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6/6/13

Semester 2 Final Review

Genetics & DNA:

1. Genes are a sequence of DNA molecules that codes for a specific amino acid in a protein. Alleles are the different sequences of DNA molecules that can make up the gene.
2. Heterozygous: chromosomes have different alleles  
   Homozygous: chromosomes have the same allele
3. Dominant, dominant, recessive
4. Haploid: 8 Diploid: 16
5. A gamete is a haploid sex cell that is formed through meiosis and is used in sexual reproduction, when two haploid cells fuse they form a diploid cell
6. DNA nucleotides are made of: Deoxyribose, a phosphate, and a nitrogen base; Thymine, Cytosine, Guanine, or Adenine.
7. DNA is located in the nucleus of eukaryotes, and in Prokaryotes it is floating in the cytoplasm.
8. The process where DNA copies itself is called Replication and it happens in Mitosis
9. During Replication the sequence CATTGCAT would be GTAACGTA.
10. There are 3 types of RNA
    1. tRNA- binds to the mRNA strand in the ribosome and attaches amino acids to the protein chain
    2. mRNA- is formed from the DNA and carries the genetic information from the nucleus to the ribosome
    3. rRNA- forms part of the ribosome

Evolution and Classification:

1. Darwin noticed that the flinches have different sized beaks depending on the type of seeds that they eat.
2. Natural Selection states that specific traits will have an advantage in the environment and that over time; these traits will become more prominent in the species.
3. 1. Fitness: how well adapted an organism is for its environment
   2. Survival of the fittest: the organisms that are the best adapted will reproduce more and gradually drive organisms that aren’t as well adapted extinct
   3. Adaptation: any change that gives an organism an advantage in its environment
   4. Evolution: the gradual change over time of a species gene pool so it is better adapted for its environment
4. A gene pool is a collection of all the different genes of a species in all of its forms
5. A mutation is any change in an organisms DNA. Mutations could be caused by random, viruses, radiation, bacteria, and/or chemicals.
6. A Primate is a mammal with, opposable thumbs and a well-developed brain.
7. A fossil is the remains of an animal that have been dug up.
8. Scientist name living organisms based on their traits and how they differ from currently classified organisms. The names give information about what species the animal is related to.