ACTIVITY 1

Within any population, there are differences in appearance and behavior due to genetics and environment. In this activity, you investigate some Skeeter populations with different growth characteristics.

Exploration

In this exploration, each color of Skeeter has its own growth characteristics and initial population. Table 1 shows a list of these characteristics for each color.

Table 1: Skeeter growth characteristics

Color	Growth Characteristics	Initial Population
Green	After every shake, for every green Skeeter with or without the mark showing, add 2 green Skeeters.	1 green
Yellow	After every shake, for every yellow Skeeter with or without the mark showing, add 1 yellow Skeeter.	1 yellow
Orange	After every shake always add 2 orange Skeeters	40 orange
Red	After every shake always add 20 red Skeeters	5 red
Purple	After every shake, for every purple Skeeter with a mark showing, add 1 purple Skeeter.	5 purple

    a. Consider the information given in table 1.
            1. Predict the population of yellow Skeeters after shake 6.
            2. Predict the population of orange Skeeters after shake 6.
            3. After shake 6, which one will be larger?

    b. Obtain a large, flat container with a lid, a sack of Skeeters of a chosen color, and a sheet of graph paper. Place the initial population of the chosen color (according to Table1) in the box.
    c. Place the lid on the container and shake it.
    d. At the end of each shake, use the growth characteristics from Table 1 to add the appropriate number of Skeeters of the chosen color.
    e. Record the total number of Skeeters at the end of six consecutive shakes, on the provided table. (Record the initial population as the number at shake 0.)
    f. By filling the Pattern and Process columns of the corresponding table, make a prediction of the population of Skeeters of the chosen color, at the end of shake 11, and for any number of shakes (n).
    g. After 6 shakes, graph the data for the chosen Skeeter population on a rectangular coordinate system. (Label the x-axis as Shake Number, and the y-axis as Color of Skeeter Population.)
    h. Repeat Parts b-g for the other populations of Skeeters.

Name: _____ Date: _____ Period: _____
Team: _____

Table 2: Growth of the Green Skeeter Population.

Shake Number	Skeeter's Population	Pattern	Process
0	1		
1			
2			
3			
4			
5			
6			
11			
n			

Table 3: Growth of the Yellow Skeeter Population.

Shake Number	Skeeter's Population	Pattern	Process
0	1		
1			
2			
3			
4			
5			
6			
11			
n			

Table 4: Growth of the Orange Skeeter Population.

Shake Number	Skeeter's Population	Pattern	Process
0	40		
1			
2			
3			
4			
5			
6			
11			
n			

Table 5: Growth of the Red Skeeter Population.

Shake Number	Skeeter's Population	Pattern	Process
0	5		
1			
2			
3			
4			
5			
6			
11			
n			

Table 6: Growth of the Purple Skeeter Population.

Shake Number	Skeeter's Population	Pattern	Process
0	5		
1			
2			
3			
4			
5			
6			
11			
n			

Discussion

a. Describe the relationship between the numbers of yellow Skeeters at the end of two consecutive shakes.

b. 1. Describe the relationship between the number of yellow Skeeters at the end of a shake and the shake number.
   2. Restate this relationship as a mathematical equation.

c. Describe the relationship between the numbers of orange Skeeters at the end of two consecutive shakes.

d. 1. Describe the relationship between the number of orange Skeeters at the end of a shake and the shake number.
   2. Restate this relationship as a mathematical equation.

e. What differences and similarities do you observe between the yellow and orange Skeeter Populations?

f. At the beginning of the lesson, we presented You with 2 different models of growth in Nature. Write a mathematical equation for each example.