

Fluids Study Sheet

There will be a Science test on Thursday, November 29th. The test will take place during the Language period to allow students a longer period of time to complete the test. Please use the following study sheet and rubric to help prepare for the test. The study sheet and rubric will be posted on the class blog at julietaylor.edublogs.org (no www before the address).

Aerodynamics

- Concerns the flow of air around solid objects or the effect of air on objects moving through it

Buoyancy

- The upward force that a fluid exerts on an object less dense than itself
 - a) **Positive Buoyancy** - the tendency of an object to rise in a fluid because the object weighs less than the fluid it displaces
 - b) **Negative Buoyancy** - the tendency of an object to sink in a fluid because the object weighs more than the fluid it displaces
 - c) **Neutral Buoyancy** - the tendency of an object to remain level in a fluid because the object weighs the same as the fluid it displaces

Compressible

- The ease with which a substance reduces its volume under external force

Density

- The mass of a substance per unit volume of that substance
- Measured in g/mL (liquids) or g/cm³ (solids)
- 1 g/mL is the same density as 1 g/cm³
- Higher density items float on top of lower density liquids

Drag

- A force that acts to slow a body moving through a liquid

Dynamic

- Relating to systems involving moving fluids

Flow Rate

- The speed that a fluid moves in a given amount of time

Hydrodynamics

- The motion of liquids, usually water, around solid objects

Hydraulics

- Confined, pressurized system that use moving liquids to operate
- Some examples include heavy equipment (backhoe, loader, excavator), a jack, the circulatory system

Mass

- The amount of matter in an object, measured in milligrams, grams, or kilograms

Particle Theory

- A theory used to explain matter and heat transfer, which suggests that all matter is made up of tiny particles too small to be seen
- These particles are constantly in motion because they have energy
- The more energy they have the faster they move (heat increases its energy)
 1. All matter is composed of particles
 2. Particles are in constant motion
 3. There are forces of attraction among particles

Pneumatics

- Confined, pressurized systems that use moving air or other gases
- Examples include air tools (using a compressor), jackhammer, lungs

Viscosity

- The physical property of a liquid that limits its ability to flow

Volume

- A measure of the amount of space occupied by matter
- Measured in cubic meters, litres, cubic centimeters, or millilitres

Weight

- A measure of the force of gravity pulling on an object
- Measured in newtons (N)