**Build an Atom** 

**1.** Google PhET build an atom and click on the first link. Click on the button.

**2**. Explore the simulation with your partner. Be sure to click on everything.

**3.** When Ms. Hawkins says it is time to start:

* Click on the reset all button.
* Open the boxes called **Net Charge** and **Mass number**
* These boxes and the periodic table box will help you fill in the data needed below.

**4.** Experiment by putting some **protons** into the nucleus of the atom (on the X). 





**5.**  Experiment by putting some **neutrons** into the nucleus of the atom (on the X). 





**6.** Experiment by putting 10 **electrons** into the nucleus of the atom (on the X). 





**Time to apply your understanding of the atom…**

**7.** Put 3 protons into nucleus of the atom. Fill in the following:

Name of atom:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ atom or ion? \_\_\_\_\_\_\_\_\_\_\_\_\_\_ net charge\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**8.** Put 1 neutron into the nucleus of the atom.

Name of atom:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ atom or ion? \_\_\_\_\_\_\_\_\_\_\_\_\_\_ net charge \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**9.** Put another neutron into the nucleus. What changes? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**10.** Put one more neutron into the nucleus. What do you notice? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**11.** Now add three electrons. How many electrons are in the inner circle? \_\_\_\_\_\_\_\_\_\_\_\_\_ How many are in the outer circle? ­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ What is the net charge? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**12.** Add three more electrons. How many electrons are in the inner circle? \_\_\_\_\_\_\_\_\_\_\_\_ How many are in the outer circle? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ What is the net charge? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**13.** Add the rest of the electrons. How many electrons are in the inner circle? \_\_\_\_\_\_\_\_\_\_ How many are in the outer circle? \_\_\_\_\_\_\_\_\_\_ What is the net charge? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Decide how you will build a **neutral atom** that is **stable.** Practice making atoms using your ideas. **Draw and label four different atoms that you created below.**

|  |  |
| --- | --- |
| **Name of atom\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Number of protons\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Number of neutrons\_\_\_\_\_\_\_\_\_\_\_\_\_****Number of electrons\_\_\_\_\_\_\_\_\_\_\_\_** | **Name of atom\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Number of protons\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Number of neutrons\_\_\_\_\_\_\_\_\_\_\_\_\_****Number of electrons\_\_\_\_\_\_\_\_\_\_\_\_** |
| **Name of atom\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Number of protons\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Number of neutrons\_\_\_\_\_\_\_\_\_\_\_\_\_****Number of electrons\_\_\_\_\_\_\_\_\_\_\_\_** | **Name of atom\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Number of protons\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Number of neutrons\_\_\_\_\_\_\_\_\_\_\_\_\_****Number of electrons\_\_\_\_\_\_\_\_\_\_\_\_** |