WORK WITH NATURE

What are plants?

What are trees?

A brief history of plants.

Differences between plants and animals.

Why are they green and how do they work?

What types of plants are there useful to humans?

What are plants?

Plants are living organisms that absorb minerals, gases and light to grow and turn into biomass which becomes food for both animals and other plants.

They grow in most places in the world, all the way from the dept of the oceans to the peaks of mountains.

What are trees?

Trees are a pump transporting water and minerals up from the root and sugar back down to the roots.

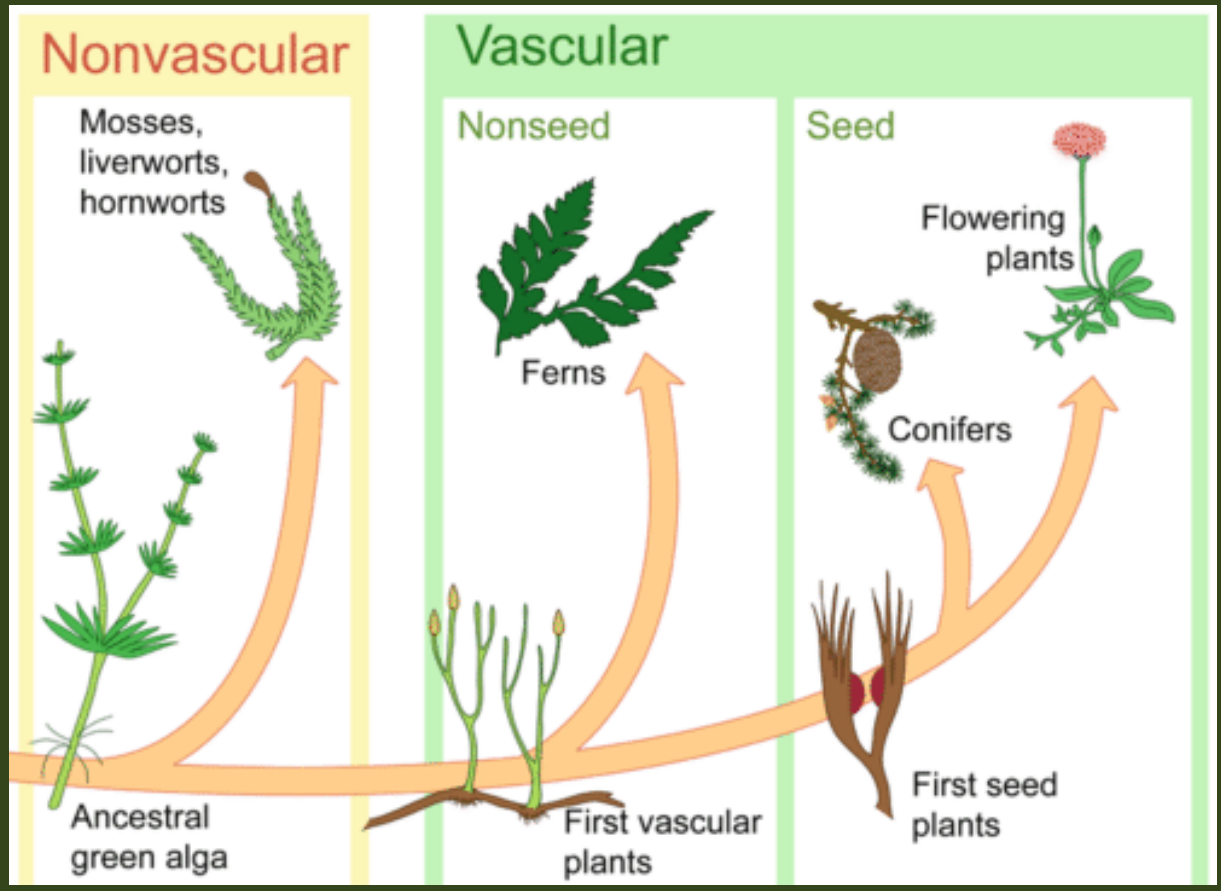
They are woody plants that can grow much taler than herbaceous (soft) plants. (Due to cellulose)

Trees are perennial and can get very old. Apple tree can reach 100 years of age and some even over 3000 years old like the giant sequoia in the redwood forest.

A brief history of plants.

Plants started to evolve as simple algae about 544 million years ago. Flowering plants only starting 145 million years ago.

Vascular plants can grow taller with the help of lignified (hardened) tissues for transporting water and minterals.



Differences between plants and animals.

Plants have cellulose in the cell walls to help them grow tall, animals do not.

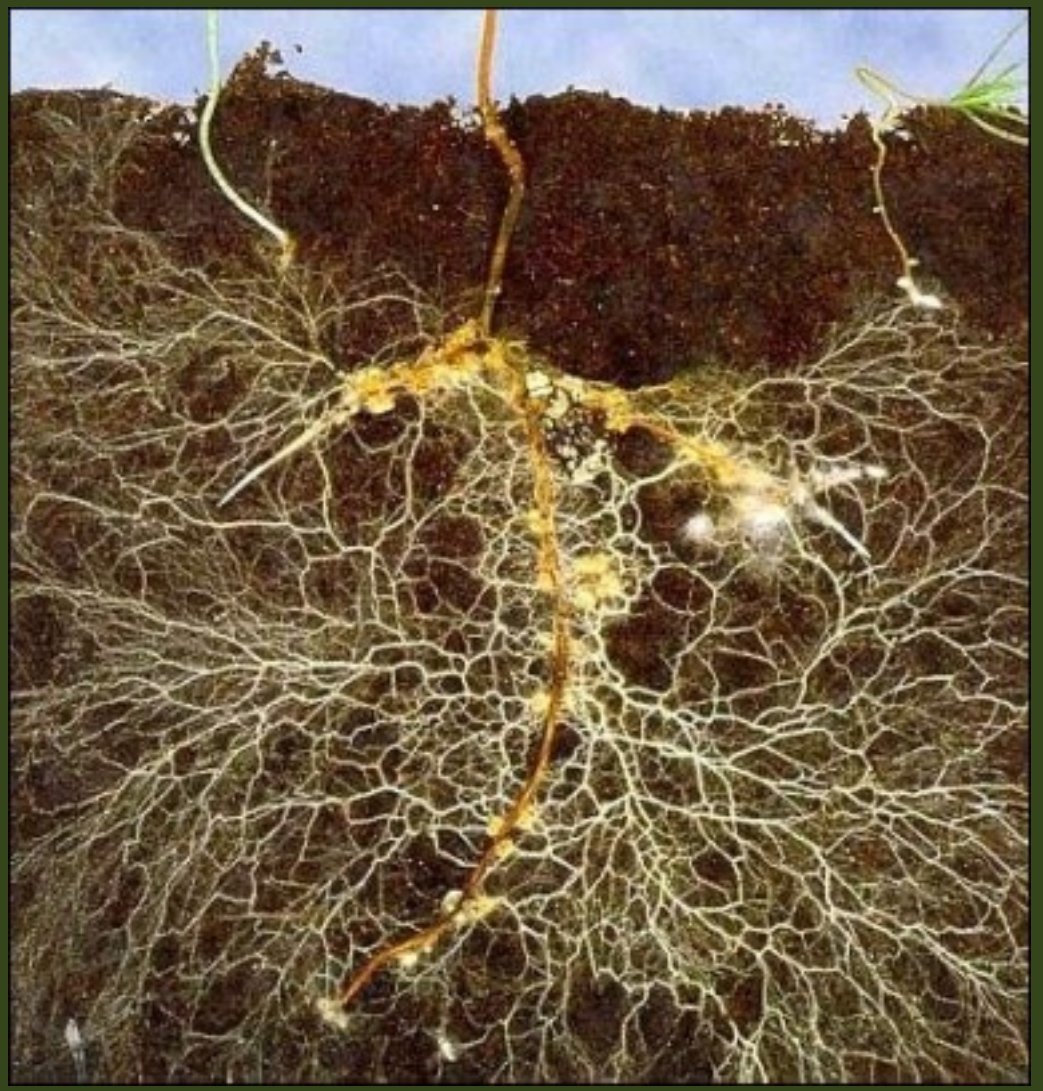
Plants are stationary, animals are mobile (Animals are the moving parts of the forest – Bill Mollison).

Plants breath carbon dioxide and expel oxygen, aninals do the opposite.

Differences between plants and animals.

There are no single celled plants.

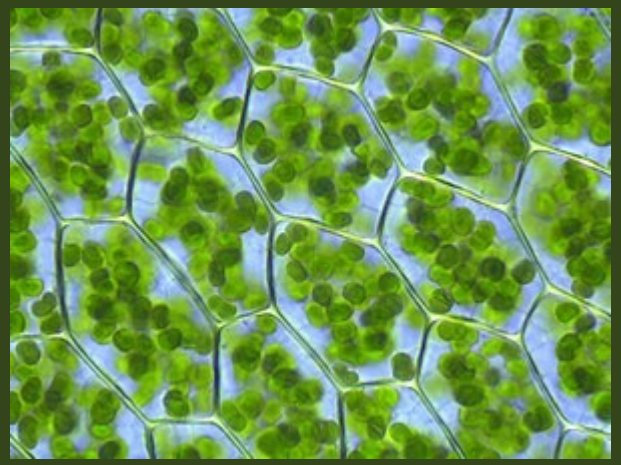
Animals have more evolved sensory organs, plants are using the help of fungi (Mycelium) networks to sense changes in the enviroment and extend their roots.



Why are they green and how do they work?

A pigment called Chlorophyll found in the leaves.

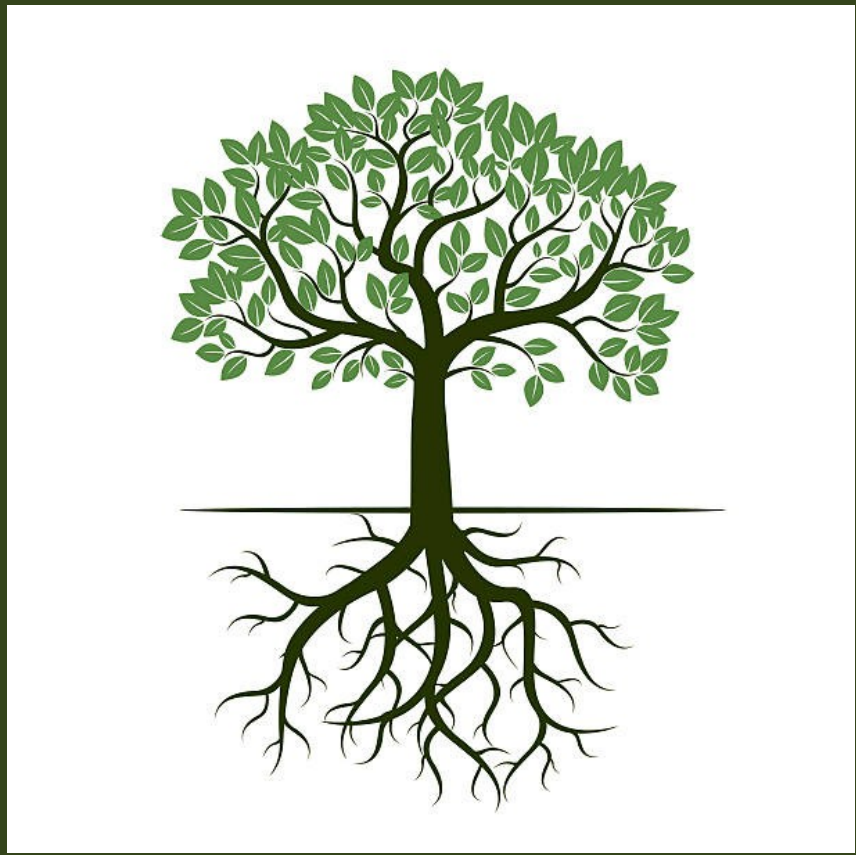
Early bacteria in the oceans used to be purple, other bacteria deeper in the water absorbing left over light evolved to be green. This caused plants to evolve to be green.
Ref: BBC – How to grow a planet.



Why are they green and how do they work?

Most plants have roots, leaves and stems.

The roots absorb water and minerals in the form of gas from the soil using a process called osmosis.



Why are they green and how do they work?

The leaves absorb light and carbon dioxide to make sugar (food for the plant) through a chemical reaction called photosynthesis.

The stems give structure to the plant and transport nutrients and water.

The only living part of trees is the green cambium layer on the outside and the middle is wood from previous years of growth.

Types of plants

Annual plants live for less than one year. For example most flowers.

Biennuals live for two years, these grow strong in the first year and then go to seed in the second year. For example Brasicas, onions and some flowers such as Mullein.

Perennials live for 3 years or more. These include all woody plants such as trees and shrubs.

Some plants are useful to humans,
but all plants are useful in some way.

Food – Vegetables and Fruits

Medicine

Materials – Construction, craft etc.

Ornamental – Flowers look, smell nice benefit insects

Thanks and happy gardening!

http://gardensforlife.ie