NATURE'S NOTES
Connecting nature with music.

STRINGS, STREAMS, AND PIZZICATO SPRINGS
EPISODE 4

ACTIVITY #2: EROSION

OVERVIEW

Water exists in almost every landscape, flowing quickly, trickling slowly, or sitting calmly. Water can also affect the shape of the landscape by causing erosion. Try this activity to see just how powerful water can be!

MATERIALS

- 3 or 4 plastic soda bottles *(1 or 2 liter is best)*
- Potting soil, garden soil, or topsoil *(Either purchased or dug up from outside)*
- 1 or 2 types of mulch, such as: bark chips, dead leaves, small rocks, grass clippings, etc.
- Watering can
- 3 or 4 plastic cups
- Masking tape
- Scissors or utility knife
- Small seedling plants or grass sod *(You can buy these, or try to find them growing outside! Any small plants will work, even weeds. Just dig them up carefully, roots and all, and see below for instructions.)*

BACKGROUND INFO

How often do you think about soil? If you are a farmer, gardener, landscaper, or geologist, you might think about it all the time! Otherwise, soil might not be the first thing on your mind. But even when you're not thinking about it, soil is working for you—constantly!

What does healthy, living soil do? It has so many jobs! Here are just a few:

1. It's a medium for plants to grow in, providing nutrition and structure.
2. It provides habitat for small creatures (like insects and worms) as well as larger ones (like mice and rabbits).
3. It recycles important nutrients (such as carbon and nitrogen) so that living things can use them again and again.
4. It filters and cleans water so that people, animals, and plants can drink it.

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Think about the water you saw in the **Strings, Streams, and Pizzicato Springs** video. Was some water moving faster than others? Did some water seem stronger?

Where would be without soil? Our life as we know it would change a lot. And even though soil doesn't have legs to get up and walk away, it can move from place to place. When soil or sediment wears away and moves, we call that *erosion*. Erosion occurs when things like water or ice exert a force on soil or sediment Think of rivers carrying sediment downstream or a glacier moving giant boulders through a mountain. Over time, these natural processes wear away soil, transporting and depositing it somewhere else. That can be a problem for people, animals, and plants who depend on that soil for its important functions.

Luckily, there are a few things you can do to stop water from eroding your soil! In this activity, we'll see firsthand how erosion works—and how you might be able to slow it down.

INSTRUCTIONS

Check out the **Strings, Streams, and Pizzicato Springs** video for a visual tutorial. Or, follow these steps:

1. Gather your materials and have an adult cut large, rectangular holes in the sides of your plastic bottles. Set the bottles on their sides, cut-side up, and fill them with soil. You now have self-draining planters!

2. Position your planters so that the bottle necks hang over the edge of the table. Or, place them on a box, and have the necks hang over the side of the box, as shown below. Brace your planters against something or tape them down so they don't roll away.

3. Now it's time to add groundcovers to your planters. Leave one as is, with just bare soil. Plant the grass sod or small plant seedlings in the second planter. Cover the soil in the remaining one or two planters with different types of mulch—a layer of rocks on one, a layer of dead leaves on another, etc.

4. Once your groundcovers are in place, set up a system to catch the draining water in plastic cups. If the necks of your planters extend over the side of a box, place a plastic cup on the table under each planter neck. If your planters hang over a table edge, stack some boxes or books on chairs to raise your plastic cups to the right height.

5. Water each planter with the watering can, making sure that each one gets the same amount. The water will begin to filter through the planters and into the cups. Keep an eye on each planter as the water moves through it. Which cup has the dirtiest water and which has the cleanest? Why do you think that is?

EXTENSIONS

What you've just witnessed is erosion at work. The force of the water transported the soil from the planter in the cup.

- Try watering your planters for a second or even a third time. Does anything different happen on the second and third rounds, or are your results the same?
- Which of your planters experienced the most erosion? The least? How did the different groundcovers affect erosion? If you wanted to protect your soil from erosion as much as possible, which groundcover would you use?
- Do you have any bare ground at home? Try using mulch or planting something on it, and see if you notice an improvement in erosion. What other ideas do you have to prevent erosion in your yard?