

Cutting Down the Rain

Human Impact on the Environment

Edgenuity Unit: Ecology

Lesson: Human Impact and the Environment

Time: 2 weeks 30 minutes on Day 0 and 15-30 minutes on Days 14 & 15



Learning Target

I can explain an example of human impact and the affect on ecosystems.

Materials

- | | |
|---|--|
| <ul style="list-style-type: none">• Wisconsin Fast Plant seeds (standard)• 4 deli container growing systems<ul style="list-style-type: none">○ 16 oz. deli container○ 8 oz. deli container○ Wicking cord or string• 2 sandwich Ziplock bags• 2 binder clips• Scissors | <ul style="list-style-type: none">• Light box – growing house<ul style="list-style-type: none">○ 2 crates○ Aluminum foil○ Hanging light fixture○ 24 watt CFL• Potting soil• Wisconsin Fast Plant fertilizer |
|---|--|

The destruction of the tropical rainforests gets a lot of media coverage. This **biome** is in great danger as trees are being cut or burned down at an alarmingly fast rate. Many **species** of plants and animals are also disappearing with the forests. The changing of one **ecosystem** on the Earth can have a ripple effect on the rest of the world. In this activity, you will investigate the difference between **ecosystems** with different amounts of leaf surface area.

You will be using Fast Plants that are about 2 weeks old. If there are none available, begin by following the directions to grow the plants (Skip to Day 14 if you have plants that are ready).

Plant the seeds in 2 containers using the following directions:

1. Poke a hole in the center of the bottom of the 8 oz. deli container.
2. Cut a wick 12-14 cm long, wet thoroughly with water and insert 2 cm into bottom of 8 oz. deli container.
3. Pour $\frac{1}{4}$ cup of soil into the 8 oz. container.
4. Label containers based on the amount of fertilizer that was added.
5. Spread fertilizer pellets evenly on top of the soil. Put a different amount in each container and make sure that one container has NO fertilizer added.
6. Add $\frac{1}{2}$ cup of soil on top of fertilizer pellets.
7. Sprinkle water over soil until it is dripping from the wick.
8. Place 5 seeds in a circle pattern on top of the soil.
9. Cover seeds with $\frac{1}{4}$ cup of soil.
10. Pour 1 cup of water into the 16 oz. deli container.

11. Set the small container on top of the larger container.
12. Place in light box and cover front (the plants will need plenty of water and 24 hours of light!)
13. Check on water daily.

Day 7

1. Keep the 3 best plants in each container and remove all others.

Day 14

1. Cover the plants in one container with a plastic bag. Secure bag with binder clip. Be careful not to break or damage the plant while putting on the bag. These plants represent an intact tropical rainforest.
2. Using the scissors, snip off all the leaves on the plants in the other container. Cover these plants as in step 2. They will represent an area in which the tropical rain forest has been cut down.
3. Return the plants to the light box.

Day 15

1. Observe the plants to answer the following questions:

What are the differences between the “**ecosystems**” that you observed?

Where do you think the water on the bag came from?

If the “**ecosystem**” with leaves cycled more water into the atmosphere (bag), what can you infer about the amounts of water cycled into the air by undisturbed forests compared to cleared areas?

Explain why the destruction of forests might lead to change in rainfall.

Why should people who live in other areas of the world be concerned about clearing of tropical rainforests?

