

Plant Tissue Systems

What are the primary functions of the main tissue systems of seed plants?

Within the roots, stems, and leaves of plants are specialized tissue systems, shown in **Figure 23–1**. Plants have three main tissue systems: dermal, vascular, and ground. Dermal tissue covers a plant almost like skin covers you. Vascular tissue forms a system of pipelike cells that help support the plant and serve as its “bloodstream,” transporting water and nutrients. Ground tissue produces and stores food. Next, you will see how the cells in these systems compare to one another.

Dermal Tissue Dermal tissue in young plants consists of a single layer of cells called the **epidermis** (ep uh DUR mis). The outer surfaces of epidermal cells are often covered with a thick waxy layer called the cuticle, which protects against water loss. Some epidermal cells have tiny projections known as trichomes (TRY kohmz). Trichomes help protect the leaf and may give the leaf a fuzzy appearance.

Dermal tissue is the protective outer covering of a plant.

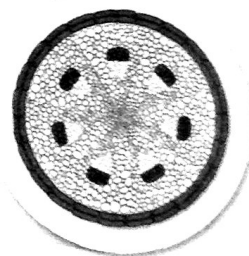
In older plants, dermal tissue may be many cell layers deep and may be covered with bark. In roots, dermal tissue includes root hair cells that help absorb water.



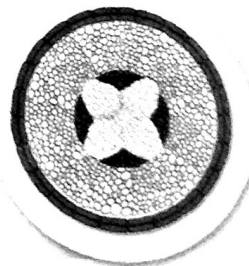
- Dermal tissue
- ▾ Vascular tissue
- ▨ Ground tissue



Leaf



Stem



Root

FIGURE 23–1 Principal Organs of Plants

These cross sections of the principal organs of seed plants show that all three organs contain dermal tissue, vascular tissue, and ground tissue. Interpret Visuals **Which tissue type is found in the center of a root?**

