

Plant Tissues

What are tissues?

- A collection of cells of a common origin or structure, working together to provide a specific function.
- Groups of cells that look alike and perform the same function.

Four Main Types of Plant Tissue:

- Dermal Tissue
- Ground Tissue
- Vascular Tissue
- Meristem Tissue

Dermal Tissue:

- Dermal Tissue forms an outside covering and provides protection.
- Prevents plant from drying out.



Dermal Tissues:

- Epidermis:
The outer layer of cells that cover a plant.
Protects the plant and reduces water loss
- Stomata:
Specialized cells which regulate gases that pass in and out of the plant.
Usually on underside of plant leaves.

Ground Tissue:

- Tissue that provides storage and provides support.
- Types:
Parenchyma
Collenchyma
Sclerenchyma



Parenchyma:

- Responsible for photosynthesis and food storage. (Makes food for other plant structures.)
- Large
- Thin cell walls
- Account for over 80% of cells in non-woody plants.

Collenchyma:

- Responsible for flexible support.
- Elongated cells with flexible walls.

Sclerenchyma:

- Serves as support
- Give plants their “woody” characteristics.
- Short-lived
- Thick cell walls

Vascular Tissue:



- Provide transport and support for plants.
- Carry water and other nutrients up and down the plant.
- Two types of vascular tissue:
 - **Xylem**- transports water and minerals upward in the plant from the roots to the leaves.
 - **Phloem**- transports food down the plant from the leaves to the roots.
- Rate of water travel through oak tree vascular tissue has been measured at 1.66 cm/s.

Meristem Tissue:

- Have the ability to divide often and allows for very rapid growth in plants.
- Cells are small with thin cell walls and large nucleus.
- Found near tips of roots and stems, and as a layer inside branches—this allows plants to grow in all directions (up, down, outward).

Question?????

- What type of tissue would carry colored water through a plant?

