

Name \_\_\_\_\_

Date \_\_\_\_\_ Hour \_\_\_\_\_

## MARSHMALLOWS AND CHEMICAL FORMULAS

**Objective:** Using the materials provided, you are going to build models of nine different molecules. Each one must contain the correct number and kind of atoms.

**Materials:** Ziploc bag of 27 marshmallows  
toothpicks - break them in half  
paper towel

### Procedure:

1. Color code your marshmallows. You choose the colors to be used. Record those colors in the space below.

carbon = 4 marshmallows = \_\_\_\_\_

chlorine = 2 marshmallows = \_\_\_\_\_

hydrogen = 7 marshmallows = \_\_\_\_\_

oxygen = 11 marshmallows = \_\_\_\_\_

sodium = 3 marshmallows = \_\_\_\_\_

2. Make each marshmallow molecule listed below. Place each molecule on a piece of paper towel and label each one with its formula.

water =  $H_2O$

carbon dioxide =  $CO_2$

carbon monoxide =  $CO$

methane =  $CH_4$

ozone =  $O_3$

table salt =  $NaCl$

chlorine bleach =  $NaOCl$

baking soda =  $NaHCO_3$

For each example below, list the number and names of the atoms in the molecule. Then, write the total number of atoms in the molecule.

<p>① NaCl</p> <p>Atoms:</p> <p>_____</p>	<p>② H<sub>2</sub>O<sub>2</sub></p> <p>Atoms:</p> <p>_____</p>	<p>③ Hg<sub>2</sub>Cl<sub>2</sub></p> <p>Atoms:</p> <p>_____</p>
<p>④ Fe<sub>2</sub>O<sub>3</sub></p> <p>Atoms:</p> <p>_____</p>	<p>⑤ H<sub>3</sub>PO<sub>4</sub></p> <p>Atoms:</p> <p>_____</p>	<p>⑥ K<sub>2</sub>CO<sub>3</sub></p> <p>Atoms:</p> <p>_____</p>
<p>⑦ CaCl<sub>2</sub></p> <p>Atoms:</p> <p>_____</p>	<p>⑧ NH<sub>4</sub>Br</p> <p>Atoms:</p> <p>_____</p>	<p>⑨ C<sub>2</sub>H<sub>6</sub></p> <p>Atoms:</p> <p>_____</p>
<p>⑩ H<sub>2</sub>SO<sub>4</sub></p> <p>Atoms:</p> <p>_____</p>	<p>⑪ Na<sub>2</sub>SO<sub>3</sub></p> <p>Atoms:</p> <p>_____</p>	<p>⑫ C<sub>4</sub>H<sub>10</sub>N<sub>3</sub>O<sub>5</sub>P</p> <p>Atoms:</p> <p>_____</p>

Choose 3 examples from above and make models of a molecule. Make a small key.

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