

Mystery Objects

No. A-211
Instructional Computing Courseware
for Apple® II Series Computers



A product from the
Science Inquiry
Collection



for the love of learning

MECC

R211M



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Mystery Objects

No. A-211
Instructional Computing Courseware
for Apple® II Series Computers



A product from the
Science Inquiry
Collection

mecc

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This manual is compatible

with

the *Mystery Objects* disk

Version 1.x

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Library of Congress Cataloging-in-Publication Data

Mystery objects [computer file]. — Version 1.x.

1 computer disk : sd., col. ; 5 1/4 in. + 1 manual.
— (Science inquiry collection)

System requirements: Apple II family of computers; 128K; ProDOS, BASIC, and Assembly; 1 disk drive; monochrome or color monitor; printer optional.

Title from title screen.

Edition statement from disk label.

Copy protected.

Audience: Grades 1-4.

Issued also on 3 1/2 in. computer disk.

Summary: A discovery-learning simulation on objects that encourages children to use their curiosity while learning scientific content and scientific process.

"A-211"—Disk label.

1. Science—Juvenile software. 2. Learning by discovery—Juvenile software. [1. Science—Software]
I. Minnesota Educational Computing Corporation.

II. Series.

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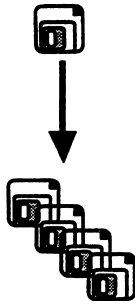
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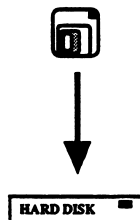
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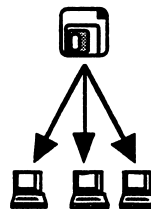
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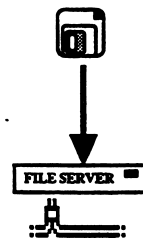
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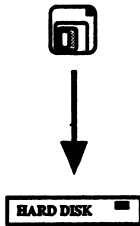
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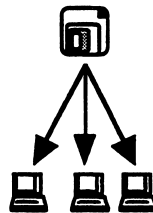
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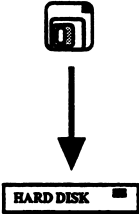
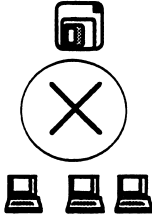
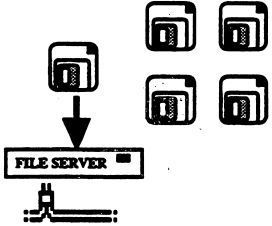
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MECC's **Science Inquiry Collection** is a set of software packages especially designed for elementary and junior high school science students. Each package covers a specialized topic in the physical, earth, or life science curriculum areas. All of the packages use science process skills appropriate to the developmental level of the student and contain accurate scientific content that is found in the typical school science curriculum. The products in the **Science Inquiry Collection** incorporate several features that promote student achievement in science, such as:

- instructional objectives that are directly correlated to the objectives addressed in popular science textbooks;
- scientific content that is accurate and important for students to learn;
- thinking processes that are appropriate to the developmental level of the students;
- motivational presentations that stimulate student interest;
- flexible material that can be used in a variety of educational environments; and
- instructional approaches that promote active student involvement and investigative learning.

All instructional materials are the most powerful when they are used in conjunction with other educational experiences rather than when they are used in strict isolation. The packages in the **Science Inquiry Collection** encourage additional student involvement, beyond computer-based learning, in the following ways:

- The packages in this collection provide students with an open and creative environment in which they may develop and apply their problem-solving techniques.
- Students can utilize a variety of problem-solving approaches when using the program.
- By freely sharing their discoveries, students can explore and compare the various techniques and thereby strengthen their ability to apply appropriate problem-solving approaches.
- Each package presents instructional material and learning experiences that can readily be transferred to concrete, hands-on classroom activities. Students can therefore become active participants in the learning process.

AN OVERVIEW OF MECC'S *SCIENCE INQUIRY COLLECTION* (continued)

Products currently included in the *Science Inquiry Collection* are briefly described below.

	Grade Levels	Topic
<p><i>Physical Science</i></p> <ul style="list-style-type: none"> * Miner's Cave * Mystery Matter Mystery Objects * Paper Plane Pilot * Wood Car Rally * Woolly Bounce 	<p>3-6, Jr. High</p> <p>3-6, Jr. High</p> <p>2-4</p> <p>3-6, Jr. High</p> <p>3-6, Jr. High</p> <p>K-2</p>	<p>Simple Machines</p> <p>Properties of Matter</p> <p>Properties of Objects</p> <p>Force and Motion</p> <p>Force and Motion</p> <p>Force and Motion</p>
<p><i>Life Science</i></p> <ul style="list-style-type: none"> * Backyard Birds Cavity Busters Cleanwater Detectives * Invisible Bugs * Lunar Greenhouse * Weeds to Trees 	<p>3-6, Jr. High</p> <p>3-6, Jr. High</p> <p>3-6, Jr. High</p> <p>3-6, Jr. High</p> <p>3-6, Jr. High</p> <p>3-6, Jr. High</p>	<p>Bird Identification</p> <p>Population Changes</p> <p>Water Pollution</p> <p>Genetics</p> <p>Plant Growth</p> <p>Plant Succession</p>
<p><i>Earth Science</i></p> <ul style="list-style-type: none"> Five-Star Forecast * Fossil Hunter * Murphy's Minerals * Sun and Seasons 	<p>4-6, Jr. High</p> <p>3-6, Jr. High</p> <p>3-6, Jr. High</p> <p>3-6, Jr. High</p>	<p>Weather Forecasting</p> <p>Fossil Identification</p> <p>Mineral Identification</p> <p>Seasonal Changes</p>

* Award-winners

INTRODUCTION

Mystery Objects is a discovery-learning simulation that capitalizes on the natural curiosity of students and encourages them to use their curiosity while learning scientific content and developing appropriate scientific processes.

Mystery Objects is a part of MECC's **Science Inquiry Collection**. Like all the packages in this collection, *Mystery Objects* features a strong process orientation while presenting material that is firmly anchored in the school science curriculum.

In *Mystery Objects*, students are challenged to determine the identity of an unknown object by testing it for such physical properties as texture, smell, size, weight, shape, and color. As the unknown object is tested for its properties, the students observe and record the results. This information enables them to determine the identity of their mystery object.

Physical science concepts addressed by *Mystery Objects* include:

- All objects, being forms of matter, have distinctive physical properties by which they can be described.
- Objects can be compared according to their physical properties.

Science processes developed in *Mystery Objects* include:

- observation;
- comparison;
- information collection;
- record-keeping; and
- classification.

INTRODUCTION (continued)

Data Snoopers

In *Mystery Objects*, students assume the roles of scientists attempting to determine the identity of unknown objects. Like actual scientists, students can use tools (scientific instruments) to test the hidden object for its physical properties. The six tools available are in the form of Data Snoopers. Each of these fantasy creatures tests the unknown object for a single attribute. For example, the Data Snooper named Heavy-Holder tests an object for weight. The Data Snoopers available for students to use are listed below. One Data Snooper, Color-Seeker, can be removed from student use by accessing the Teacher Options. You may want to prohibit the use of the color trait when students use *Mystery Objects* on a monochrome monitor.

Funny-Feeler tests the object for texture.



Sizer-Upper measures the object for length, width, height, or diameter.

Heavy-Holder weighs the object.



Super-Sniffer describes how the object smells.

See-Shaper describes the shape of the object.



Color-Seeker tells the color of the object.

TEXTBOOK CORRELATION

Mystery Objects is designed to be directly integrated into your normal school science lessons. The following charts correlate the instructional objectives and processes of *Mystery Objects* to concepts presented in five popular textbook series (Scott, Foresman; Addison-Wesley; Merrill; Silver Burdett & Ginn; and Coronado Press, Inc.). By referring to these charts, you can create lessons that directly relate to your classroom activities.

Scott, Foresman 1986

Grade	Chapter	Pages	Processes	Concepts
1	1	1-11	Observing Comparing	Senses gather information from the environment. Items can be identified by texture, color, hardness, and warmth.
1	2	12-19	Observing Comparing	Items can be identified by their taste and odor.
1	5	38-45	Observing Comparing Classifying	Properties can help identify matter (objects). Color, texture, and having or not having a shape are some properties of matter. All matter has properties that can be named.
1	6	46-53	Observing Comparing Classifying	Different types of matter may have some properties in common. Matter can be grouped by its properties.
1	7	54-61	Observing Comparing	Solid objects take space and have unique shapes.
1	8	62-69	Observing Comparing	Solid objects have various textures and feel different. Solid objects can be hard or soft.
2	5	50-59	Communicating Observing	Matter can be described by some of its properties. Matter is anything that takes up space.
2	6	60-69	Observing	Matter has properties that can be discovered through investigation. Some properties of matter are directly observable, but others require probing.

TEXTBOOK CORRELATION (continued)

Addison-Wesley 1984

Level	Chapter	Pages	Processes	Concepts
1	11	137-148	Observing	An object needs a certain amount of space. Some things will fit in smaller spaces if their shapes are changed.
2	6	76-92	Observing	On earth, matter is everything that has weight and takes up space.
3	2	38-67	Classifying Measuring	Measurement, which is a science process, is based on standard units. Scales and balances are used to measure the mass of objects.

Merrill (Accents on Science) 1985

Level	Unit	Pages	Processes	Concepts
1	1	2-17	Observing	Physical properties of objects can be observed by seeing, feeling, hearing, tasting, and smelling. Hardness, texture, wetness, and temperature can be observed through the sense of touch. Objects can be classified according to properties observed through the sense of touch.
1	2	18-37	Observing Comparing Classifying	Size, color, and shape are properties that can be used to group things. Texture, temperature, and degree of wetness are some other properties of objects.
3	3	68-77	Observing Comparing Classifying	Objects can be described by their properties such as color, size, and texture. Objects can be identified by their properties. Properties can be used to classify objects. Objects are matter and have mass and take up space.
3	3	78-87	Observing Comparing Classifying	All objects are forms of matter. Matter can be classified by its properties.

TEXTBOOK CORRELATION (continued)

Silver Burdett & Ginn

Grade	Chapter	Pages	Processes	Concepts
1	1	1-23	Observing Comparing	Classify objects as making sounds that are loud or soft. Classify objects by texture.
1	4	64-79	Observing Comparing Classifying	Classify objects by color, shape, or size. Compare the relative volume of various objects.
2	4	62-81	Observing Comparing	Compare the sizes, shapes, and colors of objects. Observe that all objects take up space and have weight. Classify objects as solids, liquids, or gases.
3	5	86-103	Observing Comparing	Identify the properties of matter. Measure the mass of various objects using a balance.
4	5	92-111	Observing Comparing	Matter is anything that has mass and takes up space. Matter can be described by its properties.

Coronado Press, Inc. (Science and Technology) 1987

Level	Chapter	Pages	Processes	Concepts
1	6	89-106	Observing Comparing Measuring	Comparisons can be understood through measurement. Length, distance, volume, and weight can be determined by measuring.
2	5	86-101	Observing Comparing	Matter takes up space and has weight. Liquids and solids are matter and take up space.
2	9	188-191	Observing	A thermometer is a device that measures temperature.
3	1	2-17	Observing	Scientists use observation and prediction skills to gain information about change. Taking up space and having weight are two properties of matter. A property of matter helps us tell what kind of matter it is.

THE PRODUCT AT A GLANCE

Description

Mystery Objects is a discovery-learning simulation that allows students to use a variety of tools to test a hidden object for certain physical characteristics. Students then use the information they gather to identify the hidden object.

Title:	<i>Mystery Objects</i>
Grade Level:	2-4
Subject Area:	Physical Science
Topic:	Physical traits and properties of objects
Processes:	Observing, comparing, and classifying
Program Type:	Discovery-learning simulation
Hardware:	Apple II series computer with 128K RAM; color monitor recommended but not required
Sound:	Sound may be turned on or off during the programs by typing Control-S (press S while holding down the Control Key) whenever the computer is waiting for a response
Exiting Programs:	Students may leave a program by pressing the Escape (Esc) Key whenever the computer is waiting for a response
Classroom Use:	Individual students or small groups

LEARNING OBJECTIVES

Using this courseware, students will receive practice in:

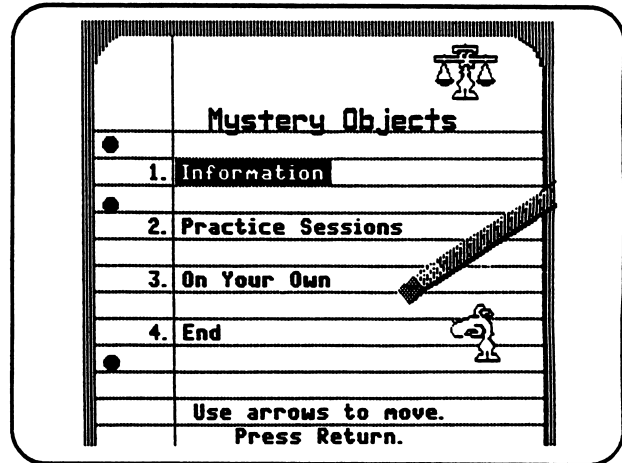
- observing and comparing objects according to such physical properties as shape, color, size, weight, texture, and smell;
- determining the identity of unknown objects from descriptions of their physical properties; and
- recording, organizing, and evaluating information to solve a problem.

A QUICK LOOK AT MYSTERY OBJECTS

The information provided in this section includes a brief look at the programs, an explanation of the various menu options, and a description of the available Teacher Options.

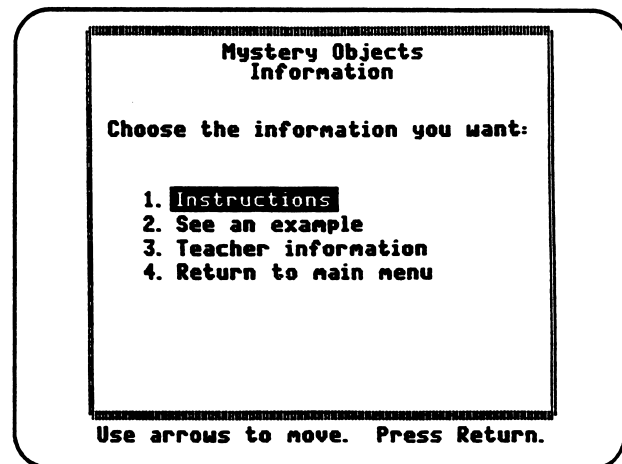
Main Menu

The main menu displays four options. The first choice tells you about the programs; next are two instructional programs; and last is the option to end the program.

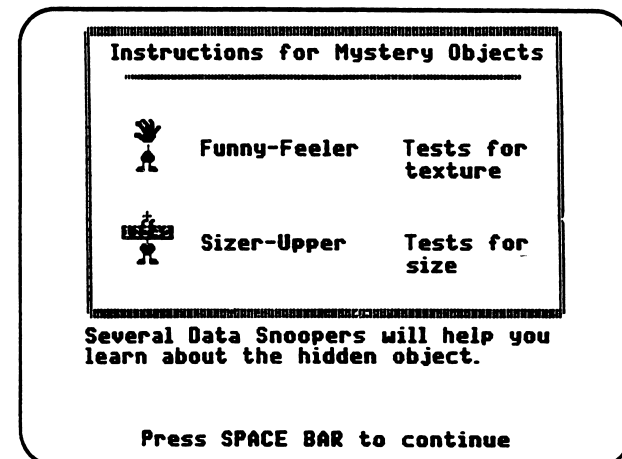


Information

Choosing the Information option from the main menu takes you to the Information menu, shown here. This menu allows you to choose the type of information that you will see.



For example, choosing Instructions takes you to a series of screens explaining the operation of the programs. One of these screens, displayed here, describes some of the Data Snoopers available in the instructional programs.



A QUICK LOOK AT *MYSTERY OBJECTS* (continued)

Instructional Programs

The two instructional programs, **Practice Sessions** and **On Your Own**, feature a similar format and method of student interaction. The programs differ, however, in two important aspects: the skill level that the students are asked to demonstrate and whether help is available to them. In essence, **Practice Sessions** is a simplified, easier version of the program **On Your Own**.

In **Practice Sessions**, students are asked to identify a mystery object that is hidden among only three distractor objects. Each distractor has physical traits that are very different from those exhibited by the mystery object. In this program, students may also request a hint on which test will yield significant information.

Students using **On Your Own** are asked to identify a mystery object from among five distractors. Students also can choose an ability level appropriate to their levels of skill development. At the Easy Level, each distractor has only one, if any, physical trait in common with those exhibited by the mystery object. Distractors at the Medium Level have two or three traits in common with the mystery object. At the Hard Level, the distractors and the mystery object have from three to five physical traits in common. Students working at the Hard Level need to test their mystery objects thoroughly to make a positive identification.

Choosing an instructional program from the main menu soon takes you to a screen that displays your mystery object hidden among distractor objects. Your task is to determine which one is your mystery object.

On Your Own

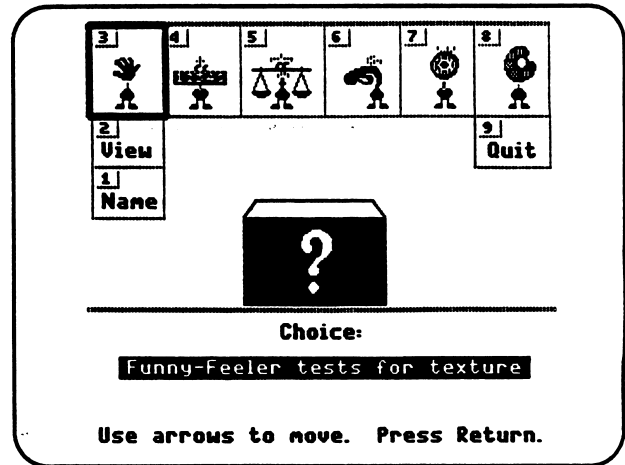
1 	2 	3 
DUCK	GARDEN HOSE	ICE SKATE
4 	5 	6 
TOMATO	HOCKEY STICK	PEN

Try to find out which one of these objects is your mystery object.

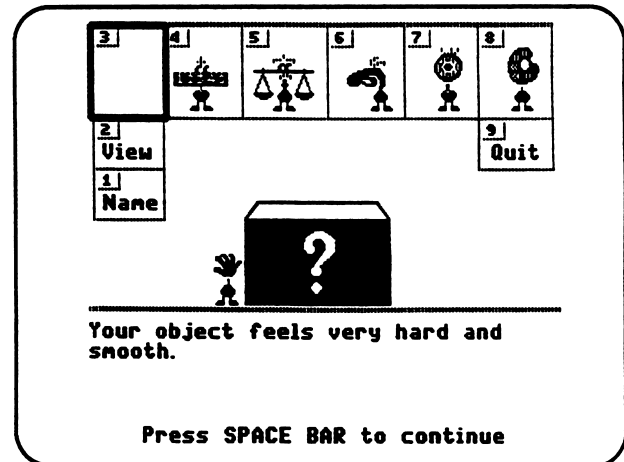
Press SPACE BAR to continue

A QUICK LOOK AT *MYSTERY OBJECTS* (continued)

After initially viewing the full set of objects, you enter the principal activity area and can begin your tests by selecting a Data Snooper. You make your selections by using the Arrow or Number Keys to move the highlighted box to the Data Snooper or command of your choice.



To test your mystery object, simply choose one of the available Data Snoopers. Each Snooper tests your hidden object for a specific trait, such as texture, size, weight, smell, shape, and color. You may look at the full set of objects again or attempt to name your mystery object. In **Practice Sessions**, you may also receive a hint on which test will give important results.



Teacher Hint:

Encourage students to use the "View" command to compare their test results to the physical traits exhibited by the full set of possible mystery objects.



A QUICK LOOK AT MYSTERY OBJECTS (continued)

Once you think you know the identity of your mystery object, choose the "Name" command to identify the hidden object. If you are not successful in identifying your mystery object, you may continue to test the object and collect additional information on its physical traits. You may continue the testing, viewing, and comparing process until you are again ready to name the mystery object.

Name Mystery Object

1  DUCK	2  GARDEN HOSE	3  ICE SKATE
4  TOMATO	5  HOCKEY STICK	6  PEN

My mystery object is the:
pen

Use arrows to move. Press Return.
Escape: Data Snoopers

Teacher Hint:

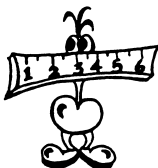
Students should try to identify each mystery object correctly on their first attempt. A positive identification on a first attempt may require testing each mystery object with more than one Data Snooper.



When you correctly identify your mystery object, a cumulative record of your achievement is displayed and you can choose whether you want to work with additional objects.

Teacher Hint:

Encourage students to identify several objects correctly at a given level before attempting more difficult levels.



**On Your Own
Patty McGuire**

Objects	Easy	Medium	Hard
Named on first try	3	1	0
Attempted	4	1	0

You can:

1. **Get a new object**
2. Change level
3. Return to main menu

Use arrows to move. Press Return.

A QUICK LOOK AT *MYSTERY OBJECTS* (continued)

Teacher Options

Teacher Options can be accessed from the main menu by typing Control-A (press A while holding down the Control Key). The Teacher Options menu enables you to work with records on student progress and to modify the programs to meet specific needs within your classroom.

Teacher Options Menu

1. **See/print/delete student records**
2. **See/edit program settings**
3. **Use printer support**

Use arrows to move. Press Return.
Escape: Main Menu

Student Records

In *Mystery Objects*, the two instructional programs store information on student progress for up to 75 students. Choosing Option 1 from the Teacher Options menu takes you to a second menu where you may select to view, print, or delete the existing student records.

See/Print/Delete Student Results

This diskette stores records for 75 sessions. When this limit is reached, the oldest record is deleted as each new record is saved.

8 records are currently saved.

1. **See student records**
2. **Print all student records**
3. **Delete all student records**

Use arrows to move. Press Return.
Escape: Teacher Options Menu

A QUICK LOOK AT MYSTERY OBJECTS (continued)

Student records contain the students' names, the level at which they worked, and the number of objects that they successfully named on their first attempt compared to the total number of objects that they attempted to name. For instance, the symbols (P, 1, 2, and 3) in the "Level" column refer to the skill level of the exercises completed in the two instructional programs.

These symbols are read as:

- P = Practice sessions**
- 1 = Easy level of On Your Own**
- 2 = Medium level of On Your Own**
- 3 = Hard level of On Your Own**

Screen 1 of 1		
Name	Level	Objects
Ho, Wendy	3	4/5
Johnson, Pete	2	2/2
Johnson, Pete	1	1/3
McGuire, Patty	P	3/4
McGuire, Patty	1	2/2

P Key: Print Screen
Escape: Records Menu ?: Help

Program Settings

Two choices are available for altering the content presented by the programs. The first choice allows you to indicate the measurement system (English or metric) you want the programs to use when presenting information on the linear size and weight of each mystery object. The second choice enables you to indicate whether objects can be tested for color in the program **On Your Own**. If you choose not to use the color trait, the Data Snooper for testing color will not be made available to your students.

To modify the program settings, simply indicate your choices with a \checkmark symbol. This is accomplished by using the Arrow and Return Keys.

See/Edit Program Settings

You may determine which units of measurement are used and if your students can test for color in the program "On Your Own."

\checkmark 1. **Use English units**

Units

2. Use metric units

\checkmark 3. Use color testing

Color

4. Do not use color testing

Use arrows to move. Press Return.
Escape: Teacher Options Menu

A QUICK LOOK AT MYSTERY OBJECTS (continued)

Printer Support

Mystery Objects is initially set up to work with an Apple //e computer having a standard printer card located in either Slot 1 or 2. If you have this setup, you do not need to do anything further. If your printer uses a different setup or if you need to enter special printing commands, you must choose the Use Printer Support option from the Teacher Options menu. *Note that to connect an Apple //c or IIgs computer, you must designate Slot 1 and use the printer port on the back of the computer.*

Selecting the Use Printer Support option takes you to the Printer Options menu. The current printer settings are displayed at the top of the screen. These options enable you to set up your printer for use with *Mystery Objects*. Additional information about each option is listed below.

Printer Options

Current slot: Search slots 1,2
Special commands: No

1. **Set printer slot**
2. Set special commands
3. Test printer setup
4. Restore default setup

Use arrows to move. Press Return.
Escape: Teacher Options Menu

Option 1, Set Printer Slot, enables you to specify the slot number in which the printer interface card is located. Unless set otherwise, the program will search Slots 1 and 2 for a recognizable printer interface card.

Option 2, Set Special Commands, allows you to enter commands that enable certain types of printers to operate. This option also permits you to set special printing formats. These special commands are listed in the manufacturer's printer or interface card manual. *Do not set up your printer to use a proportional font. This setting will cause the student records to be formatted incorrectly.*

To enter special commands, type the exact characters required. When you are finished entering commands, type ^ (Shift-6) to end.

Option 3, Test Printer Setup, prints out all of the keyboard characters. If these characters are not printed correctly, check the settings on your printer, check whether your printer has been correctly connected, or consult your interface card manual for special commands.

Option 4, Restore Default Setup, returns all printer settings to their original state. The original settings provide for a search of Slots 1 and 2 and does not use special commands.

All changes made to the printer support settings are saved on the diskette when you leave the Printer Support menu and are permanent until you use the Use Printer Support option again to change the settings.

USE IN AN INSTRUCTIONAL SETTING

This section of the manual describes the overall instructional approach of *Mystery Objects* and provides additional information on using the program effectively in an educational setting. Information on the effective use of *Mystery Objects* is divided into four sections: "Preparation," "Using the Programs," "Student Strategies," and "Additional Classroom Activities."

Mystery Objects is designed to be used with a textbook chapter and/or other classroom activities on the physical properties of objects. It can be used at the beginning of the unit to introduce the topic or at the conclusion to reinforce the important topics.

The strength of any instructional software lies in the manner in which it is used in the classroom environment. The overall emphasis of *Mystery Objects* is on presenting students with a problem-solving simulation that promotes discovery-learning. The program directly supports and complements actual hands-on experimentation in the classroom. As a teacher, you can choose to present the concepts by using the computer, by conducting hands-on experiments, or by using a combination of these two methods. The supportive and complementary nature of *Mystery Objects* gives you the opportunity to create a powerful and flexible instructional environment.

Several methods for classroom implementation of the program are suggested below. The actual selection and sequencing of activities remains up to you so that you can tailor the instruction to meet the needs of your students. In a similar manner, how much direction you give to your students depends on their own skill levels. Some students benefit from a teacher-directed approach, whereas others function best when allowed to explore and develop their own strategies.

Preparation

Although designed for students in Grades 2-4, students of many age levels may effectively use *Mystery Objects*. Because several of the terms used in the program are introduced in second-grade science and mathematics lessons, you may want to use *Mystery Objects* initially during the latter part of the second grade.

Students new to *Mystery Objects* may benefit from a short demonstration of the program. Two options in the Information menu, Instructions and See an Example, are ideal for classroom demonstrations.

Several worksheets included in this manual are useful for introducing the program to your students. Worksheet 1 introduces and explains the function of each Data Snooper, and Worksheet 2 reinforces the various functions performed by the Data Snoopers in a matching format. Version "a" of Worksheets 1 and 2 does not include the Data Snooper that tests objects for color. This version is for students using the program with the color option turned off. Version "b" of these two worksheets includes the Data Snooper for color and should be given to students using the program with the color option turned on. (See page 14 for information on how to adjust the color option.)

In some cases, the terms used by the Data Snoopers to describe objects are relative. For example, a candy bar is described as being "firm," yet your students may think of a candy bar as being "soft." Special terms and phrases used by the Data Snoopers are listed on Worksheets 3 and 4. Before they use *Mystery Objects*, your students may benefit from using these worksheets and discussing the meanings of these terms.

USE IN AN INSTRUCTIONAL SETTING (continued)

Using the Programs

After the initial preparation, distribute copies of Worksheet 5a to your students (5b for students using color monitors). Tell your students that they should keep a record of their mystery objects as they use the **Practice Sessions** program. Emphasize that they should try to identify the mystery object on their first attempt. Remind them that they may test the object with several Data Snoopers to be sure that they can correctly identify the object. Once they can easily identify objects in **Practice Sessions**, allow them to proceed to the Easy Level of **On Your Own**. Again provide them with copies of Worksheet 5 (a or b, whichever is appropriate). Encourage them to move to a new skill level as their confidence grows.

Student Strategies

As a discovery-learning simulation, *Mystery Objects* provides students with an open environment for experimenting with and developing successful strategies. During classroom testing sessions, students exhibit a wide variety of approaches to the problem of successfully identifying their objects.

Common successful student strategies include the following:

- Some students test the hidden object with all of the available Data Snoopers and carefully record their observations. Only after collecting and analyzing all of the data do they attempt to identify the object.
- Students often test the object with a single Data Snooper and then use the “View” command to review the full set of possible mystery objects. After comparing the objects with the results of the test, they return to the testing screen and repeat the process with a new Data Snooper. This pattern continues until the students think that they can identify the object.
- Some students use the “test, then view” pattern described above except that they always use every available Data Snooper, even though they can already identify the object. The extra tests are used to confirm and validate their findings.
- In some cases, students test the object until they run into a “giveaway clue” that they think positively identifies it. This method works well for most students until the harder level of **On Your Own**. At the Hard Level, the object descriptions may not always contain a determining clue.

Although individual student approaches vary greatly, each type of successful approach commonly features information collection, comparison, and analysis. Some students do not readily develop a successful strategy. Classroom discussions can, however, encourage students to share both successful and unsuccessful techniques.

USE IN AN INSTRUCTIONAL SETTING (continued)

Additional Classroom Activities

Several additional classroom activities can be used to complement and strengthen the instructional objectives and processes presented by *Mystery Objects*. In many cases, the activities listed in this section are designed to be used immediately after the students use *Mystery Objects*. Some activities, however, can also be used as introductory lessons. Others can become long-term classroom activities. The selection and order of the activities depends upon your specific classroom environment.

Discussion Sessions Engage your students in discussions of their findings, using such questions as: Which Data Snoopers proved to be the most helpful? Which were not very helpful? Did they use every Data Snooper to test an object before they named it? Did they disagree with the description of any of the objects? How would they describe the objects better? Encourage your students to describe and explain their successful strategies.

Mystery Box Hide a familiar object (an orange works well) in a box that students cannot look into. Have a student reach into the box and describe the object by using a one-word descriptor. Repeat the process, encouraging each student to think of a new and unique descriptor. Record all of the words on a chalkboard as the students “test” the object. Most students describe objects by using a very limited vocabulary. Periodically, you can reuse this technique to stimulate students to describe objects by using increasingly accurate and varied words.

Mystery Bag Similar to the previous activity, this one involves hiding from three to five objects in a bag and having the students feel through the sides of the bag. Suggested objects are an orange, a small apple, and a very small sliver of onion. Seal all of the objects first in a plastic bag and then in a large grocery bag. Before sealing the bags, however, rub the outside of the paper bag with the onion sliver. Repeat the process of describing the hidden objects outlined above. In this case, many students will rely on only one “sense” and conclude that the round objects are actually onions. The testing and rethinking of initial ideas is a key element to careful investigation.

Interdisciplinary Using Worksheet 6, ask students to create metaphor or simile riddles about various objects that they encounter in *Mystery Objects*. Worksheet 7 asks students to compare and contrast objects based on their descriptions and functions.

The true value of these activities lies in the ideas, questions, and comments that arise from discussing the experience. Allow sufficient time during and after using *Mystery Objects* and the additional activities for students to share their observations, approaches, and findings. This interaction can be encouraged by having students work together in cooperative pairs and by informing them that discussion sessions will follow the activity.

STUDENT WORKSHEETS

On the following pages are the student worksheets mentioned in the “Use in an Instructional Setting” section of this manual. Each worksheet is briefly described below:

Worksheets 1a & 1b – Introducing the Data Snoopers

These worksheets introduce the Data Snoopers and explain the function that each performs in the program. Version “a” does *not* include the Data Snooper for testing an object for color and is designed for students using monochrome monitors. Version “b” does include the Data Snooper for testing an object for color and is designed for students using color monitors.

Worksheets 2a & 2b – Meet and Match

Using these worksheets, students match a picture of each Data Snooper to a brief description of its testing function. Version “a” does *not* include the Data Snooper for color testing, whereas Version “b” does include the Data Snooper for color testing.

Worksheets 3 & 4 – Special Words

These two companion worksheets explain how certain terms are used in the descriptions.

Worksheets 5a & 5b – What I Found Out

These are student data recording sheets. Students may use them to record information that they discover when they test an object. Version “a” does *not* include information learned from the Data Snooper for color, but Version “b” does.






Worksheet 6 – Riddles

This “enrichment” worksheet encourages students to create metaphors and similes about the various objects that they encounter in the program.







Worksheet 7 – Describe and Compare

Using this worksheet, students describe and compare the physical properties and traits exhibited by two objects.

**INTRODUCING THE
MYSTERY OBJECTS DATA SNOOPERS**

	<p>Funny-Feeler squeezes and scratches your mystery object to find out what it feels like.</p>
	<p>Sizer-Upper measures your object for length, width, height, and diameter.</p>
	<p>Heavy-Holder tells you how much your object weighs.</p>
	<p>Super-Sniffer sniffs your mystery object and describes what it smells like.</p>
	<p>See-Shaper looks at your object and tells you what shape it sees.</p>

**INTRODUCING THE
MYSTERY OBJECTS DATA SNOOPERS**

	<p>Funny-Feeler squeezes and scratches your mystery object to find out what it feels like.</p>
	<p>Sizer-Upper measures your object for length, width, height, and diameter.</p>
	<p>Heavy-Holder tells you how much your object weighs.</p>
	<p>Super-Sniffer sniffs your mystery object and describes what it smells like.</p>
	<p>See-Shaper looks at your object and tells you what shape it sees.</p>
	<p>Color-Seeker tells you what color your object is.</p>

MEET AND MATCH

My Name _____

Directions: Draw lines to connect each Data Snooper to its name and to what it does.

*Snooper's Name**Data Snooper**What the Snooper Does*

Super-Sniffer



feels texture

Funny-Feeler



smells things

Sizer-Upper



measures size

Heavy-Holder



sees shapes

See-Shaper



measures weight

MEET AND MATCH

My Name _____

Directions: Draw lines to connect each Data Snooper to its name and to what it does.

Snooper's Name

Data Snooper

What the Snooper Does

Super-Sniffer



feels texture

Color-Seeker



measures size

Funny-Feeler



smells things

Sizer-Upper



sees color

Heavy-Holder



sees shapes

See-Shaper



measures weight

SPECIAL WORDS I


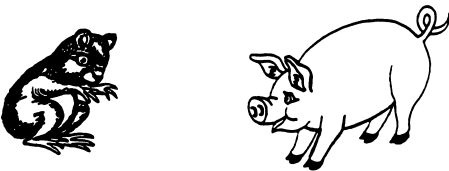
Here are some special words that might be used to describe your object's shape.

See-Shaper



Says:

Means:

<p>... is changed easily <i>or</i> ... changes easily</p>	<p>The object has a shape that you know it by, but you can easily twist or bend it into a new shape.</p> <p>Examples: a raincoat and a tie</p> <div style="text-align: center;">  </div>
<p>... changes shape as it moves</p>	<p>This means that it is alive!</p> <p>Examples: a hamster and a pig</p> <div style="text-align: center;">  </div>

SPECIAL WORDS II




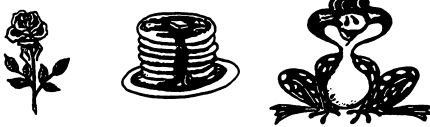
Here are some special words that might be used to describe your object's texture.

Funny-Feeler



Says:

Means:

<p>... very hard</p>	<p>A metal or rock-hard object. You need a tool to scratch it.</p> <p>Examples: a light bulb and a bowling ball</p> 
<p>... hard</p>	<p>It does not change shape when you squeeze it. You can scratch it with a fingernail.</p> <p>Examples: soap, a pencil, and a record.</p> 
<p>... firm</p>	<p>It can change shape when you squeeze it, but it's not easy. When you stop squeezing, it often returns to its first shape.</p> <p>Examples: a football, a candy bar, and a goldfish.</p> 
<p>... soft</p>	<p>Easily changes shape when you squeeze it. Sometimes it does not return to its first shape when you stop squeezing.</p> <p>Examples: a rose, pancakes, and a frog.</p> 






WHAT I FOUND OUT

My Name _____

Directions: Send a Data Snooper to look at your mystery object. Then write down what it finds out in the box next to its picture. When you know enough about your object, try to guess what it is.

Data Snooper:

Found Out:

 <p>Funny-Feeler</p>	
 <p>Sizer-Upper</p>	
 <p>Heavy-Holder</p>	
 <p>Super-Sniffer</p>	
 <p>See-Shaper</p>	
<p>My first guess:</p>	
<p>My second guess:</p>	
<p>My mystery object is:</p>	


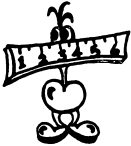




WHAT I FOUND OUT

My Name _____

Directions: Send a Data Snooper to look at your mystery object. Then write down what it finds out in the box next to its picture. When you know enough about your object, try to guess what it is.

Data Snooper:

Found Out:

 <p>Funny-Feeler</p>	
 <p>Sizer-Upper</p>	
 <p>Heavy-Holder</p>	
 <p>Super-Sniffer</p>	
 <p>See-Shaper</p>	
 <p>Color-Seeker</p>	

My first guess:

My second guess:

My mystery object is:

RIDDLES

My Name _____

Directions: Think of an object and of the things that make it special. Write a tricky riddle telling about your object. Share your riddle with some friends and see if they can guess what your object is.

<i>Object</i>	<i>Riddle</i>
Candle	What smells like a flower, but blooms best at night?
Garden hose	What is green, lies quietly on the ground, and can be over thirty feet long?

Describe and Compare

My Name _____

Directions: Think of an object and describe what each of its traits is like. Now pick a second object. Compare how the two objects are the same and how they are different.

First Object _____

Second Object _____

<i>Trait</i>	<i>Description</i>	<i>Comparison</i>
<i>Smell</i>		
<i>Texture</i>		
<i>Color</i>		
<i>Shape</i>		
<i>Size</i>		
<i>Things the object can do.</i>		
<i>Things the object can't do.</i>		

BACKGROUND INFORMATION

The following information describes the model used in *Mystery Objects* and provides additional insights gained when testing the program in classrooms.

- *Mystery Objects* contains information and graphics on more than 150 different objects. Each time the program is used, it randomly selects a mystery object from this large database of objects. Students can therefore use the program repeatedly with little chance of encountering a previously presented mystery object.
- The information describing an object reflects a composite or average number rather than absolute information. Measurements of the hamster, for instance, represent the measurements of a typical hamster rather than the actual data for every hamster.
- Several of the physical properties of objects as described in *Mystery Objects* relate closely to the human senses of touch, smell, and sight. Even very young students already have real-life experience in using their senses for exploring their environment. Therefore, few students have difficulty in relating to the descriptions of the mystery objects. Among the physical properties used in the program, the descriptions for linear size and weight present students with the greatest challenge. Many students lack practical experience in describing and comparing objects according to size and weight.
- Some of the terms used when describing an object's texture and shape are relative. For example, the program describes a fish as being "firm," yet some students may think of a fish as being "soft." Classroom discussion of the various terms and the use of Worksheets 3 and 4 can resolve the potential confusion over the meaning of the terms used to describe each object's texture and shape.

CREDITS

Mystery Objects was produced by a MECC development team that included Greg Holey, Liz Husebye, Charolyn Kapplinger, John Krenz, Nan Leekley, Sherry Luedloff, Kevin Neff, and Diane Portner.

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Howard Anderson
Katherine Curren Elementary School
Hopkins, Minnesota

Cindy Soltow
Forest Hills Elementary School
Eden Prairie, Minnesota

Dawn Erks
Harbon Montessori School
New Brighton, Minnesota

Marlene Stoehr
Pike Lake Elementary School
Mounds View, Minnesota

TO THE READER:

MECC has made every effort to ensure the instructional quality of this courseware package. Your comments—as user or reviewer—are valued and will be considered for inclusion in any future version of the product. Please address comments to:

MECC Software Development
6160 Summit Drive North
Minneapolis, Minnesota 55430-4003

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