**Leaf properties and More for Upper Grades Betty Darleen Horton**

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Pre assessment for 3 – 5: What are some ways that leaves can be classified? How does leaf placement on a plant affect its growth and its ability to produce food? Why are plants important?

Begin the activity with a quick review of properties, classification and a more in-depth amount of background regarding leaves and their structures and functions. Discuss the basic types of leaves, their placement on the plant, their function in regards to photosynthesis, and how leaves are used by animals and humans.

Share with students that when we look at a food pyramid, plants form the base. All life on our planet is supported by plants. Plants have adapted over millions of years to environmental changes such as weather, light and animals who eat them. Not only are plants food but they also clean the air and provide oxygen.

Vocabulary: smooth, toothed, lobed –referring to leaf edges; simple or compound leaves; alternate, opposite or whorled – leaf position on stems; veins

* For grades 3 - 5, send them on a leaf hunt with similar directions as for the younger students, but ask them to select leaves with different edges and to note in a journal or on a notecard the arrangement of leaves on that particular plant using leaf vocabulary.
* Give students about ten minutes to find their leaves and make their drawings. Utilize the sundial for a timing device.
* When students return, have them use the classification chart – described below – to sort their leaves. If the chart is for leaf edges, there will be three columns or boxes. Just create different charts for different properties or attributes.
* Directions: almost anything can be used to create a chart. A piece of white cloth or a vinyl backed tablecloth works well. Make a grid on the cloth using a permanent marker. Use dry erase markers or laminated pre- printed tags for headings.
* If it is a windy day students can use small rocks or even tape to keep the leaves on the chart.
* Ask students to describe their leaves and ask them to think about why the leaves on their plant were placed as they were on the stem. (Discuss briefly how leaves take in sunlight and carbon dioxide and how leaf placement affects the process).
* Discuss with students other possible ways they could classify the leaves they chose. A fun way is to create a chart of edible and inedible leaves from the garden.
* Suggest that students look for evidence of how the leaves may have been used as food by insects or other animals.
* Tell students how to dispose of their leaves. If there is time, students may want to take a moment to observe the garden plants again, after their discussions have helped them form new questions.

Post assessment: By classifying leaves collected in the gardens and by creating data charts, how can the data be utilized to understand structure and functions of leaves on plants?

Science, Math

**Common Leaf Identifier Chart**

