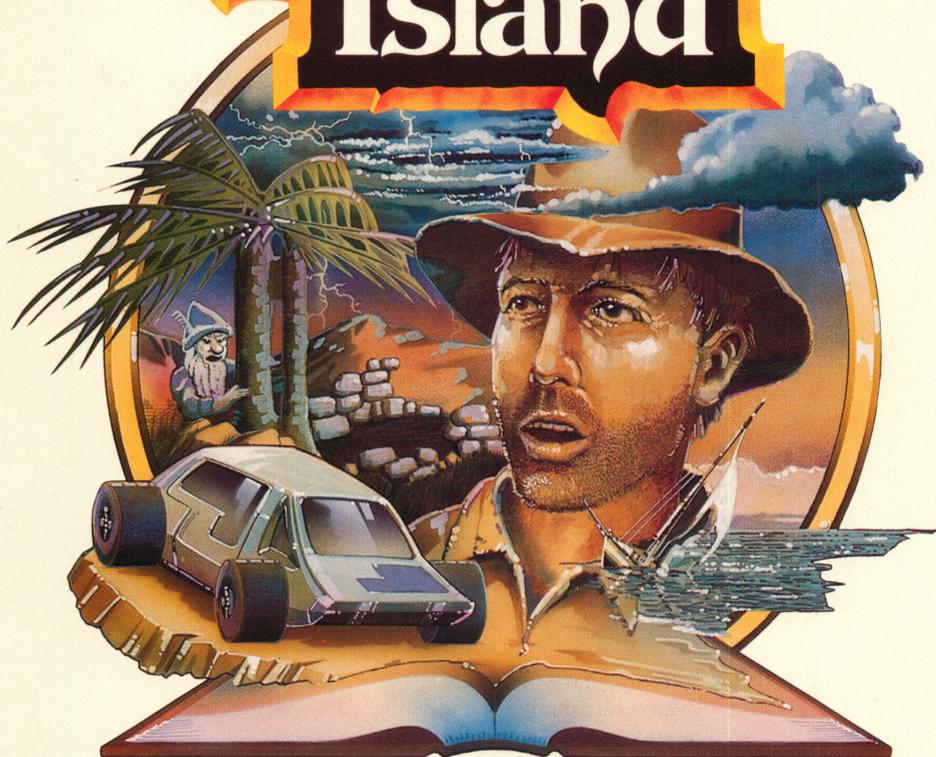


GROLIER ADVENTURES IN KNOWLEDGE SERIES

THE SECRETS OF Science Island



RESOURCE BOOK



GROLIER ELECTRONIC PUBLISHING INC.

The Secrets of Science Island™

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for Grolier Electronic Publishing, Inc.
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Books and Software

Books and software are natural partners. Both are terrific for sharing information and for fun.

We often use books to learn about something that interests us, or to take a journey in our minds to some distant place or a time long ago, or to find out about the life of a famous person.

We use computer software in many of the same ways—to help us learn facts or ideas, or to live and play for a while in an imaginary world.

Grolier Electronic Publishing recognizes that books and software are complimentary partners in the areas of education and entertainment. Our books and software adventures encourage you to combine learning with fun—to enter an imaginary world through the computer, and to use a book to help you reach a goal in that imaginary world. As you play the computer game, we think you will find that you can learn a great deal from the book that accompanies it. We hope that you will find many hours of pleasure in this unique blend of books and software.

PART I—HOW TO OPERATE THE PROGRAM

What Computer Keys Will I Use?

The Secrets of Science Island does not require that you memorize any instructions or commands. Instructions will always appear on the screen. All the different keys you will use are listed below. If you don't already know where they are on the keyboard, try locating them before you start.

- Use the keys like a typewriter when you sign in, and when you type the answers to questions.
- Use ← to erase. On the Apple *Ile* and *Iic*, you can use the DELETE key also.
- Use the SPACEBAR to get help messages or questions, or when the program tells you to use it, as when you are gathering memstones.
- Use RETURN when you have typed a response, and want it to be entered.
- Type “y” for “yes;” type “n” for “no.”
- Use the arrow keys on the Apple *Ile* and *Iic* or I, J, K, M on the II and II+ for up, left, right, and down to move your car around on Science Island. To increase the speed of your car, press the key twice or hold it down. Use “S” key to stop your car.

- Type “?” to see a summary of all of the hints you’ve had so far.
- When you type in a number, use the numbers in the top row of the keyboard.

If you type anything other than the instructions or “commands” the computer is programmed to accept, nothing will happen.

About The Secrets of Science Island

The Secrets of Science Island is a challenging adventure game in which you have a chance to travel about a magic island seeking “memstones” to build a shelter to protect you from hurricanes. If you complete your adventure in time, you will be safe when the hurricane comes, ready to go on to further adventures on the island. If not, you can watch your partly-built shelter blow away; then try again. Three adventures take place on three different parts of the island, and there are three shelters to be built. Each involves answering challenging questions by looking in the book, *Science Facts You Won’t Believe*.

The Secrets of Science Island is a Family Affair

The Secrets of Science Island is a game for the whole family. It puts the excitement and power of the home computer at everyone’s fingertips, and lets younger and older family members play together. One player can use the software alone and build shelters to avoid the powerful hurricane. Or, an older family member can help a younger one locate answers to the questions in each adventure. Two players or two teams of players can take turns answering the questions. Each player or team keeps a score sheet or performance record. At the end of each journey, players compare correct answers and penalties to determine who won that shelter. The player to win two of the three possible shelters is the winner.

What Can I Learn from The Secrets of Science Island?

- You’ll pick up all kinds of information (big ideas and trivia as well) as you look in the book, *Science Facts You Won’t Believe*.
- You’ll discover that there are lots of things in the book that interest you. You’ll probably start browsing as you look for answers to the adventure questions.
- You’ll learn how to use reference books to find answers to questions and to do research for fun or for school projects.

- You'll learn how to use the computer along with printed materials, like the book, *Science Facts You Won't Believe*.
- You'll become more familiar with using computers and program disks. Your fingers will become quite nimble at using the keyboard to start, stop, and change the speed and direction of your magic car.

What Materials Do I Need to Get Started?

All you need to begin is *The Secrets of Science Island* disk, an Apple *Ile* or *Ilc*; II or II+ with 64K of RAM, one disk drive, and a monitor. *The Secrets of Science Island* has beautiful color graphics. If you have access to a color monitor, you will want to use it with this program. You will also need the book, *Science Facts You Won't Believe*, included with this program.

How Much Help Will I Need with The Secrets of Science Island?

You probably won't need any help while you gather memstones to build shelters. However, here are some suggestions if you do need help.

- First, stop your "memcar" in front of the ? signs and press the SPACEBAR. At each ? sign is a different hint about how the game works. You can also use the ? key to get a review of the hints that you have seen in the program, but you must remember that getting hints will take some of the time you need to build your shelter. Watch the upper left corner of your screen to see how much time is left before the hurricane strikes.
- Look through this Resource Book—your questions may be answered here.
- If you cannot read or understand a particular question in the game, ask someone to help you—a parent, a teacher, or a friend.
- If you cannot find an answer to one of the questions, ask someone to help you find the correct *page* in the book, *Science Facts You Won't Believe*.
- Type your answers carefully before pressing RETURN. You have only one chance to enter your answer without getting a penalty.

How Do I Get Started?

The program is so simple that you don't even need this guide to use *The Secrets of Science Island*. As soon as you "boot up" the disk, that is, load the program from the disk to the computer, the adventure begins. Just follow the instructions on the screen, and you'll be on your way! Here's how to "boot up" the disk.

To insert the disk:

- Before turning the computer on, remove the disk from its protective sleeve, holding it by the end with the label. Do not touch the exposed plastic parts of the disk.
- Hold the disk with the label side up; insert it gently into the disk drive and close the door.
- Turn on the computer and the monitor. Soon the disk drive's red light will go on and you will hear a whirring sound as the program is loaded into the computer. When the light goes off, the program will begin on the screen.

Treat disks with care!

They can be damaged if:

- something spills on them
- they are bent
- the exposed plastic areas get dirty
- they are exposed to extreme heat, cold, humidity, or a powerful magnet

How Do I Sign In?

The Secrets of Science Island program asks you to type in both your first *and* last name, and tell whether you have played before. The program keeps a record of your game. This means it remembers who you are and how much you've played. If you go away for awhile, you can come back and pick up where you left off in the adventure. Be sure to remember exactly how you entered your name. If you do not enter it the same way every time you come back to the program, the program will not be able to find its record of your game.

What if the Computer Can't Find My Name?

It's important to enter your name exactly the same way every time. If you change anything about the way you type your name, you will see this on the screen:

No adventure exists for this name.
You can
1. Begin a new adventure,
2. Get a list of games in progress,
3. Quit.
Press 1, 2, or 3

If you use option #2, "Get a list of games in progress," the message will appear:

PRESS CTRL-U TO GET LIST OF
GAMES IN PROGRESS

To do this, hold down the Control Key with your left hand and press U with your right hand. A list of the names of the players will appear and you can check to see if your name is on the list and how it is spelled. Press the number opposite your name to begin play.

What is The Secrets of Science Island?

The adventure opens on the beach where you have been washed ashore. Science Island is beautiful, but there is something magical about it. Parked on the beach is a magic memcar; it is for you to use to get around Science Island in search of memstones to use in building a shelter. Science Island has three areas. Your adventure begins in the Countryside.

You'll need to build a shelter for protection from the impending hurricanes. You drive about the Countryside gathering magic memstones to build a simple but sturdy shack by answering questions. As you answer questions, you earn memstones to build your shelter. You have 400 hours to build your shelter before the hurricane strikes. You watch the hours count down as you gather your memstones to build your shelter. If you fail to complete your shelter before you have used up your 400 hours, the hurricane blows in and destroys your unfinished shelter. Your companion in this adventure is the book, *Science Facts You Won't Believe*. You find the answers to the questions in your adventures in this fascinating book.

If you complete your structure in Countryside before the hurricane strikes, you can then go on to the Town, and if you build a town house in less than 400 hours, you can go on to the greatest challenge of all, the Troll Forest.

The Countryside Adventure

With your copy of *Science Facts You Won't Believe* by your side, you climb into the car. Magically it starts by itself, and heads along the country roads toward a flashing question mark, where it stops. Press SPACEBAR to see instructions for driving your car. Use the arrow keys on the Apple IIe and IIc or I, J, K and M on the II or II+ to drive your car up, down, left, and right. Use "S" to stop your car.

The more you play, the more skilled you'll become as a driver. Use two hands to play. Keep one finger above the "S" key at all times; use your right hand to control the arrow or I, J, K, M keys.

When you stop at places that have questions or hints, press SPACEBAR to get the questions or hints. Part of the fun of the adventure is learning more about the rules of life on Science Island as you travel around it.

You are now on your own. Your position is shown on the map. Although you can see only one half of the map at a time, you can drive your memcar off the edge of that part of the map and onto the other half of the Countryside map. In the upper right hand corner of the map is a pair of gates. They will not open until you have earned enough memstones to build a Country shelter.

When you see a question mark sign, you can drive to it, stop, and press SPACEBAR, and a hint will appear. Hints are useful, but you will have to decide how often to get hints—they cost you time on your countdown clock! At any time, you can press "?" to get a list of all your hints so far.

If you stop at a road sign and press SPACEBAR, you are given a chance to answer a riddle. All the answers to the riddles can be found in *Science Facts You Won't Believe*. Memstones are the reward for correct answers—one memstone for the easier questions, two for the harder ones. It takes 20 memstones to build a shelter in the Countryside. Sometimes, as you are driving along, a Troll will stop you with a road block. You must answer his question correctly or lose valuable hours.

These things cost you time in the Countryside:

- driving
- pressing SPACEBAR to read a road sign or help sign
- wrong answers to riddles
- wrong answers to Troll road block questions
- crashing your memcar into the end of a road

One thing never costs you time—the time you spend looking up your answers in *Science Facts You Won't Believe*.

There are four ways to leave the Countryside:

- If your 400 hours are used up before you complete your 20-memstone shelter, the hurricane will blow your unfinished shelter away.
- If you complete your shelter before the time is up, the gates will open to allow you to enter the Town.
- By pressing ESC at any point in the adventure before your 400 hours have been used, you can save your current position to resume play another time.
- If you earn 20 memstones, and think you have enough hours left, you can see your Countryside shelter completed, and then take your 20 memstones into Town, and try to complete the 40-memstone townhouse before your time elapses.

Town

There are two ways to enter Town. You may drive in from the northeast corner of the Countryside if you have your 20 memstones and some time remaining from your adventure in the Countryside. These memstones will be the beginning of your 40-memstone Townhouse. The other way is to enter from the start of the program if you completed your shelter in the Countryside before you signed off the last time.

As in the Countryside, you will see only half of the map at a time—the half on which you are driving. To get to see the other half of town, you must drive your memcar into that part of Town. North of town, you will see the bridge that

leads to the Troll Forest, but it will not open for you until you have earned your 40 memstones by answering questions in Town.

Questions are available at the houses with numbers on the doors. Hints are available at the house with the “?” on the door.

In Town you control your car the same way you did in the Countryside. When you have stopped at a house, pressing SPACEBAR will get you the question or instruction. *Science Facts You Won't Believe* is your source for all answers to the questions, and memstones will be your reward for correct answers. You will need 40 memstones to build a Townhouse—each of the easier questions is worth two memstones; each of the harder questions earn you four memstones.

You lose time in Town for the same reasons as in Countryside, but the time penalties are higher than in Countryside.

You leave Town in the same ways you left the Countryside:

- By being blown away
- By building a Townhouse and entering Troll Forest
- By pressing ESC to stop and save your game
- By completing your Townhouse and taking your 40 memstones and remaining time into Troll Forest

Troll Forest

There are two ways to enter Troll Forest. You may drive north over the bridge out of Town if you have your 40 memstones and some time left over from Town. These memstones become the foundation of your 80-memstone Troll Forest Castle.

The other way is to enter from the start of your program if you completed your Townhouse before you signed off last time you played.

All of the Troll Forest is on one map. Help, questions, and traps are indicated by flashes. You control your memcar and use SPACEBAR the same way you did in Countryside and Town, but there are no roads. Your memcar can drive over the rugged countryside, but it *cannot* climb mountains, or drive into rivers or trees. Doing this causes crashes that cost you time. The Trolls have hidden their memstones in mines, and do not part with them easily. Be careful to answer their questions correctly. But first you have to get to the mine opening.

Watch for flashes that indicate where the mines are. You'll have to drive your memcar to the place where they flashed, and press SPACEBAR to get the chance to try a question. Each flash marks a place that remains available for a while even after the flash has disappeared. You will have to remember where it was, land on it, and press SPACEBAR. Try to get there while it lasts. It costs you time to enter a mine and get a question. Missing a question will cost you even more time!

As if that weren't bad enough, the Trolls have more tricks in store for you. Look carefully at the flashes. Some Troll Mines are actually Troll Traps! Troll Mines and Troll Traps have slightly different appearances. Getting caught in a Troll Trap costs you time. Hints and the hint summary are available as usual—but they also will cost you time.

You can still count on *Science Facts You Won't Believe* to help you answer the Troll questions. The Trolls give you four memstones for correct answers to the easier questions, and eight for the harder ones. You need 80 memstones to build your Troll Forest Castle, but once built, you will ride out the hurricane in comfort and style.

There are two ways to leave the Troll Forest:

- Press ESC to save your current position
- Blow away in the hurricane and start over again

How Many Players Can Use The Secrets of Science Island Program?

The program can save the records of 30 different players. So, what if you're player 31? Don't worry you can still play. The program will check through its files to see which of the 30 players hasn't played for the longest time. That player's record will be removed to make room for you.

What Happens to My Record When I Go Away From the Computer?

Whenever you want to stop, or when someone else wants to use *The Secrets of Science Island*, press ESC. The program will save your records. The computer can be turned off, and when you come back to continue your adventure, all you have to do is to "boot up" the disk and sign in correctly to resume play. The program will take you back to the place in the adventure where you left off.

What If I Get Halfway Through the Game, Go Away, and Don't Come Back for Weeks?

If a lot of players have been using *The Secrets of Science Island*, your name may have been removed. You will have to start at the beginning again. However, you will probably find that you remember the answers to most of the questions you've answered before. Even if you do not remember, it shouldn't take long to find the answers in *Science Facts You Won't Believe*.

How Do I Sign Off?

All you have to do is press ESC when you want to sign off in the middle of an adventure.

When you have finished building a shelter in the Countryside or in Town, you can choose:

- To take your memstones with you and go on to the next adventure. If you have finished a shelter in the Countryside, and have time left over before the hurricane, you can take your 20 memstones and your remaining time and go into Town. There you will have a 20-memstone start on a Townhouse. The same is true if you have finished a Townhouse—you can take your 40 memstones and your remaining time and go into Troll Forest to begin an 80-memstone castle with your 40 memstones.
- You can choose to quit the program for now. When you come back, you simply have to “boot up” the disk, and the program will take you to the place in the adventure where you left off.

PART II—SUGGESTED APPLICATIONS AND ACTIVITIES

Science Bluff—a Science Game You Can Program into Your Computer

You can program your computer to help you play this game with the book, *Science Facts You Won't Believe*. All you have to do is type the program as it is listed on pages 13, 14, and 15, save it on a blank, formatted disk (**do not try to save it on your Secrets of Science Island disk**), and then play the game. The program is written in Apple BASIC. It should take only about half an hour to type and save. Once you save it, you won't have to retype it each time you play.

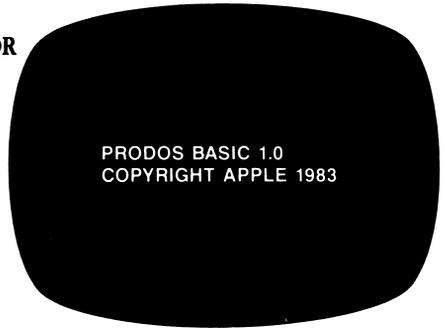
If you have never formatted a disk or entered a BASIC program, you may want to consult your Apple User's Manual. All the necessary steps are given here, but the Apple User's Manual will give you more details.

Entering and Saving the Program:

1. Format (initialize) a blank disk by following the directions in the Apple User's Manual or the steps listed in the Appendix in this book. **YOU MUST HAVE A FORMATTED DISK.** Otherwise, your program will not be saved and you will have to retype it. Check to be sure the disk is formatted by placing it in the disk drive, turning on the computer, and typing CATALOG. You should see on the screen:



OR



2. Place your formatted disk in your disk drive, and turn on the computer and monitor. You will see a] and a blinking square (called a cursor) in the lower left corner of your screen.
3. If you have an Apple *Ile* or *IIfx*, be sure you put the CAPS LOCK key down, so that your program will appear in all capital letters.
4. Type the program into your computer *exactly as it appears on pages 13, 14, and 15*. Press RETURN at the end of each line you type. Check to make sure that you leave spaces only where they are indicated, and that you use the proper punctuation marks—a comma (,) or a semicolon (;) in the wrong place may do funny things to the program when you try to run it.

5. If you make a mistake in typing, you can correct it in two ways:
 - If the mistake is in the line that you are currently typing (before you press RETURN) you use the back arrow key to move the cursor over the mistake and type in the correction. The DELETE key does not work for correcting BASIC programs.
 - If the mistake is in any line above where you are typing (or if you have just pressed RETURN), all you have to do is type that line over again—correctly this time—and leave the old, incorrect line where it is. As long as you have numbered the corrected line with the exact same number as the incorrect line, the computer will know that it should ignore the old line and use the new one in its place.
6. Finally, save your program on the formatted disk by typing SAVE SCIENCE BLUFF, then press RETURN—in other words, you type the command, SAVE, followed by a space and then the program name, SCIENCE BLUFF. Start this line with SAVE; do not type a number at the beginning of the line.

You can save other games or programs on this same disk as long as you use a different name for each program.

SCIENCE BLUFF

```

05 TEXT
10 GOSUB 840
20 PRINT "SCIENCE BLUFF"
30 FOR T = 0 TO 2000: NEXT
60 GOSUB 840
70 PRINT "PLAYER ONE TYPE YOUR NAME"
80 PRINT
90 INPUT "THEN PRESS RETURN: ";A$
100 GOSUB 840
110 PRINT "PLAYER TWO TYPE YOUR NAME"
120 PRINT
130 INPUT "THEN PRESS RETURN: ";B$
140 GOSUB 840
150 PRINT A$;" , NAME A SCIENCE FACT:"
160 PRINT
170 INPUT C$
180 GOSUB 840
190 PRINT B$;" , IS ' ";C$;" ' "
200 PRINT
210 PRINT "REALLY A SCIENCE FACT?"
220 PRINT
230 PRINT "OR, IS ";A$
240 PRINT

```

```

250 PRINT "TRYING TO BLUFF?"
260 PRINT
270 PRINT
280 PRINT "ANSWER: 1 = YES, '";C$;" ' "
285 PRINT
290 PRINT "          IS A SCIENCE FACT?"
300 PRINT
320 PRINT "          2 = NO, '";C$;" ' "
330 PRINT
340 PRINT "          IS NOT A SCIENCE FACT?"
350 PRINT
360 PRINT
370 PRINT "PRESS 1 OR 2 THEN PRESS RETURN.";
380 INPUT D
390 IF D < > 1 AND D < > 2 THEN 180
400 GOSUB 840
410 PRINT A$;" ARE YOU BLUFFING?"
420 PRINT
430 PRINT
440 INPUT "ANSWER: 1 = YES or 2 = NO: ";E
450 IF D = 1 AND E = 1 THEN 590
460 IF D = 2 AND E = 1 THEN 680
470 IF D = 1 AND E = 2 THEN 500
480 IF D = 2 AND E = 2 THEN 770
490 GOTO 400
500 GOSUB 840
510 PRINT A$;" WAS NOT BLUFFING."
520 PRINT
530 PRINT "YOU BOTH AGREE THAT"
540 PRINT
550 PRINT " '";C$;" ' IS A SCIENCE FACT?"
560 PRINT
570 PRINT "BOTH OF YOU GET 10 POINTS."
580 X = X + 10:Y = Y + 10: GOTO 900
590 GOSUB 840
600 PRINT A$;" SUCCESSFULLY BLUFFED."
610 PRINT
620 PRINT " '";C$;" ' IS NOT A SCIENCE FACT?"
630 PRINT
640 PRINT A$;" GETS 20 POINTS."
650 PRINT
660 PRINT B$;" GETS 0 POINTS."
670 X = X + 20: GOTO 900
680 GOSUB 840
690 PRINT B$;" CALLED THE BLUFF?"
700 PRINT
710 PRINT " '";C$;" ' IS NOT A SCIENCE FACT?"
720 PRINT
730 PRINT PRINT B$;" GETS 20 POINTS AND"
740 PRINT
750 PRINT A$;" GETS 0 POINTS."

```

```

760 Y = Y + 20: GOTO 900
770 GOSUB 840
800 PRINT " '";C$;" ' IS A SCIENCE FACT"
810 PRINT
820 GOTO 630
840 HOME
850 PRINT
860 PRINT
870 PRINT
880 PRINT
890 RETURN
900 PRINT
910 PRINT
920 PRINT
930 PRINT "THE SCORE IS:"
940 PRINT
950 PRINT A$;" = ";X;" POINTS"
960 PRINT B$;" = ";Y;" POINTS"
970 D$ = A$:A$ = B$:B$ = D$
980 Z = X:X = Y:Y = Z
990 PRINT
1000 PRINT
1010 PRINT "PRESS RETURN TO PLAY AGAIN."
1020 GET K$: IF K$ < > CHR$(13) THEN 1020
1030 GOTO 140

```

Playing the Game:

After you have entered and saved the Science Bluff program on a disk, all you have to do to play is:

1. Put the disk in the disk drive and turn on the computer and monitor.
2. A] and a blinking square (called a cursor) will appear in the lower left corner of your screen. Type RUN SCIENCE BLUFF, and then press RETURN. Be sure that you type in capital letters.
3. The title, SCIENCE BLUFF, will appear on the screen for a few seconds.
4. The next thing you will see is a request for the first player to enter his or her name and press RETURN. Then, the second player is asked to do the same.
5. Next, the first player is asked to name a science fact. He or she can use the book, *Science Facts You Won't Believe*, to find a fact and type it in. Or the first player can try to bluff, and type something that is not a science fact in an effort to fool his or her opponent.
6. The second player is then asked to state whether the first player's "fact" is or is not an actual science fact. Depending on how you want to play the game, the second

- player may or may not be able to use the book, *Science Facts You Won't Believe*, to help make the decision.
7. Finally, the first player is asked to reveal if he or she was bluffing. Points are awarded to each player based on his or her ability to judge real facts from bluffs or to bluff successfully.
 8. In the next round, player two goes first and so on.
- See how many points you can get. The computer keeps the score for each game until you turn it off or reboot the program.

More Fun With Science—Games and Experiments

The following section provides a variety of activities—games and experiments—which reinforce the concepts presented in *The Secrets of Science Island*. Some of the games suggest that you use index cards. If you have the Grolier Electronic Publishing program, *Friendly Filer*, you can create a database file instead of using index cards. Use this file when you play the game, or print out the file and cut out your cards from the printout. Symbols precede each activity. Here is the key for these symbols:

- C** Computer required
SFYWB *Science Facts You Won't Believe* book required
G Game

Believe It or Not

SFYWB

G

Make a gameboard as shown. Give each player a set of colored markers. Player One throws a die and moves that number of spaces around the gameboard. This player then reads the science fact, says “True” or “False,” and places a marker over the space if the answer as found in *Science Facts You Won't Believe* is correct. Player Two repeats the process. The player with the most markers covering spaces at the end of the game wins.

A camel's hump does not contain water.	Owls can see in the dark.	The sun causes seasonal changes.	The strength of gravity weakens with distance.
A tomato is a fruit.	Bats are blind.	Milk is not the perfect food.	White eggs taste better than brown eggs.
Most tropical jungles have poor soil.	It snows more in New York than at the South Pole.	Elephants drink through their trunks.	The primary colors are red, yellow and blue.

Make new gameboards by finding facts in *Science Facts You Won't Believe*. Write each fact (true or false) in a box on an empty grid. You are now ready to play the game.

Science Clues

SFYWB

Player One chooses a fact from the book, *Science Facts You Won't Believe*. This player gives clues, one by one, about the fact up to a total of four clues. The other person or team tries to guess the fact using the least amount of clues.

For example: Fact—practically no snow falls at or near the South Pole.

Clue—it is about the weather

Clue—it is in the southern hemisphere

Players or teams guess an answer after they hear each clue. When the fact is guessed, the player or team receives ten points. If the fact is not guessed or guessed incorrectly, the other player or team is given the opportunity to play. The player or team with the most points after a predetermined amount of time wins.

Face the Facts

SFYWB

Player One says, "It's a fact that a camel's hump is filled with fat, not water." Player Two repeats what Player One has said, finds a fact in the book, and says the new fact aloud. The process continues using as many facts as possible until a player cannot remember the facts stated previously. That player is out of the game. Play ends when there are no facts available from the book or one player is left.

Experiments

Will Air Expand as it is Warmed?

Snap the open end of a small balloon over the top of an empty soda bottle. The balloon hangs limp. Now set the bottle in a pan of hot water. The hot water heats the bottle and warms the cold air inside it. Gradually the warm air in the bottle will push its way into the balloon. The balloon will slowly fill with air and begin to inflate. You can see how air expands as it is warmed.

Desalt it Yourself

You can do an easy experiment to desalt water by freezing. Mix a teaspoon of salt into a glassful of water. Taste a drop of the salty mixture. Pour into a bowl and place in the freezer. Wait until a cake of ice about 1/2 inch thick is at the top. Remove

the cake and rinse it in running cold water. Taste the ice. If you rinsed the cake properly there should be no salt taste. Compare with the taste of the unfrozen water in the bowl.

Can You Find Your Direction Using Your Wristwatch?
Place your watch face up on the ground on a sunny day. Place a short stick (a matchstick size stick) upright at the edge of the watch. Turn your watch carefully until the hour hand and the shadow of the stick coincide. Halfway between the shadow and 12 o'clock will be south for people in the Northern Hemisphere. North will be opposite south. If you live in the Southern Hemisphere, halfway between the shadow and 12 o'clock will be north.

APPENDIX

How to Format or Initialize a Disk for Saving Programs in Basic

All of this information is covered in greater detail in the manuals that come with your Apple computer. We have included the fundamental steps here for your convenience.

WARNING If there is any information on the disk that you are about to format or initialize, that information will be completely erased when you initialize.

There are two ways that you can initialize a disk:

Using a DOS 3.3 System Master disk

Using a ProDOS System Utilities disk

Each method is covered separately.

A. Using a DOS 3.3 System Master Disk

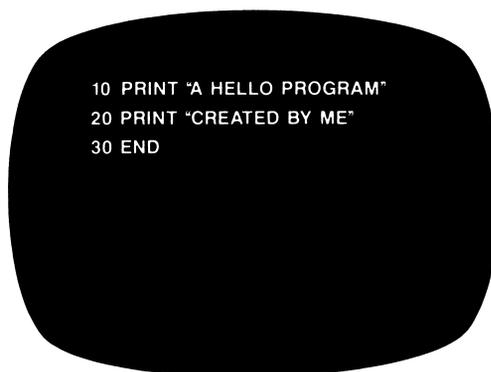
Follow these steps in the order listed:

1. If you are using an Apple *Ile* or *Iic*, BE SURE THE CAP LOCK KEY IS DOWN.
2. With the computer off, insert the DOS 3.3 System Master Disk into the disk drive and close the door.
3. Turn on the computer and the monitor.
4. Wait until the red light on the disk drive goes off. This is what you will see on your screen.



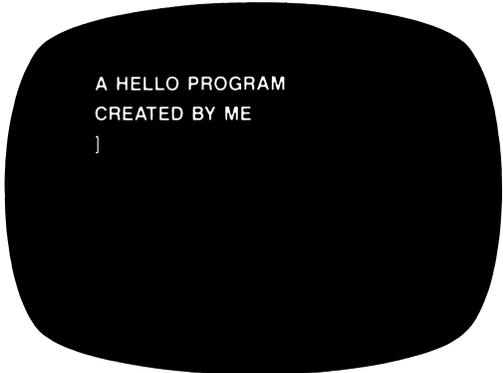
5. Remove the System Master disk.
6. Insert a blank disk, or a disk you are willing to erase, into the disk drive. Be sure the notch on the side of the disk is not covered. Close the disk drive door.
7. Type—NEW—and press RETURN. This will clear the computer memory.
8. Type the following short program. Be sure to press RETURN after you have typed each line correctly. Type the spaces and quotation marks just as shown below.

Your screen display should look like this:



If you make a mistake in a line and you have not pressed RETURN, you can use the back arrow key to move the cursor over the mistake and type in the correction.

9. Press RETURN several times. Now, test your program by typing RUN and press RETURN again. The last lines on your display should look like this:



```
A HELLO PROGRAM
CREATED BY ME
]
```

10. Now, type: INIT HELLO

Be sure to put a space between the two words. Then press RETURN. When the disk drive stops whirring and the red light goes off, the disk is initialized.

11. To test the disk to make sure it is in fact initialized, type: CATALOG and press RETURN. If the last lines on your screen looks like this:



```
DISK VOLUME 254
A 002 HELLO
```

you now have an initialized disk, and you are ready to type and save your BASIC programs. If something else appears on the screen, then start over at Step 1 and try again.

B. Using a ProDOS System Utilities Disk

Follow these steps in the order listed:

1. With the computer off, insert the ProDOS System Utilities disk into the disk drive and close the door.
2. Turn on the computer and the monitor.
3. When the Main Menu appears on the screen,

System Utilities Main Menu
Copyright Apple Computer, Inc., 1984

Work on Individual Files

1. < COPY FILES >
2. Delete Files
3. Rename Files
4. Lock/Unlock Files

Work on Entire Disks

5. Duplicate a Disk
6. Format a Disk
7. Identify and Catalog a Disk
8. Advanced Operations
9. Exit System Utilities

press number 6, "Format a Disk," and then press RETURN. The screen should look like this:

Where is your disk?

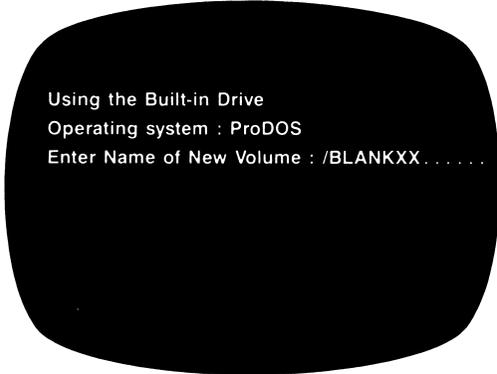
1. < BUILT-IN DRIVE >
2. External Drive

4. Press RETURN. Your screen should look like this:

Using the Built-in Drive
Select the Operating System:

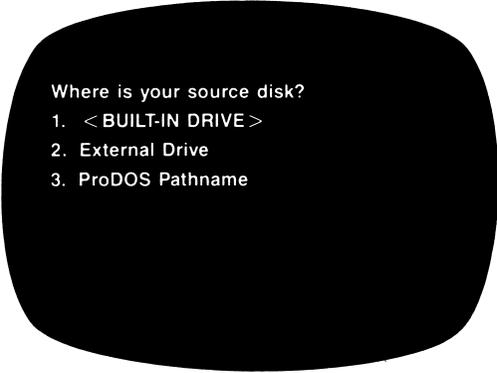
1. < PRODOS >
2. DOS 3.3
3. Pascal
4. I don't know which one to use

5. Press RETURN again and your screen will look like this:



```
Using the Built-in Drive
Operating system : ProDOS
Enter Name of New Volume : /BLANKXX. . . . .
```

6. Press RETURN.
7. Follow the directions on the screen to format your disk.
8. When the formatting is complete, and the disk drive has stopped, press the ESC key.
9. You will be back at the Main Menu. Remove the formatted disk and put the ProDOS System Utilities disk in the disk drive.
10. Press 1 to Copy Files.
11. Press RETURN. Your screen should look like this:



```
Where is your source disk?
1. < BUILT-IN DRIVE >
2. External Drive
3. ProDOS Pathname
```

12. Press RETURN again. Your screen looks like this:

```
Source Disk: Built-in Drive
Where is your destination disk?
1. <BUILT-IN DRIVE>
2. External Drive
3. ProDOS Pathname
```

13. Press RETURN. Your screen looks like this:

```
Source Disk: Built-in Drive
Destination Disk: Built-in Drive
Select Some or All files on this disk?
  <SOME>  all
```

14. Press RETURN. Your screen looks like this:

```
<STARTUP>
SU
SU1.OBJ
SU2.OBJ
SU3.OBJ
SU4.OBJ
PRODOS
BASIC.SYSTEM
```

15. Press the down arrow key until the brackets are on either side of ProDOS, like this:

< ProDOS >

Then press the right arrow key to put a check mark to the left of <ProDOS>.

16. Press the down arrow key once more until the brackets are on either side of BASIC.SYSTEM,
< BASIC.SYSTEM >
17. Press RETURN and follow the instructions on the screen to copy ProDOS and BASIC.SYSTEM onto your formatted disk.
Press 9 to quit the System Utilities.
18. Press RETURN twice, and you are now ready to type and save your BASIC program.



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