**MASS NOTES 2016**

**Mass**  
*a measure of the amount of matter in an object*

* *Kilo*gram – the basic unit of mass in the metric system

1 kg = 1000 grams

* Gram--

1000g = 1 kg

* *Milli*gram –

1000 mg = 1 g

Weight  
*a measure of the attraction between two objects due to gravity*

* Gravity - a force of attraction between two masses.
* The strength of the gravitational force between two objects depends on the masses of the objects and the distance between them:
  1. The **greater** the mass, the **greater** the gravitational force.
  2. The **greater** the distance between the two objects, the *weaker* the gravitational force between them
* Newton (N) - the basic unit of weight in the metric system.

Mass vs. Weight

* An object has a universal mass, but may have different weight depending on gravity.
* The mass of an object does not change.
* The weight of an object changes as a result of changes in gravity.
* A pineapple on earth weighs more than on the moon because the earth’s gravity is greater. But the pineapple’s mass always remains the same wherever you go (unless you get hungry and eat it!).

**Which is larger?**

A. 1 kilogram or 1500 grams

B. 1200 milligrams or 1 gram

C. 12 milligrams or 12 kilograms

D. 4 kilograms or 4500 grams

How to remember different masses in the metric system

* When you think of a gram (g) think of:
  + A paper clip
* When you think of a kilogram (kg) think of:
  + A little more than 2 pounds.

**Measuring Mass**

We will be using **triple-beam balances** to find the mass of various objects.

The objects are placed on the scale and then you move the weights on the beams until you get the lines on the right-side of the scale to match up.

Once you have balanced the scale, you add up the amounts on each beam to find the total mass.

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