

SOL 4.4 -- PLANTS

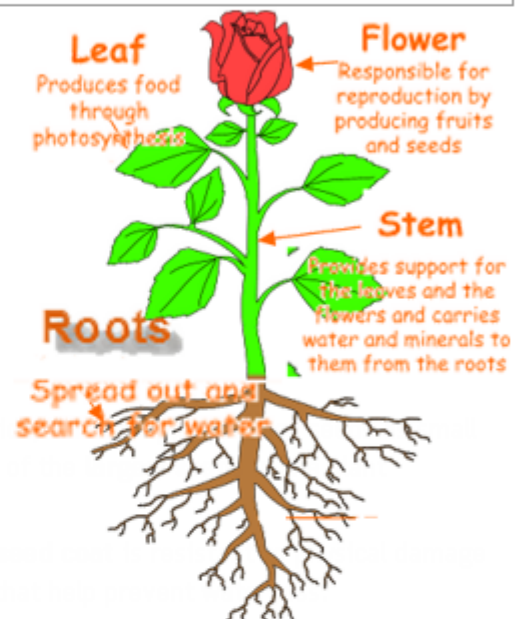
Key concepts include

- the structures of typical plants and the function of each structure ;
- processes and structures involved with plant reproduction ;
- photosynthesis ;
- adaptations allow plants to satisfy life needs and respond to the environment.



PLANT PARTS

- For many typical green plants, there are anatomical structures that perform certain basic **functions**. For example, **roots** anchor the plants and take water and nutrients from the soil. Plant **stems** provide support and allow movement of water and nutrients.
- Many seed-producing plants have **roots, stems, leaves, and flowers**.



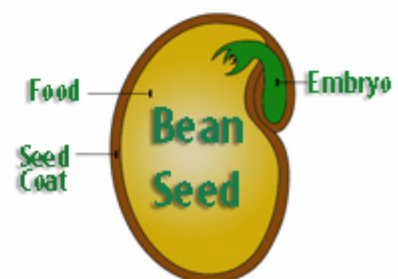
SEEDS VS. SPORES

- Plants can be divided into **two general groups**: those that produce **seeds** and those that produce **spores**.
- Plants that reproduce with **spores** include **ferns** and **mosses**.



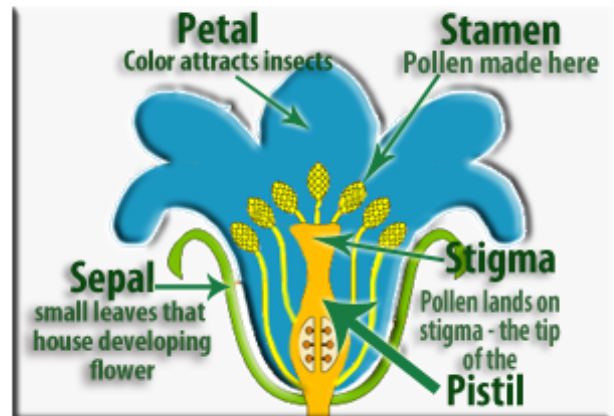
SEEDS

- Seeds** vary considerably in **size**. Orchids, for example, produce seeds as small as dust particles. The **coconut** is one of the **largest seeds** in the plant kingdom.
- In many seeds, the **protective outer seed coat** is resistant to physical damage and may also contain waxes and oils that help prevent water loss.
- The **embryo** within the seed begins as a **single cell, the zygote**. The basic organs of the plant body can be found in the embryo. In some seeds the embryonic leaves are quite large, filling most of the volume of the seed.
- The **embryonic leaves** are a major source of stored food for the embryo. Beans are an example of plants with large embryonic leaves.
- In many other plants the embryonic leaves are relatively small, and the embryo is nourished by a tissue called **endosperm**.



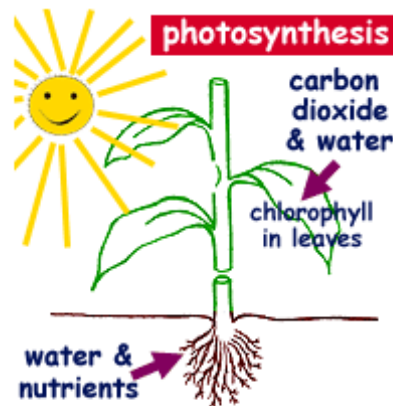
POLLINATION

- **Pollination** is part of the reproductive process of flowering plants. Pollination is the process by which **pollen is transferred** from the **stamens** to the **stigma**.
- The **stamen and pistil** are reproductive parts of the flower. The **sepals** are the small leaves that form the housing of the developing flower.
- Reproductive **terms to know** - **pollination, stamen, stigma, pistil, sepal, embryo, spore, seed.**



PHOTOSYNTHESIS

- Green plants produce their own food through the process of **photosynthesis**. Green plants use **chlorophyll** to produce food (sugar), using carbon dioxide, water, enzymes and other chemicals, and sunlight. **Leaves** are the primary food-producing part of these plants.
- **Oxygen** is released during photosynthesis.



DORMANCY

- Plants **adapt** to changes in their environment in order to survive.
- **Dormancy** is a plant adaptation. Dormancy is a period of **suspended life** processes brought on by changes in the environment.



Dormancy

During the winter, this dormant tree will not grow or develop.