Unit F: Evolution Name: _____

Activity 97 – Origins of Species Period: _____

PURPOSE: (40pts)

I can *give examples* of plant and animal **adaptations** that increase the success of an organism during an **environmental** change.

PROCEDURE:

1. Complete the Anticipation Guide *BEFORE* you read the activity.
2. Read pages F-38 – F-42 in your book.
3. Answer all analysis questions at the end of this worksheet.

ANTICIPATION GUIDE:

Before starting the activity, mark whether you agree (+) or disagree (–) with each statement below. Then as you read, mark whether you agree (+) or disagree (–) with each statement below. Under each statement, explain how the activity gave evidence to support or change your ideas.

Before **After** **(+ = Agree) (- = Disagree) (16ot, 2pt ea)**

_____ _____ **1.** There is no variation within a species, only between species.

_____ _____ **2.** All genetic variation is due to mutations.

_____ _____ **3.** Harmful mutations often get passed on to the next generation.

_____ _____ **4.** A mutation can never be helpful to a species.

_____ _____ **5.** Natural selection means the organism that is best adapted to its environment is more likely to survive.

_____ _____ **6.** Two organisms are considered to be different species if they cannot successfully reproduce with each other.

_____ _____ **7.** Darwin observed beagles to develop his theory of evolution.

_____ _____ **8.** Scientists today depend mainly on observations of physical features of organisms to determine if species are related.

ANALYSIS QUESTIONS: (24pt, 4pt ea)

1. In a sentence, *define* an **adaptation** and a **mutation**.

a. Adaptation

b. Mutation

2. *Explain* how **adaptations** enable the **evolution** of a new species to occur.
Use the story of the cichlids in the reading to help you explain your ideas.

3. Think about similarities and differences among ten different people you know.
a. What are some physical features that are likely to be a result of genetic differences?

b. What are some physical features that may not be a result of genetics, but are a result of some other factor(s), such as development from birth to adulthood?

c. What are some physical features that might be a result of genetics **and** other factors?

4. Imagine there was an **environmental** change such as larger seeds appearing in the environment. Which **mutations** would be **helpful** to a bird population in the ecosystem? Which **mutations** would be **harmful?**

Helpful:

Harmful: