

Preparation for:

Forestry Merit Badge
Plant Science Merit Badge



Into the Woods

Webelos Camp

Takeaways

- Understanding our interconnection with the plant world
- Being knowledgeable, responsible, and comfortable in the outdoors
- A Scout is reverent

Complete at least Requirements 1-4 and one other:

1. Identify two different groups of trees and the parts of a tree.
2. Identify four trees common to the area where you live. Tell whether they are native to your area. Tell how both wildlife and humans use them.
3. Identify four plants common to the area where you live. Tell which animals use them and for what purpose.
4. Develop a plan to care for and then plant at least one plant or tree, either indoors in a pot or outdoors. Tell how this plant or tree helps the environment in which it is planted and what the plant or tree will be used for.
5. Make a list of items in your home that are made from wood and share it with your den. OR: with your den, take a walk and identify useful things made from wood.
6. Explain how the growth rings of a tree trunk tell its life story. Describe different types of tree bark and explain what the bark does for the tree.
7. Visit a nature center, nursery, tree farm, or park, and speak with someone knowledgeable about trees and plants that are native to your area. Explain how plants and trees are important to our ecosystem and how -they improve our environment.

1: Identify two different groups of trees and the parts of a tree.

Types of Trees:

There are two main types of trees: deciduous and coniferous. Deciduous trees lose all of their leaves for part of the year. In cold climates, this happens during the autumn so that the trees are bare throughout the winter. In hot and dry climates, deciduous trees usually lose their leaves during the dry season.

Coniferous trees don't lose all of their leaves at the same time -- they always have some foliage. They do lose their leaves a little at a time with new ones growing in to replace the old but a healthy evergreen tree is never completely without leaves.

Parts of a Tree

Roots:

The roots are the part of the tree that grows underground. Trees have a lot of roots -- the size of the root system is usually as big as the part of the tree above the ground. This is necessary because the roots help support the tree. It takes a lot of roots to hold up a 100 foot tree!

Besides keeping the tree from tipping over, the main job of the roots is to collect water and nutrients from the soil and to store them for times when there isn't as much available.

Crown:

The crown is made up of the leaves and branches at the top of a tree. The crown shades the roots, collects energy from the sun (photosynthesis) and allows the tree to remove extra water to keep it cool (transpiration -- similar to sweating in animals). The crowns of trees come in many shapes and sizes!

Leaves:

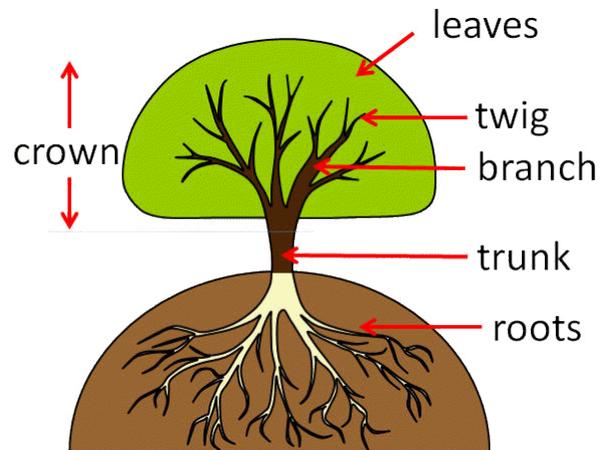
Leaves are the part of the crown of a tree. They are the part of the tree that converts energy into food (sugar). Leaves are the food factories of a tree. They contain a very special substance called chlorophyll -- it is chlorophyll that gives leaves their green colour. Chlorophyll is an extremely important biomolecule, used in photosynthesis -- leaves use the sun's energy to convert carbon dioxide from the atmosphere and water from the soil into sugar and oxygen. The sugar, which is the tree's food, is either used or stored in the branches, trunk and roots. The oxygen is released back into the atmosphere.

Branches:

The branches provide the support to distribute the leaves efficiently for the type of tree and the environment. They also serve as conduits for water and nutrients and as storage for extra sugar.

Trunk:

The trunk of the tree provides its shape and support and holds up the crown. The trunk transports water and nutrients from the soil and sugar from the leaves.



2. Identify four forest trees common to the area



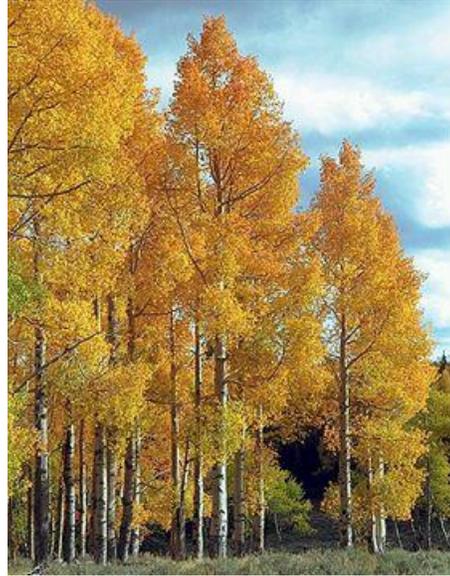
Fremont Cottonwood



Coyote Willow



Douglas Fir



Quaking Aspen



Bigtooth Maple



Box Elder

3. Identify four plants common to the area

<http://extension.usu.edu/rangeplants/>



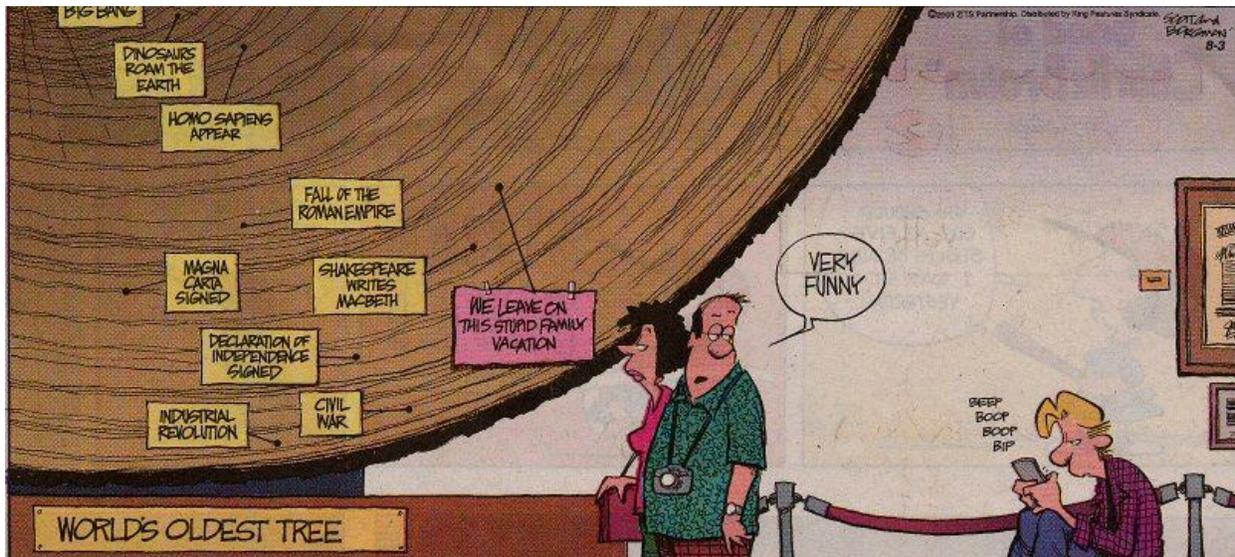
Sagebrush - it is a food source and provides cover for many types of wildlife. It is essential to sage grouse, which prefer the short forms, for feed and cover.



Cow Parsnip - Cow parsnip is a valuable forage species for livestock, deer, elk, moose, and bear. It is rated moderately good for erosion control, short-term revegetation potential, and long-term revegetation potential.

6. Explain how the growth rings of a tree trunk tell its life story.

Inside the trunk of a tree are a number of rings. Each year of the tree's life a new ring is added so many people refer to them as the annual rings.



The rings are actually made up of different parts:

7b. Describe different types of tree bark and explain what the bark does for the tree.

The outside layer of the trunk, branches and twigs of trees. The bark serves as a protective layer for the more delicate inside wood of the tree. Trees actually have inner bark and outer bark -- the inner layer of bark is made up of living cells and the outer layer is made of dead cells, sort of like our fingernails.

The scientific name for the inner layer of bark is Phloem. The main job of this inner layer is to carry sap full of sugar from the leaves to the rest of the tree.

A number of handy things are made from bark including latex, cinnamon and some kinds of poisons. Because bark is a protective layer for the tree, keeping it safe from insects and animals, it isn't surprising the strong flavours, scents and toxins can often be found in the bark of different types of trees.

Cambium:

The thin layer of living cells just inside the bark is called cambium. It is the part of the tree that makes new cells allowing the tree to grow wider each year.

Sapwood (Xylem):

The scientific name for sapwood is xylem. It is made up of a network of living cells that bring water and nutrients up from the roots to the branches, twigs and leaves. It is the youngest wood of the tree -- over the years, the inner layers of sapwood die and become heartwood.

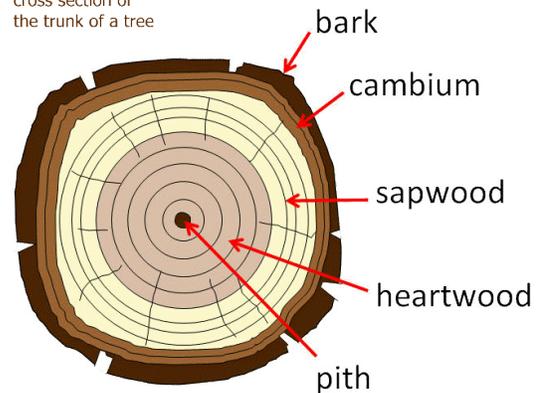
Heartwood:

The heartwood is dead sapwood in the center of the trunk. It is the hardest wood of the tree giving it support and strength. It is usually darker in colour than the sapwood.

Pith:

Pith is the tiny dark spot of spongy living cells right in the center of the tree trunk. Essential nutrients are carried up through the pith. It's placement right in the center means it is the most protected from damage by insects, the wind or animals.

cross section of
the trunk of a tree



7. Visit a nature center, nursery, tree farm, or park

CONSERVATION GARDEN PARK PATCH

With your den, pack, or family complete the following requirements to earn this patch:

1. Explain where our water comes from; how it gets to our homes; and where it ends up.
2. List two reasons why we need to conserve water in Utah.
3. Explain why landscaping is important to water conservation.
4. Identify six different garden themes displayed along the "Neighborhood Street."
5. Name three different kinds of turf grass.
6. Name three waterwise plants native to Utah.
7. Name two types of mulch and one purpose for using it.
8. Name three particles that make up soil.
9. Name three ways we use water indoors and three ways to conserve water indoors.
10. Name three ways we use water outdoors and three ways to conserve water outdoors.
11. Identify two different methods of irrigation used in the garden.
12. Time Scouts in a competition to put irrigation parts together that are found on the trays in the irrigation path.



Conservation Garden Park at Jordan Valley
8215 S 1300 W, West Jordan, UT 84088
Phone: 801-565-4300
Web site: www.conservationgardenpark.com

Admission is free.

The patch may be purchased at a local Scout Shop.