

KINGDOM

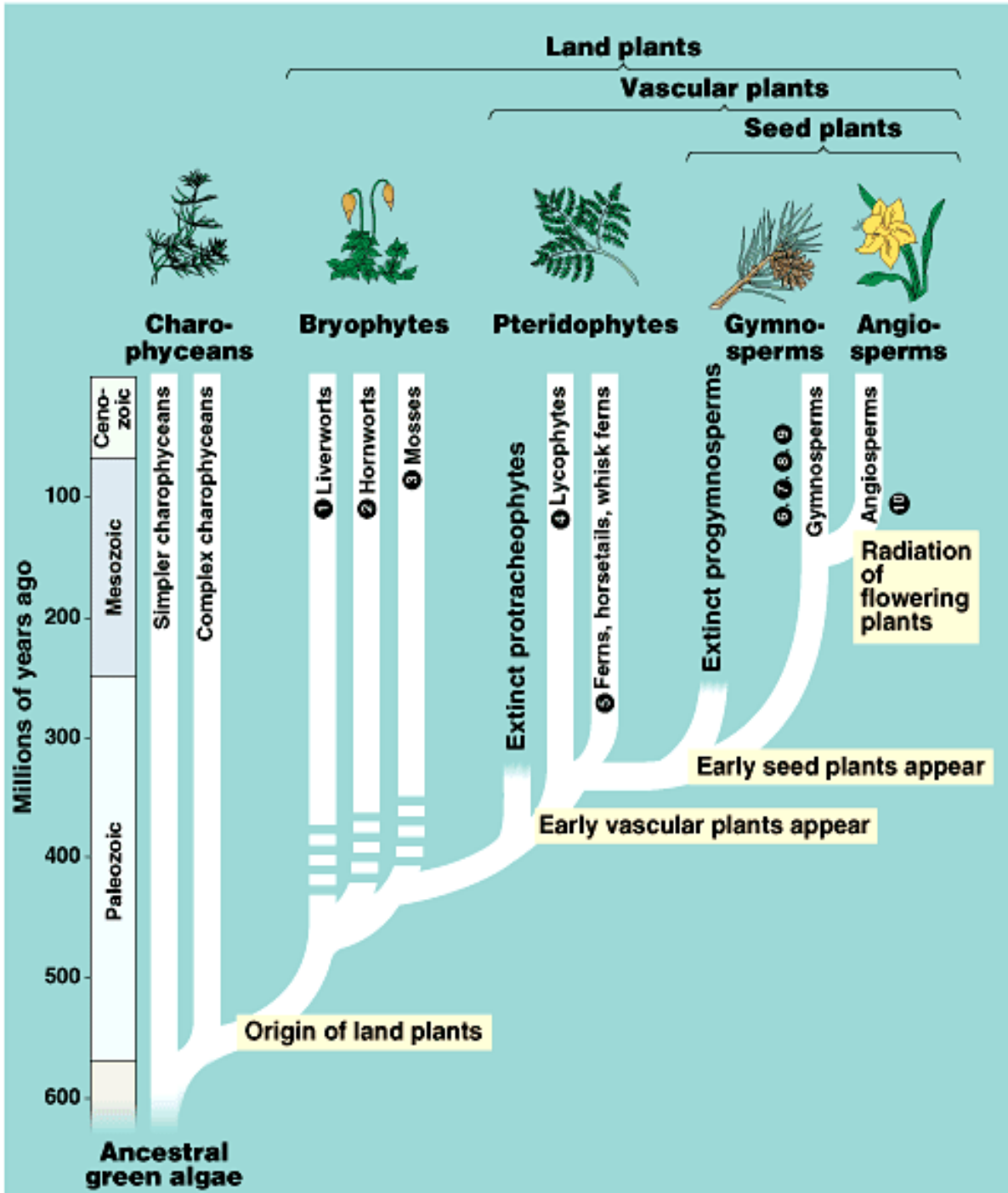
PLANTAE

Chapter 23



Plant Characteristics

- Multicellular
- Eukaryotic
- Cell walls made of cellulose
- Autotrophic
- Carries out photosynthesis using green pigment called chlorophyll
- Usually have large central vacuoles



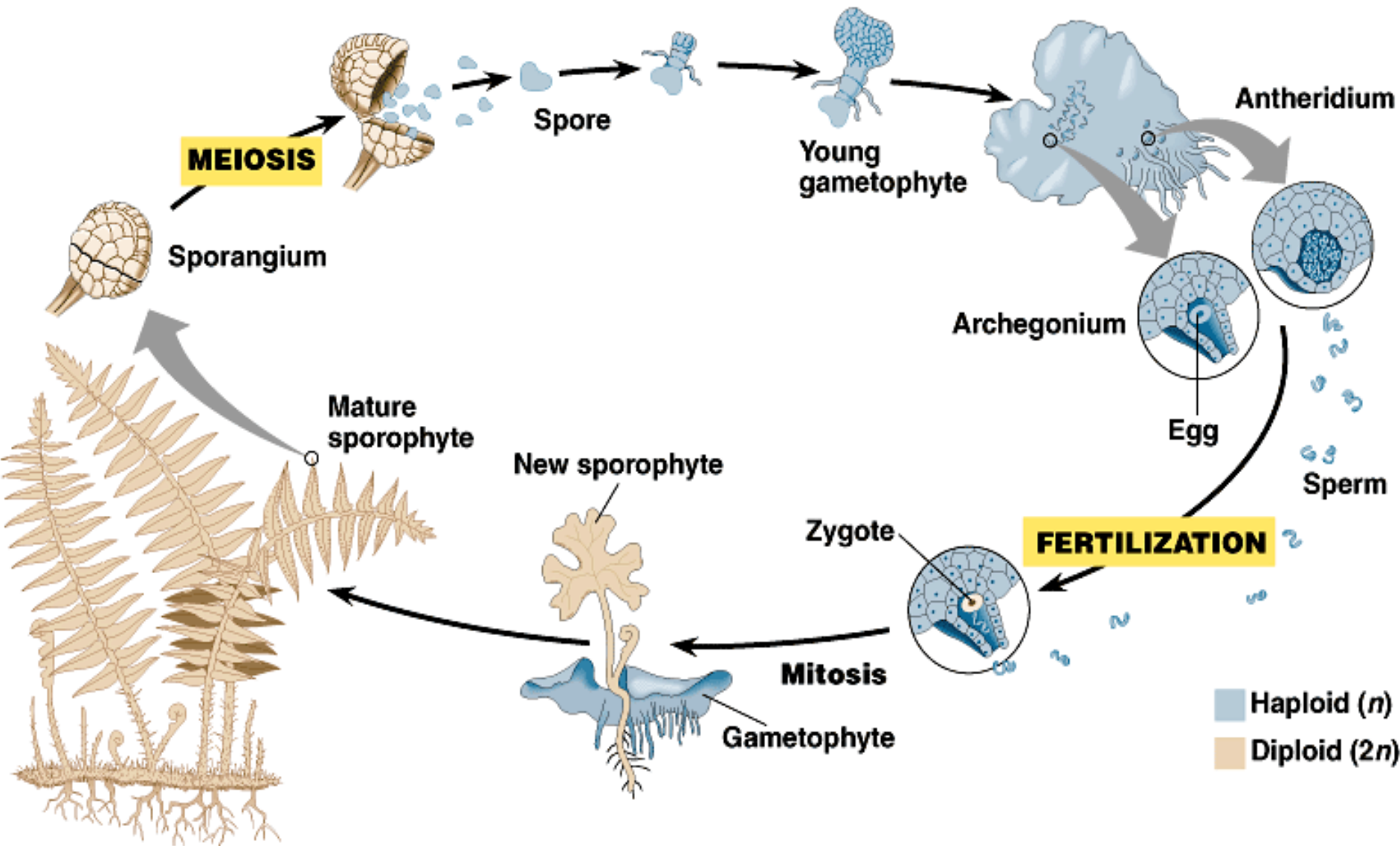
Non Vascular Plants – Mosses (*Bryophytes*)

- Require damp environment
- Require water for reproduction
- Do not have true roots (have rhizoids instead)

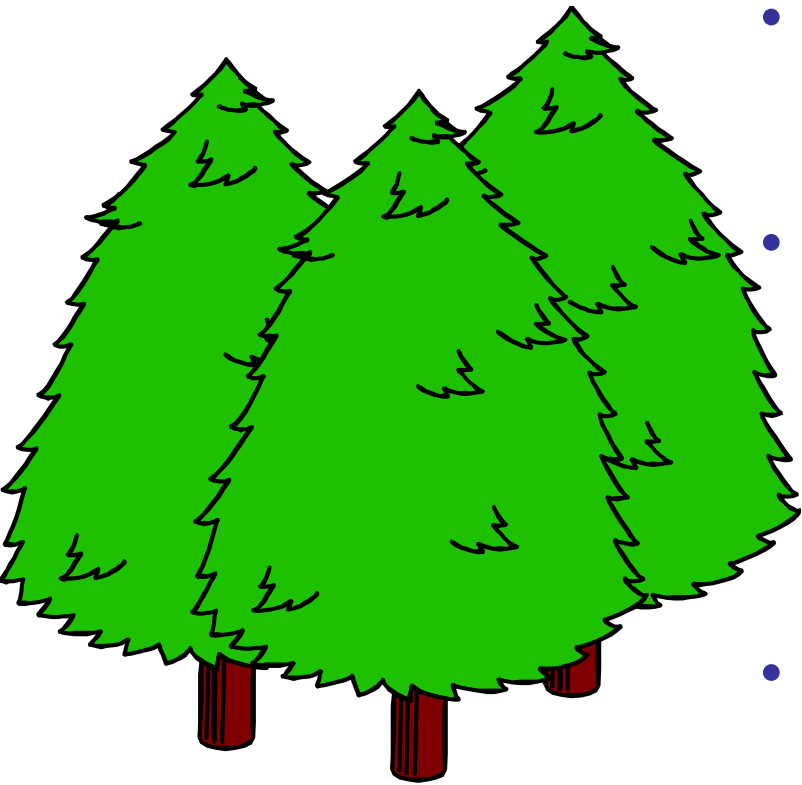




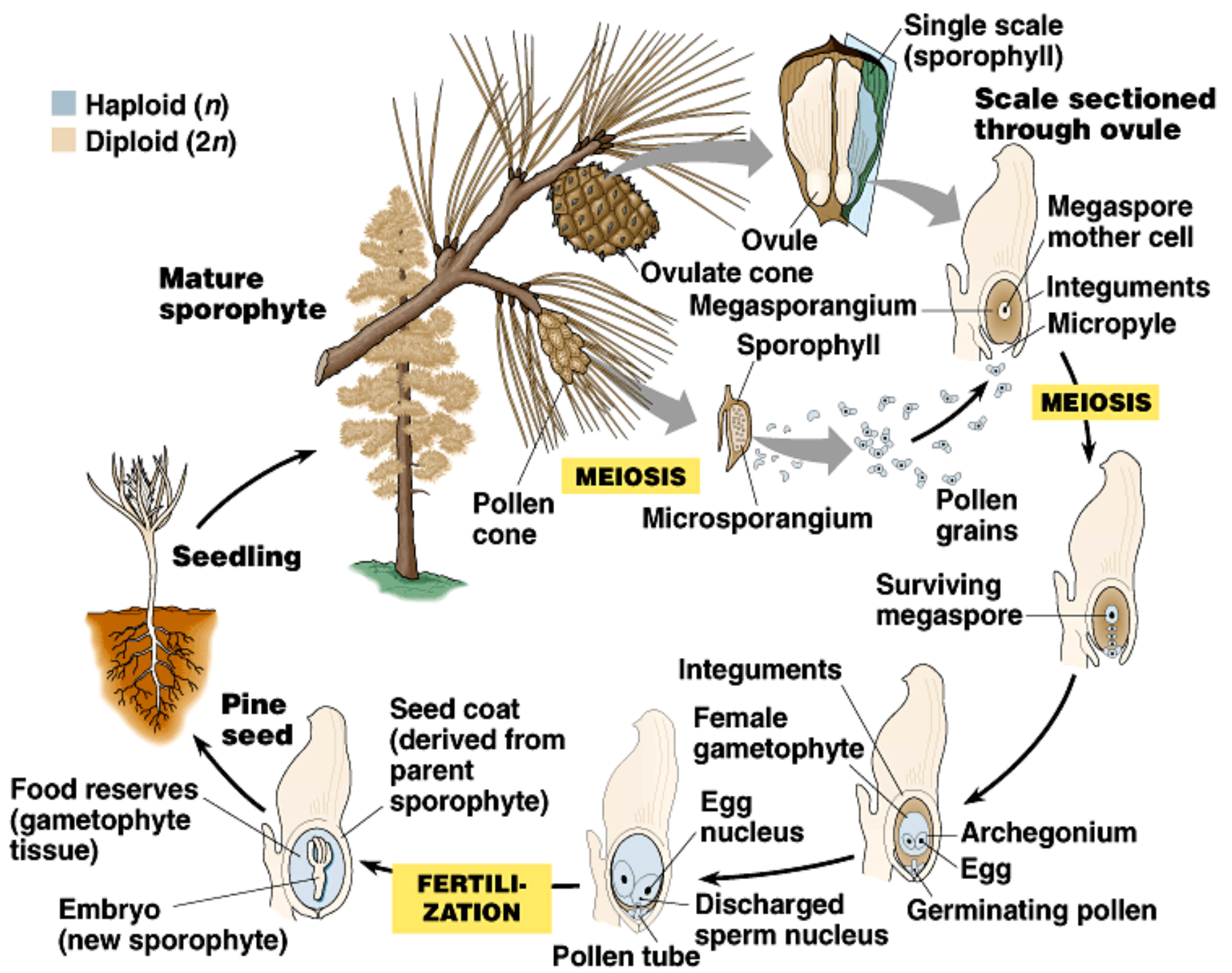
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Vascular Seed Plants- GYMNOSPERMS



- Conifers do not require water for fertilization
- Wind carries the pollen from male cones to female cone where egg is fertilized.
- Zygote becomes embryo and ovule becomes seed
- Seeds produced in cones



EXAMPLES



White Pine



Fir



Cypress



Spruce

The giant redwoods

(Notice the person in the tree to your right.)



Ancient Gymnosperm *Welwitschia spp.*



■ Other types of Gymnosperms...

Gnetae



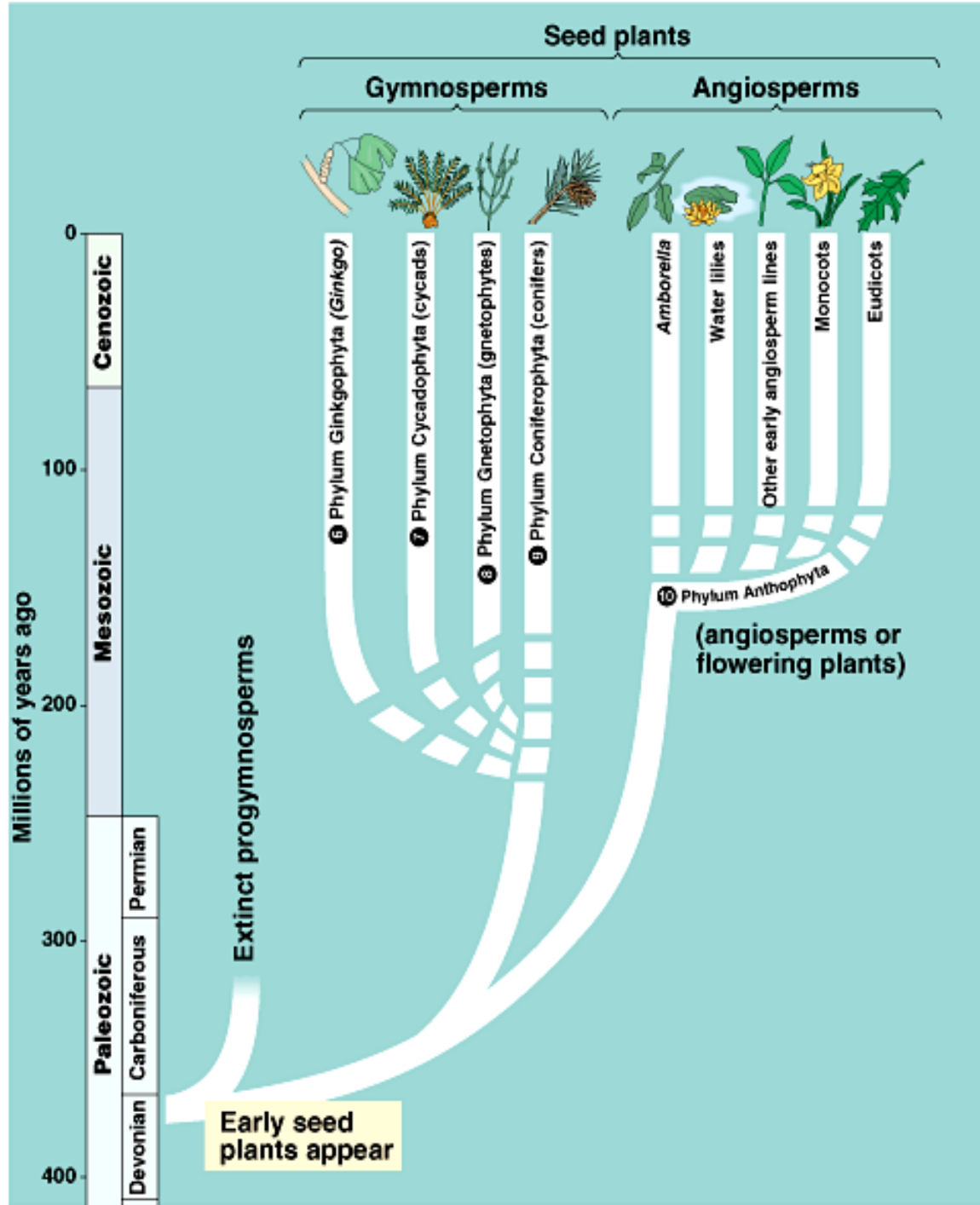
Cycad

Ginko



- While some gymnosperms lose their leaves, most have needle-like leaves that they keep all year. This is why they are referred to as evergreens.





- **Vascular Seed Plants-
ANGIOSPERMS**



- The most abundant and recent type of plants on Earth
- Have seeds that are protected by a fruit.



Passion flower and fruit

- Divided into two groups: monocots and dicots.

- Monocot seeds have one cotyledon (seed leaf). These are seeds that cannot be split in half, like a piece of corn.

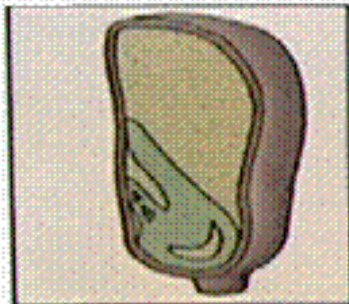


- Dicots have two cotyledons. These seeds can be split in half like peanuts and beans.



MONOCOTS

Cotyledons



One cotyledon

Veins in leaves



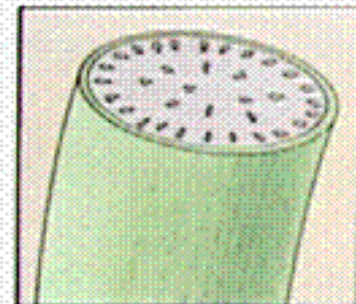
Usually Parallel

Flower parts



Usually in multiples of three

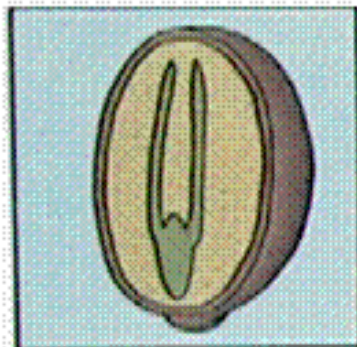
Arrangement of primary vascular bundles in stem



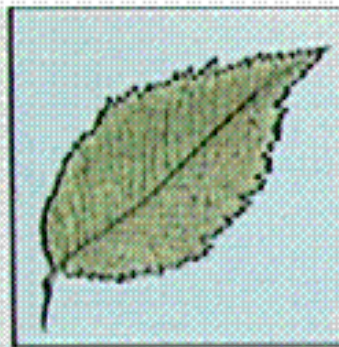
Scattered

DICOTS

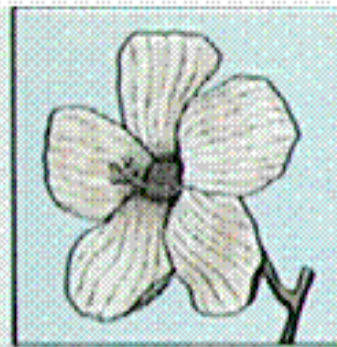
Two cotyledons



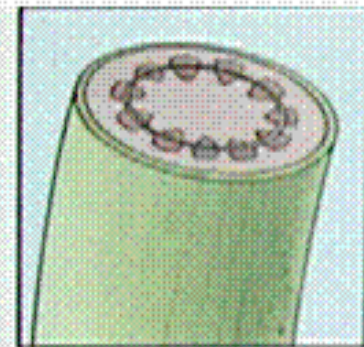
Usually netlike



Usually in fours or fives

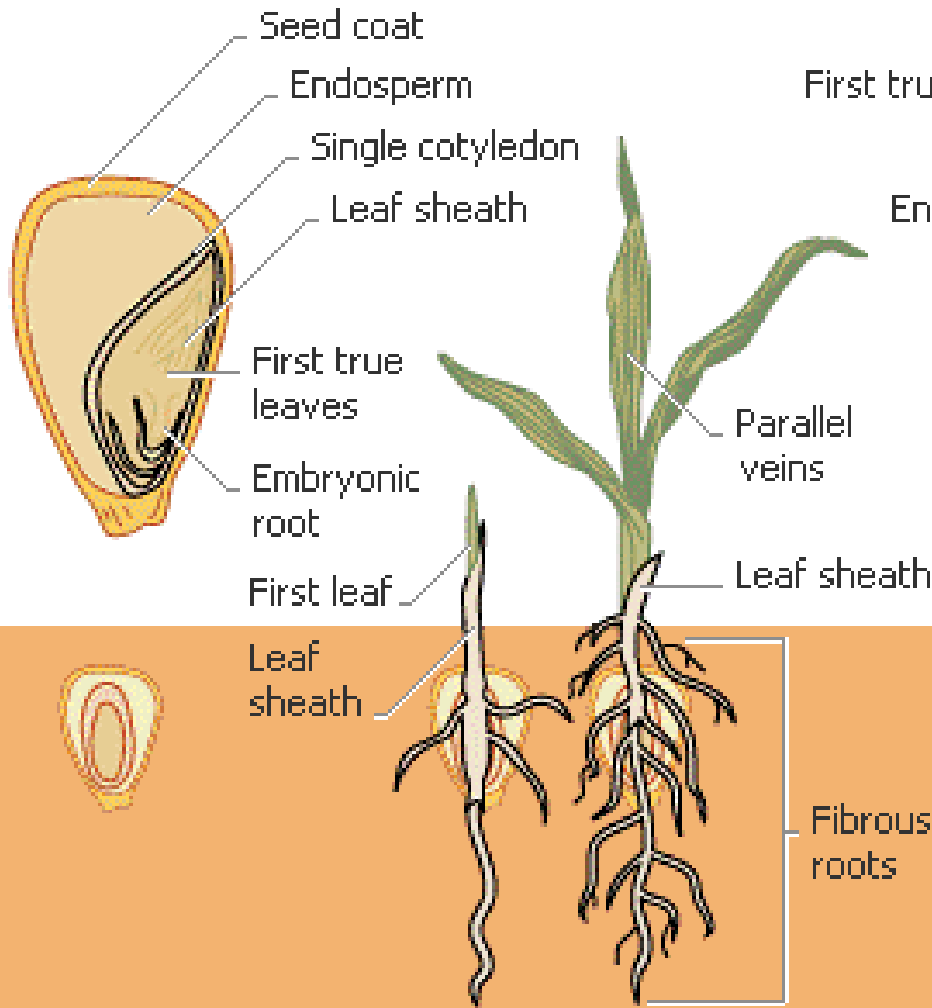


In a ring



Monocots vs. Dicots

Monocotyledon (corn)



Dicotyledon (bean)

