Introduction

What is right in front of you and yet is impossible to see? The answer is atoms. An atom is the smallest particle of matter that can exist. All atoms are more or less the same size, but different atoms are made differently. The atom is made of tiny bits of energy called subatomic particles, and each type of atom has a different number of particles. These particles are organized inside the atom in a definite pattern. Because the particles are not matter themselves, just energy, they don't behave like matter. Sometimes it is useful to imagine them like little balls, and often diagrams of the atom show them that way. Around the outside of the atom there are tiny particles called electrons. Electrons move constantly. Each electron has a negative electrical charge. In the center of the atom (the nucleus) are the bigger, heavier parts of the atom. There are two types of particle in the nucleus. One of them is the neutron, a particle with no charge. The other type of particle is the proton, a particle with a positive charge.
Activity #1

Grade Level: Middle Level

Time: 60 Minutes for setup and building the atom

I. Learning Objectives and Expected Outcomes:

- From this experience the student will be able to identify the basic parts of an atom by constructing an atomic model.
- AT. 2. C. 1
  - Analyze an atom’s particle position, arrangement, and charge using:
    - Proton
    - Neutron
    - Electron

II. Materials

- Cardboard (18x12)
- Felt (18x12)
- Box knife or scissors
- Super glue
- Multiple colored ‘pom-poms’ (blue, yellow, and purple)
- Sticky Velcro Tabs
- Laminated sheet listing different atoms with their atomic structure
III. **Computer Technology:**

Microsoft Office: Excel, Word, and Internet

IV. **Methods:**

1. Have a worksheet with various atom structures (ex. Helium) laminated.
2. If necessary, cut out the felt and cardboard to be the same size.
3. Glue the felt to the cardboard.
4. Apply the sticker Velcro tabs to the pom-poms.
5. Give each student an atom board (felt on cardboard).
6. Give each student 4 each of the neutrons (blue), protons (yellow), and electrons (purple).
7. Hand out the laminated sheets listing different atoms from the periodic table.
8. Allow students to duplicate the atoms on their boards.
V. Assessment:

- Have the following image in a worksheet and have the students label the model.

- Have the students draw different atomic models (ex. Hydrogen and Helium)
Atoms

Hydrogen Atom
Neutron= 0
Proton= 1
Electron= 1

Helium Atom
Neutron= 2
Proton= 2
Electron= 2

Hydrogen Atom
Neutron= 0
Proton= 1
Electron= 1

Lithium
Neutron= 3
Proton= 3
Electron= 3
VI. References:

http://www.cstephenmurray.com/onlinequizes/chemistry/AtomicStructure/atomgraphic.jpg
dmtturner.org/Teacher/Library/5thText/ChemPart3.htm#atom
Arkansased.org/teachers/pdf/chemistry