

Ion Study Guide

Name _____

Use ONLY your ion cards to complete this activity. For each question, pull out the cards that fit the description, then write the correct element names and symbols as the response to the statement. Expect to put many ions in more than one category. Your completed handout Structure of the Periodic Table and your Electron Dot periodic table will be helpful.

1. Define:

Monatomic ion –

Polyatomic ion –

2. Locate all element names and symbols for all ions that can be found by looking at their location on the periodic table.

a. Spread the cards out on a table or on the floor to resemble the periodic table.

b. In the space below, write a description of the location on the periodic table each group of ions having like charges. If the region on the periodic table has a specific name, write the name.

c. What is the rule for naming the ions you listed?

3. Describe the location of the periodic table of all *metals*. Describe the charge you expect them to carry.

4. Describe the location of the periodic table of all *nonmetals*. Describe the charge you expect them to carry.

7. Find all ions containing only nitrogen and oxygen. Write the name and ion symbol below.

- a. What is similar about their charges?
- b. What is the ending on the ion names?
- c. What do the endings of the names mean?

8. Find all ions containing only sulfur and oxygen. Write the name and ion symbol below.

- a. What is similar about their charges?
- b. What is the ending on the ion names?
- c. What do the endings of the names mean?

9. Find all ions containing only chlorine and oxygen. Write the name and ion symbol below.

- a. What is similar about their charges?
- b. What is the ending on the ion names?
- c. What do the endings of the names mean?

10. Find the two metal ions who are not in the s-block (are not alkali or alkaline earth metals) and whose names do not include a Roman numeral. List the names and symbols below.

11. List the two polyatomic ions that have a positive charge. What is true of their names?

12. Two ions have the prefix *per-* in their names. Find them and list their names and symbols.
 - a. What does the prefix *per-* mean?

 - b. Is there a P in the symbol? Why not?

13. Water is composed of which two elements? Find all ions containing ONLY one or ONLY both of those elements and list the names and formulas.
 - a. Look at your Ions to Know handout and copy the equation for the dissociation of water. (It's the only chemical equation on the page.)

 - b. What is the relationship of the 2 polyatomic ions to water?

14. List the names and formulas ions containing carbon, hydrogen, and oxygen.
 - a. Write a way to remember each.

15. List the names and formulas of the ions containing chromium. Write a way to remember them.

16. Find the polyatomic ions that you have not yet used and list their names and formulas. Write a way to remember each.

17. Describe how you would make a bisulfate, bicarbonate, and biphosphate ion. What is another name for each of these ions?