

# 6th Grade Science Key Concepts

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

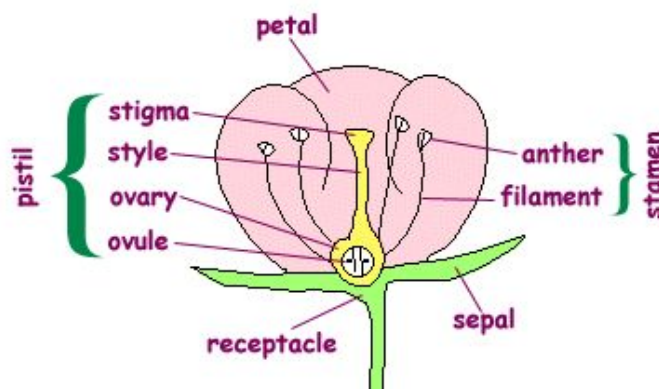
### 6.L.1.1 Structures & functions of flowering plants

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

#### Parts of a Plant

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

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- 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**.

<b>Photosynthesis</b>	<b>Respiration</b>
Food is accumulated	Food broken down
Energy from sun is stored in <b>glucose (sugar)</b>	Energy of <b>glucose</b> 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 <b>chlorophyll</b> 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.