

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

Period: \_\_\_\_\_ Date: \_\_\_\_\_

## Wormeaters and their funny beaks

Imagine you are a strange species of bird called a Wormeater. You live on a remote island with your peers, and all you eat are big, fat, juicy worms that you pick up with your beak. As in any population, you and your wormeater friends don't look exactly the same –there is slight variation in beak shape. Here is some of the beak variation found on the population:

Beak name	Beak shape
<i>Forky</i>	Fork
<i>Forktunis</i>	Fork missing three prongs
<i>Spoony</i>	Spoon
<i>Sporky</i>	Spork
<i>Sporticus</i>	Spork missing two prongs



Today, you and your wormeater friends are going on a worm hunt to feed yourself and your offspring.

### Materials:

- Beaks: *Forky*, *Sporky*, *Spoony*, *Sporticus*, *Forktunis*
- 5 paper cups
- Rubber bands –worms
- Tape

### Procedure:

1. Each table represents an island with 5 wormeaters. Each wormeater needs one beak & a cup. All five wormeaters have different beak shapes.
2. Spread out around lab station. Tape the cup to the table in front of you.
3. Place rubber bands in a pile in the center of the table. This is all the food available for the wormeaters.
4. When the teacher says “Go”, with your beak you will grab as many worms as possible and put them inside your cup. You will have 30 seconds.
  - You may only catch one worm at a time
  - You must play with one hand behind your back
  - You may not poke or hit anyone’s flesh with your beak!!
  - You cannot change beak shape after you started.
5. When your teacher says “Stop” stop picking up worms and count the worms you have on your cup. Record the number in your data table 1.
6. The wormeater with the least worms caught is not able to support her/himself and will (gulp) die. The wormeater with the most worms will be able to reproduce and add another of its kind (same beak shape) to the next generation. Settle all ties with roshambo.
7. Put all the worms back in the middle and repeat steps 4-6 four more times for a total of five generations.

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**Observations:**

Write down your beak shape and record the number of worms you caught. If you survive through out all generations, you will fill only the first row. If you die, you will turn into the offspring of the wormeater that caught most worms and inherit its beak shape. Record the beak shape you are re-born with and the number of worms caught in the appropriate row.

Table 1. <b>Wormeater</b>	<b>Generations</b>				
	1	2	3	4	5
Beak shape:					
Offspring of 1st gen. Beak shape:					
Offspring of 2nd gen. Beak shape:					
Offspring of 3rd gen. Beak shape:					
Offspring of 4th gen. Beak shape:					

After playing for five generations, record the number of wormeaters with the specific beak shape remaining on your island. Remember that each table is an island.

Table 2. <b>Number remaining on your island</b>	Forky	Sporky	Spoony	Sporticus	Forktunis

Record all the wormeaters beak shapes remaining on all the islands.

Table 3. <b>TOTAL Remaining on all islands</b>	Forky	Sporky	Spoony	Sporticus	Forktunis

**Discussion:**

Please answer each question with a complete thoughtful response.

1. What did the fork, spork, spoon, modified spork and modified fork represent?
2. If you were a wormeater and could choose your beak which one would you choose? Why? Which one would be your last choice? Why?
3. Were the same types of beak shape successful in all groups? If not, how can you explain this?
4. What do you predict would eventually happen to the individuals with a particular variant if they were consistently less successful than the others in obtaining worms?
5. What are the determining factors for survival –that allows wormeater to get more worms? Explain why.
6. Describe how this activity relates to our class model about changes in populations over time. Specifically, identify how the ideas of our model connect to what we see in wormeaters?