Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_

**NATURAL SELECTION STUDY GUIDE**

1. Describe each of the forms of evidence of evolution?

2. Define *Artificial Selection –*

3. What are the three points of the theory of natural selection?

4. Darwin’s theories were developed during a trip to what island? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Describe each of these evolutionary forces

*Gene Flow –*

*Genetic Drift –*

*Non-random mating –*

*Natural selection –*

*Mutation –*

6. Who does natural selection effect? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. Define *gene pool –*

8. Define *microevolution –*

9. What 5 conditions must be met for the Hardy-Weinberg Equilibrium to be true?

10. Define *fitness –*

11. What type of inheritance produces variation? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12. Define *bottleneck effect –*

13. Define *founder effect –*

14. Describe the three modes of selection and draw the corresponding graph.

**15. Solve the following Hardy-Weinberg Problems**

1. The dominant allele frequency is 0.7. What is the frequency of homozygous dominant, heterozygous, and homozygous recessive?

2. The recessive allele frequency is 0.1. What is the frequency of homozygous dominant, heterozygous, and homozygous recessive?

3. In a population of 1000 grasshoppers, 120 show the recessive trait. What are the dominant and recessive allele frequencies? How many of these organisms would be heterozygous?

4. In a population of 500 honeybees, 475 show the dominant trait. What are the dominant and recessive allele frequencies?