**Just How Small is an Atom?**

Objective for this “flipped” lesson: I can compare the size of atoms to other objects.

**Instructions:**

1. Go to the following website: <http://ed.ted.com/lessons/just-how-small-is-an-atom>

2. Complete the following guided notes with the video. You may have to stop, rewind, or even watch the video again in order to complete the following.

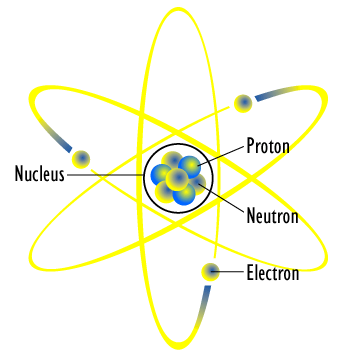
3. *There will be a short* ***quiz*** *tomorrow!*

**Notes:**

Matter is anything that takes up **space** and has **volume**.

Everything is made up of little tiny things called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Each atom is made up of subatomic (sub means “smaller than”; atomic is referring to an atom = smaller than an atom) parts called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.



If each of the Nitrogen atoms in a grapefruit were blown up to the size of a blueberry, how big would the grapefruit be? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

“So if I filled the Earth with blueberries, I would have the same number of Nitrogen atoms as a grapefruit?” \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In the center of the atom you find a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which contains the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The picture of the atom to the right is NOT to scale.

If a blueberry (an atom) were the size of a **football stadium**, then the nucleus would be the size of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

What is contained between the nucleus in the center and the electrons on the edge? Surprisingly the answer is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .