

Redwood Forests

Science Grade-Level Expectations

This instructional task addresses content related to the following science grade-level expectations:

LS-E-A3 Explain the functions of plant structures in relation to their ability to make food through photosynthesis (e.g., roots, leaves, stems, flowers, seeds) (GLE 40)

LS-E-C3 Describe the effect of sudden increases or decreases of one group of organisms upon other organisms in the environment (GLE 54)

Contents

- Teachers may choose to use or modify the tasks as part of an instructional lesson or as a formative or summative assessment.

	Objectives
Task	<ul style="list-style-type: none"> · Read about current scientific research · Describe the functions of plant parts · Describe the photosynthetic process · Describe the role of plants in an ecosystem
<u>Sample Exemplar Student Responses</u>	

Sample Exemplar Student Response:

- A. Scientists noticed the some giant sequoia trees were losing leaves and others had a lot of brown leaves. They were concerned that the drought might be causing some of the trees to die. It is important that scientists learn more about this because only some of the trees are showing signs of stress and others aren't. Scientists don't understand why this is true. The article said that these sequoia trees have been through a lot of droughts before and have survived. Scientists need to understand more in order to protect the giant trees.
- B. Photosynthesis depends on water. When plants are getting an adequate amount of water through their roots, they have a better chance of being healthy. The water travels through the stem or tree trunk to the leaves where food can be made through the process of photosynthesis. In cases of drought, the roots cannot take in enough water. The chloroplasts in the leaves cannot use energy from the sun to make food if there isn't enough water, so they start to die and turn brown.
- C. Plants and animals in forests are connected and depend upon each other for survival. Trees provide homes for animals such as birds and insects. If a lot of the sequoia trees die, animals will lose their homes.

If sequoia trees die, more sunlight will reach the forest floor since the large trees won't provide as much shade. This could allow other plants such as ferns and bushes to grow. These new plants would then provide food for plant eating animals such as rabbits.