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# Quick & Easy Habitat Education Activities Evergreen and Deciduous Leaves

Adapted by Starflower Foundation from numerous sources

Second Grade  
30-45 Minutes  
Indoors/Outdoors  
Fall or spring

2-4

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| <p><b>Description:</b> Students consider the difference between evergreen and deciduous leaves as represented by Douglas fir and bigleaf maple and other native plants from the habitat area. The class creates models of evergreen and deciduous leaves and conducts an experiment to help understand how these leaves are different. Students compare these results to live leaf samples.</p>   | <p><b>Vocabulary</b><br/> <b>Adaptation:</b> <i>modification of an organism that makes it more fit for existence under the conditions of its environment</i><br/> <b>Broadleaf:</b> <i>plants with leaves that are not needles</i><br/> <b>Conifer:</b> <i>cone bearing trees and shrubs; most are evergreen</i><br/> <b>Deciduous:</b> <i>falling off seasonally</i><br/> <b>Evergreen:</b> <i>foliage that remains green</i><br/> <b>Tend:</b> <i>to exhibit an inclination towards</i></p>   |
| <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>• Students learn that plants have adaptations that help them to survive.</li> <li>• Students apply principles of scientific inquiry in a simple experiment.</li> <li>• Students learn basic differences between evergreen and deciduous leaves.</li> </ul>   | <p><b>Washington State EALRs</b><br/> <b>Science 2.1.1</b> Understand how to ask a question about organisms and events in the environment. <b>2.1.2</b> Plan and conduct an observational investigation that collects information about characteristics or properties. <b>2.1.3</b> Explain an event or phenomena using observations as evidence. Understand how to construct a reasonable explanation using evidence. <b>2.1.4</b> Understand that models represent real objects or processes. Describe reasons for using a model to investigate phenomena. <b>2.1.5</b> Report the process used and results of the investigation (e.g., verbal, visual, written).</p> |
| <p><b>Print Materials:</b></p> <ul style="list-style-type: none"> <li>• ‘How-to-do Activity: Evergreen &amp; Deciduous Experiment’</li> <li>• Images: ‘The Seasons’</li> </ul> <p><b>Teacher supplied:</b></p> <ul style="list-style-type: none"> <li>• Waxed paper and paper towels (see ‘How-to-do Activity’)</li> <li>• Spray water bottle</li> <li>• Leaf samples (refrigerate in plastic bag until use): <ul style="list-style-type: none"> <li>▪ Bigleaf maple and other broadleaf deciduous leaves (e.g., red alder, hazelnut, Indian plum)</li> <li>▪ Douglas fir and other evergreen coniferous needles (e.g., pine, spruce)</li> <li>▪ Broadleaf evergreen leaf (e.g., madrone, Oregon grape, salal)</li> </ul> </li> </ul> |   |

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| <p><b>Activity:</b></p> <ul style="list-style-type: none"> <li>• Discuss: “What season are we in now?” Show images: ‘The Seasons’. Discuss how to compare the seasons. “When looking at a forest what is one of the biggest differences between winter and summer?” (leaves on plants).</li> <li>• Remind students about ‘Bigleaf Maple’ and ‘Douglas Fir’. Tell students that one of those trees is deciduous and one is evergreen. “A deciduous tree loses its leaves once a year, and an evergreen has leaves all year. Which tree is which?”</li> <li>• “Show student’s different leaf samples (include deciduous, coniferous, broadleaf evergreen). State that, “These are evergreen and these are deciduous. What are things we might observe that would help us tell the difference between evergreen and deciduous leaves?” List student ideas which may include thickness, shape, covering. Ask, “How can we find out if these ideas are correct? (conduct experiments)”</li> <li>• Let’s conduct an experiment to learn about some differences between evergreen and deciduous leaves. Plants need water but water is lost from the leaves. Let’s make a model of different leaves that show how they’re made to see if different leaves lose water differently.”</li> <li>• Refer to ‘How-to-do Activity’: Show three paper towel “leaves” and spray them equally with water. “How does this model leaves?” (leaves hold water). Leaf model #1: Take one wet paper towel and spread it flat. “What kind of leaf might this be?” (bigleaf maple and/or another deciduous leaf). Model #2: Take another wet paper towel and roll it up tightly into a long tube. “What kind of leaf might this be?” (Douglas fir and/or another conifer leaf). Model #3: Take another paper towel and fold it in half between waxed paper. “What kind of leaf might this be?” (broadleaf evergreen).</li> <li>• Ask, “Which model do you predict will dry first, second, last?” Ask students to record their predictions and why.</li> <li>• Allow models to remain undisturbed until Model #1 is relatively dry while others are still moist (about 1/2 – 1 hour).</li> <li>• Discuss results. Explain that, “Plants have adaptations to help them survive the cold of winter and heat of summer. One of these is different types of leaves. Deciduous plants drop their leaves in winter as a way to prevent water loss during extreme dry cold. Evergreen plants have leaves that have adapted to help them hold water during changes in seasons.” <ul style="list-style-type: none"> <li>▪ Deciduous leaves <u>tend</u> to be thinner, easier to tear. Deciduous plants tolerate the low light, cold and moisture loss of the freezes in winter by dropping their leaves and becoming dormant.</li> <li>▪ Broadleaf evergreen leaves <u>tend</u> to be thick, leathery and covered, like a blanket, with a waxy coating. This makes them resistant to cold and moisture loss from freezing in winter.</li> <li>▪ Conifer leaves <u>tend</u> to be shaped like needles and very compact. They are also strong and don’t tear easily. This makes them resistant to cold and moisture loss from freezing in winter.</li> </ul> </li> <li>• Ask students to write a description of their experiment, steps and results. Did the results match their predictions? Why or why not? What does this experiment teach us about leaves?</li> </ul> |
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