SCIENCE

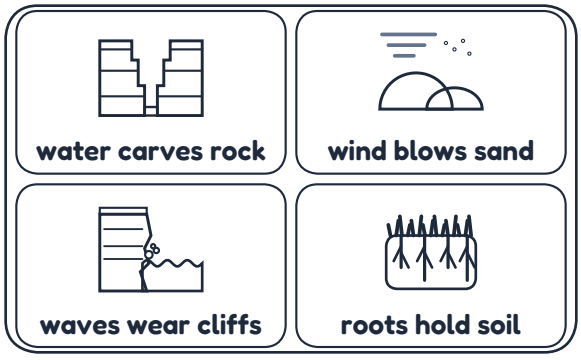
Weathering and erosion

Name _____ Date _____

I can explain how water, wind and ice change the land.

1 How it works

Weathering breaks rock into smaller pieces. Erosion carries the pieces away. Water, wind and ice are the big movers: rivers carve valleys, waves wear down cliffs, wind blows sand and glaciers scrape the land. It is usually slow, and plants, walls and fences can slow it down even more.



2 What moved it: water, wind or ice?

Use the words in the box.

water **wind** **ice**



a cracked rock
Water froze in a crack and split it.

_____



sand dunes
Sand piled into hills in a dry desert.

_____



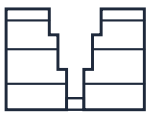
a glacier valley
A giant river of ice scraped it out.

_____



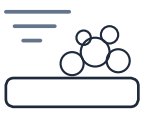
a sea cliff
Waves crash on it day after day.

_____



a canyon
A river slowly cut it deep.

_____



a bare field
Dry soil blew away on a windy day.

_____

How did I do? ☆ ☆ ☆

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Slowing erosion

Name _____ Date _____

I can choose a way to slow erosion.

1 How can we slow erosion? Draw a line.

 **plant grass**	blocks the crashing waves
 **build a sea wall**	roots hold the soil in place
 **put up a fence**	catches blowing sand
 **pile up big rocks**	protect a river bank

2 Weathering or erosion? Circle one.

Breaking or moving?

1. Water freezes in a crack and splits a rock.	weathering	erosion
2. A river carries sand down to the sea.	weathering	erosion
3. Wind blows soil off a dry field.	weathering	erosion
4. Tree roots crack a big rock.	weathering	erosion
5. Rain washes mud down a hill.	weathering	erosion

How did I do? ☆ ☆ ☆

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Think like a scientist

Name _____ Date _____

I can explain how people can slow down erosion.

1 Think about it

1. How did a river make a canyon? _____
2. Why do people plant grass on hills? _____
3. How can ice break a rock? _____
4. Why are beach pebbles smooth? _____

2 True or false? Circle it.

1. Wind can blow sand and soil away.	true	false
2. Erosion always happens in one day.	true	false
3. Plant roots help hold soil in place.	true	false
4. Ice cannot break rocks.	true	false
5. Erosion moves rock and soil to new places.	true	false

3 Design a way to keep a hill from washing away. Label it.

How did I do? ☆ ☆ ☆

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Try it: the rain hill test

Name _____ Date _____

I can test how plants slow erosion.

1 You need

- 2 baking pans
- damp soil
- grass or leaves
- a paper cup with holes
- a book

2 What to do

1. Fill both pans with damp soil. Press grass or a layer of leaves on top of one pan.
2. Prop one end of each pan on the book to make a hill.
3. Hold the cup over the top of each hill and pour in the same amount of water.
4. Look at the water that runs off each pan. Which is muddier?

3 I predict

Which hill will lose more soil?

_____

_____

4 What I see

Pan	Draw the runoff	Muddy or clear?
bare soil		
with plants		

How did I do? ☆ ☆ ☆

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FOR TEACHERS AND PARENTS

Answer key: weathering and erosion

1 Page 1

Answers: 1) a cracked rock: ice; 2) sand dunes: wind; 3) a glacier valley: ice; 4) a sea cliff: water; 5) a canyon: water; 6) a bare field: wind.

2 Page 2

Slowing erosion: 1) plant grass: roots hold the soil in place; 2) build a sea wall: blocks the crashing waves; 3) put up a fence: catches blowing sand; 4) pile up big rocks: protect a river bank.

Weathering or erosion: 1) weathering; 2) erosion; 3) erosion; 4) weathering; 5) erosion.

3 Page 3

Think: 1) It carried away rock bit by bit for a very long time; 2) Roots hold the soil so rain cannot wash it away; 3) Water freezes in a crack, grows and splits it; 4) Waves rubbed them against sand and rocks.

True or false: 1) true; 2) false; 3) true; 4) false; 5) true.

Drawing: answers will vary. Look for plants, walls, fences or rocks that slow the water and hold the soil.

4 Page 4: Try it!

The bare hill loses much more soil: its water runs off brown and muddy, and little channels form. The pan with grass or leaves loses much less, and its water runs clearer, because the plants hold the soil and slow the water. That is why people plant grass on hillsides.

5 Teaching tip

After a rainy day, walk the school grounds and look for erosion: bare dirt, little channels, mud on paths. Then look for what stopped it, like grass and mulch.

Safety: a grown-up pokes the holes in the cup. Work outside or on a tray, and wash hands after.

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