Name _____ Date _____ **PD**_____

SAS website

http://www.pdesas.org/module/content/resources/16280/view.ashx

S-8-3-1

Natural Selection Lab Activity

Feeding the birds

Name _____ Date _____ **PD**_____

S-8-3-1**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.

Natural Selection Notes

Vocabulary

- **Competition:** Living things striving in each species compete for food, living space, mates, and other resources.
- **Adaptation—**A change in an organism over time that helps it to survive in its environment.
- **Structural—**body structure (e.g., a porcupine's quills).
- **Functional—**the way body functions are carried out (e.g., how we use our lungs to breathe).
- **Behavioral—**how living things react to the environment (e.g., how wolves hunt in packs).
- **Natural selection:** Living things that are best suited to their environment are most likely to survive and reproduce. They pass their traits to their offspring. This causes species to change over time.
  Species that are alive today descended, with changes in their traits, from species that lived in the past.

Basic Concepts of Natural Selection

- Individual living things are different from each other. This is called *variation*.
- Variation is important because without it, populations cannot evolve over time.
- Living things produce more offspring than can survive, and many that survive do not reproduce.
- Living things compete for limited resources, such as food and shelter.

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S-8-3-1**Natural Selection Lab Activity**

Lab Activity Feeding the birds

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 two colored papers and place it on your desk
2. Use the hole punches (100 circles) and 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 paper 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 each colored circles and plain circles placed in the cup.
6. Repeat steps 2–5 two more times and record results in data table.
7. Spread out another colored paper. Repeat steps 2–5 two more times, using the white paper. Record results in the data table.
8. Spread out white paper instead of the colored paper. Repeat steps 2–5 two more times, using the white paper. Record results in the data table.
9. Complete the Analysis and Conclusion sections of the lab.

Data Table

	Plain RED Paper				**Plain WHITE Paper**				**Plain GREEN Paper**			
Trial Number	**# of color circles ( )**	**# of plain circles**	**# of color circles ( )**	**TOTAL Each column**	**# of color circles ( )**	**# of plain circles**	**# of color circles ( )**	**TOTAL Each column**	**# of color circles ( )**	**# of plain circles**	**# of color circles ( )**	**TOTAL Each column**
1												
2												
3												
TOTAL Each column												
Average												
Percent that Died												
Percent that Survived												

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S-8-3-1**Natural Selection Lab Activity**

Analysis

a) **TOTALS: total each row (going across) per paper by adding up the number of "bugs" you collected. Then record your answer in the space provided**

b) **TOTALS: total each column per paper color by adding up the number of "bugs" you collected. Then record your answer in the space provided**

c) **Calculate the average of each column in your data table by taking your answer from the previous problem and then dividing by 3. Record your answer in the space provided.**

d) **Calculate the Percent that Died by by taking your answer from the previous problem and dividing by 100. Record your answer in the space provided.**

e) **Calculate the Percent that Survived by subtracting the percent died from 100. Record your answer in the space provided.**

Conclusion:

1. Describe how did the color of the prey affect their survival?

_____

2. Explain how is this activity an example of natural selection?

_____

3. Based on your results, what conclusion are you able to make?