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about what you are  
reading in this space.

## Science Shorts -8

### Electron Cloud Model

Throughout the ages, scientists have changed their ideas of what an atom looks like. They have continued to do more and more experiments and make more and more observations. As they uncover new and different information, they must change their ideas of the model of the atom to fit the newly discovered information.

The current model of the atom is called the Electron Cloud Model. In this model, the atom is made up of three basic parts: protons, neutrons and electrons. The protons are positively charged particles and the neutrons are particles that have no electrical charge, so they are neutral. The protons and neutrons are inside the nucleus of the atom where they move about at random. The particles contain most of the mass of the atom.

The electrons of an atom are negatively charged particles that form a cloud surrounding the nucleus of an atom. These particles have almost no mass, but they take up most of the space of the atom. The Electron Cloud Model differs from previous models of the atom because of the way the electrons are located and how they behave.

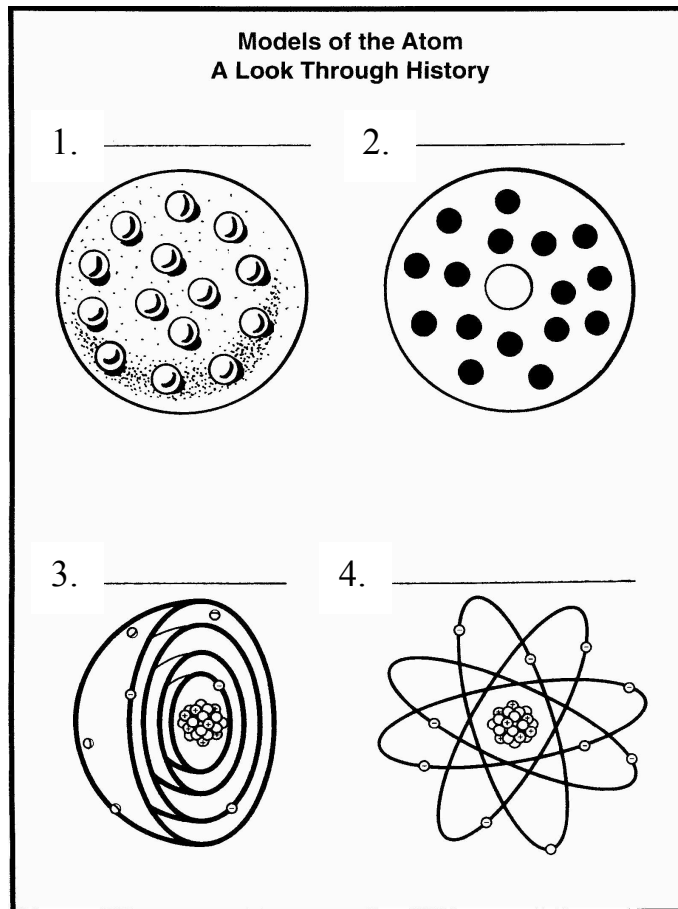
In the early 1900's Joseph John Thompson proposed a model in which the electrons were imbedded in a positively charged sphere. Later, Ernest Rutherford changed the model to include a nucleus surrounded by electrons. Niels Bohr further changed the model by stating that each electron traveled around the nucleus in a fixed orbit, like the solar system. More recently, scientists have found evidence to support another change in the model, resulting in the currently accepted Electron Cloud Model.

People continue to be fascinated by chemistry and the atom. Scientists continue to explore new ideas and to try new experiments. Sometimes their results confirm what other scientists have already learned. Sometimes their results pose new questions. As time goes on and scientists continue to satisfy their curiosity, the currently accepted model of an atom may be changed. Someday your children or grandchildren may try to explain a new model to you. Won't that be interesting?

Use the descriptions in the fourth paragraph to label the pictures below.

Electron Cloud Model  
Bohr Model

Thompson Model  
Rutherford Model



5. What are the three basic parts of the atom, according to the Electron Cloud Model? \_\_\_\_\_

6. According to the Electron Cloud Model where are electrons found?  
\_\_\_\_\_

7. What are electrons? \_\_\_\_\_

8. Why have scientists changed their ideas on the model of the atom?  
\_\_\_\_\_