Activity: Ernest Rutherford Video Questions

FOR THE TEACHER

Summary
In this activity, students will watch a video about Ernest Rutherford. They will learn about his great contributions to chemistry, including his study of alpha particles and his use of the gold foil experiment. They will also find out that he won the Nobel Prize in chemistry for his studies on radioactive substances.

Grade Level
Middle and High School

Objectives
By the end of this activity, students should be able to

- Understand and explain the importance of the gold foil experiment.
- Understand that the majority of the atom’s mass is contained in the nucleus.
- Explain that electrons are not located in the nucleus.

Chemistry Topics
This activity supports students’ understanding of

- Atomic Structure
- Atomic Theory
- Subatomic particles
- Model of the atom
- Radioactive isotopes
- History of Chemistry

Time
Teacher Preparation: minimal
Lesson: 10 minutes

Materials

- Ernest Rutherford video
- Student Handout
- Projector with Volume
- AACT Student Video Pass (optional)

Safety
- No specific safety precautions need to be observed for this activity.

Teacher Notes
- The Ernest Rutherford video was developed as a part of the AACT original video series, Founders of Chemistry. The entire series can be found here.
- The running time of this video is five minutes.
- This video is intended for students to watch, and for teachers to integrate into their curriculum.
- The student questions/answers are presented in sequential order in the video.
- An answer key has also been provided for teacher reference.
- Videos can be shown with the use of a classroom projector, or teachers can generate a Student Video Pass through their AACT membership to allow students to independently access the video.
FOR THE STUDENT
Lesson

Ernest Rutherford Video Questions

Instructions
While watching the *Founders of Chemistry* Video about Ernest Rutherford, answer the following questions:

1. What specific science did Ernest Rutherford help create through his experiments?
2. What three different types of radiation did Rutherford discover and name?
3. How long did Rutherford experiment with alpha particles?
4. What is radiation?
5. Describe JJ Thomson’s plum pudding model of the atom.
6. Describe Rutherford’s model of the atom.
7. Why did some of the alpha particles bounce back to the source during Rutherford’s gold foil experiment?
8. Whose model of the atom overthrew Rutherford’s model?