

WEEK 3: FQ#1 WHAT IS SCIENCE?

Definition of Mass Density $\rho = \frac{m}{V}$

WEEK 4: FQ#2 MOTION

Average Speed or Magnitude of Velocity $\bar{v} = \frac{d}{t}$

Definition of Acceleration $a = \frac{v_f - v_i}{t}$

Distance Traveled from Rest $d = \frac{1}{2}at^2$

Newton's Second Law $a = \frac{F}{m}$

Weight/Mass Relationship $W = mg$

Newton's Third Law $F_{A\text{dueTo}B} = F_{B\text{dueTo}A}$

Definition of Momentum $p = mv$

Change of Momentum $\Delta p = Ft$

WEEK 5: FQ#3 ENERGY

Definition of Work $W = Fd$

Definition of Power $P = \frac{W}{t}$

Definition of Potential Energy $PE = mgh$

Definition of Kinetic Energy $KE = \frac{1}{2}mv^2$

WEEK 7: FQ#4 HEAT AND TEMPERATURE

Conversion from Celsius to Fahrenheit $T_F = \frac{9}{5}T_C + 32^\circ$

Conversion from Fahrenheit to Celsius $T_C = \frac{5}{9}(T_F - 32^\circ)$

Conversion from Celsius to Kelvin $T_K = T_C + 273$

Definition of Specific Heat $Q = mc\Delta T$

Definition of Latent Heat of Fusion $Q = mL_f$

Definition of Latent Heat of Vaporization $Q = mL_v$

WEEK 8: FQ#5 ELECTRICITY

Quantity of Charge $q = ne$

Electrical Force (Coulomb's Law) $F = k \frac{q_1 q_2}{d^2}$

WEEK 10: FQ#6 ATOMS

Energy of Photon $E = hf$

Energy of Photon Emitted/Absorbed $hf = E_H - E_L$

WEEK 12: FQ#7 CHEMICAL REACTIONS

KNOW SYMBOLS FOR COMMON CHEMICAL ELEMENTS

$$\% \text{ of Element} = \frac{\text{AtomicWeight} \times \text{Number of Atoms}}{\text{FormulaWeight}} \times 100\% = \% \text{ of Element}$$

WEEK 15: FQ#8 NUCLEAR REACTIONS

KNOW α , β and γ DECAY EQUATIONS

Definition of Mass Number $A = Z + N$

Alpha Particle $\alpha = {}_2^4\text{He}$

Beta Particle $\beta = {}_{-1}^0e$