

PLANT EVOLUTION TIMELINE

From Aquatic Algae to Flowering Giants

**1.2B
YA**

Photosynthetic Eukaryotes

Emergence of multicellular green algae in aquatic environments.

**470M
YA**

Non-Vascular Land Plants

Bryophytes (mosses and liverworts) begin colonizing damp shorelines.

- Development of waxy cuticles
- Spore-based reproduction

**420M
YA**

Vascular Transition

Evolution of xylem and phloem allowing plants to grow upright.

- Early Lycophytes
- Development of true roots and leaves

**360M
YA**

Gymnosperms (Seed Plants)

Evolution of seeds and pollen, removing the requirement of water for fertilization.

- Conifers and Cycads dominant
- Formation of vast coal forests

Angiosperms

The rise of flowering plants and specialized pollination strategies.

- Co-evolution with insects
- Development of protected fruits