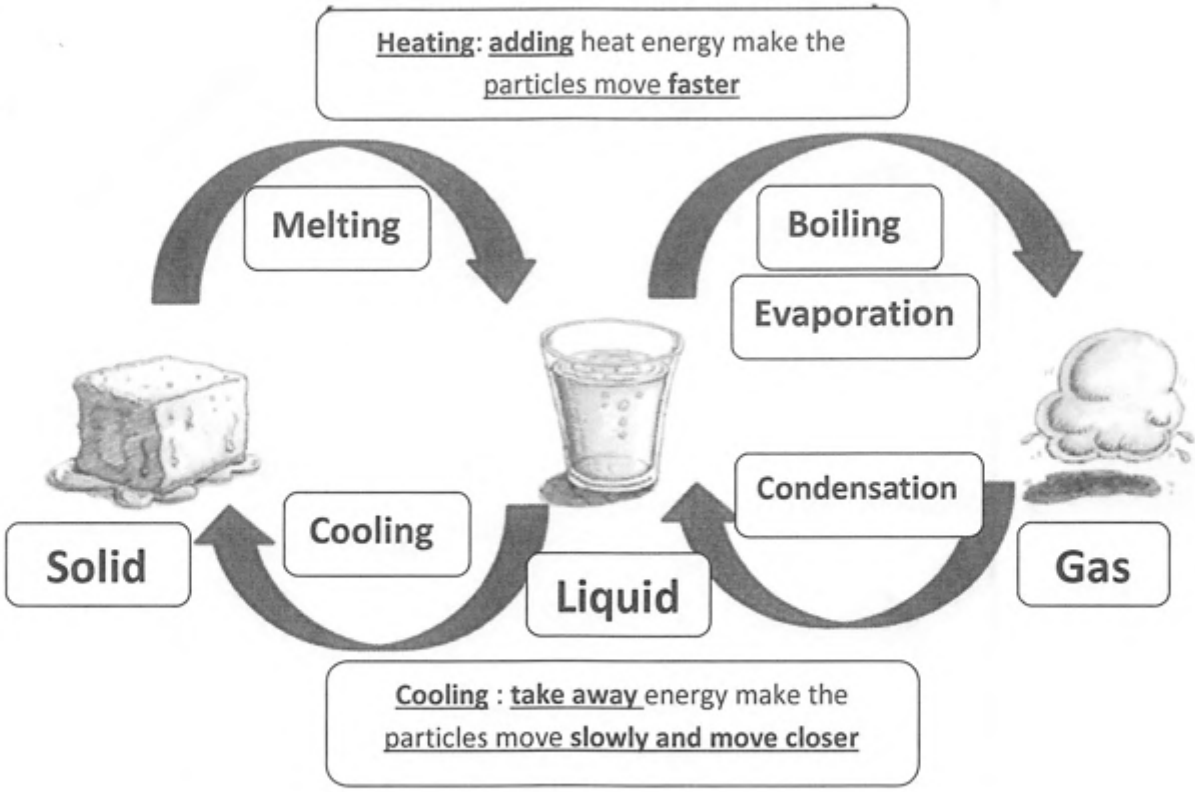
mohamed Ghassan 4 - B

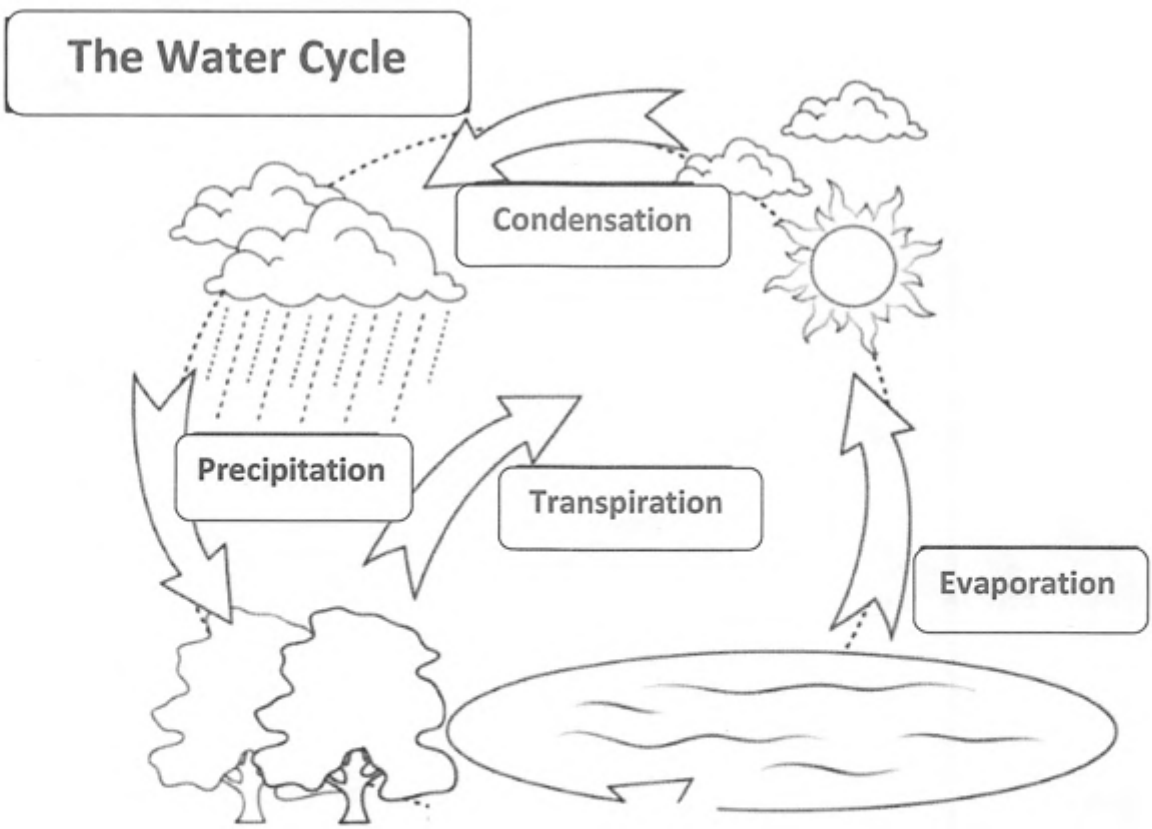
Review paper for Term2

(Part1)

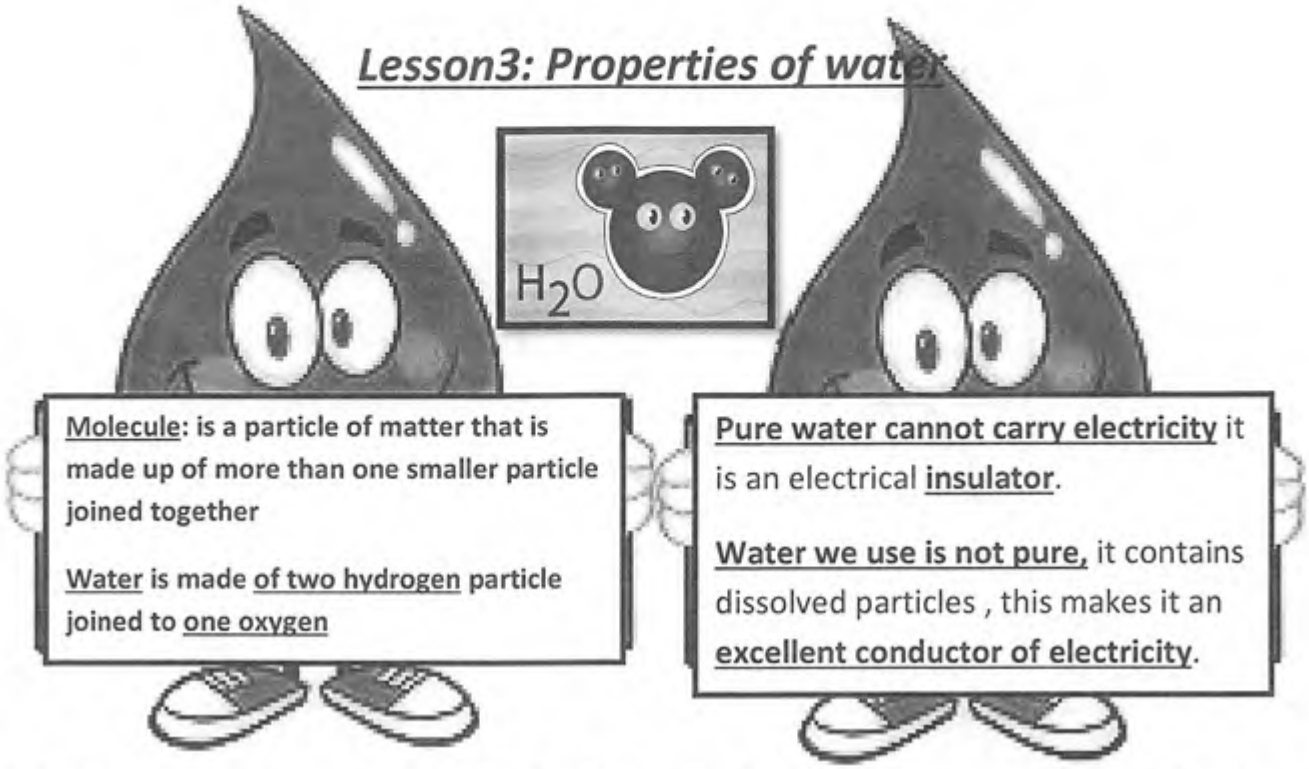
Grade 4

Ms.Eman Al Hammadi


Heating: adding heat energy make the particles move faster
Melting
Boiling
Evaporation
Condensation
Cooling
Solid
Liquid
Gas
Cooling : take away energy make the particles move slowly and move closer


The Water Cycle
Condensation
Precipitation
Transpiration
Evaporation

Lesson3: Properties of water



Physical Properties of water :

- Pure water cannot carry electricity.
- Water has No color, No taste, No smell.
- Water is clear and colorless.
- Water can dissolve many different substances.
- Sound can flow throw water.
- Water is Cohesive , means that its molecules are attracted to each other.
- Water has surface tension.
- Water has Capillary action.
- Surface tension allows insect to walk on water.

- Liquid water is more dense than solid (ice) or gas (water vapor).
- Specific heat is the amount of energy needed to raise the temperature of 1 gram of a substance by 1 °C.
- Water has high specific heat result from the strong attraction between its molecules.
- Specific heat regulate the temperatures around the globe and in the ocean.
- The high specific heat of water protects the organisms living in this lake from rapid swings in temperature.

Lesson3: light

prism : is an object that separates white light in to bands of colored light.

Electromagnetic spectrum: is the range of waves that make up light.

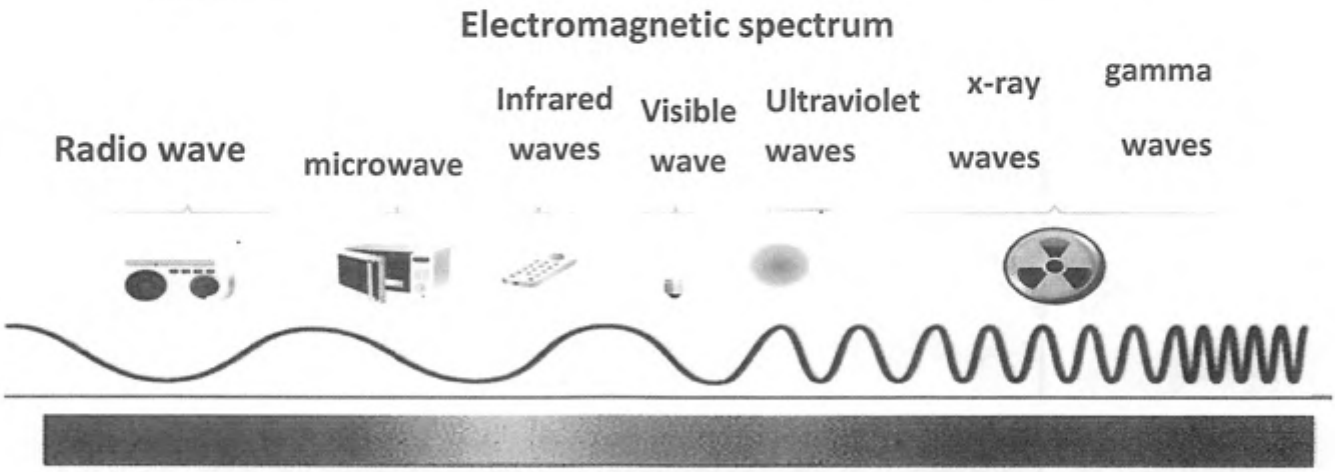
Rfraction: is the bending of light as it passes from one material to another.

Refliction: is the term for any wave that hits a surfsce and bounces off.

What is light?

Isaac Newton: he is the scientist how know about the light and colors by using the prism.

Visible spectrum: all the colors we can see(rinbow)that white light is made of.



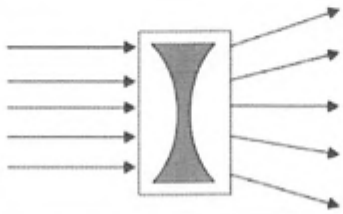
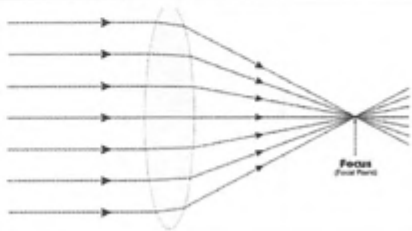
Radio waves: have the longest wavelength, and the least energy.

Infrared wave: long wavelength.

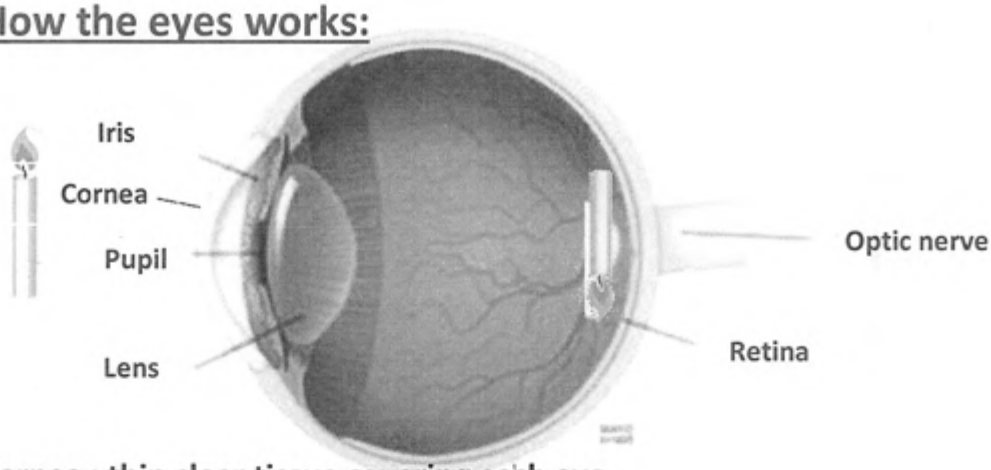
Ultraviolet wave: short wavelength.

X-ray waves: have short wavelength and great energy (help doctors see inside the body).

Gamma waves: the shortest wavelength and the most energy.

Type of lenses	Concave lens	Convex lens
Shape	Curves inward	Bulges outward
Light rays	Light bends outward from the center, the rays spread apart.	Light rays bend inward toward its center
Uses	Help you see faraway objects.	Make objects bigger. Reading glasses.
		

How the eyes works:



Cornea : thin clear tissue covering each eye.

Pupil : black spot in the center of the eye.

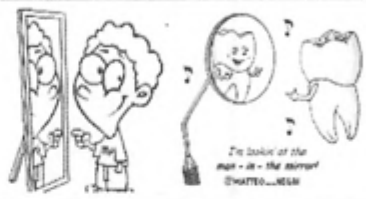
Iris : the colored part of the eye, which widen and narrow around the pupil.

Lens: refracts the light from the image.

Retina : tissue covering the back of the eye and the image that the lens focuses into the retina is upside down.

Optic nerve: bring the signals to the brain.

How mirrors work

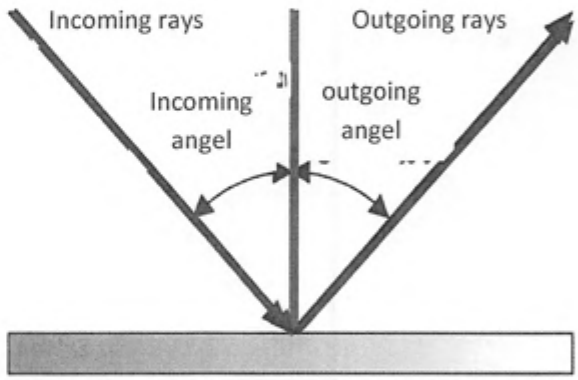
Type of mirrors	Convex mirror	Concave mirror
Shape	Bulges outward	Curves inward
Light rays	Spreads out the reflected light rays	Foucs the reflected light rays together at a point
Uses	Rareview mirror in vehicles	Make things appers larger when it is close to the mirror
		

The low of Reflection:

Incoming rays: rays moving toward the surface.

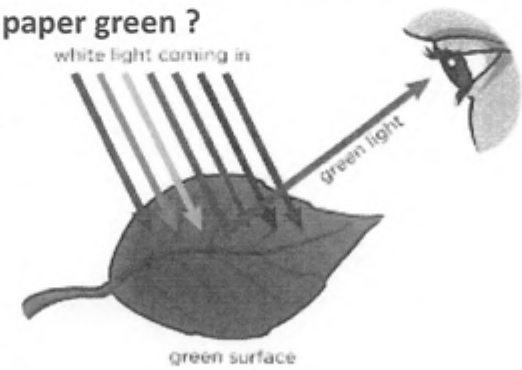
Outgoing rays: the reflected light rays.

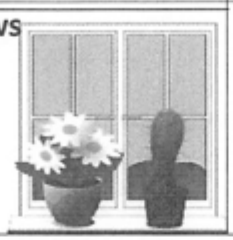
Incoming angle = outgoing angle.



Why we ca see the paper green ?

Because the paper absorb all the light colors and reflect the green light



Transparent Objects	Translucent Object	Obaque Objects
Allow light to pass through in straight line	Scatter light in different direction	Block light completely
Windows Water 	Plastic 	Wood Book 

Lesson1: Describing Matter

Matter : Anything that has mass and takes up space.

Property: is a characteristic that you can observe, like color, size, and shape.

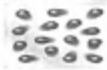
Matter has:

1. Mass.
2. Volume.

Mass	Is the amount of matter making up an object	Mass masured in : grams or Kilograms	
Volume	Is how much space in object takes up.	Volume masured in: Litre (L) or ml	

Unseen properties	Definition	Examples
magnetism 	The ability of matter to attract certain metal objects	Paper clips iron  
Dissolves	The ability of matter to dissolve in a liquid	Sugar and salt dissolve in water. Sand dose not dissolve in water
Buoyancy	Is the upward force of a liquid or gas on an object	Some objects can float in water like: Oil, Wood and cork. Some objects sink like rock and iron ball.

States of Matter

	Solids 	Liquids 	Gas 
Definition	**Definite** shape and takes up a **definite** amount of space	**Does not** have a definite shape, but its take up a **definite** amount of space.	**Does not** have a definite shape **Does not** take up a definite amount of space.
Particles	Packed to gather tightly and closely	Less tightly packed	Farther apart from another to fill the space around them
Particles move	Moving less	Move more than solid	Move freely and spread far.
Examples	Book , Desk and Door	Water , milk and juice	Helium, Air and Water vapor

Uses of Matter

what happens to the matter we use?

- Recycled: made into something else. cans , paper, plastic and glass
- Reuse : use something again like egg carton can be used to plant seeds
- To the trash

How we can classify the used matter?

Objects in nature	Objects made by people
Tree , rocks, fruits, Vegetables and metals	Car, table, book, bags and chair

Lesson1: how matter can change

Physical change: begins and ends with the same type of matter.

Boiling: change of state from a liquid to a gas.

Evaporation: change of a liquid to a gas without boiling.

Water cycle: is the movement of water between earth's surface and the air.

Precipitation: the water falls back from the air to the surface of earth.

Rust : is a solid brown substance.

Chemical change: begins with one kind of matter and ends with another.

How Matter Can Change

Chemical change

- begins with one kind of matter and ends with another.
- Examples:
  1) Acid rain reacts with limestone.
  2) Oxygen reacts with sugars in your body.
  3) Cooking food.

*Signs of a Chemical Changes:

- Lights : fireworks.
- Heat: cooking food.
- Change in color: rust.
- Change in smell: bread
- Bubbling : dropping antacid tablets in to water.

Physical change

- begins and ends with the same type of matter.
- Examples: change in shape or volume.
  (Paper folding – rock sculpted plastic can be cut....)

- Examples: change in state (boiling fre
  water.....)

Lesson2: Measurement

Length : is the number of units that fit frrom one and to the other.

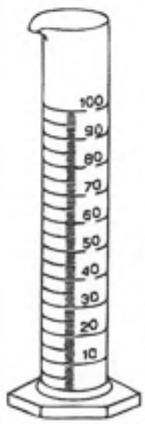
Area: describes the number of unit squares that a surface.

Area= length x width

Volume: the number of cubes that fit inside an object.

Volume = length x width x height.

To find the volume of a liquid , pour it inti a measuring cup or graduated cylinder.



Density : is the mass of the matter in a given space.

Density= mass volume. (g / cm)

Density and buoyancy : an object floats when its density is less than the density of the liquid or gas in which it is placed.

The less density Float the more density sink

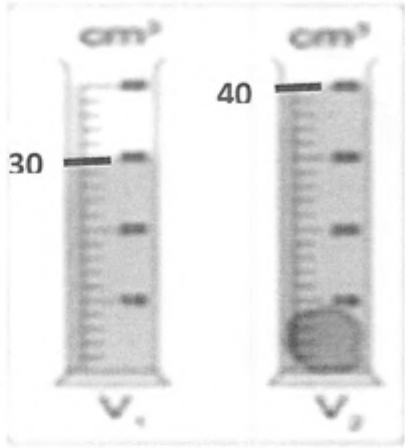
How can we change the density of matter? If we add heat so the particles move more quickly.

The heated air is less dense, it rises as cooler denser air forces it upward.

to know the volume of solid irregular shape, submerge it in the water, then subtract the original water level from the new water level.

40 – 30 = 10

The volume of the rock 10



Weight: measures the a mount of gravity between an object and a planet.

Gravity: is a force or pull between all objects.

*The more mass the stronger the pull of gravity.

*The stronger the pull of gravity ,the more an object weighs

*The pull of gravity on the moon is about as strong as on Earth.

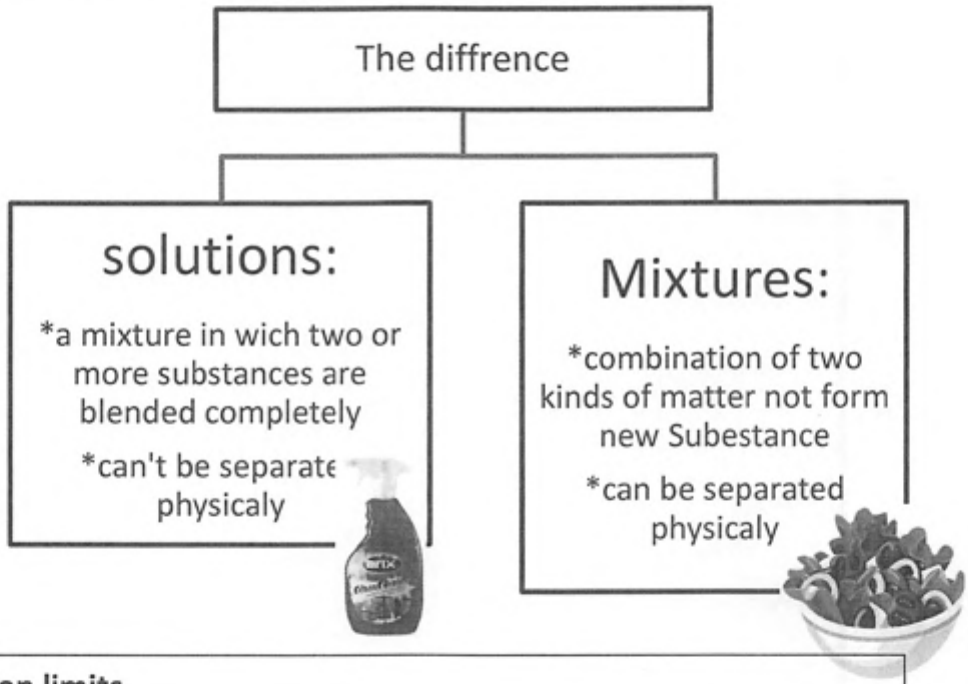
The metric unit for weight is newton (N) .

Lesson2: Mixtures

mixture : **physical combination of two or more kinds of matter.**

solution: **is mixture in which two or more substances are blended completely.**

Distillation: **is the process of separating liquids by using eveporation and condensation.**

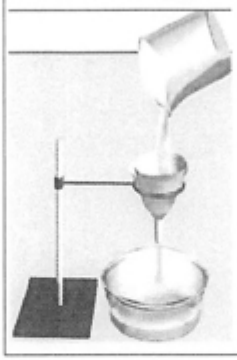


Solution limits

When Little solute dissolve in solvent we called it a **dilute solution.**

Concentrate solution when you add more and more solute until it couldn't dissolve in solvent.

Separating Mixtures

Filtering	Magnetism	Density	Distillation
	Iron attracted to magnet 	low density float high density sink 	Different boiling points 

How mixtures used?

In eating and drinking : Milk, whipped cream.

Cleaning supplies: clean windows , ammonia solution.

Making musical instruments, cars, silverware, spaceships and cooking bowl

Name _____ Date _____

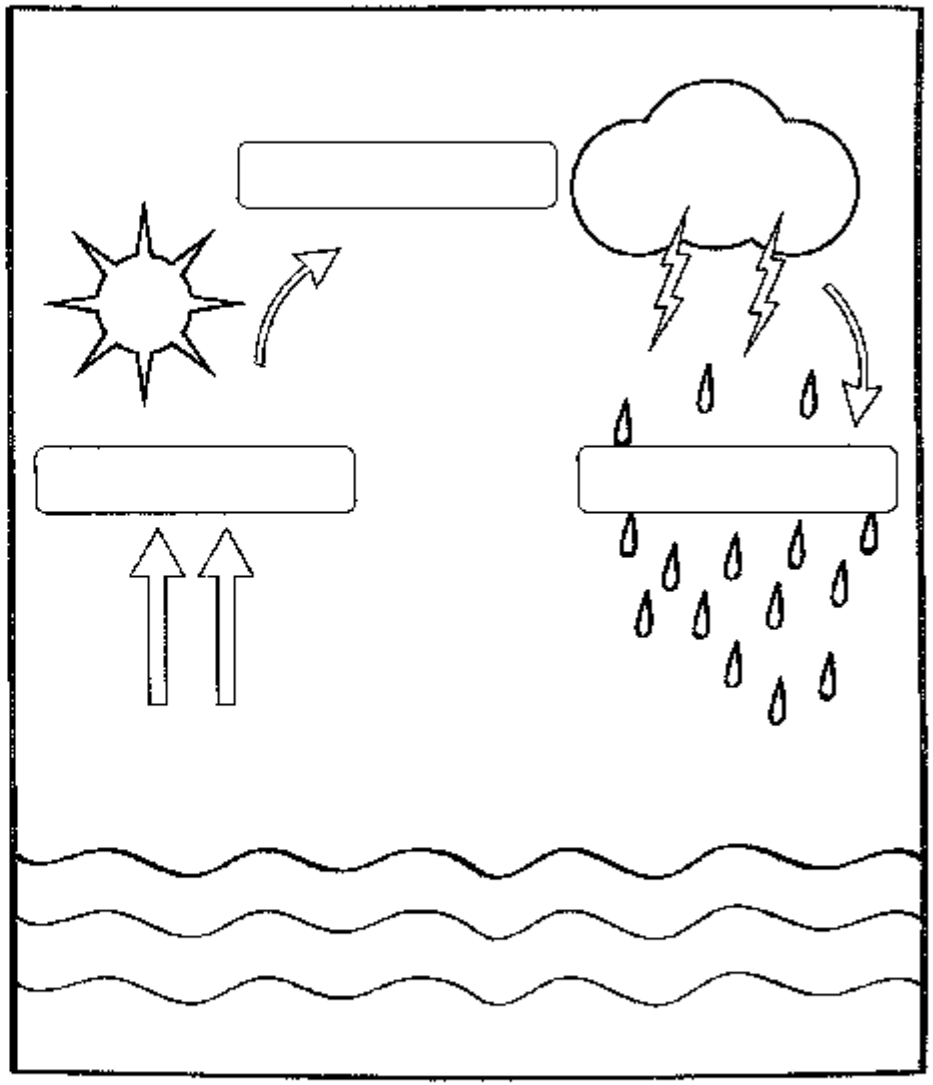
Science: Physical or Chemical Change

Directions: Decide if each is a physical or chemical change.
In a physical change, the matter remains the same.
In a chemical change, the type of matter changes.

Breaking a pencil is a ...  ◯ physical change ◯ chemical change	**Rust on a bike is a ...**  ◯ physical change ◯ chemical change	**Making orange juice is a...**  ◯ physical change ◯ chemical change	**Burning a piece of wood is a...**  ◯ physical change ◯ chemical change
Boiling water is a...  ◯ physical change ◯ chemical change	**Cutting paper is a...**  ◯ physical change ◯ chemical change	**Lighting a match is a...**  ◯ physical change ◯ chemical change	**Ice melting is a...**  ◯ physical change ◯ chemical change
Baking a cake is a...  ◯ physical change ◯ chemical change	**Chopping wood is a...**  ◯ physical change ◯ chemical change	**Breaking a glass is a...**  ◯ physical change ◯ chemical change	**Frying an egg is a...**  ◯ physical change ◯ chemical change

The Water Cycle

Color the picture. Talk about the picture



Name _____

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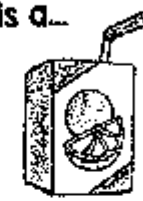
Breaking a pencil is a ...  ◯ physical change ◯ chemical change	**Rust on a bike is a ...**  ◯ physical change ◯ chemical change	**Making orange juice is a...**  ◯ physical change ◯ chemical change	**Burning a piece of wood is a...**  ◯ physical change ◯ chemical change
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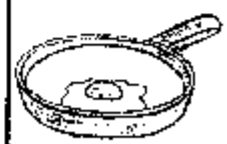
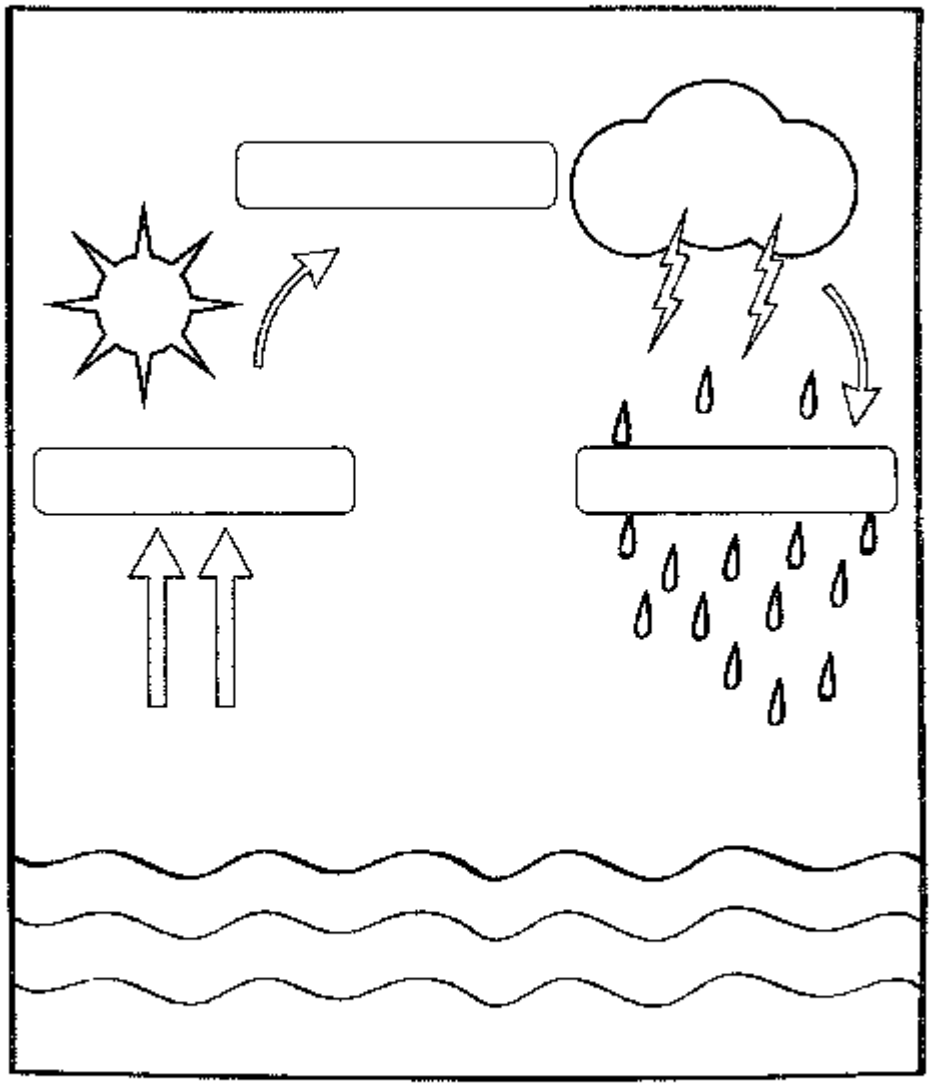
Baking a cake is a...  ◯ physical change ◯ chemical change	**Chopping wood is a...**  ◯ physical change ◯ chemical change	**Breaking a glass is a...**  ◯ physical change ◯ chemical change	**Frying an egg is a...**  ◯ physical change ◯ chemical change

The Water Cycle

Color the picture. Talk about the picture

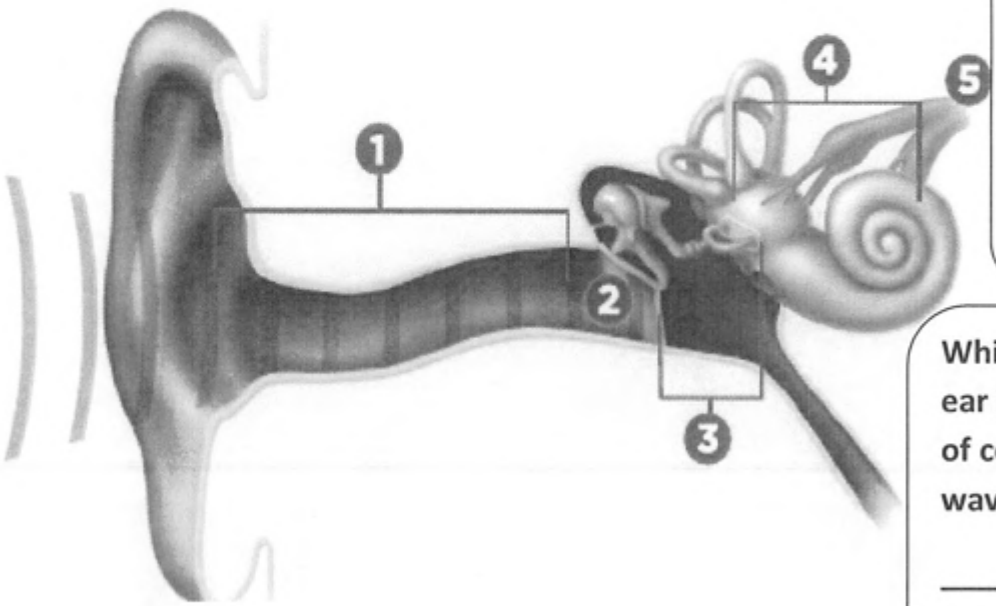


Name _____

Name: _____ Class:_____

The Ear

Label all the parts of the ear.



__ Inner ear

__middle ear

__ Ear drum

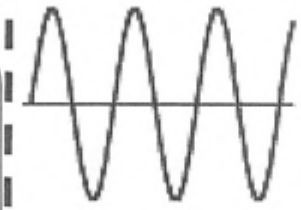
__ nerve to brain

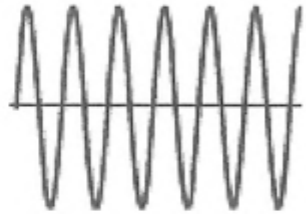
__ outer ear

Which part of the ear is responsible of collecting sounds wave?

_____

Label the low pitch and the higher pitch?





Frequency - amplitude

- The _____ of a sound determines its pitch.
- The _____affects the volume or loudness of sound.

Name: _____ Class:_____

Single path - more than one path – the other bulb will still light- the other bulb will turn off

Parallel circuit	Series circuit	
		Circuits connected ways
		Electric current flows
		if you remove one light bulb

The electrical energy converted in to **heat**

The electrical energy converted in to **light**

The electrical energy converted in to **motion**

Give **more heat than light**

Give **more light than heat**

Fluorescent light

incandescent light