

PREDICTING IONIC CHARGES

EVIDENCE NOTEBOOK

KEY IDEAS

1. Define what an ion is:
 - a. A positively charged ion is called a(n) _____. They are formed by (circle the best choice) **gaining** | **losing** an electron, or group of electrons.
 - b. A negatively charged ion is called a(n) _____. They are formed by (circle the best choice) **gaining** | **losing** an electron, or group of electrons.
2. Explain why you cannot have a cation ion without an anion:
3. The most stable electron configuration is one that has _____ valence electrons.
4. Reaching a noble electron configuration
 - a. Sodium would **gain** | **lose** _____ electron(s) to have an electron configuration like (which element) _____.
 - b. Write the symbol for the sodium ion:
 - c. Chlorine would **gain** | **lose** _____ electron(s) to have an electron configuration like (which element) _____.
 - d. Write the symbol for the chloride ion:
5. Atomic and ionic radius
 - a. How many protons does helium have?
 - b. Hoe many electrons does helium have?
 - c. How many protons does the lithium ion have?
 - d. How many electrons does the lithium ion have?

NAME: _____ DATE: _____ PERIOD: _____

- e. Which has a smaller radius, He or Li^+ ?
 - i. Why?

- f. How many protons does neon have?
- g. How many electrons does neon have?
- h. How many protons does the fluoride ion have?
- i. How many electrons does the fluoride ion have?
- j. Which has a smaller radius, Ne or F^- ?
 - i. Why?

CHECKPOINTS

1. Determine the charge of the following atoms once they become stable ions:
 - a. S
 - b. Na
 - c. Br
 - d. Ca
 - e. O
 - f. I
 - g. Be
 - h. K
 - i. F
 - j. Li
 - k. Sr
 - l. Cl

2. Draw a *circle* around all of the cations and a *square* around the anions in the prior question.
3. Which ion would be smaller, potassium or chlorine and why?