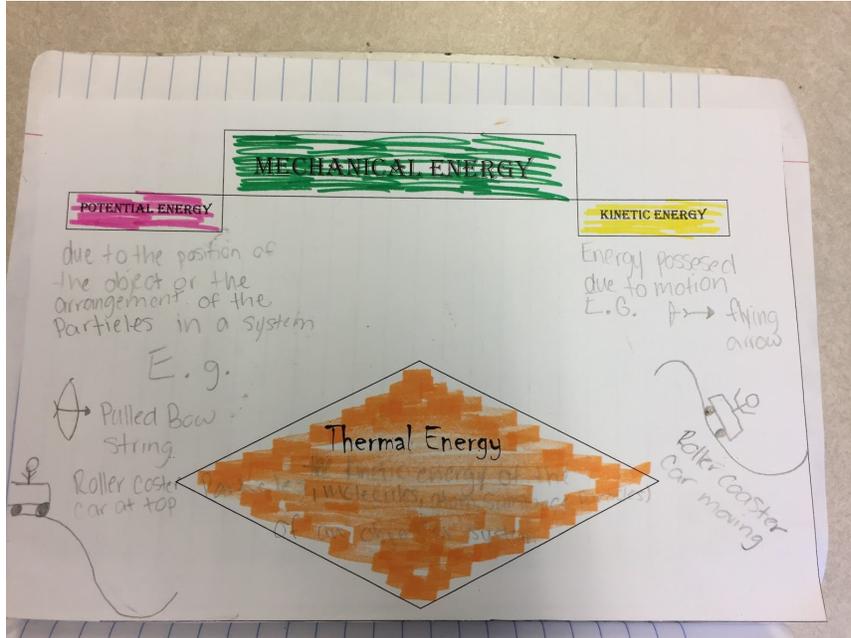
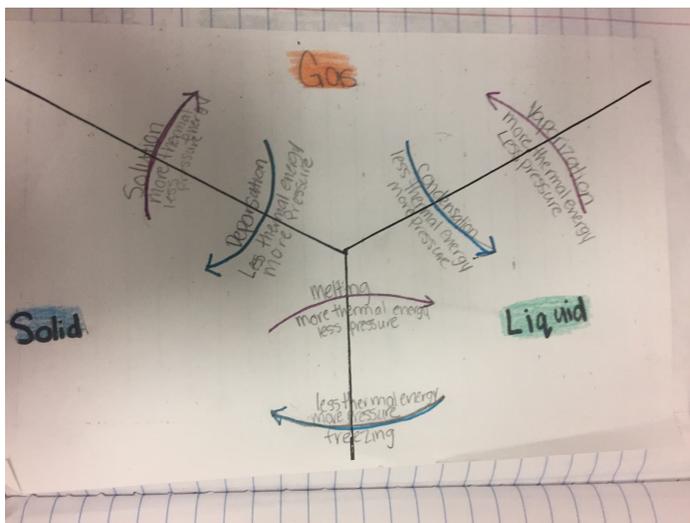


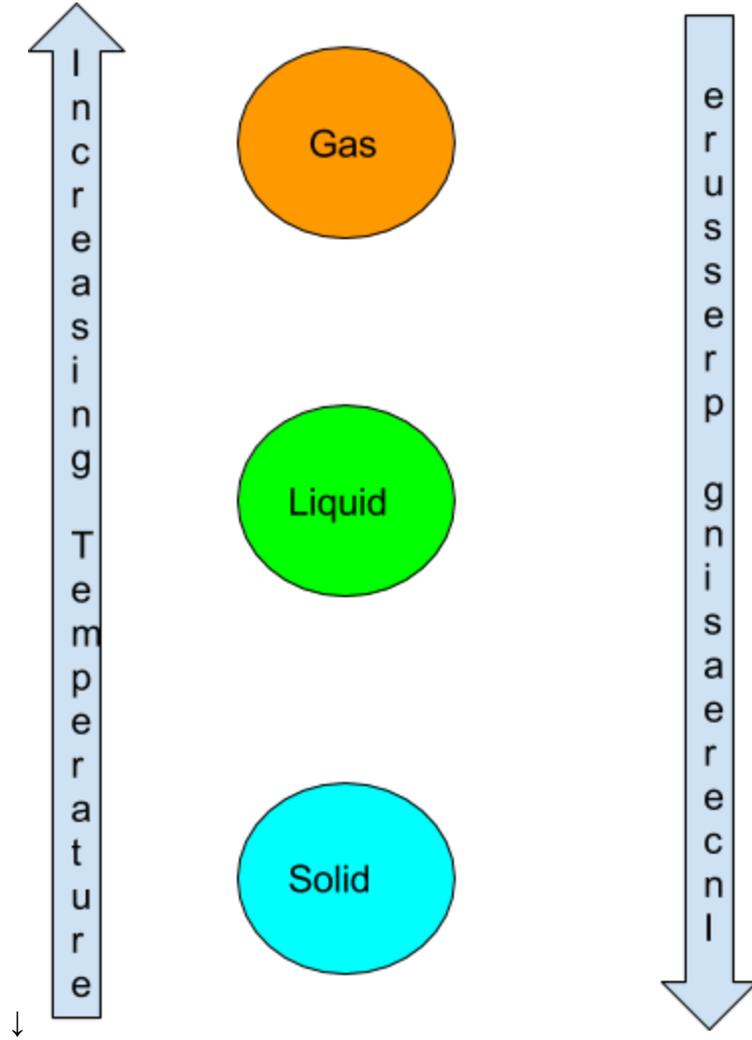
We talked a lot about physics this year and that is when Energy, Matter, and Force Interactions Energy is the ability to do work and is a property of objects. A Joule is the SI unit of energy- the amount transferred by applying a force of 1 newton through a distance of 1 meter. The conservation of matter and Energy is describing by the formula $E=MC^2$



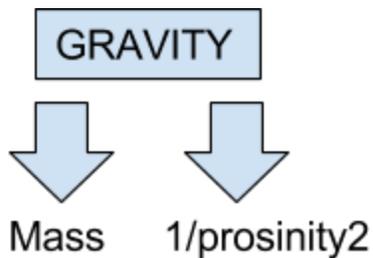
There are 4 main states of matter and the first one is **Solid** and that is when particles are very close together. The next thing is a **liquid** and that is when particles are close together and move around slowly. The third one is a **gas** and that is when particles are widely separated and move around freely. The fourth and final one is **plasma** and it's when molecular banare dislocated particles are IONS and electrons and move around freely.



The states of Matter are determined by thermal energy (temperature)



There are 4 fundamental forces which are strong, weak, electromagnetic, and gravity. The strong is what holds the nuclear particles together. The weak is what mediates radioactive decay. Electromagnetic is when objects with opposite charges are attracted; like charges repel. Gravity is the force of attraction of all matter proportional to the mass of the object and inversely proportional to the distance between them squared.

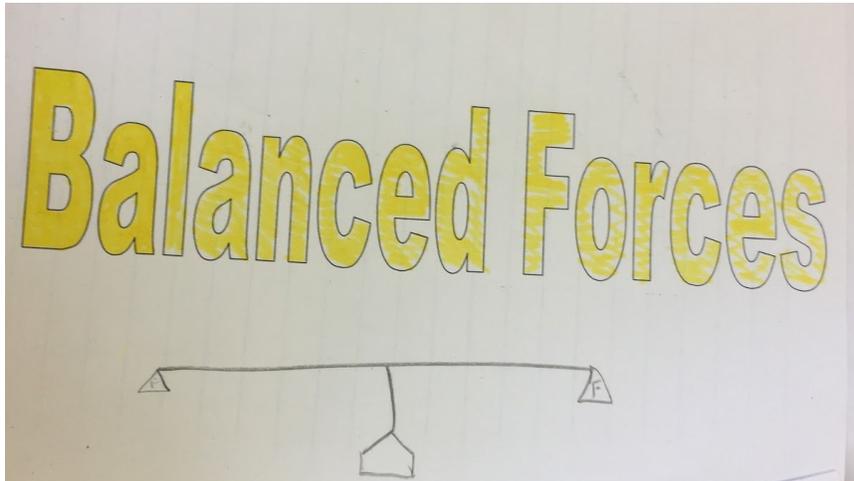


Newton's first law of motion is an object at rest will stay at rest and an object in motion will stay in motion with constant velocity unless acted upon by an unbalanced net force.

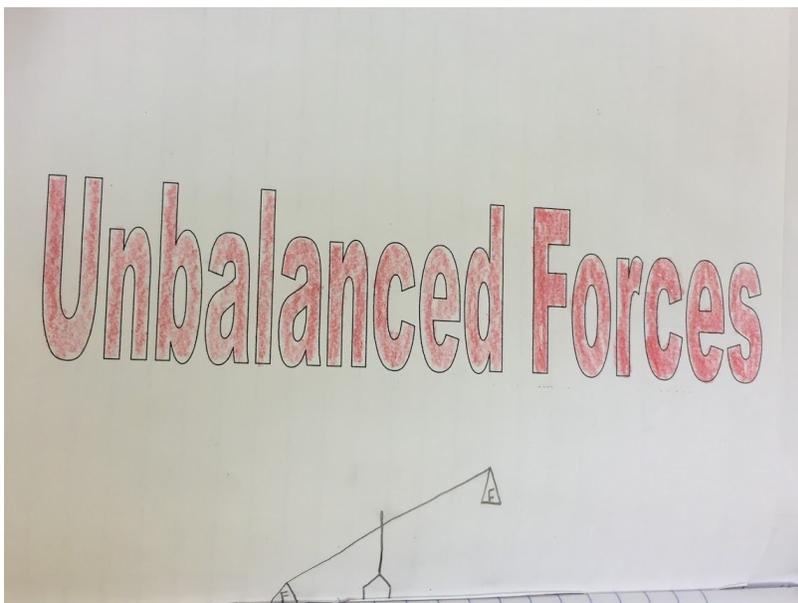
SPEED-the rate of change in position distance/time

Scalar magnitude only: vector magnitude AND direction

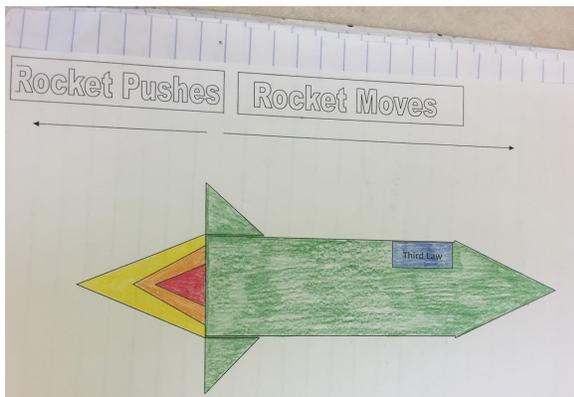
Velocity-speed in a direction



Newton's second law of motion is the acceleration of an object produced by a net force is directly proportional to the magnitude of the net force.



Newton's third law is for every action there is an equal and opposite reaction



Gravity is a from the Latin word "gravitas" or heavy. One of the fundamental forces in the Universe they are weak and infinite in range. All forces are an attraction of matter strength based upon mass and proximity. Acceleration due to gravity on earth is $9.8 \text{ meters/ second}^2$

