Unit 6 and 7 SCA Study Guide

Life Sciences- Characteristics and Structure of Life

1. Explain that many of the basic functions of organisms are carried out by or within cells and are similar in all organisms.

-Students need to know the organelles within the cells and what their main function or job is. (ex. Nucleus is the control center of the cell)

-Science notebooks have diagrams of a plant and animal cell with the organelles identified on each one.

-Student textbook and science notebook

2. Explain that multi-cellular organisms have a variety of specialized cells, tissues, organs and organ systems that perform specialized functions.

-Students should know that different types of cells make up different types of tissues, which then make up organs and organ system. (Ex. The cells/ tissues in skeletal muscles are different than the cells/ tissues in the heart)

-Student textbook and science notebook

3. Identify how plant cells differ from animal cells (e.g., cell wall and chloroplasts).

-Students should be able to identify the main difference between a plant and animal cell. (Animal cell does not have cell wall and chloroplasts)

-Student textbook and science notebook have information about the main differences between plant and animal cells.

-Student textbook and science notebook

4. Recognize that an individual organism does not live forever; therefore reproduction is necessary for the continuation of every species and traits are passed on to the next generation through reproduction.

-Students need to be able to explain that most organisms reproduce sexually and that this type of reproduction passes traits passed from one generation to the next.

-Students can use textbook and science notebook

5. Describe that in asexual reproduction all the inherited traits come from a single parent.

-A single organism replicates itself, then splits. This causes the inherited traits to come from one parent. (A paramecium is a good example of a single-celled organism that reproduces asexually)

-Student textbook and science notebook

6. Describe that in sexual reproduction an egg and sperm unite and some traits come from each parent, so the offspring is never identical to either of its parents.

-Activities on punnentt squares

-Student textbook and science notebook

7. Recognize that likenesses between parents and offspring (e.g., eye color, flower color) are inherited. Other likenesses, such as table manners are learned.

-Students should be able to explain the differences between inherited traits and learned traits.

-Student textbooks and science textbook

Please check out my website for a list of helpful websites!

Unit 6- Cell Vocabulary

Cell- the basic unit of structure and function of all living things

Cell membrane- the thin covering that encloses a cell and holds its parts together

Organelle- the parts of a cell that carry out the cell's life processes

Nucleus- the organelle that controls all of a cell's activities

Chromosomes- threadlike structures, inside the nucleus, that contain information about the characteristics of a plant or animal

Cell wall- a rigid layer that supports and protects the plant cell

Cytoplasm- a jellylike substance that contains many chemicals to keep the cell functioning (plant and animal)

Chloroplasts- organelles that make food for the plant cell (where photosynthesis takes place)

Vacuole- an organelle that stores food, water or wastes (plant and animal cell)

Mitochondria- organelles that release energy from food

Diffusion- the process by which may materials move in and out of cells

Osmosis- the diffusion of water and dissolved materials through cell membranes

Tissue- cells that work together to perform a specific function

Organ- tissues that work together to perform a specific function

System- organs that work together to perform a specific function

Unit 7- Reproduction Vocabulary

Sexual reproduction- reproduction by an egg cell and a sperm cell uniting to form a single cell

Fertilization- the uniting of the sperm cell and egg cell.

Asexual reproduction- reproduction where offspring get all of its traits, or characteristics, from a single organism; it makes an exact copy of its genetic material and then divides.

Genes- pieces of DNA that carry all the information passed from parents to their offspring.

DNA- deoxyribonucleic acid; the genetic material of all organisms; made up of two twisted strands of sugar-phosphate molecules and nitrogen bases.

Chromosomes- threadlike packages of DNA and protein. Humans have 23 pair of chromosomes, or 46 in all.

Cell division- the division of a cell in reproduction or growth

Mitosis- a type of cell division where body cells makes more body cells

Meiosis- a type of cell division where reproductive cells are produced.

Dominant- describes a trait that covers over, or dominates, another form of that trait.

Recessive- describes a trait that is covered over, or dominated, by another form of that trait and seems to disappear.

Genetics- the study of heredity; the study of how traits are inherited through the actions of alleles.

Alleles- an alternate form that a gene may have for a single trait; can be dominant or recessive.