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.

Vocabulary

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

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.

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