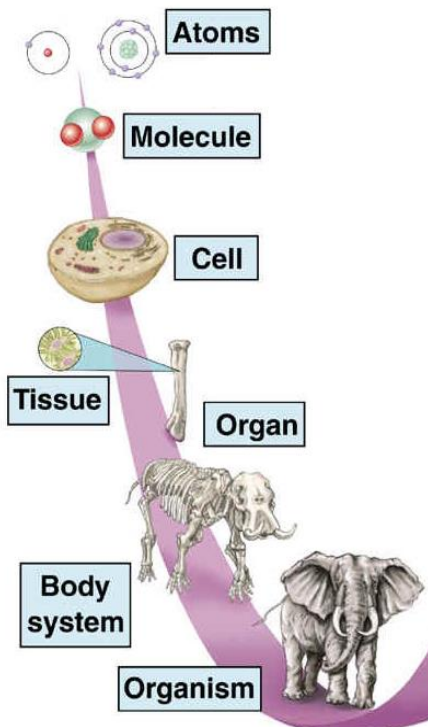
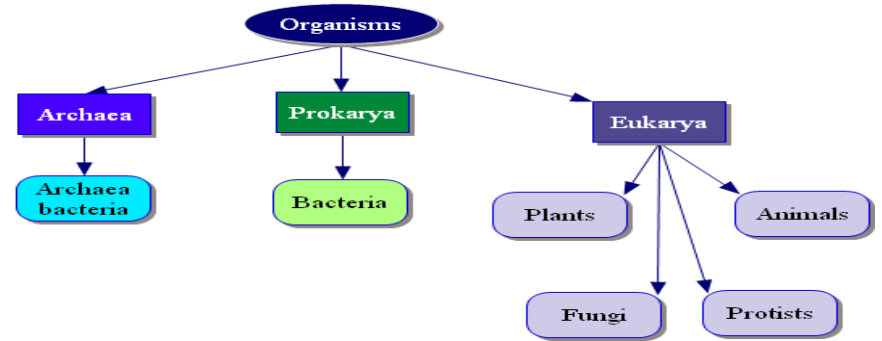


# Life Science Reference Guide

## Levels of Organization



## Classification (Binomial Nomenclature: Genus, Species)



## Symbiotic Relationships

**Commensalism:**  
Clown fish and Anemone



**Parasitism:**  
Dog and Tick



**Mutualism:**  
Bee and Flower



## Theory of Evolution (Charles Darwin)

**Evolution:**  
CHANGE over time  
**Natural Selection:**  
"survival of the fittest"  
Organisms with traits best suited to their environment are more likely to survive and reproduce

## Law of Conservation of Matter and Energy

Matter and energy CANNOT be created or destroyed.  
The total amount of matter and energy available in the universe is a fixed amount and can never be any more or less.

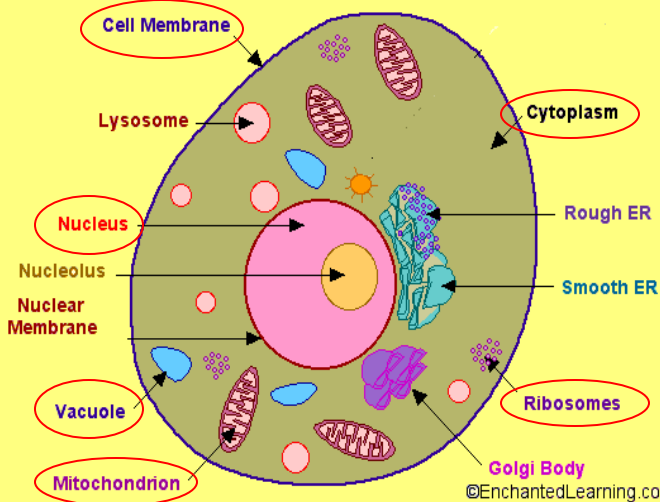
## Experimental Replication vs Repetition

**Replication:** the reproduction of an experiment by others to confirm findings or ensure accuracy  
**Repetition:** conducting multiple trials during an experiment to ensure accuracy

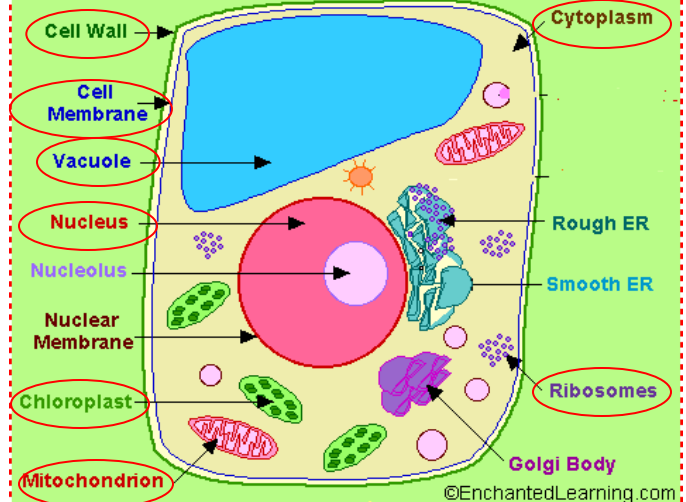
## Cells

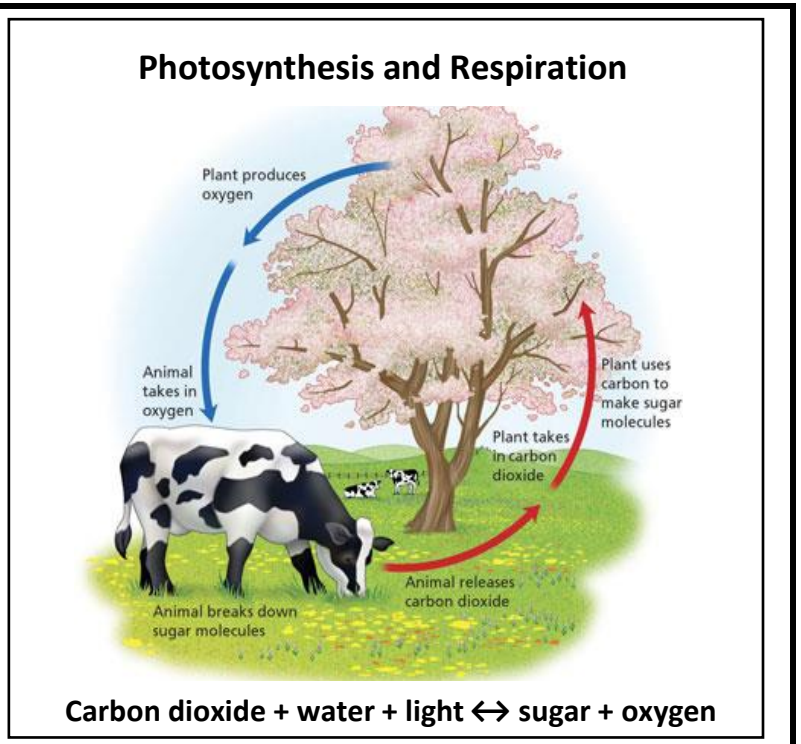
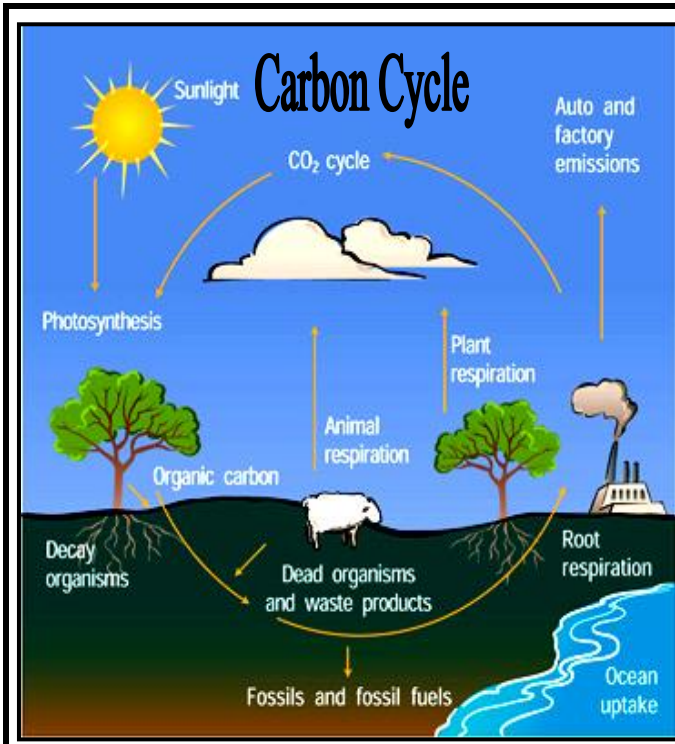
**Cell Theory:** All organisms are composed of cells, All cells come from pre-existing cells, Cells are the basic unit of life

### Cross-Section of an Animal Cell



### Cross-Section of a Plant Cell





### Human Body Systems

- Nervous:** Brain
- Immune:** White blood cells
- Reproductive:** Sperm and egg cells
- Circulatory:** Heart
- Digestive:** Stomach
- MusculoSkeletal:** Human figure showing muscles and bones
- Respiratory:** Lungs
- Excretory:** Kidneys

### Genetics

**Genotype = Gg**  
**Phenotype = Green skin**  
**Offspring = 75% green, 25% yellow**  
**Homozygous: GG and gg**  
**Heterozygous: Gg**

	G	g
G	GG	Gg
g	Gg	gg

### Experiment vs Investigation

**Experiment:** A procedure carried out and repeated under controlled conditions to discover, demonstrate, or test a hypothesis.

**Investigation:** a systematic process that uses data, logic, and reasoning to answer a question or gain understanding.

