

Youth Activity

SEARCH FOR SOIL DWELLERS



Activity Description

Healthy soil provides habitat (food, water, and shelter) for an astonishing array of creatures. Scientists estimate that more than half the mass of soil is made up of living things.

To demonstrate this, have the youth use trowels to dig up soil samples and put them in buckets. On a flat, comfortable surface (inside or outside), dump the soil onto white butcher paper and ask the youth to root through the soil to search for creatures. They can move the creatures to the side of the paper with tweezers or put them in small glass jars to view them from all angles. For a closer look, the kids can use magnifying glasses or hand lenses.

Hint: To ensure you find living creatures in some of your soil samples, dig in “natural” areas such as woods or fields rather than areas with car and foot traffic. If you are not having any luck, a garden plot should yield plenty of critters.

Critters the children might find include earthworms, millipedes, centipedes, ants, termites, mites, ground beetles, springtails, and spiders. (For photos and descriptions of critters you might find, check out the “Soil Biology Primer” on USDA’s Web site at www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/biology).

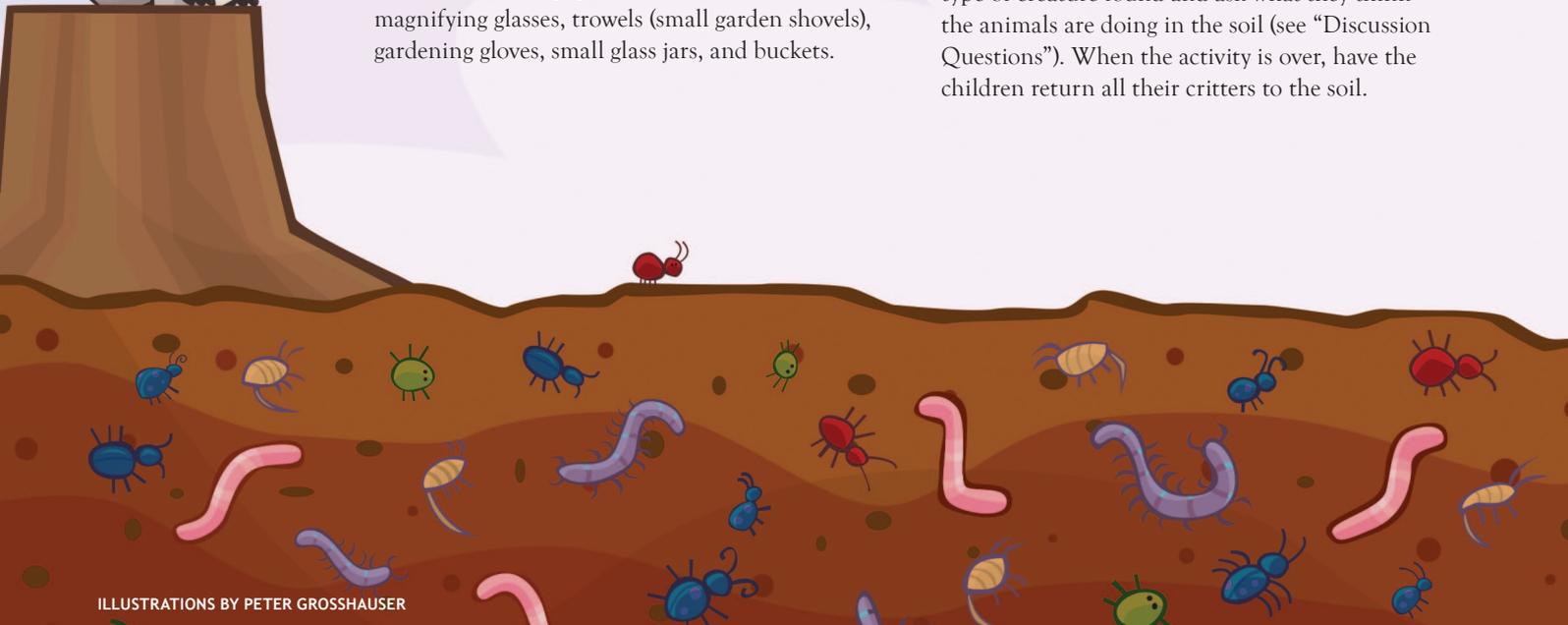
Be sure each child has an opportunity to see every type of creature found and ask what they think the animals are doing in the soil (see “Discussion Questions”). When the activity is over, have the children return all their critters to the soil.

Learning Objectives

To learn that healthy soils contain a great variety of creatures and that many of these creatures help make soil fertile and healthy.

Materials

White butcher paper, tweezers, hand lenses or magnifying glasses, trowels (small garden shovels), gardening gloves, small glass jars, and buckets.



ILLUSTRATIONS BY PETER GROSSHAUSER

Estimated Time

30 minutes.

Ages

Recommended for ages 5 to 8.

For ages 9 to 11, no specific changes are needed for this activity. Older youth may be able to spend more time identifying animals found in the soil samples and can have a more scientific discussion of soil quality. Consider taking samples from eroded or damaged areas to compare with samples of healthier soils. Youth should enjoy this activity up through early teenage years.

Option: If you have more time to spend on this project (and more space), take soil samples from a variety of sites – wet, dry, with plants and without, under mulch, along stream banks, or in the woods. Which soil sample has the most animals in it? Do the sites with the “healthiest” soils have the greatest number and variety of creatures? What makes the soil “healthy”? Discuss the answers (see “Discussion Questions”).

RELATED SOURCE

Young Ikes Activity Book – Ages 5 to 8, by the Izaak Walton League of America, 2011. Page 2–Soil.

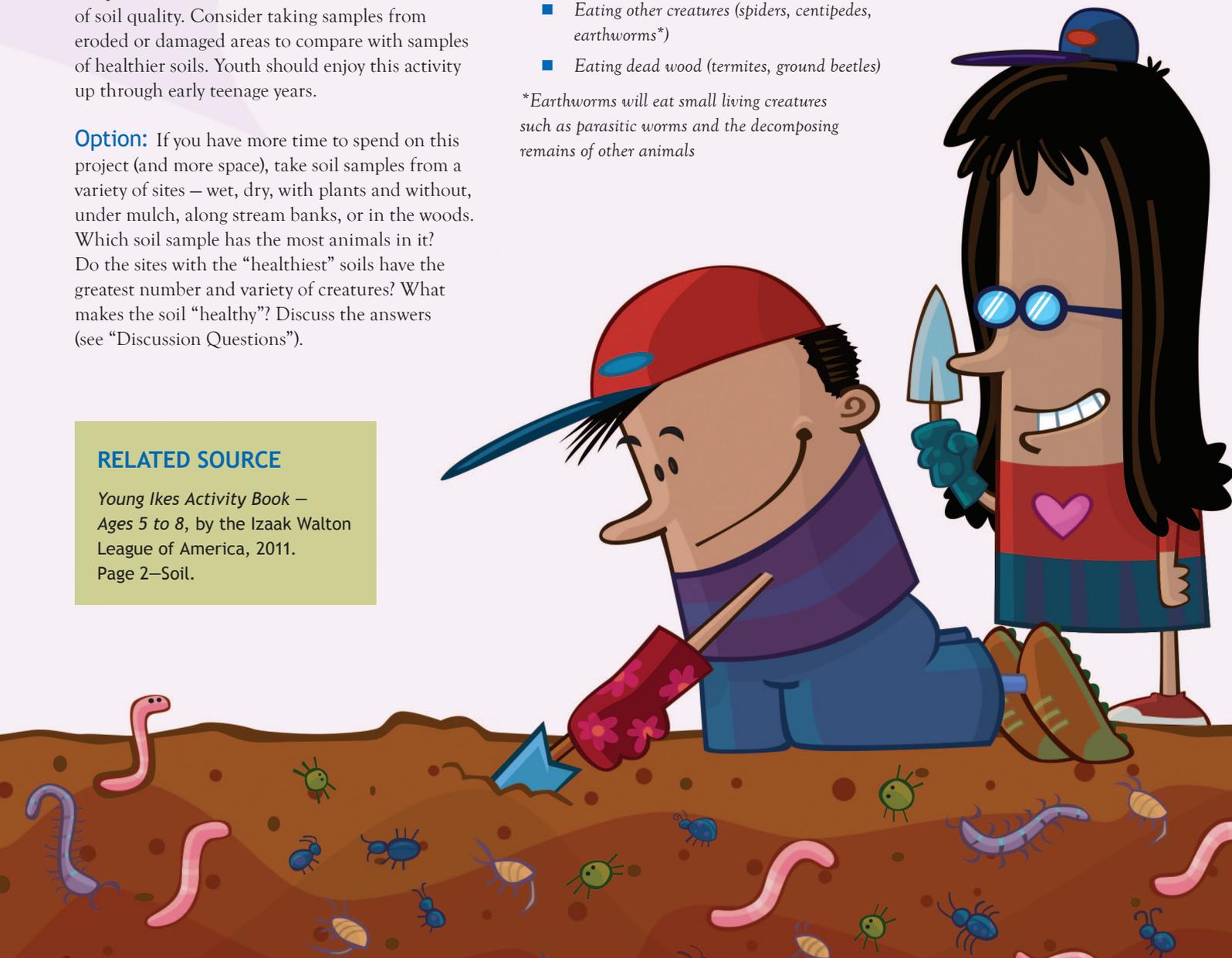
Discussion Questions

What do you think these animals are doing in the soil?

Answer(s): Will vary, depending on what animals you find. Possible answers (and associated creatures) include

- Eating decaying leaves and plant roots (earthworms, millipedes, springtails)
- Eating other creatures (spiders, centipedes, earthworms*)
- Eating dead wood (termites, ground beetles)

*Earthworms will eat small living creatures such as parasitic worms and the decomposing remains of other animals





Looking at the soil samples from different sites, which site has the most animals?

Answer(s): Will vary. However, soils that are least eroded and disturbed and have the most decaying organic matter (such as leaves and roots) should have the most abundant and varied animal life.

Do the sites with the “healthiest” soils have the greatest number and variety of creatures?

Answer(s): The “healthiest” soils should have the greatest number and variety of creatures.

Why do you think this might be?

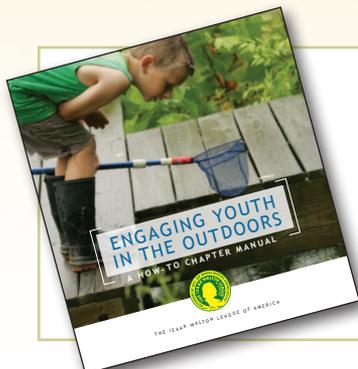
Answer(s): Healthy soil is full of life, including organic matter (such as decaying leaves and plant roots), insects, earthworms, air, water, and nutrients. Healthy soil is not eroding or disturbed (such as by excessive cars or construction).

Decaying leaves, logs, branches, and other plant and animal materials on the ground provide food and shelter for animals that live in the soil. Soil derived from decaying organic matter is able to support healthy plant life, which in turn helps support healthy animal life.

The animals themselves are vital to making the soil healthy. How do you think they do that?

Answer(s): When tiny soil creatures eat dead and decomposing organic matter, such as leaves and wood, they break the material down so that the nutrients (such as nitrogen, phosphorus, and potassium) can be drawn up by plant roots and made available to the ecosystem again.

Animals burrowing and moving through soil make small pores, holes, and tunnels. Oxygen can get into these little spaces so tiny animals can breathe. These little spaces also enable the soil to absorb and hold rainwater, like a sponge, for plants and other living things to use.



Want more great youth activities like this one? Check out the IWLA *Engaging Youth in the Outdoors* manual!

E-mail chapters@iwla.org to request a CD-ROM of the manual.