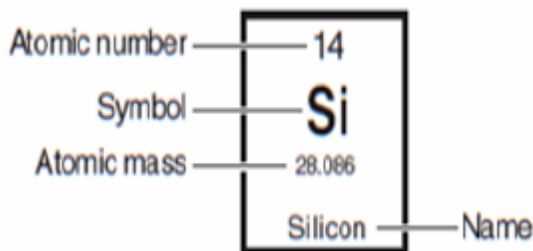


# 8<sup>th</sup> Grade Science STAAR Review

## Matter and Energy (14 questions)

8.5A – Describe the structure of atoms, including the masses, electrical charges, and locations, of protons and neutrons in the nucleus and electrons in the electron cloud.

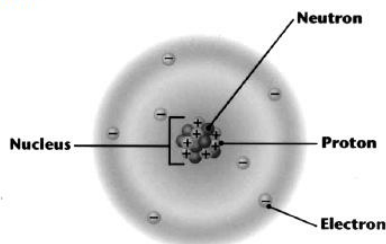
APE MAN



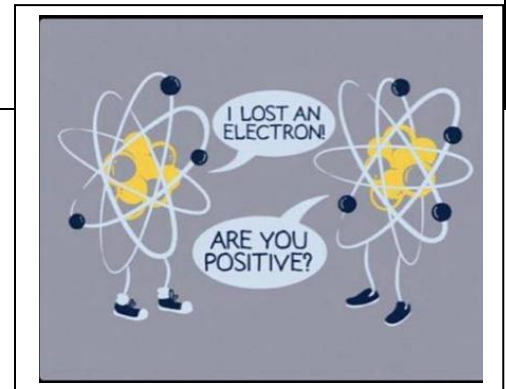
A – Atomic Number  
 P – Protons  
 E – Electrons

M – Mass Number  
 A – Atomic Number  
 N – Neutrons

Atomic Structure of Carbon:



subatomic particle	proton	neutron	electron
charge	positive	neutral	negative
location	nucleus	nucleus	electron cloud

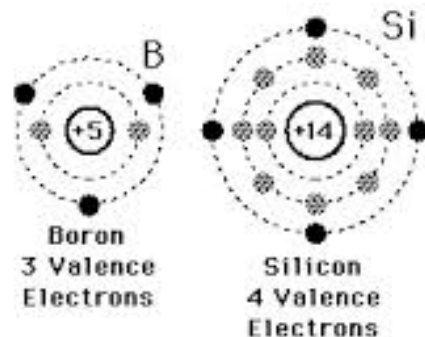


8.5B – Identify that protons determine an element's identity and valence electrons determine its chemical properties, including reactivity.

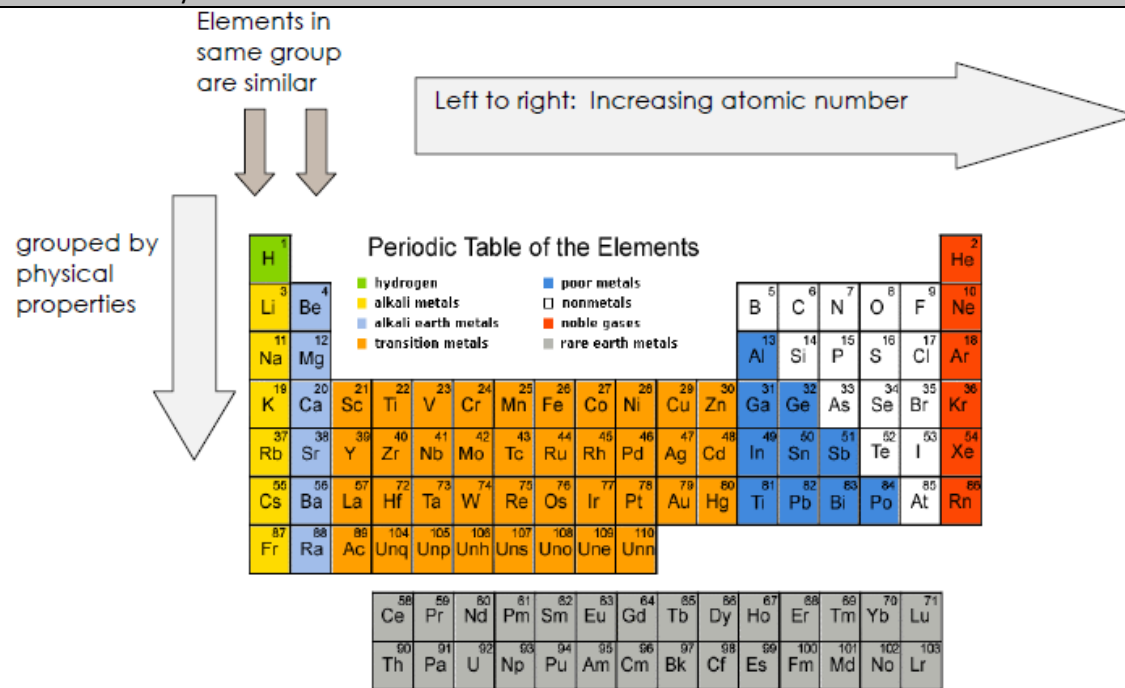
### Valence Electrons in Each Group

1														2
1	2				3	4	5	6	7	8				
1	2				3	4	5	6	7	8				
1	2				3	4	5	6	7	8				
1	2				3	4	5	6	7	8				
1	2				3	4	5	6	7	8				
1	2				3	4	5	6	7	8				


**Valence Electrons** – The number of electrons in the outer most energy level.

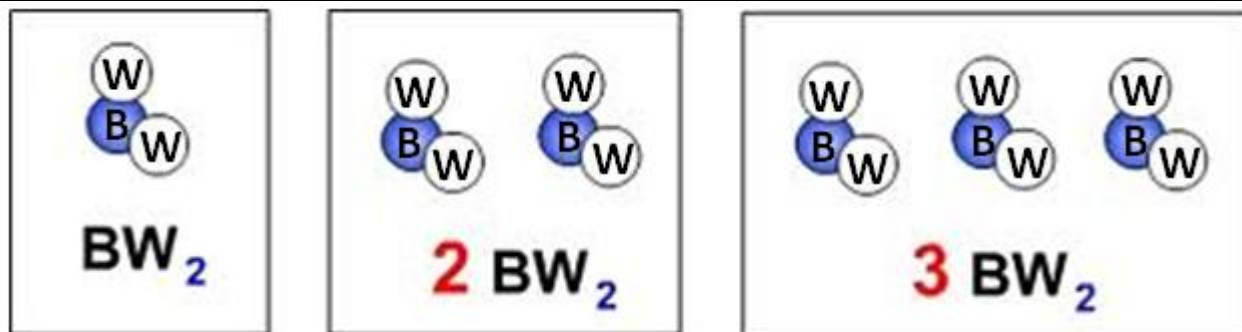


8.5 C – Interpret the arrangement of the periodic table, including groups and periods, to explain how properties are used to classify elements.



<b>F</b> <b>A</b> <b>M</b> <b>I</b> <b>L</b> <b>I</b>	<ul style="list-style-type: none"> <li>- Elements in the same GROUP or FAMILY have similar CHEMICAL properties</li> <li>- Most reactive Group = Group 1</li> <li>- Least reactive group = Group 18</li> <li>- Have the same number of VALENCE electrons</li> </ul>	<p><b>PERIOD</b> →</p> <ul style="list-style-type: none"> <li>- There are 7 of these on the Periodic Table</li> <li>- Tells you the number of energy levels present in the model</li> </ul>
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8.5 D – Recognize that chemical formulas are used to identify substances and determine the chemical formulas containing subscripts.



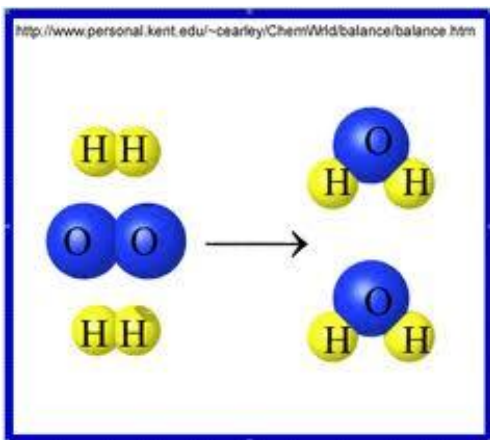
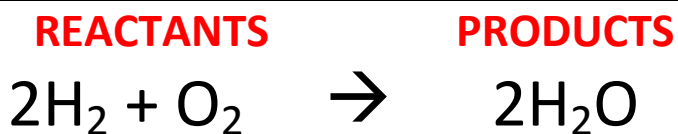
**Subscript** – The number that goes BELOW and BEHIND an element to tell you how many of that element are in the compound.

**Coefficient** – The number IN FRONT of a chemical formula that tell you how many separate MOLECULES.

8.5 E – Investigate how evidence of chemical reactions indicate that new substances with different properties are formed.

Physical Changes	Chemical Changes
<ul style="list-style-type: none"> <li>- Changes appearance only</li> <li>- NO change in Chemical composition</li> </ul> <p><b>EXAMPLES:</b></p> <ul style="list-style-type: none"> <li>- Ice melts</li> <li>- Erosion</li> <li>- Size changes</li> <li>- Water eveporates</li> <li>- Sugar dissolves</li> </ul>	<ul style="list-style-type: none"> <li>- Chnages chemical composition and Appearance</li> <li>- Produces a NEW substance</li> </ul> <p><b>EXAMPLE:</b></p> <ul style="list-style-type: none"> <li>- Color can change</li> <li>- Odor produced</li> <li>- Temperature change</li> <li>- Precipitate forms (solid)</li> <li>- Bubbles (gas produced)</li> </ul>

8.5 F – Recognize whether a chemical equation containing coefficients is balanced or not and how that relates to the law of conservation of mass.



**Law of Conservation of Mass –**

What you start with has to be equal to what you end with.

**Matter cannot be created or destroyed it simply changes form.**

	Reactants	Products
H	4	4
O	2	2

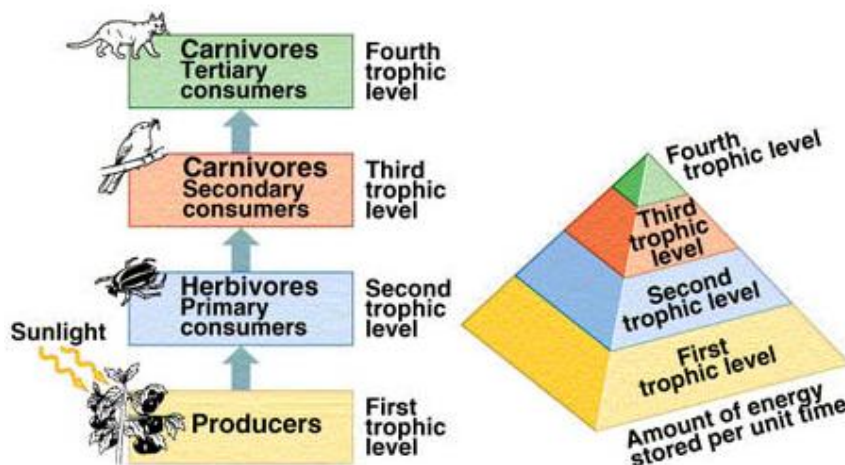
✓

✓

7.5 C – Diagram the flow of energy through living systems, including food chains, food webs, and energy pyramids.

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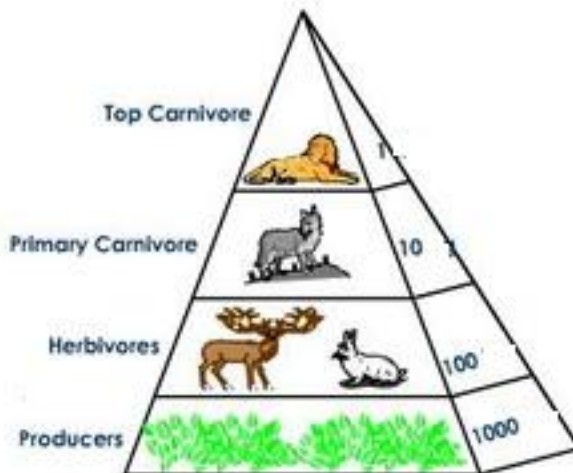
### Ecosystem energy flow



Producers contain most of the energy in an ecosystem. The amount of energy is reduced as you go up a food chain or energy pyramid.

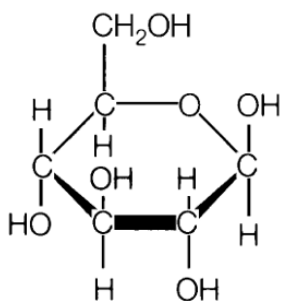
# 10% RULE

As you move up an energy pyramid only 10% of energy is transferred to the next organism



Upright Pyramid of biomass in a Terrestrial Ecosystem

7.6 A – Identify that organic compounds contain carbon, and other elements such as hydrogen, oxygen, phosphorus, nitrogen, or sulfur.

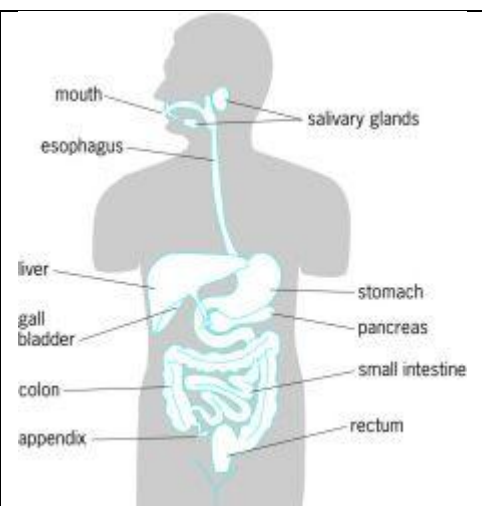


Glucose  
C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>


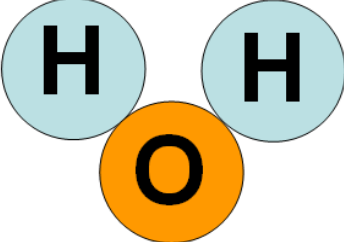
## All living things are organic

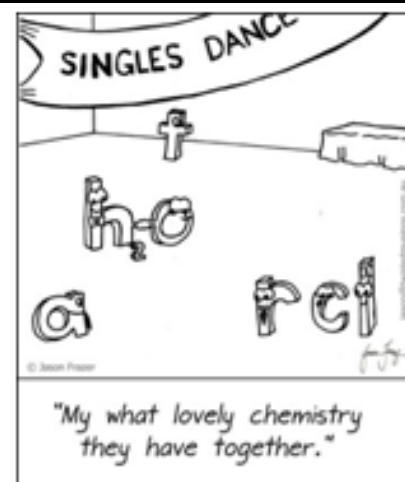
7.6 B – Distinguish between physical and chemical changes in matter in the digestive system.

Digestive Structure	Function	Chemical or Physical Change
Teeth	Breaks down food into smaller pieces.	Physical
Tongue and saliva	Helps shape the food into a ball to be passed from the mouth to the esophagus.	Physical and Chemical
Esophagus	Transports food from the mouth to the stomach.	Physical
Stomach	Acids break down food particles into nutrients the body can absorb.	Physical and Chemical



6.5 C – Differentiate between elements and compounds on the most basic level.

<p><b>Element</b> – A pure substance made up of only one atom.</p> 	<p><b>Compound</b> – 2 or more DIFFERENT elements chemically combined together.</p>  <p>Easiest way to tell how many <u>different</u> elements is to count the number of CAPITAL letters!!</p>
<p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>- O<sub>2</sub></li> <li>- Cl</li> </ul>	<p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>- Na<sub>2</sub>Cl<sub>2</sub> (2 different elements)</li> <li>- HCl (2 different elements)</li> </ul>



6.6 A – Compare metals, nonmetals, and metalloids using physical properties such as luster conductivity, and malleability.

Metals	Non-Metals	Metalloids
<ul style="list-style-type: none"> <li>- Located on the LEFT side of the periodic table</li> <li>- Shiny</li> <li>- Malleable</li> <li>- Ductile</li> <li>- Conductor</li> </ul>	<ul style="list-style-type: none"> <li>- Located on the RIGHT side of the periodic table</li> <li>- Dull</li> <li>- Brittle</li> <li>- Non-Conductor (Insulator)</li> </ul>	<ul style="list-style-type: none"> <li>- Located on the zig-zag line of the periodic table</li> <li>- Has properties of both metals and non-metals</li> </ul>

6.6 B – Calculate density to identify unknown substances.

The amount of matter in a given volume.

$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

or, in short form:

$$d = \frac{m}{V}$$

Less Dense

< 1 g/mL

Water  
(Density: 1 g/mL)

More Dense

> 1 g/mL



# Force, Motion, and Energy (12 questions)

8.6 A – Demonstrate and calculate how unbalanced forces change the speed or direction of an object's motion.

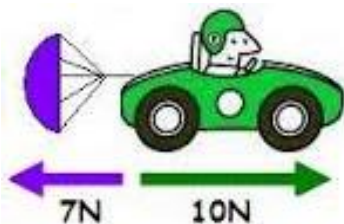
Calculating Net Force

Add	Subtract
When forces are acting in the same direction	When forces are acting in opposite directions


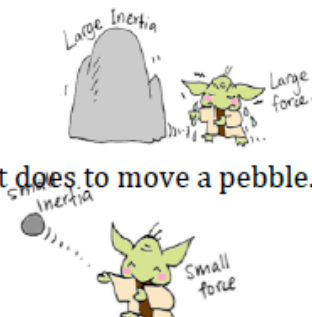
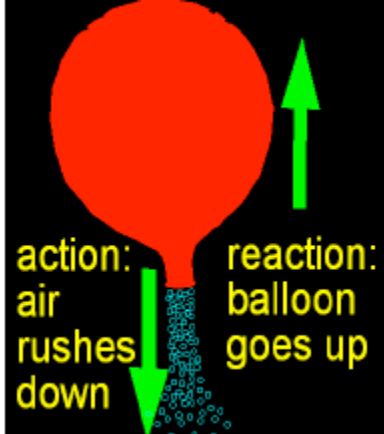
If the net force is **ZERO** the forces are said to be **BALANCED** and there will be **NO** movement



If the net force is **NOT** zero the object is going to move and will be **UNBALANCED**

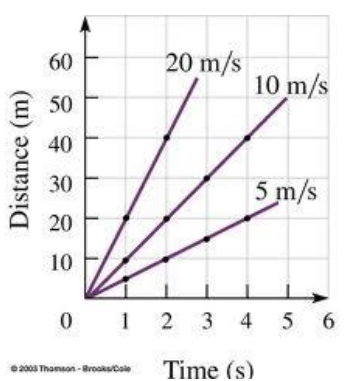


8.6 C – Investigate and describe applications of Newton’s laws of inertia, law of force and acceleration, and law of action – reaction such as in vehicle restraints, sports activities, amusement park rides, Earth’s tectonic activities, and rocket launches.

1 <sup>st</sup> Law	2 <sup>nd</sup> Law	3 <sup>rd</sup> Law
<p>Why you wear seatbelts</p>  <p>“the seatbelt law”</p>	<p>It takes <b>MORE</b> force to move a huge rock</p>  <p>than it does to move a pebble.</p>	 <p>action: air rushes down</p> <p>reaction: balloon goes up</p>
<p>An object in motion will stay in motion and an object at rest will stay at rest UNLESS acted upon by an outside (unbalanced) force.</p>	<p><math>F = M \times A</math></p> <p>Acceleration of an object depends directly on the mass of the object and the net force acting on it. More massive objects require more force to accelerate than less massive objects.</p>	<p>For every action there is an equal and opposite reaction.</p>

8.6 B – differentiate between speed, velocity, and acceleration.

**SPEED** – Change in distance over time.

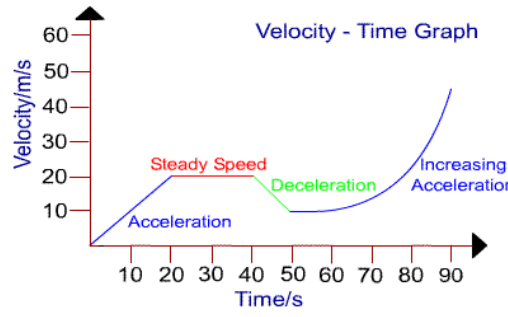
$$\text{speed} = \frac{\text{distance}}{\text{time}}$$


A distance-time line graph can be used to find an objects speed.

**Velocity** – Speed AND Direction. A object’s velocity changes when it speeds up, slows down, or changes direction.



**Acceleration** - A velocity-time line graph can be used to find an object’s acceleration.



7.7 A – Contrast situations where work is done with different amounts of force to situations where no work is done such as moving a box with a ramp and without a ramp, or standing still.

## W = Force x Distance

Work can only be done if the object **moves**.



Work is being done because the object moved



No work is being done because the wall is NOT moving.

6.8 A – Compare and contrast potential and kinetic energy.

High Potential Energy  
Low Kinetic Energy



Low Potential Energy  
High Kinetic Energy

### Potential Energy

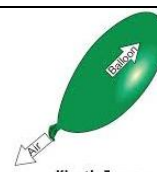
The energy of position  
"Stored" energy



Potential Energy

### Kinetic Energy

The energy of motion

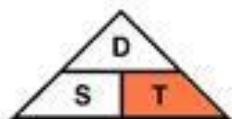


Kinetic Energy

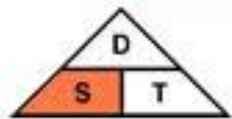
6.8 C – Calculate average speed using distance and time measurements.



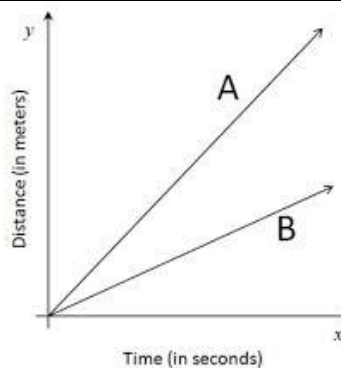
$$\text{Distance} = \text{Speed} \times \text{Time}$$



$$\text{Time} = \frac{\text{Distance}}{\text{Speed}}$$



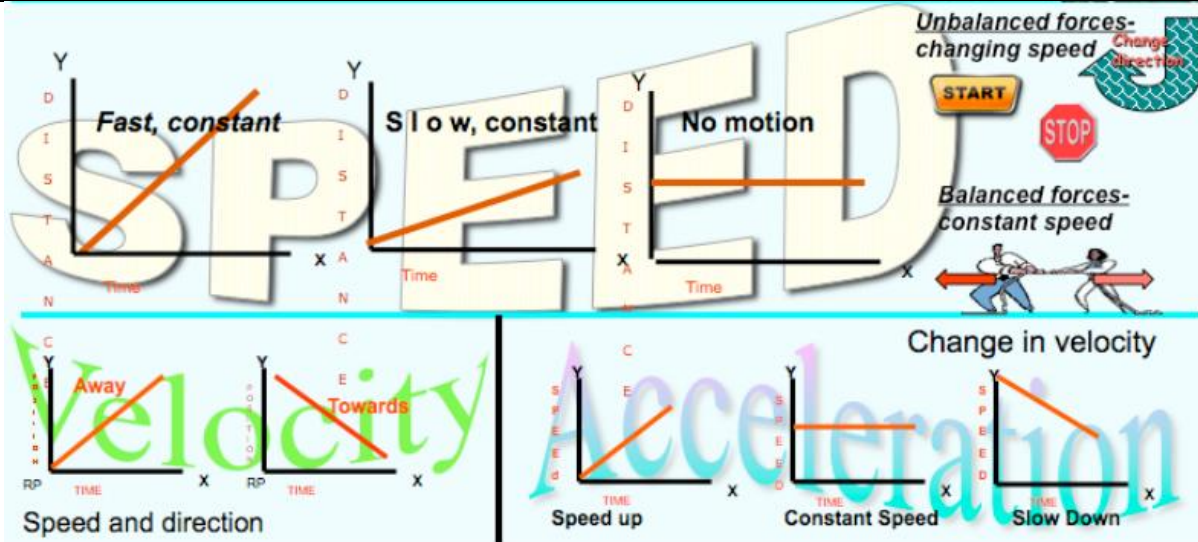
$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$



A is traveling  
Faster than B



6.8 D – Measure and graph changes in motion.



6.9 C – Demonstrate energy transformations such as energy in a flashlight battery changes from chemical energy to electrical energy to light energy.

## MECHANICAL

Relates to the movement of objects or its position in gravity.

**W = ΔE**

**POTENTIAL ENERGY**

Stored

- Filled Balloon
- Sling Shot
- Water Pressure
- About to Swing
- Roller-coaster at the top
- Water in Reservoir

Gravitational

**KINETIC ENERGY**

Moving

- Car
- Windmill
- Bicycles

---

## CHEMICAL

Relates to energy stored in the bonds between atoms in a molecule.

Batteries

Fuel

Propane + Oxygen

Carbon Dioxide + Energy + Light and Heat + Water

---

## ELECTRICAL

Relates to the movement or flow of electrons.

Static Electricity

Current Electricity

HIGH VOLTAGE

$I = \frac{V}{R}$

Electrons flow in one direction

MAGNETIC FIELD

---

## LIGHT

Relates to the vibration of an electrical charge or magnetic field that produces electromagnetic waves that can travel through a vacuum.

**Radiant**

Radio Telescope

Photovoltaic Solar Cells

ELECTROMAGNETIC SPECTRUM

Low Frequency | High Frequency

Radio Waves (10<sup>6</sup> Hz to 10<sup>9</sup> Hz) | Microwaves (10<sup>8</sup> Hz) | Radiant Heat Infrared (10<sup>12</sup> Hz) | Visible Light (4x10<sup>14</sup> Hz) | Ultraviolet | X Rays (10<sup>16</sup> Hz) | Gamma Rays (10<sup>20</sup> Hz)

AM | VHF | FM

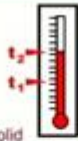
R O G B I V

# HEAT

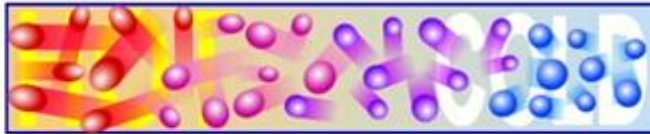


Thermal

$$Q = mc\Delta t$$



Relates to the motion of particles, atoms or molecules in a substance.



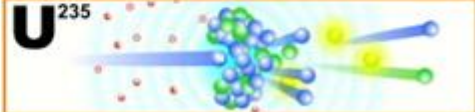
CONDUCTION - movement of thermal energy through a solid  
CONVECTION - movement of thermal energy through a gas or liquid

# NUCLEAR

$$E = mc^2$$



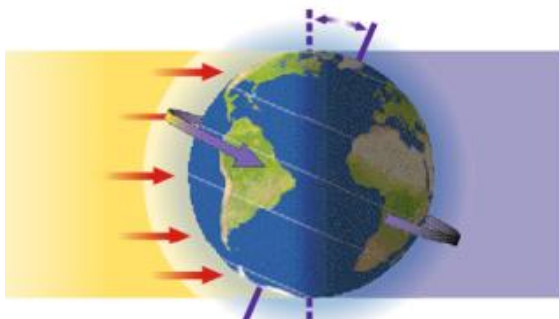
Relates to the potential energy stored in bonds between particles in the nucleus of an atom.



## Earth and Space (14 questions)

8.7 A – Model and illustrate how the tilted Earth rotates on its axis, causing day and night, and revolves around the Sun causing changes in seasons.

### Rotate- To spin on an Axis

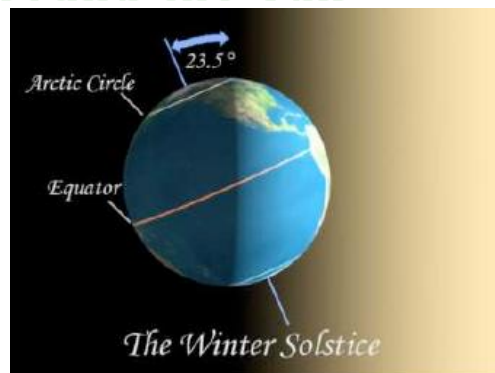


The Rotation of the Earth

Rotation is the process of the Earth spinning on its axis. It takes 24 hours to rotate fully one time. The side facing the Sun is daylight, and the side facing away is having night.

Causes **DAY** and **NIGHT**

### Revolve- To move around the sun

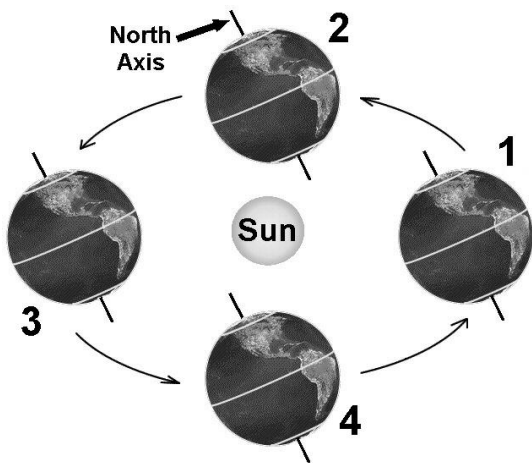


It takes 365 days for the Earth to go around the Sun.



© by Thaves.

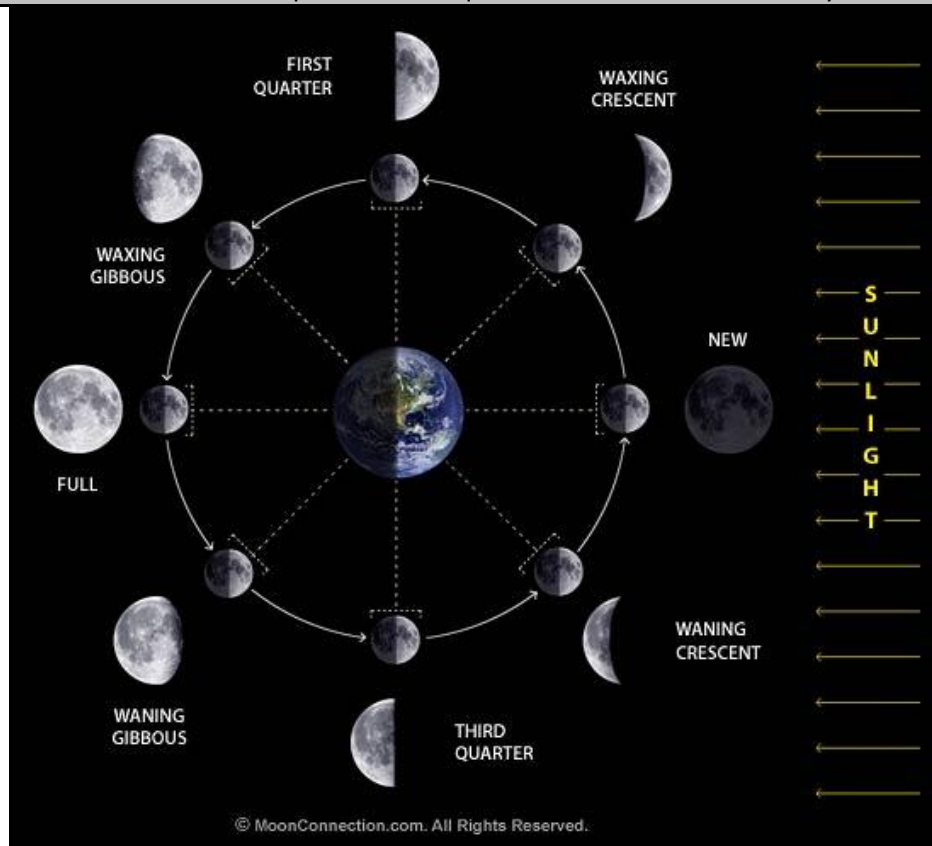
# Seasons



Earth's tilt (of about 23 degrees) and the revolution of the Earth around the Sun causes us to have seasons. It is important to remember that depending on the diagram it might show the tilt of the axis different so you will need to pay close attention. When the Northern Hemisphere is pointed towards the Sun the Northern Hemisphere is experiencing Summer because it is receiving direct sunlight. This is #1 on the diagram to the left. When the Northern Hemisphere is tilted away from the Sun we are experiencing winter because we are receiving indirect sunlight.

	Northern H.	Southern H.
Position 1	Summer	Winter
Position 2	Fall	Spring
Position 3	Winter	Summer
Position 4	Spring	Fall

## 8.7 B – Demonstrate and predict the sequence of events in the lunar cycle.



### reminders:

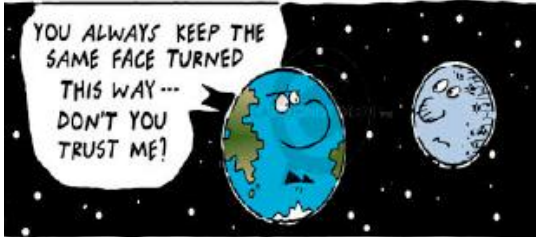
- Near and New
- Far and Full
- "b" it is getting bigger ... this is called WAXING
- "d" it is getting dimmer or smaller.... WANING

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Moon phases are caused by sunlight hitting the Moon and the angle it is from here on Earth. It takes approximately a month to go through all 8 moon phases (or every 7 days we experience a new main moon phase).

The Moon also rotates on its axis, but because its period of rotation and revolution are the exact same (one month) we on Earth only ever see ½ of the moon.




½ of the Moon is always illuminated by the Sun. When we see a full moon we are seeing at its biggest it will ever get. When the moon is at a quarter it is called that because we on Earth are seeing ½ of a ½. It makes it easier if you think about it like money. Half of half of a dollar is 25 cents.... A quarter.

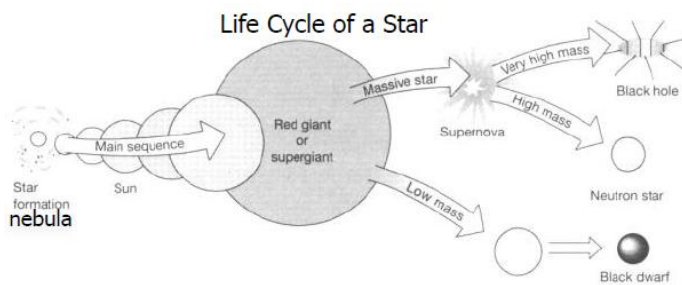


The Moons rate of rotation and revolution are the exact same so we here on Earth always see the same side of the Moon.

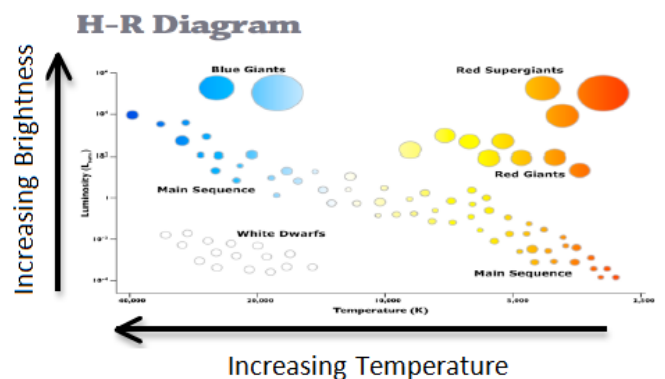
8.8 A – Describe components of the universe, including stars, nebulae, and galaxies and use models such as the Hertzsprung-Russell Diagram for classification.

Galaxies are classified based on their **shape**.

SPIRAL GALAXY – Milky Way	ELLIPTICAL GALAXY	IRREGULAR GALAXY
		



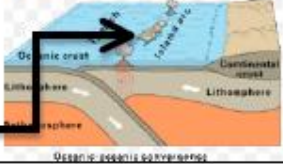
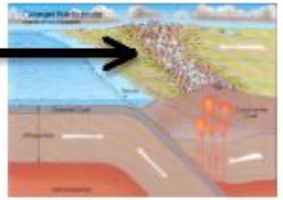
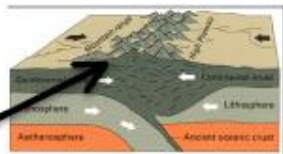
We use the Hertzsprung-Russell Diagram to help us classify stars by their surface temperature, color, and absolute magnitude (star's brightness).



8.9 B – Relate plate tectonics to the formation of crustal features

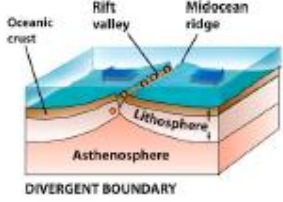
**Convergent Boundary** – location where tectonic plates **collide** together. There are three types:

1. Continental/Continental  
\* forms mountains
2. Continental/Oceanic  
\* forms volcanic mts.
3. Oceanic/Oceanic  
\* forms volcanic island arcs



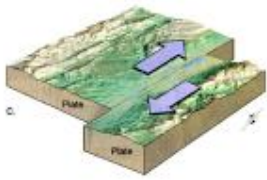
**Divergent Boundary** - location where tectonic plates move away from each other. Can result in:

- Seafloor spreading
- Earthquakes
- Rift Valleys
- Ocean Basins
- Mid-Ocean Ridge

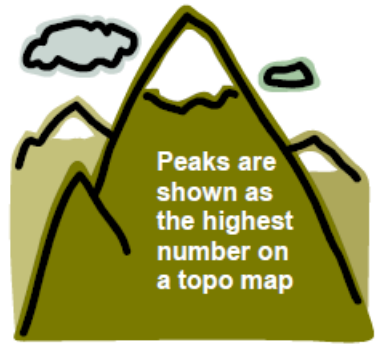
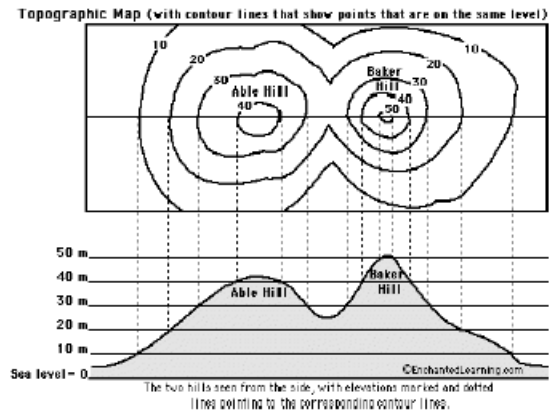


**Transform Boundary** – location where tectonic plates slide past each other. Can result in:

- Shallow earthquakes
- Fault line



8.9 C – Interpret topographic maps and satellite views to identify land and erosional features and predict how these features may be reshaped by weathering.



**Topographic Maps** are used to identify type and location of land features; contour lines connect points of equal elevation (height above sea level); **closer line** spacing indicates **steeper** changes in elevation.

8.7 C – Relate the position of the Moon and Sun to their effect on ocean tides.



## Spring Tide

Sun, Moon, and Earth make a **STRAIGHT** line to each other.

- Can only occur during a **Full** and **New Moon**
- High tides are higher than usual
- Low tide is lower than usual
- **HUGE difference between tides**

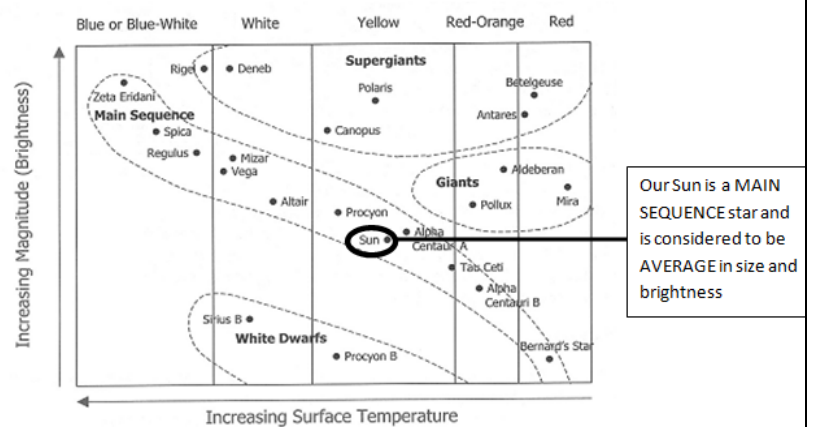


## Neap Tide

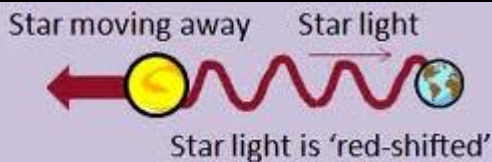
Sun, Moon, and Earth make a **NINETY** degree angle to each other.

- Can only occur during a **1<sup>st</sup>** and **3<sup>rd</sup> Quarter Moon**
- High tide is lower than usual
- Low tide is higher than usual
- **Not much of a difference between high and low tide**

8.8 B – Recognize that the Sun is a medium-sized star near the edge of a disc-shaped galaxy of stars that the Sun is many thousands of times closer to Earth than any other star.



8.8 C – Explore how different wavelengths of the electromagnetic spectrum such as light and radio waves are used to gain information about distances and properties of components in the universe.



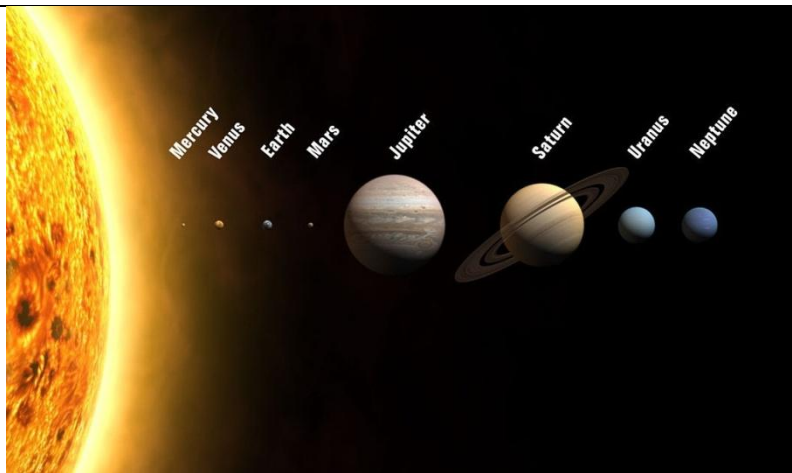
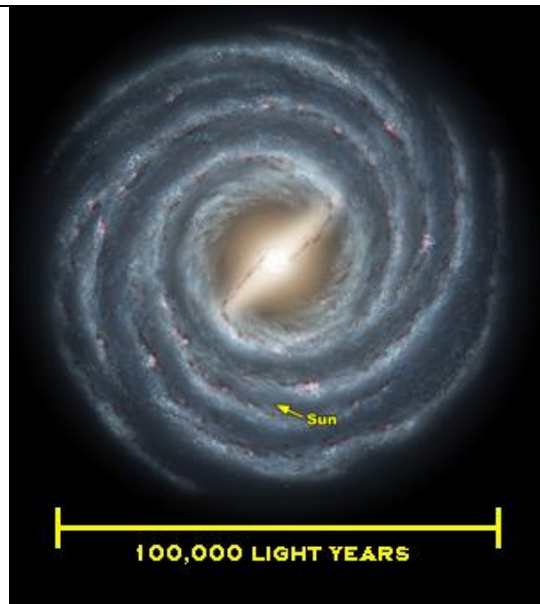
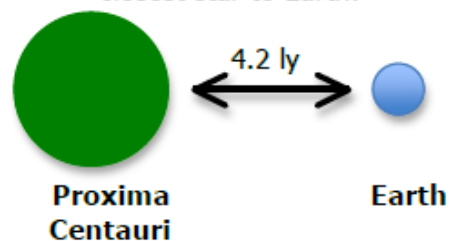
When the light from a distant star is moving away from us the light rays are “pulled” longer. Longer light wavelengths look red to us.

8.8 D – Model and describe how light years are used to measure distances and sizes in the universe.

The nearest star to Earth is our Sun. It is a fairly "average" star in the Hertzsprung – Russell diagram's "Main Sequence." Our Sun is surprisingly stable, providing Earth with just the right sunlight for life to evolve on our planet. It is approximately 8 light minutes away from earth.

**Light Year** – is used to measure large distances and sizes in the universe; equal to the distance that light can travel in a vacuum ("empty" space) in one year; 1 light year = 9,461,000,000,000 km

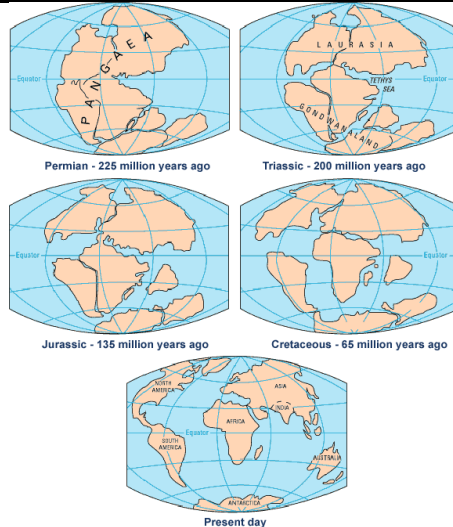
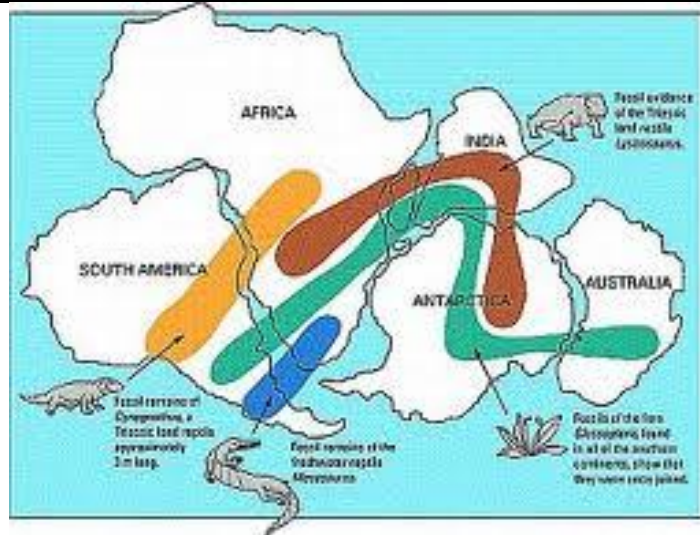
Proxima Centauri is the second closest star to Earth.



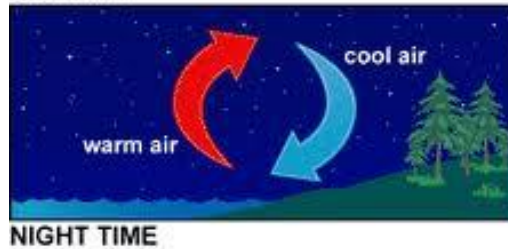
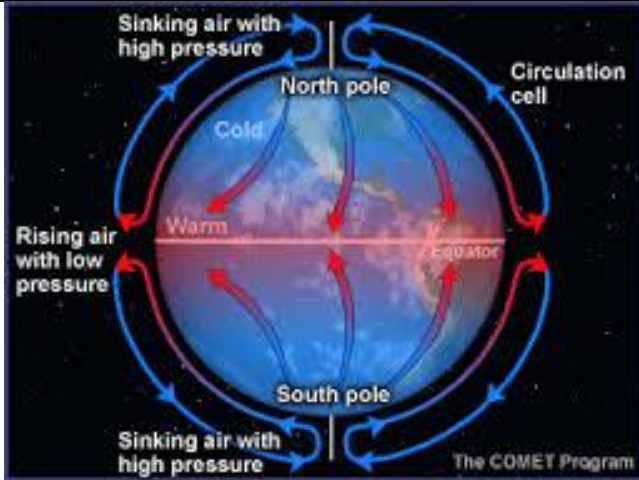
Light Years are used to measure very LARGE distances in space.

Astronomical Units (AU) are used to measure distances within our solar system.

8.9 A – Describe the historical development of evidence that supports plate tectonic theory.



8.10 A – Recognize that the Sun provides the energy that drives convection within the atmosphere and oceans, producing winds and ocean currents.



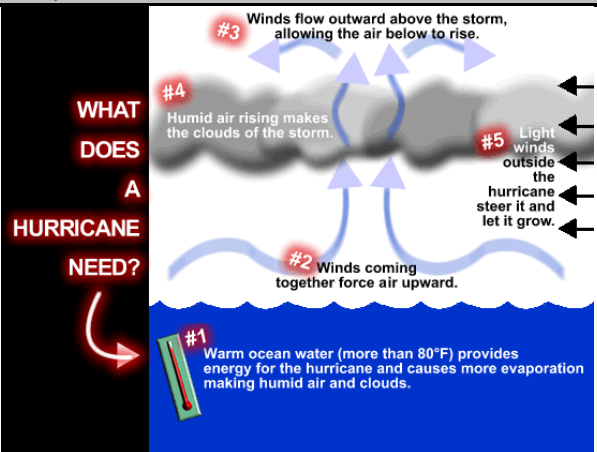
8.10 B – Identify how global patterns of atmospheric movement influence local weather using weather maps that show high and low pressure and fronts.



	<b>High Pressure System</b> - Weather tends to be cooler and clear - air is moving downward
	<b>Low Pressure System</b> - Weather tends to be warmer and cloudy/rainy - air is moving upward
	<b>Warm Front</b>
	<b>Cold Front</b>

8.10 C – Identify the role of oceans in the formation of weather systems such as hurricanes.

Hurricanes form over **WARM** water creating a very large area of **low pressure**.





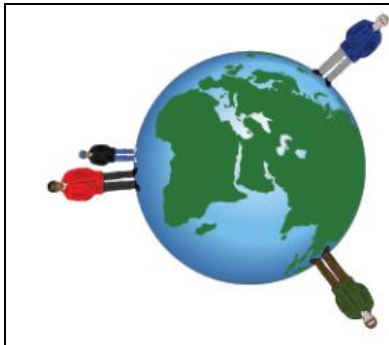
7.8 C – Model the effects of human activity on groundwater and surface water in a watershed.



Groundwater is water that is underground. The water gets underground by seeping through the layers of soil and accumulates in an aquifer. This underground water is often affected by the pollution of humans above.

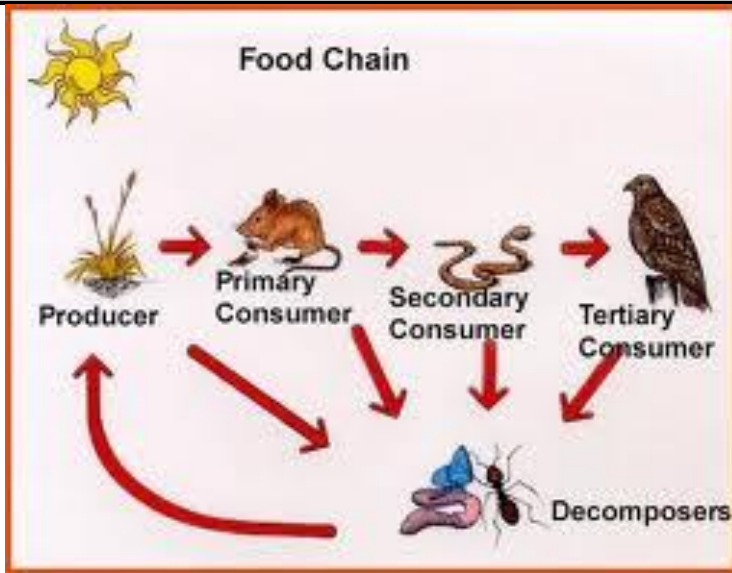
6.11 B – Understand that gravity is the force that governs the motion of our solar system.

ALL objects have gravity. More massive objects have a stronger gravitational pull towards them. This is the reason that we revolve around the Sun and you weigh more on Jupiter than the Earth's Moon.



# Organisms and Environment (14 questions)

8.11 A – Describe producers/consumer, predator/prey, and parasite/host relationships as they occur in food webs within marine, freshwater, and terrestrial ecosystems.



**Producers** – Make their own food (energy) through a process called photosynthesis.

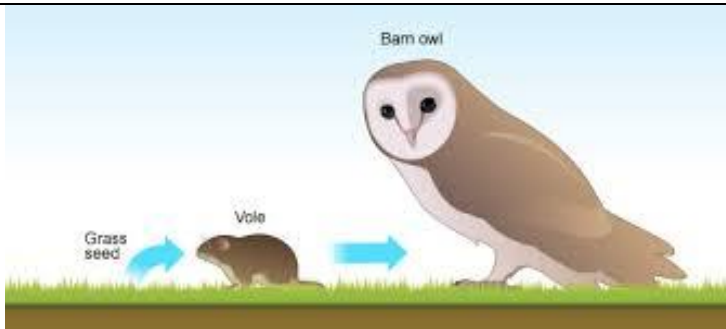
**Consumers** – Must consume (eat) producers and other consumers in order to get energy.

- Primary Consumers – Eat producers
- Secondary Consumers – Eat the primary consumer

**Herbivores** – Eat only plants (this is going to be your primary consumer)

**Carnivores** – Eat other animals

**Omnivores** – Eat both plants and animals



**Predator** – An organism that consumes another living organism. (Example – the Barn Owl is a predator of the Vole)

**Prey** – An organism that is consumed by another. (Example the Vole is prey to the Barn Owl)



**Parasite** – an organism that lives in or on another organism (its host) and benefits by depriving nutrients at the host's expense.

8.11 B – Investigate how organisms and populations in an ecosystem depend on and may compete for biotic and abiotic factors such as quantity of light, water, range of temperatures, or soil composition.

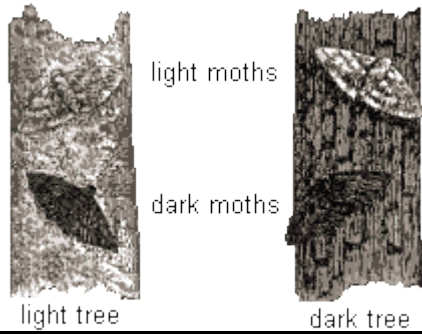
## Biotic (Living)

- Producers
- Consumers
- Decomposers

## Abiotic (Non-Living ... this does NOT mean dead)

- Temperatures
- Water
- Soil
- Light

8.11 C – Explore how short-and long-term environmental changes affect organisms and traits in subsequent populations.



The longer an organism lives the longer it has to reproduce and pass its traits on to its offspring.

When trees were a lighter color the dark colored moths population was decreasing.

When the trees were darker (covered in soot) the darker moths were able to survive longer while the white moths population decreased.

8.11 D – Recognize human dependence on ocean system and explain how human activities such as runoff, artificial reefs, or use of resources have modified these systems.

Rain water containing soil contaminated with agricultural fertilizers reaches the ocean; the buildup of soil destroys coral reef habitats; the nutrients in the runoff affect oxygen levels and change the ocean's ecosystem, resulting in fish deaths and/or "dead zones".



Sunken human-created structures (like old trucks, boats, or bridges) provide a home for marine life like corals and sponges; over time, a greater number and a greater diversity of other marine life develop in the area.



Humans remove fish until that species' population is greatly reduced or even eliminated; the population of the prey of the target fish greatly increases; the population of the natural predators of the target fish greatly decreases.



7.10 B – Describe how biodiversity contributes to the sustainability of an ecosystem.

**High Biodiversity = High Sustainability**



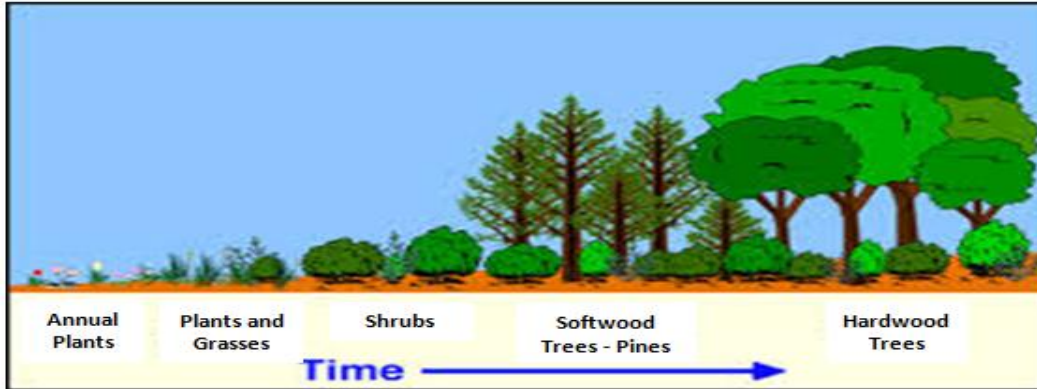
When you have an ecosystem that is diverse (lots of different organisms) it is more sustainable. When one organism dies out there are others there for the higher up organisms to consumer.

**Low Biodiversity = Low Sustainability**

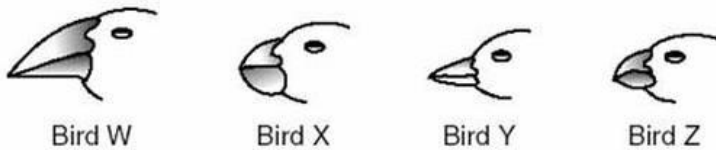


When you have an ecosystem that is NOT diverse (not many different organisms) if one organism should die out it would have a huge effect on the other organisms in that ecosystem. Very fragile balance.

7.10 C – Observe, record, and describe the role of ecological succession such as a microhabitat of a garden with weeds.



7.11 A – Examine organisms or their structures such as insects or leaves and use dichotomous keys for identification.



Answers:

- Bird W – Geospiza
- Bird X – Platyspiza
- Bird Y – Certhidea
- Bird Z - Camarhynchus

**Dichotomous Key to Representative Birds**

1. a. The beak is relatively long and slender.....*Certhidea*  
 b. The beak is relatively stout and heavy.....go to 2
2. a. The bottom surface of the lower beak is flat and straight .....*Geospiza*  
 b. The bottom surface of the lower beak is curved .....go to 3
3. a. The lower edge of the upper beak has a distinct bend .....*Camarhynchus*  
 b. The lower edge of the upper beak is mostly flat .....*Platyspiza*

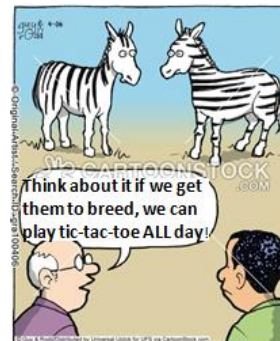
7.11 C – Identify some changes in genetic traits that have occurred over several generations through natural selection and selective breeding such as the Galapagos Medium Ground Finch (*Geospiza fortis*) or domestic animals.

**Natural Selection**



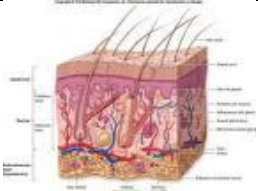
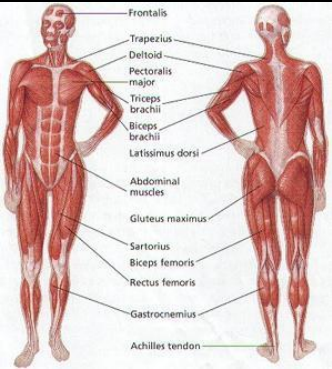
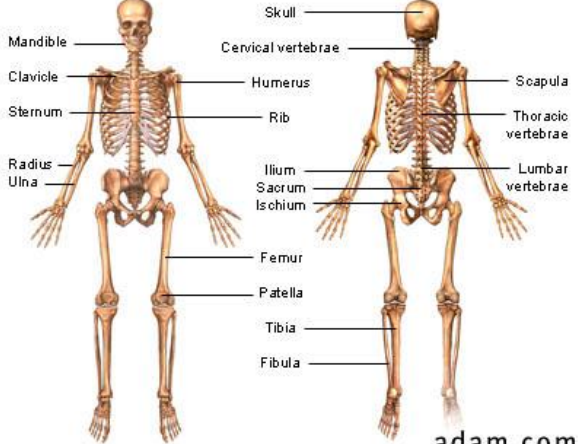
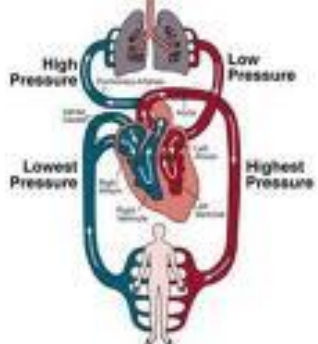
Traits that are seen as “desirable” for reproduction and continued existence of a species are passed along to offspring. Whereas “undesirable” traits are eventually weeded out and die off.

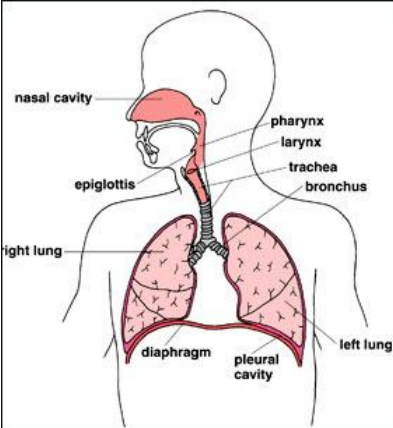
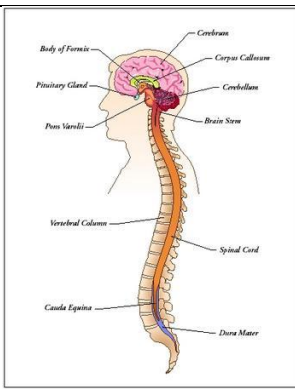
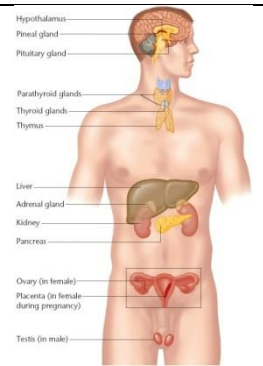
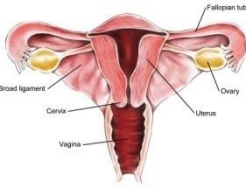
**Selective Breeding**

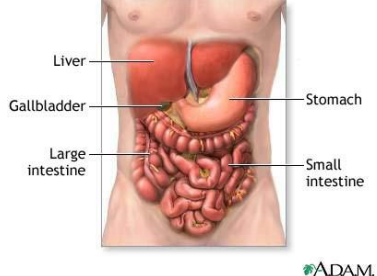
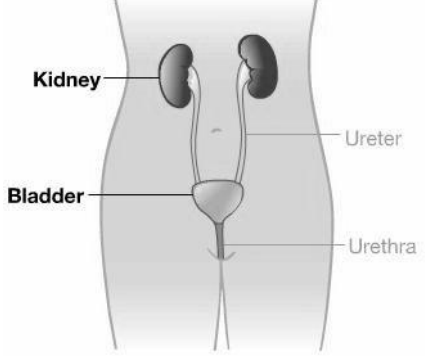


When genetic traits are purposefully chosen when breeding organisms for future offspring.

7.12 B – Identify the main functions of the systems of the human organism, including the circulatory, respiratory, skeletal, muscular, digestive, excretory, reproductive, integumentary, nervous, and endocrine systems.

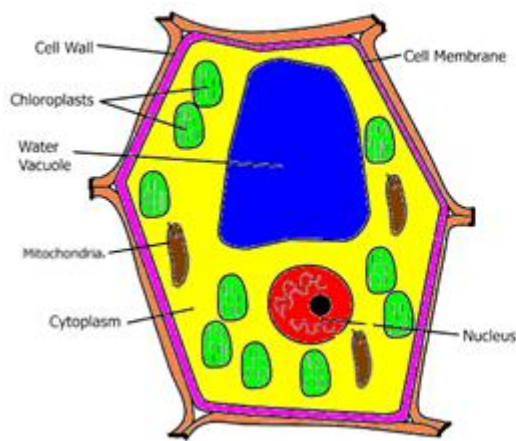
Organ System	Function	Major Organs	Picture
Integumentary System	Covers and protects	Skin	
Muscular System	Allows movement	Skeletal Smooth Cardiac	
Skeletal System	Provides structure and support, and protects internal organs	Bones	 <p style="text-align: right;">adam.com</p>
Circulatory System	Transports food, O <sub>2</sub> , CO <sub>2</sub> , and wastes	Heart, Blood, and Blood vessels	

Respiratory System	Exchanges O <sub>2</sub> and CO <sub>2</sub>	Lungs, Trachea, and Diaphragm	
Nervous System	Receiving information, Responding to stimuli, Maintaining stable internal environment	Brain and Spinal cord	
Endocrine System	Controls many of the bodies daily activities as well as long-term changes such as development	Adrenal glands, Pituitary glands	
Reproductive System	Process by which living things produce new individuals of the same type	Ovaries and Testicles	

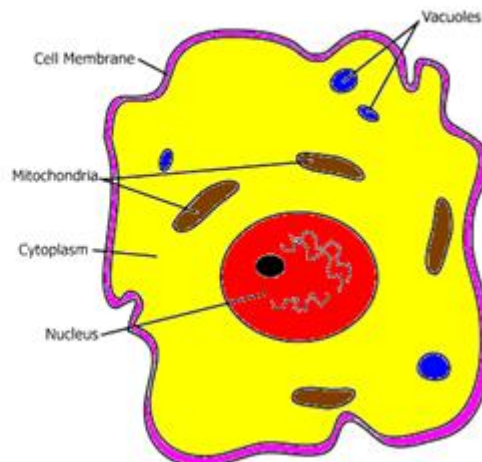
Digestive System	Breaks down food into usable form	Esophagus, Stomach, Intestines	 <p style="text-align: right;">ADAM.</p>
Excretory System	Removes wastes from blood	Kidneys, Ureters, bladder, Urethra	

7.12 D – Differentiate between structure and function in plant and animal cell organelles, include cell membrane, cell wall, nucleus, cytoplasm, mitochondrion, chloroplast, and vacuole.

**Plant Cell**



**Animal Cell**



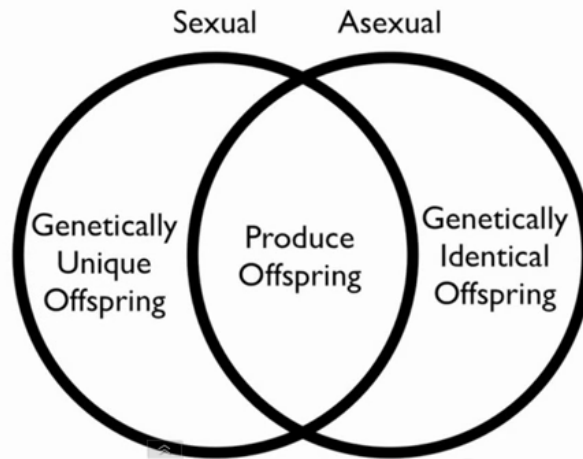
<b>Cell Wall</b>	Support	Provides support for PLANT cells. Acts very similar to the skeletal system.
<b>Chloroplast</b>	Chef	Changes sunlight into usable energy for the PLANT through a process called photosynthesis.
<b>Cytoplasm</b>	Blood	Jelly-like substance that carries nutrients around the cell.
<b>Vacuole</b>	Storage	Stores food and water for the cell.
<b>Mitochondria</b>	Energy Factory	Provides energy for the cell.
<b>Nucleus</b>	The Brain	Tells the cell what to do.
<b>Cell Membrane</b>	Gatekeeper	Controls what enters and exits the cell.

7.12 F – Recognize that according to cell theory all organisms are composed of cells and cells carry on similar functions such as extracting energy from food to sustain life.

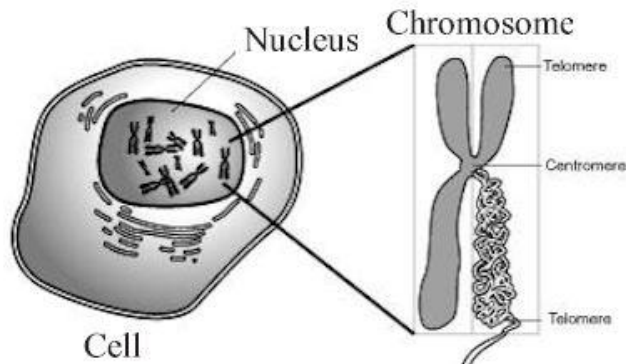


- 1: Cells are building blocks of life
- 2: Cells are created from old cells
- 3: All organisms made of cells

7.14 B – Compare the results of uniform diverse offspring from sexual reproduction or asexual reproduction.



7.14 C – Recognize that inherited traits of individuals are governed in the genetic material found in the genes within chromosomes in the nucleus.





6.12 D – Identify the basic characteristics of organisms, including prokaryotic or eukaryotic, unicellular or multicellular, autotrophic or heterotrophic, and mode of reproduction, that further classify them in the currently recognized kingdoms.

