

All About Forest Ecosystems

Investigation Data Sheet



Soil Secrets

Soil is one of the most important factors in every ecosystem. It is enriched by a combination of living and non-living things like small organisms, water, rock particles and the remains of plants and animals. As a result, the soils in different ecosystems differ from each other.

Objective

Investigate why rainforest soil has few nutrients.

Materials

- four houseplants (two each of the same type and size)
- two containers of water
- potting soil
- a large spoon
- some cheesecloth
- two large containers or buckets
- a notebook

Safety Notice: All applicable laboratory safety rules must be followed. Students should not perform any experimental activity without the teacher's supervision and express permission. Students must follow safety guidelines and wear appropriate protective gear.

Procedure

1. Lay a piece of cheesecloth over one of the large containers and have a friend hold it in place. Use the large spoon to scoop some potting soil onto the cheesecloth.
2. Carefully pour about a liter of tap water through the soil, making sure all of the soil gets wet. When the water has finished dripping through, remove the cloth, and place it over the second large container.
3. Pour the water from the first container through the soil in the cheesecloth. Repeat this step two more times. You should notice the water becoming darker. Why?

4. Pour this soil-rich water into one container and use it to water two different houseplants. This will represent water from the deciduous forest. Water the other two plants with plain tap water. This will serve as rainforest water.

5. Water your plants for several weeks, making notes in your notebook on how well the plants are doing.

- Which ones are growing faster? Why do you think that is the case?

Conclusions

- Why did the plants getting plain tap water represent plants from the rainforest? Why did the other two plants represent plants from the deciduous forest?

- How did the contents of the soil-rich water influence the growth of the plants?

- Why is soil essential for the growth of so many plants? What does it contain?

- How can rainfall help and hinder a plant?
