Evolution Review KEY

1. What does the fossil record provide? that groups of organisms have changed over time

2. Why are there physical differences between Darwin's finches? a feeding adaptation due to competition for food in their environment.

3. What can DNA sequences show you? If 2 species are closely related

4. List the taxons of classification in order from most general to specific. Domain, kingdom, phylum, class, order, family, genus, species

5. What can lead to the extinction of a species? Lives in a rare habitat, reproduces slowly, short lifespan

6. What should you do if just discovered a new species? Continue to gather observations and compare the organism to more known organisms.

7. What are structural similarities? Similar body parts in different organisms

8. What did Darwin observe on the Galapagos Islands? an increased species diversity of finches somewhat similar species, with traits that suited their particular environments
   What are his conclusions? descended from a common ancestor. Heritable variation and natural selection, Natural selection on beak size and shape is driven by available food.

9. Darwin's conclusions were not based on….. DNA evidence

10. How are bacteria able to evolve so quickly? bacteria reproduce rapidly

11. What is natural selection? Possession of **inherited** adaptations that maximize fitness.
    What are the results of natural selection? changes in the inherited characteristics of a population *not individual

12. How is the approximate age of fossils determined? Oldest in the lowest layer *start from the bottom

13. What 3 ideas did Lamarck have about evolution? inheritance of acquired characteristics, desire to change and use/disuse *review what it means

14. What is an adaptation? **Inherited** characteristic that makes more fit

15. What is fitness? Combination of physical traits and behaviors (ability) that leads to survival and reproduction (babies)

16. What is survival of the fittest? lions prey on a herd of antelopes, some antelopes are killed and some escape ----pepper moths (variation in colors)

17. Name 2 sources of genetic variation. Gene shuffling (egg/sperm) and mutations (change in DNA)

18. What is a vestigial structure? Organ with no use (function). Give 3 examples. Whales with pelvis & femur, hip bones in snakes, human appendix

19. What is reproductive isolation? 2 species cannot interbreed (seasons, behavior, geographical, time)

20. What is a cladogram? Diagram showing evolutionary relationships between organisms

21. What is coevolution? Give an example. A flower and a pollinating insect, evolve in response to changes in each other over time *mutualism

22. What is convergent evolution? Unrelated species resemble each other due to common environments or pressures. *evidence analogous structures

23. Give an example of convergent evolution. Shark, penguin, and dolphin all adapted similar body shape because they live in the same environment

24. What is adaptive radiation/divergent evolution? Groups of species evolve into several different forms that live in different ways. *evidence homologous structures (common ancestry)

25. Give an example of adaptive radiation. Finches with different beaks.

26. How do mass extinctions lead to rapid evolution? by making new habitats available to them and the organisms that survive will then reproduce

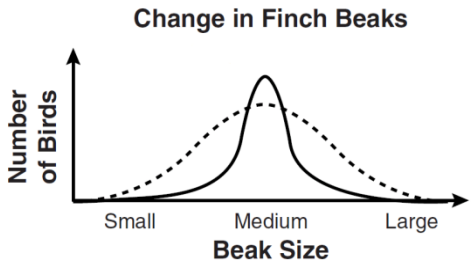
27. How did Eukaryotic cells evolve? Describe the Theory. Endosymbiotic Theory: Eukaryotes evolved from the symbiosis of several cells. Mitochondria and chloroplasts may be descended from small aerobic and photosynthetic prokaryotes. Prokaryotes began to live inside larger cells

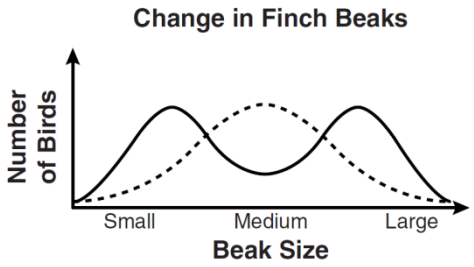
28. List 3 domains. Eukarya , Archaea, Bacteria

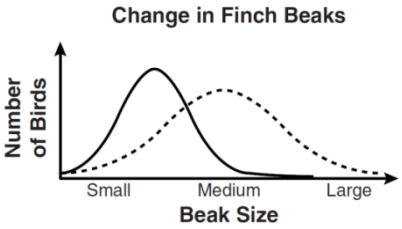
29. Give examples in each domain. Eukaryotes (mammals, birds, insects); Archaea- extreme bacteria; Bacteria-common bacteria

30. What do the kingdoms Protista, Plantae, Fungi, and Animalia have in common? All Eukaryotes (cells with a nucleus) in Domain Eukarya

31. Draw 3 graphs that represent natural selection in a population and EXPLAIN.







32. What biomolecule is inside the capsid of a virus? Nucleic Acid (DNA/RNA)