

# Walking on Ecosystems: Microhabitats under foot!

Team Members \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_


Checkpoint # or Name \_\_\_\_\_ Direction (circle) N S W E

Weather Conditions \_\_\_\_\_

## What is soil?

Rocks form the inorganic basis of the soil. They break down when they are exposed to the wind, rain, and the freezing and thawing of the seasons into smaller pieces like sand, silt, and clay. Water and air are also important parts of the soil. The water flows through the soil, moves important nutrients around, and makes things soft and easier to break down.

Air is in the soil in the small spaces between particles. Everything else on the list below forms the important organic matter of the soil. Microorganisms, insects, and fungi do much of the work decomposing all of the different parts of the soil. See how many of these components of soil you can find while exploring the Soil Production Department.



**Soil Fact:**  
**It can take more than 500 years to form just one inch of topsoil, which is the most productive layer of soil!**










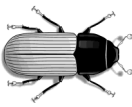





## Part A. Ant Trails

**Instructions:** Stretch out your 'Ant Trail' (piece of string) along the ground at your assigned location. Pretend that you are an ant crawling along in the soil. Look for the different components of soil and many organisms that live right under your feet. Make a check mark next to the objects and organisms you find. Be sure not to harm any living organism!

**Supplies**

- 9" string
- Hand lens
- Pencil

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|--|--|--|
|  <b>Bacteria</b> _____<br> <b>Fungus</b> _____<br> <b>Rocks</b> _____<br> <b>Leaves</b> _____<br> <b>Sticks or Wood</b> _____ |  <b>Ants</b> _____<br> <b>Roaches</b> _____<br> <b>Spiders</b> _____<br> <b>Earthworm</b> _____<br><b>Dead Animals</b> _____ |  <b>Beetles</b> _____<br> <b>Microorganisms</b> _____<br> <b>Animal Poop</b> _____<br> <b>Water droplets</b> _____<br><b>Dead Plants</b> _____ |
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# Part B. Microhabitat Under Foot: Exploring the Soil Profile

A soil profile consists of several soil horizons, beginning at the ground surface, and going downward. Each soil consists of different materials and organisms that aid in soil production.

**Instructions:** Get ready for an exciting discovery the world beneath your feet! Choose a location along your Ant Trail to dig a narrow hole about 10 inches deep. Follow the instructions beside the diagram as you dig a soil core of 1, 3, 6, and 8 inch increments. List what you find in each horizon of the soil in the space provided. Then use draw what you find in each horizon in the chart below. Use crayons to show what color each horizon is. Have fun exploring this underground ecosystem!

- Supplies**
- Shovel
  - 12" ruler
  - Hand lens
  - Crayons
  - Pencil

## Soil Layers

**O horizon: the layer of humus on the ground surface.**

1. Draw or list your discoveries as you dig down one inch. Describe the soil.

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**A horizon: top soil that is rich in organic matter.**

2. Draw or list your discoveries as you dig down 3 inches. Describe the soil.

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**B horizon: subsoil.**

3. Draw or list your discoveries as you dig down 6 inches. Describe the soil.

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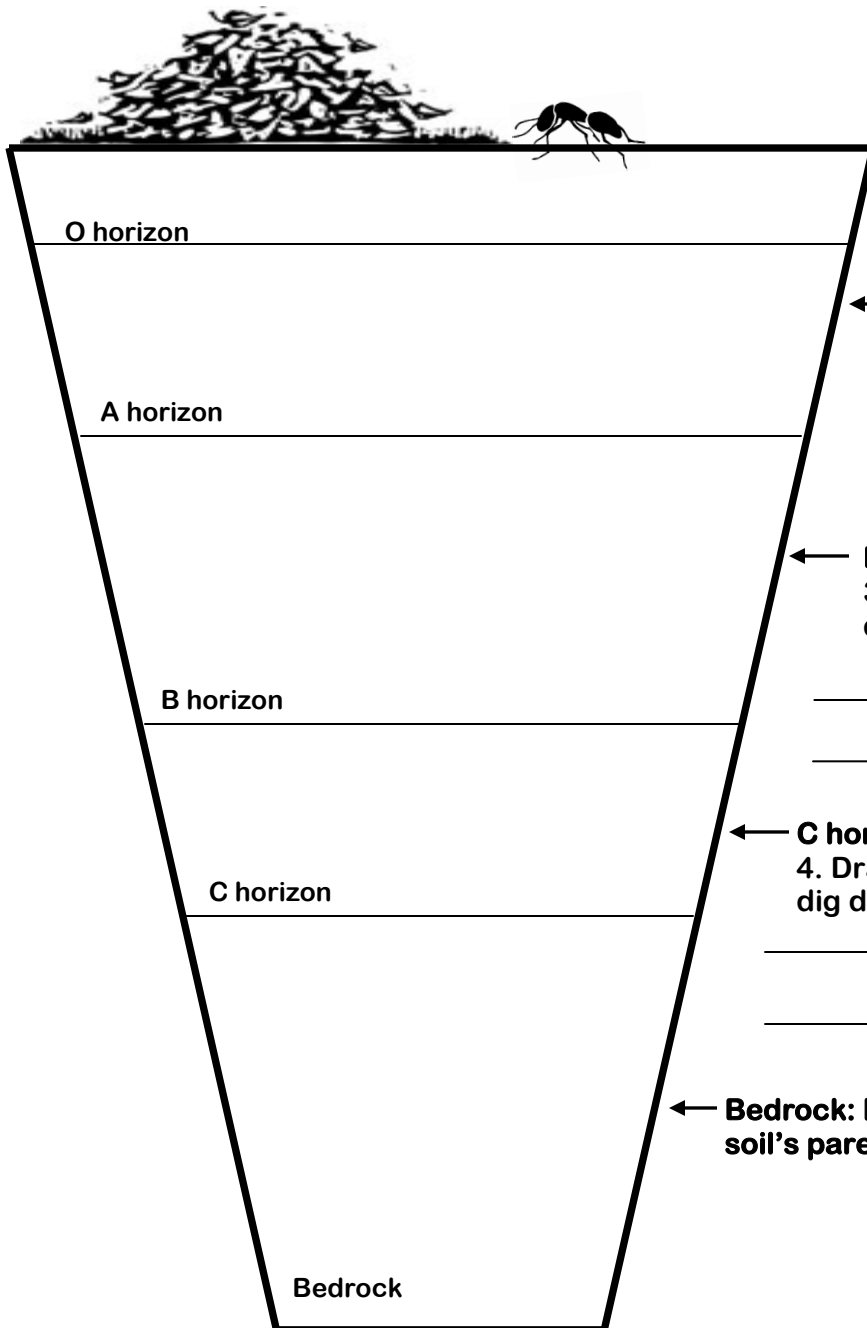
**C horizon: weathered bedrock.**

4. Draw or list your discoveries as you dig down 8 inches. Describe the soil.

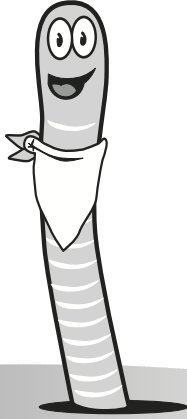
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**Bedrock: lies below the soil profile; soil's parent material.**



When you finish, please return the soil and organisms to their original location.



## **Walking on Ecosystems: Part C**

### **GEN Journaling: *What would happen if soil workers stopped doing their job?***

The world would be covered in dead animals, plant materials, and poop. Yuck!

**Instructions:** Write a journal entry about the day the soil workers went on strike. What happened? What did the world look like? What happened to the plants?

Then discuss why we need the Soil Production Department and thank the workers for all they do.