

Physical Science Final Review

Chapter 2

- Understand that molecules are always in motion
- Know the parts of an atom and where they are located
- Know that an ion is a charged particle
- Compare the characteristics of solids, liquids and gases
- Know the difference between a physical change and a chemical change
- Know the phase changes: melting, freezing, vaporizing, condensing, sublimation, deposition

Chapter 3

- Be able to convert between kilometers, meters, centimeters and millimeters
- Be able to convert between liters and milliliters
- Be able to convert between kilograms, grams and milligrams
- Be able to write a number in scientific notation
- Know the difference between weight and mass
- Be able to calculate density: **Density = Mass/Volume**

Chapter 4 Review

- Calculate distance or displacement.
- Know what Δ is called and what the symbol means.
- Be able to calculate speed and velocity **Average speed = distance \div Δ time**
Velocity = displacement \div Δ time

Chapter 5 Review

- Know Newton's three laws of motion
- Be able to calculate force and weight **Force = mass x acceleration**
Weight = mass x gravity

Chapter 6 Review

- Know examples of potential and kinetic energy

Chapter 7 Review

- Know the six simple machines
- Know the examples of the three kinds of levers
- Calculate work and power **Work = Force x distance**
Power = Work \div Time

Chapter 8 Review

- Know that liquids and gases are fluids
- Know units of pressure: Pascal, atmosphere, bar, psi
- Understand what causes atmospheric pressure
- Know that fluids flow from high pressure to low, from high elevation to low elevation
- Understand the Coandă effect
- Know Boyle's Law (how gas pressure and volume are related)
- Know Charles' Law (how gas volume and temperature are related)

Chapter 9 Review

- Convert between temperature scales
- Know the three types of heat transfer and an example of each
- Know examples of thermal conductors and insulators

Formulas: **C = 5/9(F - 32)**
F = 9/5C + 32
K = C + 273

Chapter 10 Review

- Understand how a battery produces electricity
- Be able to use Ohm's Law to solve for a value: **V = I R**
- Be able to use the power formula to solve for a value: **P = I V**

- Recognize the differences between series and parallel circuits
- Understand why short circuits are dangerous

Chapter 11 Review

- Know what causes some materials to be magnetic
- Understand why the earth has a magnetic field
- Understand that electricity can cause a magnetic field
- Understand that a magnetic field can create electricity
- Understand the difference between AC and DC
- Know what transformers are used for

Chapter 12 Review

- Know the difference between a transverse wave and a longitudinal wave
- Understand how the Doppler effect changes the sounds you hear

Chapter 13 Review

- Know how sound waves travel
- Know how changes in a sound wave change the pitch, intensity and quality of a sound

Chapter 14 Review

- Understand the light energy oscillates the electric and magnetic fields

Chapter 15 Review

- Know the order of the colors of visible light
- Know which color of light has long wavelengths and which has shorter wavelength
- Know why light rays bend as they go from air to water
- Understand how a prism separates light

Chapter 16

- Know that J. J. Thomson discovered the electron
- Know that Ernest Rutherford discovered the proton
- Know that James Chadwick discovered the neutron
- Know that Neils Bohr discovered electron energy levels
- Know the current model of an atom is called a quantum model
- Know the relative sizes of a proton, electron and neutron

Chapter 17

- Understand that elements in the same period have similar properties
- Know that Dmitri Mendeleev created the original periodic table
- Know that most elements are metals and they are on the left side of the table
- Know that alkali metals and halogens are very reactive
- Know that noble gases are inert

Chapter 18

- Know the difference between how ionic and covalent bonds are formed

Chapter 19 Review

- Know five evidences that show a chemical reaction has occurred

Chapter 20 Review

- Know the difference between a heterogeneous mixture and a homogeneous mixture
- Know what the Tyndall effect is

Good Words to Know

Acceleration	Insulator	Vector
Acoustic energy	Joule	Velocity
Air resistance	Kelvin	Volt (V)
Alternating current	Kinetic energy	Watt (W)
Ampere (A)	Lever	Wave Height
Amplitude	Lift	Wavelength
Anion	Magnet	Wedge
Barometer	Magnetic dipole	Work
Block and tackle	Magnetic energy	
Capacitor	Magnetic field	
Cation	Magnetic North Pole	
Celsius	Magnetic pole	
Chemical energy	Matter	
Circuit breaker	Mechanical advantage	
Conductor	Medium	
Conventional current	Moment	
Crest	Newton	
Cycle	Nuclear energy	
Damping	Ohm (Ω)	
Decibel	Ohm's Law	
Density	Parallel circuit	
Diamagnetism	Paramagnetism	
Direct current	Pascal	
Displacement	Period	
Drag	Periodic motion	
Efficiency	Photon	
Effort force	Pitch	
Electrical circuit	Potential energy	
Electrical current	Power	
Electrical energy	Pressure	
Electrical resistance	Pulley	
Electromagnet	Radiant energy	
Electrostatic force	Reflected ray	
EM spectrum	Reflection	
Endothermic	Refraction	
Exothermic	Resistance force	
Fahrenheit	Resistor	
Ferromagnetism	Restoring force	
Fluid	Scalar	
Focal point	Semiconductor	
Force	Series circuit	
Frequency	Short circuit	
Friction	Specific Gravity	
Fulcrum	Speed	
Fuse	Static electricity	
Gear	Thermal energy	
Geographic North Pole	Threads per inch	
Heat	Torque	
Incident ray	Transformer	
Inclined plane	Trough	
Inertia	Turbine	