

Changes to the Earth Erosion

Estimated Time: 30 minutes

Age range: 4th grade

What you need: Tray (baking sheet or Tupperware container or plastic tub will work too), pencil, enough dirt to make a small hill (sand or moistened cornstarch will work too), water dropper (turkey baster or tablespoon, you can also poke a small hole in a small paper cup and let it drip), water, and outdoor vegetation (leaves, twigs, and pine needles) and small rocks.

New Words

Vegetation- plants

Erosion- the movement of sediment (small pieces of rocks and minerals)

The Great Basin is home to many animals and plants. Did you know that wild horses are not native to the Great Basin? They were brought over many years ago and now call this area home. Unfortunately, the horses don't have any natural predators (something that eats them) to keep their population small enough to not harm the surrounding area. Too many horses cause the land to change. When the horses walk around and eat the vegetation that grows close to water sources (spots), it makes the land change.



Let's do an experiment to see how the horses make the land change.

Instructions:

- 1) Dampen your dirt.
- 2) Make a mound or hill with your dirt on your tray.
- 3) Add vegetation (pine needles, bark, wood chips, twigs, leaves and other plants) and small rocks all over your hill.
- 4) Draw your hill in the box labeled "hill before the rain" and make a prediction (guess) about what will happen when you make it "rain" on your hill.

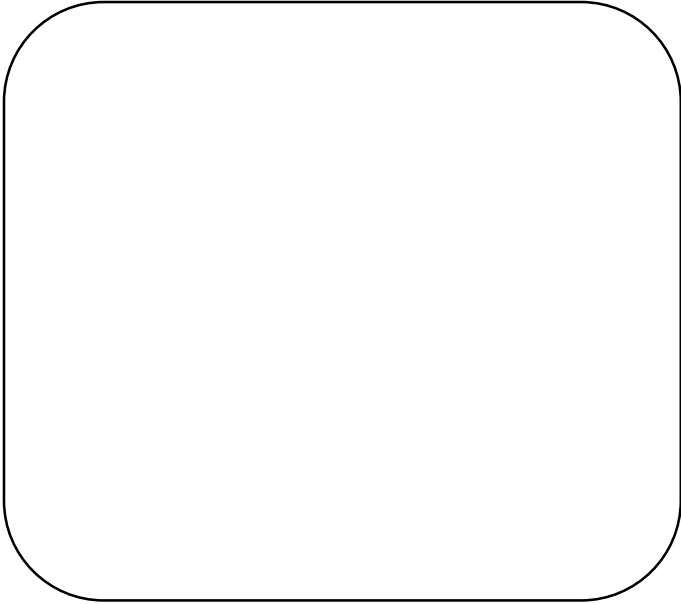
I predict that the dirt on my hill will _____

- 5) Use a water dropper to add 20 drops of water at the top of your hill to simulate a rainstorm.
 - 6) What did you notice (see) as it rained on your hill? Were your predictions correct? Draw what your hill looked in the box labeled "after 1st rainstorm".
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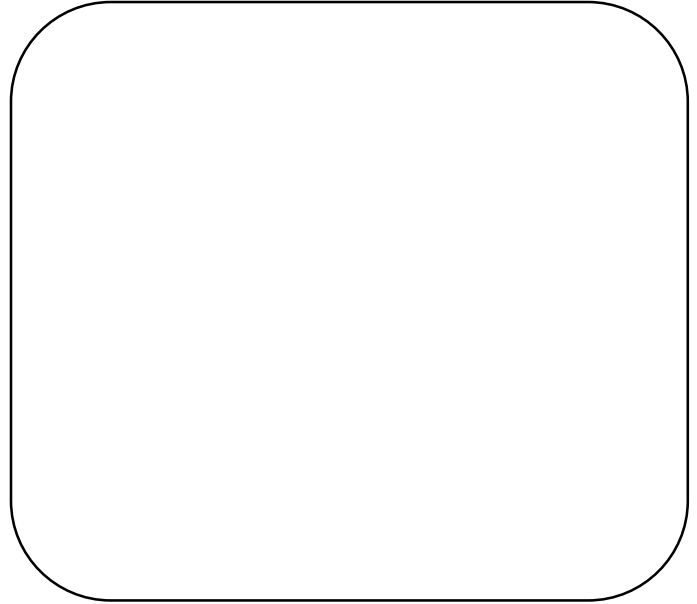
- 7) Now, let's make it rain again! But this time all of the vegetation and rocks have been eaten or moved by the horses. Take all of the rocks and vegetation off of your hill. Make a prediction about what will happen to your hill now and draw what it looks like in the box labeled "after horses change the hill".

I predict that the dirt on my hill will

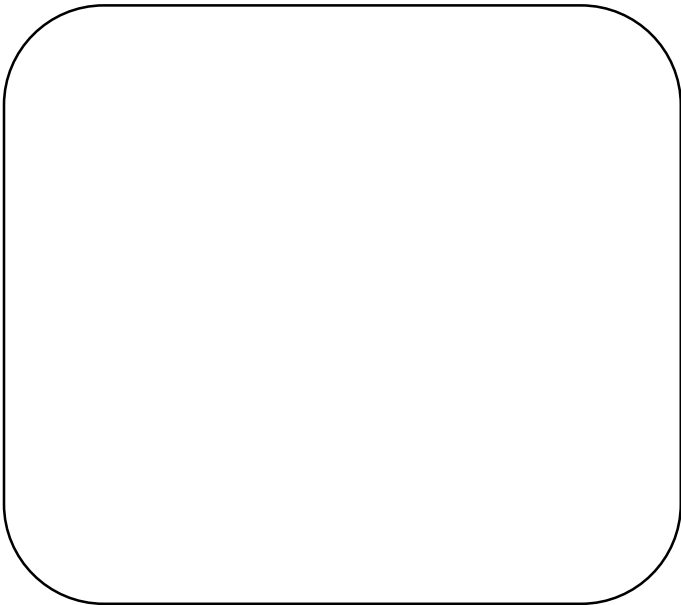
8) Add 20 more drops on your hill and see what happens. Draw what you saw in the box labeled “after 2nd rainstorm”



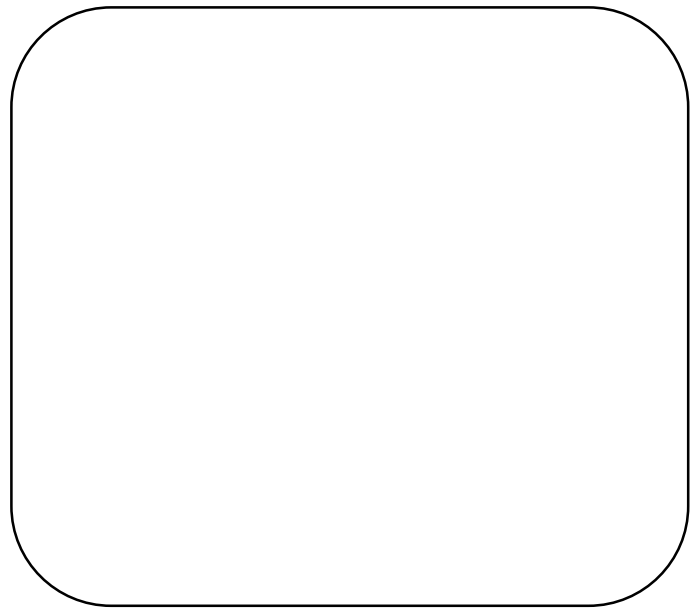
hill before the rain



after 1st rainstorm



after horses change the hill



after 2nd rainstorm

What changed on your hill when you tested it the first time with the rocks and vegetation and when you tested it the second time when the rocks and vegetation were gone? Why do you think that happened?

When the rocks and vegetation were on the hill, they stopped the dirt from being moved down hill when it rained. Vegetation has roots that help keep dirt in place. When horse eat the vegetation or walk on it and kill it, there are no plant roots to help keep the dirt from moving downhill when it rains.

When you tested the hill without any rocks or vegetation you probably noticed that a lot of the dirt moved down the hill. As you poured water on to your hill, the water picked up sand, dirt, and rocks and carried them away. What you observed is called **erosion**. Erosion is the movement of sediment (small pieces of rocks and minerals). That means that the land moves from one place to another. After it rains, have you ever taken a walk and seen something like this?

Information about horses and Erosion:

<http://naes.unr.edu/news/story.aspx?StoryID=845>

<https://www.blm.gov/press-release/blm-begin-emergency-wild-horse-water-and-bait-trap-gather-red-rock-hma>