

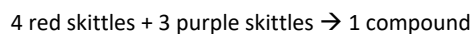
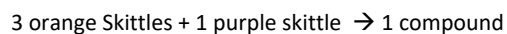
Fun with Skittles

A Limiting Reactants Activity

Name _____

Partner _____

In this lab activity, Skittles/Starburst will be used to represent atoms involved in chemical reactions. The following balanced equations are necessary in order to complete this activity:



Using the information above, you will simulate various synthesis reactions, and determine which component of the reactions limits the amount of product that can be made.

Procedure

1. Choose a partner. Work only in groups of two or by yourself.
2. Obtain skittles from your teacher. Open bag(s), count skittles by color, and separate into individual piles.
Complete the column for this information in the chart below.
3. Physically combine the separated colors based on the "reactions" above and complete the chart for each possible reaction.
Reuse each pile of skittles/starburst until the chart is complete.
4. Enjoy your skittles as you complete the analysis part of the activity.

Data Table

color	Total Number of Skittles in your possession	Total number of this color from pile used in the reaction	Total number of purple from pile used in the reaction	How many "compounds" can be made?	Which color limits?	How many of excess is left over?
orange						
yellow						
red						
Green						
Purple						

Analysis

For credit, questions must be answered in complete sentences and/or all math work related to obtaining the answer must be shown.

1. Explain how you determined which color “limits” the amount of product that can form.
2. Explain how you calculated the amount of excess skittles left when the reaction stops.
3. Solve the following questions using the ideas explored in the skittles activity.
 - a. How many grams of water are created when 50.0g of sodium hydroxide reacts with 50.0 g of hydrochloric acid in a double replacement reaction? Which is the excess reactant? How much of the excess is left over?
 - b. What volume of carbon dioxide gas can be created when 250.0 g of propane gas (C_3H_8) is burned in 500.0 g of oxygen gas (assuming that the reaction occurs at STP)? Which is the excess reactant? How much of the excess is left over?