



Science Log – 4th

Topic: Plant Life

Learning Goals:

1. Explain that the survival of plants depends on photosynthesis.
2. Create a model of a plant that include stem, leaves, and roots.

Topic: _____

K What do you already know about the topic?	W What do you want to know about the topic?	L What did you learn about the topic?

Vocabulary

Seed-producing plants	Have roots, stems, leaves, and flowers (aka vascular plants).
Pollination	Part of the reproductive process of flowering plants; pollen is transferred from the stamens to the stigma.
Stamen and Pistil	Reproductive parts of the flower.
Sepals	Small leaves that form the housing of the developing flower.
Plants with spores	Nonvascular plants.
Photosynthesis	How plants produce their own food.
Spores	A small usually single-celled reproductive body produced by fungi and some plants.
Pollen	The very tiny grains produced by the stamens of a flower that fertilize the seeds and usually appear as fine yellow dust.
Vascular	Plants that have specialized tissues for conducting water, minerals, and photosynthetic products through the plant.
Nonvascular	Plants that have no roots, stems, or leaves, so the plants cannot retain water or deliver it to other parts of the plant body.



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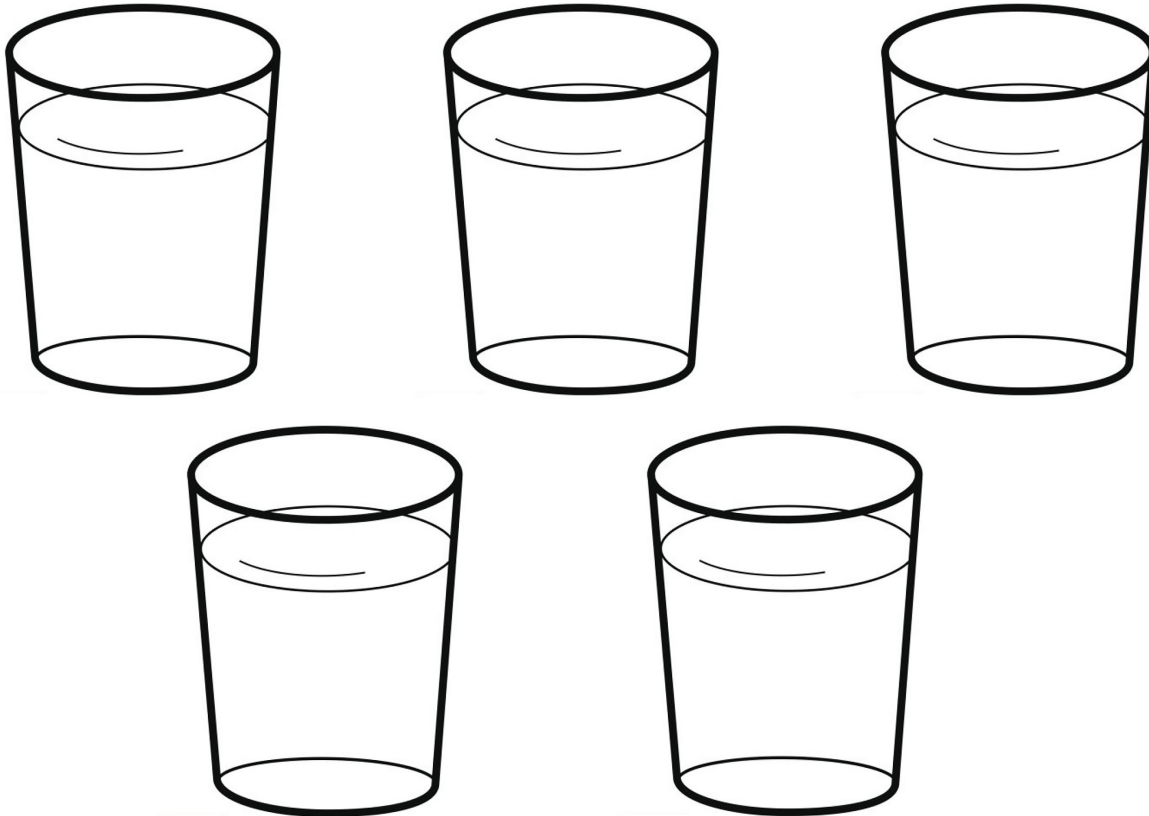
Breathing Leaves:

Which tree produces the most oxygen through photosynthesis?

Supplies: five clear cups or jars, water, 5 different fresh leaves

Directions:

1. Go outside to collect 3-5 different leaves.
2. Place one leaf into each of the clear cups or jars.
3. Fill the cups/jars with water, making sure the leaves are completely covered.
4. Draw a picture of each leaf in its cup.
5. Set them aside for about an hour.
6. Observe which cups/jars of water have the most bubbles. This shows they are producing the most oxygen!



I observed _____



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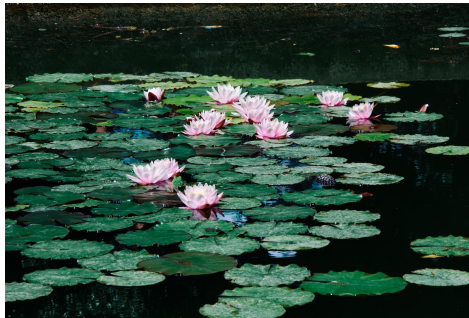
Water Plants



Seaweed is attached to the bottom of the sea or a solid structure with the roots (holdfasts) but do not absorb nutrients through them. Flexible stems easily bend with the movement of the water. They grow upwards toward the sunlight, but stay below the water. Waxy coating on the leaves prevent too much salt water absorption.



Mangroves thick tangled roots grow up above water along shores. The leaves grow at the top of the tree stems to capture sunlight.

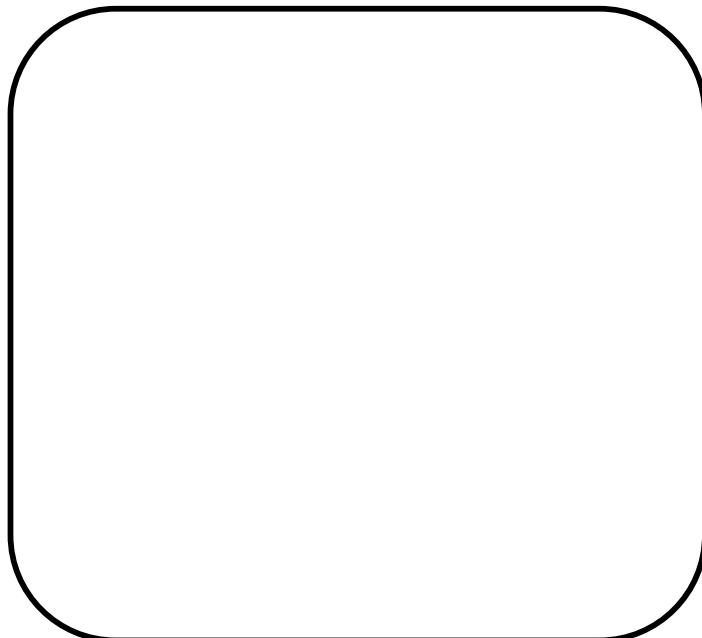


Water lilies grow up from the muddy bottom of still or slowly moving bodies of water. Long thick stems grow upwards to support their floating waxy leaves.

Supplies: green foam sheet (leaves), pink foam sheet (flowers), pipe cleaners (stems), string/twine (roots), gravel, medium sized plastic container, water, wax paper, tape

Directions:

1. Read above to learn about different types of water plant adaptations.
2. Choose a plant to design, and draw and label the model you plan to construct. (Labels: Roots, Stem, Leaves).



3. Explain the adaptations your plant model shows.

4. Choose and list the materials you will use and begin constructing your model.
5. Test your model.
 - a. Place gravel on the bottom of a medium sized plastic container to represent soil on the bottom of a lake, stream, ocean, or pond.
 - b. Place your plant models roots under the gravel anchor the plant so it can stand up.
 - c. Fill that container half full with water.



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Chlorophyll Coloring

Directions: Use the chlorophyll of a leaf to color in the tree by pressing and rubbing the leaf against the paper.

