

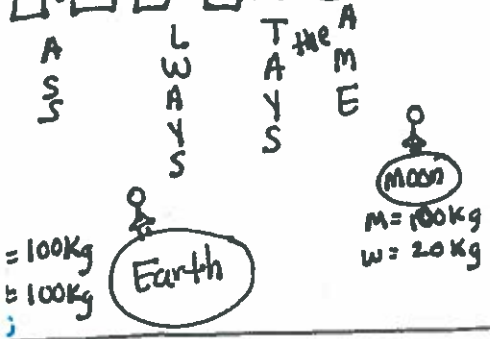
- Our Quarterback Hopes ^{That} All cheerleaders cheer)
- Observation - make observations
 - Question - Ask a question
 - Hypothesis - Form a hypothesis
 - Test Hypothesis - Do an experiment
 - Analyze Results - look at data (graphs)
 - Conclusion - Accept or Reject Hypothesis
 - Communicate - tell Results

Control - everything else that stays the same.

variable - what changes in an experiment. Ex. John's sugar

MASS

vs Weight

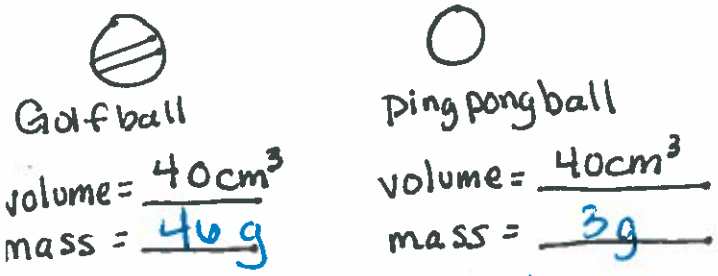


↳ based on the pull of gravity

more mass means more gravity



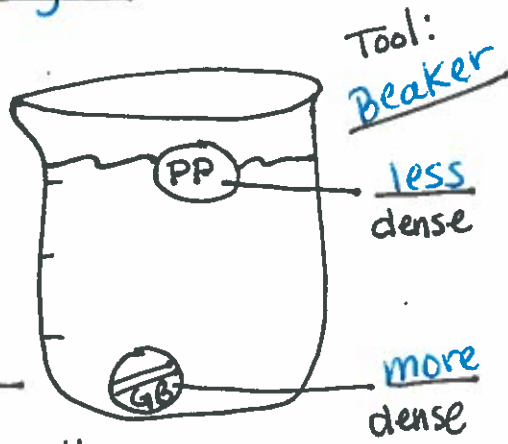
DENSITY (Sink or float)



sink	float
metal	cork
coin	foam
nail	wood
ring	

Equal volume (size)
 Un Equal mass (stuff)

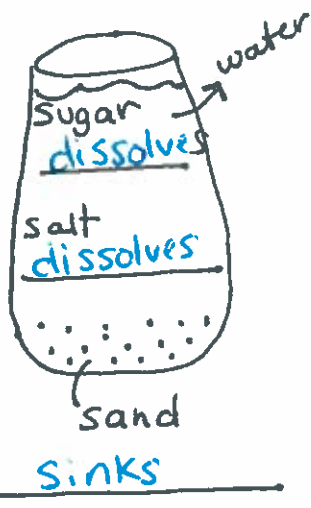
The golf ball has more stuff in it, so it is more dense than the ping pong ball.



Physical Properties of Matter

- Observable
- measurable
 - mass
 - Volume
 - Density
- Physical States of matter
 - Solid
 - Liquid
 - Gas
- Temperature
 - Boiling Point 100°C
 - melting Point 0°C
 - freezing Point 0°C
- Light
 - emit
 - Reflect
 - Refract
- Solubility
 - Mixture
 - Solution
- Conductivity (of heat or electricity)
 - Conductor
 - Insulator
- Magnetic
 - Magnetic
 - Non-magnetic
 - what does a magnet pick up?
 - Iron
 - Nickel
 - Cobalt
 - Steel

SOLUBILITY



dissolves in water. Makes a

Mix water, sand, salt and sugar in a glass.

how can you separate the sand, salt and water?

Sand: filter out

Solution: heat → salt/sugar solids left over.

MIXTURES example Salad

* Can easily separate

* Keeps physical properties (ex. taste)

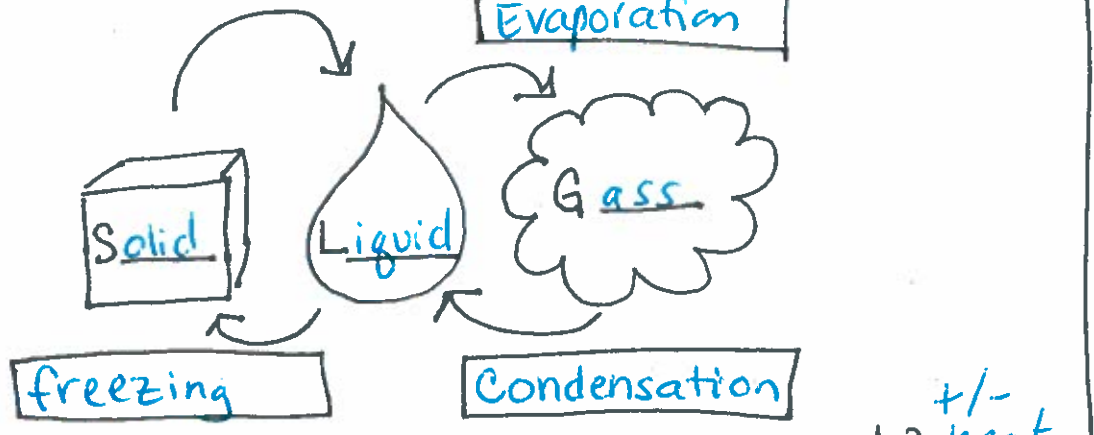
SOLUTIONS example lemonade

* to separate evaporate

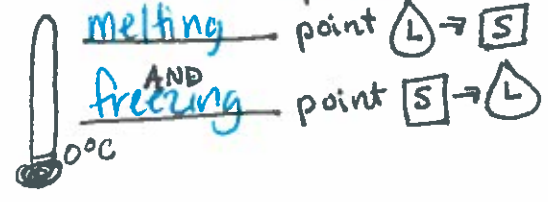
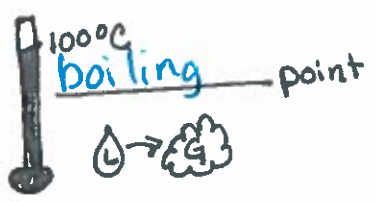
* Changes

PHYSICAL properties (state of matter)

Melting



Q? what do the arrows represent? +/- heat

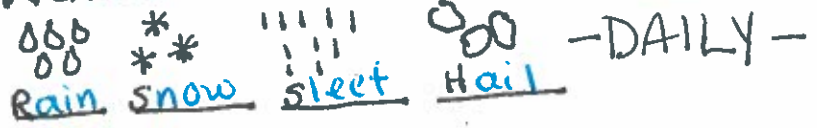


Q? when water vapor cools, what occurs? Condensation

Q? What is the boiling point of water on a sunny, tropical island? 100°C

Q? If 250 ml of water boils at 100°C, how many degrees does 500ml of water boil at? 100°C

WEATHER: Condition of the air outdoor



CLIMATE: Average or typical weather conditions. Weather patterns over long periods of time (ex 10yrs)



Q? If a description states "usually" or "most of the year" or "annually", it is talking about climate

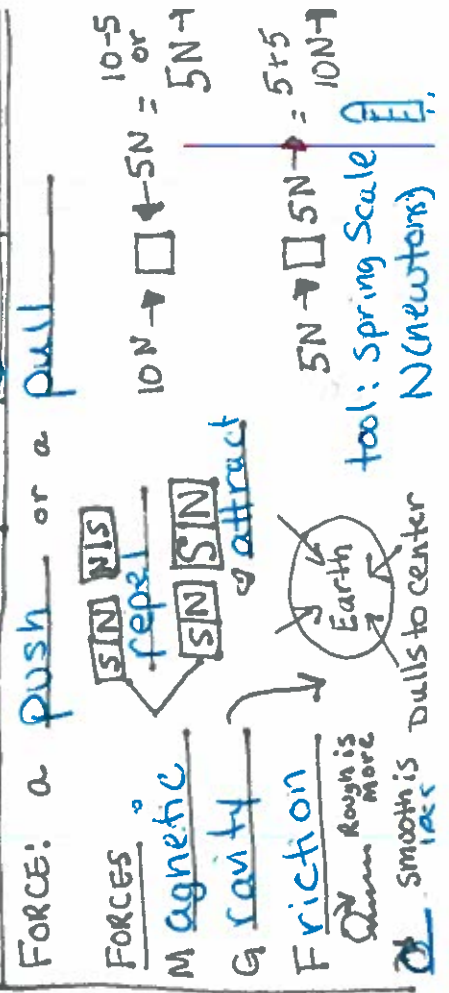
Q? Day to day is describing weather (or next week)

Forms of Energy

Secret Science code word(s)

Example
↓

M	<u>echanical</u>	<u>motion moving parts</u>	<u>ride a bike</u>
E	<u>lectrical</u>	<u>electrons moving in a circuit</u>	<u>plugged in a lamp</u>
L	<u>ight</u>	<u>energy we can see</u>	<u>sun, flashlight</u>
T	<u>hermal</u>	<u>heat transfer</u>	<u>stove/ oven</u>
S	<u>ound</u>	<u>air vibrations we can hear</u>	<u>speakers</u>



Kinetic-motion
potential-position stored
Energy Transformations

Changing one type of energy into another.



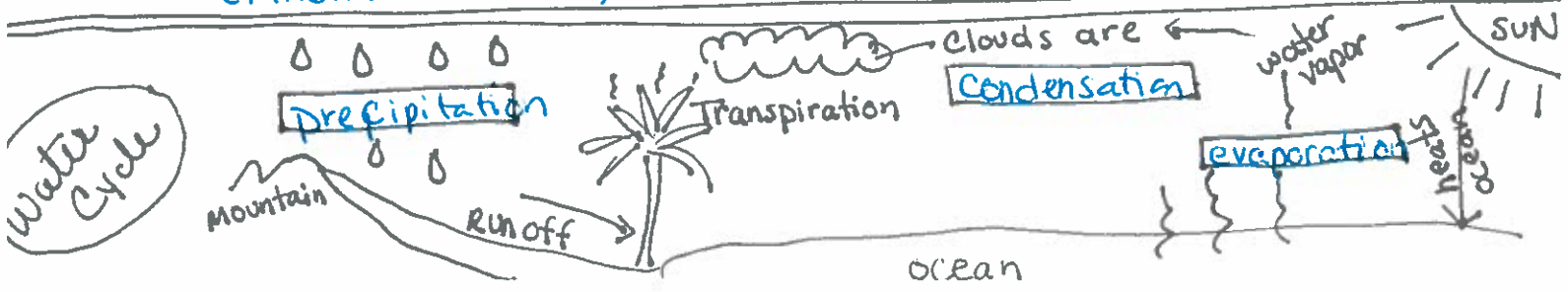
Desktop Computer: electrical energy → light energy → Sound



Toaster: electrical energy → thermal energy → Sound sound energy



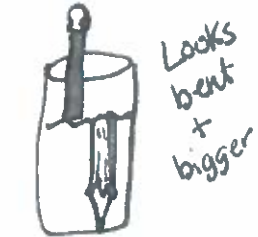
Car: Mechanical Energy (Kinetic + Potential) → Sound energy + Thermal energy



Light Energy

Light travels in straight lines until reflection or refraction

Refraction light:
Bend



Reflection light:
Bounce



Emit light:
give off



Q? Why do objects look bigger under water? Refraction-slows light

Q? Can light reflect on more than one surface? yes

ELECTRICAL Energy

Energy that comes from an electric current. Electrons moving in a circuit

Conductor
wire

ex. metal

ALLOWS heat + electricity to flow

insulator

ex. rubber

DOES NOT allow heat + electricity to flow

CIRCUIT:

the path an electric current flows

Lights ON:
Circuit/switch
closed



Lights OFF:
Circuit
open
or switch

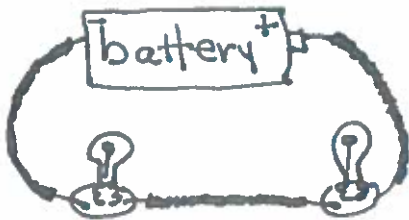


Q? what parts of a circuit are required for circuit to work?

wires
battery
device (light)

Q? what is not needed?
switch

SERIES Circuit:

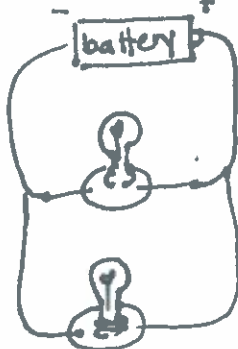


one complete path
(one loop)

one bulb goes out,
both go out

1 path only

PARALLEL Circuit:



2 or more complete paths.

one bulb goes out,
other can stay on

At least 2 paths

Objects that could complete a circuit.



wire

bulb

coin

key

nail

All metals