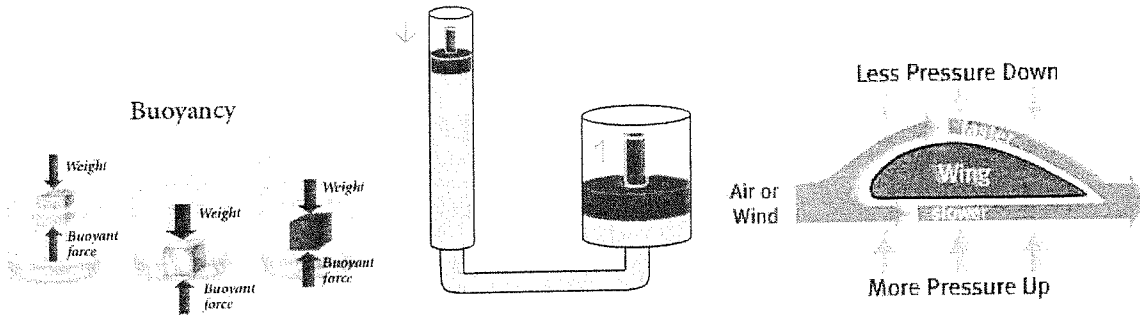


8. Know the phase change diagram! Going from a solid to a liquid or a liquid to a gas or a gas back to a liquid, etc.

9. Know your science vocabulary!!! This includes understanding Archimedes' Principle, Pascal's Principle, and Bernoulli's Principle.



10. Be able to calculate Pressure using the equation Pressure = Force ÷ Area. What is the pressure if a force of 50N is applied to a 5cm<sup>2</sup> object?

$$P = \frac{F}{A} \quad \frac{50N}{5cm^2} = \boxed{10N/cm^2}$$

11. Be able to use Pascal's Principle to calculate output force in a hydraulic system using the equation

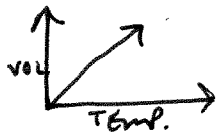
$$P = \frac{F_1}{A_1} = \frac{F_2}{A_2}$$

If an input piston has a force of 25N applied to an area of 5cm<sup>2</sup> and the output piston is 30cm<sup>2</sup>, what is the output force?

$$\frac{F_1}{A_1} = \frac{F_2}{A_2} \quad \frac{25N}{5cm^2} = \frac{F_2}{30cm^2} \quad \boxed{F_2 = 150N}$$

12. Understand Charles's Law, Boyle's Law and the Temperature-Pressure Relationship. What does each law state? What does a graph of Charles's law look like? What does a graph of Boyle's law look like? What are some real world examples of each law? Look over the notes we did in class!

CHARLES  
TEMP. ↑, VOL. ↑  
PRESSURE IS CONSTANT

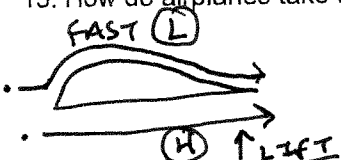


BOYLE'S  
VOL. ↑, PRESSURE ↓  
TEMP. IS CONSTANT



TEMP./PRESSURE  
TEMP. ↑, PRESSURE ↓  
VOLUME IS CONSTANT

13. How do airplanes take flight? Whose law describes this process and how does it work?



BERNOULLI'S PRINCIPLE → AS FLUIDS SPEED INCREASES, PRESSURE DECREASES.

14. Why do helium balloons expand as they rise in the atmosphere? What law describes this?

THE HIGHER YOU GO IN THE ATMOSPHERE, THE LESS PRESSURE THERE IS SO AS THE BALLOON RISES, PRESSURE DECREASES + VOLUME INCREASES. BOYLE'S LAW.