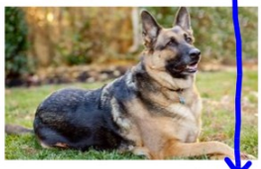
Let's Try one together

a) A German shepherd dog has a mass of 31 kg. What would be his weight on earth?



has to be in N. newton

$1\,kg = 9.8\,N$ Know

$$31\,kg \times \frac{9.8\,N}{1\,kg} = 303.8\,N$$

The weight of the German Shepherd is 303.8 kg.

mass

b) Max mass is 150 lbs (Imperial) = 68kg (metric), what is his weight on earth? (N)

÷2.2

$$\text{Weight} = 68\,kg \times \frac{9.8\,N}{1\,kg} = 666.4\,N$$

$1\,kg = 1.625\,N$

c) $\text{Moon Gravity} = \frac{1.625\,N}{1\,kg}$

$$W_{Max} = 68\,kg \times \frac{1.625\,N}{1\,kg} = 110.5\,N$$

You Try

m ⇒ g or kg
W ⇒ N

1 Kg = 9.8 N

Assume you have a mass of 50 kg. What would be your weight on earth? (9.8 N / Kg)

$W = 50\,kg \times \frac{9.8\,N}{1\,kg} = 490\,N$

Supplies soon needed for activity

Density Formula

Density of a substance can be determined by calculating its mass-to-volume ratio.

$$\text{Density} = \frac{\text{mass}}{\text{volume}}$$

Shorthand

$$D = \frac{m}{V}$$

Rearranged

$$V = \frac{m}{D} \qquad m = V \times D$$

mass ⇒ kg or g

V = cm^3 or mL or L
m^3

-For liquids density is measured in g/mL or g/L

-For solids density is measured in g/cm^3

Density is the property of fluids that allow an object o float.

Density of water is 1.00 g/mL

A substance that had a density of 2.85 g/mL would _____ in water. It is _____ dense than water.

A substance that had a density of 0.82 g/mL would _____ in water. It is _____ dense than water.