX=23 ORAX=3 OR (PEEK(56321) AND 2)=0 THEN 650
230 IFAX=23 ORAX=3 OR (PEEK(56321) AND 2)=0 THEN 650
235 IFAX=23 THEN GOSUB 900
240 X=X+1: IF X=C THEN 185
250 GOSUB 5000
260 GOTO 170
400 UC=UC+1: POKE X1, 32: POKE X2, 1: POKE L1+X, 43: POKE L2+
X, 4
410 POKE X+4, 0: POKE X+1, 30: POKE X+4, 129: POKE X+5, 1
420 OR (PEEK(56321) AND 2)=0 THEN 63
430 FOR X=1 TO 5: NEXT X: POKE X+4, 128
```

210
440 IF UC=TC% THEN 3000 : rem 170
450 POKE L1+X,32: POKE L2+X,1: HC%=HC%+1: IF HC%=MW% THEN
GOSUB 6500: GOTO 170 : rem 87
460 GOTO 200 : rem 101
500 POKE 53272, RC%: PRINT "[CLR]" "DN$(7) TAB(11)" "[RVS]
STARBASE DESTROYED [OFF]" : rem 3
510 POKE XC+0,0: POKE XC+1,0: POKE XC+5,15: POKE XC+6,15:
POKE XC+24,15: Y=50 : rem 28
520 FOR X=1 TO STEP-1 : rem 231
530 POKE XC+1, Y=Y-3: POKE XC+4,17 : rem 195
540 POKE VC+33#X: FOR Z=1 TO 100: NEXT Z: POKE XC+4,16: NEXT X:
rem 45
550 POKE XC+24,0: POKE 198,0 : rem 184
560 DD%=(SP%+5)/2: GOTO 3000 : rem 149
600 IF Y<1 THEN 240 : rem 176
610 Y=Y+1: L1=L1-40: L2=L2-40: GOTO 240 : rem 243
650 IF Y>23 THEN 240 : rem 235
660 Y=Y+1: L1=L1+40: L2=L2+40: GOTO 240 : rem 242
900 FOR I=0 TO 399: NEXT : rem 247
910 IF PEEK(197)=64 THEN 910 : rem 176
920 RETURN : rem 123
1000 KK=0: POKE 53272, CH%(KK) : rem 243
1010 FOR I=0 TO 9-SP% : rem 48
1020 Y=3*INT(RND(1)*8) : rem 186
1030 Z=3*INT(RND(1)*9)+10 : rem 73
1080 IF PEEK(P1+Z+40*Y)<>32 THEN 1020 : rem 183
1090 PRINT DN$(Y) TAB(Z) "{BLK}" SS$: NEXT : rem 80
1100 FOR X=1 TO TC% : rem 206
1110 KK=KK+1: IF KK>3 THEN KK=0 : rem 138
1120 POKE 53272, CH%(KK) : rem 185
1130 Y=INT(RND(1)*25) : rem 142
1140 Z=INT(RND(1)*30)+10 : rem 24
1150 Y=(Y*40)+Z : rem 26
1160 IF PEEK(P1+Y)<>32 THEN 1130 : rem 165
1170 POKE P1+Y,41: POKE P2+Y,6: NEXT : rem 216
1180 FOR X=0 TO 999: NEXT : rem 61
1190 PRINT DN$(23): RETURN : rem 222
2000 PRINT CHR$(147) "[2 DOWN] [3 SPACES] ENTER NUMBER
OF ASTEROIDS: [14 SPACES] (10 TO 200)" : rem 78
2010 INPUT "[DOWN] "; X$: TC%=VAL(X$): IFTC%<10 OR TC%>
200 THEN 2010 : rem 131
2020 PRINT "[2 DOWN] [3 SPACES] ENTER MISSILE SPEED:
[20 SPACES] (1=FAST - TO- 9=SLOW)" : rem 155
2030 INPUT "[DOWN] "; X$: SP%=VAL(X$): IF SP%<1 OR SP%>9
THEN 2030 : rem 34
2040 PRINT "[2 DOWN] [3 SPACES] ENTER NUMBER OF WARHE
ADS: [15 SPACES] (1 TO 5 PER MISSILE)" : rem 117
2050 INPUT "[DOWN] "; X$: MW%=VAL(X$): IF MW%<1 OR MW%>5
THEN 2050 : rem 37
2060 RETURN : rem 168
POKE53272, RC%: PRINTCHR$(147);"[2 DOWN]"SPC(15)
"[RVS]GAME[2 SPACES]OVER{OFF}"
: rem 71

PRINT"[2 DOWN][3 SPACES]NUMBER OF ASTEROIDS = "; UC: POKE198, 0
: rem 58

PRINT"[2 DOWN][3 SPACES]NUMBER OF MISSILES
[2 SPACES]="; MC
: rem 135

X = INT(10*{(UC/(MC*MW%)+(UC/TC%))/2})-DD%-INT(3*(SP%/9))
: rem 224

IF X<0 THEN X = 0
: rem 14

IF X>9 THEN X = 9
: rem 35

PRINT"[3 DOWN][3 SPACES]YOUR RANK IS: "; RT$(X)
: rem 204

PRINT"[4 DOWN][9 SPACES]PLAY AGAIN?"
: rem 181

PRINT"[DOWN][2 SPACES]{RVS}GAME{OFF}AME GAME"; PRINT
"[DOWN][2 SPACES]{RVS}NEW GAME"; PRINT
"[DOWN][2 SPACES]{RVS}UIT"
: rem 93

GETX$; IF X$="" THEN 3090
: rem 233

DD% = 0; IF X$="S" THEN MC = 0; UC = 0; PRINT"{CLR}"
POKE53272, CH%(0); GOTO 155
: rem 132

IF X$="Q" THEN GOSUB 7000; PRINTCHR$(147); END
: rem 223

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 STATION
FROM A"
: rem 145

5020 PRINT"GROUP OF ASTEROIDS SURROUNDING IT.";
: rem 147

5030 PRINT"[2 DOWN]YOUR SHIP'S COMPUTER FIRES MISSILES FROM";
: rem 120

5035 PRINT"THE LEFT SIDE OF THE SCREEN."
: rem 51

5040 PRINT"[2 DOWN]YOU CAN CAUSE EACH MISSILE TO CLIMB 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"; IF PEEK(653)> 1 THEN 5150
: rem 143

5065 GOSUB 7000; GOSUB 6000
: rem 151

5070 PRINTCHR$(147);"[3 DOWN]IF YOU CAUSE A MISSILE 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}0 NUMBER OF ASTEROIDS";
PRINT"{DOWN}{2 SPACES}0 MISSILE SPEED"
:rem 249
5105 PRINT"{DOWN}{2 SPACES}0 NUMBER OF MISSILE WAR
HEADS"
:rem 65
5110 PRINT"{2 DOWN}A MISSILE WITH MORE THAN 1 WARHEAD CAN"
:rem 170
5120 PRINT"DESTROY MULTIPLE ASTEROIDS PER FLIGHT."
:rem 48
5150 FORI=0 TO 3:FORJ=C%(I)+296TOC%(I)+343:READZ:POKEJ,Z:NEXT
:rem 128
5155 FORJ=C%(I)+256TOC%(I)+263:POKEJ,0:NEXT
:rem 251
5160 FORJ=C%(I)+128TOC%(I)+1287:POKEJ,255:NEXT
:rem 200
5165 FORJ=C%(I)+344TOC%(I)+351:POKEJ,INT(RND(9)*25)
:rem 178
5180 SS$="%{DOWN}[2 LEFT]'(":IFPEEK(653)>1THENRE
URN
:rem 89
5190 PRINT "{CLR}"DN$(12)TAB(17)"MISSILE":GOSUB5500
:rem 11
5200 PRINT DN$(12)TAB(16)"{PUR}*****":GOSUB5510
:rem 132
5210 PRINT DN$(12)TAB(16)"{BLK}ASTEROID":GOSUB5500
:rem 1
5220 PRINT DN$(12)TAB(16)"{BLU}) ) ) )":GOSUB5510
:rem 4
5230 PRINT DN$(12)TAB(16)"{BLK}STARBASE":GOSUB5500
:rem 253
5240 PRINT DN$(11)TAB(19)SS$:GOSUB5510
:rem 188
5500 FORI=0 TO 999:NEXT:POKE53272,CH%(0):PRINT"
{CLR}";RETURN
:rem 175
5510 FORI=0 TO 9:FORK=0 TO 3:POKE53272,CH%(KK):FORJ
=0 TO 19: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=1 TO 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=0 TO 39
: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=0 TO 39
:rem 139
6560 POKE P1+K1+X, PT%(X, 0) : rem 165
6570 POKE P2+K1+X, PT%(X, 1) : rem 168
6580 NEXT : rem 18
6590 RETURN : rem 180
7000 POKE XC+0, XC+5, XC+6, XC+24, 15 : rem 18
7010 FOR X=0 TO 21 : rem 122
7020 Y=INT(NT%(X, 0)/256) : rem 51
7030 POKE XC+0, NT%(X, 0)-(Y*256) : rem 133
7040 POKE XC+1, Y : rem 109
7050 FOR Y=1 TO NT%(X, 1)*60 : rem 76
7060 POKE XC+4, 16 : NEXT X: NEXT Y: rem 145
7070 RETURN : rem 174
9000 DATA PRIVATE, SERGEANT, LIEUTENANT, CAPTAIN, MAJOR, R, COLONEL : rem 177
9010 DATA "** GENERAL", "** GENERAL", "*** GENERAL", "**** GENERAL" : rem 20
9100 DATA 6430, 2, 5407, 2, 6430, 4, 6430, 2, 5407, 2, 6430, 4, 6430, 2, 5407, 2, 6430, 2, 6430, 4, 5407, 2, 5728, 2, 6430, 2, 5728, 4, 6430, 2, 5728, 4 : rem 212
9110 DATA 4817, 2, 6430, 2, 5728, 4, 4817, 2, 4291, 8 : rem 143
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.

```plaintext
1 REM BLACK HOLE :rem 154
100 DIMRT$(9), NT$(44, 1), PT$(39, 1), CH$(3), C$(3), DNS$(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%=PEEK K(53272):gosub 5600 :rem 142
115 FOR I=0 TO 3: C%(I)=1024*CH%(I): CH%(I)=(RC% AND 240) OR CH%(I): NEXT :rem 87
120 FORX=54272 TO 54296: POKEX, 0: NEXTX :rem 174
125 P1=((PEEK(53272 AND 240)/16)*1024: P2=55296 :rem 101
130 FORX=0 TO 9: READX$: RT$(X)=X$: NEXTX :rem 37
135 FORX=0 TO 44: FORY=0 TO 1: READZ: NT%(X,Y)=Z: NEXTY,X :rem 215
140 GOSUB5000 :rem 218
150 GOSUB2000: PRINTCHR$(147): SD%=0 :rem 240
155 FORX=0 TO 24: POKEP1+(X*40), 0: NEXTX :rem 217
160 GOSUB1000 :rem 216
165 FORREC=1 TO EC%: NEXTREC :rem 201
170 Y=INT(RAND(1)*25): L1=(Y*40)+1+P1: L2=(Y*40)+1+P2 :rem 203
180 X=0 :rem 94
190 IF PEEK(L1+X)=81 THEN NEXT0 :rem 8
200 POKE L2+X, 2: POKE1, 32: POKE1+X, 90 :rem 161
205 FOR K=0 TO 3: POKE 53272, CH%(KK): NEXT KK :rem 149
210 FOR Z=0 TO SP$: NEXTZ: POKE53272, CH%(0) :rem 72
220 A=PEEK(197): IF A=6 OR A=9 OR (PEEK(56321) AND 1)=0 THEN 600 :rem 157
230 IF A=23 OR A=3 OR (PEEK(56321) AND 2)=0 THEN 650 :rem 254
235 X1=L1+X :rem 96
240 X=X+1: IFX<=38 THEN 190 :rem 173
250 GOSUB5000: NEXTEC: GOTO 3000 :rem 25
400 POKE X1, 32 :rem 221
405 SD%=SD%+1: POKEMC+0, 0: POKEMC+1, 10 :rem 60
410 POKEMC+5, 15: POKEMC+6, 15: POKEMC+4, 17 :rem 30
420 POKEVC+32, 0: POKEVC+33, 0: POKEMC+4, 24, 9 :rem 40
430 FORQ=1 TO 200: NEXTQ: POKEMC+4, 16 :rem 39
440 POKEMC+24, 0: POKEVC+32, 2: POKEVC+33, 15 :rem 89
```
450 GOTO250  :rem 105
600 POKE X1,32:IFY<1THEN235  :rem 55
605 X1=L1+X  :rem 97
610 Y=Y-1:L1=L1-40:L2=L2-40:GOTO240  :rem 243
650 POKE X1,32:IFY>23THEN235  :rem 114
655 X1=L1+X  :rem 102
660 Y=Y+1:L1=L1+40:L2=L2+40:GOTO240  :rem 242
1000 FORX=1TOBH%  :rem 192
1010 Y=INT(RND(1)*25)  :rem 139
1020 Z=INT(RND(1)*30)+10  :rem 21
1030 Y=(Y*40)+Z  :rem 23
1040 A=PEEK(P1+Y):IFA<>32THEN1010  :rem 152
1050 POKEP1+Y,81;POKE P2+Y,0:NEXTX  :rem 43
1060 FORX=1TO1000:NEXTX  :rem 169
1070 PRINTDNS(23)  :rem 193
1080 RETURN  :rem 169
2000 PRINTCHR$(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%>50THEN210  :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%>9THEN2030  :rem 33
2040 PRINT"{2 DOWN}{3 SPACES}ENTER # OF BLACK HOLE{SPACE}{3 SPACES}(50 TO 200)" :rem 189
2050 INPUT"{DOWN}";X$;BH%=VAL(X$);IFBH%<50ORBH%>200THEN2050  :rem 104
2060 SP%=SP%*7  :rem 246
2070 RETURN  :rem 169
3000 POKE 53272,RC%:PRINTCHR$(147);"{2DOWN}{RVS}GAME{4SPACES}O V E R{OFF}" :rem 255
3002 X$=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
Just
For
Fun

3060 PRINT"{2 DOWN}{9 SPACES}YOUR RANK IS:{DOWN}";
PRINTSPC(9);RT$(X):rem3
3080 PRINT"{2 DOWN}{9 SPACES}PLAY AGAIN?":rem147
3085 PRINT"{DOWN}{4 SPACES}{RVS}S{OFF}AME GAME";PRINT"{DOWN}{4 SPACES}{RVS}N{OFF}EW GAME";PRINT"{DOWN}{4 SPACES}{RVS}Q{OFF}UIT":rem93
3090 GETX$;IFX$=""THEN3090:rem233
3100 IFX$="N"THENSC=0:GOTO 150:rem217
3110 IFX$="Q"THENGOSUB7000:PRINTCHR$(147):END:rem222
3120 IFX$="S"THENSC=0:SD%=0:PRINT"{CLR}H:GOTO 155":rem230
3130 GOTO 3090:rem204
5000 POKEVC+32,2:POKEVC+33,15:rem160
5005 PRINTCHR$(147);"{DOWN}{BLK}{RVS}{10 SPACES}LACK{4 SPACES}L0 LE{10 SPACES},,:rem201
5010 PRINT"{2 DOWN}YOU MUST PILOT A FLEET OF STARS
HIPS":rem142
5020 PRINT"ACROSS SPACE, AVOIDING THE BLACK HOLES.
":rem51
5030 PRINT"{2 DOWN}EACH SHIP TRAVELS FROM THE LEFT
SIDE OF THE SCREEN TO THE RIGHT.";rem236
5040 PRINT"{2 DOWN}YOU CAN CAUSE EACH SHIP TO CLIM
B OR DIVE":;rem79
5050 PRINT"BY USING THE JOYSTICK OR THE KEYBOARD:";rem26
5060 PRINT"{2 DOWN}{4 SPACES}({RVS}W OR F5{OFF}=CL
IMB{3 SPACES}{RVS}X OR F7{OFF}=DIVE)";rem73
5070 IF PEEK(653)>1 THEN 5090:rem219
5080 GOSUB 7000:GOSUB 6000:rem148
5090 PRINT"{CLR}{2 DOWN}YOU CAN CONTROL THE DIFFIC
ULTY OF THE{3 SPACES}GAME BY THREE FACTORS:";rem7
5100 PRINT"{2 DOWN}{3 SPACES}+ NUMBER OF STARSHIPS
:"PRINT"{DOWN}{3 SPACES}+ STARSHIP SPEED";rem41
5120 PRINT"{DOWN}{3 SPACES}+ NUMBER OF BLACK HOLES
":rem11
5130 FOR I=0 TO 3:FOR J=C%(I)+256 TO C%(I)+263:POKE
E J,":rem235
5135 FOR J=C%(I)+1280 TO C%(I)+1287:POKE J,255:";rem20
5140 FOR J=C%(I)+648 TO C%(I)+655:READ ZZ:POKE J,Z
Z:rem215
5145 FOR J=C%(I)+720 TO C%(I)+727:READ ZZ:POKE J,Z
Z:rem72
5150 IF PEEK(653)>1 THEN RETURN:rem236
5160 GOSUB 6000:rem18
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" :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, MAJOR,
R, COLONEL :rem 177
9010 DATA "** GENERAL","** GENERAL","*** GENERAL"," 
**** GENERAL" :rem 20
9100 DATA 2145,2,0,.3,2145,2,2864,2,2864,2,2864,2,2,2 
864,2,3215,2,0,.3,4291,2,3823 :rem 89
<table>
<thead>
<tr>
<th>Time</th>
<th>Data Contents</th>
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<tr>
<td>9110</td>
<td>DATA2, 3608, 2, 2864, 2, 0, 3, 2145, 2, 2408, 2, 4817, 2, 4291, 2, 3823, 2, 3608, 2, 3215, 2 : rem 251</td>
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<td>DATA2864, 2, 2864, 4, 2703, 2, 3215, 1, 3215, 2, 3215, 2, 3215, 2 : rem 38</td>
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<td>9140</td>
<td>DATA2703, 2, 2408, 2, 3215, 2, 2025, 2, 2145, 4 : rem 106</td>
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<td>DATA0, 124, 254, 254, 254, 254, 254, 124 : rem 172</td>
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<td>DATA0, 248, 28, 31, 28, 248, 254, 0 : rem 76</td>
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<td>DATA0, 68, 254, 124, 124, 124, 254, 254, 68 : rem 80</td>
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<td>63003</td>
<td>DATA0, 248, 28, 47, 28, 248, 0, 0 : rem 85</td>
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<td>63004</td>
<td>DATA0, 68, 56, 56, 56, 56, 68, 0 : rem 248</td>
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<tr>
<td>63005</td>
<td>DATA0, 248, 28, 79, 28, 248, 0, 0 : rem 92</td>
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<td>63006</td>
<td>DATA0, 0, 40, 16, 40, 0, 0 : rem 108</td>
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<tr>
<td>63007</td>
<td>DATA0, 248, 28, 143, 28, 248, 0, 0 : rem 134</td>
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</tbody>
</table>
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 hungry 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 backtracking 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$(147):M=*((PEEK(53272)AND240)/16)*1024 :rem 161
110 X=55296 :rem 161
150 PRINT"{BLK}{DOWN}{RVS}{14 SPACES}EARTHWORMS :rem 4
{16 SPACES}{OFF}{DOWN}";
155 GOSUB2300 :rem 224
160 PRINT"{DOWN}AS YOU CRAWL THROUGH THE DIRT YOU :rem 72
{SPACE}MUST{2 SPACES}EAT ALGAE {{GRN}Q{BLK}} A ND
170 PRINT"SHARP PEBBLES {{BLU}Z{BLK}}.":rem 236
175 PRINT"{DOWN}HITTING PEBBLES OR THE BORDER O F T
180 PRINT"SCREEN OR CROSSING A PREVIOUS TUNNEL :rem 255
{4 SPACES}WILL END THE GAME." :rem 228
185 GOSUB2400 :rem 249
190 PRINT"{DOWN}CONTROL DIRECTION WITH THE JOYSTICK :rem 224
190 K.": :rem 249
200 PRINT"{DOWN}TEEN POINTS FOR EACH ALGAE BALL YOU :rem 255
EAT." :rem 170
210 GOSUB2500:GOSUB2000 :rem 86
220 PRINTCHR$(147);"{DOWN}{2 SPACES}ENTER SKILL LE :rem 171
VEL:" :rem 171
220 PRINT"{3 DOWN}{3 SPACES}{RVS}1{OFF}BEGI
225 PRINT"{2 DOWN}{5 SPACES}-TO-"{PRINT}{2 DOWN} :rem 197
{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);FOR=Y(6):GOSUB2100:POKE+ :rem 155
X,90:POKEC+X,6:NEXTY
260 AC=SL*20:FOR=Y(6):GOSUB2100:POKE+ :rem 64
X,5:NEXTY
270 H1=20:V1=12:POKE+500,160:POKEC+500,2 :rem 21
275 {21 SPACES}
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<>ORH3<>O :rem 224
THENH2=H3:V2 =V3:GOTO360
340 LC=LC+1:IFLC<LTTHEN300 :rem 68
350 LC=0 :rem 148
360 H1=H1+H2:V1=V1+V2:IFH1<ORH1>39ORV1<ORV1>24TH :rem 61
EN700
370 X=PEEK(M+H1+(V1*40)) :rem 39
```
Just For Fun

380 IFX=32ORX=81THENPOKEM+H1+(V1*40),160:POKEC+H1+(V1*40),2:GOT0410 :rem 173
390 IFX=160ORX=90THEN700 :rem 188
400 GOT0300 :rem 96
410 IFX=32THEN300 :rem 224
420 REM ***** EAT ALGAE :rem 128
430 POKEMC+O,O:POKEMC+1,O: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 GOT0300 :rem 105
700 REM ***** GAME OVER :rem 163
701 POKEMC+O,O:POKEMC+1,20:POKEMC+4,17:POKEMC+24,1 :rem 249
702 FORY=1TO500:NEXTY:POKEMC+4,16:POKEMC+24,0 :rem 34
710 PRINTCHR$(147);"{3 DOWN}{15 SPACES}{RVS}GAME OVER" :rem 224
720 PRINT"{3 DOWN}{4 SPACES}SCORE =";SC :rem 39
730 PRINT"{5 DOWN}{4 SPACES}REPLAY? {{RVS}Y{OFF}} O R {RVS}N{OFF}}" :rem 173
740 GETX$: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,X:NEXTX :rem 161
2320 FORX=896TO896+63:READZ:POKEX,Z:NEXTX :rem 144
2330 FORX=832+48TO832+56:READZ:POKEX,Z:NEXTX:RETURN :rem 48
2400 REM ***** SETUP FOR SPRITE & NOTES :rem 122
2410 FOR X=54272 TO 54296:POKE X, 0: NEXT X :rem 226
2420 POKE MC+1, 10: POKE MC+4, 17: POKE MC+5, 15 :rem 71
2430 POKE MC+6, 15 :rem 123
2440 POKE VC+0, 0: POKE VC+1, 200: POKE VC+16, 0 :rem 85
2450 POKE VC+23, 1: POKE VC+28, 0: POKE VC+29, 0 :rem 103
2460 POKE VC+39, 2: POKE 2040, 13 :rem 72
2470 RETURN :rem 173
2500 REM ***** DRAW SPRITE :rem 130
2510 POKE MC+24, 15: POKE VC+21, 1: X=5: Z=25 :rem 211
2520 POKE 2040, 13: FOR Y=1 TO 50: NEXT Y: POKE MC+4, 16 :rem 251
2525 POKE VC+0, Z: Z=Z+10 :rem 46
2530 POKE 2040, 14 :rem 80
2540 POKE MC+1, X: X=X+3: POKE MC+4, 17 :rem 219
2550 IF Z=265 THEN POKE VC+0, 0: POKE VC+16, 1: Z=0 :rem 47
2560 IF Z<>100 THEN 2520 :rem 185
2570 POKE MC+24, 0: POKE VC+21, 0 :rem 102
2580 RETURN :rem 175
3000 DATA 0, 62, 0, 99, 0, 99, 0, 0, 65, 0, 0, 193, 128, 0, 1
3010 DATA 93, 128, 0, 128, 128, 1, 128, 192 :rem 166
3020 DATA 16, 4, 0, 16, 252, 0, 31, 0, 0, 0, 0, 0, 0, 0, 0 :rem 202
3030 DATA 0, 60, 0, 0, 102, 0, 255, 195, 255 :rem 208
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 fl.

Scoring
At the end of a game, the computer will tell you four things:
How many leaves were in the compost heap;
Just
For
Fun

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
100 PRINTCHR$(147): VC=53248: MC=54272
110 DIM DT%(3, 1), BT%(3, 3, 1), BV(3), NT%(37, 1), CH%(1),
C%(1)
120 S=((PEEK(53272)AND240)/16)*1024:C=55296-S
130 FORX=54272TO54296:POKEX,0:NEXTX
140 POKEVC+32,6:POKEVC+33,12
150 FORW=0TO37:FORX=0TO1:READZ:NT%(W,X)=Z:NEXTX,W
160 GOSUB2000
170 L%=27:LF%=28
200 PRINTCHR$(147);"{3 DOWN}{2 SPACES}ENTER SKILL
{SPACE}LEVEL:";
210 PRINT"{3 DOWN}{5 SPACES}{RVS}1{OFF}BEGINNER",
PRINT"{2 DOWN}{7 SPACES}--TO--",
PRINT"{2 DOWN}{5 SPACES}{RVS}9{OFF}ADVANCED"
220 GETX$: IFX$=""THEN230
240 SK=VAL(X$): IF SK<1ORSK>9THEN230
250 POKEVC+33,1: P1=160: P2=7: PRINTCHR$(147): HI=0: BC
=0
260 FORW=0TO960STEP40: GOSUB3000: NEXTW
270 FORW=961TO998: GOSUB3000: NEXTW
280 FORW=999TO39STEP-40: GOSUB3000: NEXTW
290 FORW=38TO1STEP-1: GOSUB3000: NEXTW
300 FORY=1TOSK*4+5
310 W=INT(RND(1)*836)+82
320 IFPEEK(S+W-1)<32 OR PEEK(S+W)<32 OR PEEK(S+W+1)
<32THEN310
325 IFPEEK(S+W+40)<32 OR PEEK(S+W-40)<32THEN310
330 P1=BV((INT(RND(1)*4)):
P2=6: GOSUB3000: NEXTY
340 NT=INT(SK*10+10): P1=LF%: P2=5: FORY=1TONT
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+39 THENI=-1:X=4
   :rem 245
430 IFCP=S+960 THENI=1:X=2
   :rem 250
435 IFCP=S+999 THENI=-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)=4 THEN900
   :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):IF PEEK(197)=60 THENQT=1
   :rem 123
480 NEXTZ:IF QT=0 THEN410
   :rem 212
500 IFCP=SORCP=S+39 ORCP=S+960 ORCP=S+999 THEN410
   :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=7 THENZ=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=32 THEN630
   :rem 236
560 IFY=LF% THEN600
   :rem 60
570 IFY=160 THEN660
   :rem 35
580 GOTO 700
   :rem 109
600 GOSUB 4000:HI=HI+1
   :rem 207
630 POKECP,L$:POKECP+C,2:FORZ=1TO(10-SK):NEXTZ:IFH
   I=>NTTHEN900
   :rem 220
640 GOTO 520
   :rem 106
660 POKECP,L$:POKECP+C,2:IFI=-40 THENI=1:X=4:GOTO 410
   10
   :rem 193
670 IFI=40 THENI=1:X=2:GOTO 410
   10
   :rem 5
680 IFI=1 THENI=40:X=3:GOTO 410
   10
   :rem 52
690 I=40:X=1:GOTO 410
   10
   :rem 145
700 Z=9:FORW=0TO3:IFBV(W)=YTHENZ=W
   :rem 222
710 NEXTW:IFZ=3 THEN 630
   :rem 138
720 X=BT%(Z,CD-1,0):CP=CP+BT%(Z,CD-1,1):GOSUB 4100
   :rem 28
725 IFPEEK(CP)=LF% THEN GOSUB 4000:HI=HI+1
   :rem 146
730 POKECP,L$:POKECP+C,2:GOTO 510
   :rem 202
900 PRINTCHR$(147);"{WHT}[2 DOWN][15 SPACES}{RVS}GAME OVER!{OFF}";POKEVC+33,12:POKE 198,0
   :rem 94
910 PRINT"[3 DOWN][5 SPACES]# LEAVES[2 SPACES]=";N
   :rem 155
920 PRINT"[DOWN][5 SPACES]# EATEN[3 SPACES]=";HI
   :rem 22
930 PRINT"{DOWN}{5 SPACES}# LUNCHES =";BC :rem 176
940 IF BC=0 THEN BC=1 :rem 64
950 X=(HI-BC)*5+40;X=X-(2*(9-SK));IF X<1 THEN X=1 :rem 142
955 IF HI<1 THEN X=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 GET X$: IF X$="" THEN N=980 :rem 147
990 IF X$="Y" THEN N=980 :rem 72
1000 IF X$="N" THEN N=980 :rem 168
1010 GOSUB 5000 :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 QQ :rem 91
1520 IF PEEK(S+W-1)<>32 OR PEEK(S+W)<>32 OR PEEK(S+W +1)<>32 THEN QQ =12:NEXT QQ :rem 199
1530 IF PEEK(S+W+40)<>32 OR PEEK(S+W-40)<>32 THEN 1510 :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}LADYBUG{OFF}{SPACE}g{14 SPACES}{OFF}" :rem 144
2010 PRINT"{2 DOWN}THE LADYBUG RUNS AROUND THE SCREE EN{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 LEAV ES OR BY PRESSING THE{RVS}P1{OFF} KEY." :rem 234
2040 PRINT"{DOWN}EAT AS MANY LEAVES AS POSSIBLE P E R LUNCH FOR A HIGHER SCORE." :rem 96
2050 PRINT"{DOWN}ADD MORE OBSTACLES BY PRESSING {RVS}SHIFT{OFF}" :rem 109
2060 GOSUB 5000 :rem 13
2070 FORX=0 TO 3:FORY=0 TO 1:READZ:DT%(X,Y)=Z:NEXTXY,W :rem 200
2080 FORW=0 TO 3:FORX=0 TO 3:FORY=0 TO 1:READZ:BT%(W,X,Y )=Z:NEXTXY,W :rem 136
2090 FORW=0 TO 3: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)AND 251 :rem 231
2140 FOR I=0 TO 1:FOR J=8 TO 25:POKE C%(I)+J,PEEK (VC+J):NEXTJ :rem 166
2150 FOR J=C%(I)+216 TO C%(I)+271:READ Z:POKE J,Z:NEXT:REM 18
2160 FOR J=280 TO 511:POKE C%(I)+J,PEEK(VC+J):NEXT:REM 94
2170 FOR J=1024 TO 1487:POKE C%(I)+J,PEEK(VC+J):NEXT:REM 62
2180 POKE 1,PEEK(1) OR 4:POKE 56334,PEEK(56334) OR 1:REM 186
2190 FOR I=0 TO 1:CH%(I)=(PEEK(53272) AND 240) OR CH%(I):NEXT:POKE 53272,CH%(0):REM 94
2200 PRINT"{DOWN}{8 SPACES}(PRESS ANY KEY TO START)" :REM 134
2210 GET X$: IF X$=M" THEN 2210: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 POKE MC+24,15:POKEMC+4,129:REM 199
4020 FOR V1=50 TO 10 STEP-10:POKE MC+1,V1:NEXT V1:REM 172
4030 POKEMC+4,128:FOR V1=1 TO 4:NEXT V1:POKE MC+24,0:REM 170
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:FOR V1=1 TO 40:NEXT V1:REM 141
4130 POKEMC+4,16:FOR V1=1 TO 10:NEXT V1:REM 147
4140 POKEMC+24,0:REM 117
4150 RETURN:REM 173
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 FOR X=TO37:Y=NT%(X,0):Z=INT(Y/256):REM 73
5030 Y=Y-Z*256:POKEMC+0,Y:POKEMC+1,Z:REM 185
5040 POKEMC+4,17:FOR Y=1 TO TONT%(X,1)*70:NEXT Y:REM 54
5050 POKEMC+4,16:FOR Y=1 TO TONT%(X,1)*70:NEXT Y:REM 67
5055 POKE MC+6,15:REM 129
5060 RETURN:REM 171
9000 DATA 6430,2,7217,2,7217,2,8583,3,7217,1,6430,2,5728,1,5407,2,7217,2:REM 236
9010 DATA 6430,2,7217,2,7217,2,8583,2,8101,2,7217,2,6430,2,5728,2,5407,2,5728,2:REM 75
9020 DATA 6430,2,5728,2,7217,1,5407,2,6430,1,4817,2,5407,2,5728,2,6430,2:REM 233
9030 DATA 6430,2,7217,2,8101,2,8583,2,6430,1,6430,2,7217,2,5728,2,5407,1,4291,2,4291,1:REM 63
10000 DATA 1,3,-40,1,-1,4,40,2:REM 141
10010 DATA 4,40,3,-1,2,-40,1,1:REM 142
10020 DATA 4,40,1,1,3,-1,2,-40:REM 143
10030 DATA 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 DATA255,127,31,15,7,3,3,17 :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 DATA27,63,63,31,15,7,1,0 :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 previously 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 combination 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 constructed 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
100 DI=8:TA=1:REM ** DEVICE NUMBERS **
110 VC=53248:POKE VC+32,0:POKE VC+33,11:PRINT CHR$(14)
```

:rem 15
:rem 98
:rem 50

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Build A Quiz

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=0 TO 30: READZ; NT%(X)=Z: NEXTX  :rem 10
160 M=((PEEK(53272) AND 240) / 16) * 1024  :rem 44
170 C=55296  :rem 35
200 PRINT"[WHT][2 DOWN] [RVS][6 SPACES]B U I L D 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 [4 SPACES]Q U I Z 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 GOSUB 9000  :rem 228
230 PRINT"[2 DOWN][3 SPACES]ENTER OPTION:"  :rem 25
240 PRINT"[DOWN][3 SPACES][RVS]1[OFF] CREATE A QUI Z"
:rem 44
245 PRINT"[DOWN][3 SPACES][RVS]3[OFF] END PROGRAM"
:rem 67
250 GETX$: IFX$=""THEN 250  :rem 127
260 X=VAL(X$): ONXGOTO300, 700, 280  :rem 97
270 GOTO 250  :rem 105
280 PS=0: GOSUB 9000: PRINTCHR$(147)  :rem 226
290 END  :rem 114
300 NQ=0: GOSUB 9200: GOSUB 7500: PRINTCHR$(147): rem 95
310 OPEN9, DV, 1, QN$: PRINTCHR$(147): PRINT#9, X$: Z$;  :rem 133
320 NQ=NQ+1: PRINT"[CLR][2 DOWN][3 SPACES]ENTER QUE STION TYPE:[2 DOWN]"
:rem 192
330 PRINT"[2 DOWN][3 SPACES][RVS]1[OFF] TRUE/FALSE "
:rem 82
335 PRINT"[2 DOWN][3 SPACES][RVS]2[OFF] MULTIPLE CHOICE"
:rem 95
340 PRINT"[2 DOWN][3 SPACES][RVS]4[OFF] (ALL DONE)"
:rem 178
350 GETX$: IFX$=""THEN 350  :rem 129
360 IFX$="4"THEN X$: GOTO 550  :rem 198
365 IFX$<"1"ORX$="3"THEN 350  :rem 243
370 PRINT"[CLR][DOWN][3 SPACES]QUESTION #": NQ;  :rem 191
380 X=VAL(X$): T$=X$: ONXGOTO 400, 450, 500  :rem 205
390 GOTO 350  :rem 109
400 PRINT"(TRUE/FALSE)"; O=240: L=80: GOSUB 8000: A$=X$  :rem 241
Build
A
Quiz

410 PRINT"[10 DOWN]{3 SPACES}ENTER CORRECT ANSWER
{SPACE}>({RV}$T{OFF} OR {RV}$F{OFF})"
:rem 68
420 GETX$: IFX$="" THEN 420
:rem 125
430 IFX$<"T" AND X$="F" THEN 420
:rem 204
435 PRINTCHR$(147)
:rem 23
440 PRINT9,T$;Z$;A$;Z$;X$;Z$;:GOTO 320
:rem 234
450 PRINT"(MULTIPLE CHOICE)";O=240:L=80:GOSUB 8000
:rem 219
455 Q$=X$: PRINT"[8 DOWN] A.";O=404:L=76:GOSUB 8000
:rem 222
:rem 145
:rem 67
:rem 68
480 PRINT"[3 DOWN][4 SPACES]ENTER CORRECT ANSWER
{RV}$A{OFF},{RV}$B{OFF},{RV}$C{OFF} OR {RV}$D
{OFF})"
:rem 228
485 GETX$: IFX$="" THEN 485
:rem 147
490 IFX$<"A" OR X$="D" THEN 485
:rem 28
495 PRINTCHR$(147)
:rem 29
497 PRINT9,T$;Z$;Q$;Z$;A$;Z$;B$;Z$;C$;Z$;D$;Z$;X$;Z$;
:rem 104
499 GOTO 320
:rem 116
500 PRINT"(COMPLETION)";O=240:L=80:GOSUB 8000:Q$=X$
:rem 34
505 PRINT"[10 DOWN][3 SPACES]ENTER CORRECT ANSWER:
"
:rem 175
510 O=600:L=80:GOSUB 8000
:rem 101
520 PRINTCHR$(147)
:rem 18
530 PRINT9,T$;Z$;Q$;Z$;X$;Z$;
:rem 242
540 GOTO 320
:rem 103
550 PRINTCHR$(147)
:rem 21
560 PRINT9,T$;Z$;
:rem 28
570 CLOSE9
:rem 75
580 GOTO 200
:rem 104
700 GOSUB 9200:GOSUB 7500:PRINTCHR$(147)
:rem 29
730 OPEN9, DV, 0, QN$:GOSUB 6000
:rem 150
740 IFLEN(X$)>39 THEN 760
:rem 76
750 A$=" +X$;X$=A$+":GOTO 740
:rem 254
760 PRINT"[CLR][2 DOWN]":FOR X=1 TO 11:PRINTX$;":PRINT
" " :NEXTX:GOSUB 7000:FORX=1 TO 150:NEXTX
:rem 11
770 PRINTCHR$(147):NQ=0:CQ=0
:rem 154
800 INPUT9,X$
:rem 44
810 IFX$="4" THEN 2000
:rem 74
820 IFX$<"1" OR X$="3":THEN 800
:rem 239
830 NQ=NQ+1:X=VAL(X$)
:rem 241
850 onxGOTO 9000, 1000, 1100
:rem 63
Build A Quiz

860 GOTO 800: rem 111
900 GOSUB 6000: Q$ = X$: GOSUB 6000: R$ = 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$: IF A$ = "" THEN 940: rem 93
950 IF A$ < "T" AND A$ < "F" THEN 940: rem 172
960 IF A$ <> R$ THEN 1200: rem 117
970 GOTO 1300: rem 157
1002 GOSUB 6000: D$ = X$: GOSUB 6000: R$ = 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$: GOSUB 6700: rem 152
1010 PRINT " B. "; B$; X$ = B$: GOSUB 6700: PRINT " C. "; C$: rem 131
1020 PRINT " D. "; D$: X$ = D$: GOSUB 6700: rem 139
1030 PRINT "[12 SPACES] ENTER {RVS} A{OFF}, {RVS} B{OFF}, {RVS} C{OFF} OR {RVS} D{OFF}"": rem 166
1040 GETA$: IF A$ = "" THEN 1040: rem 173
1050 IF A$ <> "A" OR A$ <> "D" THEN 1040: rem 59
1060 IF A$ <> R$ THEN 1200: rem 157
1070 GOTO 1300: rem 197
1100 GOSUB 6000: Q$ = X$: GOSUB 6000: R$ = 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: GOSUB 8000: rem 153
1130 IF X$ < R$ THEN 1200: rem 178
1140 GOTO 1300: rem 195
1200 GOSUB 7200: PRINT "[CLR][3 DOWN] CORRECT ANSWER: [3 DOWN]"; PRINTR$: rem 105
1210 FOR X = 1 TO 1500: NEXT X: PRINT CHR$(147): GOTO 800: rem 107
1300 CQ = CQ + 1: GOSUB 7000: rem 6
1310 PRINTCHR$(147): rem 64
1320 GOTO 800: 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
**Build A Quiz**

```basic
2030 IFNQ=0 THEN NQ=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$="" THEN 2070 : rem 227
2080 PRINTCHR$(147) : rem 69
2090 CLOSE 9 : rem 122
2100 GOTO200 : rem 142
6000 X$="" : rem 195
6010 GET#9,R$ : rem 165
6020 IFR$="" THEN 6010 : rem 68
6030 IFASC(R$)=13 THEN 6060 : rem 146
6040 X$=X$+R$ : rem 160
6050 GOTO6010 : rem 203
6060 RETURN : rem 172
6700 X=LEN(X$) : IFX$=36 OR X$=76 THEN 6720 : rem 118
6710 PRINT"[SHIFT - SPACE]" : rem 63
6720 RETURN : rem 175
7000 POKEMC+0,0:POKEMC+1,0:POKEMC+5,15:POKEMC+6,15
      :POKEMC+24,10 : rem 220
7010 FORX=2 TO11 : rem 123
7020 POKEVC+33,X:POKEMC+1,X*5:POKEMC+4,33 : rem 200
7030 FORY=1 TO50:NEXTY : rem 82
7040 POKEVC+4,32:FORY=1 TO10:NEXTY,X : rem 188
7050 POKEVC+24,0 : rem 120
7060 RETURN : rem 173
7200 POKEMC+0,0:POKEMC+1,30:POKEMC+4,33:POKEMC+5,1
      5:POKEMC+6,15 : rem 228
7210 POKEVC+33,0:POKEMC+24,10 : rem 150
7220 FORX=1 TO50:NEXTX : rem 129
7230 POKEVC+4,32:FORX=1 TO20:NEXTX : rem 56
7240 POKEVC+24,0:POKEVC+33,11 : rem 154
7250 RETURN : rem 174
7500 PRINT"{CLR}{3 DOWN}{3 SPACES}ENTER QUIZ NAME:
      ""PRINT"{DOWN}{3 SPACES}(1-37 LETTERS)" : rem 221
7510 O=323:L=38:GOSUB8000:IFLEN(X$)>37 THEN 7500 : rem 185
7520 QN$=X$:IFLEN(X$)>11 THEN QN$=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$="" THEN 7550 : rem 285
7560 IFASC(E$)<>13 THEN 7550 : rem 208
7570 RETURN : rem 179
```

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Build
A Quiz

8000 X$="":POKEM+O,160:POKEC+O,1
8010 GETY$:IFY$=""THEN8010
8020 X=ASC(Y$):IFX=13THEN8150
8030 IFX=20THEN8100
8040 Y=LEN(X$):X$=X$+Y$:IFX>63THENX=X-64
8050 POKEM+O+Y,X:POKEC+O+Y,1:POKEM+O+Y+1,160:POKEC
+O+Y+1,1:IFLEN(X$)<LTHEN8010
8060 GOTO8150
8100 Y=LEN(X$):IFY$<"THEN8010
8110 POKEM+O+Y,32:POKEM+C+O+Y,11:POKEC+O+Y-1,1
8120 Y$=LEFT$(X$,Y-1):X$=Y$:GOTO8010
8150 RETURN
9000 IPS=1THEN9080
9005 POKEMC+0,0:POKEMC+1,0:POKEMC+5,79:POKEMC+6,12
9:POKEMC+24,15
9010 FORX=0TO30
9020 Y=INT(NT%(X)/256)
9030 POKEMC+0,NT%(X)-(Y*256)
9040 POKEMC+1,Y:POKEMC+4,17
9050 FORY=1TO70:NEXTY
9060 POKEMC+4,16:FORY=1TO10:NEXTY,X
9070 POKEMC+24,0:PS=1
9080 RETURN
9200 IFDP=1THEN9280
9205 PRINTCHR$(147);"{4 DOWN} DO YOU WANT TO USE D
ISK OR TAPE FOR"
9210 PRINT"{DOWN} SAVING/LOADING QUIZZES?":REM 29
9220 PRINT"{5 DOWN} ENTER {RVS}D{OFF} OR {RVS}T
{OFF}"
9230 GETX$:IFX$=""THEN9230
9240 IFX$="D"THENDV=DI:DV$="DISK":GOTO9270
9250 IFX$="T"THENDV=TA:DV$="TAPE":GOTO9270
9260 GOTO9230
9270 DP=1
9280 RETURN
9900 DATA6430,6430,6430,4817,8101,8101,8101,6430,6
430,8101,9634,9634
9910 DATA8583,8101,7217,0,7217,8101,8583,8583,8101
,7217
9920 DATA8101,6430,6430,8101,7217,4817,6069,7217,6
430
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
Appendix

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
Appendix

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:

<table>
<thead>
<tr>
<th>When You Read:</th>
<th>Press:</th>
<th>See:</th>
</tr>
</thead>
<tbody>
<tr>
<td>{CLEAR}</td>
<td>SHIFT</td>
<td>CLR/HOME</td>
</tr>
<tr>
<td>{HOME}</td>
<td>SHIFT</td>
<td>CLR/HOME</td>
</tr>
<tr>
<td>{UP}</td>
<td>SHIFT</td>
<td>CRSR</td>
</tr>
<tr>
<td>{DOWN}</td>
<td>SHIFT</td>
<td>CRSR</td>
</tr>
<tr>
<td>{LEFT}</td>
<td>SHIFT</td>
<td>CRSR</td>
</tr>
<tr>
<td>{RIGHT}</td>
<td></td>
<td></td>
</tr>
<tr>
<td>{RVS}</td>
<td>CTRL</td>
<td>9</td>
</tr>
<tr>
<td>{OFF}</td>
<td>CTRL</td>
<td>0</td>
</tr>
<tr>
<td>{BLK}</td>
<td>CTRL</td>
<td>1</td>
</tr>
<tr>
<td>{WHT}</td>
<td>CTRL</td>
<td>2</td>
</tr>
<tr>
<td>{RED}</td>
<td>CTRL</td>
<td>3</td>
</tr>
<tr>
<td>{CYN}</td>
<td>CTRL</td>
<td>4</td>
</tr>
<tr>
<td>{PUR}</td>
<td>CTRL</td>
<td>5</td>
</tr>
<tr>
<td>{GRN}</td>
<td>CTRL</td>
<td>6</td>
</tr>
<tr>
<td>{BLU}</td>
<td>CTRL</td>
<td>7</td>
</tr>
<tr>
<td>{YEL}</td>
<td>CTRL</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>When You Read:</th>
<th>Press:</th>
<th>See:</th>
</tr>
</thead>
<tbody>
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<td>{CLR}</td>
<td>{CLR/HOME}</td>
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<tr>
<td>[ ]</td>
<td>{UP}</td>
<td>{CRSR}</td>
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<tr>
<td>[ ]</td>
<td>{DOWN}</td>
<td>{CRSR}</td>
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<td>[ ]</td>
<td>{LEFT}</td>
<td>{CRSR}</td>
</tr>
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<td>[ ]</td>
<td>{RIGHT}</td>
<td></td>
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<tr>
<td>[ ]</td>
<td>CTRL</td>
<td>9</td>
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<td>[ ]</td>
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<td>[ ]</td>
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</table>

<table>
<thead>
<tr>
<th>Press:</th>
<th>See:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>COMMODORE</td>
</tr>
<tr>
<td>2</td>
<td>COMMODORE</td>
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<tr>
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<td>COMMODORE</td>
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<td>COMMODORE</td>
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<td>7</td>
<td>COMMODORE</td>
</tr>
<tr>
<td>8</td>
<td>COMMODORE</td>
</tr>
</tbody>
</table>

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Appendix C

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

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
- Heavenly Bodies
- Stargazer
- Skeleton
- Plan a Menu

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

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
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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).
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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.

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Appendix D

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
Appendix D

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.
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:
Appendix

1. Clue 1.
2. Clue 2.
3. Clue 3.
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.
Appendix D

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.
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.
Appendix

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.)
Appendix

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) ;
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 ZEU$ 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 COMPUTED 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 "rem123". 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.
Appendix

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..."; FOR I = 886 TO 1018: READ A: CK = CK + A: POKE I, A: NEXT
110 IF CK <> 17539 THEN PRINT "[DOWN]YOU MADE AN ERROR"; PRINT "IN DATA STATEMENTS."; END
120 SYS 886: 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

266
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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Learning Through Games

Whether you're just starting or you already know how to program, you've probably realized that creating educational, entertaining games takes time and practice. This book, with 30 complete games, gives you an instant library of educational software for your children.

- *Hidden Picture*, in which your child uncovers a series of drawings on the screen using a joystick
- *Notecrafter*, which matches your musical ear against the computer
- *Stargazer*, in which you identify constellations displayed as you'd see them in the night sky
- *Real People*, which tests your knowledge of historical figures
- A program which allows you to create a quiz on any subject
- And games that teach skills from spelling to world geography

Each game is ready to type in and run on your Commodore 64, with clear explanations. You can even change the games to fit your child's needs.

And since the games are fun to play, your child will return to them again and again, learning something new each time.