Natural selection lab

Natural Selection Lab This hands-on laboratory exercise is a highly simplified model that attempts to simulate evolution by means of natural selection. Predators will act as agents of selection on their prey, a species whose members vary in color. We will assume that color is an inherited trait. Small squares of paper will represent the prey, which will be spread out of a piece of printed colored fabric that will serve as the habitat. The predators (you) will prey upon the population, with the surviving members reproducing and passing along the genes for color.

Problem:

How does a population change as a result of natural selection?

Materials:

- 5 different colors of paper cut into 1 cm ? 1 cm squares (at least 100 squares of each color)
- Multicolored fabric or newspaper, approximately 1 meter?
- 1 or 2 partners (friends orfamily)

Procedure:

- The prey will be represented by the small 1 cm?
- 1 cm squares of paper and the habitat is represented by the 1 meter?
- 1-meter piece of fabric. Hypothesize which color prey you think is most likely to be captured by the predator and which color prey is most likely to survive, and then record your hypothesis. Be sure that your hypothesis includes explanations for your predictions.

- Have the two partners (prey) stand with their backs to the habitat while you scatter 20 squares of each color randomly on the fabric. Try to achieve uniform distribution, and be sure to separate any that are clumped together.

- Have the partner(s) randomly pick up the prey as fast as they can. Have them stop when they have collected a total of 75 prey, leaving the other 25 remaining in the habitat.

- Count the number of survivors of each color. Each surviving prey has three offspring of the same color, bringing the total population back up to 100. Record the number of each color in the next generation in your data table.

- Count out the correct number of each colored prey and scatter them on the fabric. Repeat the process two more times, for a total of three generations.

Hypothesis: I think the black color pieces are most likely to be captured because they are so easy to be identified. I think the blue color would most likely survive because of its color shade.

Data and Observations:

Color	Generation 0	Generation 1	Generation 2	Generation 3
1. Blue	20	4	6	3
2.	20	1	3	2

Yellow				
3. Red	20	5	2	4
4. Green	20	10	11	15
5. Black	20	5	3	1

Record any observations. Data Analysis: Conclusion:

The surviving amount of prey population was drastically different from the original. There was much less of each color in the end. Over half of each color prey I went. When my two partners had their backs turned and I was scattered around the color pieces, once I told them that it was okay to turn around and pick them up, I saw that they tended to pick up the brightest colors. So, in conclusion, the brighter the prey the more the predators attract them and hunt them. The green pieces of paper barely even got touched, but the yellow seemed to stand out the most. If I were to continue, the yellow would have been extinct in like Generation 4. But, the prey as a whole would have been very scarce within two generations. The green would be the last to go. Whatever the brightest color was would have died off first.

1. You can't re-collect the same prey once it's been picked off

2. There might not be 25 surviving prey all the time. There could be more or less.

3. A large number of predators can really decrease the population in a species dramatically.

4. It's a prime example of survival of the fittest because there will be animals trying to eat other animals. *

5. If the predator knew the habitats of his prey. Then, he could bring back some more predators and they could take out a whole area of prey.

6. Camouflage can really help you survive in times of need. Let's say there is a predator behind you and it is ready to eat you. If you know the perfect places to hide then you are safe. Especially if the hiding spot matches with your body color. The predator probably won't recognize you.