Group Members: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Natural Selection M&M Lab



**Objective(s)**

- To describe the importance of coloration in avoiding predation

- To explain how natural selection causes populations to change

# **Materials**

M&M’s (mini & regular) Colored paper

Small collecting container Calculator

# **Procedure**

# **Part I**

* 1. Pick a member of your group to be the leader. This person will be responsible for running the lab and setting up the M&M’s. **DO NOT EAT ANY M&M’S TILL THE END OF THE LAB.**
  2. Place the 30 regular sized M&M’s on the 11x17 colored piece of paper. Spread them out evenly on the piece of paper.
  3. Record the color and number of each color in the table.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| M&M Color | Total # (Population) | # Selected (eaten) | # Left (Survived) | % Survival |
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* 1. Devise a hypothesis about which color M&M will have the highest survival percentage in your environment.

Hypothesis: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* 1. Three members of the group will select M&M’s. Each member should keep their eyes closed until the leader of the group tells them to pick an M&M. Once told to select an M&M, the member of the group will open their eyes and select the ***first*** M&M they see. Place the M&M in the collecting container. Each member will select 5 M&M’s (for a total of 15 M&M’s).
  2. Once 15 M&M’s have been selected, fill out the rest of the table. **Leave the remaining 15 M&M’s on the colored paper.** They will be used in Part II of the lab.

# **Part II**

1. Take the other bag of M&M’s (mini) and put them on the colored piece of paper along with the M&M’s left from Part I of the lab. Spread them out evenly on the piece of paper. Empty the collecting container.
2. Devise a hypothesis about which color and size M&M will have the highest survival percentage in your environment.

Hypothesis \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Record the color, size, and number of each color in the table. (mini = small, regular = large)

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| --- | --- | --- | --- | --- | --- |
| M&M Color | Size | Total # (population) | # Selected (eaten) | # Left (Survived) | % Survival |
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1. Three members of the group will select M&M’s. The Fourth member will be the recorder. Each member should keep their eyes closed until the leader of the group tells them to pick an M&M. Once told to select an M&M, the member of the group will open their eyes and select the ***first*** M&M they see. Place the M&M in the collecting container. Each member will select 10 M&M’s (for a total of 30 M&M’s).
2. Once 30 M&M’s have been selected, fill out the rest of the table.
3. % Survival = [ #Left (Survived)] x 100% (do for each color & size)

[ Total # Population]

# **Discussion**

1. What was the color of your environment? What is represented by the M&M’s? What do you represent?
2. In Part I of the lab, which two colors had the lowest survival rates? Why were these colors selected more often than others?
3. Is coloration an important factor in successful predation? Explain why?

1. What is the relationship between the environment and the color of the M&M’s selected?