RECITATION 11: LIMITING REACTANTS

Concept Areas 1-2

Today you are going to use the "**Reactants, Products and Leftovers**" simulation to explore how many products you can make given the initial amounts of two reactants.

You need to: 1) find a partner, and 2) click on the "**RPAL**" icon to open the sim.

CONCEPT AREA 1: MAKING SANDWICHES

1. If you have 6 pieces of bread and 4 slices of cheese, *predict* how many cheese sandwiches of type A you can make. Then *predict* how many of type B you can make.

A: 

B: 

How did you figure this out?

Now *check* your predictions using the "**Sandwich Shop**" tab. Do the results make sense? Revise your answers or reasoning as needed.

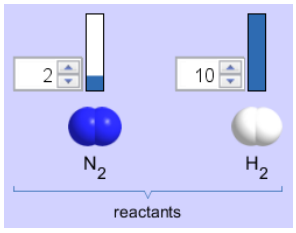
In case A, the bread could be called the "limiting reactant." How would you define a "limiting reactant"?

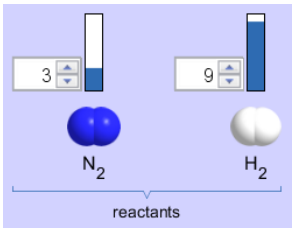
What is the limiting reactant for case B and *why*? What is leftover when all the sandwiches are made?

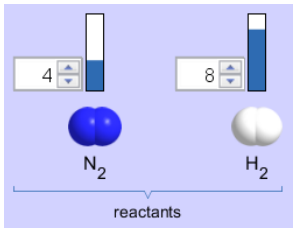
CONCEPT AREA 2: MAKING AMMONIA

2. Consider the chemical equation: 1 N_2 + 3 H_2 → 2 NH_3

For the 3 scenarios below, *predict* which one will produce the most ammonia, and *predict* which ones will have leftovers.

A: 

B: 

C: 

Explain your reasoning:

Now *check* your predictions using the "**Real Reaction**" tab. Do the results make sense? Revise your answers or reasoning as needed.

How did the "Real Reaction" tab relate to the "Sandwich Shop" tab?

3. Play *at least* one "**Game!**" at each level with your partner (estimated time = **5 minutes** per game).

Record your best score for each level in the table below.

Level	Best Score
1	
2	
3	

How did you solve the problems? Write your strategy in the space below. Did your strategy change as you played the game? If so, write how it changed.