

SCIENCE·3D

DESERT MONSTER

In this packet, sample student answers are provided in **red** and notes to teachers are in **blue**.

In this **Mission Reader**, *Desert Monster*, students will learn about Gila monsters, desert biomes weather and climate, how landscapes change through time, and the use of topographic maps and GPS. They will also explore plant and animal life cycles, and how their traits help them survive.



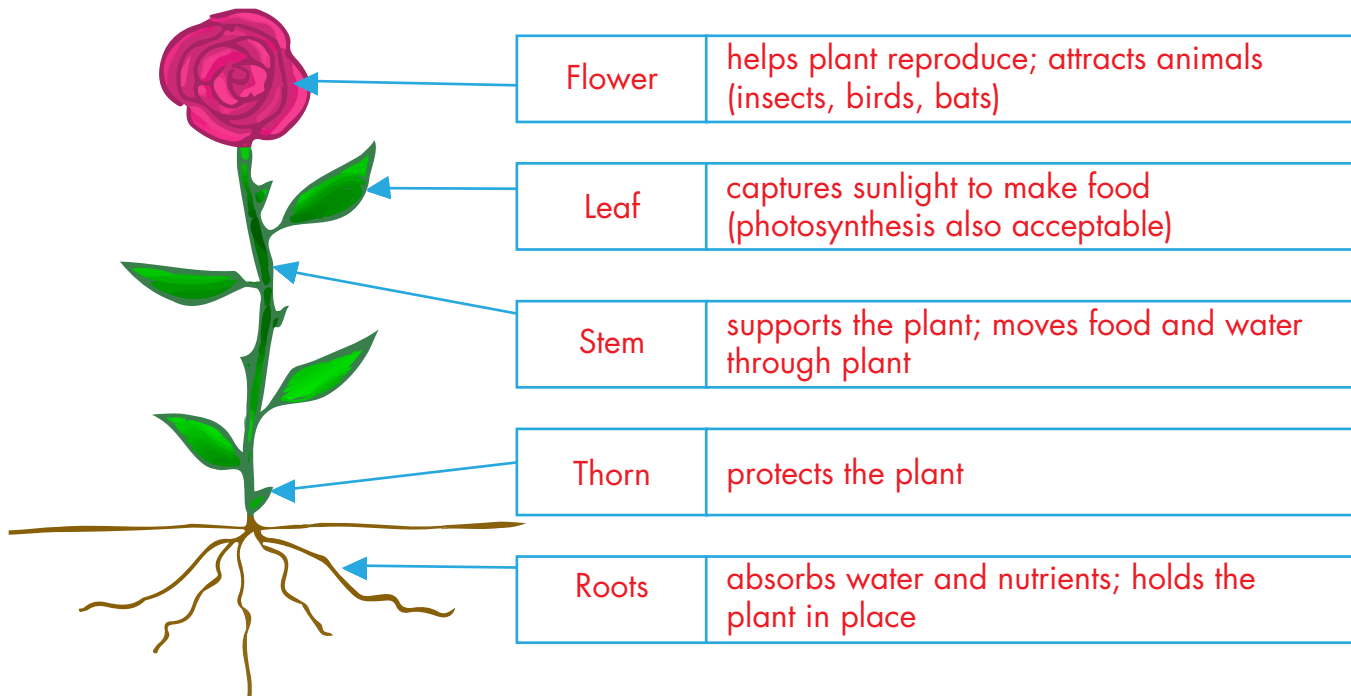
Activity 1: Plants!

Before we study Gila monsters, we need to know more about their environment. And, one of the most important parts of their environment is plants! Without plants, there would be no food for animals. That would mean Gila monsters could not exist. But how do plants survive in such hot and dry environments? How will they respond to changes in their environment?

Use the **Reader**, other books, or online resources to help answer the following questions.

1. Use the following words to complete the diagram. **Describe** the role of each part next to the term.

Flower, Leaf, Stem, Thorn, Roots



2. Use the following words to label the diagram. **Describe** the role of each part next to the term.

Needles, Cones, Trunk, Bark

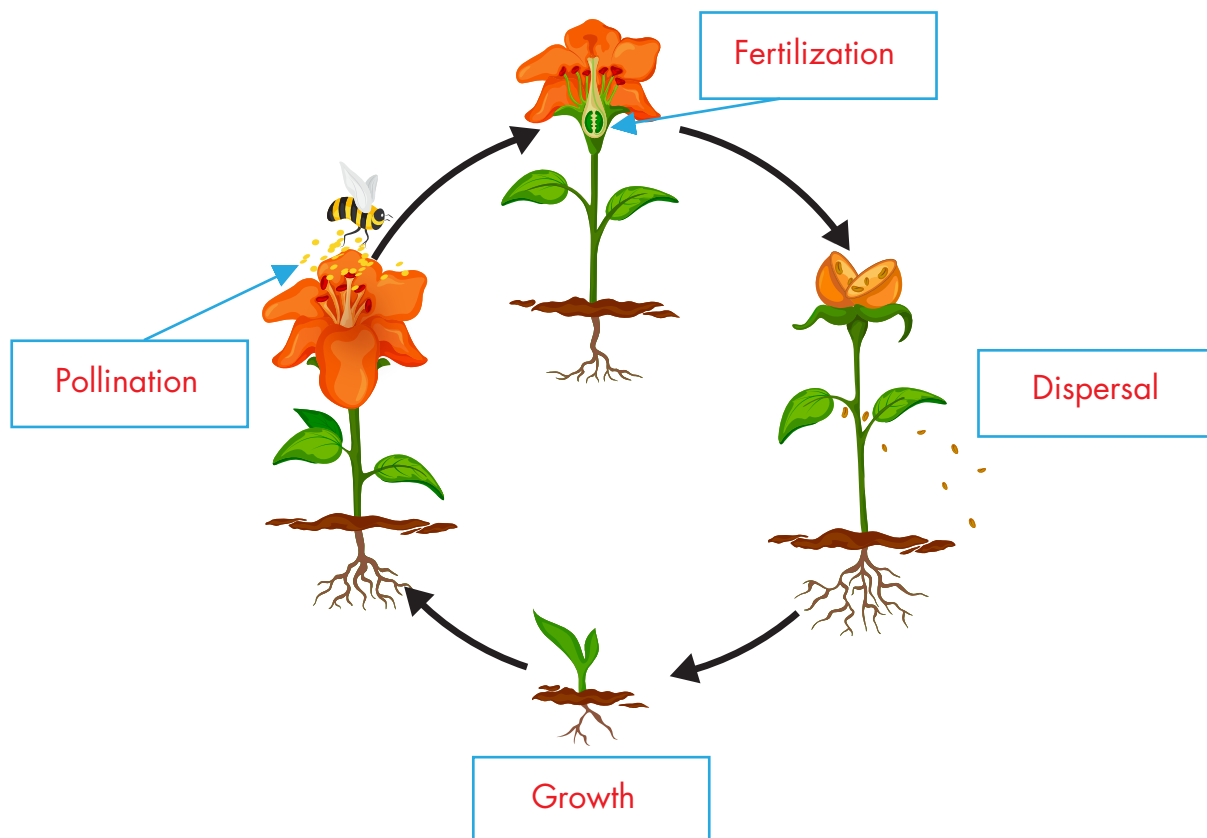
Needles
capture sunlight to make food
(photosynthesis also acceptable)

Cones
help plant reproduce; attract animals
(insects, birds, bats)

Trunk
supports the plant; moves food and water
through plant

Bark
protects the trunk

3. Use the following words to complete the diagram: **Pollination, Fertilization, Dispersal, Growth**



4. **Describe** what is happening in each of the following pictures. **Describe** how what is illustrated helps the plant survive and reproduce.



Pollen is blown by the wind. This helps the
plant reproduce because of fertilization.



A seed is blown by the wind. This helps a
seed move away to a place where it can
grow.

5. **Describe** what is happening in each of the following pictures. **Describe** the benefit to the plant. **Describe** the benefit to the animal.



A bee brings pollen to a flower/plant.

The plant gets fertilized.

The bee gets food.



A squirrel is covered in seeds from another plant.

The animal gets no benefit.

The plant seed gets carried away to a place to grow.



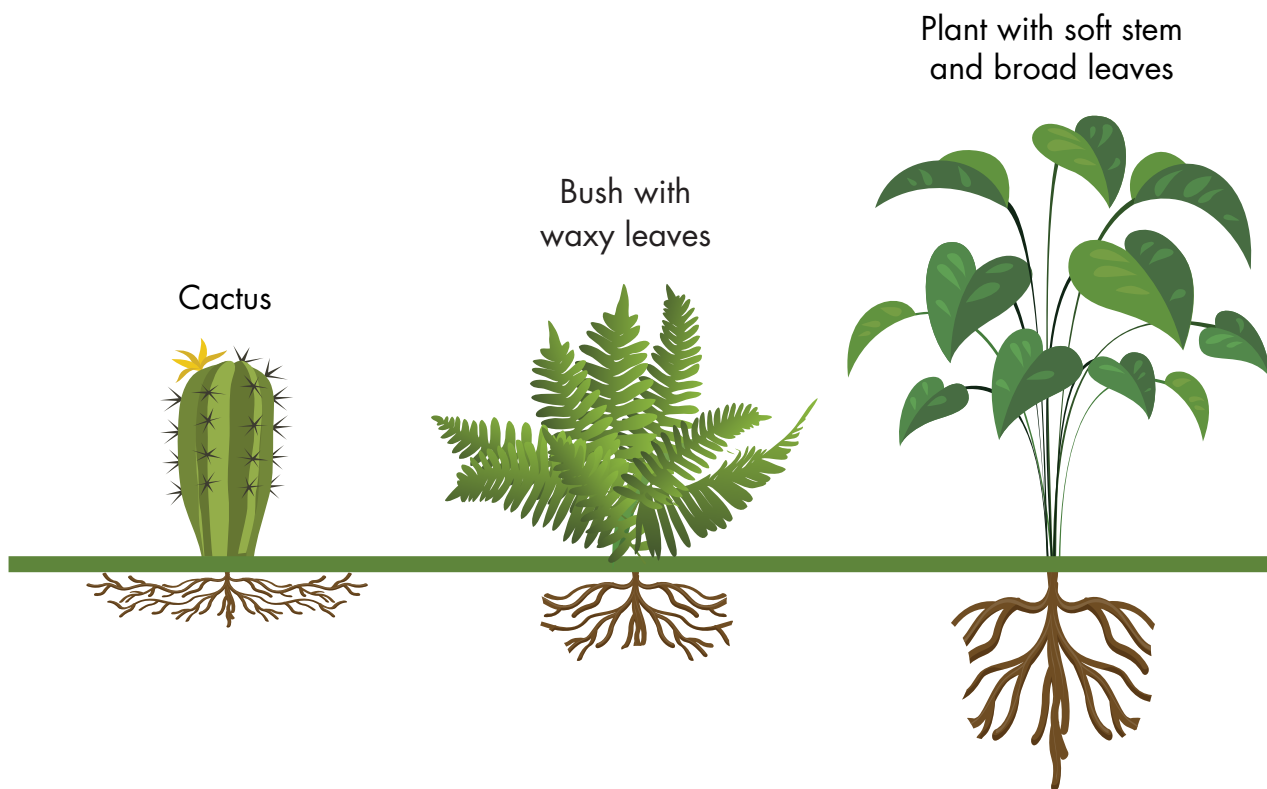
A bird eats berries.

The bird gets food.

The plant seeds are moved to a place where they can grow.

Pine trees and cactuses both have traits that help them survive during conditions without much water. Large and flat leaves may gather lots of sunlight, but they also lose lots of water. Smaller leaves and needles that have waxy coatings better hold on to water. A cactus without any leaves holds onto water really well! A round body is great for retaining water.

Look at the graphic below. It includes a cactus, a bush with thin waxy leaves, and a plant with a soft stem and broad flat leaves. Do you notice differences in their roots? Use what you have learned and what you observe in the graphic to answer the following questions.



6. Predict what would happen to each of the three plants if the conditions were to get much drier and hotter and rain could not reach deep into the soil. **Describe** why you made these predictions.

Cactus: I predict that the cactus will do well. Its roots are shallow so it can still get water. Its shape is good for retaining water.

Bush with waxy leaves: I predict the bush with waxy leaves will survive. The leaves hold in water and its roots are shallow. Some students may say it will have some trouble. Make sure they justify their answer (will still lose water from leaves or roots are too deep).

Plant with soft stem and broad leaves: The plant with a soft stem and broad leaves will disappear. It will not be able to get enough water with its roots, and it will lose too much water from its leaves.

7. **Predict** which of the three plants will do the best if conditions were to get much wetter and cloudier. Remember, rain will make the upper layers of soil very unstable. There will be less light because there are more cloudy days. **Describe** why you made this prediction.

The plant with a soft stem and broad leaves will do best. It will get plenty of water, and its broad leaves will get enough sun. It won't fall over in the wet soil. The cactus will not do well. Its roots are shallow, so it might fall over. It may have trouble getting enough sunlight. (Some students may not get this last part of the answer, but it would provide an opportunity to discuss the concept of surface area in an extended discussion or activity). The bush with small leaves may not get enough sunlight.