

## Activity 9

Name \_\_\_\_\_

We will be trying to find the relative frequency of the various colors of Sweet Tarts. Open your Sweet Tarts. Write down the color of the candies in your pack:

Tally these on the white board. Also note if you had 3 of the same color in one pack.

1. Write down the frequencies of the colors from the class, and calculate the relative frequencies: (Remember, Relative frequency = Frequency/Total # of candies)

Color	Frequency	Relative Frequency
Red		
Orange		
Yellow		
Green		
Blue		
Purple		
TOTAL		

2. How many packs of candy were opened in the class? Is the total frequency equal to 3 times this number?

3. If you were to put all the separate individual candies in one bag and draw one at random, what is the probability that it is purple?

4. If you were to put all the separate individual candies in one bag and draw one at random, what is the probability that it is purple, green, or red?

5. In a pack of three, what is the probability of getting a purple, a green and a red? (HINT: There are 6 different orders that this can happen.)

6. What is the probability of getting 3 of a kind in any color?

<b>Three of a Kind!!!</b>	<b>Frequency</b>	<b>Relative Frequency</b>
Observed in the Class	# of packs w/ 3 candies the same color	Frequency/(# of packs opened)
Expected	Exp. Rel. Freq*# of packs opened	calculate this using probability rules

Hint: first fill out the top row. Then, calculate the relative frequency for the expected row using the probability rules (you'll need to use the "and" rule and the "or" rule to find the probability of finding 3 reds or 3 oranges or 3 yellows or...). Finally, multiply this by the number of packs opened to get the expected frequency.

7. How does the expected outcome compare with the relative frequency of the class?

8. What assumption have you made about the relationship between the colors of candies in your pack to do the above calculations? (What assumption do we need to use the multiplication rule?)