

Physical Science - Semester Exam Review

Chapters covered and main topics of each chapter.

- 1 - Scientific Method
 - Observation, Hypothesis, Test, Collect Data, Conclusion, Retest
- Metric System
 - Base 10
 - meter, liter, gram
 - prefixes (centi, milli, kilo)
- Science tools
 - ruler, balance, thermometer
- 2 - Matter
 - any thing that has mass and takes up space
- Measuring Mass
- Measuring Volume (1 x w x h, water displacement) (ml cubed, cubic centimeter)
- Measuring Density (mass/ volume) (grams/ ml)
- 3 - Phases of matter
 - Solids, Liquids, Gases
- Phase changes
 - Freezing / melting/ boiling points
 - Sublimation, evaporation, condensation
- Chemical and physical properties, changes
 - can it be reversed? color change? gives off gas? requires or produces heat?
- 5 - Atomic models
 - Rutherford, Dalton, Thompson models
- Structure of atoms
 - Electrons, Protons, Neutrons (location and charges)
- 6 - Periodic Table
 - Atomic Number (number of protons, electrons)
 - Atomic Mass (number of protons + neutrons)
- 12 - Motion
 - Frame of Reference
- Speed
 - distance / time (proper units?)
- Velocity
 - speed and direction
- Acceleration
 - change in velocity over period of time
 - (final velocity-starting velocity)/ time
- 13 - Force of Friction
 - force that opposes motion
- Newton's Laws of Motion
 - 1st law - inertia
 - 2nd law - force = mass x acceleration
 - 3rd law - equal and opposite reaction
- 14 - Fluid pressure
 - pressure increases with depth
- Bernoulli's Principle
 - as an object moves through a fluid, lift is created
- 15 - Calculating Work
 - work = distance / time (joules)
- Calculating
 - power = work / time (watts)
- Simple Machines
 - levers, wheel and axle, pulley, inclined plane
 - 3 classes of levers
 - Mechanical advantage
- 16 - Forms of Energy
 - Mechanical, Electromagnetic, Nuclear, Chemical, Heat
 - Kinetic vs. Potential
 - Energy Conversions

