

Toothpick Fish Make Up Lab

Website: <http://tinyurl.com/toothpickfishlab>

1. Read through the text on the left side under, "Question: How does natural selection affect allelic frequencies."
2. Answer the questions below.
3. Complete the lab assignment.

Pre-Lab Questions:

1. How does the predator select its prey?
2. The gene represented by the alleles A and a shows what type of dominance?
3. Using the guide, what color would an ant be if the genotype was:

AA _____ Aa _____ aa _____

Lab:

- In this lab, you can choose an environment and choose which ants to have in the environment. We will simulate natural selection.
- Choose ROCKY ENVIRONMENT.
- Change the allele frequencies at the top of the page to $A = 0.5$ and $a = 0.5$. This means that 50% of the alleles in the population are A and 50% of the alleles in the population is a .
- In the ROCKY ENVIRONMENT, which ant do you think will survive best? _____ Why?

- Record the color of the environment. Record the frequencies of A and a . Record the number of ants of each genotype before natural selection. Press NATURAL SELECTION. Record the number of ants after natural selection. Record data in table.
- Repeat the above process for 5 generations.
- Answer the Post Lab Questions.

Glue Header Here

Data:

Generation	Allele Frequencies		Before Natural Selection			After Natural Selection		
	A	a	AA	Aa	aa	AA	Aa	aa
1								
2								
3								
4								
5								

Post-Lab Questions:

1. Which genotype was "most fit" for the rocky environment? _____ Why?
2. Over time, did allele A increase, decrease, or disappear? Why or why not?
3. Over time, did the allele a increase, decrease, or disappear? Why or why not?
4. What trend did you see in the rocky environment in terms of ant color?
5. Hit the RESET button. Look at the different environments available (Desert, Grassland, and Urban). In which of these environments might the Aa ants survive best? _____ In which environment might the aa ants survive best? _____
6. How does this lab illustrate natural selection?

*Place this lab sheet in your notebook in place of Toothpickfish