Start-Up Activity

Group Members: Role of Member: 3/16/11

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Group Roles:

**Recorder**- This person writes the answers to the questions after the group has arrived at an answer.

**Sorter**- This person sorts the nuts and bolts and keeps them organized for the combination maker.

**Combination Maker**- This person will make the models.

**Combination Destroyer**- This person will dismantle the models and give the parts to the sorter.

Procedure:

1. Use a balance to find the mass of **12 nuts** and the mass of **9 bolts.**

Mass of 12 nuts=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Mass of 9 bolts =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Attach 1 nut (N) to 1 bolt (B) to assemble a nut-bolt (NB) model. Make as many NB models as you can. Record the number of models formed, and record which material was used up first. Have Ms. Taylor initial your page and then dismantle the models.

Number of models formed:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Material used up first: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Attach 2 nuts to 1 bolt to assemble a nut-nut-bolt (N2B) model. Make as many N2B models as you can. Record the number of models formed, and record which material was used up first. Have Ms. Taylor initial your page and then dismantle the models.

Number of models formed:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Material used up first: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Analysis: (Answer on back of page)

1. Just using the mass of the starting materials could you predict which material would be used up first? Explain.
2. Write a balanced equation for the “reaction” that forms NB. How can this equation help you predict which component runs out?
3. Write a balanced equation for the “reaction” that forms N2B. How can this equation help you predict which component runs out?
4. If you have 18 bolts and 26 nuts, how many models of NB could you make? How many of N2B?