**On Level Reproduction & DNA Review**

* Define mutations: Changes in the DNA that may be helpful or harmful to the organism or have no effect at all.
* How is meiosis related to sexual reproduction? Meiosis produces the sex cells that join to form new offspring during sexual reproduction.
* Which part of the cell cycle inmoves the nucleus divides. Mitosis
* Describe or define a chromosome; has two chromatids, which are held together by a centromere.
* Define DNA – is molecule contains the information that determines the traits that a living thing inherits and needs to live. It contains instructions for an organism’s growth, development and activities.
* The backbone of a DNA molecule is made of which two components? Phosphate and sugar
* What determines the genetic code? the order of amino acids in a protein
* Facts about genetic mutation
  + Mutations are a driving force of evolution
  + Mutations cause changes in the genetic structure of an organism
  + Mutations can be caused by radiation, viruses, and mutagenic chemicals
* Define Gametes -types of cells are found only in organisms that reproduce sexually?
* A characteristic of both sexual and asexual reproduction? New cells are produced.
* Define asexual reproduction
* Why would a scientist use asexual reproduction to grow two offspring of a plant, instead of using sexual reproduction? The plants would be an exact genetic match.
* Why does sexual reproduction result in more genetic diversity than asexual reproduction?
  + Traits from two parents are combined.
* What is the purpose of replication? to produce copies of a DNA molecule
* If a sexually reproducing organism has 28 chromosomes in its body cells, how many chromosomes did it inherit from each parent? 14
* How can a substitution mutation affect a person’s traits? This mutation stops DNA from replicating.
* What is translation? the process by which mRNA directs the formation of proteins
* How might a deletion mutation in a gene affect the translation of that gene?
* The mutation would cause a different sequence of amino acids to be brought to the ribosome during translation.
* In what way is cell division important to keeping organisms healthy? Cell division replaces damaged cells with new cells.
* How does a multicellular organism grow larger? Cells in the organism divide, increasing the total number of cells.
* If the sequence is “replicating” the bases in one strand of DNA. What will be the base sequence on the strand that is formed during replication? Use Chargaff’s Rule A-T and C-G
  + Example ATTCGA stand formed TAAGCT
* Define Interphase as the period of cell growth and development prior to division.
* What is happens in anaphase to the sister chromatids: they separate from each other
* Know the correct order of phases of mitosis? PMAT
* What is crossing over - during meiosis, homologous chromosomes line up and exchange DNA.
* Which organisms go through mitosis? Plants and animals
* If one cell undergoes MITOSIS, how many and what type of cells are produced? 2 diploid cells
* After meiosis the resulting gametes **half** the number of chromosomes as the parent cell.
* Which of type of cells are diploid? skin cell, red blood cell, brain cell, nerve cell
* Which of the following are haploid? sperm cell and egg cell