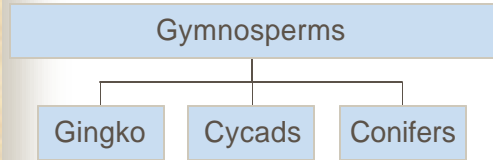


Gymnosperms

Gymnosperm Types



Cycads:

- are like small palm trees
- have scaly bark
- have feathery leaves
- grow in warm climates of the world
- have separate male and female plants

Ginkgo:

- Wild only in China
- can grow in polluted air
- male or female trees
- fan-shaped leaves
- female seeds produce an awful smell so generally, only males are planted in cities

Conifers:

- Most of gymnosperms are conifers
- term conifer means “cone bearing”
- needle-like leaves
- “Christmas” type trees -- pines, spruces, and firs
- produce 2 kinds of cones on the same tree (Male and Female)

Conifers:

- Produce 75% of the world’s lumber
- Produce 90% of the world’s paper
- varnish
- turpentine
- Rayon
- used for flood prevention
- soil erosion prevention
- burned for fuel
- provide shelter for animals

Vocabulary:

- Cone: reproductive structure with overlapping scales made by many gymnosperms
- Pollen: fine powder that produces sperm; male reproductive structure of plants
- Ovule: reproductive structure that produces one or more eggs; surrounds and protects eggs

Cones: Male

- Male cones are "Pollen Cones"
- make pollen
- relatively small in size
- yellow or red
- in clusters at the ends of branches
- release pollen in Spring
- near top of tree

Cones: Female

- Female cones are "Seed Cones"
- larger than pollen cones
- woodier than pollen cones
- grow singly
- make seeds -- two ovules near base of scales
- near bottom of tree

Making a baby conifer:

- Pollination: transfer of pollen from a male reproductive structure to a female reproductive structure



Making a baby conifer:

- Male cones release pollen.
- Pollen falls down and hopefully reaches a female cone.
- Pollination
- After pollination, pollen grains produce a "pollen tube" which grows toward the egg (in the ovule)--takes about 1 year to reach the egg.
- Fertilization