Name Date Class

LAB Atomic Trading Cards

Background

Perhaps you have seen or collected trading cards for famous athletes. Usually, each card has a picture of the athlete on one side with important statistics related to the sport on the back. Atoms can also be identified by their properties and statistics.

Question

How can a model show how energy levels fill when atoms combine?

Materials

4-in. × 6-in. inch index cards
pencil
periodic table

Objectives

- **Display** the electrons of elements according to their energy levels.
- **Classify** elements according to their outer energy levels.

Procedure

1. Read the procedure and safety information, and complete the lab form.
2. Get an assigned element from the teacher. Write the following information for your element on your index card: name, symbol, group number, atomic number, atomic mass, metal/nonmetal/metalloid.
3. On the other side of your index card show the number of protons and neutrons in the nucleus (for example, *6p* for six protons and *6n* for six neutrons for carbon).
4. Draw circles around the nucleus to represent the energy levels of your element. The number of circles you will need is the same as the row the element is in on the periodic table.
5. Draw dots on each circle to represent the electrons in each energy level. Remember, elements in period 1 become stable with two outer electrons while all others become stable with eight electrons.
6. Look at the picture side only of five of your classmates' cards. Determine which element they have and to which group it belongs.