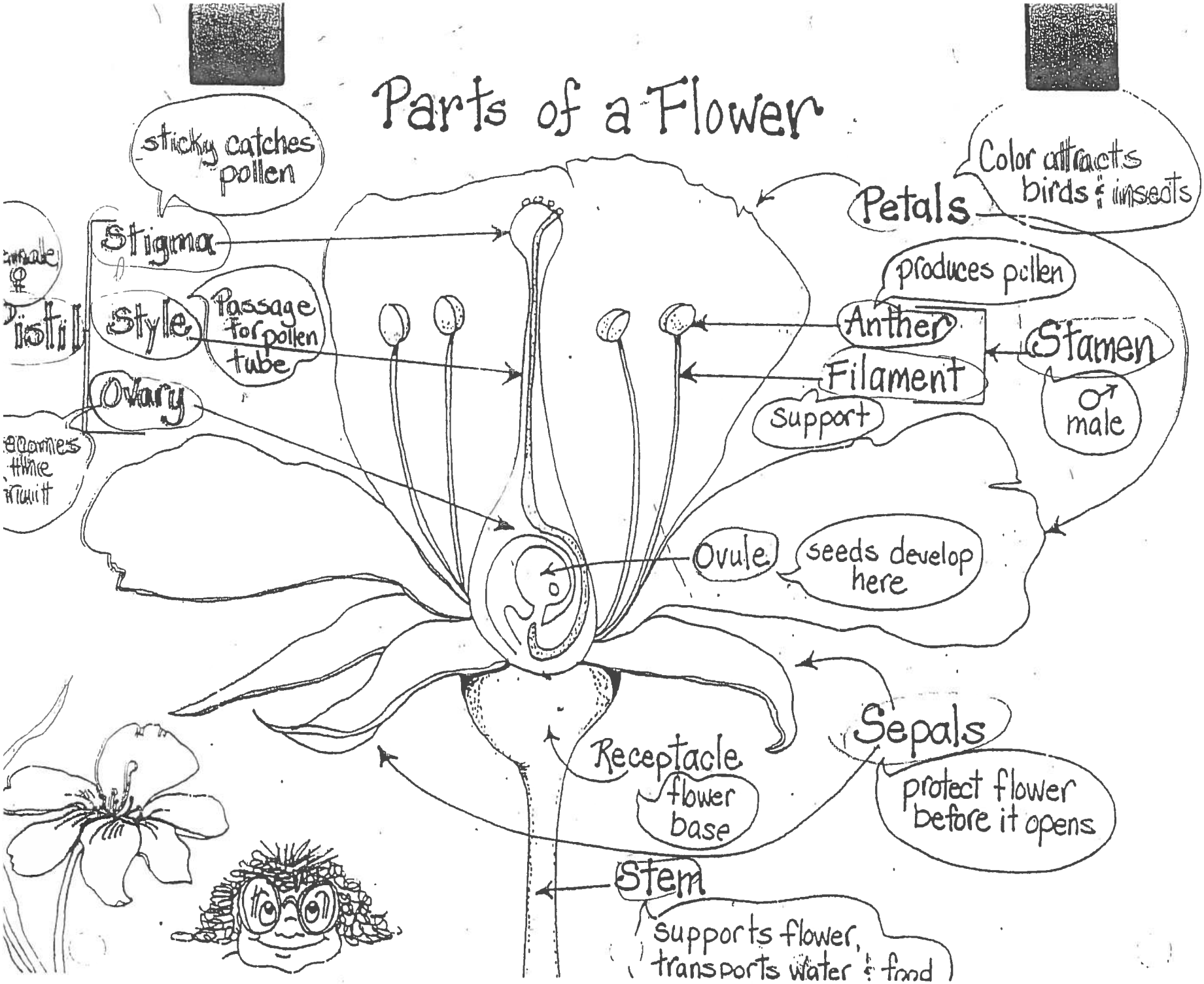
SOL 4.4 Life Processes (Plants)

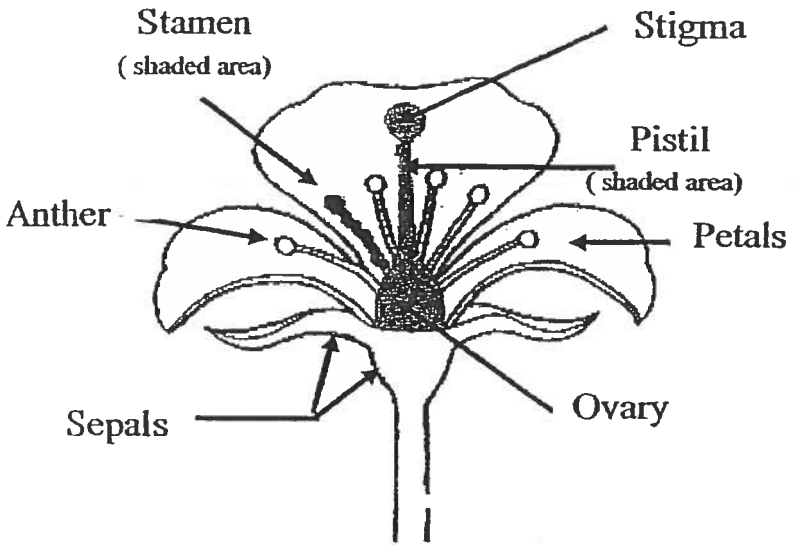
Vocabulary:

• Anther	The part of the flower that holds the pollen.
• Carbon dioxide	A colorless, odorless gas.
• Cell	The basic unit of all living things.
• Chlorophyll	A green pigment found in green plants that absorbs energy from sunlight and is used by plants in making food and oxygen.
• Dormancy	A period of time where life processes are stopped.
• Filament	A long thin part of the flower that holds the anthers out so insects can get pollen.
• Flower	The part of a plant that makes seeds.
• Leaf	The part of the plant that makes food by photosynthesis.
• Ovary	The hollow base of a flower containing the ovules.
• Ovule	The part of the ovary that contains the unfertilized seed of the plant.
• Petal	The colorful part of the flower that protects it and attracts insects and other pollinators
• Photosynthesis	The process that plants use to make food using water, nutrients, and carbon dioxide
• Pistil	The female part of the flower
• Pollination	The transfer of pollen from the male part of one flower to the female part of another.
• Plant	A major group of living things that are multicellular and carry out photosynthesis

Parts of a Flower



1) Flower Structure



Flower Parts

Sepals – protect the flower by folding around it.

ovary – part of the pistil in which the seed is formed.

pistil – the female part of the flower in which pollination takes place.

stamen – male part of the flower that produces pollen.

petal – colorful part of the flower that attracts animals and insects.

anther – end of the stamen that produces pollen.

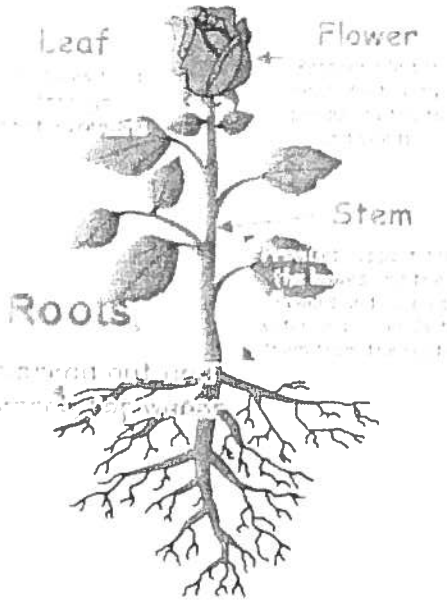
stigma – sticky part of the pistil that "grabs" the pollen.

SOL 4.4 -- PLANTS

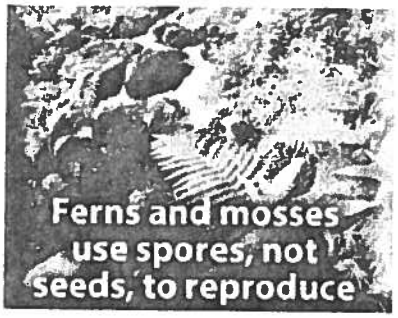
Key concepts include

a. **the structures of typical plants and the function of each structure**;
b. **processes and structures involved with plant reproduction**;
c. **photosynthesis**;
d. **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**.

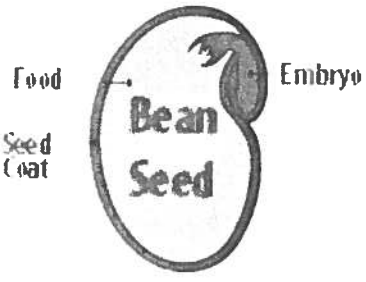


SEEDS VS. SPORES

- 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

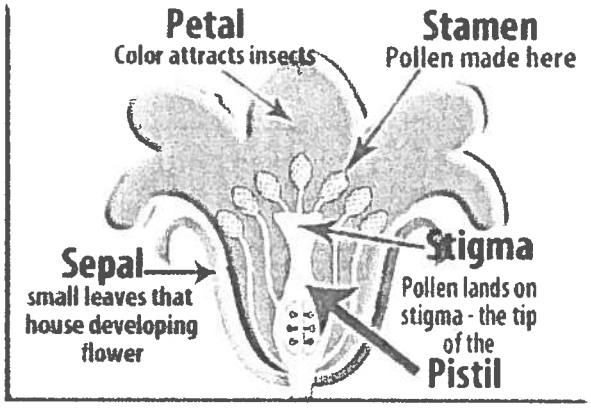
- **Seeds** vary considerably in **size**. Orchids, for example, produce seeds as small as dust particles. The **coconut** is one of the **largest seeds** in the plant kingdom.
- In many seeds, the **protective outer seed coat** is resistant to physical damage and may also contain waxes and oils that 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**.

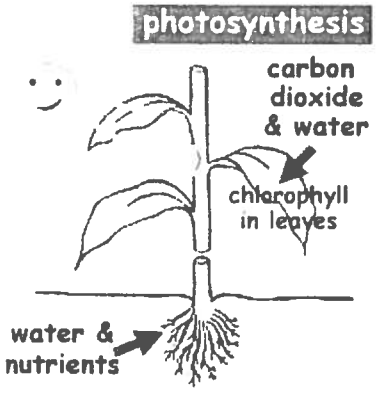
POLLINATION

- **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

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

- **Dormancy** is a plant adaptation. Dormancy is a period of **suspended life** processes brought on by changes in the environment.