NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**2**

DATE \_\_\_\_\_\_\_\_\_ PER \_\_\_\_

Reproduction in Breakfast Cereal

**Directions:** In this activity we will use Froot Loops to simulate sexual reproduction and Cheerios to simulate asexual reproduction

**Materials:**

Cheerios Froot Loops 2 cups

**Instructions:**

In the table below, keep track of the number of each type of organism at the end of each round.

* Each Cheerios will produce one additional Cheerio every round (or you can think of them as doubling every round)
* The Froot Loops will produce one new Froot Loop for every pair of “parent” Froot Loops.
  + If a Froot Loop is not paired, it can’t produce another Froot Loop. (Odd numbers don’t mate. Sad to be all alone in the world…)
  + The math would look like this: if you started with 7 Fruit Loops then the next round you would have 7 (the last rounds number) + 7/2 (Round down because one FL did not have offspring so 3.5 goes to 3).  Therefore 7+3=10
* Record the color of the first two Froot Loop parents in the box provided.
* Draw new Froot Loop offspring out of the bowl randomly.

At the end of certain rounds, you will encounter natural obstacles or benefits. Follow the directions for these encounters at the end of the round in which they are listed. Each obstacle or benefit will take place after the offspring for that round are added.

**Data:**

|  |  |  |  |
| --- | --- | --- | --- |
| Round | # of Cheerios  (Asexual) | # of Fruitloops  (Sexual) | Original Parent’s Colors, Obstacles, and Benefits |
| 1 | 1 | 2 | Original Parent’s Colors: |
| 2 |  |  | Normal Year |
| 3 |  |  | Normal Year |
| 4 |  |  | Normal Year |
| 5 |  |  | Benefit 1: 3 organisms immigrate into the population. Add 3 Cheerios and 3 fruit loops |
| 6 |  |  | Obstacle 1: New fruit loop predator starts eating all of the ( ) colored loops. Randomly select a color to die. (all new loops of that color will be die) |
| 7 |  |  | Normal Year |
| 8 |  |  | Obstacle 2: Genetic disease kills all organisms that are identical to the original parents (Cheerios and Froot Loops). |

**Analysis:**

|  |  |
| --- | --- |
| **1. Cheerios (Asexual)** | **Advantages:** |
| **Disadvantages:** |
| **2. Fruit Loops (Sexual)** | **Advantages:** |
| **Disadvantage:** |

|  |  |
| --- | --- |
| **3. Define Asexual Reproduction**  (Cheerios) |  |
| **4. Define Sexual Reproduction**  (Froot Loops) |  |

|  |  |
| --- | --- |
| 5. Which type of reproduction do you think would be more successful if there was a disease that was easily transferred to others?  **WHY**? |  |
| 6. Which type of reproduction do you believe would be more successful at recovering if the most of the population died?  **WHY**? |  |
| 7. Which population Fruit Loops (sexually) or Cheerios (asexually) has the greatest increase over time?  **WHY**? |  |

**Summary:**

|  |  |
| --- | --- |
| 8. Write 1-3 sentences about what you have learned about asexual and sexual reproduction |  |