

LESSON  
19

ACTIVITY

# Noble Gas Envy Ions

Name \_\_\_\_\_

Date \_\_\_\_\_ Period \_\_\_\_\_

## Purpose

To explore the patterns in ions that form when atoms transfer electrons.

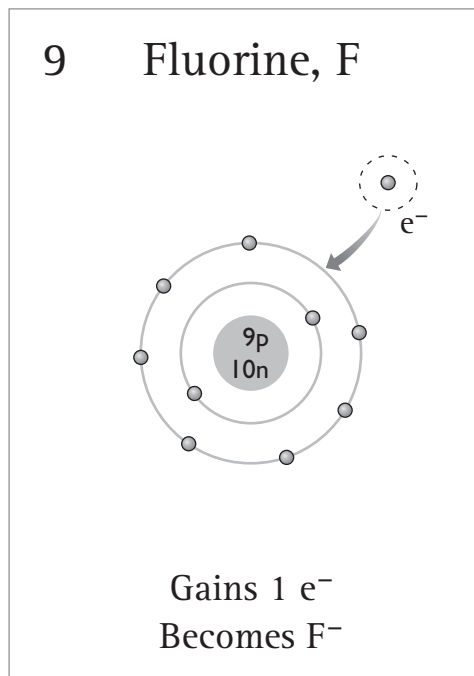
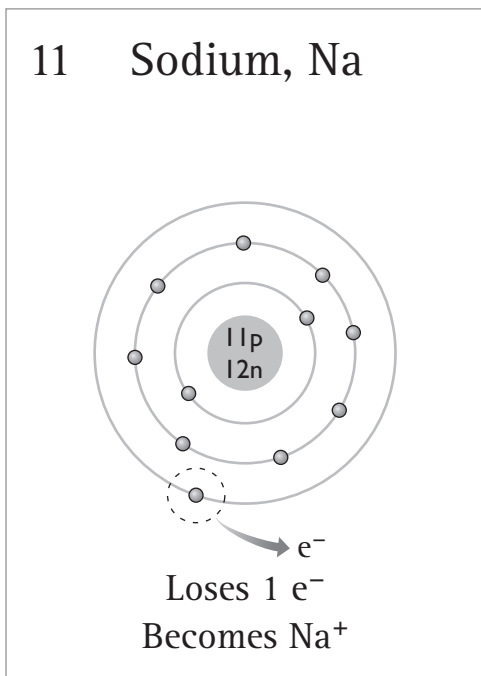
## Materials

- 28 index cards

## Instructions

### Part I: Create Ion Cards

1. In the upper left-hand corner, number the blank cards 1 through 20, then 31 through 38.
2. Shuffle the numbered cards and divide them evenly among your group members.
3. The number on each card is the atomic number of an element. Create ion cards like the ones shown for each atomic number. Elements in Groups 1A, 2A, and 3A lose electrons. Elements in Groups 5A, 6A, and 7A gain electrons. Elements in Group 4A could gain or lose electrons, so use both sides of these cards to show either option.



## Part 2: Organize Your Ion Cards

Organize the cards according to the periodic table.

### Analysis

1. List at least three patterns that you notice in the arranged cards.
2. What happens to the charge on an atom when electrons are removed?
3. What happens to the charge on an atom that gains electrons?
4. Does transferring an electron change the identity of the elements involved? Explain.
5. **Making Sense** Why do you think this lesson is titled “Noble Gas Envy”?
6. **If You Finish Early** Tin, Sn, can lose or gain four electrons.
  - a. What is the charge on the tin atom if four electrons have been removed?
  - b. Does tin resemble a noble gas after the four electrons have been removed? Explain.