

GRADES 9-12:

Career Field: Standard Engineering and Science Technologies

65.3: Describe postsecondary education and career opportunities in the field of Engineering.

PROCEDURE:

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

- Biomechanical Engineering is a field which applies the principles of Mechanical Engineering to the human body.
- Biomechanical Engineers are degreed professionals.
- Biomechanical Engineering applications are typically practiced in the following domains: clinical, occupational, and sports.
- Biomechanical Engineering is a sub-field of Biomedical Engineering.
- Biomechanical Engineers rely heavily on skills from the STEM content areas – Science, Technology, Engineering, and Math.
- Biomechanical engineers rely heavily on creative thinking skills in order to solve problems.

In discussion after viewing the *Biomechanical 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, *Biomechanical 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 *Biomechanical 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 Biomechanical 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	Biomechanical Engineering as a career field is only for students who excel in STEM subjects.	Agree Disagree
Agree Disagree	Biomechanical Engineering programs are often included under Biomedical or Mechanical Engineering tracks in college.	Agree Disagree
Agree Disagree	Biomechanical Engineers focus on helping people by applying the principles of Mechanical engineering to the human body.	Agree Disagree

	<i>What I Already Know</i>	<i>What I Learned</i>
1. What is a Biomechanical Engineer?		
2. In what domains do Biomechanical Engineers typically work?		
3. How does Biomechanical Engineering help people?		
4. Why is Biomechanical Engineering an up and coming field?		
5. What other fields often work in conjunction with the Biomechanical Engineering field?		
6. Who would be a good fit for the Biomechanical Engineering profession?		
7. What are some of the educational pathways you could take to enter the field of Biomechanical Engineering?		
8. What courses should you focus on in high school to prepare for a career in Biomechanical Engineering?		