Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

The Story of the Peppered Moth

In Manchester, England in 1845 peppered moths were a common insect. In this area, most of these insects were light colored with dark spots and the trees in the area were covered with light-colored, spotted lichens. As the industrial revolution progressed, the lichens died as soot covered the tree trunks. The trees looked darker, and a darker coloration of moth became more common. By 1890, 45 years later, the dark variety of moth was very common and the light colored moth with dark spots became relatively rare.



Consider: What happened to the moth population in those 45 years?

What the correlation is between the tree and moth colors?

Other questions: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Peppered Moth Activity

Materials: Newspaper

Dots punched out of newspaper

White paper

Holes punched out of white paper

Stopwatch or clock

Chart to collect data

Procedure:

1. Place a sheet of white paper on the table.
2. One person spread 30 white circles and 30 newspaper circles over the surface while the other person isn't looking.
3. The "predator" will then use forceps to pick up as many of the circles as (s)he can in 30 seconds.
4. Place your caught prey in a pile off to the side. Record your data in the charts below after each trial.
5. Take turns being the “predator” and the person who spreads the dots.
6. This procedure will be repeated as shown in the chart below, changing the background to newspaper for the second set of trials.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Populations Start on **White** Background | | | | | |
|  | Starting Population | | Final Population (# of set still surviving on the background) | |  |
| Generation | Newspaper | White | Newspaper | White | Double these numbers to get your starting population for the next generation |
| 1 | 30 | 30 |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| 4 |  |  |  |  |
| 5 |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Populations Start on **Newspaper** Background | | | | | |
|  | Starting Population | | Final Population (# of set still surviving on the background) | |  |
| Generation | Newspaper | White | Newspaper | White | Double the final population to get your starting population for the next generation |
| 1 | 30 | 30 |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| 4 |  |  |  |  |
| 5 |  |  |  |  |

Discuss:

Find and describe a trend in how the population of moths changed in each generation for both the newspaper and the white moths.

What moth coloration is the best adaptation for a newspaper background? How do you know?

Which type of prey was best adapted for its environment? Explain.

  How does this activity relate to natural selection?

Extend:

Create your own example of natural selection in a population. You may either research a population and report the selective pressures that caused its change over time, or you may create a fictional population and scenario.

Be sure to include the selective pressures and the result of this change.