

Plantae

The Plantae includes all land plants: mosses, ferns, conifers, flowering plants and so on-an amazing range of diverse forms. With more than 250,000 species.

The most striking, and important, feature of plants is their green color, the result of a pigment called chlorophyll. Plants use chlorophyll to capture light energy, which fuels the manufacture of food-sugar, starch, and other carbohydrates. Without these food sources, most life on earth would be impossible. There would still be mushrooms and algae, but there would be no fruits, vegetables, grains, or any animals (which ultimately rely on plants for their food too!)

Another important contribution of plants is their shaping of the environment. Think of a place without plants. The only such places on earth are the arctic wastelands, really arid deserts, and the deep ocean. Everywhere else, from the tundra to the rainforest to the desert, is populated by plants. In fact, when we think of a particular landscape, it is the plants which first come to mind. Try to picture a forest without trees, or a prairie without grasses. It is the plants which produce and maintain the terrestrial environment as we know it.

The ancestors of modern plants evolved in the seas nearly 700 million years ago. Another 265 million years passed before the first plants appeared on land. These early land plants looked very different than the plants you're familiar with today. In fact, many of them lacked true roots, stems, and leaves - the very structures we tend to associate with plants in general! Since then, plants have taken on a variety of forms and are found in most places on Earth.



Plant characteristics

- Chlorophylls a and b for photosynthesis
- Stores carbohydrates (starch)
- Embryo (protected by tissues)
- Historically - 2 whiplash flagella

Movement to land

Plants came from protists

- The algae *Chara* is the ancestor of modern plants
- Advantage on land
- More light
- More CO₂
- More reliable supply of minerals & nutrients

12 Phyla of Plants

Phylum [Bryophyta <bryophyta.htm>](#) (Mosses)

Phylum [Hepatophyta <hepatophyta.htm>](#) (Liverworts)

Superphylum Tracheata (Vascular plants)

Phylum [Psilophyta <psilophyta.htm>](#) (Whiskferns)

Phylum [Lycophyta <lycopodophyta.htm>](#) (Quillworts, club-mosses and spike-mosses)

Phylum [Sphenophyta <equisetophyta.htm>](#) (Horsetails)

Phylum [Filicinophyta <pteridophyta.htm>](#) (Ferns)

Phylum [Cycadophyta <cycadophyta.htm>](#) (Cycads)

Phylum [Ginkgophyta <ginkophyta.htm>](#) (Ginkgo)

Phylum [Coniferophyta <coniferophyta.htm>](#) (Conifers)

Phylum [Gnetophyta <gnetophyta.htm>](#) (Mormon tea and other gnetophytes)

Phylum [Magnoliophyta <magnoliophyta.htm>](#) (Flowering plants)

The study of plants is called botany and is a very large branch of the biological sciences. It is generally concerned with identifying and studying species of plants.

Plant Information



