Activity: Spellbound Episode 1 Ahmed Zewail Video Questions

FOR THE TEACHER

Summary
In this activity, students will answer questions while watching a video from the Spellbound series produced by ACS. Each episode focuses on a different notable scientist, recounting how their interest in science was sparked in their childhood and how they went on to make great contributions to the scientific community. This first episode focuses on the childhood of Ahmed Zewail, who went on to become the 1999 Chemistry Nobel Laureate.

Grade Level
Middle School, High School

Objectives
By the end of this activity, students should be able to:
- Explain how childhood experiences can contribute to an individual’s scientific development.
- Describe Zewail’s contributions to chemistry.
- Reflect on their own interests and how they can use them to make a difference in the world.

Chemistry Topics
This activity supports students’ understanding of:
- History of chemistry
- Chemical change

Time
Teacher Preparation: minimal
Lesson: 10-20 minutes

Materials
- Spellbound Episode 1 Video
- Student Handout
- Computer and projector with volume

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

Teacher Notes
- The Spellbound series of videos is about the childhood experiences that inspired important scientists to become scientists. They can help students understand that anyone at any age, anywhere in the world can be inspired by science. These videos would be appropriate at any point in the year and, as they are publically available, could easily be used as part of an emergency sub plan.
- Since this is the first episode in the series, there is some introductory material about the series as a whole at the beginning of the video that is more for the teacher than the students. If you want to start after that introduction, skip ahead to 1:26.
- The running time of this video is about five minutes. As it is a short video and it moves pretty quickly, you may want to show it twice to ensure students can complete all the questions.
- The student questions/answers are presented in sequential order in the video.
- An answer key has also been provided for teacher reference.
• The last three questions ask for students to reflect on the content of the video as it applies to their life. It could be interesting to have students share answers with a partner or with the class after they have had a few minutes to answer those questions.

FOR THE STUDENT
Lesson

_Spellbound Episode 1 Ahmed Zewail: Video Questions_

**Instructions**
While watching the video, answer the following questions:

1. Where did Ahmed Zewail grow up?
2. What did Ahmed’s family do to encourage his intellectual curiosity when he was in elementary school?
3. What is femtochemistry?
4. How did Ahmed’s new technique allow him to study chemical reactions?
5. What materials did Ahmed use for his very first experiment as a child?
6. How did Ahmed’s mother respond to his first experiment?
7. Where did Ahmed study for his Ph.D.?
8. What did Ahmed say was critical for success?

After you watch the video, reflect on the following questions:

9. How would your family have reacted if you had done chemistry experiments in your house? Describe the possible reactions of at least two family members or friends.

10. What are you passionate about? How would you like to use your passion to make a difference in the world?

11. If you had the opportunity to ask Ahmed one question (about anything – his work, his life, etc.), what would it be?