

Is Soil Alive? Background Page

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Summary: In this inquiry students will observe soil samples. Students will then form hypotheses as to whether or not soil is alive. Students will also read and discuss information about soil and components of soil. After completing the observations, readings, and discussions, students will be able to state whether or not they believe soil is alive and list the four components of soil.

Related Topics: nature, biota (living) vs. aboita (nonliving), weathered rock, humus

Ohio Academic Standards Alignment:

Science Inquiry Indicator

2. Discuss observation and measurements made by other people
4. Identify and apply science safety procedures
5. Record and organize observations
6. Communicate scientific findings to others through a variety of methods

Earth and Space Sciences

4. Observe and describe the composition of soil.
5. Investigate the properties of soil.
6. Investigate that soils are often found in layers and can be different from place to place.

Background Information:

-Biota: Bio means life. Biota means living. Living organisms are those which need SWEAT (Space, Water, Energy, Air, and Time)

-Abiota: Abiota means nonliving. The prefix means “not”. Soil is not living.

-Weathered Rock: Weathered rock is the bits of rock broken down by weathering (Snow, ice, rain, wind, etc.). This is the component of rock that contains the minerals in soil.

-Humus: Humus is the component of soil that consists of decayed parts of once-living things. It is dark and soft. Humus contains much of what plants need for growth.

Misconceptions: Everything in soil is a component of soil. Fact: Soil consists of weathered rock, humus (once living plant and animal material), water, and air. Some living things such worms may be found in soil. While worms live in soil and enrich the soil they are not considered a component of soil.

Misconception: Soil is alive. Fact: Soil has many components. Both living and nonliving things can be found in soil. The living things are just that, living in soil. These living things are not considered a component of the soil.

-Expected Results:

- Nature: students will have a better understanding of what is natural
- Living vs. Nonliving: Students will develop a better understanding of what is living and nonliving
- Soil: Students will be able to list the components of soil and be able to state whether soil is living or nonliving a give reasons why.