

Bio 25.1

Goals: Discuss and the modes of evolution and determine which types are happening when given different scenarios

Bellwork: In what ways can a population change over time? What forces could be at work to change the alleles?

Plan:

Discussion and notes: modes of evolution: artificial selection, natural selection, mutations, genetic drift, gene flow, sexual selection

Reading and identification of different types of evolution modes. Describe why these modes fit for each?

HW: Reading (remind)

Bio 25.3

Goals: experiment with genetic drift and scenario

Plan: M&M's genetic drift experiment

Genetic drift activity

Biology, in class

Name _____

Hour _____

In this activity, M&M candies of different colors are assumed to be different traits of the same species, *Candius mminius*. You will try to simulate several scenarios before eating your M&Ms.

Step 1. Draw a circle on a portion of you plate. Jiggle your plate until the M&Ms are evenly distributed around the plate. Count how many of each color are inside of the circle.

Red

Orange

Yellow

Green

Brown

Blue

Step 2. Count the total number of M&Ms in the circle (it should be sum of your tally above).

Step 3. Compute the percentage by dividing the count of each color by the total, then multiplying by 100.

Percentages:

Red Orange Yellow Green Brown Blue

Step 4. Repeat steps 1-3 and recompute

Red

Orange

Yellow

Green

Brown

Blue

Percentages

Red Orange Yellow Green Brown Blue

Step 5. Now compute the overall percentages, tally all the colors (inside and outside the circle) compute the percentages.

Red

Orange

Yellow

Green

Brown

Blue

Percentages

Red Orange Yellow Green Brown Blue

Questions

1. Did your percentages match in steps 3 and 4? Did they both match step 5? Why might there be differences?

2. Do you think a small collection (ie a smaller circle drawn) of M&Ms is more or less likely to represent the overall total (step 5) than a large collection of M&Ms? Why?

3. Imagine a bag of M&Ms represents the whole population. If half of the M&Ms were ~~eaten~~ killed by a freak storm, do you think you're more likely to retain the same percentages of colors if the original bag is large or small?

4. Thinking about types of drift, what kind of scenario is describe in question 3?

You may now eat your M&Ms. But be ready to discuss your answers above.