

6th Grade Science Key Concepts

Structures & Functions of Living Organisms (6.L.1)

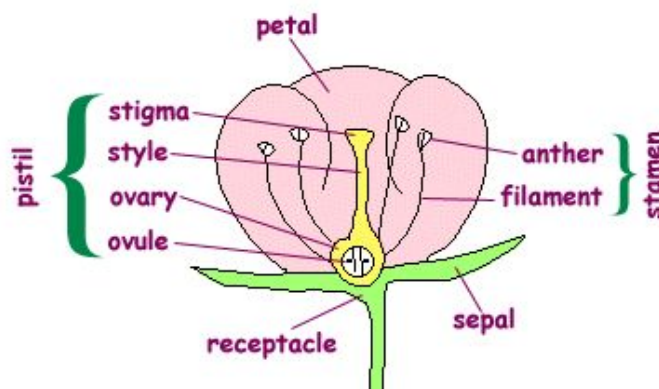
6.L.1.1 Structures & functions of flowering plants

Plants have basic structures and functions that are necessary for reproduction, survival and defense.

Parts of a Plant

Structure	Location and Function
Petals	Leaf like, colorful, arranged in a circular pattern at the top of the stem, located inside the sepal
Sepals	Outermost part of a flower; often green and look like leaves, surround and protect the flower bud
Stamen	Male part of the flowering plant (sperm), inside the petals Filament: stalk of the stamen Anthers: tips of the filament, produces pollen Pollen: contains the male gametes, powdery
Pistil	Center of the flower, attached to the top of the flower stem, contains female reproductive part (ovaries)
Stoma (stomata)	Small opening the the epidermis (skin) of a plant that allows carbon dioxide, water, and oxygen to move in and out of the leaf.
Seed	Contains the embryo of the plant and some nutrient material for the embryo
Fruit	Fruits form from the ovary/ovaries of the flowering plant and contain the seeds
Leaf	A structure in flowering plants that contains chlorophyll and is able to capture the sun's energy for use in photosynthesis
Root	A structure of the plant, often underground, that helps stabilize the plant and take up water from the soil
Stem	A support structure of the plant

Flowering is controlled by the length of day and night.



Parts of a flower

6.L.1.2 Photosynthesis, respiration & transpiration in plants

6th Grade Science Key Concepts

Structures & Functions of Living Organisms (6.L.1)



- Plants use sunlight to make their own food (**photosynthesis**), whereas animals must consume foods (from plant and/or animal sources).
- **Respiration** is the process of “burning” sugar to release energy needed for living.
- Plants carry on both **photosynthesis and respiration**.

Photosynthesis	Respiration
Food is accumulated	Food broken down
Energy from sun is stored in glucose (sugar)	Energy of glucose released
Carbon dioxide is taken in	Carbon dioxide given off
Oxygen is given off	Oxygen take in
Produces glucose	Produces carbon dioxide and water
Goes on only in light	Goes on both day and night
Occurs only in living things where chlorophyll is present.	Occurs in all living things

- Water loss through the stomata is called **transpiration**.
- Leaves have an **epidermis** (outer skin) with a waxy cuticle and **stomata** to prevent water loss.
- **Guard cells** are cells in a plant that regulate the opening and closing of the stomata.