

Activity 1

1. Trim stem 25 cm long
2. Split lower portion into 2-4 sections
3. Put each section into food coloring
4. Allow food color to get into petals
5. Document the outcome with a camera

Activity 2

1. Pick a dicot plant
2. Sever the stem with a razor blade close to the soil surface
3. Immediately submerge the cut end in water
4. Cut off 5-10 cm of stem below the water surface
5. Fill 2 tubes with Toluidine Blue O and Amaranth Red
6. Split the stem internode
7. Place in dyes
8. Look at shoot for dye movement
9. Note the pattern of dye movement
10. Take digital photos
11. Make thin cross sections to determine outcome of process
12. Place on slides using fresh mounts
13. Document the cross section with digital pictures

Activity 3

1. Prepare thin section of stem tissue using a razor blade using the hand microtome
2. Quickly place the moist section in a drop of dye on a slide
 - a. Dye = Dilute .1% Toluidine Blue O
 - i. Primary walls – purple
 - ii. Lignified secondary walls – blue
 - iii. Other – green
3. Let section sit in dye for 2 minutes
4. Blot excess dye and rinse with a drop of water
5. Identify all the stems major tissues
 - a. Epidermis
 - b. Cortex
 - i. Collenchyma
 - ii. Parenchyma
 - iii. Schlerenchyma
 - c. Vascular tissue
 - i. Xylem
 - ii. Phloem
 - d. Pith
6. Repeat with monocot sorghum
7. Take digital pictures of the best cross sections