Atomic Theory Time Line Project

Introduction

If you were asked to draw the structure of an atom, what would you draw? Throughout history scientists have accepted five atomic models. Our perception of the atom has changed from the early Greek model because of clues or evidences that have been gathered through scientific experiments. As more evidence was gathered old models were discarded or improved upon. Your goal is to trace the atomic theory through history.

Task

You and your partner will use the sources provided to develop a briefing that outlines the key scientists and experiments associated with the development of modern atomic theory. The briefing should include the names of the scientists, a description of the accomplishments, pictures of experimental equipment or atomic models, and description.

Process

I. Begin your research by using your textbook, the internet, and the links provided in the resource section to complete a research data sheet for each of the following 20 scientists, experiments, and atomic models:

Democritus  Robert Millikan  Electron Cloud Model
J.J. Thomson  James Chadwick  Ernest Rutherford
John Dalton  Erwin Schrodinger  Dmitri Mendeleev
Gold Foil Experiment  Niels Bohr  Henry Moseley
Cathode Ray Tube  Law of Conservation of Mass
Antoine Lavoisier  Dalton’s Atomic Theory
Plum Pudding Atomic Model  Rutherford Model
Bohr Planetary Model  Quantum Mechanical Model
II. Prepare a timeline: Poster board
   1. It should include information from your research data sheets presented in chronological order and pictures to illustrate your information.
   2. In 1-2 sentences tell the importance of the discovery that relates to the structure of the atom.

   A timeline is in chronological order – earliest time to latest time.

   1. Examples:
      Food Timeline
      http://www.foodtimeline.org/
      Timeline Tool
      http://timeline.thinkport.org/

Evaluation

Atomic Theory Time Line Grading Rubric

Resources

Atom - The Incredible World
http://library.thinkquest.org/19662/low/eng/index.html

The Atom - Info and Democritus, Plum Pudding, Rutherford Models
http://www.lbl.gov/abc/wallchart/chapters/02/1.html

History of the atom - Info and Plum Pudding, Rutherford, Bohr models

History of the electron
http://www.aip.org/history/electron/jjhome.htm

JJ Thompson
http://www.aip.org/history/electron/jjelectr.htm

Timeline
http://www.rsc.org/chemsoc/timeline/timeline.asp

Brainpop
http://www.brainpop.com/science/matter/atomicmodel/

Atomic Theory 1: The early days
http://www.visionlearning.com/library/module_viewer.php?mid=50
Conclusion

After completing your projects you should be able to: 1) Demonstrate an understanding of the present model of the atom by identifying the parts of the atom, the subatomic particle charges, and the relative location of each particle. 2) Demonstrate your knowledge of the history of the atomic theory by constructing a chronological order of events.