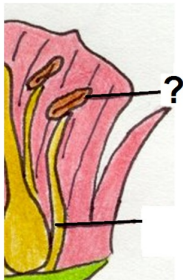


# 5 Kingdoms

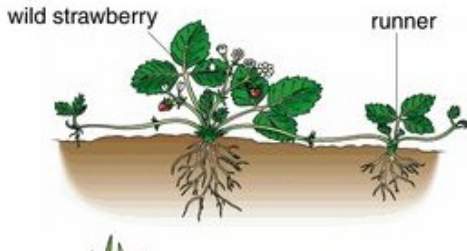
plants, animals, fungi, protists, moneran  
(archae/bacteria)

anther



located on the top of the stamen; produces pollen

asexual reproduction



A reproductive process that involves only one parent and produces offspring that are identical to the parent.

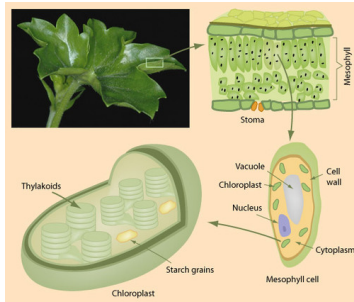
autotroph



An organism that makes its own food (plants)

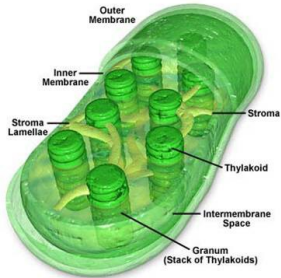


chlorophyll



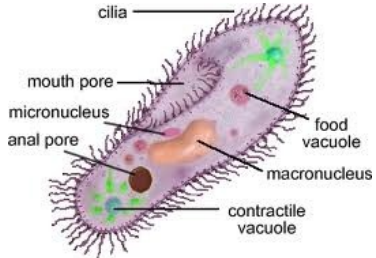
a green pigment in plants that absorbs energy from the  
sun

cholorplast



part of the cell that contains the chlorophyll

Cilia



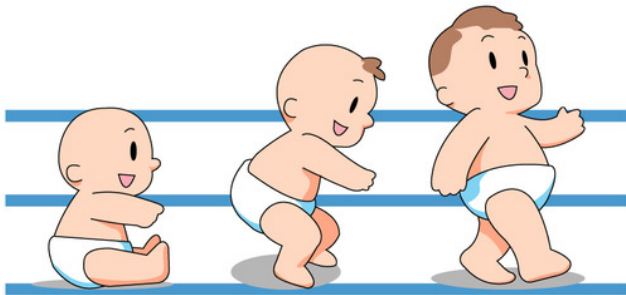
small hair-like projections on the surface of the cell used to sweep food into mouth-like structures. Can also be used to move. Paramecium have this

dead

organism that was once alive, but now is not



development



process that occurs in the life of an organism that results in the organism becoming more complex structurally

dormant



a living organism who's processes are slowing down in order to conserve energy; asleep

egg

female reproductive cell

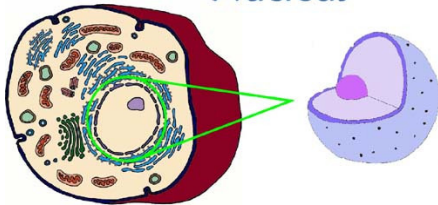
energy

required for all organisms to grow and develop



Eukaryotic

Nucleus



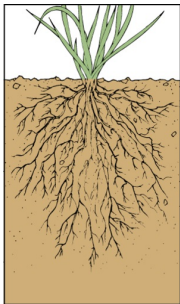
containing a nucleus

evidence



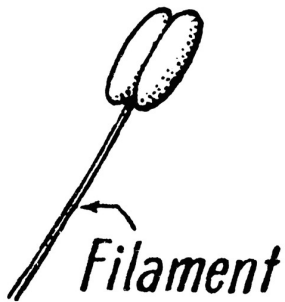
Collected data from observations and experiments;  
proof

fibrous roots



several main roots that each branch off to form a mass of roots that are all about the same size; found in monocots (grass, corn and some trees)

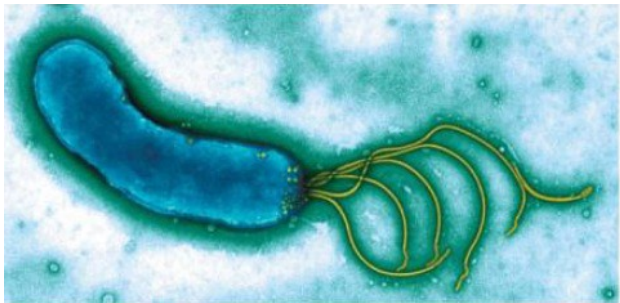
filament



located in the stamen; stalk that holds the anther up (like a flagpole)

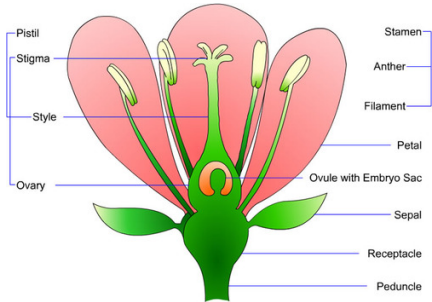


Flagella (flagellum)



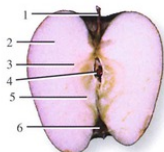
a long whip-like tail used to move or catch food; Euglena has one

flowers



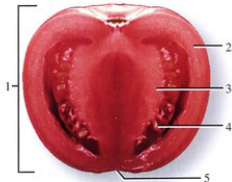
part of the plant that contains the reproductive organs need to produce new plants/flowers

fruit



**Figure 6.143** A longitudinal section of an apple [a pome].

- |                        |                             |
|------------------------|-----------------------------|
| 1. Pedicel             | 5. Mature ovary             |
| 2. Receptacle          | 6. Remnants of floral parts |
| 3. Ovary wall          |                             |
| 4. Seed (mature ovule) |                             |



**Figure 6.145** A longitudinal section of a tomato [a berry].

- |                 |                      |
|-----------------|----------------------|
| 1. Mature ovary | 4. Seed              |
| 2. Ovary wall   | 5. Remnant of stigma |
| 3. Placenta     |                      |

formed from the ovary of the plant; protects seeds

fungi kingdom



almost all multi-cellular, eukaryotic (have a nucleus), heterotrophs, but do not move to get food; absorb nutrients from other organisms



gravitropism (geotropism)

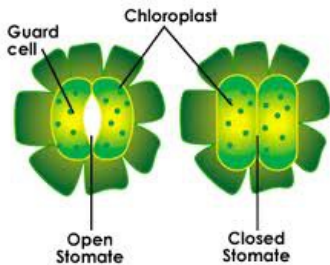


a growth response to gravity (pictured is negative gravitropism where shoot grows up against gravity)

growth

a process when a living organism becomes larger

guard cells



mostly located on the bottom of the leaf; open and close the stomata

habitat



Place where an organism lives

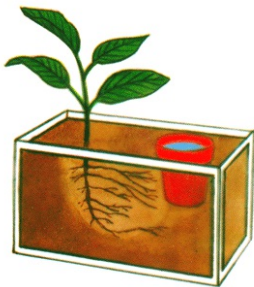


heterotroph



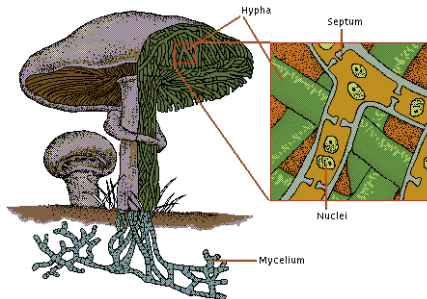
An organism that cannot make its own food (ex. animals, protists, fungi)

hydrotropism



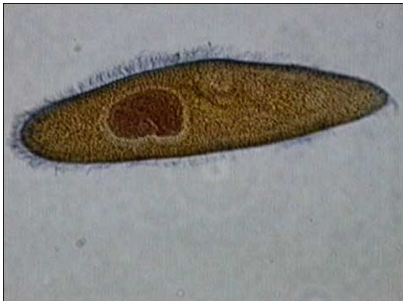
a growth response to water

Hyphae



the "root" system of fungi; long fibrous strands

# Kingdom Protista



lots of variety among members; most are single celled, live in moist environments & vary in how they move and obtain energy



levels of classification

kingdom, phylum, class, order, family, genus, species

living

an organism that reproduces, grows and develops, obtains resources for energy and responds to stimuli

locomotion

moving from place to place

multicellular

made of more than one cell

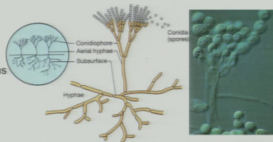


Mycelium

## MYCELIUM

- **Intertwined mat of hyphae**

Taken from Brock;  
Biology of Microorganisms



- **2 portions**

- **Vegetative** - attached to substrate/penetrates to obtain substrate
- **Reproductive** - represented by aerial structures (cottony appearance on agar)  
Asexual reproduction propagules (conidia)

multiple hyphae

nonliving

something that was never alive

nonvascular plants



lack vascular tissue, do not have true roots/stems, distributes water/food from cell to cell, small in size, close to the ground

offspring

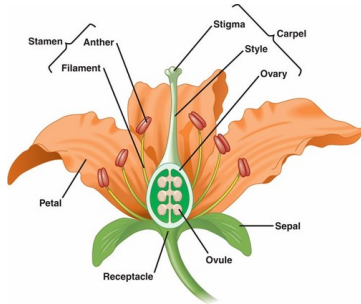
Product of reproduction, a new organism produced by one or more parents; baby



Organisms are placed into a kingdom based on...

its ability to make food and the number of cells in its  
body

ovary



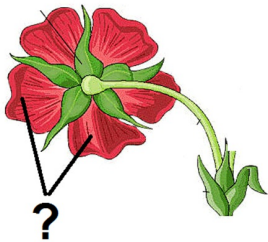
located at the bottom of the pistil; contains ovules where egg cells are produced; eventually turns into the fruit

parasitic fungi



feed on other living organisms (host) and harm the host

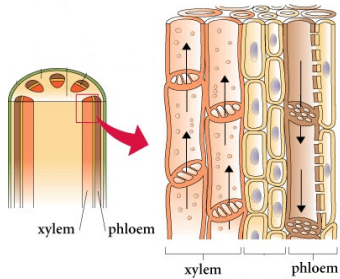
petals



colorful or fragrant to attract insects, birds or other  
pollinators



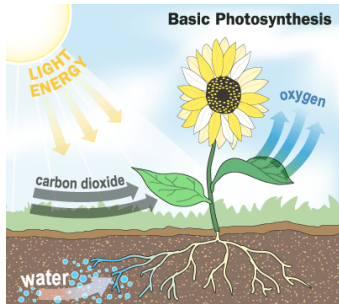
phloem



Elizabeth Morales

vascular tissue in plants that transports sugar down from the leaves to the rest of the plant

photosynthesis



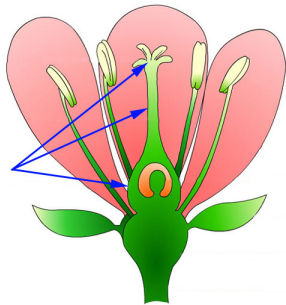
process where plants make sugar (glucose) and release oxygen by using sunlight, carbon dioxide and water

phototropism



A growth response to light

pistil



female part of the flower

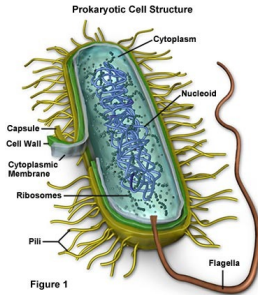


poison



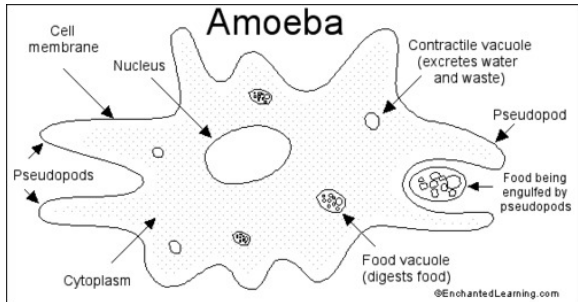
a structural adaptation for defense of a plant that is contained in either the fruits or leaves to protect it from being eaten from some animals

Prokaryotic



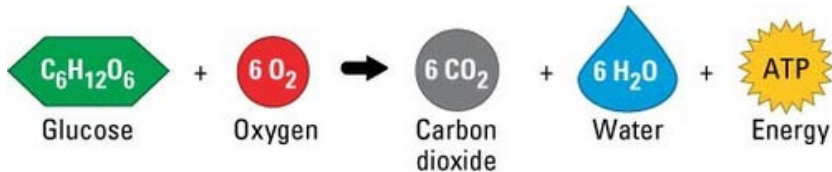
single cell that does not have a membrane bound nucleus; like bacteria

Pseudopod



false foot. a finger-like projection from the cell used to catch food and/or move. amoeba have this

respiration



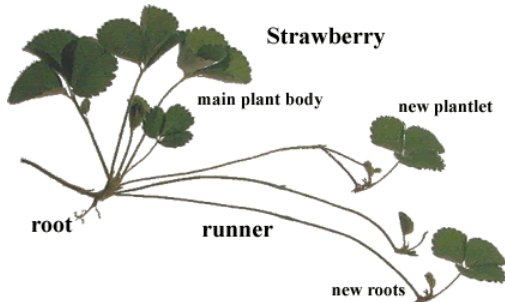
uses sugar (glucose) and oxygen to create carbon dioxide, water and energy for the plant



response

An action or change in behavior that occurs as a result of a stimulus.

runners



asexual reproduction process; stems that run above ground on the surface (strawberries, ivy, lawn grasses)

saprophytic fungi



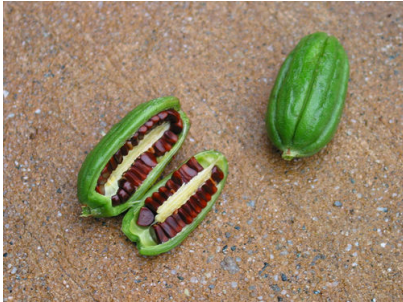
get energy from decaying organic matter

scientific name

Genus species (Latin word written in italics)

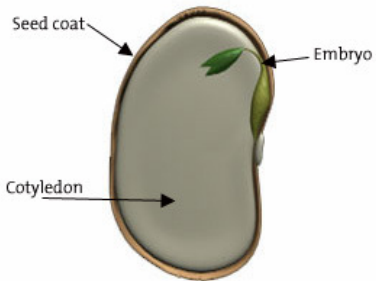


seed



contains the fertilized egg (embryo) from which new plants are formed; often protected by a  
fruit

seed coat



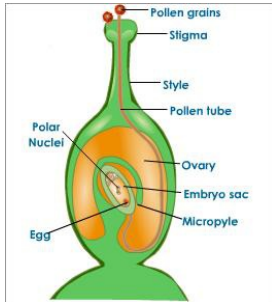
protect the seed from injury or drying out

seed dispersal



special structures on the seed allow it to be carried away from the parent by wind, water or animals

sexual reproduction

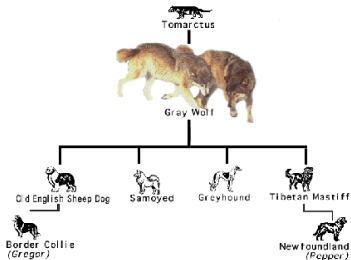


a reproductive process which involves 2 parents and produces similar offspring (a mix of the 2 parents)



species consist of..

## Family Tree

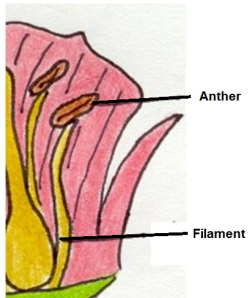


organisms that are the same type; able to breed and produce offspring of the same kind

sperm

male reproductive cell

stamen



male part of the flower

stem cuttings



asexual reproduction process; piece of stem is cut and replanted, roots form and a new plant develops (sugar cane and pineapple)

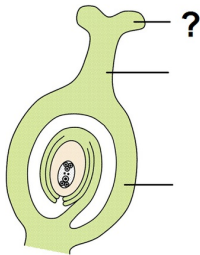


stems



support the plant and hold it up closer to the light  
source

stigma



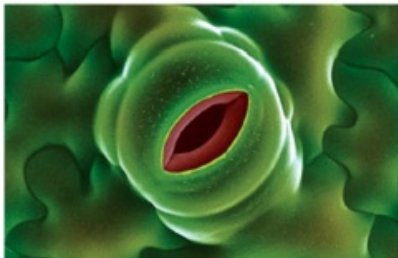
sticky top of the pistil where pollen lands

stimulus

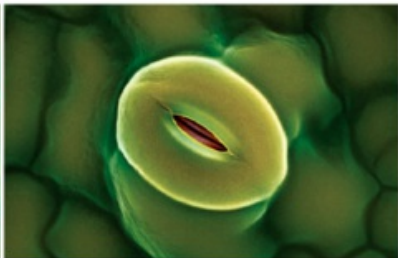


A change in an organism's surroundings that causes the organism to react

stomata



**Stoma open**

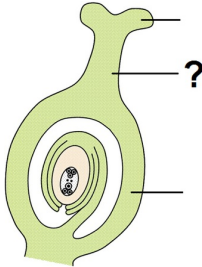


**Stoma closed**

tiny pores on the bottom of leaves that allow gases to enter or exit



style



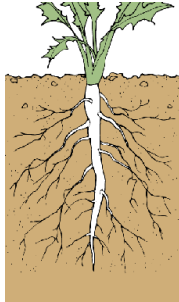
located on the pistil; long stalk which the pollen tube grows down after pollination has taken place

symbiotic fungi



feed on other living organisms (host), but do not harm the  
host

taproot



Single, large root with a few tiny hairs; found in dicots (carrots, dandelions, cacti)

taxonomists

scientists who groups organisms



taxonomy

the study of classifying organisms

thigmotropism



a growth response to touch

thorns



a structural adaptation for defense of a plant that protects it from being eaten by some animals

transpiration



when plants lose excess water through tiny holes in the leaves called stomata



tropism

A growth response of a plant toward or away from a stimulus

tubers/bulbs



**Storage Roots**



**Stem Tubers**



**Bulbs**



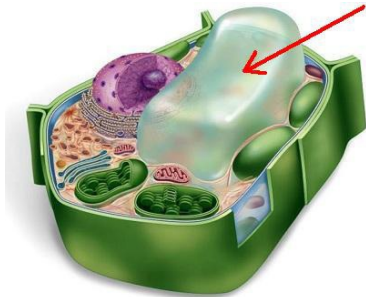
**Tendrils**

asexual reproduction process; underground stems (potatoes, onions)

unicellular

single celled organism

vacuole



part of the cell that stores water/food. plants have one large vacuole to store water for photosynthesis, animals have many small ones

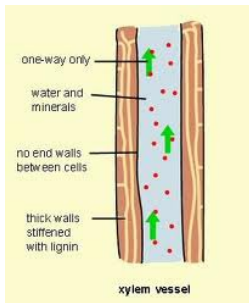


vascular plants



vascular tissue to transport water/nutrients, true roots, stems & leaves, can grow to be very tall

xylem



vascular tissue in plants that transports water up the plant