Marshmallow

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Physical and Chemical Properties of Matter

The physical properties of matter

* We have already learned some physical properties of matter
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Physical properties of matter**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can be observed or measured \_\_\_\_\_\_\_\_\_\_\_\_ changing the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of matter
* Properties you notice when using your five senses:
	+ Touch/feel- \_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_
	+ Sight- \_\_\_\_\_\_\_\_\_\_\_\_\_
	+ \_\_\_\_\_\_\_\_\_\_\_
	+ \_\_\_\_\_\_\_\_\_\_\_
	+ \_\_\_\_\_\_\_\_\_\_\_
* Physical properties
	+ **Color**
	+ **Odor**
	+ **\_\_\_\_\_\_\_\_\_\_\_\_\_\_**- How shiny a substance is
	+ **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**- the ability of a substance to beaten into thin sheets
	+ **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**- The ability of a substance to be drawn into thin wires
	+ **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**- the ability of a substance to allow the flow of electricity
	+ **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**- how easily a substance can scratched
	+ **Melting/freezing point-** the temperature at which the solid and liquid phases of a substance change
	+ **Boiling point-** the temperature at which the vapor pressure of the liquid is equal to the pressure of the liquid
	+ **Solubility**- if an object is soluble or insoluble

Properties of matter

* Remember all objects take up space and has mass
* You use your sense of taste and smell to tell the difference between spinach and an orange
* Properties of matter
	+ A property describes how an object looks, feels or acts.
	+ The objects shown has different kinds of properties

Physical vs. Chemical

* **Physical properties**: observe \_\_\_\_\_\_\_\_\_\_\_\_\_ changing the identity of the substance
* **Chemical properties**: observe only when the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* How do you know if it’s a chemical or physical change?
	+ If it CHanges, it’s CHemical

Chemical properties

* common chemical property are:
	+ **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**-the tendency of a substance to undergo chemical reaction.
		- Reactive to oxygen
		- Reactive to air
		- Reactive to water
	+ **\_\_\_\_\_\_\_**- Measures how acidic (high concentrated) or how basic (low concentration )a solution is
	+ **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**- the interaction between oxygen molecules and other substances (rust)

***NOTICE: that a chemical properties aren’t EASY to observe, unlike physical properties***

Properties are constantly changing

* Matter is constantly changing
	+ Ice in your soda melts
	+ Glass breaks
	+ Paper is ripped

Where does the ice go? What does it become

Physical Changes

* Changes in matter that do not alter the identity of matter itself
* Changes that do NOT change the identity of the substance
* You may or may not be able to undo a physical change
* Examples:
	+ Size
	+ Shape
	+ State of matter: solid, liquid and gas
	+ Dilutions- the water doesn’t turn into soil or macaroni. It remains water
	+ If water did change into macaroni, you would have an example of a chemical change

Chemical Changes

* Chemical changes DO alter the identity of a substance.
* A substance changes into an entirely different substance
* For example:
	+ Iron rusting
	+ Wood burning
	+ Copper turning into brass
	+ Baking a cake
	+ Spoiled milk

Chemical properties

* These are properties that can only be observed by changing the identity of the substances
* A piece of paper burns and turns to a black substance
* After the flame goes out you can no longer burn the new substance
* The chemical properties have been changed

Signs of a chemical change: Lets observe:

 1. Production of odor

 2. change in temperature

 3. Change in color

 4. formation of a gas (bubbles)

 5. Precipitate- Formation of a solid