Capturing and Counting Candy Critters

If you were given a cup of skittles, could you determine the total number of candies in the cup and the percentage of those candies that are orange or purple without actually counting all of the candies? Many times it is necessary for biologists to do exactly that. They must determine the population size they are studying and the percentage of the population that carries a certain trait. Today you will be studying a population of candy critters. Your job is to determine the percentage of the population that is red, green, yellow, orange and purple.

Procedure

- 1. Obtain a cup of skittles. DO NOT EAT any of them until Table Two is completed!
- 2. Predict the number of each color critter that will be in a one tablespoon sample. Mix your candy critters by stirring and withdraw one level tablespoon. Spread the candy critters on a clean paper plate.
- 3. Count and record the total number of critters in this sample and determine how many of each color critter you have.
- 4. Record these values in your data sheet and return all critters to the cup.
- 5. Repeat the sampling procedure 4 more times.
- 6. Calculate the percentage of each sample that is red, green, yellow, orange and purple.

Table One P=predicted A=actual

Trial	Total		Red		Green		Yellow		Orange		Purple	
	Р	Α	Р	Α	Р	Α	Р	Α	Р	Α	Р	Α
1												
2												
3												
4												
5												
Total # of Critters												
Percent of sample												

Let's see how close your data came to predicting the actual population counts! Fill in the predicted column of Table Two with the numbers from the last row of Table One. Count out 100 candy critters from the cup to see if the actual number of each color agrees with the predicted number.

	Predicted (Table One)	Actual (Count out 100)
Red		
Green		
Yellow		
Orange		
Purple		

Analysis Questions

1. What is an ecological population?

- 2. How did your actual and predicted numbers compare on the small samples in Table One?
- 3. Why do you think you were asked to repeat the small sample procedure five times?
- 4. How did your actual and predicted numbers compare on the large sample in Table Two?
- 5. How do you think your predicted numbers in Table Two would compare to a 100 candy sample from a different population (cup?)
- 6. Name two situations in which this type of sampling technique would be useful to a biologist.

 1.
 - 2.
- 7. What is meant by a "representative sample?"
- 8. Name two obstacles a biologist might face in collecting a representative sample of organisms.
 - 1.
 - 2.