

Scientific Literacy Center

How the Discovery Process Works I Activity

Teaching Notes

Class Time: 15 minutes

Grade Level: High School- Pre-Freshmen

Assignment Type: Homework

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Adapted From: ScienceNetLinks: The History of the Atom Series- <http://sciencenetlinks.com/lessons/history-atom-ancient-greeks/>

History of the Atom

Lesson Overview:

Students will complete this activity following the video and PowerPoint lecture for How the Discovery Process Works. This activity will allow students to understand the development of modern ideas in science while exploring the history of the atom and the work of J. J. Thomson. Students will also be able to explain how these and other findings have led to advancements in the areas of science, technology, engineering and mathematics.

Materials:

1. Scientific Literacy Course video lecture, PowerPoint and lesson handout (high school) for *How the Discovery Process Works*

2. Links:

<http://www.aip.org/history/electron/jj1897.htm>

<http://www.furryelephant.com/content/radioactivity/discovery-electron-thomson/thomson-charge-mass-simulation/>

<https://sites.google.com/site/physicsflash/home/thomson>

<http://www.youtube.com/watch?v=o1z2S3ME0cI>

3. History of the Atom Teacher Notes: <http://sciencenetlinks.com/student-teacher-sheets/jj-thomson-teacher-sheet/>

3. Computer, Projector, Internet connection

High School Students

National Standards:

G. History and Nature of Science

GA Standards:

SPS1. Students will investigate our current understanding of the atom.

Undergraduate Students

Best Practices for Scientific Literacy

1. An understanding of the nature and development of scientific research and knowledge
2. Knowledge of the interdisciplinary nature of STEM
3. Possessing the ability to evaluate scientific evidence and explanations

Lesson Objectives:

1. Students will understand the development of modern ideas in science.
2. Students will explore the history of the atom and the work of J. J. Thomson.
3. Students will evaluate the significance of Thomson's experiment and its contribution to our modern theory of the atom.