

Plant Tissues Project

From the Archives of Mr. Truax, GFHS Biology

Chapter 23 discusses and explains the many types of tissues and structures found in plants. The purpose of this project is to introduce the vegetative parts of plants, along with the different tissue types found within each part. At the conclusion of this project you should have a thorough understanding of plant structure, tissues and their functions.

Project Description:

Through reading, examination of slides, and viewing of images and video, you will construct a packet containing information and diagrams that demonstrates understanding of the structure and tissue types found in plants.

Project Requirements:

Construct a packet of information that:

1. Lists the vegetative parts of a plant
2. contains labeled drawings/sketches of each part including tissue types (no scanning, photocopies, or computer images please)
3. contains a description that describes each tissue type
4. defines the function and location of each tissue type

Project Evaluation:

You will be graded on the quality of the final product produced. Neatness, organization, completeness, and accuracy will all be considered in the final assessment of the project.

Miscellaneous Information:

1. The vegetative structures to be covered include roots, stems and leaves. Each structure has a number of tissue types that need to be included in your information and diagrams
2. Although slide work can be tedious and difficult, microscope slides should be carefully examined. You may also observe images in the internet.
3. Tissues to consider include : meristematic, surface, parenchyma, sclerenchyma and vascular. (each type may have many kinds)

Project Check List:

- ✓ 7 labeled drawings (see the checklist on the next page)
- ✓ All tissues included
- ✓ Explanation/Description/Definition of each tissue
- ✓ Function and location of each tissue included in the description
- ✓ Information is accurate to the best of my knowledge
- ✓ Drawings and definitions are neat.

Checklist for tissues and structures

Define all of them and label those that apply to the 6 drawings.

Root Cross Section (1 monocot and 1 dicot) Pages 584-588

1. epidermis
2. cortex
3. endodermis
4. casparian strip
5. vascular cylinder
6. xylem
7. phloem
8. root hair
9. pericycle

Root Longitudinal Section (1 onion root tip) Pages 584-588

1. apical meristem
2. root cap
3. zone of elongation
4. zone of maturation
5. root burn
6. transpiration pull (root pull)

Stem Cross Section (1 monocot and 1 dicot) Pages 598-594

1. xylem (vascular tissue)
2. phloem (vascular tissue)
3. vascular bundle
4. sclerenchyma
5. parenchyma or pith
6. vascular cambium
7. epidermis

Leaf Cross section (1 monocot and 1 dicot) Pages 595-598

1. cuticle
2. upper epidermis
3. palisade layer
4. air sacs
5. spongy layer
6. lower epidermis
7. mesophyll
8. veins
9. stoma
10. guard cells