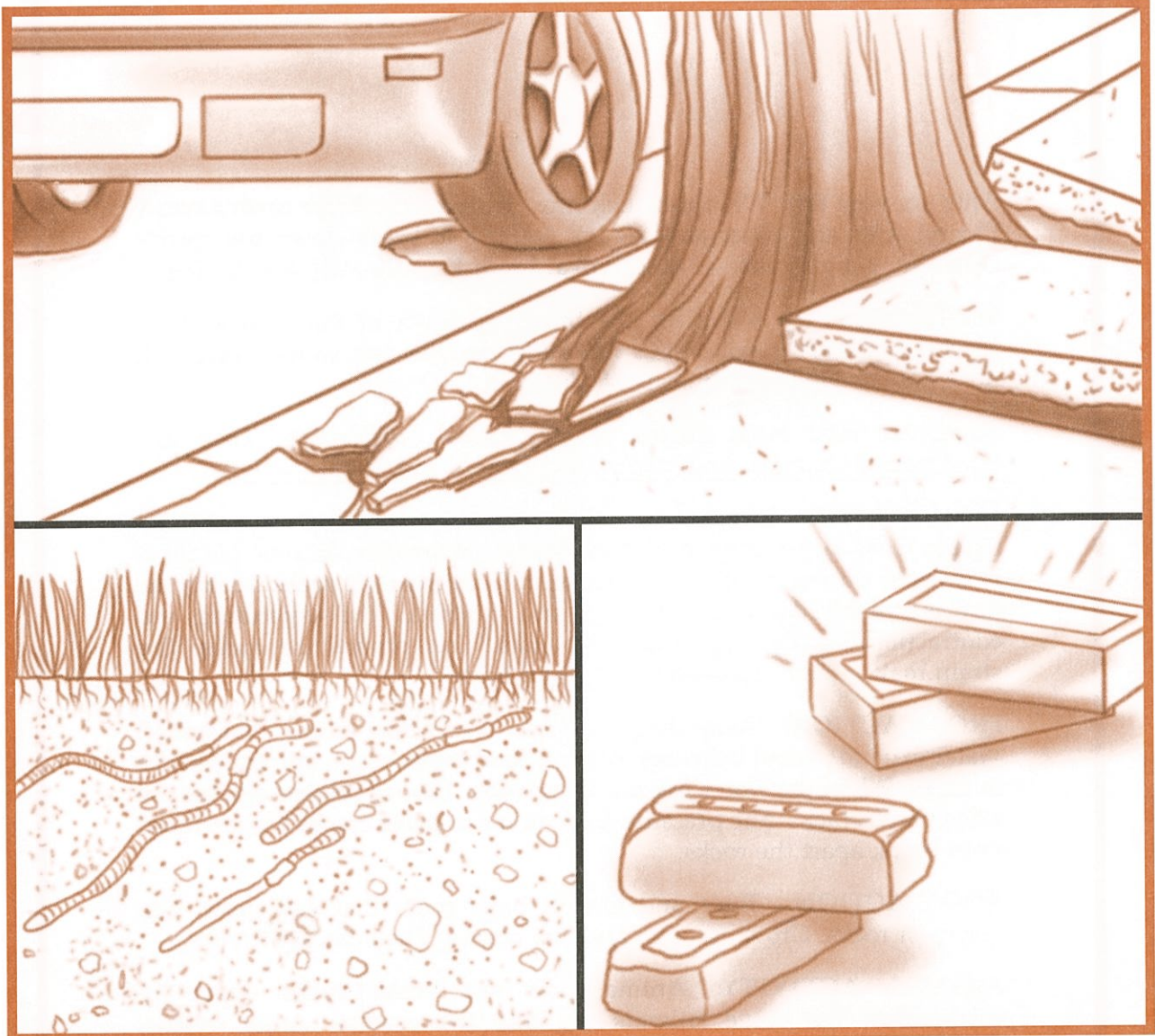


What causes mechanical weathering?



KEY TERMS

mechanical weathering: weathering in which the chemical makeup of rocks does not change

weathering: breaking down of rocks and other materials on the earth's surface

LESSON 13 | What causes mechanical weathering?

Ants are very tiny. What can such tiny creatures do to the earth's crust? Plenty! Ants and other animals are helping to break down the earth's crust. They are a cause of **mechanical** [muh-KAN-ih-kul] **weathering**.

Weathering is the name for the breaking down of the earth's crust. Mechanical weathering breaks rocks into smaller and smaller pieces. It does not change the chemicals of the rocks.

There are four main causes of mechanical weathering. They are: temperature changes, frost action, root action, and animal activity.

TEMPERATURE CHANGES: Heat makes most things expand—get bigger. Cold makes most things contract—get smaller. In most places, it is warmer during the day than at night. Heat expands rocks during the day. At night, the rocks cool off and contract. The expanding and contracting happen over and over again. That strains the rocks. The strain makes them crack—a tiny bit at a time.

FROST ACTION: Most things contract when they freeze. Not water! Water expands when it freezes into ice. Rain water seeps into tiny cracks in rocks. When the water freezes, it expands. The ice presses against the sides of the cracks. The pressure is great. It can make cracks bigger. It can even break apart the rocks.

ROOT ACTION: Trees and shrubs have roots that can grow into cracks of rocks. Growing roots are very strong. They can split rocks.

ANIMAL ACTIVITY: Animals do not break rocks apart by themselves. But some animals dig into the ground. Ants, worms, woodchucks, and some others dig holes. The holes let in air and water. The air and water weather the rocks.

COMPLETING SENTENCES

Choose the correct word or term for each statement. Write your choice in the spaces provided.



Figure A

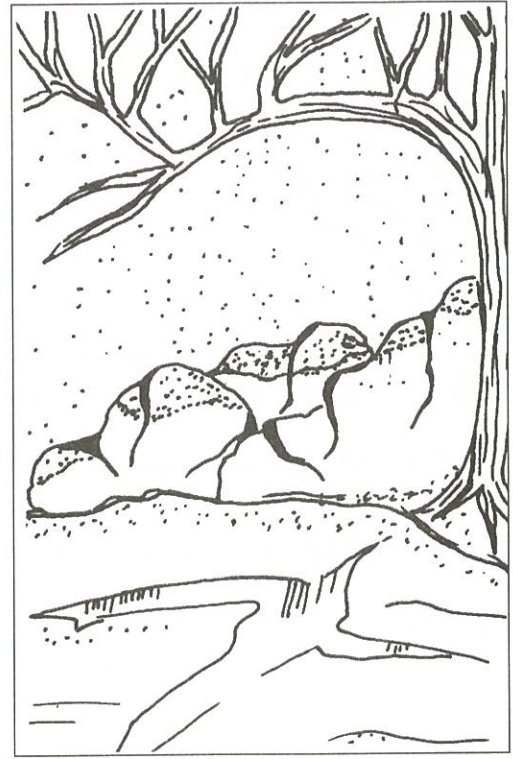


Figure B

1. During the day, rocks _____ .
expand, contract
2. During the night, rocks _____ .
expand, contract
3. Repeated contraction and expansion strain rocks. Strain can _____ rocks.
cool, crack
4. Changes of temperature can cause _____ weathering.
chemical, mechanical
5. Water _____ seep into cracks easily.
does, does not
6. Water _____ when it freezes.
expands, contracts
7. Ice presses against the cracks in rocks. The pressure can _____ rocks.
contract, crack
8. Frost action is an example of _____ weathering.
chemical, mechanical

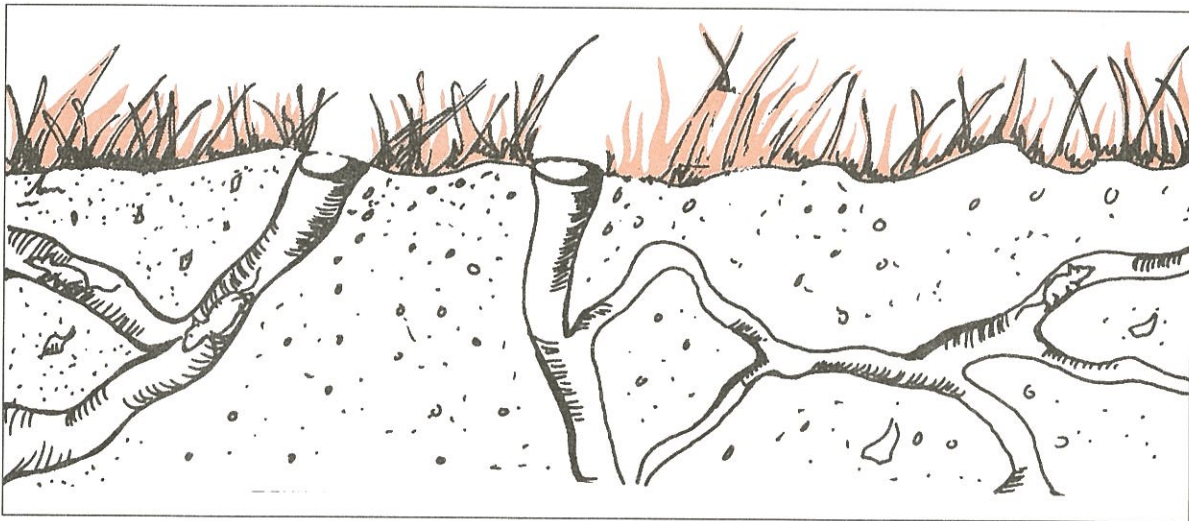


Figure C *A busy world below the ground*

9. Animals _____ break rocks apart by themselves.
do, do not
10. Holes made by animals in the soil let in _____ .
pressure, air and water
11. Air and water _____ .
wear down rocks, keep rocks in one piece

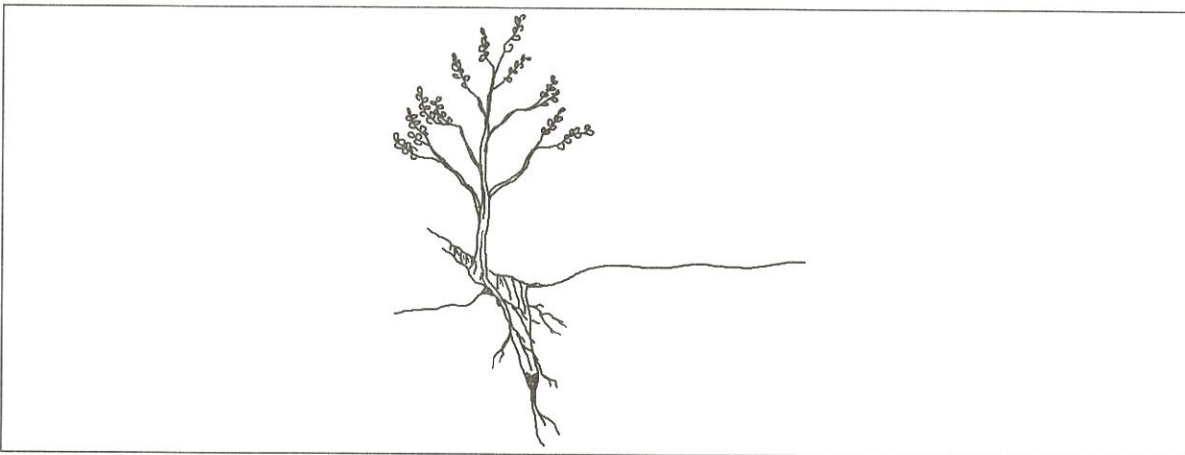


Figure D

12. The rock in Figure D was split by _____ .
roots, ice
13. Root-action is an example of _____ weathering.
mechanical, chemical
14. Mechanical weathering _____ change a rock's chemicals.
does, does not
15. Mechanical weathering _____ change the size and shape of rocks.
does, does not

FILL IN THE BLANK

Complete each statement using a term or terms from the list below. Write your answers in the spaces provided.

roots	carry away	mechanical
more	frost action	crack
weathering	pressure	animal activity
root	temperature changes	air
water	holes	

1. The breaking down of the earth's crust is called _____.
2. Weathering that does not cause chemical changes is called _____ weathering.
3. Four causes of mechanical weathering are _____, _____, _____, and _____ action.
4. Heating and cooling over and over again can _____ rocks.
5. When water freezes it takes up _____ room.
6. The _____ of ice can split a rock.
7. Ants, worms, and woodchucks help weathering because they make _____ in the soil.
8. _____ and _____ pass through the holes that animals make in the soil.
9. A plant's _____ can split rocks.
10. Weathering just splits the earth's crust into smaller and smaller pieces. It does not _____ the pieces.

MATCHING

Match each term in Column A with its description in Column B. Write the correct letter in the space provided.

	Column A	Column B
_____	1. weathering	a) expands rock
_____	2. water	b) contracts rocks
_____	3. rise in temperature	c) the breaking down of the earth's crust
_____	4. drop in temperature	d) the part of a plant that is usually in the ground
_____	5. roots	e) expands when frozen

TRUE OR FALSE

In the space provided, write "true" if the sentence is true. Write "false" if the sentence is false.

- _____ 1. Mechanical weathering changes a rock's chemicals.
- _____ 2. "Expand" means to become larger.
- _____ 3. Heat makes rocks expand.
- _____ 4. Rocks expand at night.
- _____ 5. Expansion and contraction can strain rocks.
- _____ 6. Growing grass roots have no force.
- _____ 7. Rocks usually have tiny cracks and holes.
- _____ 8. Water can go into tiny openings.
- _____ 9. Air and water help weathering.
- _____ 10. Woodchucks eat rocks.

REACHING OUT



Figure E

Earthworms burrow through the soil. As they move, they turn over soil. This makes the soil better for farming. Why do you think that the earthworm is "one of people's best friends?"
