

Biology
pHet Build an Atom Activity

Name: _____

Date: _____ Hour: _____

Go to the following site: <https://phet.colorado.edu/en/simulation/build-an-atom>

Click on the “Build an Atom” game to begin.

Click on “Atom”. Make sure the Element, Mass Charge and Mass Number boxes are all clicked open. Use this activity to answer the following questions:

1. When you put 1 proton into the atom what do the following boxes read:

Element: _____ Mass charge: _____ Mass Number: _____

2. When you add 1 electron to this atom what do the following boxes read:

Element: _____ Mass charge: _____ Mass Number: _____

3. When you add 1 neutron to this atom what do the following boxes read:

Element: _____ Mass charge: _____ Mass Number: _____

4. Try to put another proton into the electron “ring”. What happens? _____

5. Build the following atoms. Fill in the information that is provided when they are finished:

a. Lithium - p^+ _____ n^0 _____ e^- _____ mass number _____

b. Oxygen - p^+ _____ n^0 _____ e^- _____ mass number _____

c. Beryllium - p^+ _____ n^0 _____ e^- _____ mass number _____

d. Fluorine - p^+ _____ n^0 _____ e^- _____ mass number _____

6. What do you notice about the number of protons and electrons in each of the atoms once they are finished?

7. Predict what the combination of particles would be for sodium if it's atomic number is 11:

p^+ _____ e^- _____ n^0 _____ mass number _____

Click on the “Symbol” button at the bottom of the screen to change programs.

7. Add particles until the “symbol” box reads a mass number of 4, atomic number of 2 and charge of 0. What element have you made?

8. Click on the restart button on the lower right hand side.

9. Make the following combinations of elements and name what you have built:

Mass Number	Atomic Number	Charge	Name of Element
2	1	0	
10	5	0	
13	6	0	
23	10	0	

If time is left over, click on the “game” button on the bottom of the screen. Play some of the games provided for extra practice.

Reflection Questions:

1. According to this program, how would you draw an atom that has 7 protons, 8 neutrons and 7 electrons? Draw your picture in the space provided:

2. Why do you think the charge was always 0 for the atoms we built? _____

3. What would happen if the charge of the atom was not 0? _____
