***Vocabulary Review***

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - Any difference among individuals of the same species.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - Any heritable trait that increases an organism’s fitness.
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- changes in genetic frequencies over time (change in alleles over time).
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - The change in genetic traits (allele frequency) of a species over many generations.
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- unrelated organisms independently evolve similar traits as a result of having to adapt to similar environments.
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - a group of organisms that shares enough genetic information to make offspring.
7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - The ability to survive and reproduce.
8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- Survival of an individual that is genetically fit for its environment.
9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - errors in a DNA sequence can give rise to new traits.
10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - The amount of time it takes for half of the parent element to decay into a different element.
11. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- A record of living organisms over the history of the Earth.
12. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- calculating the exact age of a fossil or rock by comparing the original form of an element to the form after decay.
13. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - Structures that have closely related functions but do not derive from the same ancestral structure.
14. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - Using the order of the layers of sedimentary rock to estimate the age of any fossils in the rock.
15. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - Nonfunctional remains of organs that were functional in ancestral species.
16. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - Speciation that occurs in a different geographical areas.
17. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- Sediments and rocks pile on top of each other over time. Younger - top. Older - bottom.
18. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - Speciation that occurs in the same geographical area.
19. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- variations on a structural theme that was present in their common ancestor
20. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- organisms independently evolve similar traits as a result of having to adapt to similar environments or ecological niches.
21. Vestigial Structures
22. Homologous Structures
23. Analogous Structures
24. Half-life
25. Convergent Evolution
26. Divergent Evolution
27. Allopatric speciation
28. Sympatric speciation
29. Mutation
30. Radioactive Dating
31. Geologic time
32. Evolution
33. Species
34. Adaptation
35. Natural Selection
36. Fitness
37. Law of Superposition
38. Genetic Variation
39. Speciation
40. Relative Dating

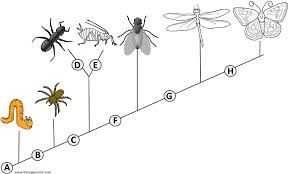
**Honors Study Guide: Evolution**

***Define the following words:***

1. Bell Curve:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Gene pool:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Fossils:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Geographic Isolation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Gradualism:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Punctuated Equilibrium:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. Adaptive Radiation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Short Answers***

1. What are Darwin’s four postulates? Be able to apply them to a situation.
2. What are the main requirements of speciation? Be able to apply them to a situation.
3. Describe how genetic variation is produced.
4. Two wolves are compared. Wolf “A” lived for 21 years and had 5 pups, 4 of which survived into adulthood. Wolf “B” lived 18 years and had 5 pups that all survived to adulthood. Which wolf is more fit? EXPLAIN.
5. A tiny four-legged creature competes with others for food. One day it decided to stretch its neck to reach the nice juicy leaves on trees. This creature was more successful in obtaining food, lived longer, and passed his long neck onto multiple offspring. Evolutionary biologists claim this story is incorrect. Give an alternative explanation (that includes the process of natural selection) for how giraffes’ evolved a long neck.



1. What do the letters on the cladogram represent?
2. Which two organisms are the most closely related on the cladogram?