

Tree Branch Observations

Name _____ Date __/__/__

For this investigation you will be looking at fresh cut, young tree branches.

Materials

- Freshly cut branch from a maple, oak, pine, or other tree.
- Dissecting/Stereo microscope or Magnifying lens
- Compound microscope
- Slides and cover slip
- Plastic knife
- Scalpel or razor blade
- Forceps/tweezers
- Iodine or Bromothymol Blue stain
- Safety glasses

Safety

- Always cut away from your body when slicing tree branch.
- Iodine will stain your clothing.
- Wear safety glasses throughout the investigation.

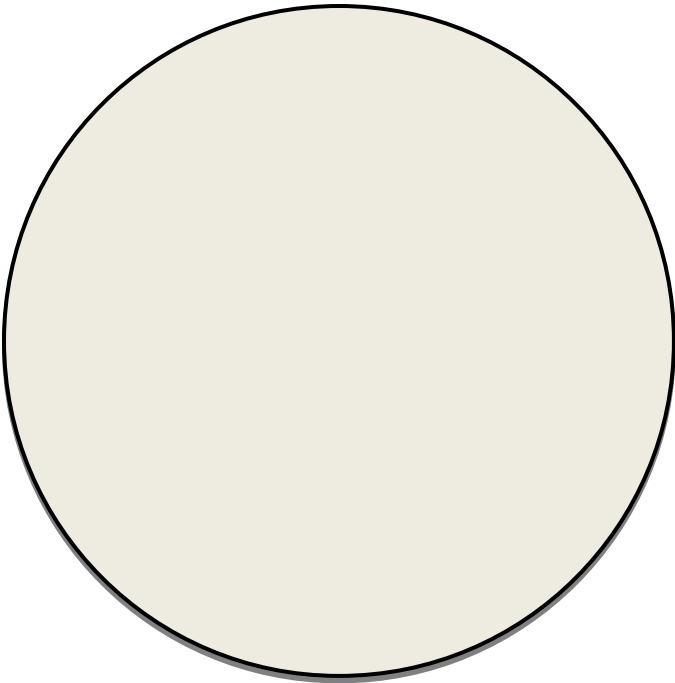
Procedure

1. Carefully study the branch. Make a sketch of the branch and label the following: bark, stem, leaf, bud, leaf scar, apical bud, bud scale, node, and internodes.
2. Use the plastic knife to scrape the bark off a thin portion of the stem to expose the wet, greenish layer of cambium.
3. Use the forceps to peel away a very thin portion of the cambium layer.
4. Place the cambium on a slide and carefully cover with a cover slip.
5. Observe the cambium slide under the compound microscope. Sketch what you see in the space provided.
6. Stain the cambium layer, observe it under the compound microscope and sketch what you see in the space provided.
7. Find an apical bud using the dissecting microscope, stereo microscope, or magnifying glass.
8. Carefully make a thin cross section of bud to observe its inner layers. Sketch what you see in the space provided.

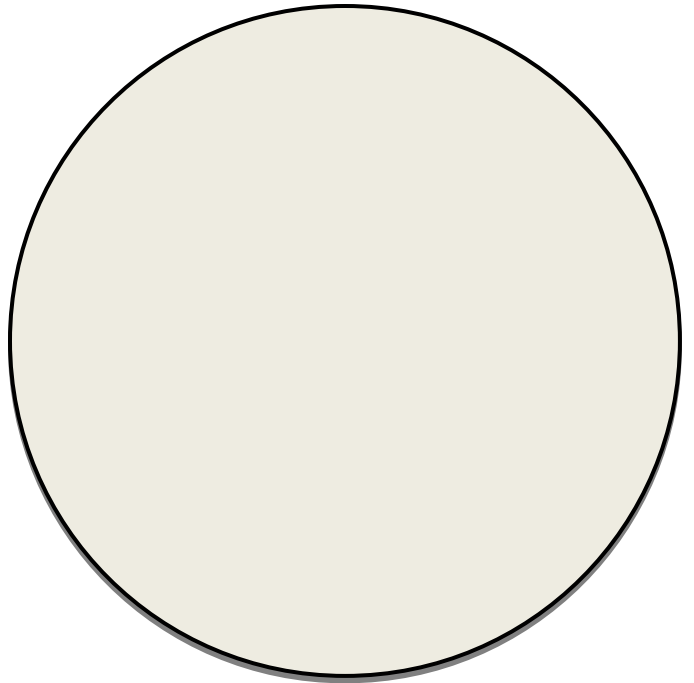
Observations

In the space below, sketch the branch. Label the following parts: bark, stem, leaf, bud, leaf scar, apical bud, bud scale, node, and internodes.

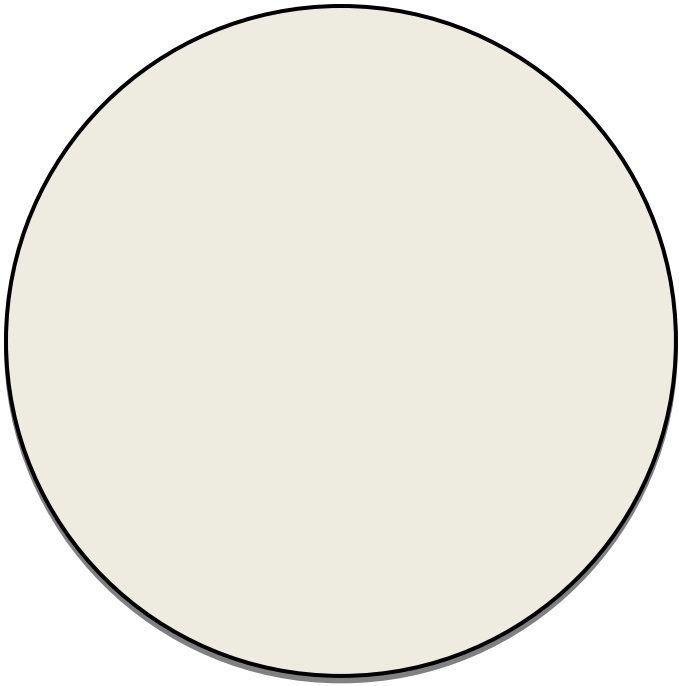
Cambium Wet Mount Sketch



Stained Cambium Sketch



Apical Bud Structure Sketch



Questions

1. List the phenotype(s) of the tree branch that you observed.

2. Did you observe the genotype of the branch? Explain your answer.

3. Which part of the branch is going through the process of cellular division most rapidly? Provide evidence for your answer.