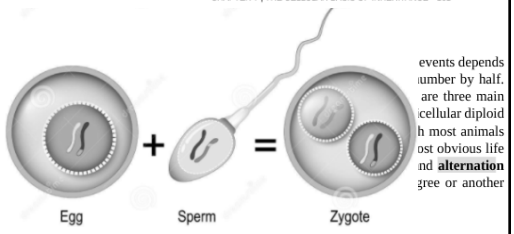
Complex Life Cycles

Dreamstime.com

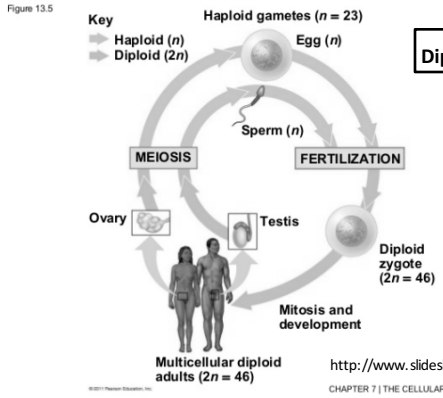
Alternation of Generation



Basically:

- Some plants spend most of their life as a haploid structure (n, ½ the genetic info), like our sperm or egg (known as Gametophyte)
- Some plants spend most of their life as a diploid structure, like our adult form (known as Sporophyte)

Life Cycles in Humans



Diploid Dominant

http://www.slideshare.net/emanshrydeh/

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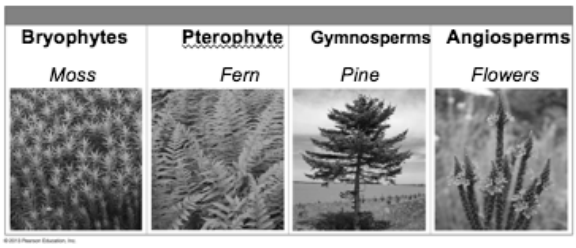
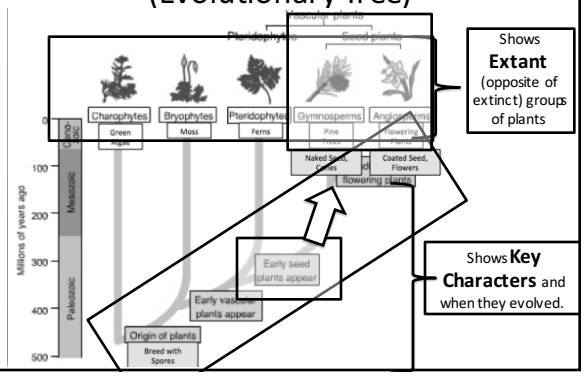
Four major plant groups



Phylogenetic Tree of Plants (Evolutionary Tree)



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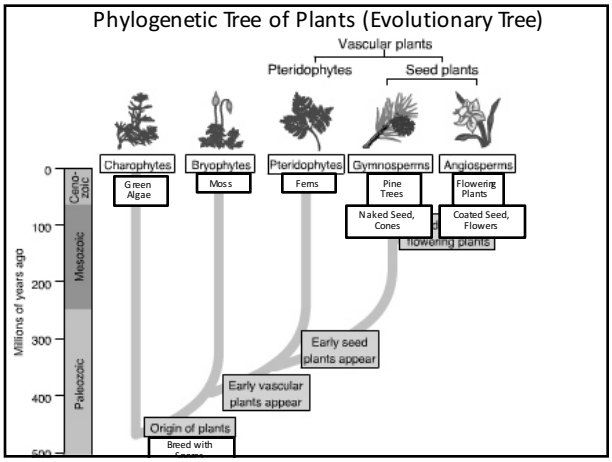
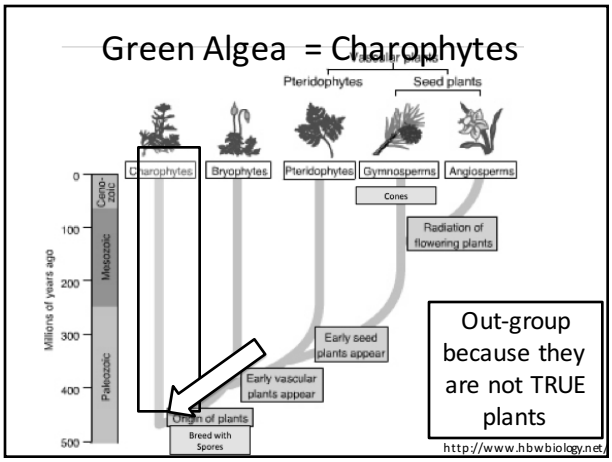


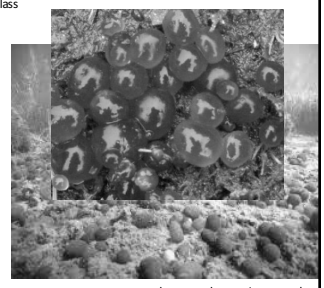
Green Algea = Charophytes



Green Algea = Charophytes

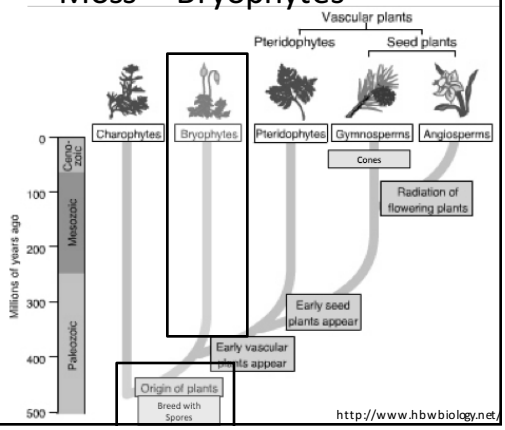
- The possible ancestors for the plants.
- They don't have all the plant characteristics
  - But they have the 3 we covered in class

Conjugation:
- Line up
- Build bridge
- Swap genes



downgardenservices.org.uk
University of New Hampshire

Moss = Bryophytes



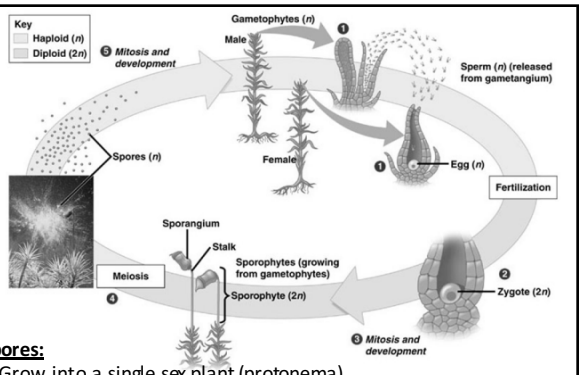
http://www.hbwbiology.net/

Moss = Bryophytes

- First Land Plant!
- Still Breed using water: **Spores**

East Tennessee Wildflowers

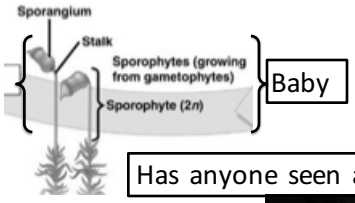
The Planted Tank



Spores:
- Grow into a single sex plant (protonema)
- Females have eggs
- Males have **sperm that swim to egg**
- Baby grows out of mom

Dominant Haploid Stage (n)

Moss = Bryophytes



Baby

Has anyone seen alien vs predator?

Baby

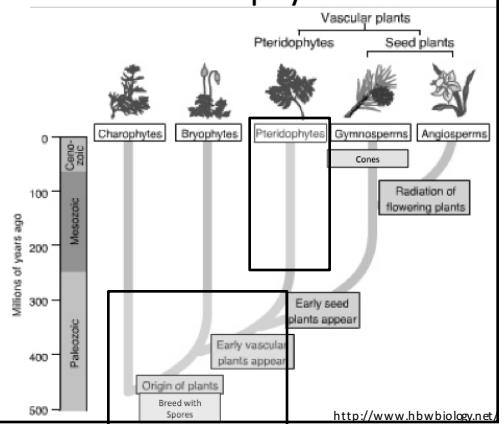
:or

Moss = Bryophytes

- **Spores:**
  - –Produce sperm that must **swim** to egg
  - –Need water
  - –Require **wet habitat**.

Forest Service

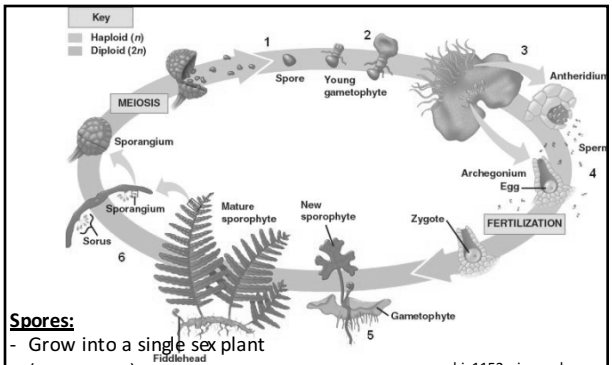
Ferns = Pterophytes



Ferns (Pterophytes)

- Second Land Plants
- Still Breed using water: Spores

www.amerfernsoc.org

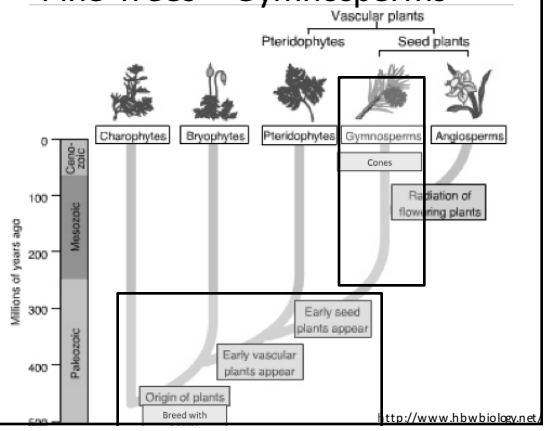


Spores:

- Grow into a single sex plant (protonema)
- Females have eggs
- Males have sperm that swim to eggs
- Baby grows out of mom

Dominant Diploid Stage (2n)

Pine Trees = Gymnosperms



http://www.hbwbiology.net/

Pine Trees = Gymnosperms

- Third Land Plants

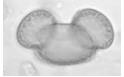
TurboSquid

Pine Trees = Gymnosperms

- Breed on land: Use Seeds
  - Naked seeds
    - Needs to be protected by cone

Amazon.com

  - No Flowers:
    - Pollen blows in the wind

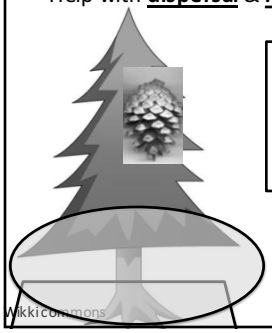


Superfoods-for-Superhealth

Pine Trees = Gymnosperms

Cones

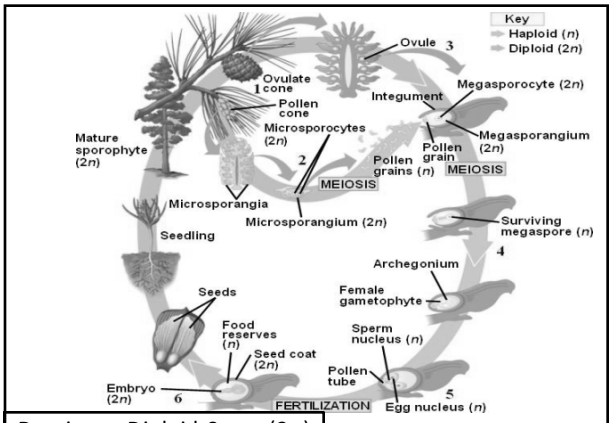
- Protect the naked seed
- Help with **dispersal** & **reduce competition** with mother



Wikkicommons

MORE FOOD

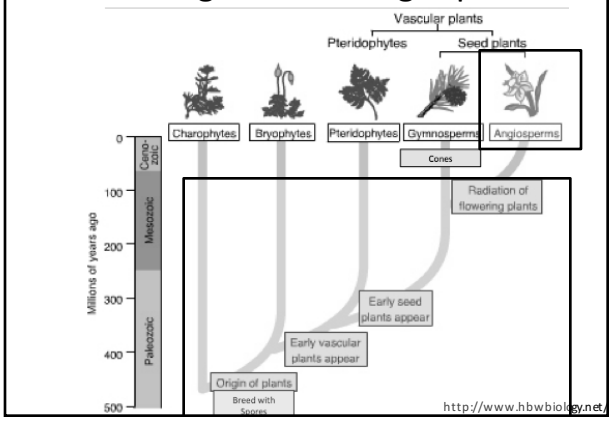
- Not shaded by mom = More photosynthesis
- Not competing for nutrients/water with mom



Dominant Diploid Stage (2n)

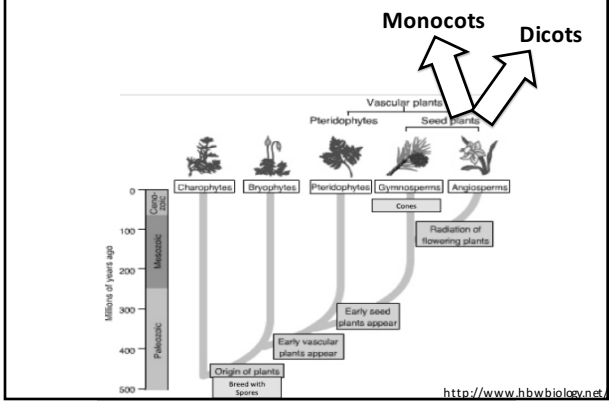
gallery.asiaforest.org

Flowering Plants = Angiosperms



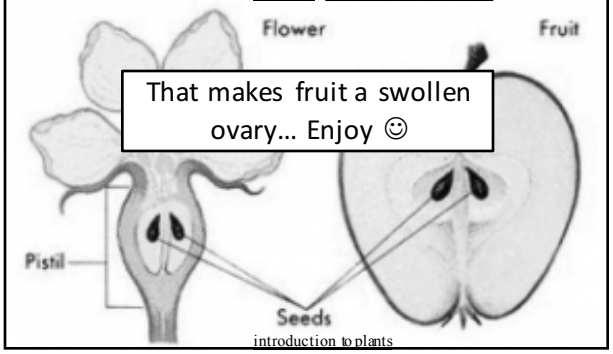
http://www.hbwbiology.net/

Flowering Plants = Angiosperms



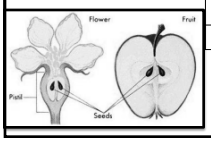
Flowering Plants = Angiosperms

- Fourth Land Plants
- Breed on land: Use **Seeds**, **Flowers, & Fruits**



How do Flowering Plants Reproduce?

1 – Seeds	2 – Flowers	3- Fruits
The 2nd to evolve seeds Derived: Seed coat to protect the baby plant	To Attract Pollinator	To move the baby far away from mom so they aren't in competition 1. Breaks down seed coat n digestive system 2. Releases seed with fertilizer 3. Moves seeds better/farther than a pine cor



Flowering Plants = Angiosperms

- Coated seeds
  - No longer need a pine cone to protect seed

Apple seeds contain amygdalin, which decomposes into toxic benzaldehyde and prussic acid (hydrogen cyanide. However, humans are able to detoxify small amounts of these

Flowering Plants = Angiosperms

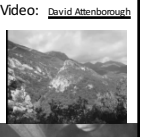
- Flower
  - Attracts pollinators

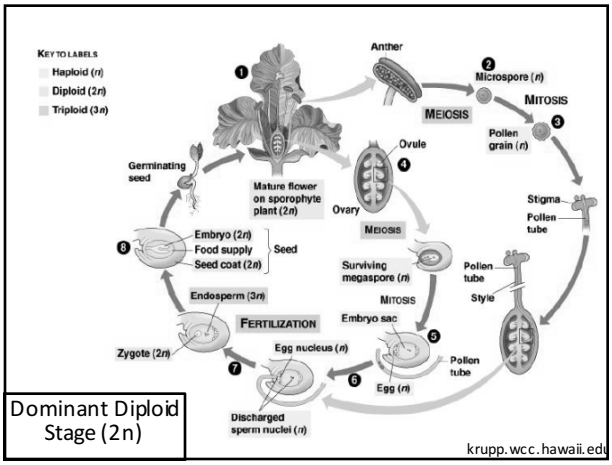
Ingo & Martina Stang

How do flowers attract pollinators?

Pretty	Smell Good	UV	Trickery: Look Like Wasp
Certain colors attract different species - Hummingbirds see red best	Attract species by scent rather than sight	Bees see UV, so showing colors in the UV spectrum better attract Bees	Video: David Attenborough

http://nautil.us/issue/11/light/how-animals-see-the-world





Dominant Diploid Stage (2n)