

## Activity 6 Overview

This activity helps the students understand how the newest electron is placed in its lowest energy state. Through the review of the ionization energies they can see how the electron configuration of each atom is developed. From the electron configuration they are able to see how the trends of the atoms are arranged in the periodic table.

### Safety Requirements

In the margins of the student pages you will find safety warnings that should be rigorously followed.

- Make certain that the high-voltage power supply and the gas discharge tubes are secure.
- Limit the amount of time that the discharge tubes are in operation to minimize the exposure to x-rays.

## Preparation and Materials Needed

### Preparation

Set up the demonstration using the high-voltage power supply and gas discharge tubes. Make certain that they are secure and that there is not a chance of someone getting injured or receiving an electrical shock.

### Time requirements

Plan on using two laboratory periods to complete this activity. The development of electron configuration of the elements should involve a good class discussion.

### Materials/Chemicals needed

- High-voltage power supply for gas discharge tubes.
- Gas discharge tubes (Helium, neon, argon and others would help in this section)
- Spectroscope or diffraction grating lens
- Graph paper