Animal Apartments

Lesson Description

By dividing the soil environments into a model of an apartment building—with inhabitants on the basement, ground level, and upper levels—students learn what animals make homes in each soil habitat.

Teacher Background

This lesson demonstrates the amazing variety of animals that live in, on, and above the soil. Students examine small, individually assigned outdoor areas for terrestrial animal life, and report their findings. Class discussions about the habitat and food of these creatures will show that in one way or another, all living things depend on the soil for nutrition and survival.

Living things are found almost everywhere in the world. However, where they live depends on what *resources* they can obtain from the *environment*. All organisms—including humans—need air, water, and food to survive. Environments provide different kinds of food and climate, and therefore support different forms of life.

The differences between environments can be as small as the difference between the soil surface and the
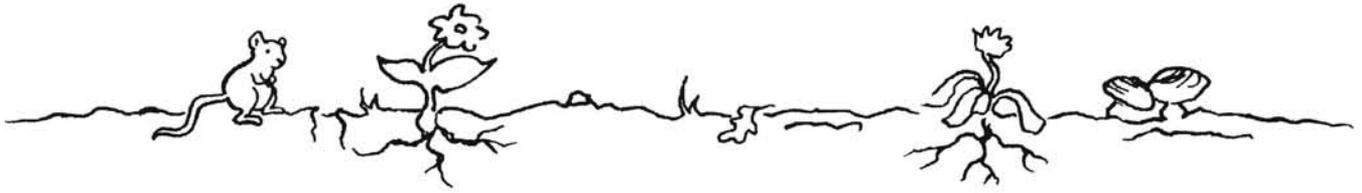
Subjects

Art, Language Arts, Science

Time

Prep: 30 minutes
Activities: 1 ¾–2 hours
(not including Extensions)

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Student Objectives

Students will be able to:

- gather data on the animals that live on the soil;
- describe the animals that live in, on, and above the soil; and
- define animal habitats.

space below ground. The animals in Figure 7.1 may be found in the various soil environments—in, on, or above the soil—near your school. Many of these animals must inhabit more than one soil environment to obtain the resources necessary for survival. Not all of the animals in Figure 7.1 will be found in all parts of the country, or at all times of the year. You will have to adapt this table for your own region.

Figure 7.1. Animals found in soil environments.

Found in Soil	Found on Soil	Found Above Soil
earthworm	snail	butterfly
ant	slug	moth
beetle	spider	dragonfly
insect larvae	millipede	bee
chipmunk	grasshopper	mosquito
mole	ladybug	tree frog
badger	snake	chickadee
prairie dog	turtle	nuthatch
groundhog	frog	hawk
gopher	lizard	woodpecker
rabbit	pigeon	jay
fox	robin	squirrel
mouse	sparrow	bat

Learning Cycle

Perception: 30 minutes

Prep On a large piece of poster paper, sketch an apartment building with at least three levels: basement, ground level, and second level (see Figure 7.2, which is a small version of one of the Student Handouts).

1 Referring to your sketch, discuss the floors in an apartment building (basement, ground level, second level). Ask students how an animal's home is like a person's home, and help students understand that animals make their homes in a similar way in, on, and above soil. Explain that today's activity will examine some organisms that live in the basement levels of soil—below ground.

2 Ask students what animals live below ground. Discuss habitats and environments and why some animals burrow underground for safe nesting. Discuss how decomposing plant and animal life in the soil provide nutrients for plants. (This sets the stage for Lessons 8 and 9 about food chains and decomposers.)

3 Write down students' suggestions on index cards—one animal per card— and tack the cards next to the basement level on your poster. Review the relationship between basement residents and organisms in the soil.
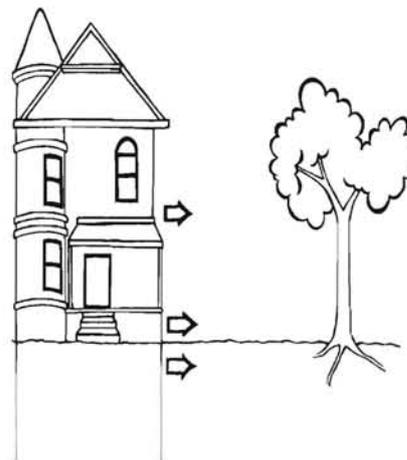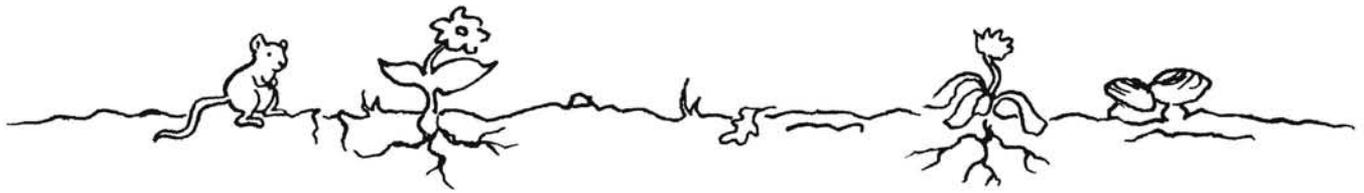
Materials

For the Class
- Poster paper
- Markers
- Index cards
- Pushpins
- Instant or digital camera (optional)

For Each Student Group
- Yarn (approximately 0.9 meters)
- Small plastic hand magnifier (approximately 5x magnification)
- Drawing paper
- Pencil
- Student Handouts 7A and 7B

Figure 7.2. The environments in an apartment building.

Exploration: 30 minutes

Prep Make copies of Student Handout 7A, which has drawings of animals commonly found on the soil in many parts of the country. (The drawings in the handout are not to scale.) Do library or Internet research to find common animals native to your area, and photocopy drawings of those animals. You might also find pictures of animals in biology textbooks, encyclopedias, or through newsletters and magazines of local wildlife conservation groups.

If your students have had no prior experience with studying animals you may wish to spend extra time discussing habitats and animals before this activity.

1 Distribute Student Handout 7A and pictures of animals native to your region. Discuss the animals that students will observe outside on the "ground level" on the soil. Point out the tiny size of many organisms and elicit suggestions on how to become more aware of these living things.

2 Take the class outside to a grassy area. Distribute hand magnifiers, paper, pencils, and yarn.

3 Demonstrate how to lay out a yarn lasso in the grass and use a magnifier to examine all the animals within the study circle, then have students do the same. The circle of yarn enhances close-up study and prevents running around or clustering around another student's discovery area. Caution students to observe but not touch any living animals or plants.

4 Have students draw what they found in their study circles. This will help students recall their discoveries as they share with the class. If you have access to an instant or digital camera, take a photograph of each student's study circle. The photos can help students see size differences and make comparisons.

5 Gather students and sit quietly to observe larger animals on the soil, such as mice, squirrels, chipmunks, frogs, snakes, pigeons, robins, and sparrows. If you don't see any animals, ask students to name animals they've seen before on the soil surface.

6 In the classroom, write down all students' discoveries on index cards and pin the cards next to the ground level on the animal apartment poster.

Application: 30 minutes

1 Review what students discovered about basement-level and ground-level dwellers in the animal apartment.

2 Ask students to name animals that live above the soil.

3 Write down all students' discoveries on index cards and pin the cards next to the upper level of the animal apartment illustration.

4 Ask if any of these upper-level organisms ever move down to the ground level. For example, why would a squirrel move from above the soil down to the soil surface? (Answer: to get food or nesting material.) Why would an owl swoop to the ground even though it roosts in a tree? (Answer: to catch a mouse.) Why would a butterfly land on a flower? (Answer: to get nectar or lay eggs.)

5 Help students understand that many animals must cross habitat levels to get resources such as food, just as a person living on the second floor of an apartment building has to go the ground floor to buy food from the market. Some of the animals students found on the soil may actually live

primarily below the soil (e.g., earthworms) or above the soil (e.g., birds).

Evaluation: 15–30 minutes

Distribute Student Handout 7B. Students should draw two animals living at each level and label the drawing. You may wish to provide younger students with a list of words or names to choose from. Older students can draw more examples, or write sentences describing the habitats.

Extensions: 30 minutes each

- Read a story about animal habitats from the resources list in Appendix B.

- Set up an ant farm so students can investigate ant life in the soil.

- Have students write and illustrate a book on animal apartments to share with other classes or visitors (possibly during a special event focusing on the environment or on soil and water conservation).

- Find a place where students can dig into soil (or find a place where a deep cut has been made into soil) to see what the basement level—beneath the soil surface—looks like.
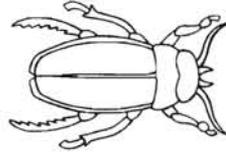
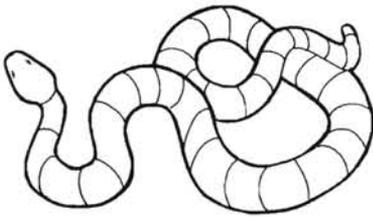# Name: _____

snail

earthworm
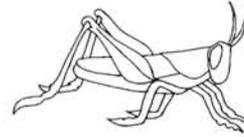
grasshopper
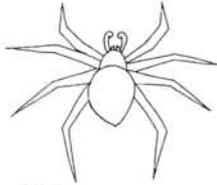
spider

ladybug

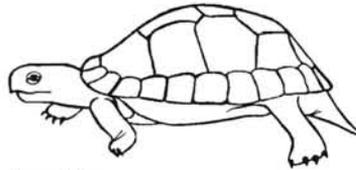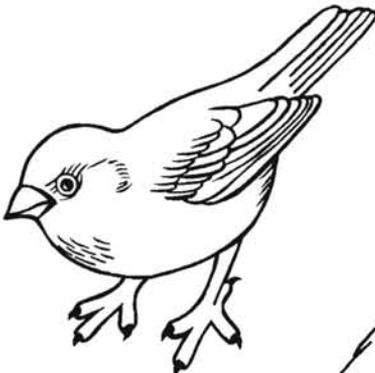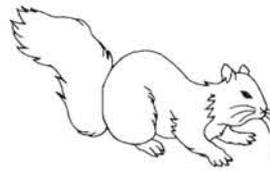beetle

butterfly

frog

snake

turtle

lizard

chipmunk
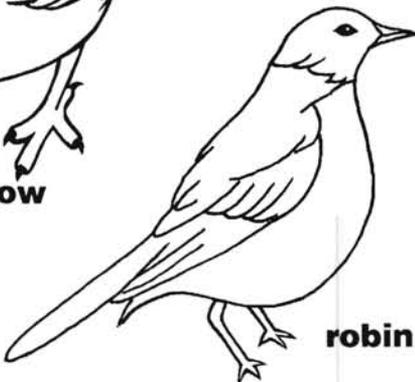
sparrow

robin

gopher

squirrel

mouse

Name: