REFERENCE SHEET & FORMULAS for GRADE 9 SCIENCE

CHEMISTRY

Table 1: Density of various Substances

Table 1

substance	density (g/cm³)
air	0.0013
feather	0.0025
oak	0.60
birch	0.66
gas	0.69
isopropanol	0.79
ice	0.92
water	1.00
brick	1.84
aluminum	2.70
zinc	7.13
steel	7.80
iron	7.87
copper	8.96
silver	10.49
lead	11.36
mercury	13.55
gold	19.32

$$d = \frac{m}{v}$$

PHYSICS

The Electrostatic Series:

Acetate
Glass
Wool
Cat's fur, human hair
Calcium, magnesium, lead
Silk
Aluminum, zinc
Cotton
Paraffin wax
Ebonite
Polyethylene (plastic)
Carbon, copper, nickel
Rubber
Sulphur
Platinum, gold

$$V = I \times R$$

$$E = P \times t$$

$$E = V \times Q$$

$$Q = I \times t$$

$$P = I \times V$$

$$E = V \times t \times I$$

$$cost = energy\ used\ x\ price\ of\ electricity$$

$$efficiency = \frac{E_{out}}{E_{in}}\ x\ 100\%$$

PHYSICS

1C = 6.2 x 10^{18} electrons

1kW = 1000W

1kW·h = 3.6 x 10^6 J

In Series:

$I_T = I_1 = I_2 = I_3$

$V_T = V_1 + V_2 + V_3$

$R_T = R_1 + R_2 + R_3$

$$V_{load(series)} = \frac{V_{source}}{\#\ of\ loads}$$

In Parallel:

$I_T = I_1 + I_2 + I_3$

$V_T = V_1 = V_2 = V_3$

$$\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$$

$$I_{load(parallel)} = \frac{I_{source}}{\#\ of\ loads}$$

SPACE

1 AU = 1.5 x 10^8 km

1 light year = 9.46 x 10^{12} km