

Investigation Plan

In this lab the green cubes will represent protons, yellow, orange and white cubes will represent neutrons, and the small silver beads or tiny tubes will represent the electrons. It is your job to figure out the name of each type of atom using the procedure below. When removing cubes and beads from bags, empty them on to a blue tray so they won't spill and go on the floor. BE CAREFUL TO PLACE ALL MATERIALS BACK IN THE BAG WHEN YOU ARE FINISHED!

Observations: Record the following observations in the space provided.

Bag letter : A

1. Find the mass of the nucleus of the atom by counting the number of colored cubes. Each cube as a mass of 1 gram. This represents the atomic mass. Record it here: Mass=_____
2. Count the number of protons. Protons= _____
3. Count the number of neutrons. Neutrons= _____
4. What is the relationship between the number of protons and neutrons and the atomic mass?

5. Count the number of electrons. Electrons= _____
6. What is the relationship between the number of protons and the number of electrons?

7. What type of observations did you just record? _____

Bag letter: B

1. Find the mass of the nucleus of the atom by counting the number of colored cubes. Each cube has a mass of 1 gram. This represents the atomic mass. Record it here: Mass= _____
2. Count the number of protons. Protons= _____
3. Count the number of neutrons. Neutrons= _____
4. What is the relationship between the number of protons and neutrons and the atomic mass?

5. Count the number of electrons. Electrons= _____
6. What is the relationship between the number of protons and the number of electrons?

7. What type of observations did you just record? _____

Bag letter: C

1. Find the mass of the nucleus of the atom by counting the number of colored cubes. Each cube has a mass of 1 gram. This represents the atomic mass. Record it here: Mass= _____
2. Count the number of protons. Protons= _____
3. Count the number of neutrons. Neutrons= _____
4. What is the relationship between the number of protons and neutrons and the atomic mass?

5. Count the number of electrons. Electrons= _____
6. What is the relationship between the number of protons and the number of electrons?

7. What type of observations did you just record? _____

Bag letter: D

1. Find the mass of the nucleus of the atom by counting the number of colored cubes. Each cube has a mass of 1 gram. This represents the atomic mass. Record it here: Mass= _____
2. Count the number of protons. Protons= _____
3. Count the number of neutrons. Neutrons= _____
4. What is the relationship between the number of protons and neutrons and the atomic mass?

5. Count the number of electrons. Electrons= _____
6. What is the relationship between the number of protons and the number of electrons?

7. What type of observations did you just record? _____

Data Analysis: Fill in the table below. From top to bottom, put the elements in order of increasing number of protons. The element with the fewest number of protons should be at the top.

Number of Protons	Number of Neutrons	Atomic Mass	Number of Electrons	Element Name	Element Symbol

Using the chart above and your REAL Periodic Table, fill in the made up Periodic Table below with the appropriate place for the fake lab elements. Use the crosscutting concept of **patterns** to help you place the numbers, name and symbol in the correct place. Include the atomic number, element symbol, element name and atomic mass in each box. **ORDER MATTERS!!!**

