

Name: _____

Experiment: Drawing A Model for an Atom
(B. Science 10-2-1b)

Purpose: To draw a model of an element given the number of protons, neutrons, and electrons of the element.

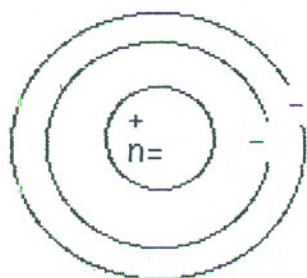
Materials: Periodic table pencil brain

Methods:

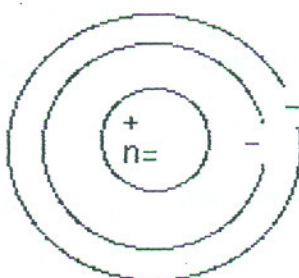
1. Use the periodic table to find the symbol, atomic mass & atomic number. Determine the number of protons, neutrons, and electrons in lithium & record this on chart.
2. Below the chart, write the number of protons in the circle next to a positive (+) sign for Lithium.
3. Write the number of neutrons in the circle next to the letter n.
4. Write the number of electrons for each energy level beside (-) sign. Remember the first energy level has 2 e maximum, second energy level has 8 e .
5. Repeat the steps for boron, oxygen, carbon, helium & neon atoms.

Results:

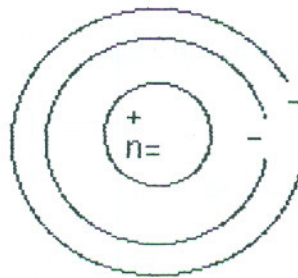
	atomic mass	atomic #	# of protons	# of neutrons	# of e
Lithium ()					
Boron ()					
Oxygen ()					
Carbon ()					
Helium ()					
Neon ()					



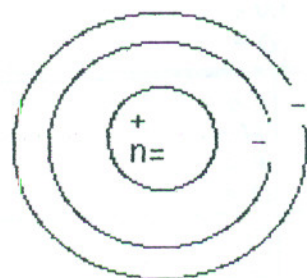
Lithium



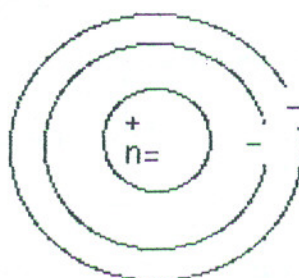
Boron



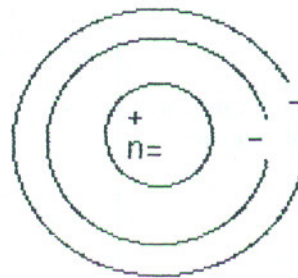
Oxygen



Carbon



Helium



Neon

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Conclusions:

1. What two parts of the diagram is the nucleus?
2. How is the model you have drawn different from a real atom?

Discussion:

The formula for a compound indicates the elements that make up the compound and the number of atoms of each element present in the compound. These numbers of atoms are indicated by the use of small numbers called subscripts. Sometimes groups of atoms act as a single atom. Such a group of atoms is called a radical. If a radical is used in a formula more than once, the radical is put in parentheses and the subscript appears outside the parentheses. When a subscript appears outside the parentheses, it indicates that all the elements inside the parentheses should be multiplied by that subscript. For example, the formula $\text{Fe}(\text{OH})_3$ indicates the combination of one atom of iron, Fe, three atoms of oxygen, O, and three atoms of hydrogen, H.

In the following examples, list each element in the compound and the number of atoms of each element present. The first example has been done for you. You may already be familiar with some of the compounds.

Name	Use	Formula	Atoms in Formula
Calcium carbonate	Limestone	CaCO_3	Ca = calcium 1 C = carbon 1 O = oxygen 3
Aspirin	Pain reliever	$\text{C}_9\text{H}_8\text{O}_4$	C = H = O =
Magnesium hydroxide	Found in milk of magnesia	$\text{Mg}(\text{OH})_2$	Mg = O = H =
Paradichlorobenzene	Moth crystals	$\text{C}_6\text{H}_4\text{Cl}_2$	C = H = Cl =
Acetic acid	Found in vinegar	$\text{C}_2\text{H}_4\text{O}_2$	C = H = O =
Trinitrotoluene (TNT)	Explosive	$\text{C}_7\text{H}_5(\text{NO}_2)_3$	C = H = N = O =
Calcium dihydrogen phosphate	Fertilizer	$\text{Ca}(\text{H}_2\text{PO}_4)_2$	Ca = H = P = O =
Pyrite	Fool's gold	FeS_2	Fe = S =