

Teacher's Guide

# Solve It!

Apple



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**Designers:** Peggy Healy Stearns, Ph.D.  
C. Alan Riedesel, Ph.D.

**Programmers:** Andrew Armstrong  
Gary Schenck

**Project  
Manager:** Ed Annunziata

**Guide:** Elaine Shen Vislocky  
Peggy Healy Stearns, Ph.D.

**Graphics:** Olga Mirkin

**"Rescue from an Icy Peak" mystery developed by:  
Lawrence Carey Healy, Jr.**

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*This program is dedicated to my children, Joe and Brett,  
two creative and inspiring problem solvers.*

P. H. Stearns

## ABOUT THE AUTHORS:

**Peggy Healy Stearns** received her Ph.D. from the State University of New York at Buffalo where she majored in Computer Education. Her dissertation involved a comparison of teacher and student evaluations of educational software. Prior to this, Dr. Stearns earned her bachelor's degree in Economics from Manhattanville College and her master's from Harvard University.

Over the past 8 years, Dr. Stearns has taught middle school, high school, undergraduate, and graduate students; has helped to train hundreds of inservice teachers in grades K-12; and has given presentations at dozens of conferences and workshops. She has published several articles on the use of computers in the schools and is the editor of an upcoming book on educational computing in the home. In 1987, she was honored by President Sample of the State University of New York at Buffalo as a "University Inventor".

Currently, Dr. Stearns teaches graduate students at SUNY at Buffalo, acts as Assistant Coordinator of the Software Evaluation Project at the University, and is the District Computer Specialist for the Depew Public Schools.

**Dr. Alan Riedesel** is a Professor of Education at the State University of New York at Buffalo. His publications include over fifty research and application articles directed at the improvement of instruction in the elementary school. His books include Teaching Elementary School Mathematics (Fifth Edition), Handbook for Mathematics Teaching, Coping with Computers in the Elementary and Middle School, and sixteen elementary school textbooks for children. For six years he was the research editor for The Arithmetic Teacher. He has reviewed tests for Mental Measurements Yearbook and he wrote the elementary school mathematics research review chapter in the American Educational Research Association's Second Handbook of Research on Teaching. In addition to teaching and writing, he has been Director of Teacher Education, Coordinator of the Software Evaluation Project, Director of the Center for Research with Schools, and the principal investigator on fifteen research and teaching projects funded by the state and federal government as well as private foundations. He has authored two complete college courses via computer assisted instruction, authored and directed ten instructional motion pictures for teachers, and is a pioneer in Worldview education.

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# SOLVE IT!

## INTRODUCTION

In 1980, the National Council of Teachers of Mathematics designated problem solving as the focus of mathematics education in the 1980's. Since then, numerous other reports have echoed this concern. In a world where facts are conveniently stored in databases, where the responsibility for computational accuracy can be relegated to electronic devices, new skills are needed. Students must know how to access, analyze, and synthesize information.

Despite the increasing emphasis on problem solving, teachers often find it difficult to integrate these skills into the classroom. They feel pressured by the need to prepare students for the growing number of standardized tests, the need to cover an ever more demanding curriculum.

Furthermore, in approaching the teaching of problem solving, most teachers are exploring unfamiliar territory. The task is seen as ambiguous. Problem solving encompasses a broad range of skills; specific objectives are both difficult to define and difficult to measure in terms of achievement. Thus, objectives which focus on problem solving skills are often hard to justify in an environment geared increasingly to accountability.

### SOLVE IT!: A PRACTICAL ROUTE TO CURRICULUM INTEGRATION

The **Solve It!** mini-mysteries address these problems by integrating the teaching of logical thinking skills into the traditional curriculum. The program addresses several skill areas: the development of reading comprehension, an understanding of databases including the concept of an effective database search, and the analytical thinking skills needed to deal with and/or and exclusion logic. In addition, several of the mysteries deal with science or social studies subject area content and even raise ethical issues for students to ponder or debate. By combining so many objectives, the program makes it easier for teachers to find time to include important critical thinking skills in the curriculum.

**Solve It!** incorporates other elements that encourage successful classroom implementation. The program uses a compelling game format with the student playing the role of a detective in the Solve It Agency. After reading the selected case history, the student is challenged to retrieve appropriate clues from the **Solve It!** database and then analyze this information in order to eliminate suspects. A wide range of difficulty levels allows students to master program operation, database search, and the use of logic in a less complex setting before advancing to more challenging situations. Because suspects, clues, and solutions are all drawn at random from a pool of possibilities, mysteries are different each time they are played. Therefore, even the same student may replay a mystery repeatedly without ever being sure of the outcome.

We believe that teachers will find **Solve It!** to be both entertaining and instructionally relevant in a variety of curricular areas. It will, we feel, provide a meaningful and effective way to encourage the practical implementation of problem-solving skills into teachers' already-demanding curricula.



# SOLVE IT!

## PROGRAM OBJECTIVES



**Prerequisite Skills:**

- 4th grade reading level
- Note taking
- Organization

**Grade Level:** 4-12

**Reading Level:** 4th grade (Spache)

**Time Required:** 10-20 minutes

**Objectives:**

1. to search effectively for information in a database
2. to learn about the function and value of databases
3. to exercise logical thinking
4. to organize and analyze information
5. to discriminate between important and unimportant or unrelated information
6. to discover relationships between information
7. to enhance language arts skills

## SOLVE IT!

### PROGRAM OVERVIEW

Students play the role of detectives in the Solve It Detective Agency. After selecting a mystery, they read the Case History and select important persons, places, or things about which they would like to retrieve more information. Students then use these words as keywords to search the Solve It Central Computer database for clues which will help them solve the mystery. All clues are written in the form of logical statements which require students to use analytical thinking skills.

The three levels of difficulty available for each mystery encourage students of various abilities to play the game and seek higher levels of challenge. Rookie Detectives receive only important clues to help them solve the case. Senior Detectives must first sort through the clues to discard extraneous information (unimportant or unrelated clues) before they analyze their information to solve the case. Super Sleuths must not only discard extraneous information, but relate the information contained in separate clues in order to solve the case.

As students attempt to solve each of the six mysteries, they will explore such topics as underwater sea life (*The El Diablo Treasure*), the structure and history of medieval European castles (*Race to Spy Castle*), and the ethical concerns about zoos (*The Animals are Loose!*). The unique collection of clues and suspects selected each time a mystery is played alters the solution to the case. Consequently, students may replay a mystery at the same level and will probably never encounter exactly the same collection of clues and solution.

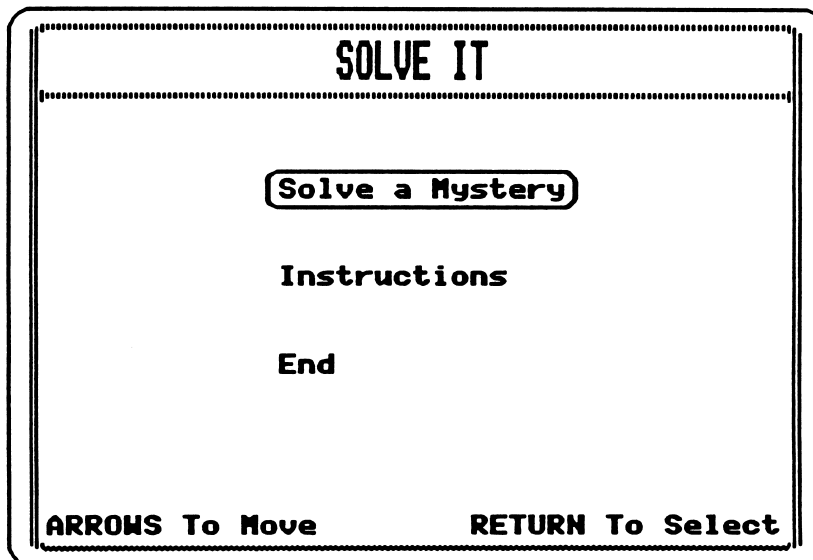
## SOLVE IT!

### PROGRAM DESCRIPTION

#### STARTING THE PROGRAM

After students have inserted the Program Disk, they will be asked to insert the Mysteries Disk and then press RETURN.

The Main Menu will appear:



The choices are as follows:

*Solve a Mystery* - to select a mystery to solve

*Instructions* - to receive an explanation of the program

*End* - to exit the program

To make a selection from this and all other menus, use the arrow keys to move the selection box to your choice, then press RETURN to select it. To return to the Main Menu at any time, press CONTROL-E and/or select *End* from the Assignment screen (see page 7).

When students select *Solve a Mystery*, they will be asked to enter their names:

```

SOLVE IT
-----
Welcome to the Solve It Detective
Agency. Please sign in.

Detective █ _____

Enter your name and press RETURN.

```

Next, students will select a level of difficulty:

```

SOLVE IT
-----
What kind of mystery would you
like to solve?

Rookie (Easy)
Sr. Detective (Medium)
Super Sleuth (Hard)

Main Menu

ARROWS To Move RETURN To Select

```

The level of difficulty will affect the complexity and relevance of the clues. The choices are as follows:

**Rookie** - all clues are important (reveal information which will help solve the case).

**Senior Detective** - clues may be important, unimportant (lack information which will help solve the case), or unrelated (contain information relating to a different case).

**Super Sleuth** - includes important, unimportant, and unrelated clues. For each important clue, there is another related clue. Important clues are not helpful unless the related clue is retrieved.

**Main Menu** - to return to the Main Menu.

Students now select a mystery. The mysteries are arranged in order of increasing difficulty (based on the number of suspects as well as the length of the clues and the Case History).

**Rookie**

---

**Detective Winters, which case would you like?**

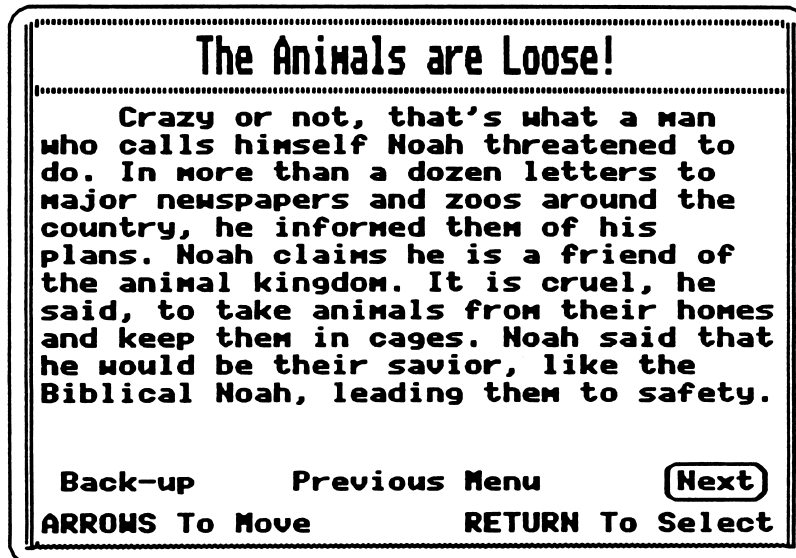
- The Haunted House**
- The Black River Caves**
- The El Diablo Treasure**
- Rescue from an Icy Peak**
- The Animals are Loose!**
- The Race to Spy Castle**
- Main Menu**

**ARROWS To Move                      RETURN To Select**

The 4-suspect mysteries include: The Haunted House, Rescue from an Icy Peak, and The Race to Spy Castle. The 5-suspect mysteries include: The Black River Caves, The El Diablo Treasure, and The Animals are Loose!.

After the mystery has been selected, the Case History appears. Shown below is the second screen of a Case History.

A Case History provides the background information on a case. Students should note important people, places, and things which they will want to investigate. They will use these words as keywords to search the Solve It database.



Students may select

*Next* - to progress through the Case History,

*Back-up* - to see the previous screen, or

*Previous Menu* - to return to the previous menu (in this case, the Main Menu).

After students have read the Case History, they will receive their assignment, which always includes two parts. For a student investigating *The Animals Are Loose!* case at the Rookie level, the following Assignment screen would appear:

**The Animals are Loose!**

---

**YOUR ASSIGNMENT: Find out which zoo is the first target and which zoo is the second target.**

**Which would you like?**

<b>Search Database</b>	<b>Case History</b>	<b>Hint</b>
<b>Solve Mystery</b>	<b>Notes</b>	<b>End</b>

**ARROWS To Move                      RETURN To Select**

### INVESTIGATING A CASE

To carry out their assignment, students may select from the options listed at the bottom of the Assignment screen: *Search Database*, *Case History*, *Hint*, *Solve Mystery*, *Notes*, and *End*.

Unless students need to refer back to the Case History right away, they will begin by selecting *Search Database* to search for clues in the database. As they progress, however, they will want to take advantage of some of the other options available to them. A description of each of the options follows.

**Search Database**

Students may search for clues to help them solve the case by using the Solve It Central Computer database. They simply enter a keyword or part of a keyword (up to 18 letters), and the computer retrieves any clues in the database which contain that keyword. At the *Rookie* level only, students receive a list of suggested keywords, as shown below:

**The Animals are Loose!**

---

**YOUR ASSIGNMENT:** Find out which zoo is the first target and which zoo is the second target.

You may want to use one of these keywords for your search:

Discovery	Jungleland
Parkview	Ruckus
Wild World	first
second	

**ENTER KEYWORD:**

Enter keyword and press RETURN,  
ESC to go back.

Students may use these keywords or select their own.

[Note: At the *Senior Detective* and *Super Sleuth* levels, students will not receive any suggested keywords. They must identify their own keywords, based on the Case History and any clues which they uncover.]



As each clue is revealed, students have the option of continuing the search (by selecting *Resume Search*), or choosing one of the other options discussed below.

**Current keyword: Discovery**

---

**Clue #29**

**"I'll be eating my lunch in the picnic area at my first target zoo. Try and spot me." Only four of the five zoos have picnic areas - Wild World, Jungleground, Ruckus, and Discovery.**

<b>Resume Search</b>	<b>Case History</b>	<b>Hint</b>
<b>Solve Mystery</b>	<b>New Keyword</b>	<b>Notes</b>

**ARROWS To Move                      RETURN To Select**

Once all clues containing the keyword have been revealed, students receive the following message:

**Current keyword: Discovery**

---

**No more clues found.**

<b>Search Database</b>	<b>Case History</b>	<b>Hint</b>
<b>Solve Mystery</b>	<b>Notes</b>	<b>End</b>

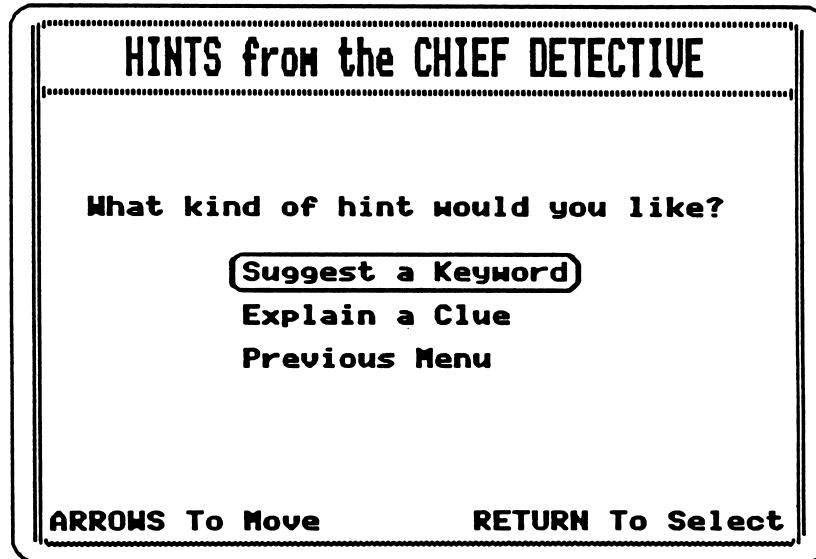
**ARROWS To Move                      RETURN To Select**

***Case History***

Students may refer back to the Case History at any time by selecting this option.

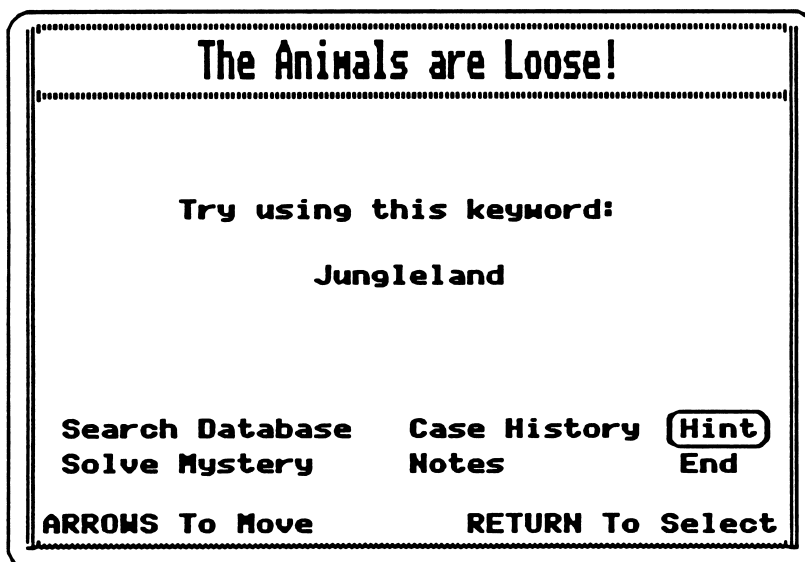
**Hint**

Students select this option to request some assistance from the Chief Detective. The following screen appears:



Students may select:

*Suggest a Keyword* - to receive a suggestion for a keyword, such as the one shown below:



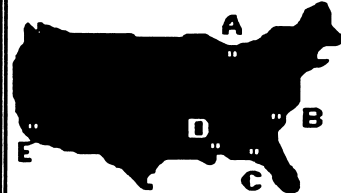
*Explain a Clue* - to receive an explanation of a clue which they have already uncovered. After students select this option, the clues they have uncovered reappear, in the order that they were retrieved. As students review each clue, they must choose from a new set of options, as shown below:

**HINTS from the CHIEF DETECTIVE**

---

**Clue #55**

Noah told southern zookeepers to watch out. He said that his first target would be in the southern half of the United States.



**A=American  
C=Ruckus**

Back-up
Explain Clue
No Hint

**ARROWS To Move**                      **RETURN To Select**

Select *Back-up* to view the previous clue, *Explain Clue* to receive an explanation of the clue, or *No Hint* to view the next clue.

If *Explain Clue* is chosen, students receive an explanation such as the one shown below:

**HINTS from the CHIEF DETECTIVE**

---

**This is an IMPORTANT clue.**

The first target is in the southern half of the United States. American is in the northern half of the U.S. Therefore, American cannot be the first target.

See Clue
Continue

**ARROWS To Move**                      **RETURN To Select**

They may select *See Clue* to refer back to the clue again, or *Continue* to return to the original *Hint* menu.  
*Previous Menu* - to return to the Assignment screen.

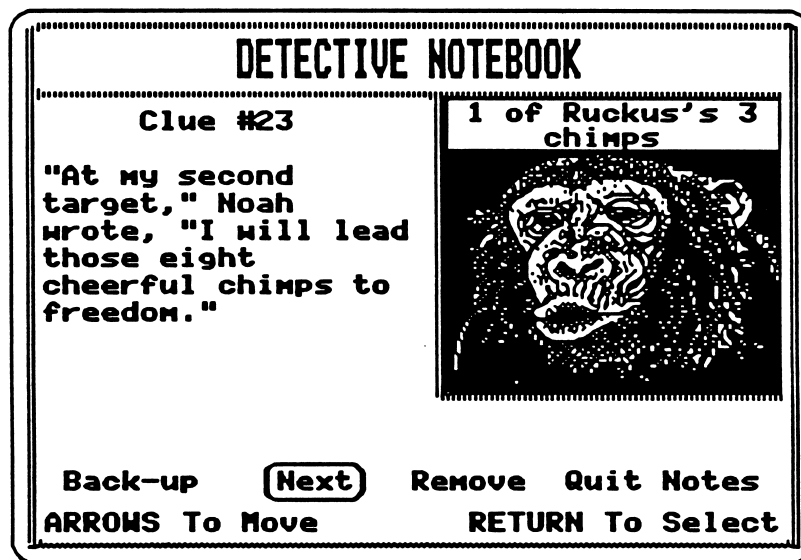
*Previous Menu* - to return to the Assignment screen.

### **Solve Mystery**

Once students believe they have solved both parts of the mystery, they select this option. Refer to Solving a Mystery on page 13 for further explanation.

### **Notes**

As students retrieve clues from the database, clues are placed in a notebook stored on the computer. Students may refer to this notebook by selecting *Notes*. Clues are stored in the notebook and revealed in the order in which they were retrieved. As each clue is revealed, students may select from a number of options, as shown below:



*Back-up* - to refer back to earlier clues in the notebook

*Next* - to proceed through the notebook

*Remove* - to purge their notebook of unimportant or unrelated clues

*Quit Notes* - to set their notebook aside to pursue some other activity

### **End**

Students select this option to return to the Main Menu.

SOLVING A MYSTERY

The minimum number of clues needed to solve a 4-suspect mystery varies between 5 and 9 clues at the Rookie and Senior Detective levels. A minimum of 10 clues is always required at the Super Sleuth level. The minimum number of clues needed to solve a 5-suspect mystery at the first two levels varies between 7 and 9 clues. A minimum of 14 clues is required at the highest level.

The minimum number of clues depends on the order of clues which have been randomly retrieved each time a mystery is selected. With this information in mind, teachers may be able to judge when students guessed at a solution (if they used fewer than the minimum number of clues) and when they performed efficient searches.

Once students believe they have solved the case, they select the *Solve Mystery* option. Two screens will appear, each asking for one part of the twofold solution. For example, the following two screens would appear in *The El Diablo Treasure* mystery:

**The El Diablo Treasure**

---

On which island is the treasure?

Christobel  
 Hammerhead  
 Lobster Pot  
 St. Lukes  
 Taco  
 No Guess Now

ARROWS To Move
RETURN To Select

**The El Diablo Treasure**

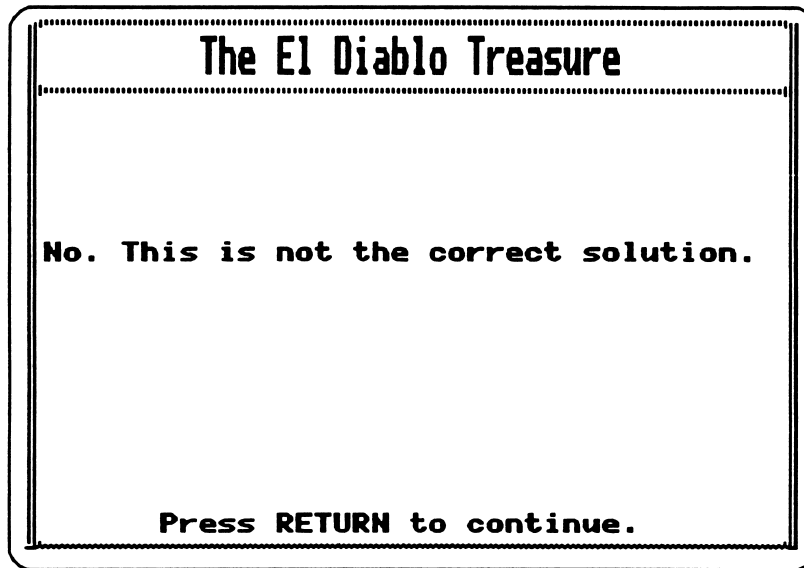
---

Which island was the hideaway?

Christobel  
 Hammerhead  
 Lobster Pot  
 St. Lukes  
 Taco  
 No Guess Now

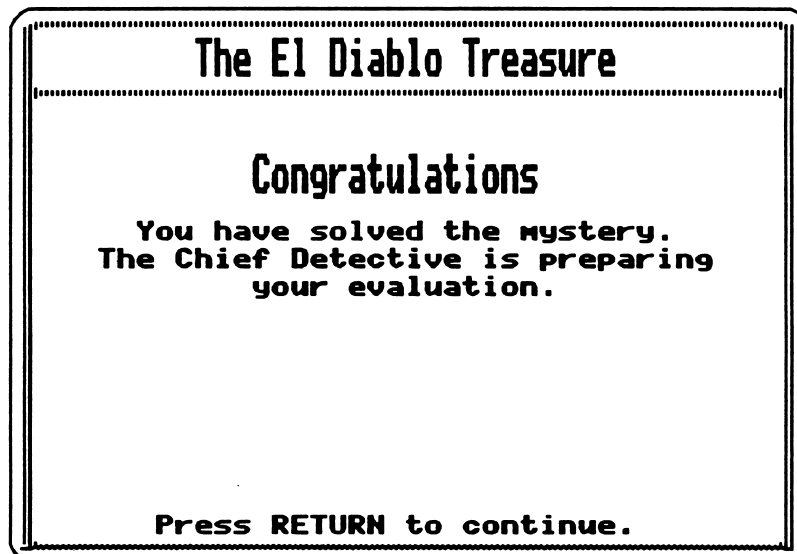
ARROWS To Move
RETURN To Select

- If one or both parts of the students' solution are incorrect, they will receive the following message:



By pressing RETURN, students will return to the Assignment screen. They may then resume their investigation of the case.

- If both parts of their solution are correct, they will receive the following message:



After they press RETURN, students who have solved a mystery at the Senior Detective or Super Sleuth level will be offered the opportunity to identify the clues they have retrieved as *important*, *unimportant*, or *unrelated* (if unrelated clues have been made available through the Teacher Options settings). The screen appears as follows:

**The El Diablo Treasure**

---

**You can improve your evaluation by looking over the clues that you retrieved and identifying which ones were important for solving the mystery.**

**Do you want to look over the clues?**

**Yes**       **No**

**ARROWS To Move                      RETURN To Select**

- If students select *No*, or if they have solved a mystery at the Rookie level (where there are no unimportant or unrelated clues), the first portion of the Chief Detective's Evaluation will appear. (Refer to page 16.)
- If students select *Yes*, they will classify each clue in their notebook, as in the example below:

**The El Diablo Treasure**

---

**Clue #6**

**According to Sea Hawk's log, the pirates' hideaway was in a giant stone temple built centuries earlier. There are temples like these on many islands, but not on Marnelda.**

**This clue is:**

**Important**     **Unimportant**     **Unrelated**

**ARROWS To Move                      RETURN To Select**

If students have taken clear, organized notes, they may be able to use their notes to go through this activity very quickly. After classifying each clue, the students will receive an evaluation of their response similar to the one shown below.

**The El Diablo Treasure**

---

**You are correct!**  
**This is an IMPORTANT clue.**

**The pirates' hideaway was in a giant stone temple. There are no temples like this on Marnelda. Therefore, Marnelda cannot be the hideaway.**

**See Clue**                      **Continue**

**ARROWS To Move**                      **RETURN To Select**

They may then select *See Clue* to refer back to the clue, or *Continue* to continue classifying the clues.

Once students have classified all the clues in their notebook (or have bypassed this option), the first part of the Chief Detective's Evaluation will appear:

**Chief Detective's Evaluation**

---

**Detective Minters**  
**Mystery: The El Diablo Treasure**  
**Level: Sr. Detective**

<b>IMPORTANT clues retrieved:</b>	<b>12</b>
<b>UNIMPORTANT clues retrieved:</b>	<b>6</b>
<b>UNRELATED clues retrieved:</b>	<b>0</b>
<b>Number of hints needed:</b>	<b>0</b>
<b>Number of INCORRECT solutions:</b>	<b>0</b>

**Press RETURN to continue evaluation.**



The information provided in this first portion of the Chief Detective's Evaluation allows students to evaluate how effectively they searched for clues (the retrieval of unrelated clues reflects a need to improve choice of keywords), how much help they used, and how carefully they reviewed their clues before trying to solve the case (incorrect solutions reflect inadequate research or faulty analysis).

For students who have classified their clues, a second portion of the Chief Detective's Evaluation appears after they press RETURN:

<b>Chief Detective's Evaluation</b>			
<b>REVIEW OF CLUES</b>			
		<b>You chose:</b>	
		<b>IMPORTANT</b>	<b>UNIMPORTANT UNRELATED</b>
<b>The clue was:</b>			
<b>IMPORTANT</b>	<b>(10)</b>	<b>2</b>	<b>0</b>
<b>UNIMPORTANT</b>	<b>2</b>	<b>(4)</b>	<b>0</b>
<b>UNRELATED</b>	<b>0</b>	<b>0</b>	<b>(0)</b>

**You have correctly identified 14 out of 18 clues, a total of 78% right.**

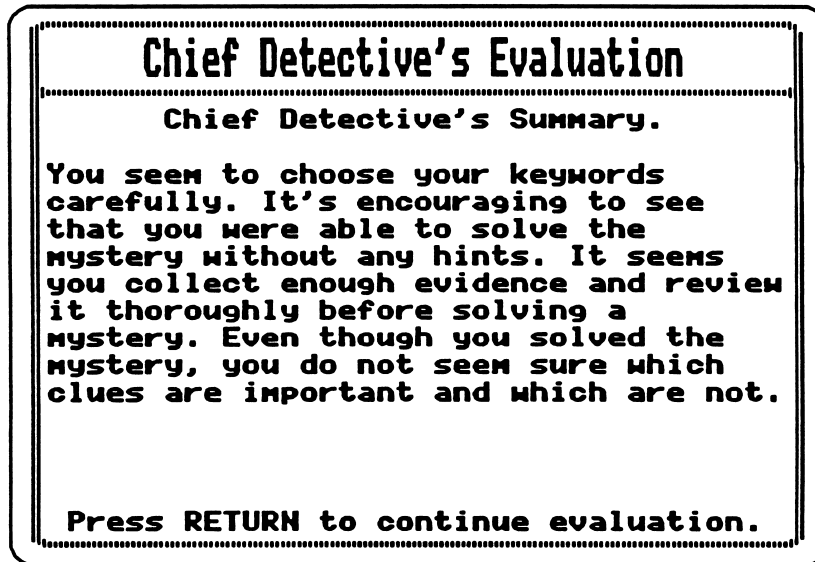
**Press RETURN to continue evaluation.**

The information provided in this second screen allows students to see how accurately they classified the clues in their notebook. The information is organized in grid format. Retrieve the information by reading across each line, as follows:

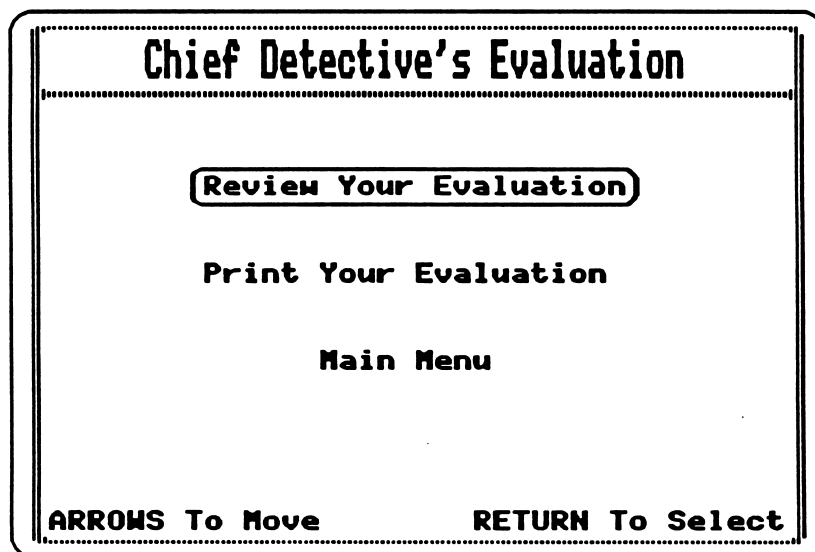
- The first line reveals that students correctly classified 10 important clues as important, but incorrectly classified 2 important clues as unimportant, and did not classify any important clues as unrelated.
- The second line reveals that students incorrectly classified 2 unimportant clues as important, correctly classified 4 unimportant clues as unimportant, and did not classify any important clues as unrelated.
- The third line reveals that students did not retrieve any unrelated clues.

The number of correctly identified clues of each type (*important*, *unimportant*, and *unrelated*) appears in parentheses. The total number and percentage of clues correctly identified is stated below the grid.

After the students press RETURN once again, the final portion of the Chief Detective's Evaluation appears. (Students who have not classified their clues will proceed from the first portion of the Chief Detective's Evaluation directly to the final portion.) At this point, the Chief Detective provides a summary evaluation of the students' handling of the mystery.



After students have viewed the final portion of the Chief Detective's Evaluation, the following menu will appear:



Students may select one of the following options:

*Review Your Evaluation* - to review the Chief Detective's Evaluation;

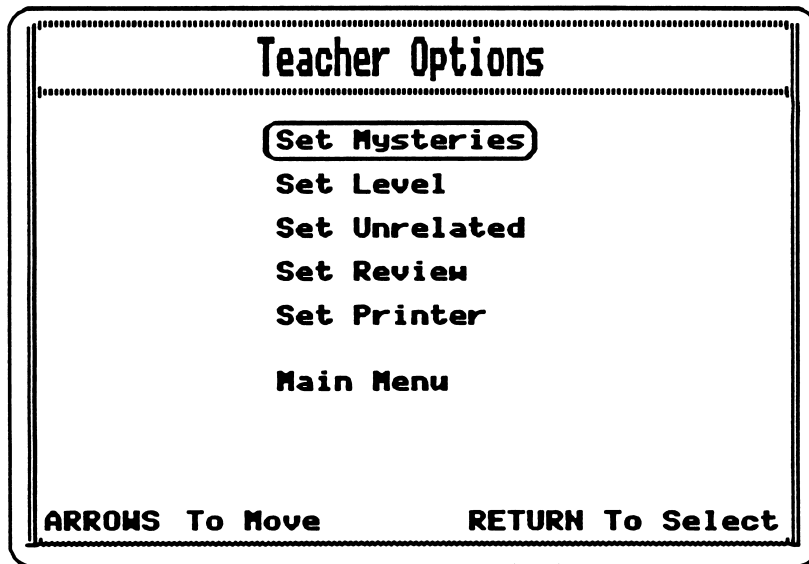
*Print Your Evaluation* - to print the Chief Detective's Evaluation; or

*Main Menu* - to return to the Main Menu.

## SOLVE IT!

### TEACHER OPTIONS

To access the Teacher Options, press CONTROL-T while at the Main Menu. The Teacher Options menu appears as follows:



The default settings for the options listed above are highlighted on each submenu and are as follows:

- all mysteries are available,
- students may choose the level of difficulty,
- unrelated clues are included,
- students may choose whether or not they wish to review clues, and
- the printer card is in slot 1.

Teachers may choose from these options:

**Set Mysteries** - to select one particular mystery or a set of mysteries from which the students will choose. A check preceding the mystery indicates that the mystery will be available to students.

**Teacher Options**

---

**Check the mysteries you want:**

- ✓ The Haunted House
- The Black River Caves
- ✓ The El Diablo Treasure
- ✓ Rescue from an Icy Peak
- The Animals are Loose!
- ✓ The Race to Spy Castle

Done

**ARROWS To Move**
**RETURN To Select**

Press RETURN to select a mystery or deselect one that was previously selected.

**Set Level** - to preset the level of difficulty, or to allow students to choose a level of difficulty.

**Teacher Options**

---

**Please choose a mystery level:**

- Rookie                   (Easy)
- Sr. Detective       (Medium)
- Super Sleuth         (Hard)

Student's Choice

**ARROWS To Move**
**RETURN To Select**

**Set Unrelated** - to include or exclude unrelated clues--clues which relate to a different mystery. [Note: Unrelated clues never appear in mysteries at the *Rookie* level.]

**Teacher Options**

---

Do you want UNRELATED clues?

**Yes**       **No**

**ARROWS To Move**                      **RETURN To Select**

**Set Review** - to predetermine whether or not students will review clues after they have solved a mystery, or to allow students to make their own choice.

**Teacher Options**

---

After solving the mystery, students:

**Always Review Clues**  
 **Never Review Clues**  
 **Student's Choice**

**ARROWS To Move**                      **RETURN To Select**

**Set Printer** - to indicate the appropriate slot for the printer. [Note: If you are using an Apple IIc or an Apple IIGS without a printer card, choose from slot 1 or 2 only.]

**Teacher Options**

---

**Which slot is your printer in?**

**1** 2 3 4 5 6 7

**ARROWS To Move**                      **RETURN To Select**

**Main Menu** - to return to the Main Menu.

Teacher Options settings are stored on the Mystery Disk so that a lab pack may be customized for different students.

## SOLVE IT!

### CLASSROOM USE

**Solve It!** complements a school curriculum in so many different ways that it might best be described as an interdisciplinary educational tool. The program was designed to provide students with a fun and challenging way to:

- learn about the function and value of databases;
- strengthen problem-solving skills, particularly in the areas of exercising logical thinking and organizing information; and
- enhance language arts skills.

The classroom lessons in this guide focus on these three goals.

#### Classroom Suggestions

**Lesson #1 - An Introduction to Databases** (pages 26-28) begins by giving students an understanding of what a database is. Students then create a database on paper and search for information manually in order to gain an appreciation for the capabilities of computer databases.

**Lesson #2 - Exercising Logical Thinking** (pages 29-35) challenges students to apply negation logic to solve a variety of problems. Some problems require students to use their research skills as well.

**Lesson #3 - Investigating a Sample Mystery** (pages 36-40) builds upon the students' experiences in the previous two lessons by having them apply their understanding of databases and negation logic to solve a simple paper-and-pencil mystery. They will discuss their own personal methods of organizing information drawn from the clues, and then explore the use of a solution matrix as an organizing tool.

**Lesson #4 - Investigating a Solve It! Mystery** (pages 41-44) has students (as a class) investigate *The Black River Caves* mystery at the Senior Detective level, using a large screen monitor. Teachers may wish to present this lesson before students try to solve any mysteries at the computer or before they try to solve mysteries at the higher levels.

**Other Classroom Ideas** (page 45) offers additional ideas for classroom activities.



## Supplementary Materials

The **Vocabulary List** (page 46) contains words which may be new to students in each of the mysteries. The list may be reproduced for students and discussed before students begin to investigate a particular mystery. Once students get involved in a mystery, it may be difficult for them to stop and look for the definition of a word they don't understand. Students will find, however, that some of the vocabulary words are defined in the body of the clue and the meaning of other words may be inferred from the context of the clue.

The text of the **Case Histories** (pages 47-52) for all of the mysteries is available so teachers may read it and select the mystery or mysteries they would like to use with their students. Subject matter, length and complexity of the background information, and/or the number of suspects involved are some criteria teachers may use in selecting the appropriate mystery (or mysteries) for their students.

Blank **Solution Matrices** (pages 53-56) are included for each mystery level. Students will need to complete some of the headings for their grids as well as fill in the information which they retrieve from their clues. [Note: When using the Super Sleuth Solution Matrix, teachers will want to provide students with a few copies of page 1.] These matrices may be particularly helpful to students who are having difficulty organizing their notes or moving up to a more difficult level. Many students, however, may not need this assistance and all students should be encouraged to problem solve with as much independence as possible.

Although students are given the option of printing their evaluation from the Chief Detective after they have correctly solved a mystery, they may not have access to a printer. Consequently, blank **Evaluation Sheets** (pages 57-58) are included so that students may fill in the information which appears on the screen of their computer. (Teachers may want to check that students have accurately transferred the information before it disappears from the computer screen.)

Teachers may offer **Certificates of Achievement** (pages 59-61) to students to encourage them and recognize their achievements. A unique certificate is available for each level of difficulty.

## Lesson #1 - An Introduction to Databases

- Objectives:**
- To understand what a database is.
  - To understand what a database search is.
  - To appreciate the capabilities of a computer database.

**Materials Needed:** copies of Activity Sheet #1--cut apart (page 28)

**Procedure:**

1. Explore with the class the meaning of *database*.
  - What is *data*? INFORMATION
  - What is a *database*? A COLLECTION OF INFORMATION
  - What are some examples of databases that we commonly use?  
TELEPHONE DIRECTORY, CARD CATALOG, ENCYCLOPEDIA
2. Construct a class database.
  - Distribute a blank form cut apart from Activity Sheet #1 to each student. After students have filled out their forms, collect them to form a class set.
  - Photocopy enough copies of the forms so that every student will have a class set. [**Note:** Depending on the size of your class and the availability of a photocopy machine, you may choose to have students fill out several copies of the form. Using these copies, you can assemble several class sets which students can share to do the activities below.]
3. Ask students to answer the following questions by searching for information in the class database.
  - How many people in the class have a birthday in June?
  - How many people have a cat as a pet?
  - How many people have a cat as a pet *and* at least one brother?
  - How many people have a cat as a pet, at least one brother, and at least one sister?

4. Have students discuss their experience searching for information in their database.

- What difficulties did they encounter?
- Can they suggest ways in which they could have improved their efficiency?
- How would students react to doing this activity with a database such as the school library's card catalog (a database composed of many more entries, each containing numerous fields of information)?

**OPTIONAL:**

5. If you have another database program, demonstrate the speed with which a computer can search for information in a database. The teacher, an aide, or the students themselves will enter the information into the computer and then perform some of the same searches on the computer that the students have already performed manually.

## Activity Sheet #1

---

Name \_\_\_\_\_

Date of Birth \_\_\_\_\_

Pets \_\_\_\_\_

Number of Brothers \_\_\_\_\_

Number of Sisters \_\_\_\_\_

---

Name \_\_\_\_\_

Date of Birth \_\_\_\_\_

Pets \_\_\_\_\_

Number of Brothers \_\_\_\_\_

Number of Sisters \_\_\_\_\_

---

Name \_\_\_\_\_

Date of Birth \_\_\_\_\_

Pets \_\_\_\_\_

Number of Brothers \_\_\_\_\_

Number of Sisters \_\_\_\_\_

## Lesson #2 - Exercising Logical Thinking

- Objectives:**
- To practice using negation logic.
  - To practice research skills (grades 8-12).

**Materials Needed:** Activity Sheet #2 for grades 4-7 (pages 30-32), Activity Sheet #3 for grades 8-12 (pages 33-35)

**Procedure:**

1. Define negation logic. Use specific example problems to help students understand the term. For instance:

Begin with the set of all students in the classroom. Ask students to identify all students who are *not blond*. Add other criteria such as *not tall*, *not female*, or *not sitting near the window*,...until only one student remains.

2. Design a similar problem in which the students must provide the conditional statements. For example:

Beginning with the set of all students in the classroom standing, ask certain students, based on your own predetermined rules, to sit down. Ask the class to provide a conditional statement which would produce such a result. [Note: There may be more than one correct conditional statement.] Again, continue the activity until one student remains.

### FOR GRADES 4-7

3. Pass out Activity Sheet #2 and instruct students to apply the same type of logical thinking.
4. Discuss the results. [Note: There may be more than one correct answer to problems in Part B.]

### FOR GRADES 8-12

3. Pass out Activity Sheet #3. Explain to students that some problems will require research. (You may want to assign these problems for homework, or you may want to simplify the task by providing the appropriate resources or actually extracting the necessary information for the students.)
4. Discuss strategies used to solve the houses/couples problem. In particular, how did students organize their information?
5. Discuss strategies used to solve the research problems (Part B and C). What resources did students use?

Name \_\_\_\_\_

Date \_\_\_\_\_

**Activity Sheet #2**  
(page 1 of 3)

**A. Using negation logic, fill in the blanks.**

1. old, cat, swim, run, book, umbrella, imagine, bubble

- a. not more than one syllable \_\_\_\_\_
- b. not a verb \_\_\_\_\_
- c. not a noun \_\_\_\_\_

2. Pacific, Europe, Italy, Australia, Atlantic, Minnesota, South America

- a. not an ocean \_\_\_\_\_
- b. not a continent \_\_\_\_\_
- c. not a country \_\_\_\_\_

**B. Using negation logic, fill in the negation rule which will produce the answer at the end of each blank.**

1. 1, 8, 72, 5, 20, 40

- a. \_\_\_\_\_ 1, 8, 5, 20, 40
- b. \_\_\_\_\_ 8, 20, 40
- c. \_\_\_\_\_ 20

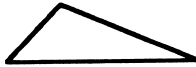
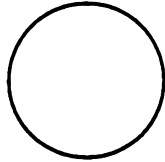
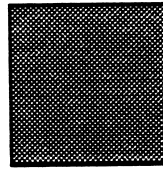
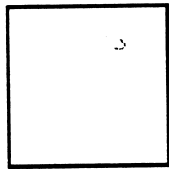
Name \_\_\_\_\_

Date \_\_\_\_\_

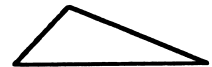
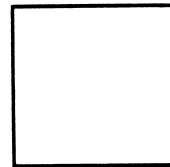
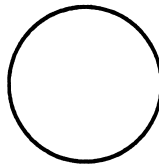
**Activity Sheet #2**  
(page 2 of 3)

**B. (continued)**

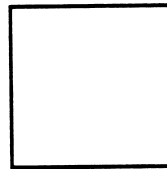
2.



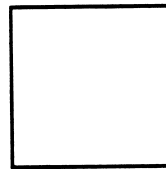
a. \_\_\_\_\_



b. \_\_\_\_\_



c. \_\_\_\_\_

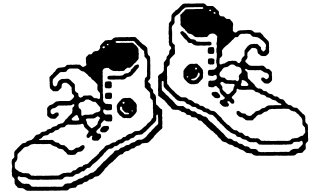
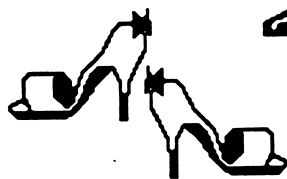


Name \_\_\_\_\_

Date \_\_\_\_\_

**Activity Sheet #2**  
(page 3 of 3)

**C. Which pair of shoes am I wearing? Circle your answer.**



**HINTS:**

1. They're not small.
2. They're not high-heeled.
3. They're not sneakers.
4. They're worn mainly in hot weather.



Name \_\_\_\_\_

Date \_\_\_\_\_

**Activity Sheet #3**  
(page 1 of 3)

A. Using the attached sheet and the hints below, solve the following problem:

A married couple lives in each house. Figure out which people live in each house.

**HINTS:**

1. No one is married to a person whose name begins with the same letter.
2. No one whose name begins with "P" lives in the Town House.
3. Robert lives in the Ranch.
4. Cathy is married to Paul.
5. Rachel lives in the Cape.

**ANSWERS:**

\_\_\_\_\_ and \_\_\_\_\_ live in the Cape Cod.

\_\_\_\_\_ and \_\_\_\_\_ live in the Town House.

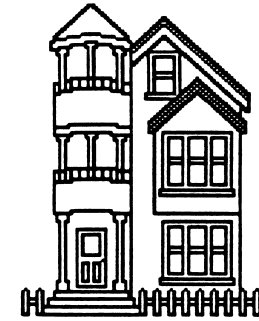
\_\_\_\_\_ and \_\_\_\_\_ live in the Ranch.

\_\_\_\_\_ and \_\_\_\_\_ live in the Split Level.

Activity Sheet #3  
(page.2 of 3)



Cape Cod



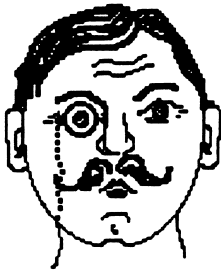
Town House



Ranch



Split Level



Charles



Patty



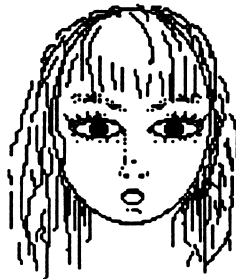
Cathy



Robert



Bill



Bonnie



Paul



Rachel

Name \_\_\_\_\_

Date \_\_\_\_\_

**Activity Sheet #3**  
(page 3 of 3)

B. The Wilson family is planning to move from Anchorage, Alaska, to another city. They have narrowed down their choices to the following 8 cities:

Grand Rapids, Michigan  
Albuquerque, New Mexico  
Baltimore, Maryland  
Memphis, Tennessee  
Seattle, Washington  
San Diego, California  
Phoenix, Arizona  
Jacksonville, Florida

The members of the family agree that their future home must satisfy the following criteria. Using reference materials, find out which city the family chose. Circle the answer in the list of cities above.

1. The city must have a population over 500,000.
2. Winter temperatures must be mild (averaging over 50 degrees Fahrenheit).
3. The city must be near an ocean.
4. The city must be near mountains.

C. Here is a list of 6 African countries:

Zaire  
Ghana  
Libya  
Nigeria  
Mali  
Botswana

Which country meets the following criteria? Use reference materials to help you. Circle your answer.

1. It gained independence after 1959.
2. It has a major river running through it.
3. It has no desert region.
4. It has a military government.

## Lesson #3 - Investigating a Sample Mystery

- Objectives:**
- To understand how databases work.
  - To exercise logical thinking.
  - To discriminate between important and unimportant clues.

**Materials Needed:** 1 copy of all clues--cut apart (page 39), a transparency of the Case History (page 38), a transparency as well as copies of the Secret Admirer Solution Matrix (page 40)

### Procedure:

1. Project the transparency of the Case History. After students have read it, ask them what persons, places, and/or things they want to investigate further. (For example, they might want to investigate *secret admirer*.)
2. Once the class has discussed the various suggestions and agreed on a set of keywords, begin to search for clues which contain each keyword.
3. Distribute the clues so that no student has more than one clue (some students may not have a clue at all). After you announce a keyword, request that students who have a clue containing that keyword stand up or raise their hands.
4. After you have verified that all clues containing the keyword have been correctly identified, ask the students (one at a time) to read their clues. Students should analyze the content of each of the clues and take careful notes throughout this activity.\* Some questions to ask include:
  - Is the clue important? (Does it reveal any information which helps us to solve the case?)
    - If so, what conclusion can you draw from the clue?
    - If not, why?

[\***Note:** Depending on time constraints, your students' skills, and other considerations, you may want to distribute copies of the Secret Admirer Solution Matrix to students at this time, instead of waiting until step 7.]

5. Continue searching for and then analyzing clues until a student believes there is enough information to solve the case.
6. Once a correct solution has been reached, ask different students to share their note-taking methods, focusing on *what* they wrote down and *how* they organized their information. Discuss how some methods are more effective than others.

7. Project a transparency of the Secret Admirer Solution Matrix. Along the side of the matrix, suspects are listed: Fred, Carl, and Phillip. Across the top, types of clues are listed: important, unimportant, or undecided.

Have students reread each clue aloud. Classify the clue into one of the three types. If the clue is important, decide whether the clue eliminates a suspect as the secret admirer or as the best friend. For example, given Clue #1 (*Looking over the notes Emily has received from her secret admirer, you notice that the handwriting is always cursive. Fred only prints.*) students would first determine that the clue was important and then draw the conclusion that Fred is not the secret admirer. Transfer this information into the Solution Matrix as follows:

SUSPECTS	IMPORTANT CLUES		UNIMPORTANT CLUES	UNDECIDED
	Not Secret Admirer	Not Best Friend		
Fred	#1			
Carl				
Phillip				

Filling in the clue number allows students to refer back to the clue at a later time; otherwise, an "X" will suffice.

8. Discuss how to arrive at a solution using the matrix. For example, after all the clues have been filled in, the Matrix would appear as follows:

SUSPECTS	IMPORTANT CLUES		UNIMPORTANT CLUES	UNDECIDED
	Not Secret Admirer	Not Best Friend		
Fred	#1		#2	
Carl			#3	
Phillip	#5	#6	#4	

Explain that since neither Fred nor Phillip is the secret admirer, Carl must be the secret admirer. Furthermore, since Carl is not friendly with Phillip at all (based on clue #6), only Fred can be his best friend.

## **Secret Admirer Case History**

Emily has been receiving mysterious notes and telephone calls from a secret admirer for the past few weeks. She thought this was flattering and exciting at first, but now her friends are beginning to tease her. They are spreading rumors that there is no secret admirer at all--Emily is making it all up!

Now Emily has decided she must get to the bottom of all of this. The situation is getting a bit complicated, though. Apparently, the secret admirer has recruited his best friend to help keep his cover. Emily has managed to narrow her suspects down to Fred, Carl, and Phillip. Can you help her identify the secret admirer and his best friend?

## Secret Admirer Clues

---

### Clue #1

Looking over the notes Emily has received from her secret admirer, you notice that the handwriting is always cursive. Fred only prints.

---

### Clue #2

Fred and Paul used to be best friends, but now that Fred has become more involved in extracurricular activities at school, he has very little free time to spend with Paul.

---

### Clue #3

Carl always seems to be dating someone. However, he claims he hasn't been dating anyone lately.

---

### Clue #4

Phillip once had a secret admirer too, but he never found out who it was.

---

### Clue #5

An excerpt from one of the notes reads: "I was in your class last year, but I was too shy to talk to you." Emily mentioned that Phillip just moved to the neighborhood a few months ago.

---

### Clue #6

Carl and Phillip are top students in the school and are extremely competitive with one another. They never socialize together.

## SECRET ADMIRER SOLUTION MATRIX

SUSPECTS	IMPORTANT CLUES		UNIMPORTANT CLUES	UNDECIDED
	Not Secret Admirer	Not Best Friend		
<b>Fred</b>				
<b>Carl</b>				
<b>Phillip</b>				



## Lesson #4 - Investigating a Solve It! Mystery

- Objectives:**
- To become familiar (or *more* familiar) with the **Solve It!** program.
  - To discriminate between important, unimportant, and unrelated clues.

**Materials Needed:** **Solve It!** disks, computer with large screen monitor

**Procedure:**

1. Be sure that unrelated clues and the review option are selected in the Teacher Options before you begin this activity with your students.
2. After you have inserted the Program Disk, a message will appear, instructing you to insert the Mysteries Disk into the disk drive. Insert the Mysteries Disk and select the *Senior Detective* level of *The Black River Caves* mystery.
3. Have different students read each screen of the Case History aloud. Read the class' Assignment together and ask students what persons, places, and/or things they want to investigate further. [Teachers may want to point out to students that a list of suggested keywords is provided at the *Rookie* level only. Furthermore, unrelated clues--clues from a different mystery--may be retrieved at the *Senior Detective* and *Super Sleuth* levels if students do not choose their keywords carefully.]
4. Once the class has discussed the various suggestions and agreed on a set of keywords, write the keywords on the blackboard.
5. Select *Search Database* on the computer.
6. Enter the first keyword. Analyze the content of each of the clues together and encourage students to take careful notes throughout this activity. Discuss the value of noting clue numbers: to make it easier to find clues in the notebook, to discuss clues with classmates, and to spot repeated clues when searching for different keywords. (Students may want to construct a matrix similar to the one in the previous lesson, or they may select another method of note-taking.) Ask students questions such as:
  - Is the clue **important, unimportant, or unrelated?**

- If **important**, what conclusion can students draw?

Point out that while students may be investigating one suspect, they may find important information concerning another suspect. For example, in searching for information about Black Hollow, students may retrieve the following clue:

*According to Drew's notes, the branch where the gems are hidden is completely dark. Only 3 of the 4 branches are completely dark - Black Hollow, Deathtrap, and Titan.*

This clue tells us important information about Devil's Den, the 4th branch: it cannot be the branch with the hiding place.

- If **unimportant**, why?
- If **unrelated**, ask students why they may be retrieving clues that have nothing to do with the current mystery. (The keyword was not chosen carefully enough. Discuss the choice of keyword.)

6. As you continue to search for clues containing other keywords:

- demonstrate the *Hint* option. An ideal time is when students draw different conclusions from a particular clue.
- demonstrate the *Notes* option. Do this when students have questions about a particular clue they remember seeing.

[Note: Students may suggest using a keyword such as "the" or "e." This strategy will enable students to retrieve all the clues they will need to solve the mystery; however, they will also retrieve an assortment of unimportant and unrelated clues. Furthermore, students may suggest using part of a keyword (such as "death" instead of "Deathtrap"). In some cases, using the shortened keyword will retrieve the same clues; in other cases, this strategy may retrieve clues from another mystery.]

7. Once students feel that they have solved the case, select *Solve Mystery* on the computer screen. Enter both parts of the solution.

- If the solution is incorrect, teachers can select *Notes* to review the clues the class has retrieved and thereby check to see which part or parts of the class' solution is/are incorrect.

- If the solution is correct, students will be asked if they wish to review the clues they have retrieved in order to classify them as important, unimportant, or unrelated. Select *Yes* so that students will understand how this portion of the program works.
8. After students have finished classifying the clues, the Chief Detective's Evaluation will appear. Teachers may choose to have students print the Evaluation or fill in the blank **Evaluation Sheets** included in the Teacher's Guide (pages 57-58).
9. Discuss the information provided in each screen.
- While viewing the first screen, ask the class how effectively they searched for clues. (Did they retrieve any unrelated clues?) Did they use any help (*hints*)? Did they review their clues carefully enough before trying to solve the case? (Did they have any incorrect solutions?) Press RETURN to view the next portion of the evaluation.
  - Some students may need help understanding the information provided in the second screen. Explain the format carefully. (Teachers should read the chart line by line. In the first line, students will see how accurately they classified the important clues. Referring to the example below, point out that students correctly classified 4 important clues, and incorrectly classified 1 important clue--they incorrectly classified it as unimportant. In the second line, students will see that they correctly identified 2 clues as unimportant and incorrectly identified 2 unimportant clues--one as important and the other as unrelated. And in the third line, students will see that they did not retrieve any unrelated clues.

<b>Chief Detective's Evaluation</b>			
<b>REVIEW OF CLUES</b>			
	<b>You chose:</b>		
	<b>IMPORTANT</b>	<b>UNIMPORTANT</b>	<b>UNRELATED</b>
<b>The clue was:</b>			
<b>IMPORTANT</b>	<b>(4)</b>	<b>1</b>	<b>0</b>
<b>UNIMPORTANT</b>	<b>1</b>	<b>(2)</b>	<b>1</b>
<b>UNRELATED</b>	<b>0</b>	<b>0</b>	<b>(0)</b>
<b>You have correctly identified 6 out of 9 clues, a total of 67% right.</b>			
<b>Press RETURN to continue evaluation.</b>			

Now ask the class how accurately they classified the clues in their notebook. Press RETURN to view the last portion of the evaluation.

- In this last screen, the Chief Detective provides a final evaluation of the class' handling of the mystery. The summary is based on the information contained in the two preceding portions of the evaluation. Read the summary together and ask students to discuss its accuracy. Press RETURN to proceed.
10. The final screen allows students to review their evaluation (all three parts), print their evaluation, or return to the Main Menu.

## Other Classroom Ideas

1. Have students create their own mysteries! Specify the number of suspects and the number of important, unimportant, and unrelated clues which they must include. Working independently or cooperatively, students must then produce a case history, an assignment, and a set of clues which will enable a detective to solve the case.
2. Have students read a mystery for their next reading assignment.
3. Prepare students for the new vocabulary words they will encounter. Begin with words such as *accomplice* and *sleuth*, which are common to mysteries in general. Then move on to words which relate to specific mysteries. The **Vocabulary List** (page 46) includes words which may be new to students in each mystery.

## Vocabulary List

### THE HAUNTED HOUSE

informant  
accomplice  
bulbous  
rafters  
alibi  
alias  
suspect

### THE BLACK RIVER CAVES

infested  
stalactites  
stalagmites  
spelunkers  
bacteria  
sump hole  
crevice  
informant

### THE EL DIABLO TREASURE

galleons  
cargo  
barren  
whirlpools  
riptides  
currents  
tentacles  
lagoon  
coral reefs  
turquoise  
salvage

### RESCUE FROM AN ICY PEAK

topographical map  
fissures  
boughs  
archeologists  
artifacts  
stranded

### THE ANIMALS ARE LOOSE!

ferocious  
stalk (v.)  
banner  
veterinarian  
marine  
charity  
budget  
habitat  
species

### RACE TO SPY CASTLE

infiltrate  
intercepted  
catapult  
medieval  
portcullis  
sniper  
moat  
coat of arms  
tapestries  
dungeon  
minstrels  
barbican

## SOLVE IT!

### CASE HISTORIES

[Note: Suspects are italicized in the following case histories to indicate that the names may vary each time the mystery is selected.]

#### The Haunted House

It's a spooky old house, all alone atop a barren hill on the edge of Centerville. Mr. Cranshaw lives there by himself. He claims he hears strange noises and says that things are never where he puts them. Cranshaw is scared. He thinks the house is haunted and wants to sell it - at any price.

No one has been paying much attention to Cranshaw's complaints. "He's just a crazy old man," they said. Then Rhonda, his niece and only living relative, stopped by. Rhonda was sure something was wrong, so she hired Solve It to investigate. Detectives soon uncovered an old letter that told of jewels buried in Cranshaw's basement. Now it all makes sense! There is no ghost, but somebody wants Cranshaw to believe there is.

With the help of Big Mouth, a reliable informant, detectives discovered that four men - *Healy, Brady, Barber, and Williams* - know about the jewels. One of these men is the so-called "ghost"; he's trying to scare Cranshaw out of his house. Another is the accomplice; he's helping the ghost plan his tricks.

Solve It detectives recovered two more important pieces of evidence. Detective Schebell found an appointment book which the so-called "ghost" dropped in Cranshaw's attic. Another detective turned in a pair of glasses which fell off the accomplice's head as he escaped one night. Now the agency has enough information to solve the mystery - if only someone can piece it all together!

## The Black River Caves

Six months ago, the priceless Abergris Gems were stolen from the Royal Museum. Members of the infamous Black Leopard Gang were arrested and convicted, but the gems were never recovered. Now the Solve It Detective Agency has been brought in to find the jewels. Detectives have collected dozens of clues and feel they are close to a solution. A reliable informant, known as the Fox, told detectives of a mysterious series of caves - the perfect hiding place.

Supposedly, one enters the caves through a crevice in a dried-up river bed. From the main cavern, four tunnels angle off in different directions. The branches have code names - *Titan*, *Black Hollow*, *Devil's Den*, and *Deathtrap*. One branch is the hiding place for the gems. Another ends in a dangerous sump hole that sucks everything into an underground river.

Just last week, the Fox finally revealed the location of the caves. Solve It detectives rushed to the site and started investigating. They discovered that construction of a new super highway may soon destroy the caves. It is now too dangerous to explore all four branches. The location of the gems must be found immediately!

The agency has enough information to solve the mystery - if only someone can piece together all the clues. The best evidence is a map made by A. N. Drew, the gang's leader, which Detective Schmengler found outside the entrance to the caves. Now it's up to you to locate the hiding place - before it's too late!



## The El Diablo Treasure

There is treasure beneath the turquoise waters of the Caribbean. The natives tell of Spanish galleons sunk hundreds of years ago. Their cargoes of gold and jewels still lie at the bottom of the sea.

Cayman and Company, a world famous salvage crew, has been searching for the exact location of the El Diablo, one of these Spanish wrecks.

The big breakthrough came when Solve It detectives uncovered an old ship's log written by Sea Hawk, one of the pirates who sailed the El Diablo. Sea Hawk loved the sea. He wrote about his travels and sketched pictures of the underwater creatures. When the El Diablo sank, Sea Hawk was the only survivor. His log, along with his drawings, will help detectives locate the El Diablo.

We know the El Diablo sank near one of five islands - *St. Lukes, Malaba, Sugar Key, Lobster Pot, or Hammerhead*. One of these islands is the treasure island; the El Diablo lies just off its shore. Another one was the pirates' hideaway. Where is the treasure? Which island was the pirates' hideaway? It's up to you to find out.

But, suddenly, time is precious! Someone on the salvage crew sold the information to another group that hopes to beat Cayman and Company to the El Diablo. Now Solve It detectives must act fast, or Cayman and Company will lose their chance to recover thousands of dollars in gold and jewels.

## Rescue from an Icy Peak

There was a sudden, unexpected storm. Within hours the mountains were blanketed in more than a foot of snow. Now weathermen are predicting another two feet by nightfall.

Somewhere in the snow-covered mountains, three teenagers, Michelle, Carey, and Joe, huddle against the cold. Their weekend outing has become a nightmare, a fierce struggle for survival. It is almost impossible to see in the blinding snow, to find the trails, or to stay warm in the sixty-m.p.h. winds. Unless an experienced rescue party arrives soon, their fate will be a frozen death.

When the campers' parents alerted the State Police, a search party was formed. But no one knew exactly where to look. With no time to waste, the police called in the famous Solve It Detective Agency to help narrow the search. Solve It detectives questioned friends and family. They discovered that the hikers are on one of four peaks - *Thunder, Crystal, Pinnacle, or Magic.*

The hikers spent last night at the campsite on one of these mountains. Another peak is their main climb; it is the mountain where they are stranded. On which peak is the campsite? Which is the main climb? It's up to you to piece together the clues and send the rescue party off in the right direction. But hurry - before a blanket of snow and darkness spells their doom!

## **The Animals are Loose!**

"He's crazy!" the zookeeper cried. "He's a loony bird."

"You're right, he is crazy. But he's still dangerous," Detective Tower replied.

Brett, the outraged zookeeper, just couldn't understand why anyone would want to free all the animals in the zoo. What good would it do? The animals wouldn't survive, and the people in the area would be in danger.

Crazy or not, that's what a man who calls himself Noah threatened to do. In more than a dozen letters to major newspapers and zoos around the country, he informed them of his plans. Noah claims he is a friend of the animal kingdom. It is cruel, he said, to take animals from their homes and keep them in cages. Noah said that he would be their savior, like the Biblical Noah, leading them to safety.

Noah, or the Loony Bird as the zookeepers called him, never revealed his real name or address. The letters were mailed from all over the country, and the handwriting was always different. In them, Noah described the first and second zoos he would strike. He never revealed names, but he gave a lot of clues. "Catch me if you can," he challenged. And that's just what the authorities planned to do!

The National Zookeepers Association called in the Solve It Detective Agency. There are hundreds of zoos in the country, but detectives narrowed the search to only five - *Jungleland*, *Metro*, *Parkview*, *Central*, and *Wild World*. One of these zoos is Noah's first target, and another is his second. If we're going to stop Noah, we must first figure out where he'll strike. Track him to his first and second targets. It's up to you!

## The Race to Spy Castle

The Lynx is an experienced spy - one of the best. But the U.S. Central Intelligence Bureau (CIB) outsmarted her. She was caught red-handed smuggling top secret documents out of the Pentagon. She confessed and agreed to help the CIB break the spy ring.

The Lynx, also known as Jamie Bondito, is a tall, athletic woman with blond hair and deep-set black eyes. She worked, until now, for the government of Perfidia, a new island nation. She and several other enemy agents were collecting information on U.S. defense systems. Within the next 48 hours, a top secret meeting with other enemy spies is scheduled. The Lynx has agreed to help the U.S. infiltrate that meeting.

All was going well. The Lynx got information and instructions from her contact. The CIB intercepted other messages and decoded them. The secret meeting, they learned, was to be held in an old European Castle. Twenty-four hours before the meeting, the Lynx would get her final instructions. She would find out exactly where she should go. But the final instructions never came! Has the Lynx been found out? It's now too dangerous to send her in.

The CIB hasn't given up. With electronic "bugs," they'll hear everything that goes on at the meeting. But where is the meeting? There are hundreds of castles in Europe! The CIB called in the Solve It master detectives who quickly narrowed the search to four castles - *Beaumont*, *Glenwood*, *Hopewell*, and *Hyde*. One, they know, is the meeting place. Another is the command outpost. Which is which? It's up to you to figure it out.

# ROOKIE SOLUTION MATRIX

SUSPECTS	NOT -----	NOT -----	MEANING UNDECIDED

## SENIOR DETECTIVE SOLUTION MATRIX

SUSPECTS	IMPORTANT CLUES		UNIMPORTANT CLUES	UNRELATED CLUES	MEANING UNDECIDED
	Not	Not			



# SUPER SLEUTH SOLUTION MATRIX

(page 2 of 2)

SUSPECTS	IMPORTANT CLUES		UNIMPORTANT CLUES	UNRELATED CLUES	UNDECIDED
	Not	Not			



# SOLVE IT!

## Review of Clues



Detective \_\_\_\_\_



Mystery: \_\_\_\_\_



Level: \_\_\_\_\_



Number of IMPORTANT clues retrieved: \_\_\_\_\_



Number of UNIMPORTANT clues retrieved: \_\_\_\_\_



Number of UNRELATED clues retrieved: \_\_\_\_\_

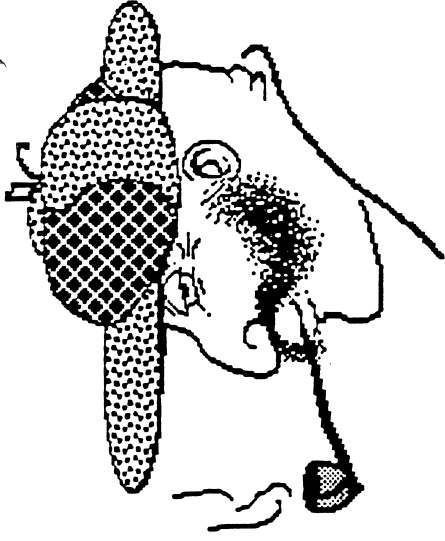
Number of hints needed: \_\_\_\_\_

Number of incorrect solutions: \_\_\_\_\_



# SOLVE IT!

## Review of Clues



	YOU CHOSE:		
	IMPORTANT	UNIMPORTANT	UNRELATED
<b>THE CLUE WAS:</b>			
<b>IMPORTANT</b>	<input type="checkbox"/> 124 <input type="checkbox"/> 123 <input type="checkbox"/> 122	<input type="checkbox"/> 120 <input type="checkbox"/> 119	<input type="checkbox"/> 116
<b>UNIMPORTANT</b>	<input type="checkbox"/> 121	<input type="checkbox"/> 117	<input type="checkbox"/> 118
<b>UNRELATED</b>			

You have correctly identified \_\_\_\_\_ out of \_\_\_\_\_ clues, a total of \_\_\_\_\_ % right.

# Solve It Detective Agency

This is to certify  
that \_\_\_\_\_  
has achieved the  
rank of ROOKIE!

**CASE  
CLOSED**

Teacher \_\_\_\_\_

Date \_\_\_\_\_

# Solve It Detective Agency

This is to certify that \_\_\_\_\_  
has achieved the rank  
of Senior Detective!

**CASE  
CLOSED**

Teacher \_\_\_\_\_

Date \_\_\_\_\_

# Solve It Detective Agency

This is to certify  
that \_\_\_\_\_  
has achieved the  
rank of SUPER SLEUTH!

**CASE  
CLOSED**

Teacher \_\_\_\_\_ Teach

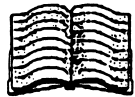
Date \_\_\_\_\_

# Solve It

*Language Arts: Reading/Database*

## Overview

Students read detective stories and use a database to search for clues to solve the mystery.



**READING LEVEL**

4

**GRADE LEVEL**



**TIME REQUIRED**

10-25 minutes

## Curriculum

### PREREQUISITE SKILLS

- Fourth grade reading ability

### OBJECTIVES

- Create a motivating reading environment
- Help students learn to discriminate between important and unimportant information
- Teach logical thinking skills
- Teach students how to make connections between different pieces of information
- Introduce database concepts in a fun and simple format

### PROBLEM SOLVING SKILLS

- Scanning for hints and clues
- Eliminating possibilities
- Examining assumptions
- Gathering information
- Making organized lists

## Courseware

### NOTEWORTHY FEATURES

- Students can solve the mystery alone, or in a small group, or as a class
- Students can receive hints that either explain clues or suggest key words to search on the database
- Clues are saved in a "notebook" which players can review at any time
- Solutions to the mysteries change with every game
- Three levels of difficulty: More complex reading and problem solving skills are introduced at higher levels

### TEACHER OPTIONS

- Sound control
- Teacher may choose the level of play

## Hardware

- Apple



# Solve It

## DESCRIPTION

As members of the Solve It Detective Agency, players are presented with the case history of an unsolved crime. Using a database to search for clues, students learn different facts about the case which they must piece together to solve the mystery. The program has three levels:

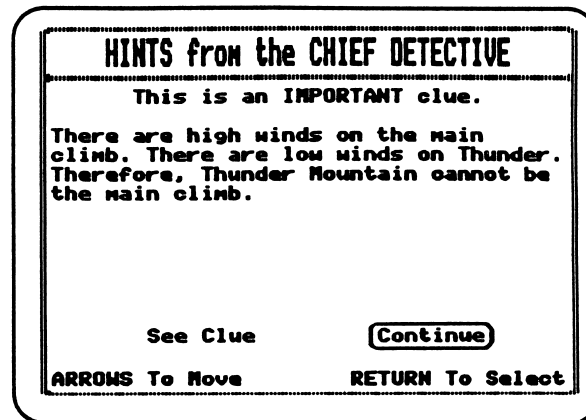
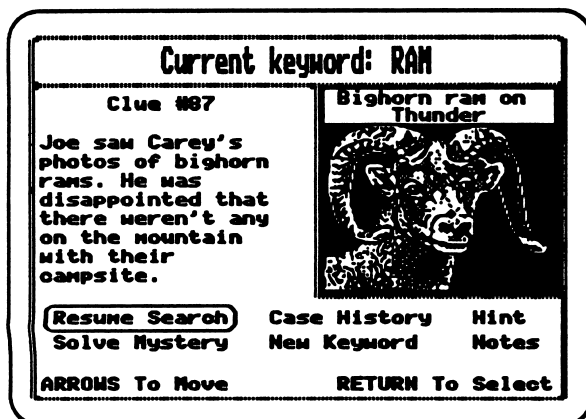
**Rookie** - Provides key words for students to use to search the databases. All the information they receive will be important to the solution of the case.

**Senior Detective** - Requires students to come up with their own key words for their database searches. Students are given both important and unimportant information and must decide which clues they will use.

**Super Sleuth** - Clues are linked to one another. The meaning of a clue is not apparent until one finds another clue with related information.

## GETTING STARTED

Bring a story in from a newspaper or magazine about a police investigation and make enough copies so that everyone in the class can read together. Have the students circle with red pencil words in the story that they think are important to solving the crime — leads they think the police should follow. Then list some of their suggestions on the blackboard under the heading of Key Words. Allow students to disagree about the words. Let students explain why.



## AT THE COMPUTER

**Step 1:** Demonstrate the program to the class. Use the Rookie (easiest) level. Have students take notes and record why they think "who done it." What clues did they use to solve the puzzle? Note: All clues are important in this level.

**Step 2:** Pair students into teams. Allow time for them to use the Rookie level to familiarize themselves with the program.

**Step 3:** Instruct them to move on to level two, Senior Detective. In this level, students must decide which clues are important. Listen to students as they defend their thinking to their team partner.

## SUGGESTED EVALUATION

**Oral Evaluation:** Do one of the mysteries at level two or three as a class. Have students verbalize why they think a clue is important or unimportant. Encourage them to be as specific as they can in explaining their ideas. Allow for disagreement among students. Try to have different students discuss different clues.

**Written Evaluation:** Use one of the printed mysteries provided in the Teacher's Guide. Ask students to solve the mystery, explaining their solution including the reason why clues are important or unimportant.

## SPECIAL KEYS

- CTRL-E exits program at any time
- CTRL-S turns sound on or off
- CTRL-T accesses Teacher Change Options

## APPLE II+, IIe, IIc: WORKING WITH THE COMPUTER

1. Turn on the television or monitor.
2. Insert the diskette into the disk drive with the label facing up and on the right.
3. Close the door to the disk drive.
4. Turn on the computer. (The on-off switch is on the back left side of the computer.)
5. You will see a red light on the disk drive turn on. If the disk drive light does not turn off in about 10 seconds, turn the Apple off and make sure your diskette is placed correctly in the disk drive.
6. The SUNBURST logo will appear on the screen, followed by the opening screen of the program.
7. Follow directions given in the program.
8. If you wish to stop during the program, hold down the CTRL (CONTROL) key and press E.

### Turning Off the System

1. Remove the diskette from the disk drive and return it to its place of storage.
2. Turn off the computer.
3. Turn off the television or monitor.



## Apple IGS: Control Panel Settings

To allow your Apple IGS to work properly with Sunburst software, certain Control Panel settings should be selected. The Apple IGS retains these settings even after the power is turned off.

### To Use the Control Panel:

- Turn on the Apple IGS and monitor.
- Enter the Control Panel main menu by holding down the CONTROL and OPTION keys, and then press RESET (the rectangular key located above the number keys). If your Apple IGS is in an Apple //e case, use the closed-apple (🍏) key instead of OPTION.
- Press the 1 key to enter the Control Panel.
- Use ↓ and ↑ to highlight the feature you want to change and press RETURN. Again use ↓ and ↑ to highlight a specific option and change it by using the ← and → keys.
- After you have finished making changes, select Quit to use the Apple IGS.

### To Change the Display:

- Highlight **Display** and press RETURN.
- Set **Type** to **Color**.
- Set **Columns** to **40**.
- Set **Text** to **White**.
- Set **Background** to **Black**.
- Set **Border** to **Black**.
- Press RETURN to save the changes and to go back to the Control Panel.

### To Change the System Speed:

- Highlight **System Speed** and press RETURN.
- Set **System Speed** to **Normal**.
- Press RETURN to go back to the Control Panel.

### To Change the Slots:

- Highlight **Slots** and press RETURN.
- Set **Slot 1** to **Printer Port**. If you are using a printer card, select the slot number your printer card is in.
- Set **Slot 6** to **Disk Port**, if you use a 5.25 - inch drive connected to the disk drive port.
- Set **Slot 6** to **Your Card**, if you use a 5.25 - inch drive connected to a controller card in Slot 6.
- Set **Startup Slot** to **Scan**.
- Press RETURN to go back to the Control Panel.

## "WHAT HAPPENS IF . . . ?" -- SUNBURST COURSEWARE AND WARRANTY

### **1. What happens if a program will not load or run?**

Call us on our toll-free number and we will send you a new diskette.

### **2. What if I find an error in the program?**

We have thoroughly tested the programs that SUNBURST carries so we hope this does not happen. But if you find an error, please note what you did before the error occurred. Also, if a message appears on the screen, please write the message down. Then fill out the evaluation form and call us with the information. We will correct the error and send you a new diskette.

### **3. What happens if the courseware is accidentally destroyed?**

SUNBURST has a lifetime guarantee on its courseware. Send us the product that was damaged and we will send you a new one.

### **4. How do I stop the program in the middle to go on to something new?**

A program can be ended at any time by holding the CONTROL (CTRL) key and pressing the E key.

### **5. Can I copy these diskettes?**

The material on these diskettes is copyrighted. You should not copy the courseware.

### **6. Can I take either diskette out of the computer after the program has loaded and put it into another computer?**

Only the Program Disk.