



Insect Field Journal

Introduction

In the book *Under One Rock: Bugs, Slugs and Other Ughs*, author Anthony Fredericks takes us on one boy's discovery of the insects that hide under a single rock. In this activity, youngsters will create their own "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.

Materials Needed

- ◆ Cardstock or cardboard (cereal boxes)
- ◆ 10 sheets of 8 1/2 x 11 paper
- ◆ Hole punch or sharp scissors
- ◆ Ribbon

Procedure

1. Fold the paper and cardstock in half.
2. Lay the paper stack over the cardstock cover and pierce holes: one at the center and one above and below - 1" from the top and bottom.
3. Thread the ribbon through holes. Then go in through the opposite hole. Tie the ends together in a double knot.
4. Cut the ribbon off and use the ends to close the notebook.
5. Decorate or color - optional.
6. 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.

Key Concepts

- ◆ Students answering questions using scientific resources combined with observations.
- ◆ Plan and conduct a simple systematic observation or investigation.
- ◆ Communicate or analyze investigations and explanations that might be drawn or spoken as well as written.

For standards correlation please see our website.

Nature Connections

- ◆ 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 pm, 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.

Additional Resources

Some fun bug websites to visit:

Lets Talk About Insects

<http://uranext.illinois.edu/insects/03.html>

National Geographic: Bug Photos

<http://animals.nationalgeographic.com/animals/bugs/>

Bug Journal

<http://www.bugjournal.com>

Miniature Marvels

<http://www.insects.org>





Observation Ring

Introduction

In the book, *Under One Rock: Bugs, Slugs, and Other Ughs*, author Tony Fredericks introduces children to the mini-habitat of creatures that reside in, under and around a rock. In this activity, students will observe a different mini-habitat and create field notes about the tiny creatures that inhabit it.

Materials Needed

- ◆ Four sharpened pencils
- ◆ String
- ◆ Magnifying lens

Key Concepts

- ◆ Students answering questions using scientific resources combined with observations.
- ◆ Plan and conduct a simple systematic observation or investigation.
- ◆ Use knowledge and evidence to formulate explanation.

For standards correlation please see our website.

Procedure

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.
5. 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.

Nature Connections

- ◆ Ask students to match the habitat with the critter:

Flower	Earthworm
Pond	Cricket
Dirt	Caterpillar
Leaves	Water Bug
Rocks	Bee

- ◆ Create your own observable ant farm from an old fish tank. Fill it with dirt, capture ants using honey as bait, then be sure to put in some food such as small insects or meal worms to keep the ants healthy.

Additional Resources

Make Pet Rock Animals

<http://familycrafts.about.com/od/stoneandrock/ss/petrocks.htm>

Ladybug Rocks

<http://crafts.kaboose.com/earth-ladybug-rocks.html>

Create Your Own Rock Creature

<http://www.teaching-tiny-tots.com/toddler-activities-pet-rock.html>

Martha Stewart Rock Animals

<http://www.marthastewart.com/272787/rock-animals>





Pet Rock Journal

Introduction

In the book *Under One Rock: Bugs, Slugs, and Other Ughs*, author Anthony Fredericks introduces students to a collection of creatures that make their home under and around a rock. In this activity, students make observations about a rock in their neighborhood and how effective it is as a habitat for creatures.

Materials Needed

- ◆ Notebook/Scrapbook
- ◆ Camera
- ◆ *Under One Rock: Bugs, Slugs, and Other Ughs* by Anthony D. Fredericks

Procedure

1. Invite students to select a rock near the school.
2. 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.
3. Ask students to answer some of the following questions about their rock:
 - ◆ Who comes to visit the rock (animals)?
 - ◆ What does the rock look like when it rains, snows or is sunny outside?
 - ◆ Does the weather, or any other activity, change the rock?
 - ◆ How does the environment around the rock change?
 - ◆ What can we conclude about the nature of the rock?
4. 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.

Key Concepts

- ◆ Weather changes from day to day and over the seasons.
- ◆ Changes in environments can be natural or influenced by humans.
- ◆ Use knowledge and evidence to formulate explanation.

For standards correlation please see our website.

Nature Connections

Critical thinking questions about *Under One Rock*:

- ◆ Which of the creatures was most amazing?
- ◆ How did the illustrations help you learn about the animals in the book?
- ◆ Which of the animals would you like to learn more about?
- ◆ How are so many different animals able to live together in one place?

Additional Resources

As the weather gets colder these animals find shelter under rocks:

- ◆ Squirrels
- ◆ Mice
- ◆ Insects
- ◆ Snakes
- ◆ Reptiles

These animals hibernate for all or part of the winter under rocks or in rock caves:

- ◆ Bears
- ◆ Skunks
- ◆ Chipmunks
- ◆ Bats





Wonder Worms

Introduction

In *Under One Rock: Bugs, Slugs and Other Ughs*, author Anthony Fredericks uncovers a mini-habitat of creatures who live upon and within the soil. In this activity, students will observe how earthworms aerate the soil by constructing underground tunnels.

Materials Needed

- ◆ Large wide-mouthed jar
- ◆ Tin can
- ◆ Gravel or small pebbles
- ◆ Soil
- ◆ 5 or 6 earthworms

Procedure

1. Stand the can in the middle of the glass jar.
2. Place a layer of gravel or small pebbles about 1/2 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.)
6. The worms will begin burrowing into the soil. After several days they will have dug a series of tunnels. Students will be able to see these tunnels by carefully removing the construction paper from the sides of the jar. (Have students replace the construction paper after observing their work so the worms will continue to tunnel in the darkness.)
7. Students should be able to watch the worms behavior without harming them, for 3 or 4 weeks, but then they should be returned outside.

Key Concepts

- ◆ Soils have different properties and abilities to support plants.
- ◆ Plants are the base of an ecosystem.
- ◆ All animals depend on plants.

For standards correlation please see our website.

Nature Connections

- ◆ 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.
- ◆ Worms can eat their weight in soil each day. Over 1 million worms may be present in one acre of soil, and these worms can produce 700 pounds of castings each day. Ask children to estimate how much food waste they produce each day. What happens to it? What ways can food waste and other waste be recycled?

Additional Resources

Interesting Facts about Worms

<http://urbanext.illinois.edu/worms/facts/index.html>

Exploring Worms

<http://www.thinkingfountain.org/w/worms/worms/worms.html>

Teacher Worm Resources

<http://www.learner.org/jnorth/search/Worm.html>

