

Plant Growth and Development

Objective: to explain basic principles of plant growth.

Training Materials: samples of different classifications of plants.

Lesson: *Ornamental plants are categorized as either woody or herbaceous.*

Herbaceous plants have soft stems, while woody plants have hard rigid stems.

Herbaceous plants include annuals, some vines and some perennials, while most woody plants are perennials, shrubs and trees. Trees and shrubs that lose their leaves in the fall and winter are called deciduous, while those that retain their leaves year round are evergreen.

Most plants have the same basic structure.

Roots are normally underground and are for structural support and absorption of water, nutrients, and storing carbohydrates (plant food). Water and nutrients are absorbed by tiny microscopic root hairs.

The shoot is above ground and consists of stem(s), leaves, buds, and flowers.

Cells and Tissue:

Xylem – plant tissue that conducts water up and down the length of the plant

Phloem – plant tissue that conducts food up and down the plant.

In woody plants, the phloem is part of the bark, while the xylem forms growth rings. Removing or wounding some of the bark can disrupt the flow of nutrients to the roots and leaves.

Plant Growth:

Plants absorb water and nutrients through their roots. The leaves absorb light and carbon dioxide where photosynthesis takes place. This is the transformation of light, carbon dioxide and water into carbohydrates or plant sugars. Byproducts of photosynthesis are oxygen and water, which are released to the atmosphere through the leaves in a process called transpiration. It is through these two amazing chemical processes that plants filter carbon dioxide out of the air and replace it with fresh oxygen while creating their own food.

- *Ornamental plants are categorized as either woody or herbaceous. Herbaceous plants have soft stems, while woody plants have hard rigid stems.*

- *Horticulture is the art and science of growing ornamental plants.*

