

# Exploring Caves Teaching Guide



Exploring Caves is an interdisciplinary set of materials on caves for grades K–3, covering geology, cartography, and hydrology. This packet contains a poster, an instructional book, and a list of multimedia resources on caves. The instructional book contains a read-aloud story, lessons, and student activity hand-out sheets.

## About This Instructional Unit

At first, teachers may find the study of caves to be somewhat intimidating. Caves entail at least five scientific disciplines: earth science, hydrology, mapping, biology, and anthropology. Each of these disciplines involves a unique content area as well as the development of particular intellectual skills. This unit aims at helping teachers to sort and organize the most important ideas in this rich scientific area. Detailed lesson plans serve as ways to pass these ideas on to very young students.

The unit capitalizes on the fact that caves are associated with many centuries of dramatic lore and adventure. The unit links cave adventure with scientific truth, and such important issues as safety and the environment. Hopefully, this combination of elements will provide students with an unforgettable learning experience — and teachers with a little well-earned enjoyment.

The cave-related material in the unit juxtaposes sets of ideas designed to stimulate thinking and new ways of looking at the world. Some of these combinations include:

- geology and water action
- light/darkness and biology
- light/darkness and anthropology
- environment and safety
- environment and legend.

Where these ideas intersect, students will develop interesting concepts, assisted by the materials provided here. For example, cave animals living out their lives in total darkness is a curious concept that one of the lessons helps to explain. Lessons sometimes focus on a seemingly bizarre or curious situation as a way of drawing attention to a scientific concept.

The lessons in this curriculum offer an interdisciplinary mix of skills development. Teachers are encouraged to use a variety of skill-development activities. The unit is designed to maximize the greatest diversity of student learning styles. Skill activities include:

- scientific observation
- research
- reading, vocabulary, and writing
- inference and deduction.

## Organization of the Unit

The core of this curriculum unit is an original five-chapter, read-aloud story that describes the adventure of two children who get lost in a cave and are led to safety by a talking bat. This fictional story is designed to introduce students to a wealth of information about caves. Each chapter has a coloring handout illustrating the action in the chapter, and a set of lesson plans designed to reinforce or expand upon the scientific and environmental elements in the chapter.

The poster provides an accurate and detailed illustration of a limestone cave and its animal inhabitants. At the top of the back of the poster, the pictures and text describe key events in the story. These illustrations are included in the packet as coloring handouts. The poster also serves as a teaching tool: other types of caves are depicted, and environmental and safety issues are addressed.

Each chapter is accompanied by the following types of materials:

- Follow-up activities
  - coloring handout
  - discussion questions
  - vocabulary
  - writing exercise
- Lesson plans
  - demonstrations
  - research/observation
  - reading

### **Suggestions for Using the Unit**

Each lesson has four information tags: difficulty level, science topic, discipline, and special skill. The lessons are designed so that you can do some or all, depending on available time or interest in a topic. Some are more suitable for older students and some for younger students. Most activities can be easily adapted to meet the needs of your age group.

The read-aloud story and follow-up activities make this unit useful for kindergarten and first grade teachers, despite the somewhat technical content. Teachers of very young students can use the story elements alone and add some of the art and music activities.

The images on the poster are sufficiently dramatic and varied to appeal to all age groups.

Using the information tags for the lessons, teachers can also organize the unit topically, focusing, for example, on science topic (geology), discipline (reading), or special skill (computer).

### **Information for Teachers**

The List of Multimedia Resources includes books, articles, World Wide Web sites, and organizations. Please refer to the resource list some weeks before you teach the unit. These resources contain background information you may find helpful when teaching the unit.

Additionally, you may wish to order brochures or supplementary teaching materials from “show caves,” or contact cave organizations (both are listed in the resource list). You would be wise to allow four to six weeks for delivery of such materials.