

Group # _____

Name _____

Period ___ Date ___/___/___

Lab Ch 6 • Mole Buffet Lab Activity

Lab Partners: _____

Prelab – must be complete before entering lab!!!

(no prelab = you receive zero points lab)

Show the calculations for molar mass for the following chemicals: (Show all work, units, and correct sig figs)

1. **Molar mass for H₂O**

2. **Molar mass for NaCl (table salt)**

3. **Molar Mass for C₁₂H₂₂O₁₁ (sucrose = table sugar)**

Objective

In this lab, you will perform several conversions using mole concepts. Be sure to use your periodic table and calculator. You will take these to lab bench to perform calculations. **Show all work, cancel units, and circle your answer.**

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Materials

Chemical	Equipment
Distilled Water	Balance
Salt	10mL graduated cylinder
Sugar	Weigh boat
Al foil	teaspoon
Cu wire	

Safety Precautions

- Always wear safety glasses and a lab apron

Procedure & Calculations: Be sure to show all work, units, and correct sig figs

Station #1: Water molecules

How many grams of water are in 1.0 mole of water?

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NOW, perform the lab to see what you just calculated.

This is all you! You have to determine how your going to show me that you weighed out the correct amount of water.

Total mL's of water in graduated cylinder: _____

Mass of DI water: _____

What do you notice about the 2 values? Are they the same or different?

EXPLAIN!!!

(THINK: What do you know about water's properties that you learned in Ch 2 to help you answer this)

After you performed lab, how many water molecules are in this graduated cylinder?

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Station #2: Table Salt (NaCl)

How many grams of salt are in 1.0 mole of salt?

NOW, perform the lab to see what you just calculated.

This is all you! You have to determine how your going to show me that you weighed out the correct amount of salt.

Mass of empty weigh boat: _____

Mass of NaCl & weigh boat: _____

Mass of NaCl: _____

After you performed lab, how many salt formula units are in 1.0 mol?

How many sodium atoms are in 1.0 mol of NaCl?

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Station #3: Sucrose – Table Sugar (C₁₂H₂₂O₁₁)

How many grams of sugar are in 1.0 mole of sugar?

NOW, perform the lab to see what you just calculated.

This is all you! You have to determine how your going to show me that you weighed out the correct amount of sugar.

Mass of empty weigh boat: _____

Mass of sugar & weigh boat: _____

Mass of sugar: _____

After you performed lab, how many sugar molecules are in 1.0 mol?

How many hydrogen atoms are in 1.0 mol of sugar?

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Station #4: Aluminum Foil

Mass of aluminum foil: _____

How many aluminum atoms are in the foil?

Station #5: Copper wire

Mass of copper wire: _____

How many copper atoms are in the wire?

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Station #6: Number of Sugar atoms in Food/Drink item (C₆H₁₂O₆)

Name of food/drink item: _____

Serving Size: (found at top of Nutrition Facts label) _____

Servings Per Container: (found at top of Nutrition Facts label) _____

Look at Nutrition Facts label on item and find "Total Carbohydrates"

Mass of "Total Carbohydrates" according to label: _____

Total Carbohydrates is the amount of sugar in that item per serving!

BEWARE: It doesn't mean it's the total amount of sugar if you consume the whole item!!

For example, a box of cookies has a serving size of 4 cookies = 22g sugar (carbohydrates). So if you consume the whole box of cookies and it was a total of 8 servings (32 cookies), then the **whole** box has 176g (22g x 8servings) of sugar!!! It makes you think.... is consuming the whole box of cookies worth all that sugar. ☹

Now WEIGH IT OUT!! According to your TOTAL Carbohydrates that you wrote above, weigh out that same amount of sugar on balance to see what that really looks like.

Were you shocked at the amount of sugar in that item? (Circle one) YES NO

Cleaning and Disposal

1. Put salt and sugar back into their containers
2. Wipe off balance and make sure no solids are on it
3. Dry dishes for next lab group and place them on a paper towel.
4. Clean Lab BENCH with small soap bottle and sponge.
5. Wash hands with hand soap.
6. Let me know when you are ready. Do not get unprotected until dismissed.