Evolution Study Guide

Vocabulary:

Complementary base pairing
Convergent evolution
Directional selection
Divergent evolution
Disruptive selection
Deoxyribonucleic acid (DNA)
Double helix
Evolution
Fitness
Gene flow
Gene pool
Genetic drift
Gradualism
Macro-evolution
Micro-evolution
Mutation
Natural selection
Nitrogenous bases
Non-random mating
Punctuated equilibrium
Species
Speciation
Stabilizing selection
Sugar-phosphate backbone

Can You...?:

1. Describe the basic structure of deoxyribonucleic acid (DNA) using the following information:
   - double helix
   - sugar-phosphate backbone
   - nitrogenous bases (A, T, C, G)
   - complementary base pairing (A=T, C≡G)

2. Explain the role of DNA in evolution

3. Explain the theories of evolution prior to Darwin (i.e. Lamarck and Erasmus) and after Darwin (i.e. Russell-Wallace, Eldridge and Gould)

4. Describe how the five agents of micro-evolution (mutation, genetic drift, gene flow, non-random mating, and natural selection) effect the gene pool

5. Explain how understanding a gene pool can help us to understand evolution

6. Explain the 3 types of selection and how they show that evolution is occurring

7. Describe how selective pressures can alter a gene pool

8. Differentiate among and give examples of convergent evolution and divergent evolution

9. Explain how convergent evolution and divergent evolution are related to speciation

10. Compare the gradual change model with the punctuated equilibrium model of evolution

11. Explain how the four types of evidence support the theory of evolution

Life Sciences 11

Taxonomy Study Guide

Name:

Key-words:

Taxonomy
Binomial nomenclature
Domain
Kingdom
Phylum
Class
Order
Family
Genus
Species
Eukaryotic
Prokaryotic
Unicellular
Colonial
Multicellular
Motile
Sessile (non-motile)
Autotrophic
Heterotrophic
Asexual reproduction
Sexual reproduction
Dichotomous key
Archaebacteria
Aerobe
Obligate anaerobe
Peptidoglycan
Cellulose
Chitin
Eubacteria
Protista
Plantae
Animalia
Fungi
Methanogen
Halophile

Key-Concepts:

- Who created the classification system and how does it work
- Know what a scientific name represents in terms of classification
- Read, use and make a dichotomous key
- Compare organisms based on their classification
- The 3 domains and 4 kingdoms and their defining characteristics
- An example organism for each domain and kingdom

Name: _____ Date: _____

Evolution Reminders

1. What does it mean to say that an animal is the "most fit"?

2. What are the 3 possible types of selection? Draw the graphs!

3. Define "species" and "population"

4. Define "gene pool"

5. Compare and contrast gradualism and punctuated equilibrium. Draw an example of each.

6. Who are these people and what did they do: Jean Baptiste Lamarck, Charles Darwin, Eldredge and Gould, Alfred Russell Wallace?

7. Describe the 5 ways to change a gene pool

8. Define "speciation"

9. Compare and contrast micro and macro evolution

10. Why are these examples used in evolution: Peppered Moth, Galapagos Finches, Giraffes' necks? Describe each of these examples

11. Describe the idea of "Inheritance of Acquired Characteristics". Who came up with it, what is the mechanism behind it, and what are some flaws?

12. What does DNA have to do with evolution?

13. The accumulation (build-up) of characteristics that improve a species' ability to survive and reproduce is called adaptation! What is the mechanism for adaptation?

14. Compare and contrast convergent and divergent evolution.

15. Describe 4 types of evidence which support the theory of evolution.