

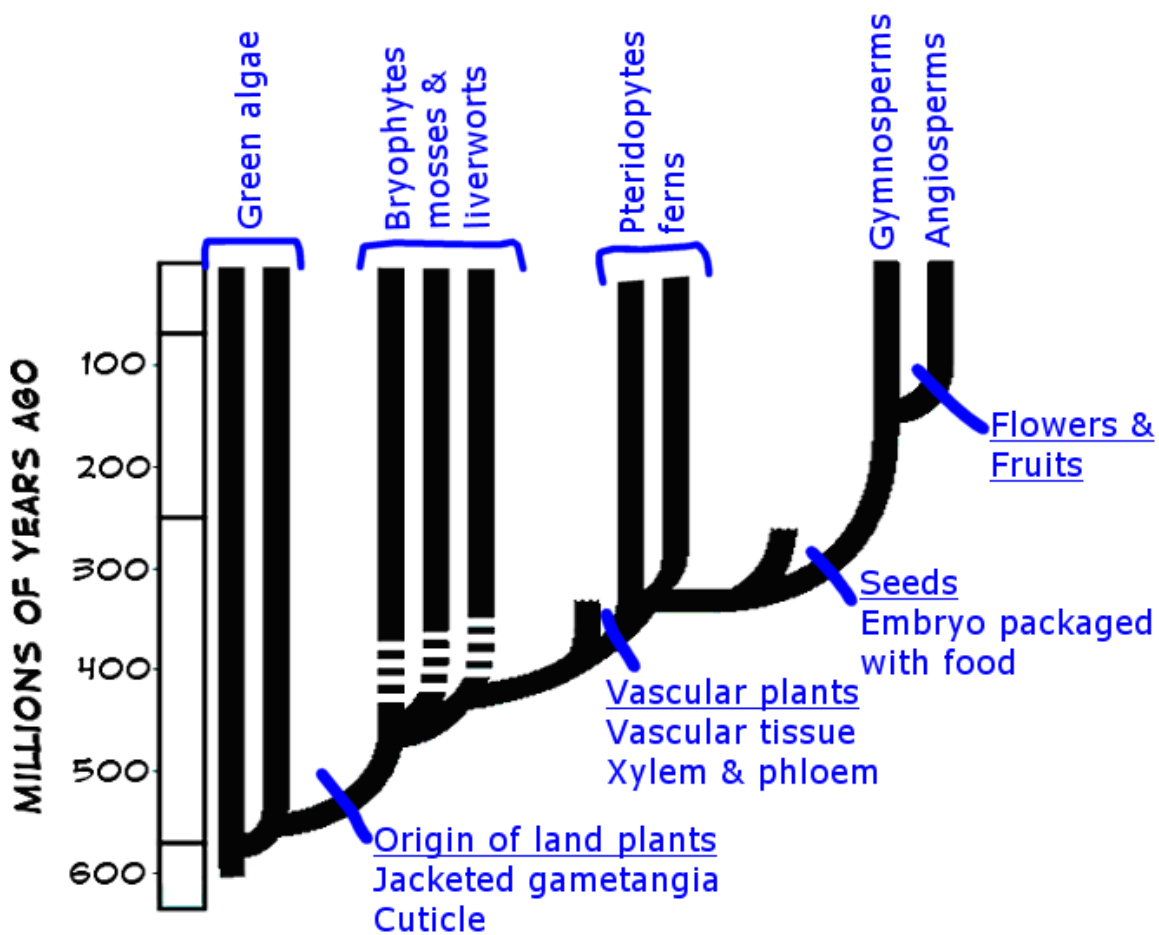
## Activity #4

# KINGDOM PLANTAE

### GENERAL CHARACTERISTICS

- Eukaryotic
- Multicelled
- Photosynthetic
- Cell wall with cellulose
- Terrestrial

### PLANT EVOLUTION HIGHLIGHTS



## CHALLENGES TO LIFE ON LAND

**PROBLEM: RESOURCES OF WATER AND LIGHT SEGREGATED**

**SOLUTION:**

Roots – absorb water and minerals

Shoot system – makes food

**PROBLEM: SUPPORT**

**SOLUTION:**

Lignin

Embedded within cellulose matrix

Provides support

**PROBLEM: ALL PARTS OF THE PLANT ARE NOT EXPOSED TO WATER. ALL PARTS OF THE PLANT ARE NOT PHOTOSYNTHETIC.**

**SOLUTION:**

Vascular tissue

Xylem transports H<sub>2</sub>O & minerals from roots to shoots

Phloem transports food from shoots to roots

**PROBLEM: LACK OF WATER FOR SPERM TRANSPORT**

**SOLUTION:**

Pollen

**PROBLEM: EXPOSURE TO DAMAGING UV RADIATION**

**SOLUTION:**

Increase dominance of diploid sporophyte generation

Has 2 sets of chromosomes

# ALTERNATION OF GENERATIONS

