

Plant Growth in Desert & Grassland Ecosystems

There are plants in all of the Earth's ecosystems. Some plants are better suited to live in certain ecosystems because of adaptations they have developed to help them meet their basic needs of sunlight, air and water.

Objective

Create a model of a desert ecosystem and a model of a grassland ecosystem to see which kinds of plants do best in each.

Materials

- four containers for growing plants
- some sandy soil
- some garden soil
- water
- grass seeds
- four small desert plants, such as a cactus
- gloves
- a ruler
- some paper to draw and write observations

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. Fill two of the containers with sandy soil and two with garden soil. At one end of each container, plant the desert plant. Scatter the grass seeds on the soil at the other end.
2. What types of adaptations do these plants have to survive in their ecosystems? Do you think the same adaptations will help them to survive in other ecosystems?

3. Water each container equally — enough so the seeds will be able to grow. Then, set the containers in a warm, sunny spot. You now have four containers of the same plant life, but with different soils: two have the dark, rich soil found in grasslands ecosystems, while the others have the loose, sandy soil found in deserts around the world.
4. Every few days, check your plants and take some notes on how they're doing. Then, give one of the sandy soil containers and one of the garden soil containers plenty of water. Give the others just a little.

5. After several days, list your observations in the table below.

		Grass	Desert Plants
Sandy desert soil	More moisture		
	Less moisture		
Garden soil	More moisture		
	Less moisture		

Under which conditions did the grass seeds grow best? The desert plant?

Conclusions

- Do you think that a desert plant can survive in the grassland? Can a grassland plant survive in the desert? Explain.

- Which of the two plants do you think would be better suited to live in a variety of ecosystems? Why?

- How do unusual or unexpected climate trends (i.e., drought) affect plants in an ecosystem?
