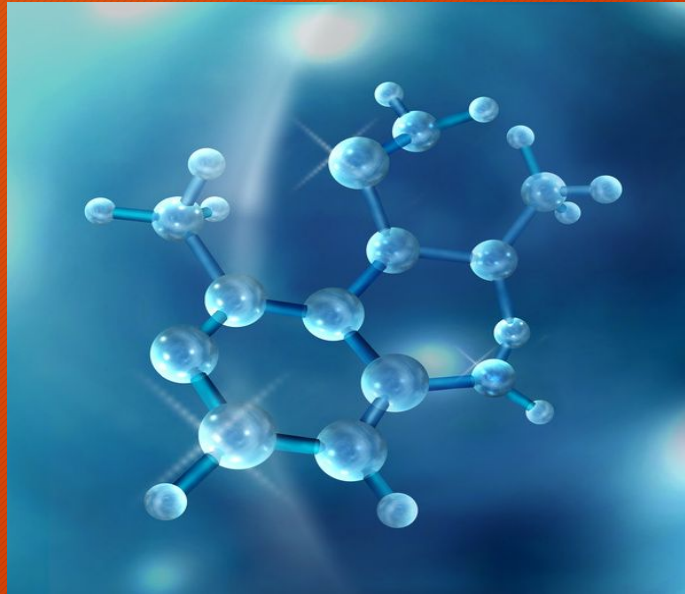


# HUMAN AND SOCIAL BIOLOGY

Characteristics of Living Things and Cells

# What Is Biology ?



The science of life or living matter in all its forms and phenomena, especially with reference to origin, growth, reproduction, structure, and behavior.

Since we know that we are studying the interaction of humans (which are living things) with the non living (abiotic) environment. Then we have to determine the characteristic of living organisms

What are the benefits of the study of human and social biology.

It can help us to solve the social issues of

- (i) Disease and prevention
- (ii) Food shortages (famine)
- (iii) Pollution
- (iv) Housing
- (v) Population Growth
- (vi) Human Behavior
- (vii) Healthcare and access to proper medicine
- (viii) Crime



So what are the  
characteristics  
of living things?

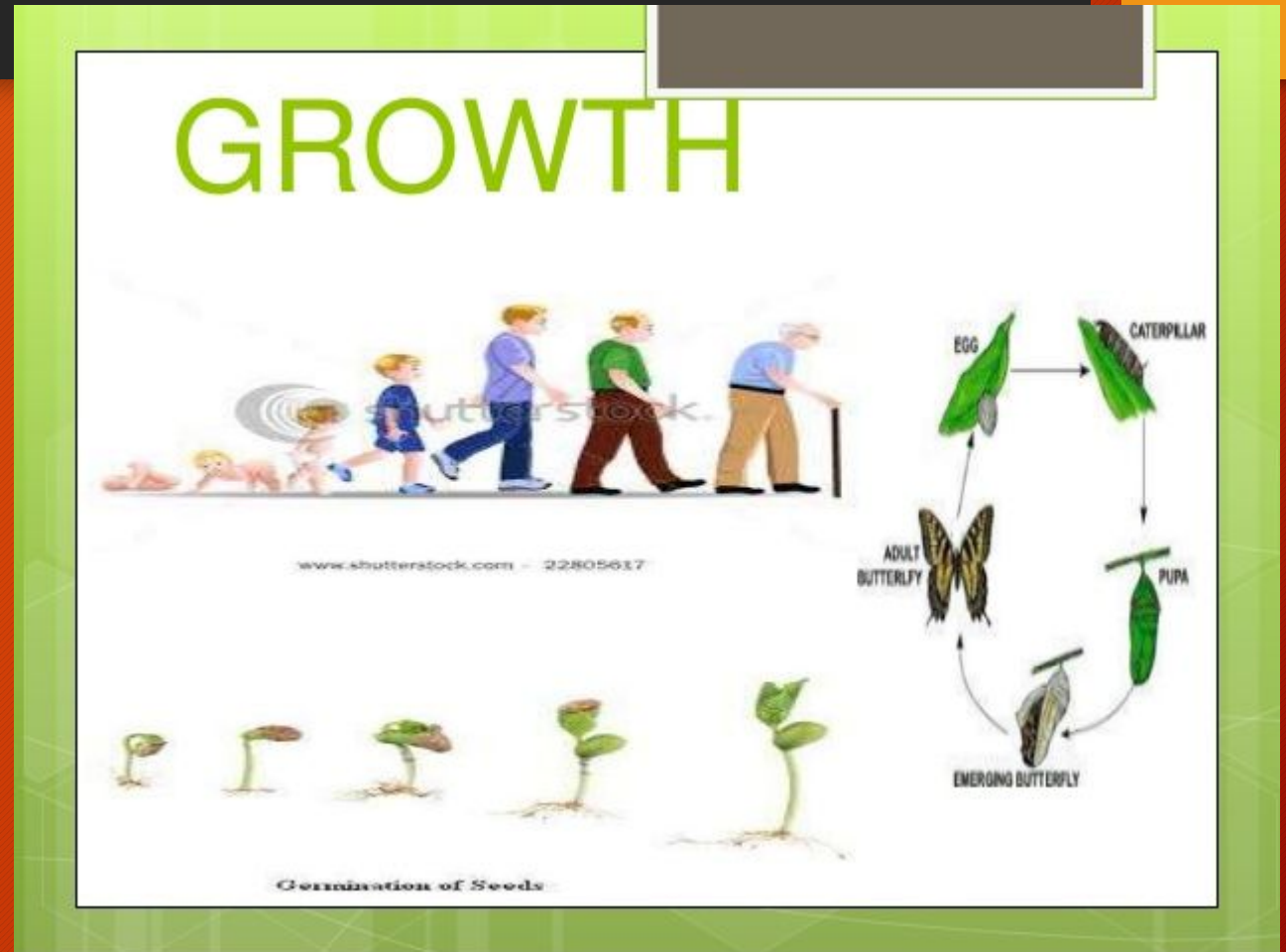
# GRIMNER-7 THINGS LIVING THINGS DO

- GROWTH
- RESPIRATION
- IRRITIBILITY
- MOVEMENT
- NUTRITION
- EXCRETION
- REPRODUCTION



# GROWTH

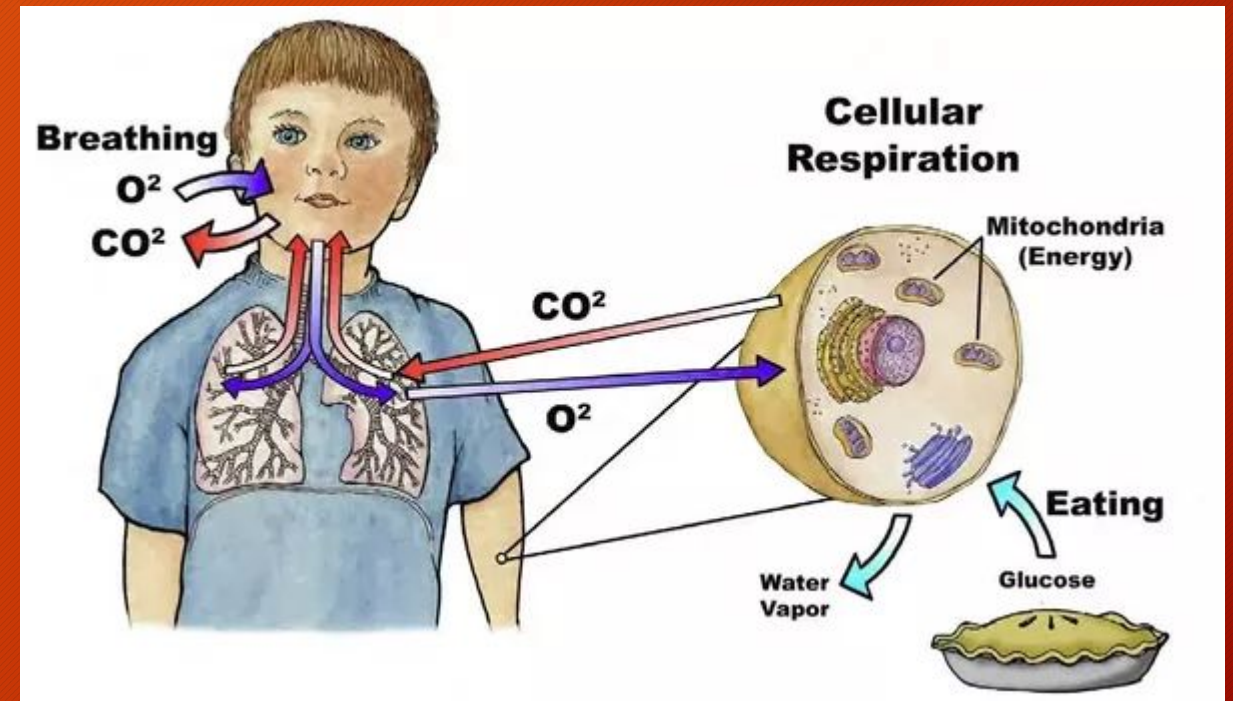
- Growth is defined as a permanent increase in size and weight. This is caused by an increase in cell size or the amount of cells in an organism





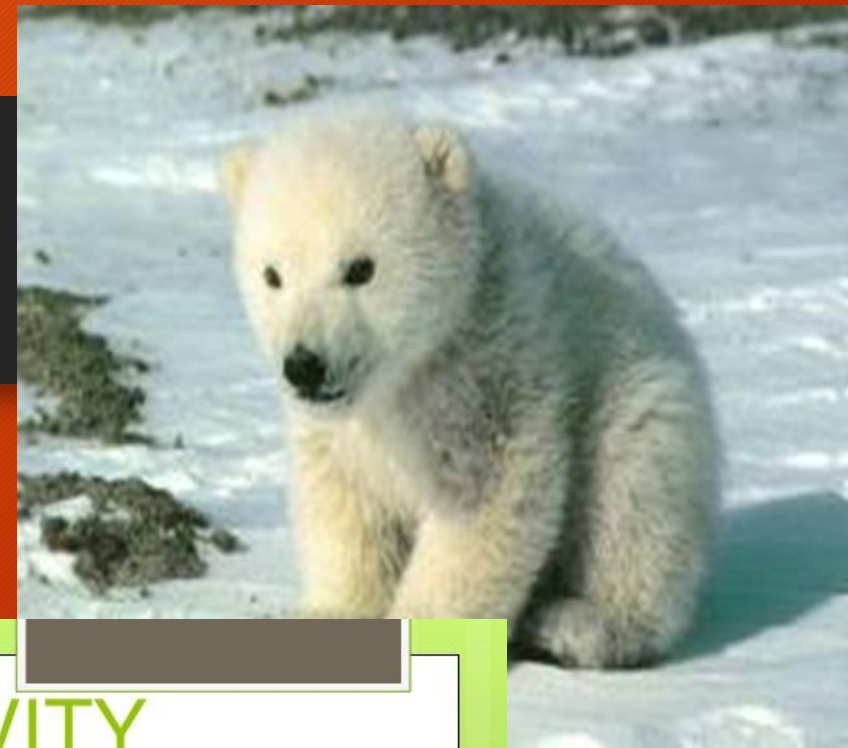
# RESPIRATION

- Respiration is known as, the release of energy from food. When we breathe we take in Oxygen. Oxygen is used to produce energy.



# IRRITIBILITY / SENSITIVITY

- The ability to respond to stimuli. Living Things can adapt to their environment:
- Modifications enable an organism to survive better in a particular environment.
- .e.g. Polar bears have a lot of fur to withstand the cold and are white so that they blend in with the snow



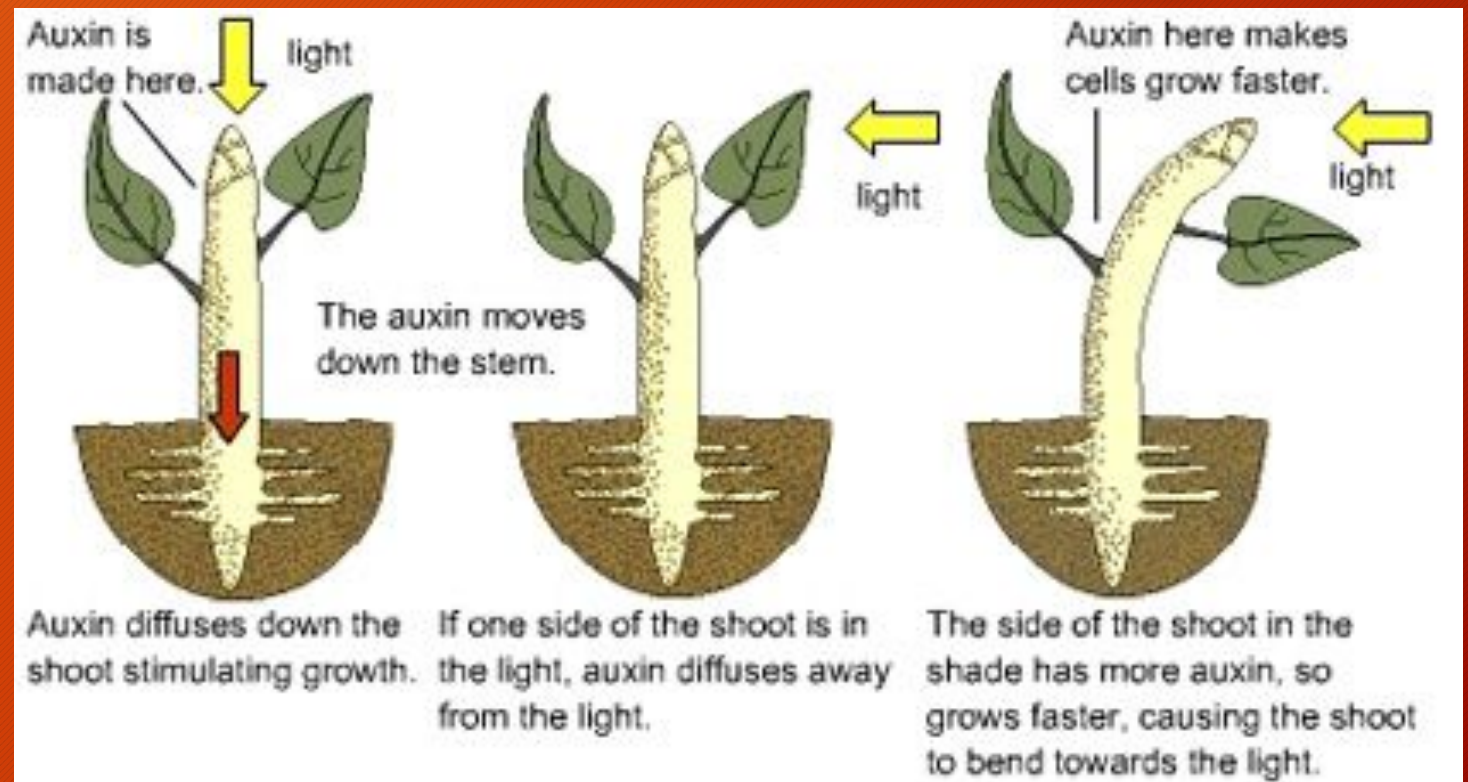
## SENSITIVITY

**-response to stimulus**



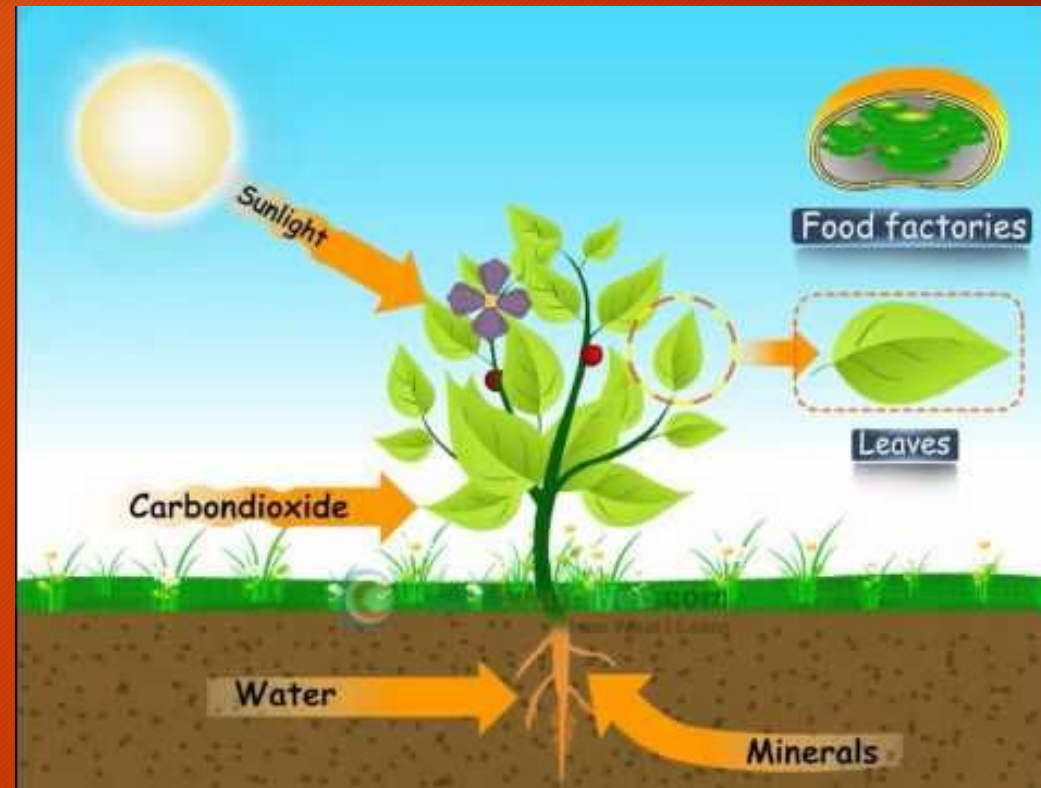
# Movement

- The change in location or position of the whole organism or part.



# NUTRITION

- The obtaining or making of food.



# EXCRETION

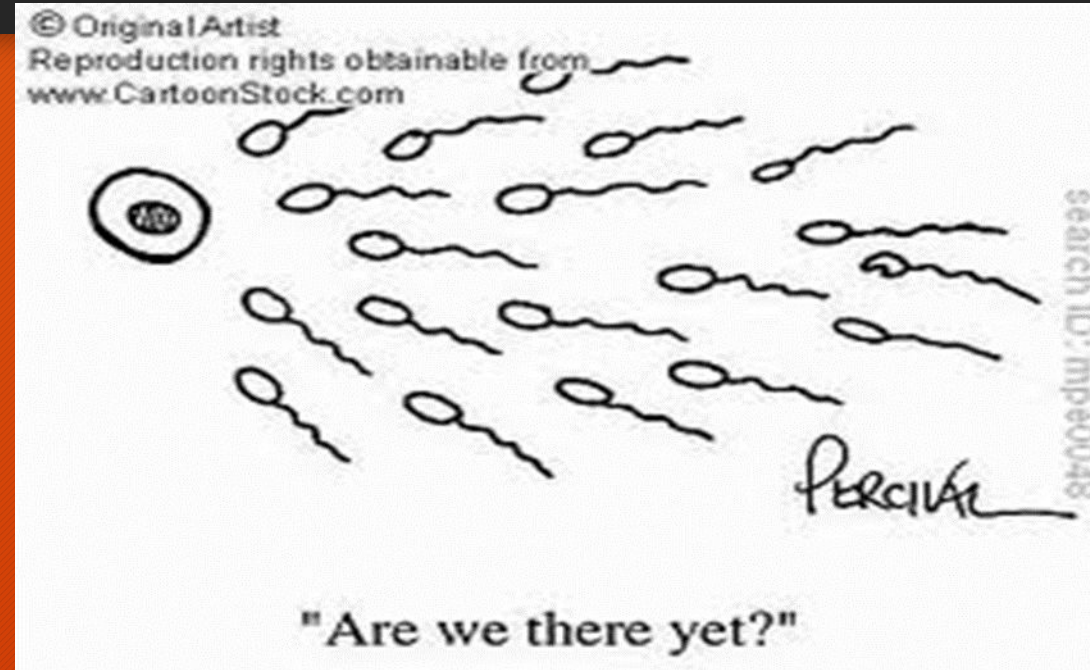
- The removal of metabolic waste. Metabolism is defined as the chemical processes that occur within a living organism in order to maintain life.

- This should not be confused with egestion which is the removal of undigested food from the intestine



# REPRODUCTION

- Reproduction is the passing on of genetic information from one generation to another.



# QUESTION TIME!

1. Name Four Characteristics of Living things.
2. A car excretes and moves. Explain in detail whether or not a car is a living organism. State three points.

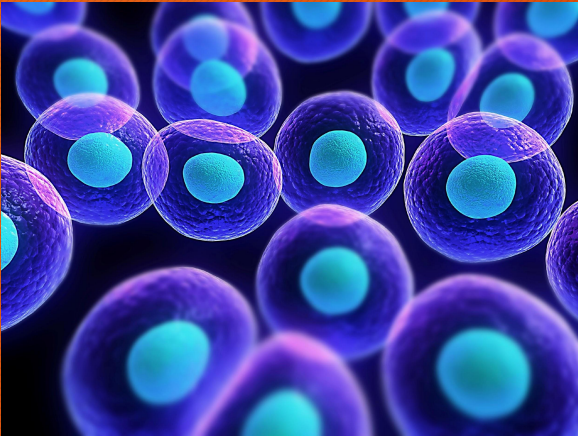
# CELLS

Living Things Are Highly Organized  
– From the smallest to the largest  
part.

Thus in terms of arrangement all  
living things are arranged in orders

i.e. Cell – tissues – organs – organ  
systems – organisms

**The cell is the smallest unit and  
the organism the amalgamation  
of all of these things together.**



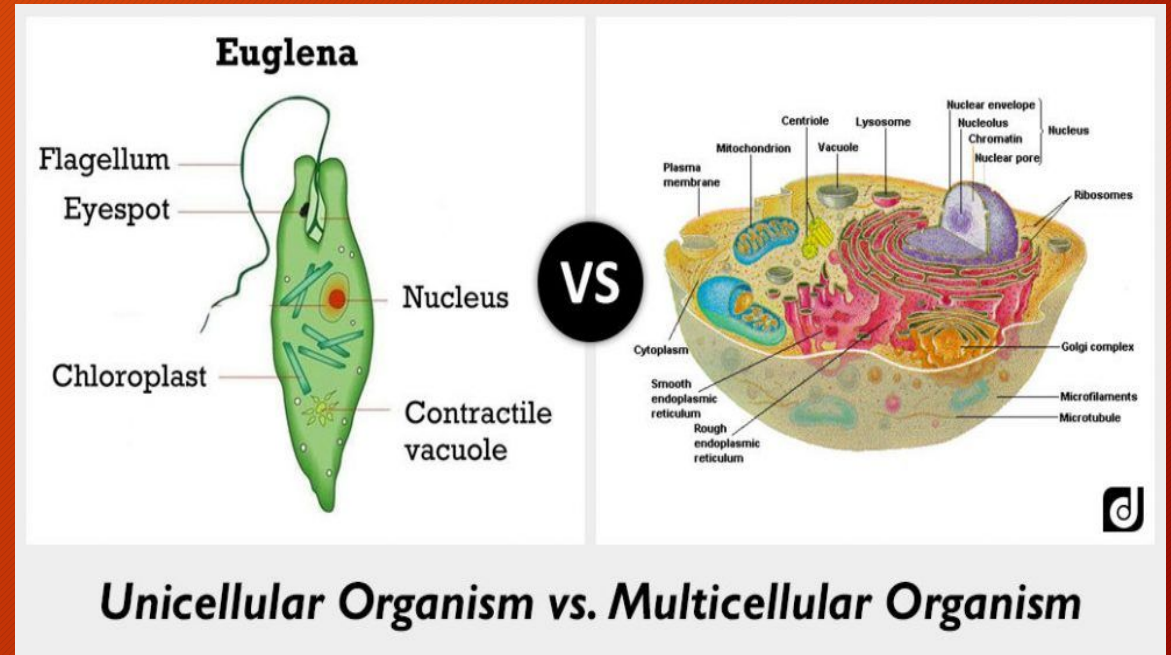


# What is everyone did the same job?

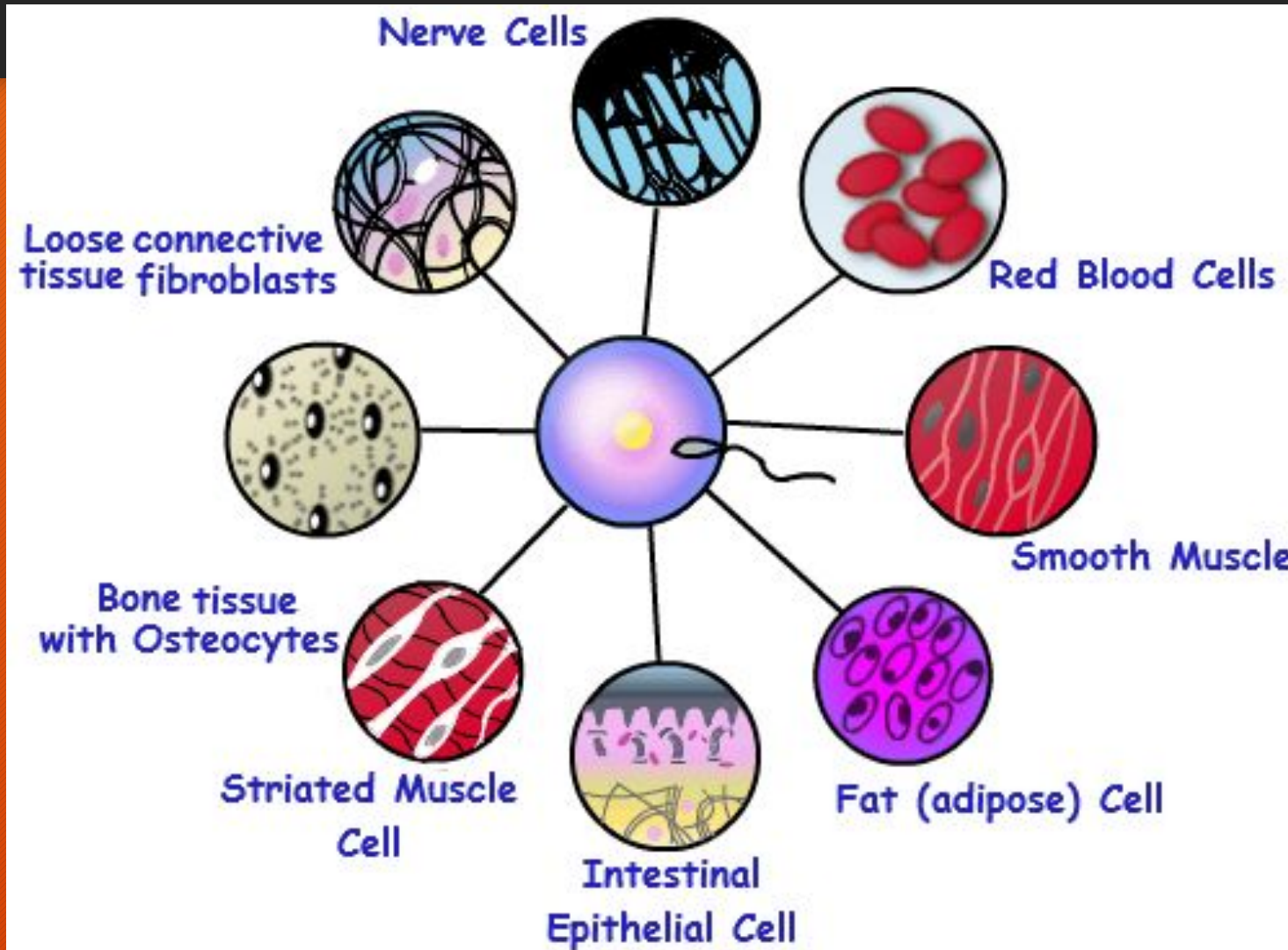


# Multicellular and Unicellular Organisms

- Living organisms can be made of a single cell, such as bacteria and protists, or they can be multicellular, like plants, animals, and fungi. Unicellular organisms, like bacteria, are able to perform all life functions within one single cell. They can transport molecules, metabolize nutrients, and reproduce within this one cell.

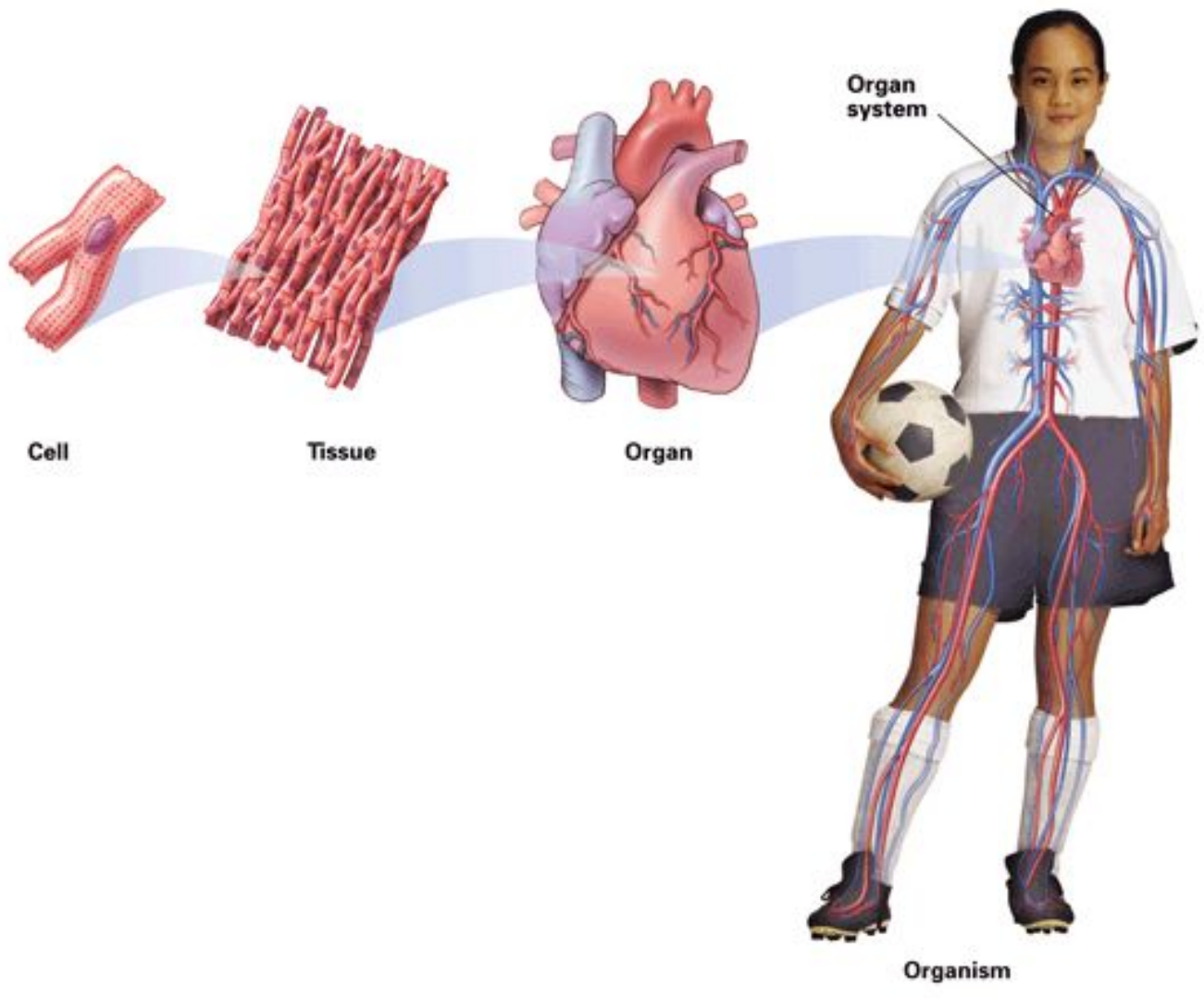


# Why are humans multicellular organisms?

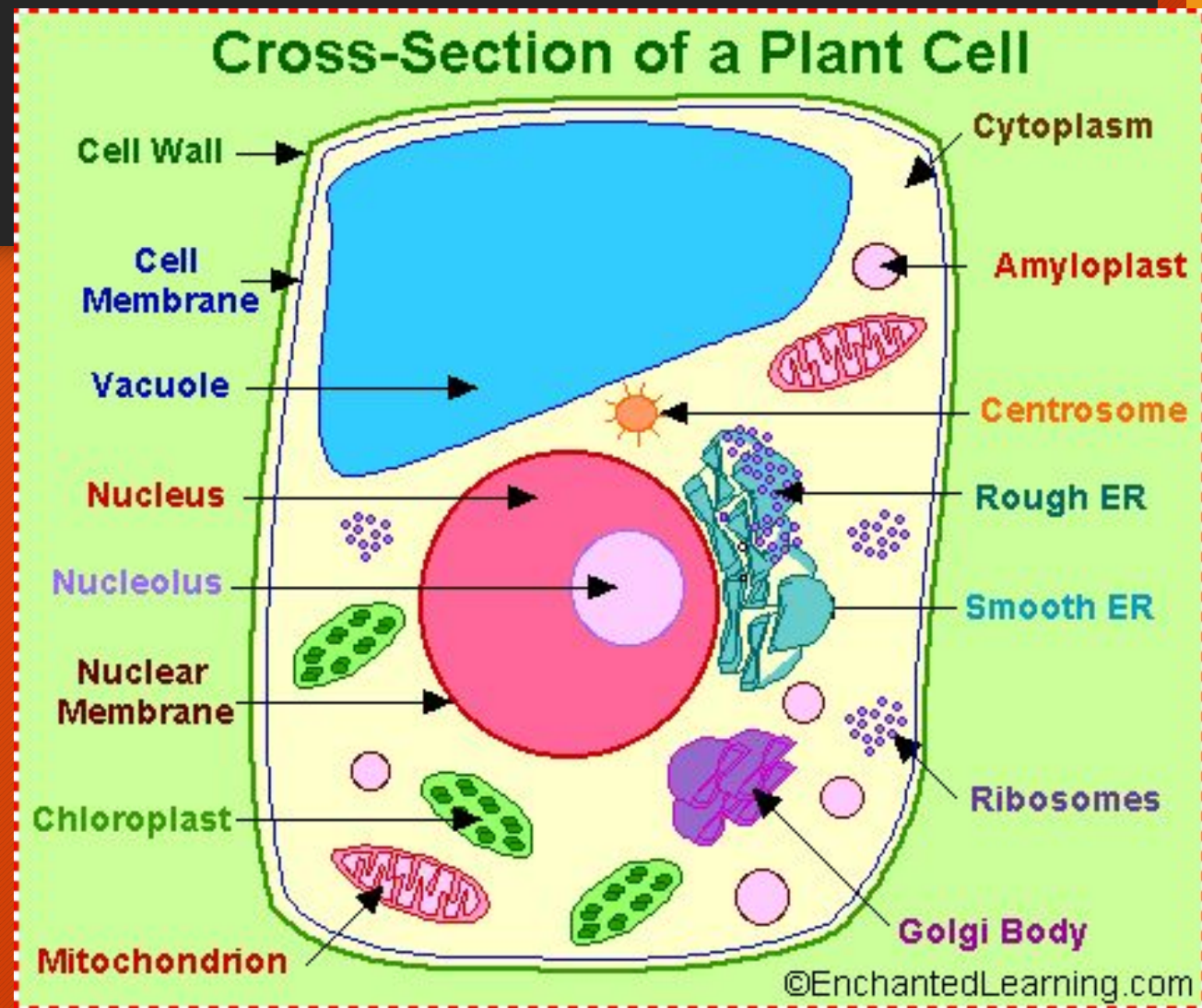


# CELL SPECIALIZATION

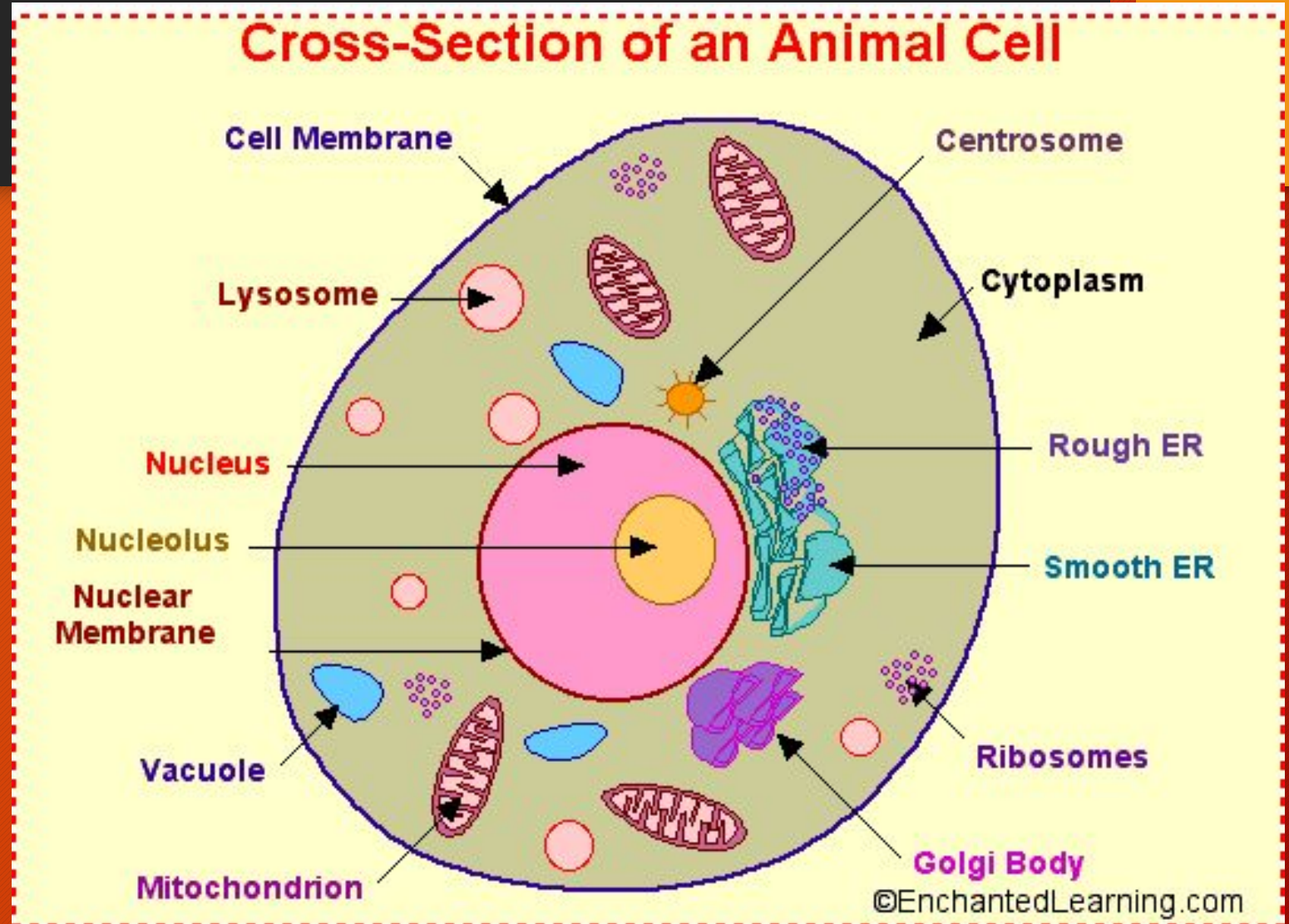
- Multicellular organisms need many different types of cells to carry out the same life processes. Each of these special types of cells has a different structure that helps it perform a specific function. Humans have many different types of cells with different jobs, such as blood cells that carry oxygen and nerve cells that transmit signals to all parts of the body. Cell differentiation is the process by which cells become specialized in order to perform different functions.



# Plant Cells



# Animal Cells



Four state the differences between plants and animal cells.

List the functions of each of the organelles of both the plant and animal cell.



# Summary

- What is Biology?
- Why is the study of Human and Social Biology important?
- What are the 7 characteristics of living things?
- What is the basic unit of life?
- What is cell specialization?
- State two differences between the plant cell and the animal cell

# Reminders

- DON'T FORGET THE HOME-WORK!
- READ YOUR TEXT BOOK!
- TEST NEXT WEEK ON CELLS!