

Microzine[®]

The Learning Library on Disk

36

Trap Doors • *Critical Thinking/Math*
Dr. Think & The Idea Factory • *Reading/Social Studies*
It Fits! • *Problem Solving/Spatial Relations*
The Case of the Crafty Caper • *Problem Solving/
Visual Discrimination*

Apple® II Plus, IIe, IIc,
IIc Plus, or II GS; 64K; disk
drive; printer optional

 SCHOLASTIC

Ages 9 and up

Microzine®

Student Handbook and Teacher's Guide

36

Trap Doors • *Critical Thinking/ Math*
Dr. Think & The Idea Factory • *Reading /Social Studies*
It Fits! • *Problem Solving/Spatial Relations*
The Case of the Crafty Caper • *Problem Solving/
Visual Discrimination*

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Microzine

STUDENT HANDBOOK

Getting Started

Apple Computers

Equipment You Need

1. Monitor or TV
2. 64K Apple II Plus, IIe, IIc, IIc Plus, or IIGS
3. Disk drive

Apple[®] is a registered trademark of Apple Computer, Inc.

Loading *Microzine*

1. Open the disk drive door.
2. Hold the disk with the label end facing you.
3. If you have a 3.5-inch disk, insert the disk slowly with the label facing up. If you have a 5.25-inch disk and the program you want is on Side 1 of the disk, insert the disk slowly with the label facing up. If the program you want is on Side 2 of the disk, insert the disk slowly with the label facing down.
4. Close the drive door.
5. Turn on the computer and monitor (or TV).

NOTE: Never remove or insert a disk while the disk drive's red light is on.

MS-DOS Computers

Equipment You Need

1. Monitor or TV
2. 256K IBM with a Color Graphics Adapter (CGA), Tandy 1000, or any 100% compatible
3. Disk drive
4. Disk Operating System (DOS), version 2.0 or higher

Loading DOS

You must load DOS into your computer before you can load *Microzine*.

1. If you have a hard drive, turn the computer on.

If you have DOS on a 5.25-inch disk or on a 3.5-inch disk, open the disk drive door and insert the disk. Turn the computer on.
2. You will see a DOS prompt. The prompt will be a letter followed by a greater-than sign (for example, A>). The letter of the prompt corresponds with the disk drive.
3. If you want to load *Microzine* in the disk drive that corresponds with the letter of the prompt (for example, if the DOS prompt is A> and you want to load *Microzine* into Drive A), put the *Microzine* disk in that drive.

If you want to load *Microzine* in a drive that is different from the drive indicated by the DOS prompt (for example, the prompt is A> and you want to load *Microzine* in Drive B), type the letter of the drive and a colon, then press Enter (for example, type B: and then Enter). You will see a new DOS prompt (for example, B>). Put the *Microzine* disk in the drive.

Loading Microzine

Choose a program you want to load. Find the disk with that program's name on the label. Type these commands to load the *Microzine* programs:

MICROZINE GUIDE: Type MZ and then press Enter.

NOTE: *You may also load the other Microzine programs from within the Microzine Guide. Choose "PROGRAMS" and then choose the Microzine program you want to load. Choose the option, Start the Program and then press Enter.*

TRAP DOORS: Type TD and then press Enter.

DR. THINK & THE IDEA FACTORY: Type DT&TIF and then press Enter.

IT FITS!: Type IF and then press Enter.

THE CASE OF THE CRAFTY CAPER: Type TCOTCC and then press Enter.

NOTE: *In each issue of Microzine, you may load any program by typing the initials of the program name at the DOS prompt.*

If the *Microzine* program does not appear on the screen, read the instructions once more, starting with "Loading DOS," and try again.

Using *Microzine*

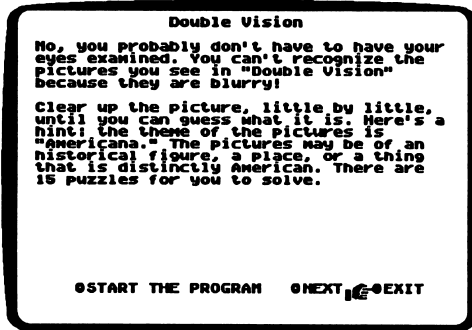
Using the *Microzine* Hand

You will use the *Microzine* Hand icon in most of the programs and features in this issue of *Microzine*. Use the arrow keys or IJKM to move the Hand.

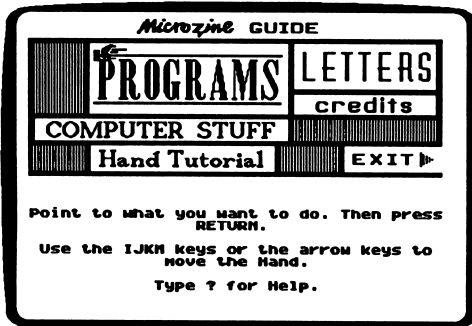
Use the Hand to point to what you want to do, and then press Return or Enter.

There are two different ways to point to what you want to do:

1. Make the Hand touch some part of the word that describes what you want to do. If you want to exit a program or screen, make the Hand touch the word Exit, or the circle in front of Exit, and then press Return or Enter.



2. Make the Hand point to a box that contains a word that describes what you want to do, such as the boxes on the Table of Contents. Make the Hand touch any part of the box, and then press Return or Enter.



The *Microzine* Guide

There are six features in the *Microzine* Guide. They are Programs, Computer Stuff, Credits, Letters, Hand, and Exit. The features are listed in a collection of boxes on the screen. Each box is labeled.

Use the Hand icon to point to the box that describes what you want to do. For example, to read the Credits, use the Hand to point to the box labeled Credits, and then press Return or Enter.

PROGRAMS

Use the Hand to point to Programs on the *Microzine* Guide, and then press Return or Enter, to read a description of the programs in this issue of *Microzine* or to load a program from this issue of *Microzine*.

COMPUTER STUFF

Use the Hand to point to Computer Stuff on the *Microzine* Guide, and then press Return or Enter to see a list of the functions in Computer Stuff. See Computer Stuff, page 29.

CREDITS

Use the Hand to point to Credits on the *Microzine* Guide, and then press Return or Enter, to see the credits for this issue of *Microzine*.

LETTERS

Use the Hand to point to Letters on the *Microzine* Guide, and then press Return or Enter, to read letters from the *Microzine* Editor and *Microzine* readers.

HAND TUTORIAL

Use the Hand to point to Hand Tutorial on the Table of Contents, or press ?, and then press Return or Enter to learn how to use the *Microzine* Hand. Also, see Using the *Microzine* Hand, page 6.

EXIT

Use the Hand to point to Exit on the *Microzine* Guide, and then press Return or Enter to quit using *Microzine*.

CONTROL (CTRL) KEYS

Sometimes you will have to press the Control (Ctrl) key and another key at the same time. This will be written as Ctrl-(the key). For example, if you see Ctrl-N, it means press the Control key and the N key at the same time.

Troubleshooter

We have included this section in the *Microzine* Handbook to help you if you run into problems using *Microzine*. Each *Microzine* program is documented in the Handbook, and specific hints for using the program are included there; however, we occasionally receive calls about more general problems.

LOADING MICROZINE

If *Microzine* does not appear on the screen, turn the computer off. Then turn it back on and try again. Make sure the disk drive door is closed, and check to see that the disk drive is hooked up correctly.

APPLE IIC PLUS

Microzine programs run most effectively when the Apple IIc Plus is running in slow mode, rather than fast mode. Put the *Microzine* disk in the drive. Hold down the Open Apple key, the Control key, the Reset key and the Esc key simultaneously, then release all four keys. The computer will reboot the *Microzine* program in slow mode.

TRAP DOORS

Microzine's Critical
Thinking Feature



Watch your step as you make your way through our creaky haunted house. There are trap doors hidden under many of the floorboards. A step in the wrong direction could land you in a basement filled with snakes, spiders, and who knows what else!

What You Will Find

You will move a cursor box to walk from one end of a haunted house to the other. Your job is to avoid the hidden trap doors, leave the house and escape through the back door. As you move the cursor box to step on each space on the game board, the program will tell you *how many* of the spaces that surround it have trap doors under them. The program won't tell you *which* of the spaces have trap doors under them. That's what you must figure out!

MAIN MENU

There are two functions, or things you may do in "Trap Doors." They are PLAY "TRAP DOORS" and INSTRUCTIONS.

PLAY "TRAP DOORS"

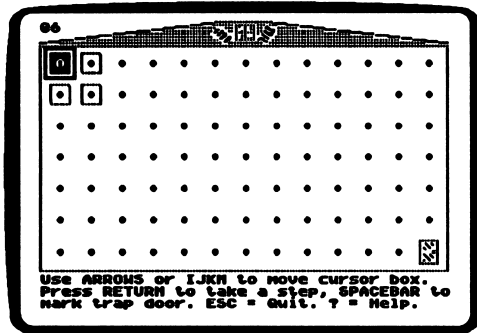
Choose this function to play "Trap Doors."

Levels of Play

You may play "Trap Doors" with as few as ten or as many as 60 trap doors on the game board. Type the number of trap doors you want to play with, and press Return or Enter. Begin by playing the Easy Level, with only 10—20 trap doors. Then challenge yourself by adding more and more trap doors to the game board. You may play "Trap Doors" with extra help (see page 14).

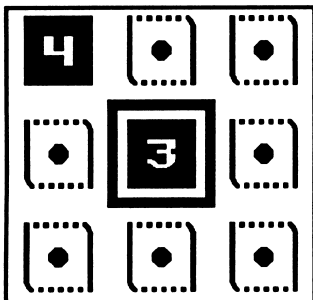
The Game Board

In "Trap Doors" you will use the cursor box to walk from one end of a haunted house to the other.



Move the cursor box to step on a space on the game board. When you step on a space, the program will tell you how many of the spaces that surround it have trap doors under them.

For example, if the space you're standing on has the number three on it, you know that three of the spaces surrounding you have trap doors under them.



Moving Through "Trap Doors"

Use the following keys to move through the haunted house.

Apple II Plus

I to move up
J to move left
K to move right
M to move down

Apple IIe/IIc/IIc Plus/IIGS

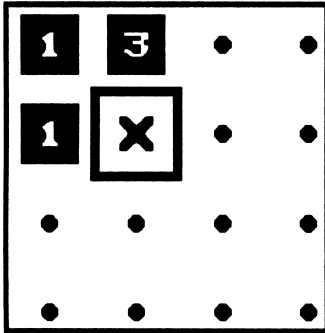
I or ↑ to move up
J or ← to move left
K or → to move right
M or ↓ to move down

MS-DOS

↑ to move up
← to move left
→ to move right
↓ to move down

Marking Spaces That Have Trap Doors

Press the Space Bar to mark a space you've decided has a trap door under it. An X will appear on the space. This will remind you not to step on a space by accident.



Extra Help

You may choose to play "Trap Doors" with extra help. Sometimes you will not be able to figure out which spaces don't have trap doors under them. If you choose to play "Trap Doors" with extra help, you may press ? when this happens. The program will uncover one "safe" space that touches the space on which you are standing. Move the cursor box over that space. Now look at the game board again. You may be able to figure out where to step next.

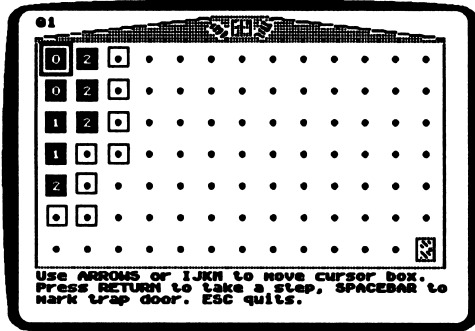
NOTE: *You may only press ? to uncover a safe space while the cursor box is over a space on which you've already stepped.*

Winning "Trap Doors"

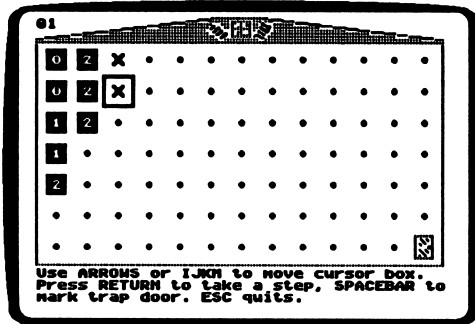
The goal in "Trap Doors" is to reach the space in the lower-right corner of the game board. It is marked with a door. Move the cursor box over the door and press Return or Enter to escape to the sunny outdoors.

Tutorial

This tutorial will help you understand how to decide which spaces are safe, and which have trap doors under them. Look at the game board below.

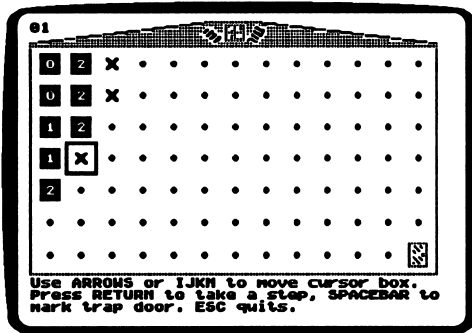


You may move the cursor box onto any of the highlighted spaces. In the first row, you see a "2." You know that two of the spaces that touch the "2" space have trap doors, and there are only two spaces on which you can step. Therefore, you know that both spaces must have trap doors under them. Press the Space Bar to mark them with an "X" so you know there are trap doors under those spaces .



In the second row, you see a "2." You know two of the spaces that touch the "2" space have trap doors, and there are three open spaces that touch it on which you can step. However, you already decided that the top two spaces have trap doors under them. Therefore, you know you can safely step on the third space that touches the "2" space.

In the third row you see a "1." You know that one of the spaces that touches the "1" space has a trap door, and there is only one open space that touches it. Mark it with an "X" so you know there is a trap door under it.



Also in the third row you see a "2." You know that two of the four open spaces that touch the "2" space have trap doors. You already decided that the space on the second row has a trap door, and the space on the fourth row has a trap door. These are the two trap doors you are looking for. Therefore, you know that you may safely step on the other two spaces that touch the "2" space.

In the fourth row you see a "1." You know that one of the two spaces that touches the "1" space has a trap door. You already decided that the space next to the "1" space in the fourth row has a trap door. This is the trap door you are looking for. You know that you may safely step on the other space that touches the "1" space.

In the fifth row you see a "2." You know that two of the four spaces that touch the "2" space have trap doors. You already decided that the space in the fourth row has a trap door. You don't know which one of the other three spaces that touch the "2" space has a trap door under it. Don't step on any of them until you step on other spaces and learn more.

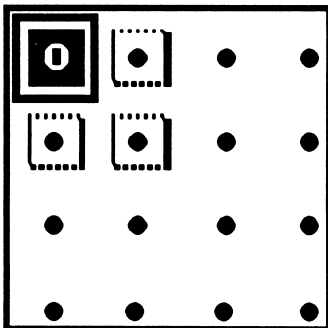
INSTRUCTIONS

Choose this function to read instructions on how to play "Trap Doors."

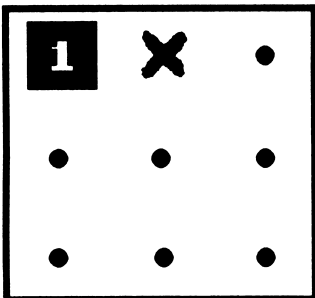
Tips On Playing "Trap Doors"

Read these tips to help you plan your walk across "Trap Doors."

- You can be certain that some spaces don't have trap doors under them. For example, if you see a space that says "0," you know that none of the spaces that touch it have trap doors under them. You should step on all of these spaces.



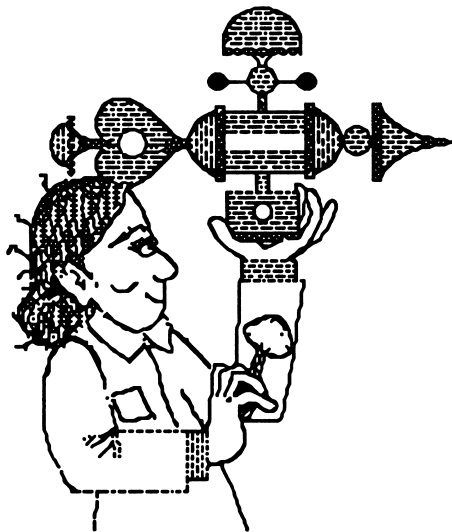
If you see a space that says "1," and notice that you've correctly marked one space next to it with an "X," you know that the other spaces next to it don't have trap doors. You should step on all of these spaces.



- Remember, just because you mark a space with an "X," doesn't mean there *is* a trap door under that space. If you aren't sure if a space has a trap door under it, don't mark it with an "X."

DR. THINK & THE IDEA FACTORY

A Twistaplot™
Adventure



Here's your chance to travel through time! A dusty old doorknob that you find in a time capsule has the incredible power to zap you back to the past. Dr. Think will join you as you visit with some great inventors. There's only one problem—you'll be stuck in the past forever unless you invent a way to get back home! Put on your thinking cap—you'll have to think your way out of this one!

What You Will Find

You and Dr. Think will stroll through the Great Hall of Inventors and visit inventors in their workshops. You'll arrive just in time to help these great thinkers invent their inventions.

When you're ready, you'll visit Dr. Think's Idea Factory. Here's your chance to use her invention to invent your own time travel machine. If you're lucky, it will bring you back home! Good luck!

Moving Through the Great Hall of Inventors

Use the following keys to move through the Great Hall of Inventors:

Apple II Plus

I to move up
J to move left
K to move right
M to move down

Apple IIe/IIc/IIc Plus/IIgs

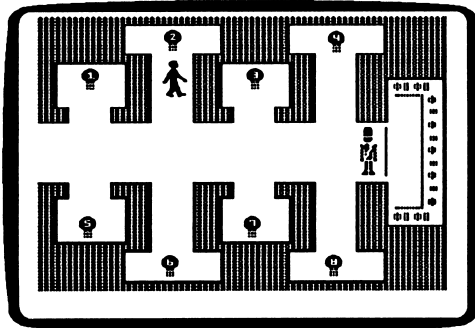
I or ↑ to move up
J or ← to move left
K or → to move right
M or ↓ to move down

MS-DOS

↑ to move up
← to move left
→ to move right
↓ to move down

Entering An Inventor's Workshop

To enter any workshop, move the "you" icon to the doorway of the workshop you want to visit.



The Great Inventor Cards

Use the Great Inventor Cards to find out information about inventors and their inventions. To see the cards, type **C** at any time. You can search through the cards by inventor or by invention.

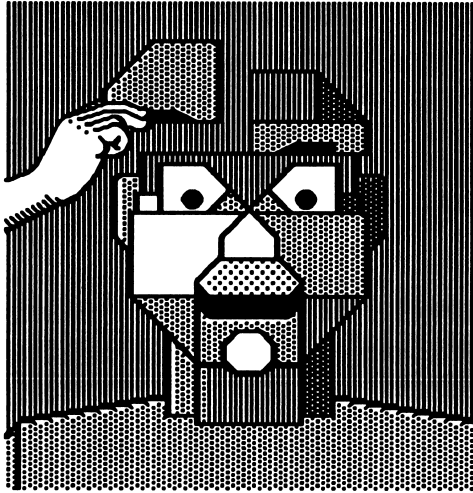
Helpful Hints

Here are a few things to think about as you visit the great thinkers:

- Study the Great Inventor Cards carefully. You never know when you'll be asked a question.
- Write down any information you learn that seems important. You will have to use your knowledge of the great inventors and their inventions to enter Dr. Think's Idea Factory.

IT FITS!

A Problem Solving Feature



What You Will Find

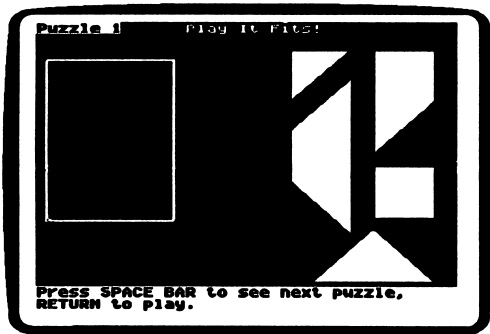
In "It Fits!" you will have five differently shaped pieces and 12 puzzle outlines in which to fit the shapes. Pick up the pieces, move them, rotate them, manipulate them any way you can to make them *all* fit into the puzzle outline you choose. It may not look like all five pieces will fit into each puzzle outline, but we promise, they fit!

MAIN MENU

There are two functions or things you may do in "It Fits!" They are PLAY "IT FITS!" and INSTRUCTIONS.

PLAY "IT FITS"

Choose this function to play "It Fits!" You will see the Play "It Fits!" game screen.



There are 12 outlines you may choose to play. Press Return or Enter to play with the outline you see. Press the Space Bar to see the next outline. All five shape pieces are on the right side of the screen. You must fit them all inside the outline.

Moving the Hand and the Shape Pieces In "It Fits!"

Use the following keys to move the Hand and the shape pieces.

Apple II Plus

I to move up
J to move left
K to move right
M to move down

Apple IIe/IIc/IIc Plus/IIgs

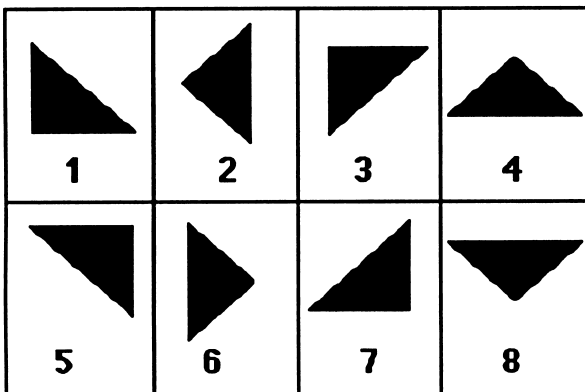
I or ↑ to move up
J or ← to move left
K or → to move right
M or ↓ to move down

MS-DOS

↑ to move up
← to move left
→ to move right
↓ to move down

Use the Hand to point to the shape piece you want, then press Return or Enter. Now use the arrows or IJKM to move the piece to the outline.

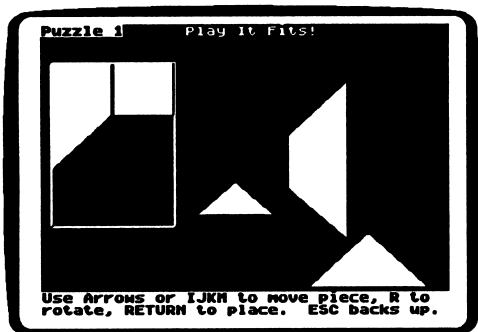
Press **R** to rotate, or turn the shape piece. You will see the shape rotate. You may rotate it in eight different positions.



Press Return or Enter to place the shape piece inside the puzzle outline. "It Fits!" will not let you place a shape piece on top of another piece.

Putting Shape Pieces Together

When pieces fit together perfectly, you will still see a thin black line between them.



Removing Shape Pieces

Use the Hand to point to the shape piece you want to remove from the puzzle outline, then press Return or Enter. Move the piece anywhere on the screen where there isn't another piece, and press Return or Enter. Now you may pick up another piece.

NOTE: There is room for all of the shape pieces on the screen, outside of the puzzle outline. As you rotate and move pieces around the screen, it may become difficult to find a place to put the shape pieces. You may have to rotate them in order to place them.

INSTRUCTIONS

Choose this function to read instructions on how to play "It Fits!"

"THE CASE OF THE CRAFTY CAPER"

A Monitor Mystery



We at the *Microzine* Mystery Society used our powers of observation and logic to deduce that you would be playing the Monitor Mystery today. Last night one of our agents secretly turned your everyday computer into a Sherlock 221B Mystery-Solving Computer! Can the two of you work together to solve this crafty caper?

What You Will Find

You will read a Story, look at a Picture, and then answer Questions to solve "The Case of the Crafty Caper."

Monitor Mystery MAIN MENU

Monitor Mystery has two functions or things you may do. They are INSTRUCTIONS, and "THE CASE OF THE CRAFTY CAPER."

INSTRUCTIONS

Choose this function to learn how to solve "The Case of the Crafty Caper."

"THE CASE OF THE CRAFTY CAPER"

Choose this function to solve "The Case of the Crafty Caper." The mystery is divided into three parts: the Story, the Picture, and the Questions.

The Story

Read the Story to learn the facts you will need to answer the Questions.

Type **P** to see the Picture. Type **Q** to answer the Questions.

The Picture

Study the Picture and search it for clues. A magnifying glass will appear. Move the magnifying glass over every object in the picture, and then press Return or Enter. Clues will appear at the bottom of the screen.

Use These Keys to Move the Magnifying Glass:

Apple II Plus

I to move up
J to move left
K to move right
M to move down

Apple IIe/IIc/IIc Plus/IIgs

I or ↑ to move up
J or ← to move left
K or → to move right
M or ↓ to move down

MS-DOS

↑ to move up
← to move left
→ to move right
↓ to move down

Type **S** to read the Story. Type **Q** to answer the Questions.

The Questions

Answer the Questions to solve "The Case of the Crafty Caper."
Your 221B computer will tell you if all your deductions are correct.

If one or more of your deductions is wrong, your 221B computer will ask you to type in the number of the answer you want to change.

When all your answers are correct, your 221B computer will ask you one final question.

FINAL QUESTION

Answer the final question to solve the mystery. If your answer is wrong, your 221B computer will ask you if you want to try to answer the final question again.

Type **Y** for yes and **N** for no.

When you answer the final question correctly, your 221B computer will ask if you want to compare your deductions with it.

Type **Y** for yes and **N** for no.

You will then read the final story screens.

***Microzine* Mystery Society Mystery-Solving Tips**

- A smart sleuth reads the Story carefully to learn all the facts.
- An inventive investigator checks each object in the Picture for clues.
- If the 221B computer says that at least one answer is wrong, a daring detective carefully re-examines each answer to make sure an "obviously" right answer is not, in fact, dead wrong!
- After answering the final question correctly, a magnificent mystery-solver always compares deductions with the 221B computer to see how logical minds think alike.

COMPUTER STUFF

A Utility



What You Will Find

On the "Computer Stuff" MAIN MENU, you will find COPY A PROGRAM, and INITIALIZE A DISK.

COPY A PROGRAM

Microzine is committed to offering your students programs that will challenge and reinforce their critical thinking skills. To make these programs accessible to your entire class, Scholastic grants permission for you to make one copy of the Critical Thinking program in this issue for each of your students.

If you have an Apple computer, use any ProDOS copy utility to make a copy of "Trap Doors."

If you have an MS-DOS computer, choose "Copy a Program" from the COMPUTER STUFF menu to copy "Trap Doors."

INITIALIZING A DISK

Choose this function to initialize or format a data disk.

A data disk is a blank disk (or one that you don't mind erasing) that has been initialized, or formatted. Initializing a disk gets it ready to save your data for *Microzine*.

If you have an Apple computer, to initialize a data disk, use the Hand to choose "Initialize a Disk" and then press Return.

The program will tell you that you need a blank disk, or one you don't mind erasing. The program will tell you to insert your blank disk in the drive. The program will tell you that the disk will be erased. It will ask, "Do you want to go ahead?" Use the Hand to point to Yes or No, and then press Return.

The program will initialize the disk. Then the "Computer Stuff" list of functions will appear. You now have a data disk. You may use it for any *Microzine* feature that requires a data disk.

If you have an MS-DOS computer, use any MS-DOS format utility to format or initialize a disk.

Issues 1-26 of *Microzine* require a DOS 3.3 data disk. Beginning with issue 27, each issue of *Microzine* that requires a data disk will require a ProDOS data disk for Apple computers or an MS-DOS data disk for MS-DOS computers.

TEACHER'S GUIDE

MICROZINE SCOPE & SEQUENCE CHART

CRITICAL THINKING SKILLS

TRAP DOORS

*DR. THINK & THE
IDEA FACTORY*

IT FITS!

*THE CASE OF THE
CRAFTY CAPER*

| | | | | |
|-----------------------|---|---|---|---|
| Comparing/Classifying | | | • | • |
| Sequencing | • | | • | |
| Analyzing | • | • | | • |
| Inferring | • | • | | • |

CURRICULUM AREAS

| | | | | |
|-----------------------|---|---|---|---|
| Reading/Language Arts | | • | | • |
| Math/Problem Solving | • | | • | |
| Science | | | | |
| Social Studies | | • | | |

INFORMATION PROCESSING SKILLS

| | | | | |
|-----------------------|---|---|---|---|
| Database/Research | | • | | |
| Maps/Charts/Graphs | • | | | |
| Visual Discrimination | • | | • | • |

TRAP DOORS

Microzine's Critical Thinking Feature

DIFFICULTY LEVEL: Challenging, Average, Easy

VOCABULARY PREVIEW: adjacent, diagonal

SCHOOL ACTIVITIES

CRITICAL THINKING/MATH: To practice the critical thinking skills students must use to play "Trap Doors," set up a "live" version of the program in your classroom. Have students sit in rows on the floor, or at their desks. Give each student a piece of paper and a pencil. Assign five (or more) students to be "trap door" spaces, and ask them to write "TRAP DOOR" on their papers, and hold them up. Make a sign to be a "YOU ARE HERE" marker. Then, beginning in one corner, have each student verbally analyze which of the students adjacent to them are "safe" and which are trap doors.

For example, give the "YOU ARE HERE" sign to the first student (seated in the corner space) and have her look at the three students seated adjacent to her. She should say, "The person next to me doesn't have a trap door, so that place is safe. The person diagonally across from me does have a trap door, so I can't move there, and the person below me also has a trap door, so I can't move there either. Therefore, my space should have a number two on it." Tell her to write the number two on her paper to represent the number of trap doors that surround her, and hold it up. Ask her to select one of the "safe" students and hand him the "YOU ARE HERE" sign. Now have this student analyze the spaces adjacent to him. Continue playing until every student has participated.

To make this activity more challenging, assign more students to be trap door spaces.

HOME ACTIVITIES

WRITING: Have students imagine they fell through a trap door in an old, haunted house. Have them write a short story about their adventures. Where does the trap door lead them? Do they eventually find their way out of the house?

DR. THINK & THE IDEA FACTORY

A Twistaplot™
Adventure

DIFFICULTY LEVEL: Challenging, **Average**, Easy

VOCABULARY PREVIEW: artifacts, engineer, feat, inspiration, knack, mount, paddle boat, patent, proffer, reference, revolutionize

SCHOOL ACTIVITIES

ART & DESIGN/RESEARCH: Have each student research an invention, such as a type of machine or household appliance, to find out when it was invented and by whom. Ask students to draw or cut out pictures of the inventions and to label them with the inventor's name, name of invention, and the date it was invented.

Hang up all of the students' pictures in chronological order to make a timeline of inventions.

HOME ACTIVITIES

LANGUAGE ARTS/WRITING: Have students choose a favorite inventor from "Dr. Think & the Idea Factory," or the inventor of the invention they researched for a school activity. Have students write

a poem about the inventor they chose. Suggest to students that they include in their poems some information about how the invention is used today.

Hints on Playing "Dr. Think & The Idea Factory"

Daimler invented the gas-powered car.

Ferris invented the ferris wheel.

Ford invented the assembly line.

Fuller invented the skyscraper.

Judson invented the zipper.

Kellogg invented breakfast cereal.

Naismith invented basketball.

Wakefield invented the chocolate chip cookie.

Tell the guard in front of the idea factory:

The Toll House is the name of Wakefield's inn.

A paddle boat gave Ferris the idea for the ferris wheel.

Judson originally named the zipper the Universal Slide Fastener.

The first skyscraper is the Flatiron Building.

Naismith was a gym teacher.

A conveyor belt moves cars down the assembly line.

The Kelloggs put prizes into cereal boxes.

The steam engine was popular before the gas-powered engine.

IT FITS!

A Problem Solving Feature

DIFFICULTY LEVEL: Challenging, **Average**, Easy

VOCABULARY PREVIEW: outline, rotate

SCHOOL ACTIVITIES

MATH/SPATIAL RELATIONS: Explain to your students how outlines that appear very different may take up the same amount of space, or have the same area. Using the blackboard or an over-head projector, draw two squares. Leave one square as is, and erase the top side of the second square, and re-draw it two inches lower. Now extend the left side by two inches to make a rectangle. Explain to your students that both shapes have the same amount of space inside the lines. Tell them that both shapes have the same area.

Illustrate this point using two containers that are the same size, but are different shapes (for example, use a milk carton and an ice-cream carton). Cover the containers so students can't read the size. Have students look at both containers and make predictions about which is bigger. Then fill one carton with water, and transfer the water from the first container to the second. Were the students' predictions correct? You can also do this experiment using solids such as rice or gravel.

HOME ACTIVITIES

ART & DESIGN/SEQUENCING: Have students create their own shape pieces and assemble them in various outlines. Students can cut shapes out of poster or construction paper. Students can draw outlines that their shapes fit into, bring them to class, and swap with classmates. Set up a contest to see whose puzzles students found most challenging.

THE CASE OF THE CRAFTY CAPER

A Monitor Mystery

DIFFICULTY LEVEL: Challenging, Average, Easy

VOCABULARY PREVIEW: annual, bazaar, collage, maraca, stroll

SCHOOL ACTIVITIES

ART & DESIGN: In this Monitor Mystery, Lila Bells makes papier-mache maracas for her band. Have your students make their own papier-mache maracas. Following is the recipe for one maraca:

Materials

- 1 balloon
- 2 teaspoons fish-tank gravel or dried beans
- newspaper strips
- flour and water mixture made of 1 part flour to 1 1/2 parts water
- empty toilet paper roll
- masking tape

Directions

1. Put the gravel or beans into the balloon, blow it up and knot the end.
2. Tape the toilet paper roll to the knotted end of the balloon. This will serve as the handle for the maraca.
3. Make the papier-mache. One by one, dip newspaper strips into the flour and water mixture and wipe off excess with fingers.

4. Cover the balloon and toilet paper roll with at least 2 layers of papier-mache.
5. Fill the toilet paper roll with rolled up newspaper strips (dry) and cover the ends with papier-mache.

The maracas will take about a day to dry. Students can paint their maracas with poster paints.

HOME ACTIVITIES

MATH/DESIGN: Have students design a project that they would sell at a crafts show. Ask them to list items needed to make their craft and the approximate cost of each item. Have students figure out the cost of each craft by adding up the costs of the items used to make it. Then ask them to figure out how much they would sell them for to make profits of 10 percent, 25 percent, and 50 percent.

NOTE: *Instead of having students calculate percentage of profits, you may have students figure out exact profits of \$1.00, \$5.00, etc.*

INVENTION CONNECTION

You met these eight inventors in "Dr. Think & The Idea Factory."
Now draw lines to connect the inventors to their inventions.

INVENTOR

J. H. Kellogg

G. Daimler

J. Naismith

R. Wakefield

H. Ford

W. L. Judson

G. W. Ferris

F. Fuller

INVENTION

Basketball

Ferris Wheel

Zipper

Gas-powered car

Breakfast Cereal

Skyscraper

Chocolate Chip Cookies

Assembly Line

CRAFTY CAPER CLUE KEEPER

Use the chart below to keep track of the clues that you uncover in "The Case of the Crafty Caper."

CLUES I FOUND ABOUT:

Winona

Rajesh

Sarabeth

Lila Bells

Places where I think there are balloons:

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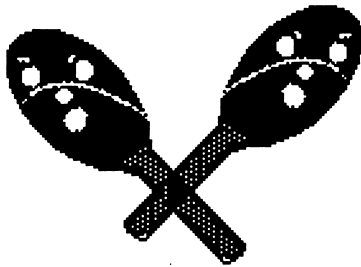
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Monitor Mystery

 **Detective Diploma**



Has Solved

The Case of the Crafty Caper

**And Has Hereby Demonstrated All The
Skills Necessary To Become An Official
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Detective Ed Minkly

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