Name **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** Date **\_\_\_\_\_\_\_\_\_\_\_**

**Natural Selection Lab Activity**

**Introduction**

In this lab activity, you will use white and colored paper circles to represent two kinds of prey. You will act as the predator, with forceps to “catch” the prey. First, you will try to catch the prey on a white background, and then you will try to catch the prey on a newspaper background.

**Objective:** To conduct an activity that simulates the process of natural selection.

**Materials**

* hole punch
* newspaper
* paper cup
* sheet of white paper
* forceps
* stopwatch/clock with second hand

**Procedure**

1. Take a piece of white paper and place it over a sheet of printed newspaper. You may want to tape the ends to keep the papers together.

2. Use the hole punch to make 100 circles (50 white/50 newspaper). Place the circles in the paper cup. Place your hand on top and shake them around so they are thoroughly mixed.

3. Have your partner spread all the circles onto a sheet of newspaper while you are not looking.

4. When the circles have been spread out, have your partner time you for 15 seconds while you use the forceps to pick up as many circles as you can. Place all circles that you pick up into the paper cup.

5. Count the number of printed circles and plain circles placed in the cup.

6. Repeat steps 3–5 two more times and record results in data table.

7. Spread out white paper instead of newspaper. Repeat steps 3–5 two more times, using the white paper. Record results in the data table.

8. Complete the Analysis and Conclusion sections of the lab.

**Data Table**

|  |  |  |
| --- | --- | --- |
|  | **Newspaper** | **Plain White Paper** |
| **Trial Number** | **# of printed circles** | **# of plain circles** | **# of printed circles** | **# of plain circles** |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| Average |  |  |  |  |
| Percent that Died |  |  |  |  |
| Percent that Survived |  |  |  |  |

**Analysis**

1. Calculate the average in your data table by adding the numbers in each column and then dividing by 3.

2. Calculate the Percent that Died by dividing the average by 100.

3. Calculate the Percent that Survived by subtracting the percent died from 100.

4. How did the color of the prey affect their survival?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. How is this activity an example of natural selection?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Conclusion**: Based on your results, what conclusion are you able to make?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Answer KEY**

**Natural Selection Lab Activity**

**Data Table** *On the newspaper background, there should be a greater percent of the “printed circle” prey that survived. On the white paper background, there should be a greater percent of the “plain circle” prey that survived.*

|  |  |  |
| --- | --- | --- |
|  | **Newspaper** | **Plain White Paper** |
| **Trial Number** | **# of printed circles** | **# of plain circles** | **# of printed circles** | **# of plain circles** |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| Average |  |  |  |  |
| Percent that Died |  |  |  |  |
| Percent that Survived |  |  |  |  |

**Analysis**

1. Calculate the average in your data table by adding the numbers in each column and then dividing by 3.

2. Calculate the Percent that Died by dividing the average by 100.

3. Calculate the Percent that Survived by subtracting the percent died from 100.

4. How did the color of the prey affect their survival?

*Prey organisms were more likely to survive when their color blended in with the environment.*

5. How is this activity an example of natural selection?

*This activity is an example of natural selection, because it demonstrates survival of the fittest. The prey organisms that were camouflage were more likely to survive.*

**Conclusion**: Based on your results, what conclusion are you able to make?

*Answers will vary, but the student should relate the results of the activity to survival.*