**Speciation Worksheet**

Name: \_\_\_\_**KEY**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Speciation** - the formation of new and distinct species in the course of evolution.

**Reproductive Barriers:**

Prezygotic

1. Habitat Isolation

2. Temporal Isolation

3. Behavioral Isolation

4. Mechanical Isolation

5. Gamete Isolation

Postzygotic

1. Zygote mortality

2. Hybrid sterility

Modes of Speciation

Allopatric Sympatric

Geographic Isolation leads to speciation differences appear within the population

that lead to a new species

Speed/Tempo of Speciation Category of Speciation

Punctuated Equilibrium Phyletic

Big bursts of rapid change followed by

times of little change A 🡪 B 🡪 C

Gradualism Divergent

slow gradual change over time B

A

C

**Questions:**

1. What happens during the process of speciation?

Organisms develop differences that eventually prevent them from interbreeding

2. If animals are in the same species, they can do which of the following?

a. mate

b. produce a zygote

c. successfully produce future generations of offspring

d. all of the answers are correct

3. A pre-zygotic barrier prevents which of the following?

a. A zygote from developing into viable offspring

b. An egg from being fertilized

c. Animals from interacting with one another

d. All of the answers are correct.

3. Use the key below to identify the type of reproductive barrier being described.

1. Habit isolation
2. Temporal isolation
3. Gametic isolation
4. Behavioral isolation
5. Mechanical isolation

\_c\_ Gametes fail to fuse

\_c\_ The cheetah egg and hyena sperm don’t recognize each other

\_e\_ The anatomical structures of a blue whale are different than a steelhead salmon.

\_d\_ Blue footed booby mating dance is not recognized by the frigate bird.

\_b\_ One lizard mates in the spring and another mates in the fall.

\_a\_ The Catskills separate two populations of beetles.

\_b\_ Male flowers of cherry trees produce pollen before the flowers of the pear trees open.

\_d\_ The female bird of paradise does not recognize the male’s dance.

\_e\_ Male reproductive organs of insects vary greatly in size and shape.

\_e\_ The structure of the trumpet flower restricts access of pollinators without specific adaptations.

4. According to the Punctuated Equilibria model,

a. natural selection is unimportant as a mechanism of evolution

b. given enough time, most existing species will branch gradually into a new species

c. most new species accumulate their unique features relatively rapidly as they come into

existence, then change little for the rest of their duration as a species.

d. most evolution occurs in sympatric populations

e. speciation is usually due to a single mutation