

GRADES 9-12:

Career Field: Standard Engineering and Science Technologies

65:3: Describe postsecondary education and career opportunities in the field of Agricultural Engineering.

PROCEDURE:

In discussion before viewing *Agricultural Engineering*, the teacher may consider engaging students in discussion on any of the following topics:

- Agricultural Engineers help solve the problems of producing enough food and energy for a growing population while maintaining environmental quality.
- Agricultural Engineers are degreed professionals.
- Agricultural Engineering combines other engineering disciplines such as mechanical and chemical with biological sciences and ecology.
- Agricultural Engineers focus on the design and management of agricultural systems as they relate to farming practice.
- Agricultural Engineers rely heavily on skills from the STEM content areas – Science, Technology, Engineering, and Math.
- Agricultural Engineers rely heavily on creative thinking skills in order to solve problems.

In discussion after viewing the *Agricultural Engineering* video, the teacher may have a follow-up discussion on the same topics discussed before viewing the video.

BEFORE VIEWING:

Distribute the Agree-Disagree chart and the Pre and Post-viewing guide on the following page to provide focused viewing for students while watching the *STEM Career Lab* video, *Agricultural Engineering*.

Have each student complete the “Before Viewing” column on the Agree-Disagree Chart and the “What I Already Know” column of the Guided Viewing Worksheet. Let students know it’s okay if they do not know all the answers.

WHILE VIEWING:

Play the *Agricultural Engineering* video and instruct students to now fill out the “What I learned” Column. Students will make notes about their impressions of needed skills in science, technology, engineering and math and how they need to prepare to go into a career in Agricultural Engineering.

AFTER VIEWING:

Have students complete the “After Viewing” column on the Agree-Disagree Chart. Discuss the changes in their answers, then use the Guided Viewing worksheet to facilitate a post viewing discussion with students.

DIRECTIONS:

Mark whether you agree or disagree with each statement in the left column before viewing the video. After viewing the video, identify whether you agree or disagree with each statement in the right column. Discuss each statement as a group.

<i>Before Viewing</i>	<i>Statement</i>	<i>After Viewing</i>
Agree Disagree	Agriculture as a career field is only for students who excel in STEM subjects.	Agree Disagree
Agree Disagree	Agricultural Engineering projects require teams of people with many different skills.	Agree Disagree
Agree Disagree	Agricultural Engineers focus is on the design of agricultural systems.	Agree Disagree

	<i>What I Already Know</i>	<i>What I Learned</i>
1. What do Agricultural Engineers do?		
2. How important are Mechanical, Chemical, Electrical & Biological Sciences to the field of Agricultural Engineering?		
3. How important is it for an Agricultural Engineer to understand how to maintain environmental quality?		
4. What STEM courses in high school should students take in order to prepare for an Agricultural Engineering program?		
5. How can Agricultural Engineers impact environmental quality?		
6. What types of people are well-suited to becoming Agricultural Engineers?		
7. What are some of the innovations in Agricultural Engineering that have a positive impact on the environment?		
8. Where can Agricultural Engineers work?		