Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Genetic Drift Fruit Loop Lab

Background Info: Genetic drift is a change in allele frequency in a population due to a random event. The change in alleles has nothing to do with an organism’s fitness, only its luck. Complete the following lab to determine if genetic drift has more of an effect on a small or a large population by using the species fruitloopitus.

Materials: cup or bag, 100 fruitloopiti, pencil

Procedure:

1. Randomly count 100 fruitloopiti and put them in your bag or cup. This is your original population.
2. Count and record in the data table the number of each color of fruitloopitus.
3. Put all 100 fruitloopitus back into the cup or bag. Without looking, pick out 50 fruitloopiti.
4. Count and record in the data table the number of each color of the 50 fruitloopiti.
5. Put all 50 fruitloopitus back into the cup or bag (so now all 100 should be back in the bag or cup). Without looking, pick out 10 fruitloopiti.
6. Count and record in the date table the number of each color of the 10 fruitloopiti.
7. Discard the fruitloopitus and clean up your area.
8. Finish lab questions.

Data:

ORIGINAL POPULATION (100 Fruitloopitus)

|  |  |  |  |
| --- | --- | --- | --- |
| Color of Fruitloopitius | # of color | Total # in population | Percent of Population |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

1. Natural Disaster-HURRICANE

A terrible hurricane has struck your population of fruitloopiti, randomly leaving only 50 survivors. Without looking, pick out the 50 fruitloopiti who have survived.

POPULATION (50 Fruitloopitus)

|  |  |  |  |
| --- | --- | --- | --- |
| Color of Fruitloopitius | # of color | Total # in population | Percent of Population |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

1. Natural Disaster-FLOOD

A raging flood sweeps through the habitat of the fruitloopitus population, wiping out nearly the entire population of fruitloopiti. By chance, 10 individuals have managed to survive. Without looking, pick out the 10 fruitloopiti who have survived.

POPULATION (10 Fruitloopitus)

|  |  |  |  |
| --- | --- | --- | --- |
| Color of Fruitloopitius | # of color | Total # in population | Percent of Population |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Post Lab Questions:

1. In your own words, explain what genetic drift is.
2. Looking at your data, does genetic drift have more of an effect on large or small populations? Explain.
3. Based on your experiment, what does genetic drift do to the diversity of a population?
4. If genetic drift occurred on a small population, predict the effect it could have on that population’s survival? Would the small population have a greater chance of survival than the original population? Explain.