## Chapter 2 : Worksheet #1 KEY

1. One of the basic measurements a microbiologist uses is a nanometer, what is the definition of a nanometer?
This is also equal to one- one billionth of a meter.



**2. List the three main components of a cell and give a brief description of each.**

**A) Plasma Membrane – Cell membrane wraps up cell to form a boundary.

B) Cytoplasm – The region and all its contents between the plasma membrane and the nucleus. Consists of cytosol fluid and many organelles.

C) Nucleus – Compartment housing the genetic material – DNA.**



**3. Give a brief description of the function that each type of organelle plays.**

1. Ribosomes : Globular Protein Factories made from rRNA and proteins. Site of Translation (protein synthesis)



2. Rough Endoplasmic Reticulum : A network of folded over membranes that form channels. RER houses many ribosomes. So proteins are synthesized and enter the channels.
 
3. Smooth E.R.: A system of folded over membranes that form channels. Site of the production of phospholipids and steroids.
4. Golgi Apparatus : Formation of stacked vesicles that receive proteins, modify and sort them and then ship them out in specific vesicles.

5. Mitochondria : Site of cellular respiration used to produce ATP.



6. Lysosomes : Special vesicles that house hydrolytic enzymes that digest and break things down.


7. Centrioles : Assemblies of microtubules that help form cytoskeleton structures like mitotic spindles for cell division.



8. Cilia : Structures composed of microtubules that use energy to move and create movement along the outside of a cell.



9. Flagella : A longer assembly of microtubules that uses energy to actually move the cell itself. Ex sperm cell.

 