Soil's Two Stories

Trace how rock and once-living matter become soil.

3.10.B "investigate and explain how soils such as sand and clay are formed by weathering of rock and by decomposition of plant and animal remains; and"

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline details that tell how rock becomes sand or clay. Circle details that tell how dead plants or animals become part of soil.

From Rock and Remains to Soil

1. On a rainy hillside, water slips into small cracks in a granite rock. When the water freezes, it expands and pushes the cracks wider. Heat, wind, and moving water can also break rock into smaller pieces. This breaking and wearing away is weathering. Over a long time, weathering can make tiny rock particles that become part of soil.

2. Sand often forms when weathering breaks rock into grains. A river may carry the grains, and waves may rub them together. Sand grains are larger than clay particles and feel gritty. Clay forms when rock is weathered into extremely tiny particles. These particles can pack closely together and hold water, so wet clay often feels smooth and sticky.

3. Soil also includes bits of once-living things. Dead leaves, roots, animals, and animal waste are broken down by decomposers, such as fungi, bacteria, and worms. This process is decomposition. It makes dark material called humus, which mixes with weathered rock particles. Humus can add nutrients to soil and help it hold water. Many soils contain sand, clay, humus, and other materials.

2 ANSWER WITH EVIDENCE

Use the passage

1. How can freezing water weather a granite rock?

2. How are sand grains and clay particles different?

3. What do fungi, bacteria, and worms do to once-living things?

4. How does humus become part of soil, and what are two ways it helps soil?

3 YOUR TURN

Your own words

Draw two panels that show two ways soil can form. In one panel, show a rock changing into soil particles. In the other panel, show a dead plant or animal remain changing into humus. Write one sentence under each panel to explain what is happening.

ANSWER KEY

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GRADE 3 · TEKS 3.10.B

PART 1 · READ AND MARK

Underline details that tell how rock becomes sand or clay. Circle details that tell how dead plants or animals become part of soil. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How can freezing water weather a granite rock?	**Water freezes in cracks, expands, and pushes the cracks wider.**
2	How are sand grains and clay particles different?	**Sand grains are larger and gritty. Clay particles are extremely tiny and can pack closely together.**
3	What do fungi, bacteria, and worms do to once-living things?	**They break down once-living things during decomposition.**
4	How does humus become part of soil, and what are two ways it helps soil?	**Humus made by decomposition mixes with weathered rock particles. It adds nutrients and helps soil hold water.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Panel 1: A pebble on a stream bank has cracks and small grains around it. Sentence: Moving water rubs the pebble and breaks it into grains that can join soil. Panel 2: A dead leaf on the ground has worms and fungi around it, with dark soil below. Sentence: Worms and fungi break down the leaf, making humus that mixes into soil.

Accept equivalent descriptions of weathering, including rock breaking from water, wind, heat, or freezing. For the drawing, look for one rock-weathering process and one decomposition process, each with an accurate written explanation.