

## Section 1 Structure of the Atom

- A. Elements are abbreviated in scientific shorthand—first letter or two of element's name
- B. Atom—smallest piece of matter that still has the properties of the element
1. Protons have electrical charge of 1+.
  2. Neutrons do not have an electrical charge.
  3. Electrons have electrical charge of 1-.
  4. Protons and neutrons are in the nucleus of an atom; electrons surround the nucleus.
- C. 1. Protons and neutrons are made up of smaller particles called quarks.
2. Six quarks are known to exist; the sixth is called the top quark.
- D. Scientists use scaled-up models to represent atoms.
1. Early models of atoms used a solid sphere.
  2. Current electron cloud model shows electrons traveling in specific energy levels around a nucleus of protons and neutrons.

**Discussion Question**

Where does the electron cloud model of an atom place protons, neutrons, and electrons? Protons and neutrons are in a center nucleus surrounded by electrons traveling in specific energy levels.

END