

TYPES OF CELLS IN TREES

Simply, the types of cells found in (woody angiosperm/gymnosperm) trees are:

Ground tissue

The 'ground tissue' of plants includes all tissues that are neither dermal nor vascular. There are three types, based on the nature of the cell walls.

- **Parenchyma** cells have thin primary walls and usually remain alive after they become mature. Parenchyma cells form the 'filler' tissue in the soft parts of plants and is usually present in cortex, pith and medullary rays in primary stems and roots.
- **Collenchyma** cells have thin primary walls with some areas of secondary thickening. Collenchyma provides extra mechanical and structural support, particularly in regions of new growth.
- **Sclerenchyma** cells have thick lignified secondary walls and often die when mature. Sclerenchyma provides the main structural support to a plant.

Dermal cells

The epidermis and its waxy cuticle provide a protective barrier against physical injury, water loss and infection. Various modified epidermal cells regulate transpiration, increase water absorption and secrete substances.

- Some dermal cell types are unique, such as stomatal guard cells and trichomes (hairs).

Vascular tissue

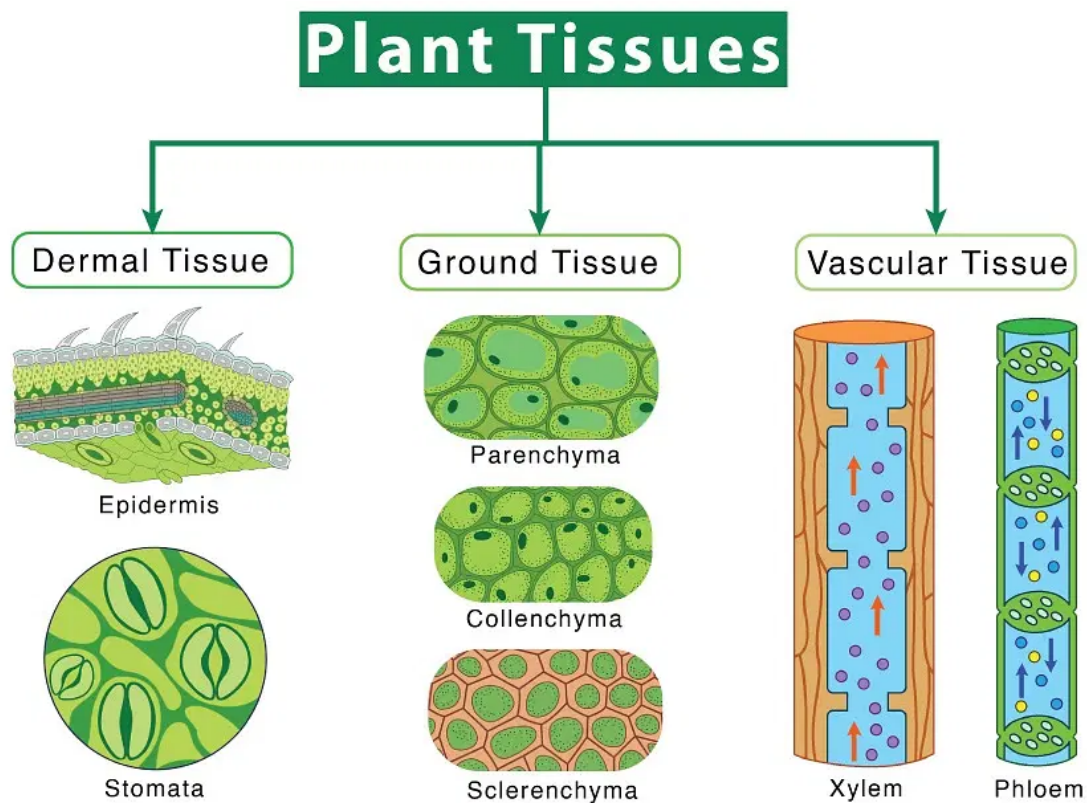
The main function of vascular tissue in plants is to transport water, minerals and the products of photosynthesis throughout the plant. Vascular tissue refers to xylem and phloem.

- **Xylem** cells function like straws, transporting water and nutrients from the roots of the plant up to the tips of the leaves.
- **Phloem** cells conduct sugars made in the leaves during photosynthesis to all other parts of the plant.

Meristematic cells

Meristematic tissue is comprised cells that divide continuously to form new cells.

- Meristem cells are found in the growing regions of plants, such as the tips of roots, stems and branches.
- The function of meristematic tissue is to make plants grow.



Cambium cells

The layer of actively dividing cells dividing xylem (wood) and phloem (bark) tissues.

- Responsible for the secondary growth of stems and roots (that is, secondary growth occurs after the first season and results in increases in length and/or thickness).