

Ecosystems Activity Bag

Impacts on Ecosystems: Student Activity Guide

Have you wondered what happens to an ecosystem when there is a forest fire, an oil tanker leaks oils, or your school plants a pollinator garden? Each of these events has an impact on the ecosystem and the living things within them. This activity will explore these relationships.

These directions will get you started. Your teacher will be in contact to guide you and provide information.

Materials From The Bag

- 2 Plastic Squat Cups
- 2 Soil Tablets
- Medicine Cup
- Bag of Grass Seed (If you have not completed the EcoBag activity, save the remaining grass seed.)
- Small Spoon
- Packet of Malt Vinegar

You Will Need

- Water
- Scissors

Preparation

Set up a cup ecosystem. Follow the directions below.

1. Remove the mesh from the soil tablets and place one tablet in each cup. Add 30 mL of water.
2. After the water is absorbed, break apart the soil using the small spoon.
3. Add an additional 10mL of water and mix.
4. Place two small spoons worth of seeds into the soil. Gently mix the seeds into the soil.
5. Allow for the grass seeds to grow. The grass should be taller than the edge of the cup. This should take 5-7 days. Water the grass as needed.

Part 1: Acid Rain

You will explore how malt vinegar, an acid, affects an ecosystem.

1. Draw your cup ecosystem.
2. Predict what you think will happen if you water the ecosystem with a vinegar solution.
3. Carefully cut open the packet of malt vinegar and pour it into the medicine cup. Fill the rest of the medicine cup up to the 30mL mark with water.
4. Water your ecosystem with the entire vinegar solution.
5. After 24 hours, record your observations and draw your ecosystem.
6. Repeat step 5 for the next 3-5 days.

How did the vinegar solution affect your ecosystem? Compare your results to your prediction.

What's happening...

Have you ever heard of acid rain? Acid rain is pollution that begins when humans burn fossil fuels, such as gas, coal, and oil. Burning these fuels releases chemicals into the air. Those chemicals combine with water and fall to Earth as rain, snow, sleet, hail, or fog. Acid rain can change how living things grow in ecosystems. The vinegar solution represented acid rain. *Now that you know how the vinegar solution affected your plants, how do you think it would impact other organisms in an ecosystem?*

Part 2: Experimenting With Ecosystems

Many different things can affect an ecosystem. In this part, you will change one thing to the ecosystem and see how it impacts the ecosystem. For example, changing water to acid rain.

1. Prepare a cup ecosystem following the instructions in the preparation section.
2. What would you like to change in your ecosystem? Predict what you think will happen to the ecosystem.
3. After your grass has grown taller than the edge of the cup (5-7 days), begin to apply the change to the ecosystem.
4. After 24 hours, record your observations and draw your ecosystem.
5. Repeat step 4 for the next 3-5 days.

How did your change impact the ecosystem? Compare your results to your prediction.

What's happening...

Whenever something changes in an ecosystem, the ecosystem will be impacted. Some changes have a negative impact on the ecosystem, some changes have a positive impact on the ecosystem, while others have little or no impact on the ecosystem.