

Writing Chemical Formulas

You have learned how to write the symbols for the elements. Some elements have one letter for their symbol while other elements have two letters. When we write symbols for a compound it is called a formula. For example, table salt is a compound made up of one part sodium and one part chlorine. Its formula is written as NaCl. The carbon dioxide gas you breathe out is a compound that will always be made of one part carbon to two parts oxygen (CO₂). Scientists use the element symbols to write the chemical formula for compounds.

Notice that if there is only one element in the compound there is no subscript written – it is invisible. If there is more than one element in the compound a subscript number is placed after the element in the formula.

Directions: In the activity below you will write the chemical formula for each compound using the element symbols and the subscript numbers. Use the periodic table.

1. In the chemical reactions we used hydrogen peroxide. It has 2 atoms of hydrogen and 2 atoms of oxygen.

Write the formula. _____

2. In some of the chemical reactions we used baking soda. It has 1 atom of sodium, 1 atom of hydrogen, 1 atom of carbon and 3 atoms of oxygen.

Write the formula. _____

3. We also used ammonia. It has 1 atom of nitrogen and 4 atoms of hydrogen.

Write the formula. _____

4. In one of the reactions we used a product called Damp Rid. Its chemical name is calcium chloride. It has one atom of calcium and 2 atoms of chlorine.

Write the formula. _____

5. One of the ingredients of milk is milk sugar, which is also called lactose. Lactose contains 12 atoms of carbon, 22 atoms of hydrogen and 11 atoms of oxygen.

Write the formula. _____

6. We used vinegar in some of the chemical reactions. Its formula is a little different because it is an acid. It has 1 atom of carbon, 3 atoms of hydrogen, another atom of carbon and two atoms of oxygen that sit side by side with no subscript and 1 more atom of hydrogen.

Write the formula. _____

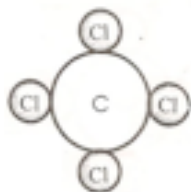
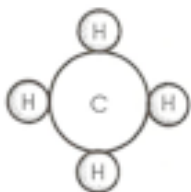
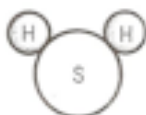
7. We used ammonium nitrate in our experiments. It has 1 atom of ammonia and 4 of hydrogen. Then it has another atom of ammonia and 3 atoms of oxygen.

Write the formula. _____

Scientists draw pictures to represent compounds. The larger the atom, the larger the circle. There are some rules for writing chemical formula.

- When writing chemical formulas the metal always comes first.
- If there is no metal then the element closest to the metal side comes first – EXCEPT Hydrogen. It usually is last.

Write the formulas for the following compounds.



Sometimes we need to know the number of elements or the number of atoms in a chemical formula. The rules for determining this information are as follows:

- When counting **elements** count the **capital letters**.
- When counting **atoms** count the **subscripts**.

Remember that the subscript of 1 is invisible but is still counted.

Chemical Formula	Number of elements	Number of atoms
H ₂ O ₂		
NaHCO ₃		
CH ₃ COOH		
HCl		
Fe ₃ C		
H ₂ O		
Fe ₂ O ₃		
SH ₂		
NH ₃		
CO ₂		



Name _____ period _____

EXIT TICKET

Chemical Formulas

1. How many elements are in the compound H_2SO_4 ?

2. How many atoms are in the compound H_2SO_4 ?

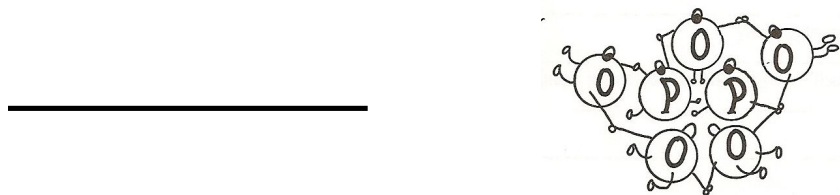
3. The compound below is called silicon dioxide. What is its chemical formula?



4. The compound below is called calcium carbonate. What is its chemical formula?



5. The compound below is called phosphorus pentoxide. What is its chemical formula?



Name _____ period _____

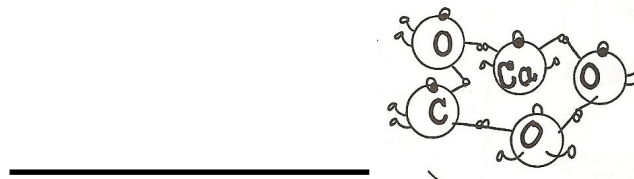
EXIT TICKET

Chemical Formulas

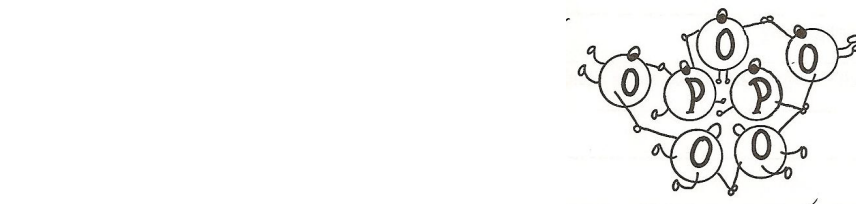
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2. The compound below is called calcium carbonate. What is its chemical formula?



3. The compound below is called phosphorus pentoxide. What is its chemical formula?



4. How many elements are in the compound H_2SO_4 ?

5. How many atoms are in the compound H_2SO_4 ?
