

LESSON
82

LAB

Holey Moley

Preparing Solutions

Name _____

Date _____ Period _____

Purpose

To practice converting between moles and grams and making solutions of different concentrations.

Materials

- scale
- weigh boat
- 250 mL beaker
- graduated cylinder
- wash bottle
- sodium chloride, NaCl, solid
- large test tube

Part 1: Create Your Saltwater Solution

Procedure

1. Your instructor will assign your group an amount of sodium chloride, NaCl, in grams. Write that amount in the box.
2. Weigh out this amount of NaCl and use it to make exactly 100 mL of NaCl solution. (*Note:* Adding 100 mL of water will result in a total volume of more than 100 mL.)
3. Fill a large test tube about 3/4 of the way with your solution. Label the test tube with your group's names. Turn this in to your teacher.

Grams NaCl

Part 2: Determine the Molarity of Your Solution

1. Name three ways chemists keep track of amounts of substances.
2. Imagine that you need to determine the number of grams of salt necessary to make 1.5 L of a 0.80 M NaCl solution.
 - a. What information do you have?
 - b. What information do you need?
 - c. Determine the number of grams of NaCl needed. Show your work.

3. Imagine that you need to determine the molarity of a solution that you prepare by dissolving 11.0 g of NaCl in exactly 100 mL of solution.
- What information do you have?
 - What information do you need?
 - Determine the molarity of the solution. Show your work.

4. You dissolved a specific mass of NaCl to make 100 mL of solution. Determine the molarity of the solution you prepared.

5. Enter your data into the table below and on the blackboard. Also record the data from other groups on your table. Write the molarity of your sample on your test tube and turn it in to your teacher.

Mass of NaCl (g)	Moles of NaCl (mol)	Volume of solution (mL)	Concentration (M)
0.58 g		100 mL	
1.75 g		100 mL	
2.34 g		100 mL	
3.50 g		100 mL	

6. **Making Sense** Describe how the molarity changes if you dissolve 10 g of NaCl in increasingly larger volumes of water.
7. **If You Finish Early** How many grams of potassium bromide, KBr, are in 100 mL of a 0.50 M solution?