

## **Evolution Test Study Guide**

**Questions that will be handed in (use the lecture notes on our class website do NOT use information from outside sources or other websites!);**

1. What is a scientific theory? How does it differ from the way we use theory in our everyday lives?
2. What is the difference between a scientific theory and a scientific law?
3. What is natural selection AND how does it work?
4. Give me 3 examples of adaptations in organisms and how those adaptations help those organisms survive in their environment (only one can deal with color).
5. What is a species?
6. What is a clade? AND what do cladograms show us?
7. Why is variation important within populations?
8. What is homologous structure? How is it different from an analogous structure
9. Give one example for an analogous structure AND one example for a homologous structure.
10. Who was Charles Darwin and what did he do that was so important?
11. What is evolution? Why is it important that we study evolution?

**Other stuff you need to know for the test..... Check online for the powerpoint lectures, ALL the information you need is either on those or your worksheets!!!**

1. The differences between scientific facts, hypotheses, laws, theories and observations as well as the relative “certainty” of each.
2. What natural selection is and how it works. As well as how it affects organisms at the genetic level, increasing gene frequencies of more adapted organisms while decreasing the frequencies of gene of those that are “less fit” to be around.
3. Understand what adaptations and fitness are and how they related to natural selection and evolution as a whole.
4. Understand how and why scientists create phylogenetic trees (family trees) and cladograms and how they show evolutionary relationships among different organisms.
5. Be able to describe relationships among organisms using a cladogram (for example; using a cladogram you should be able to tell me what different characteristics different organisms have and share).
6. Know what homologous and analogous STRUCTURES are and examples of each.
7. Understand how genetic drift and mutations increase variation in populations of organisms.
8. Know who Charles Darwin was, the observations he made on the Galapagos islands with the finches and why his work was important to evolutionary theory.
9. Know the following definitions; evolution, natural selection, adaptations, fitness, clade, phylogenetic tree, species, relative dating, absolute dating, law of superposition, radiometric dating, convergent evolution, analogous structure, homologous structure.
10. Know what theory, law, hypothesis, observation and fact are in SCIENCE (not in everyday life-usage).
11. What evolution is and the importance of studying evolution.