

Ag Issues 101



Grade Level: 9th – 12th Grade

Approximate Length: 125 – 180 minutes

Objectives:

- Understand the world population is growing and new solutions are important before reaching carrying capacity
- Discuss the importance of technology and the role it plays in the agriculture industry
- Learn about the global water crisis and how we can make difference
- Understand the types of alternative energy and how it plays a role in society

Science Standards Available (Teacher will identify which standards to bundle):

- ESS2-2 Feedback in Earth's system
- ESS3-1 Global Impacts on Human Activity
- ESS3-3 Biodiversity, natural resources and human sustainability
- ESS3-4 Reducing human impact design solutions
- ESS3-6 Human impacts on Earth systems
- LS2-1 Carrying capacity of ecosystems
- LS2-7 Human impact reduction solution
- LS3-1 Chromosomal inheritance
- LS3-2 Inheritable genetic variation

Outline for Program:

- **Interest Approach (5-10 min):** Students will start the lesson by discussing the main purpose of agriculture... Producing food, fiber and fuel for the world. They will then watch a demonstration, where cutting an apple a certain way shows the usable land on Earth to feed people.
- **Opening Activity (15-20 min):** During this time, students will work as a team in small groups to generate a list of the most pressing topics in Agriculture. Then as a whole group we will come together to share our answers and see how each groups perceptions differ. Looking at the total list of topics, we can then focus on the main topics in the presentation.
- **Presentation (45-60 min):** The students will learn about some of the main topics in agriculture. They will cover topics such as population growth and Earth's carrying capacity, technology use (soil testing, GPS, GMOs, etc.), the global water crisis (quality and quantity) and alternative energy use (geothermal, ethanol, wind, solar, etc.). Students will understand that there are many new ways to get creative and make a difference in agriculture, while protecting the environment. Together we will explore these various topics and open student's eyes to the possibilities. This can lead to them making a difference as a consumer or even a career choice.
- **IQhub Scavenger Hunt (45-60 min):** The IQhub is an interactive museum, that will help the students build on topics they have already learned and grab their attention for some new ones as well. Students can work individually or in small groups to explore the IQhub and learn about agriculture and the environment. This museum incorporates Science, Technology, Engineering and Math (STEM) to give students a well-rounded and fun learning experience.
- **Closing Activity (15-30 min):** The students will create a public service announcement (PSA) to help educate other on their agricultural topic. Student will brain storm with their small groups and create their own PSA, which will include a written communication and a poster/ flyer. Some methods of written communications would be a press release, newspaper article, blog, radio announcement, television spot, etc. The poster or flyer will need to include images to grab people's attention.