**Atomic Structure Web Quest**

1. Describe the importance of Ernest Rutherford’s atomic experiment.
<http://micro.magnet.fsu.edu/electromag/java/rutherford/>  or  <http://www.rsc.org/chemsoc/timeline/pages/1911.html>

2. The atomic number is the same number as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   Give an example of an element and its atomic number.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
<http://www.ndt-ed.org/EducationResources/HighSchool/Radiography/atomicmassnumber.htm>

3. The mathematical equation for atomic mass.
 <http://www.ndt-ed.org/EducationResources/HighSchool/Radiography/atomicmassnumber.htm>

4. Sketch a “Bohr’s Atomic Model” and label all the parts.  Use **C**arbon as an example. (Be sure to label +, -, and =)
<http://www.universetoday.com/56637/atom-model/>

5. Describe how to find the number of electrons in a neutral stable atom.
<http://education.jlab.org/qa/mathnuceus_01.html>

6. Sketch a diagram of an atom that is losing and electron and one that is gaining an electron, and explain how the atom’s charge changes.
<http://personal.psu.edu/staff/m/b/mbt102/bisci4online/chemistry/chemistry1.htm>

7.Describe nuclear force and how protons, electrons, and neutrons interact.
<http://academic.brooklyn.cuny.edu/physics/sobel/Nucphys/force.html>

8. Explain what an isotope is, and what role protons and neutrons play in the formation of an isotope.
<https://online.science.psu.edu/chem101_activewd/node/3335>

9. Give four examples of isotopes.  <http://staff.jccc.net/pdecell/chemistry/radiotopes.html>
<http://www.ptable.com/#Isotope>
     1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ isotope =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
     2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Isotope =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
     3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Isotope =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
     4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Isotope =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. Pick one of the isotopes above to sketch the stable atomic model and the isotope atomic model (no link)

11.  Use the table <http://www.ptable.com/#Isotope> to answer the following questions:
     1. Do all elements have an isotope?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
     2. Which element has the most isotopes?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , it has \_\_\_\_\_\_isotopes.  From \_\_\_\_ to \_\_\_\_\_.

12.  Sketch an atomic model of a model with 2 electrons on the first shell, and 7 electrons on the second shell.  If this atom is stable (neutral) how many protons are in the nucleus?  Sketch/label the protons in the nucleus.  If the atom’s atomic mass is 19 what is the name and symbol of the element.  Label the neutrons inside the nucleus. (No link)

13. Explain the difference and similarities between Uranium 238 and Uranium 235, in terms of protons, electrons, and neutrons.  (No link)

14.  Explain how atoms repel or attract each other, in the context of losing and gaining electrons.
<http://www.ndt-ed.org/EducationResources/HighSchool/Electricity/electriccharge.htm>

15. Try this practice quiz: <http://www.sciencegeek.net/Chemistry/taters/Unit1AtomicStructure.htm>             Score = \_\_\_\_%

Now that your brain is fried, lets simplify all of this and watch a little bit of Bill Nye.  (Spring fever remedy)
<https://www.youtube.com/watch?v=Tktvb-MaAac>
1. The word “atom” comes from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ meaning \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Electricity is the result of\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Briefly describe the space between the electrons, protons, and neutrons.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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4. Explain why atoms act like solids when they are mostly empty space.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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5. H2O, water has \_\_\_\_\_\_\_ Oxygen atoms and \_\_\_\_\_\_\_\_ Hydrogen atoms.
6. The number of \_\_\_\_\_\_\_\_\_\_\_\_\_ in the nucleus is what makes each element different.
7. Explain the difference between energy and matter?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_