Student Page

Survival of the Flattest

Name:_____ Period:_____

Background*:* Natural selection is sometimes referred to as survival of the fittest. In any given environment some individuals within a population contain specific traits that make them better able to survive and reproduce in an environment. By reproducing more frequently those individuals pass on their genes to future generations. Overtime the frequency of the alleles that code for that specific trait (which makes the individual better fit) will increase in the population. This change over time is evolution.

Purpose: To see how natural selection might change a population.

Materials: cup with dots, tweezers, clock, different surfaces

Prediction: Which color will be picked up least often from the table? Which color will be picked up the most?

Procedure:

1. Shake the dots in the cup.
2. Number your surfaces 1-4 and describe each in the data section below.
3. Put surface #1 on your table.
4. Pour out the dots on the surface. Have one person time the other two or three people as they pick up the dots with tweezers.
5. When 30 seconds has gone by, stop.
6. Count the number, type of paper and color of dots that were picked up. Count the number of each color and type that was not picked up. Put them all back in the cup.
7. Repeat on three different surfaces.

Data:

Surface #	Description of Surface
1	
2	
3	
4	

Color of Dot	# on Surface 1	# on Surface 2	# on Surface 3	# on Surface 4

Analysis:

1. Which dots were most picked on the table? Why?

2. Which were least picked on the table? Why?

3. Did the results on the other surfaces support the results from #1 and #2? Why or why not?

4. What is natural selection? How is it driven by the environment? Give an example.

5. Artificial selection is driven by human interaction instead of the environment. Natural populations contain variation or diversity. Humans take advantage of this diversity and select for traits they find desirable. They then breed organisms that display the desired trait. Over time the frequency of the trait increases in the population. What are 2 examples of artificial selection you can think?

6. Describe two factors in the environment that act as natural selectors for dots.

7. What factors in the human environment are selecting us?

8. Why do factors in the environment like temperature and weather not act as severe pressures for natural selection on humans?

9. What could the changing of the surfaces represent in an actual environment?

10. If you could select out a gene or genes in the human population, what would it/they be and why?

Conclusion: Please explain 2 things you learned in complete sentences.