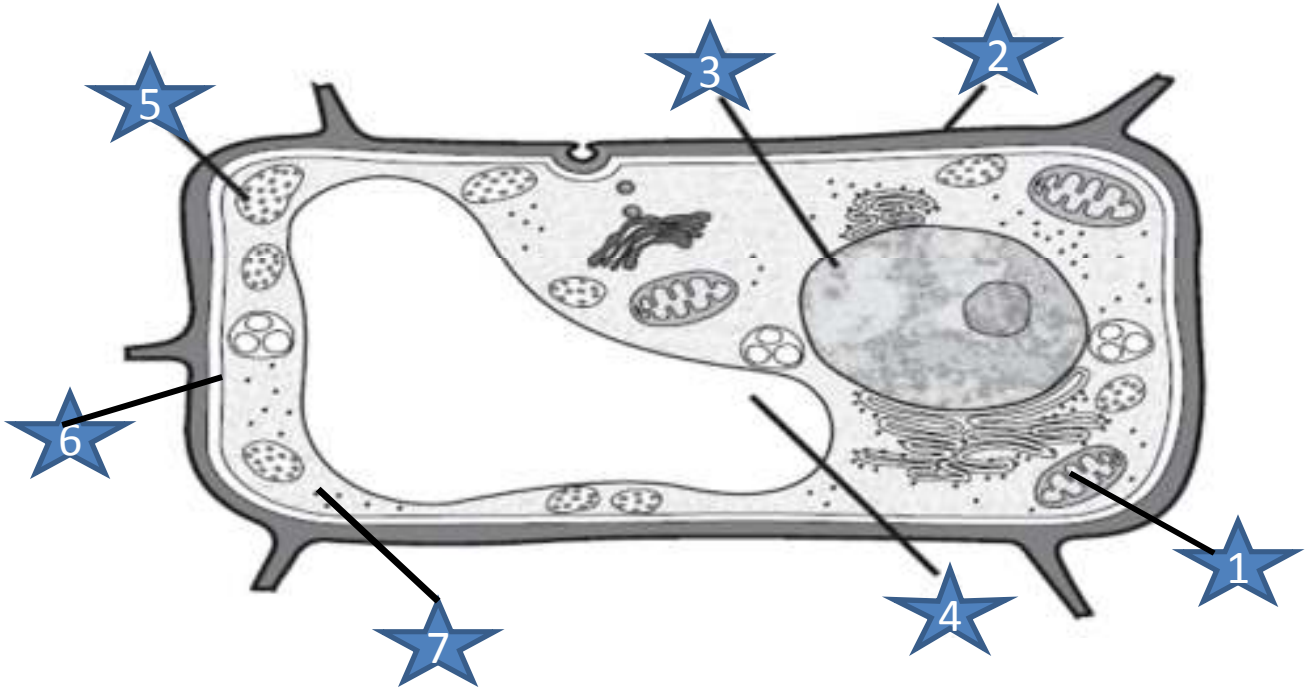
Mrs. Smith's Study Guide for the Alabama Science Assessment

Plant Cell

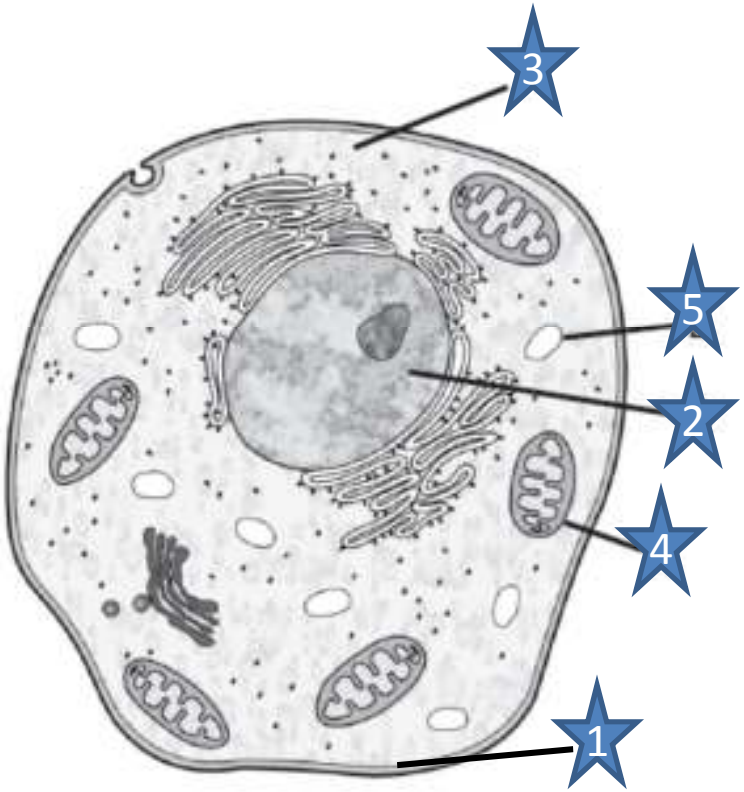


Page 1

Mitochondria	Cell Wall	Cytoplasm
Vacuole	Nucleus	Chloroplast
Cell Membrane		

Mitochondria	**Cell Membrane**	**Nucleus**
Cytoplasm	**Vacuole**	

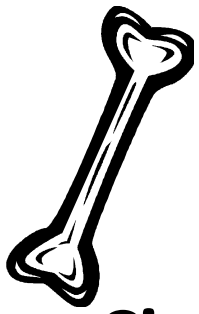
Animal Cell



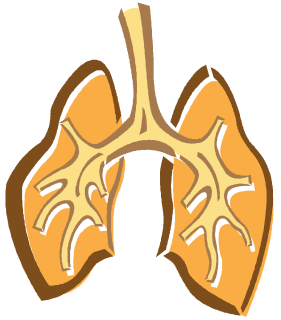
Answer Key for Cells

- Plant Cell
  1. Mitochondria
  2. Cell wall
  3. Nucleus
  4. Vacuole
  5. Chloroplast
  6. Cell membrane
  7. Cytoplasm

- Animal Cell
  1. Cell membrane
  2. Nucleus
  3. Cytoplasm
  4. Mitochondria
  5. Vacuole



Human Body Systems



- **Circulatory-** circulates blood cells to get oxygen to cells and remove waste from cells; includes arteries, veins, heart
- **Respiratory**- moves gasses in and out of the body; includes lungs, nose, mouth, & trachea
- **Excretory-** removes waste; includes kidneys, bladder, and ureters.
- **Reproductive**- produces offspring
- **Skeletal**- provides support for the body

A Trick to Help Remember the Order of the Planets

- **My –** Mercury
- **Very –** Venus
- **Excellent –** Earth
- **Mother –** Mars
- **Just –** Jupiter
- **Served -** Saturn
- **Us –** Uranus
- **Nachos -** Neptune

Spheres of the Earth

- **Geosphere** – includes land, rocks, mountains, & volcanoes: also known as the lithosphere
- **Biosphere** – places on earth where plants, animals, microorganisms, and all other living things are found.
- **Hydrosphere** – includes all of the water on earth (rivers, lakes, water from the water cycle, & water vapor/clouds)
- **Atmosphere** – layer of gases surrounding the earth (mostly oxygen & nitrogen)

Layers of the Atmosphere

- Exosphere
- Thermosphere
- Mesosphere
- Stratosphere
- Troposphere

(This is where you would find weather balloons)

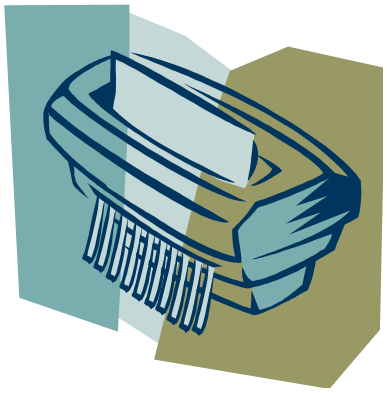
(The layer nearest Earth. This is where our weather Takes place and this is the layer that we live in)

Chemical Changes

- Burning
- Rust/ Corrosion
- Bubbling Gases
- Change in color
- Increase in temperature

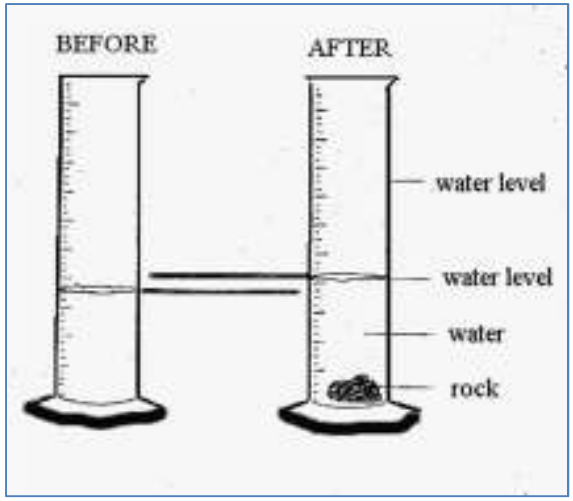
Physical Changes

- Tearing/shredding paper
- Melting an ice cube
- Freezing water



Mass, Volume, & Density

- **Volume** – the amount of space that an object takes up (find the volume of a rock by adding it to a beaker of water. The water level will rise because the rock is taking up space)



- **Mass** – the amount of matter in an object (measured using a balance)

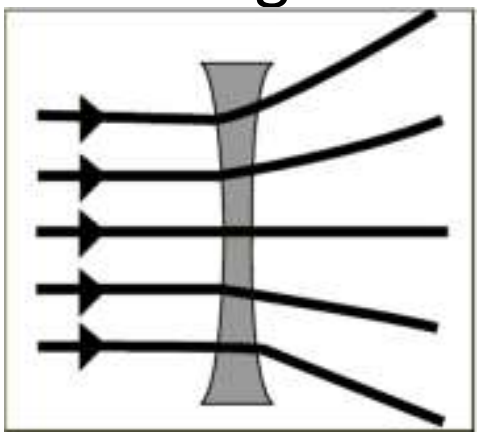
- **Density** – the amount of mass per unit volume

  D=M/V

LENSES

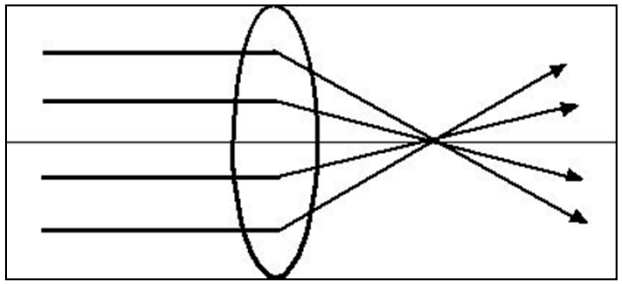
CONCAVE

- Causes light rays to spread apart
- Corrects nearsightedness
- Image remains right side up



CONVEX

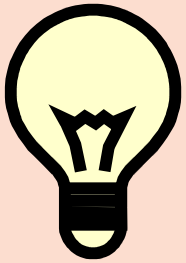
- Focuses light rays together to a focal point
- Corrects farsightedness
- Makes image upside down



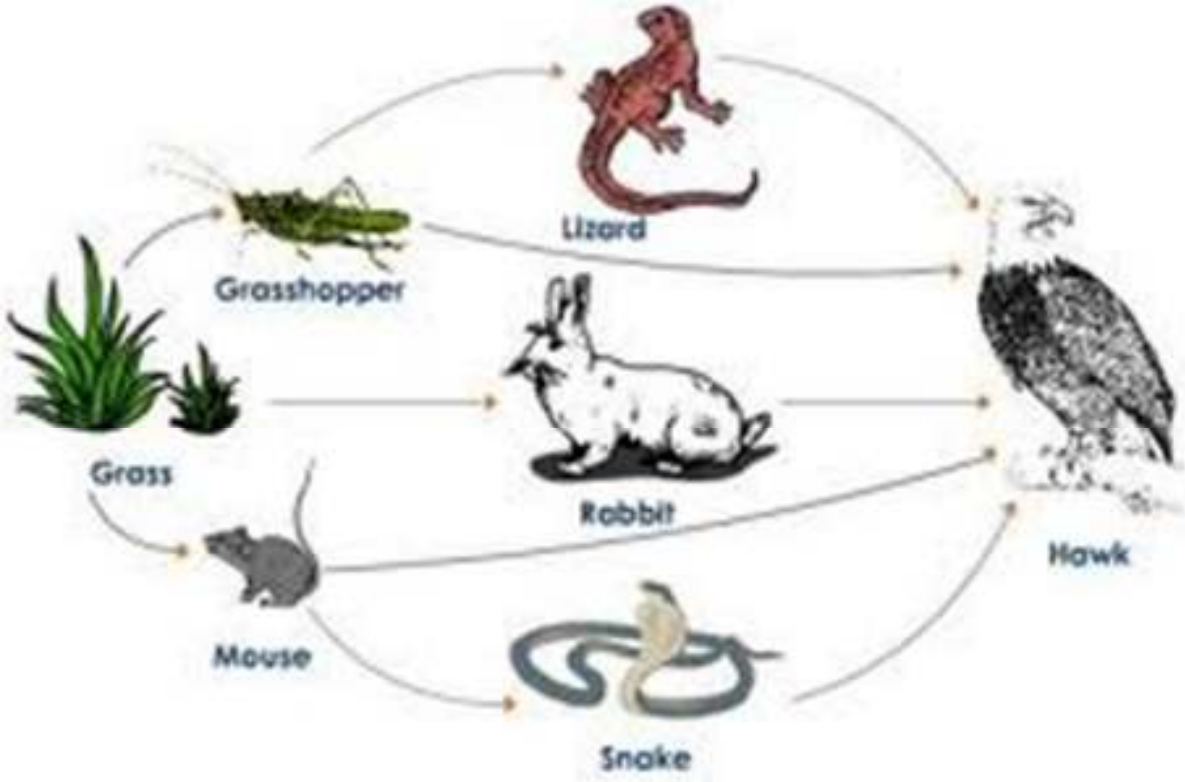
ACIDS	BASES
Examples: • Citrus fruits – lemons, oranges, limes, etc. • Vinegar • Soft drinks	**Examples:** • Soap • Baking Soda • Ammonia • Limewater (not made from lime juice)
Acids will change: • Cabbage juice to bright pink • Grape juice to red • Black Tea to a lighter color **Strong acids are dark in color, but weak acids are light in color**	**Bases will change:** • Cabbage juice to a green, yellow or blue color • Grape juice to blue • Black tea to a darker color **Strong bases are dark in color, but weak bases are light in color**

ENERGY

Chemical	Heat	Light	Mechanical
• Food • Burning • Batteries • Matches	• Insulation • Fridge • A/C • Sun (feel it) • Stove	• Light bulbs • Fire • Sun (see it) • Flashlight • Firefly	• Springs • Bow & Arrow • Hammer & nail



FOOD WEBS



A Food Web in a Grassland Ecosystem With Five Possible Food Chains

Remember, the arrow points to the animal that is getting the energy. The arrow points to the animal that is eating whatever is on the other end of the arrow. For example, the rabbit eats the grass. The hawk eats the snake, mouse, rabbit, grasshopper, and lizard. The mouse is eaten by the snake and the hawk.

SYMBIOSIS

- Commensalism – one organism benefits from the relationship, but the other organism isn't affected by the relationship (shark & remora)
- Parasitism - one organism benefits from the relationship, but the other organism is harmed or even killed (heart worms & a puppy)
- Mutualism – both organisms benefit from the relationship (ants & aphids)

ECOSYSTEMS

- Abiotic Factors – the nonliving parts of an ecosystem (sun, water, wind, etc.)
- Biotic Factors - the living parts of an ecosystem (plants, animals, etc.)
- Population – all of the organism of one kind in an ecosystem (all the snakes are a population & all of the birds are a population)
- Community – populations interacting with each other form a community.