Plant Phylogeny

- Land Plants - Embryophytes
  - Vascular Plants - Tracheophytes
    - Monilophytes
    - Seed Plants - Spermatophytes
      - Gymnosperms
    - Vascular Ferns
      - Whisk Ferns
      - Ophiogloss. Ferns
    - Whisk Ferns
    - Ophiogloss. Ferns
    - Cycads
    - Ginkgo
    - Conifers (incl. Gnetales)
  - Angiosperms (Flowering Pls.)
  - Flower, carpels, stamens (+ sev. other features)
  - Seeds
  - Wood
  - Xylem & phloem vascular tissue
  - Independent sporophyte
  - Cuticle, gametangia, embryo (sporophyte)
Angiosperms  “Vesseled Seeds”=FRUITS

- Flower production
- Ovules enclosed w/in ovaries
- Seeds produced w’in carpel w/ stigmatic surface for pollen germination
- Double fertilization leading to 3n endosperm
Helen Gilkey - 1886-1972
Leaves

BLADE

AXIL

PETIOLE

STIPULE

NODE
Leaf Arrangements

- Alternate
- Opposite
- Basal
- Whorled
Leaf Types

Simple

Compound with leaflets

Pinnately Compound

Palmately Compound
Angiosperm Flowers

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mooseyscountrygarden.com/chelsea-flower-show/chelsea-flower-show.html
Angiosperm Life Cycle
Flower: angiosperm reproductive structure

terminology to know:

- Perfect (bisexual) vs
- Imperfect (unisexual)

- Perianth (sepals & petals)
Floral Whorls

**Individual parts**
- Sepals
- Petals
- Stamens
- Carpels

**Whorl(s) of Parts**
- Calyx
- Corolla
- Androecium
- Gynoecium

Perianth
More important terms:

**Adnation**: Fusion of different tissues

**Connation**: Fusion of like tissues

**Hypanthium**: Fusion of sepal, petal (and stamen) tissue
Perianth Features

Apetalous  Apopetalous  Sympetalous
Sepal connation and Petal connation
Floral Symmetry:
arrangement of floral parts

Radial
2 or more planes of symmetry

Bilateral
1 plane of symmetry

Asymmetrical
No plane of symmetry

Figure 4.18 Patterns of floral symmetry.
Perianth Features

A. Parts of petal

B. Parts of sympetalous corolla

C. Parts of a bilabiate corolla
Perianth Features

To be continued

& Intro to

Insertion &

Placentation Types