

Soil Connection Detectives

Trace how parts of soil support living things.

3.6.a "soil, with its different components, is important to organisms; and"

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each word or phrase that names a soil component. Circle each sentence that tells how a soil component helps an organism.

Life in Garden Soil

- ① Under a garden bed, soil is more than brown dirt. It is a mix of tiny rock pieces, bits of dead plants and animals, water, air, and living things. The rock pieces contain minerals. The decayed bits, called organic matter, can add nutrients. Spaces between soil pieces can hold both water and air for plants.
- ② A bean seedling sends roots into soil. Its roots take in water and dissolved minerals. Roots also need air to work well. If soil is packed tightly, less air and water can move through it. A gardener may add compost, made from decayed materials, to help make soil crumbly and to add organic matter over time.
- ③ An earthworm moves through moist soil and eats some organic matter. As it tunnels, it makes pathways where air and water can travel. The worm also leaves wastes that become part of the soil. Plants can use the improved soil, and the earthworm has food, water, air, and shelter. Soil supports many organisms in connected ways.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 Name four components found in soil.

2 Why is tightly packed soil a problem for a plant's roots?

3 What are two ways compost helps soil?

4 How does an earthworm's tunneling help soil, and how does soil help the earthworm?

3 YOUR TURN _____ Your own words

Complete the chart for three organisms not named in the passage. For each one, name a soil component it uses and explain how that component helps it.

ORGANISM	SOIL COMPONENT IT USES	HOW THE COMPONENT HELPS

PART 1 • READ AND MARK

Underline each word or phrase that names a soil component. Circle each sentence that tells how a soil component helps an organism. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Name four components found in soil.	Any four: tiny rock pieces, organic matter or decayed bits, water, air, and living things.
2	Why is tightly packed soil a problem for a plant's roots?	Less air and water can move through tightly packed soil, and roots need water and air.
3	What are two ways compost helps soil?	Compost helps make soil crumbly and adds organic matter.
4	How does an earthworm's tunneling help soil, and how does soil help the earthworm?	Tunnels make pathways for air and water to travel. Soil gives the earthworm food, water, air, and shelter.

PART 3 • YOUR TURN (SAMPLE ANSWER)

ORGANISM	SOIL COMPONENT IT USES	HOW THE COMPONENT HELPS
Mushroom	organic matter	It gets nutrients while breaking down dead material.
Ant	air	It breathes in air spaces in its soil tunnel.
Strawberry plant	water and minerals	Its roots take them in to grow.

Accept any accurate soil component and a scientifically reasonable connection to the organism. Students may use organisms other than those in the sample, as long as they are not the bean seedling or earthworm from the passage.