



# The Formidable TREES



**Evergreen (Conifers...have cones)**

**&**

**Deciduous ( have flowers)**

# Two general groups of trees are:

Flowering trees (Angiosperms)

Maple tree

Oak tree

Birch tree

Apple tree

Cone bearing trees that do not have true flowers  
(Gymnosperms...evergreens or conifers)

Fir tree

Spruce tree

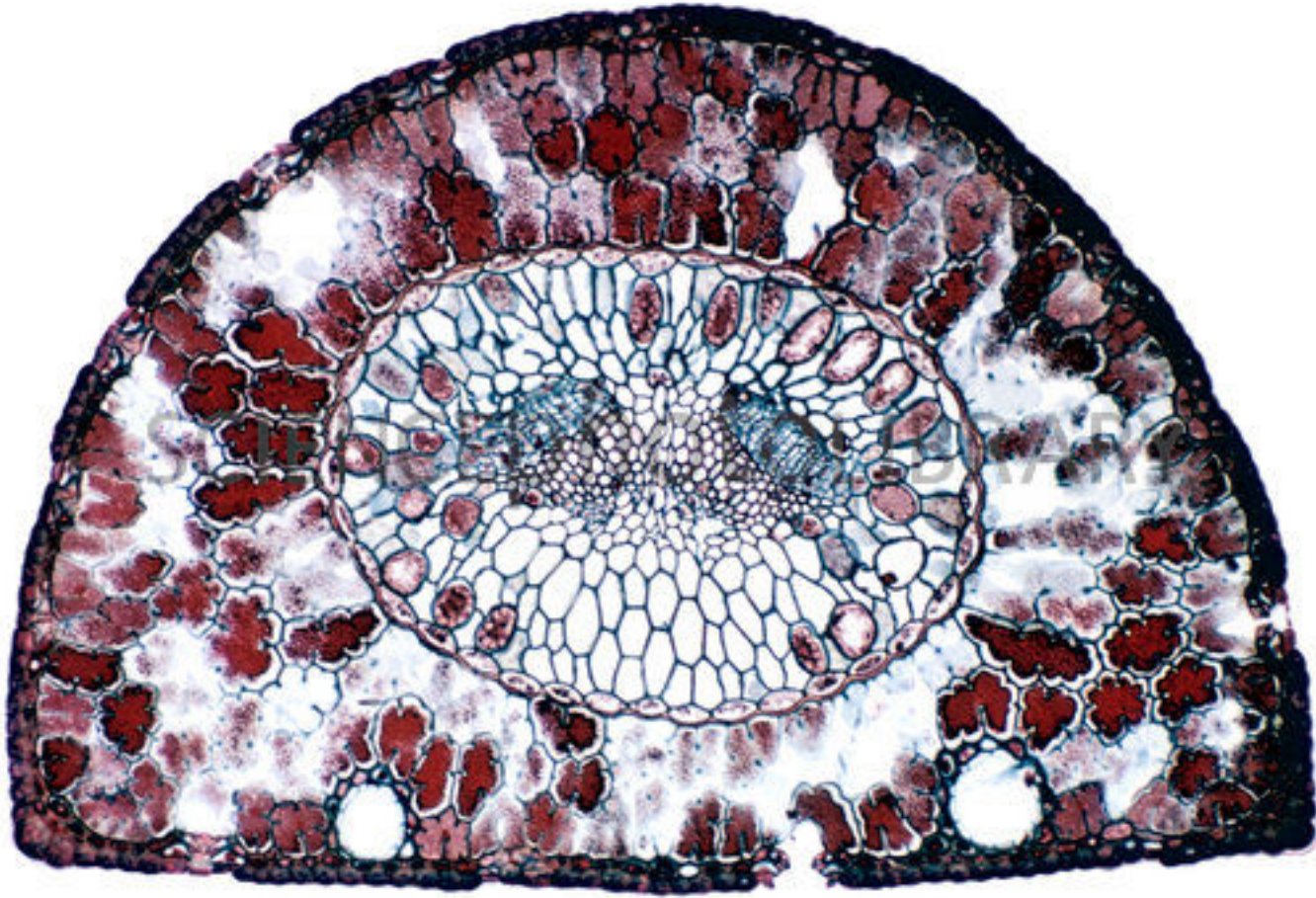
Pine tree

Evergreen trees have skinny leaves called needles.  
Evergreen trees do not lose their leaves in the fall.





## Cross section of a *Pinus resinosa* needle



The outer layer of cells is called the epidermis (epi means around or outer and dermis means skin) It is thick and contains a waterproof substance. The inner oval area contains vessel cells that transport fluid to and from the needle.

# Life Cycles of a White Pine Tree

Conifer - Gymnosperm



Adult Tree  
Sporophyte Generation

Male Cone

Female Cone



Seeds inside



Pollen Grain  
Male Gametophyte  
Generation (haploid)

Embryo  
Female Gametophyte  
Generation (haploid)

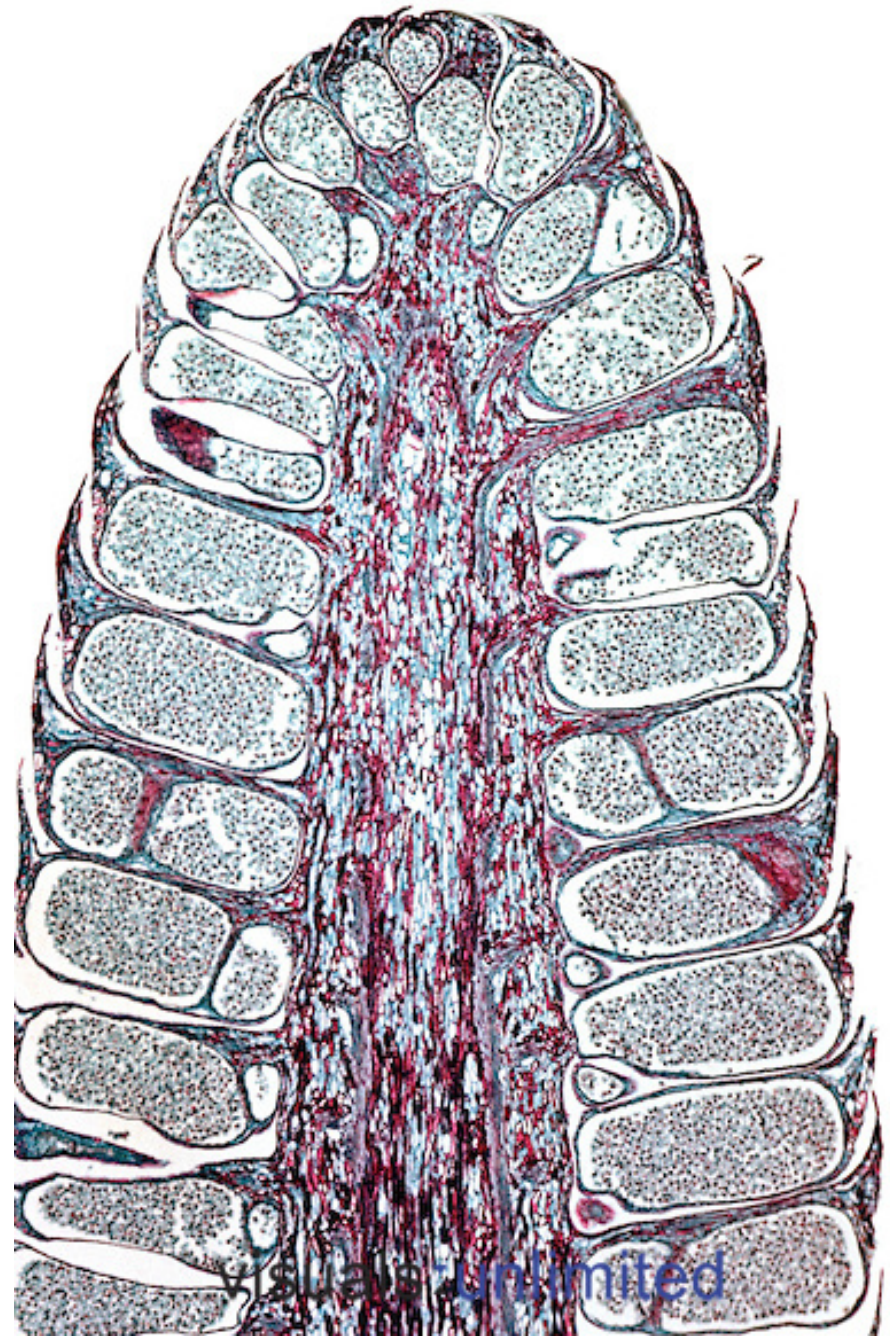
Mature Fruit  
developed from ovary  
to protect seeds and  
promote seed dispersal



pollen tube brings  
pollen into ovary  
for fertilization



longitudinal section of male cone with numerous pollen sacs



Female Pine cone





Maple trees are deciduous because they lose their **leaves** in the fall

