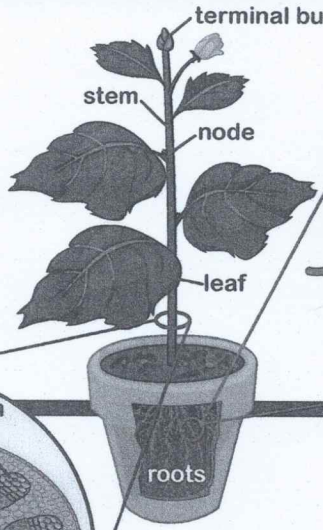
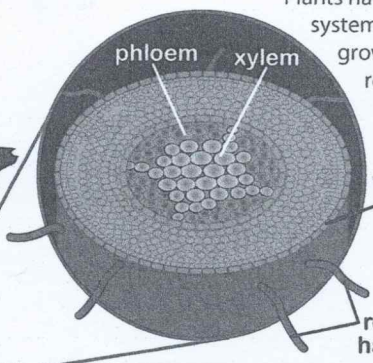
Roots, Stems & Leaves

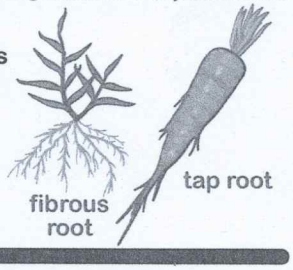
Roots

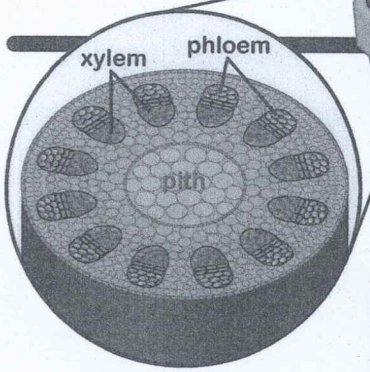
Plants have various structures, each serving a different purpose for keeping a plant alive and healthy. Plant **roots** anchor the plant firmly into the soil, store food, and most importantly absorb water and nutrients from the soil.

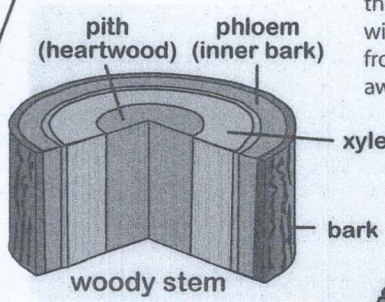




Plants have two different root systems. A **taproot** system consists of one main large root that grows directly down into the soil. A **fibrous** root system consists of many roots that grow underground in many directions.

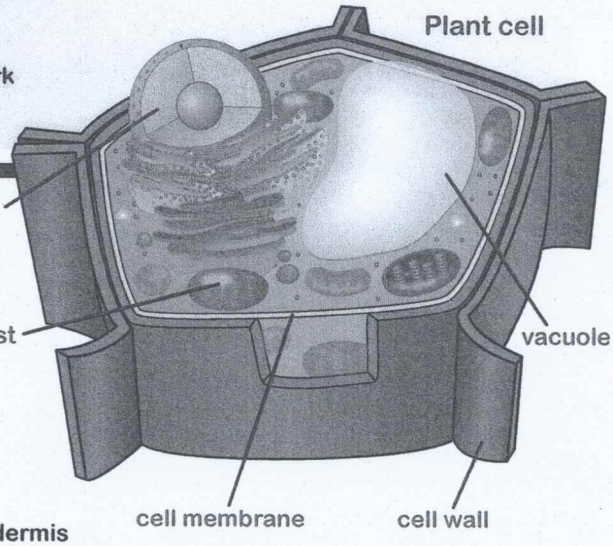






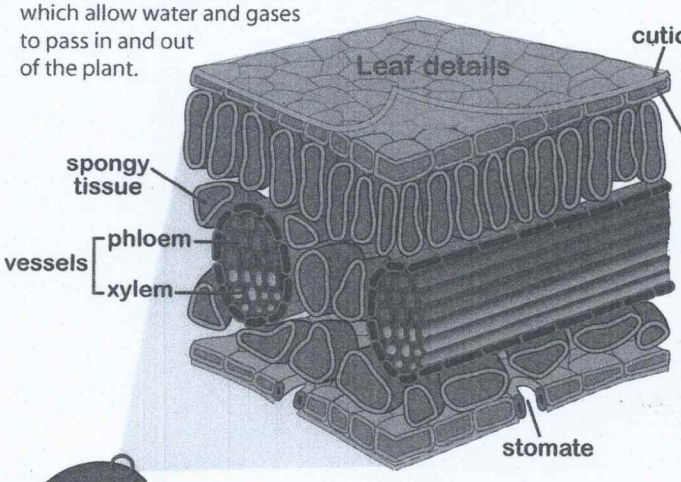
Stems

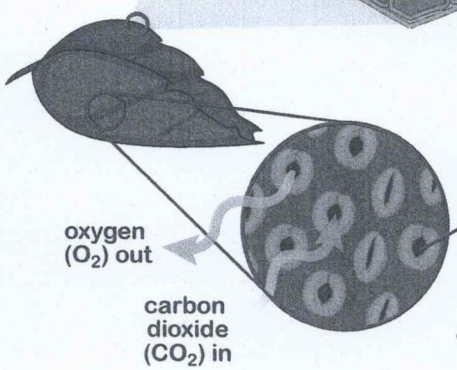
Plant **stems** perform two basic functions: they support the leaves and flowers and they carry water and nutrients within the plant. The **xylem** carries water and nutrients from the roots to the leaves. The **phloem** carries sugar away from leaves to the rest of the plant.



Leaves

Most of a plant's food is made in the leaves. A leaf is made of many layers that are sandwiched between two layers of tough skin cells called the **epidermis**. These layers provide protection for the leaf from insects and other pests. Leaves have tiny pores called **stomates** which allow water and gases to pass in and out of the plant.





The Process of Photosynthesis

Plants make food in the form of sugar through the process of **photosynthesis**. Photosynthesis takes place in the **chloroplast** of a plant cell. **Chlorophyll** found in the chloroplast of the plant cell absorbs sunlight. Plants use carbon dioxide they take in from the air around them, water they get from the soil through their roots, and energy from the Sun to produce oxygen and sugar.