

## Chapter 10 Review: The Cell is the Basic Unit of Life

### 1. What is a cell?

*The basic functional unit of life*

### 2. What are the 4 characteristics of living things? Briefly describe each.

*Growth*

*A result of the cells in your body increasing in number  
New cells will grow to replace old cells that die.*

*Movement*

*A change in position, shape or location (locomotion)*

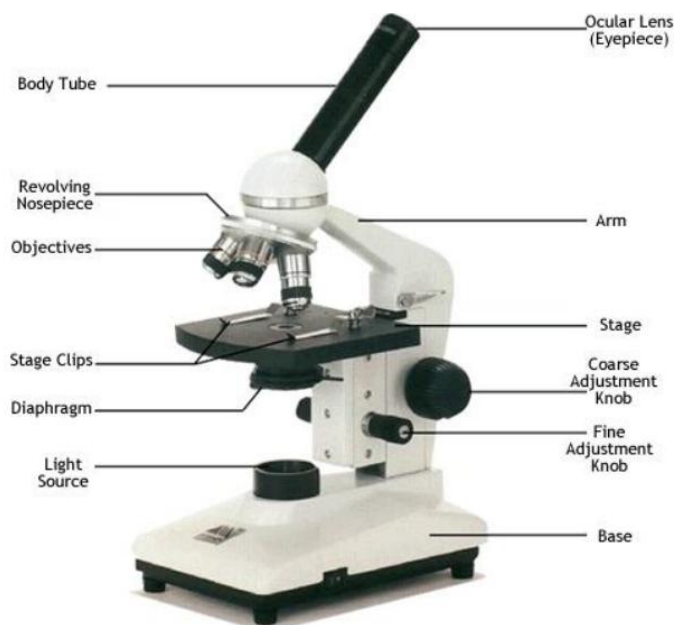
*Respond to Stimuli*

*Stimulus: anything that causes an organism to react.  
Maybe external or internal*

*Reproduction*

*Producing more of the same kind (offspring)*

### 3. Name and describe the parts of the microscope. Be able to label a diagram.



**Table 10.2 The parts of a compound light microscope**

Part	Function
Eyepiece	Is used for viewing and contains a lens that magnifies
Tube	Holds the eyepiece and objective lenses at proper distance from each other
Arm	Supports the eyepiece
Coarse adjustment knob	Brings an object into focus at low or medium power
Fine adjustment knob	Brings an object into focus at high power
Objective lenses	Magnify the image. Most microscopes have three or four lenses.
Revolving nosepiece	Holds the three objective lenses
Stage	Supports the slide. Some microscopes have stage clips to hold the slide in place.
Iris diaphragm	Controls the amount of light reaching the specimen
Light source	Supplies the light needed to view the slide
Base	Supports the entire microscope

**4. Describe 3 points of the cell theory.**

- The cell is the basic unit of life.
- All living things are made of one or more cells.
- All cells come from other living cells.

**5. Name and Describe the 7 parts of a cell. Be able to label a diagram of a plant cell and an animal cell.**

Cell membrane:

Found in both plant and animal cells

Surrounds and protects the contents of the cell  
Controls the movement of materials in and out of the cell

Cytoplasm:

Found in both plant and animal cells  
Jell-like fluid that in which the organelles float  
Helps to move materials like food to different parts of the cell

Cell wall:

Found only in plant cells  
Tough, rigid structure that give plant cells their box-like shape  
Made mostly of cellulose

Nucleus:

Found in both plant and animal cells  
Large round structure often visible  
Contains the chromosomes  
The "control centre" of the cell

Vacuole:

Balloon-like spaces in the cytoplasm  
Store materials that can not be used right away  
Found in both plant and animal cells (smaller and more numerous in animal cells)

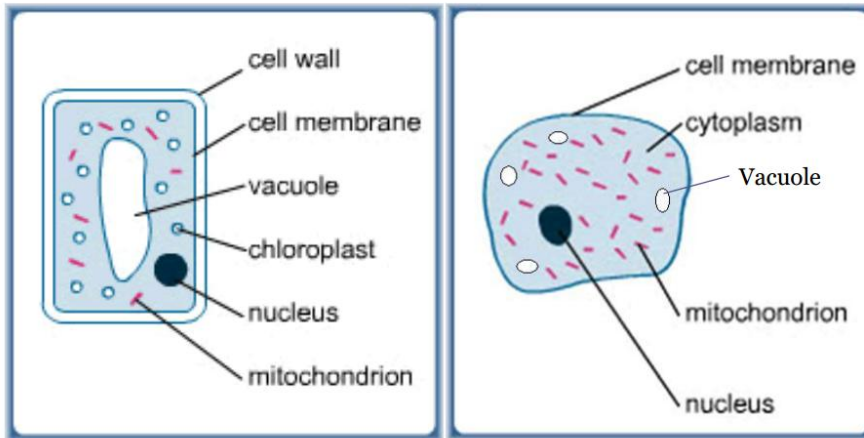
Mitochondrion:

Oval, bean-like structures  
Produces energy by breaking down food particles  
Found in both plant and animal cells

Chloroplast:

Green structures that contain chlorophyll  
Capture the sun's energy for photosynthesis  
Found only in plant cells

# Plant vs. Animal Cells



6. What are 3 differences between plant and animal cells.

Plant cells have cell walls

Plant cells are square in shape

Plant cells have chloroplasts

Plant and animal cells both have vacuoles, but they are smaller and more numerous in animal cells

7. Name the process by which cells divide.

Mitosis

8. What is cellular respiration?

Cells need energy for all life processes. Energy is stored in food called glucose (a type of sugar) To release energy cells must carry out cellular respiration. Takes place in the mitochondrion.