Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
Date Due: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date handed in: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Speciation Activity Worksheet**

Video:

1. What type of animal is shown in the video?

2. What kind of isolation has this species experienced?

3. What do the different populations have to adapt to? Why do they come in different colors?

Paint Card example:

1. What did the different paint samples (colored papers) represent? Why are there so many different colors?

2. What do the two ends of the spectrum (green and purple) represent? Would they be able to ‘mate’?

3. How is this like the salamanders example?

Beads example:

3. What do the colored beads represent, and what do they determine?

|  |  |  |
| --- | --- | --- |
| **# of alleles:** | **White** | **Red** |
| **Entire Class** |  |  |
| **After Physical Separation** | Area 1:  Area 2: | Area 1:  Area 2: |
| **10 random on an island:** | Trial 1:  Trial 2: | Trial 1:  Trial 2: |

*Consider the original concentration of alleles (“entire class” data) compared to the other data sets.*

4. Physical separation: Let’s say the alleles were two forms for hair growth in these animals . Red is for longer hair and white is for shorter hair.

a) What would happen to the species if area 1 is cold and area 2 is hot?

b) What would happen to the species if area 2 is cold and area 1 is hot?

c) \*Remember: Heat is an example of a selective \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Some other examples include:

5. Behavioral separation: Now let’s say the alleles are for two mating styles. Animals with 2 white alleles have one behavior, and those with two red alleles have another. Animals with 2 white alleles cannot mate with those with 2 red alleles.

a) What are some examples of things that could separate them behaviorally? (not let them mate)

b) What do you think would happen to the animals with 2 white alleles if they were in an area with animals that had mostly red?

6. Island: What is the population like after 10 random individuals end up on an island? What do you think will happen to the species in terms of fur length and mating style?

a) Trial 1-

b) Trial 2-

7. Explain in your own words what speciation is.

8. Imagine that this lizard is food for owls and bobcats. It has slight variations for skin color, ranging from yellowish to brighter green. The population gets separated by a river. On one side of the river, it is very dry grassland. On the other side, there is more rain and it is very green.

A) Over time, what might happen to the populations on each side of the river?

B) If the river dries up 1,000 years later and they are able to hang out in the same place again, will they be able to mate with each other? Explain.