

Under One Rock:

Bugs, Slugs and Other Ughs

*Activities, Projects
and Tons of
Really Neat Ideas*



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Selected Citations:

- 2002 **Ecology and Nature Award** – *Skipping Stones Magazine*
- 2003 **Teacher’s Choice Award** – *Learning Magazine*
- “Here is a beautifully crafted book to introduce our youngest students to habitats.” – *Library Talk*
- “Fantastically detailed and realistic illustrations enrich the delightful cumulative verse of this book” – *Green Teacher*
- “[This book] could be considered one of the most perfect children’s books.” – *The Kaboose Network*
- “No child will be able to resist looking under a rock after reading Fredericks’ rhyming, engaging story.” – *Weekly Reader*

Summary:

In this creatively illustrated book, readers make some amazing discoveries about an ecosystem right in their own back yard. They’ll journey with a youngster as he lifts up a single rock to find an amazing collection of creatures that take up residence on and in the ground. Using a rhythmic verse, this book introduces youngsters to some delightful inhabitants of this community of critters (“This is the spider with her eight-eyed face/Who builds a home in this cool dark place.”).

Suggested Grade Levels: 1-4

Lesson Objectives:

Science Standards

- Content Standard A: Science as Inquiry
 - Abilities necessary to do science inquiry (K-4, 5-8)
 - Understandings about science inquiry (K-4, 5-8)
- Content Standard C: Life Science
 - The characteristics of organisms (K-4)
 - Organisms and environments (K-4)
 - Populations and ecosystems (5-8)
 - Diversity and adaptations of organisms (5-8)
- Content Standard F: Science in Personal and Social Perspectives
 - Characteristics and changes in populations (K-4)
- Content Standard G: History and Nature of Science
 - Science as a human endeavor (K-4, 5-8)

Critical Thinking Questions:

1. Which of the creatures was most amazing?
2. How did the illustrations help you learn about the animals in this book?
3. Which of the animals would you like to learn more about?
4. How are so many different animals able to live together in one place?
5. What other animals do you think could be found under a single rock?
6. If you could tell the author one thing, what would you like to say?

Comprehension Lesson (Concept Cards)

Setting the Stage:

Invite students to share what they know about insects and bugs. Where did they get their information? How accurate is their information? What uncertainties do they have about the topic?

Duplicate the **Concept Cards** (on the following sheet) on sheets of card stock (65 lb. paper). Cut the cards apart into 4-6 sets of 25 cards each. Place each set of cards inside a zip-loc sandwich bag.

Before Reading:

Divide the class into 4-6 small groups. Provide each group with a set of **Concept Cards**. Invite each group to arrange the cards into several categories. Inform students that there are no right or wrong answers for this activity. There is no predetermined number of categories nor is there a predetermined number of words within each category - those decisions are entirely up to each individual group. After sufficient time invite each group to describe their various categories and the words they placed within each category (there are often significant differences).

During Reading:

After students have arranged their cards into categories and shared the words within each category, invite them to read the book (silently or as part of a guided reading lesson). Encourage students to pay attention to the words they saw on the **Concept Cards**.

After Reading:

Invite students to return to their **Concept Cards** and rearrange them into categories according to information learned in the book. What new categories do they need to create? What words need to be shifted from one category to another? Are there any new words that could be added to a category? Plan time for students to discuss any alterations they made – specifically, the changes, additions, or modifications they made in their post-reading categories in comparison to their pre-reading categories. This is a great way to demonstrate the connections between pre- and post-reading knowledge.

insects	turtles	birds	lizards	creatures
village	earthworms	squiggly	soil	ground
ants	spider	beetle	crickets	millipede
slugs	critters	boy	lad	rock
crowd	neighbors	army	dirt	slime

Literature Extensions

Invite students to select one or more of the following:

1. Invite each student to choose an animal from the book to study. Students can pretend that they are writing a newspaper birth announcement for the birth of their animal. They will need to do some research to collect necessary information. Provide the birth announcement section of a daily newspaper for students to use as a reference for writing their article. Decorate a bulletin board to look like a section of a newspaper, and hang the animal birth announcements there. Students can include an illustration of each new "baby."
2. As a class, brainstorm about what the planet Earth would be like if there were no insects. For example, imagine no more mosquito bites or bee stings, no more honey, no more flowers, no more butterflies, and so on. Invite students to list the positive and negative "contributions" of insects on the chalkboard. They can also write and illustrate stories about the planet Earth with no insects.
3. Invite each student in the class to select one of the animals illustrated in the book. Encourage each child to conduct necessary library research on his or her identified species. Then, invite each student to write a series of diary entries told from the perspective of the creature, for example, "A Day in the Life of a Slug" or "My Life as an Ant."
4. Invite youngsters to keep a journal of the activities, habits, travels, and motions of a single animal. Kids may want to select a house pet or some other animal that can be observed quite regularly throughout the day. Provide youngsters with a "Field Journal" – a simple notebook wildlife biologists frequently use to track the activities of one or more wild animals over the course of an extended period of time.
5. Invite students to select a rock near the school. Encourage them to take periodic photographs of the rock throughout the year and maintain a diary or journal of the events or changes that take place around the rock. Who comes to visit the rock (animals)? What does the rock look like when it rains, snows or is sunny outside? Periodically, talk with students about any changes in the surrounding environment and how those changes may be similar to or different from some of the events in the story.
6. Talk with students about some of the 'Fantastic Facts' included in the back of this book. Which ones did they find to be most amazing? Why did the author include those facts?
7. Invite children to make a large chart (on an oversized piece of poster board, for example) listing the speeds at which selected animals (from the book or in your neighborhood) travel. The chart can rank order animals from the fastest to the slowest or vice versa. Be sure to encourage kids to add additional animals with which they are very familiar (i.e. dogs, cats, guinea pigs, etc.). How much faster is their pet than the slowest animal on the chart? What is the fastest animal found *Under One Rock*?
8. Invite students to keep a logbook of the numbers of selected bugs located in a specific area (a room in their house, a section of the classroom, a plot of land in the backyard). Encourage students to record numbers of bugs observed during a designated part of each day (from 3:30 to 4:00 P.M., for example) over a selected period of time (one

week, for example). Invite students to create a chart or graph that records those numbers for display in the classroom.

9. People live in a wide variety of houses or dwellings – so do animals. Invite youngsters to create a chart and investigate the wide variety of homes and dwellings used by animals. They may wish to use some of the following examples and add to the list through their library readings:

nest	burrow
cave	tunnel
branch	ledge

Invite students to discuss the similarities between human dwellings and animal homes. What are some of the things that determine where an animal lives? Are those conditions or features similar to the considerations of humans in selecting a living site? Invite youngsters to create a chart of animal homes and examples of the animals that might live in or on those spaces.

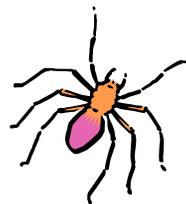
10. Invite students to each select one of the critters mentioned in the book. Invite each child to demonstrate the movement of that insect in a designated area. For example, for an earthworm, students can slither across the floor on their bellies; for a cricket, students can leap on their hands and knees. Provide opportunities for students to describe their movements and why they may be unique to each selected animal.
11. Encourage students to read other books in this series. These include the following:
- *In One Tidepool: Crabs, Snails and Salty Tails*
 - *Around One Cactus: Owls, Bats and Leaping Rats*
 - *Near One Cattail: Turtles, Logs and Leaping Frogs*
 - *On One Flower: Butterflies, Ticks and a Few More Icks*
12. Invite students to write a sequel to this book. What other creatures would the boy discover under other rocks?
13. Ask students to keep an “Animal Journal.” This can be a record of all the animals they see or read about during the week. This could include wild animals or other critters seen on TV. Hang individual posters for **Mammals, Fish, Birds, Reptiles** and **Amphibians**. Students can add their “sightings” to the posters daily.
14. Invite youngsters to create “Wanted” posters for some of the animals in the book. What information should be included on each poster? What are some of the “vital statistics” that students would want to share with others via their posters? If possible, obtain one or more “Wanted” posters from your local post office and use them as models for your students’ posters.
15. Provide students with an assortment of magazines that contain pictures of insects and spiders. Encourage students to bring in old magazines from home, too. Invite students to make a class collage by pasting pictures of different invertebrates on an *Insects & Spiders* poster.
16. Invite students to imagine that they are each one of the creatures in the story. Encourage them to create a poster that says “Save Our Home.” They can include drawings of each of the selected creatures and write convincing ads for saving the ecosystem represented by the rock.

Word Wise

There were seven primary animals featured in the book *Under One Rock*. Each of the animals was described using specific adjectives. For each of the animals in the column on the left side of this chart you will note two specific adjectives. After conducting some additional research (library, Internet, classroom encyclopedia, etc.), you are invited to add two more adjectives that could be used to describe each creature.

Afterwards, insert five more animals in the blank spaces in the left-hand column. For each animal that you include locate four specific adjectives that could be used to describe each creature.

ANIMAL	ADJECTIVE	ADJECTIVE	ADJECTIVE	ADJECTIVE
Earthworms	squiggly	round		
Ants	tiny	diggers		
Spider	8-eyed	busy		
Beetle	shiny	black		
Field Crickets	singers	leapers		
Millipede	many feet	sensitive		
Slugs	slimy	creepers		



Wonder Worms

Worms are some of the most surprising creatures on earth. This activity will help you make some fascinating discoveries about these creatures.

Materials:

- large wide-mouthed jar
- tin can
- gravel or small pebbles
- soil
- 5 or 6 earthworms (also known as nightcrawlers) [from your garden, the bait shop, or a local pet store]
- dark construction paper

Directions:

1. Stand the can in the middle of the glass jar.
2. Place a layer of gravel or small pebbles about ½ inch deep on the bottom of the jar, between the can and the jar sides.
3. Fill the jar with garden soil up to the height of the tin can.
4. Place the worms on top of the soil.
5. Wrap the dark construction paper around the outside of the jar to keep out the light (Check the condition of the soil every so often and moisten it as needed.).

Description:

The worms will begin burrowing into the soil. After several days, they will have dug a series of tunnels. You will be able to see these tunnels by carefully removing the construction paper from the sides of the jar. (Replace the construction paper after observing their work so the worms will continue to tunnel in the darkness.) You should be able to watch the worms behavior without harming them, for 3 or 4 weeks, but then you should put them back outside.

Worms feed by taking soil through their bodies, creating tunnels as they go. These tunnels aerate the soil, providing plants with the oxygen they need to grow. If it weren't for earthworms, many varieties of plants would not be able to survive.



Observation Ring

Here's an interesting activity that you can do any time and any place.

Materials:

- four sharpened pencils
- string
- magnifying lens

Directions:

1. Go outside and select a section of grassy area (part of a yard, lawn, or playground).
2. Push four sharpened pencils into the soil in a one-foot square pattern.
3. Tie string around the pencils, making a miniature "boxing ring" on the ground.
4. Get on your hands and knees and look closely inside the square.

Description:

If you look carefully enough and long enough you'll begin to see many different critters. You may want to keep some "Field Notes" of all the different types of animals you see inside the ring. Note the movements, habits, or behaviors of any animals (ants, grasshoppers, caterpillars, worms) as they travel (jump, crawl, slither) through the ring. You might want to visit your "ring" frequently over a period of several weeks.



SOURCE: The activities and projects in this handout were adapted from: Fredericks, Anthony D. *More Science Adventures with Children's Literature: Reading Comprehension & Inquiry-Based Science* (Westport, CT: Teacher Ideas Press, 2008; ISBN: 1-59158-619-4).