[***Build an Atom***](http://phet.colorado.edu/en/simulation/build-an-atom) **Remote ‌Lab ‌**

**(This‌ ‌lesson‌ is designed ‌for‌ ‌a‌ ‌student‌ ‌working‌ remotely‌.)‌**

**Part 1 Directions:** Use your own words and captured images for each question.

**Develop your understanding:**  Open the [***Atom***](https://phet.colorado.edu/sims/html/build-an-atom/latest/build-an-atom_en.html?screens=1) screen, then explore to develop your own ideas about the atomic particles that make up atoms and ions.

**Explain your understanding:**

**An Atom is Stable if it has 8 outer electrons or if is H or He with 2 outer electrons**

1. What parts go in the center of the atom? What is the center called?
2. Explore until you discover a good rule for making the center of the atom **stable**.
   1. What seems to make the center of the atom **unstable**?
   2. Fill in the table to identify three examples – at least 1 stable and at least 1 unstable – that shows your rules for stability work to “build an atom” of your own.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **What is in your nucleus?** | **Capture and paste your atom** | **Is it stable or unstable?** | **What Element is it?** |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |

**Part 2** Use your own words and captured images for each question.

**Develop your understanding:**  Everything around us is made up of different elements. The air has Oxygen and Nitrogen. Plants and people have lots of Carbon. Helium is in balloons. Hydrogen is in water.

Open the [***Symbol***](https://phet.colorado.edu/sims/html/build-an-atom/latest/build-an-atom_en.html?screens=2) screen, then explore to develop your own ideas about how the atomic particles determine the name of an atom or ion.

**Explain your understanding:**

1. What determines the element?
2. Test your idea by identifying the element for the 3 cases.Insert captured images.

|  |  |  |
| --- | --- | --- |
| **example** | **Atom or Ion has** | **What Element is it?** |
| 1 | # of protons: 6  # of neutrons: 6 # of electrons: 6 |  |
| 2 | # of protons: 7 # of neutrons: 6 # of electrons: 6 |  |
| 3 | # of protons: 6 # of neutrons: 7 # of electrons: 7 |  |

1. What does the tool called **Symbol** tell you about what parts are in an atom or ion?
2. What rules can you use to tell how many protons, neutrons and electrons make up an atom or ion?