

Survival of the Fittest

Introduction:

Within a population, organisms will vary. Charles Darwin stated that in the struggle for existence, those variant organisms that have favorable variations are "better adapted" to their environment and will survive and reproduce in greater numbers. Favorable variations may mean that they are faster, or stronger, or able to eat different types of food, or better camouflaged to avoid predators. In this lab you will simulate the effect of predation by a hawk on a large population of assorted mice. Your population of mice will consist of black, white, and speckled mice. You will represent the hawk.

Objectives:

- to simulate the effect of hawk predation on the appearance of mice
- to simulate the natural selection of traits

Materials: The materials used in this experiment were:

1. large sheet of newspaper 4 hawks (students)
2. 30 white mice (paper squares) 1 petri dish
3. 30 speckled mice (paper squares)
4. 30 black mice (paper squares)

Procedure: The procedures used in this experiment were:

1. Open your sheet of newspaper and place it on the lab table. This will serve as the environment for your mice.
2. Place the petri dish on the other side of the lab table. This will be the nest.
3. Select one person from your group to act as a hawk. This person should stand by the nest.
4. Spread the mice on their environment evenly.
5. The hawk now swoops over and has 1 minute to pick up as many mice as possible. The hawk may only pick up one mouse at a time and must place it in their nest (a petri dish) before flying back to pick up another. The goal is to pick up as many mice as possible in the time period.
6. When the time is up, record the number of mice left in the environment in the data table below.
7. Repeat this procedure for each person in the lab group or 4 times.
8. After all data is collected, construct a bar graph. Be sure to label the graph and its axes.

Data:

Table 1:

| | White mice | Speckled mice | Black mice |
|----------------|-------------------|----------------------|-------------------|
| Hawk #1 | | | |
| Hawk #2 | | | |
| Hawk #3 | | | |
| Hawk #4 | | | |
| Total | | | |

Analysis:

Conclusion: