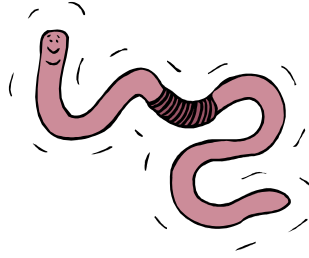


LOOKING FOR LIFE



BENCHMARKS and TASKS

SC.A.1.1.1 The student knows that objects can be described, classified, and compared by their composition (e.g., wood or metal) and their physical properties (e.g., color, size, and shape).

SC.F.1.1.2 The student knows how to apply knowledge about life processes to distinguish between living and nonliving things.

SC.G.1.1.1 The student knows that environments have living and nonliving parts.

- The student identifies objects as living or nonliving.
- The student recognizes that most living things, including humans, need water, energy, air, shelter, and space.
- The student observes that there are similarities and differences between living and nonliving things.

KEY QUESTION

How can you tell if something is living?

BACKGROUND INFORMATION

Everything with which students come into contact can be classified as either living or nonliving. All these things exist and interact to make up the **ecosystem**. There are five basic processes of living things:

- Metabolism: getting and using food
- Respiration: releasing energy
- Elimination: removing waste
- Growth
- Reproduction

Earthworms are flexible, elongated bundles of muscle, efficiently evolved for life underground. Earthworms help the soil by mixing up the different layers of the soil and letting air in as they crawl around. They add nutrients to the soil by depositing their waste products (called castings) in the soil. Earthworms also help decompose dead plant and animal material, turning it into simpler parts that can be used again by new organisms. Worms eat some of the decaying matter.

Earthworms have two kinds of muscles. When the short muscles that encircle each segment contract, the worms get thinner and longer. When the long muscles that connect all the segments contract, the worm becomes shorter and fatter.

MATERIALS

Teacher

for the worm habitat:

soil
leaves
pebbles
several earthworms
plastic wrap
rubber band
black construction paper
clear plastic container, aquarium or tennis ball container

What Do You See? student sheet (optional)

All About Worms class chart

Rigby Big Book *Wiggly Worm* by Jill Eggleton

Per student or pair of students

worm in a cup of soil
hand lenses
gummy worms

TEACHING TIPS

1. Purchase earthworms at a local bait shop. Red wigglers are best for these activities.
Earthworms must stay cool! Do not leave them in a car.
2. Construct a worm environment.
 - a. Place a layer of pebbles on the bottom of the container. Next, place a layer of soil (not potting soil) over the pebbles. Finally, add a layer of leaves on top of the soil.
 - b. Add several worms to the container.
 - c. Place plastic wrap over the opening of the container. Punch several small holes in the plastic wrap. Use rubber bands to secure the plastic wrap. (If you choose not to make this right away, the worms will last in a refrigerator for a few days.)
 - d. Tape black construction paper around the outside of the container.
 - e. Feed the worms by placing slivers of potatoes (no eyes) in the soil.
3. Keep soil moist at all times. Spray it lightly with water from a plant mister as often as necessary.
4. Prepare the *All About Worms* class chart.
5. Talk to students about the humane treatment of all living things.
6. When you are finished with the worms, take them outside to a cool, moist, dark place to release them.
7. For hygiene reasons, you may want to do the gummy worm exploration before the earthworm exploration.

ENGAGE

Read and discuss *Wiggly Worm* by Jill Eggleton.

EXPLORE Part 1

1. Distribute a worm in a cup and hand lens to each student or pair of students. Let students remove the plastic wrap and observe the earthworms.
2. Allow students plenty of time to discover the characteristics of an earthworm, noticing such things as the way it moves, its texture, etc.
3. (Optional) Have students use their senses to fill out their *What Do You See?* student sheet.

EXPLAIN

1. Discuss their observations and record on the class *All About Worms* chart.

All About Worms	
Earthworms	Gummy Worms

2. Ask:
What do the earthworms feel like when you gently touch them?
How do the earthworms react to being touched?
How would you describe their movements?
How are the earthworms alike and how are they different?
Did you see lines or grooves on the worms?
Did you see eyes on the earthworms?
Did you see a mouth on the earthworms?
3. Introduce the term *segment* to the students.

EXPLORE Part 2

1. Collect the live worms and distribute the gummy worms. (If you plan to let the students eat the gummy worms, be sure they have time to wash their hands before you distribute them.)
2. Have students observe the gummy worms just like they did the earthworms.

EXPLAIN

Compare and contrast the student responses to the earthworms and the gummy worms.

Ask:

- How were the earthworms and gummy worms alike?*
How were they different?
Which one was living?
Which one was nonliving?
How can you tell when something is living?

EXTEND/APPLY

1. Have students compare and contrast the characteristics of earthworms to themselves.
2. Share the following poem:

Earthworms have two types of muscles
To help make them move.
They live under the soil and form
A tunnel called a groove.
Earthworms have no eyes or ears
And they cannot see or hear.
When a gardener sees them in his soil,
He hollers out a cheer.

Melissa Runge

3. After reading the poem, discuss why a farmer would cheer if he saw an earthworm in his garden.

ASSESSMENT

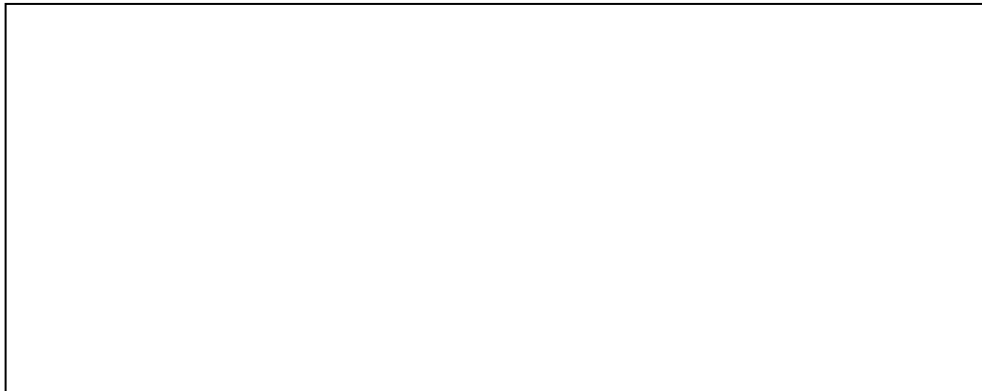
Through observation assess the following criteria:

- Student demonstrates understanding through completion of the activities and participation in class discussions.
- Student uses science tools appropriately and observes science safety rules.

What do you see?



Observe your worm with the magnifier. Draw your worm and color it.



How does the worm feel when you gently touch it?



How does the worm smell?



How does the worm sound? Does it make any noise?

