# Leaf Classification

A Japanese maple tree

Most **vascular plants** have leaves. The leaves on one kind of plant are different from the leaves on other kinds of plants. Scientists can use leaves to identify plants. But with so many different kinds of plants in the world, how do scientists use leaves to identify plants? The answer is **classification** systems.

Leaves have properties that can be used to organize them into groups, or classes. In class, you used the pattern of veins in the leaves to organize your leaf collection. You organized the leaves into three classes, **palmate**, **pinnate**, and **parallel**.
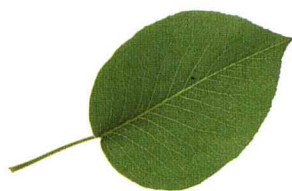

Palmate

Pinnate

Parallel

Other properties can be used to **classify** leaves, too. Leaves have shape. Some are long and pointed. Others are round. Leaves can even be fan shaped, triangular, or heart shaped. You can classify leaves by the shape of the **blade**.
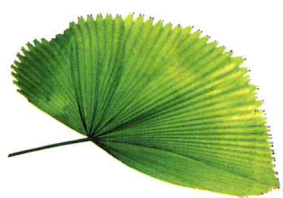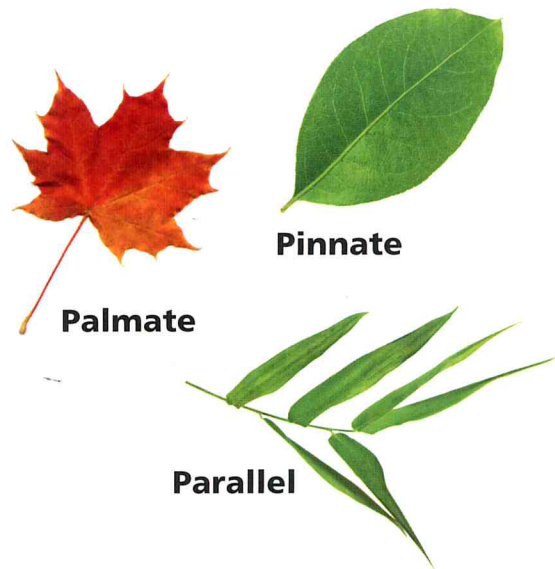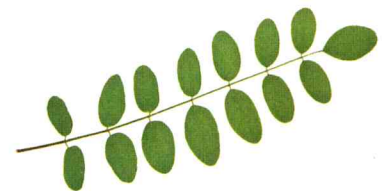

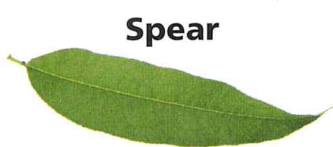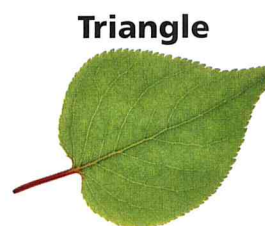**Fan**　　　**Round**　　　**Heart**　　　**Compound**

Spear　　　**Needle**　　　**Triangle**
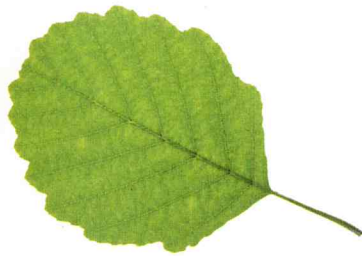
The edges of leaves, called **margins**, are different from one another. Margins can be toothed, lobed, scalloped, fuzzy, or smooth. You can classify leaves by their margins.

Toothed

Lobed

Scalloped

Fuzzy

Smooth

Leaves are not the only way to classify plants. Whole plants can be classified. They can be organized into grasses, clovers, cacti, sagebrushes, palms, and so on. Any collection can be classified. Rocks can be classified by the minerals they contain or by form. A collection of rocks can be divided into a set that contains mica, a set that contains calcite, a set that contains quartz, and so on. The same collection of rocks can be classified again into sets of igneous, sedimentary, and metamorphic rocks.

Classification is one way to organize information about the natural world. By putting things together that have the same properties or behaviors, the complex world becomes a little easier to understand.

Thinking about Leaf Classification

1. What is classification?

2. What are three different ways you can classify leaves?

3. If you had a collection of insects, how would you classify them?