

Discovery Education Science Techbook ActivityLearning Objectives:

- Recognize that elements are built of one kind of atom made of protons, neutrons, and electrons.
- Recall that *atoms are made of protons, neutrons, and electrons.*
- Discover that elements are determined by the number of protons, neutrons, and electrons.

Procedures to complete this lab:

- Read the Introduction and click the Continue button.
 - Complete the Input Chart below for each combination of protons, neutrons, and electrons as you complete these steps:
 1. Enter the Input Combination and then press the Play button to discover the element created. Record the resulting symbol and name.
 2. Watch electron(s) circling in the atomic model and note the number of protons and neutrons. Then click on Choose Another and enter another combination from the chart below.
 3. Reread the Introduction and figure out the correct combination for the last element, Carbon.
- Hint: The atomic number (bottom number on square) also represents the number of electrons in an atom.

Input Data Chart:

Input Combination Proton/ Neutron/ Electron	Element Created		
	Symbol	Name	Illustration
1 / 0 / 1			
2 / 2 / 2			
3 / 4 / 3			
4 / 5 / 4			
5 / 6 / 5			
	C	Carbon	

Analysis Questions:

1. How many protons are in the element Boron (B)? _____
2. Where were the electrons located in your atomic model illustrations?

3. What pattern did you notice between the number of protons and the number of electrons for each element? _____

Drawing Conclusions:

Complete the following conclusion paragraph by filling in the blanks:

Atoms are composed of 3 primary parts _____, _____, and _____.
The _____ have a positive charge, the _____ have a neutral charge, and the _____ have a negative charge. An element is determined by the number of protons, neutrons, and electrons. The nucleus of an atom contains the protons and _____ while the _____ circle the outer edge of an atom.

Sharing Results:

Answer the following questions to share your findings:

1. What parts were most difficult in completing your lab?

2. What parts were easiest?

3. What would you modify to ensure this lab would be smoother next time?

