

## STEM in agriculture

# STEM in agriculture – teacher learning progression

Students will investigate STEM in agriculture and relate it to a career in agriculture.

### **Sequence**

1. Students will complete the STEM in agriculture e-learning module.
2. Students will discover and report on an innovation in agriculture.
3. Students will investigate a career related to agriculture.
4. Students will complete a personalized learning experience related to a career of their choice.

### **Ohio standards**

Nature of Science (K-12): One goal of science education is to help students become scientifically literate citizens able to use science as a way of knowing about the natural and material world. All students should have sufficient understanding of scientific knowledge and scientific processes to enable them to distinguish what is science from what is not science and to make informed decisions about career choices, health maintenance, quality of life, community and other decisions that impact both themselves and others.

### **Materials**

STEM in agriculture e-learning

STEM innovations in agriculture lesson – student.pdf

Sample presentation for STEM innovations in agriculture

<https://docs.google.com/presentation/d/1jjTQsq5BYih8NE8KVqbZ86xNCUaLAp7MtXa91ZqAljE/edit#slide=id.p>

STEM careers investigation – student.pdf

STEM careers personalized experience deck

### **Objectives**

Students will know that there are many innovations in agriculture.

Students will understand that the innovations in agriculture are created by people with careers in STEM areas.

Students will be able to identify their career interests related to an agricultural career.

### **Prior Knowledge**

Students should have a basic understanding of their likes and dislikes.

### **Engage**

Ask students if they know what STEM stands for, then to write down as many STEM careers as they can think of in two minutes. Do not spend time discussing what STEM is or give them a lot of details. Collect their papers to give back to them at the end of the unit.

### **Explore**

1. Complete the e-learning course
2. Students complete STEM innovations in agriculture research and create a presentation.

– STEM innovations in agriculture lesson – student.pdf

Students use a template slide to add their information



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<https://docs.google.com/presentation/d/1jjTQsq5BYih8NE8KVqbZ86xNCUaLAp7MtXa91ZqAljE/edit#slide=id.p>

Teachers may want to use something like this presentation, but will need to check links for accuracy.

3. Students complete the AG Explorer MyCareer Quiz, then investigate two of the careers to find out more information. Finally, students choose one career to determine job availability and demand.

### Explain

As students present, they will explain why they have chosen the innovation and career they investigated and apply what they know about themselves to determine if there is a career choice they are interested in pursuing. (self reflection)

### Extend

Students complete the STEM personalized learning experience (link to deck)

-learn more about the day-to-day work environment

-plan their coursework for pursuing that career

-students may find a person in their career to shadow

### Evaluate

Students are evaluated with a presentation rubric for their innovation presentation.

Rating	1	2	3	4
Photo	No photo	Photo is not recognizable or is unclear or contains extraneous elements	Photo is identifiable and clear	Photo is high resolution, easily identifiable with attribution
Description of innovation	Description is unclear	Description is clear with one descriptor	Description is clear with two descriptors	Description is clear with connection to an agricultural technology
Importance of innovation	Importance is unclear with no or only one descriptor	Importance is clear with only two descriptors	Importance is clear with three descriptors	Importance is clear with three descriptors and a connection to agricultural problem or concept
Slide design	Slide is not readable or lacks information	Slide is too crowded, font is too small or hard to read, background is distracting	Slide is readable with clear layout	Slide is easily readable, background and layout easy to follow

Additional evaluation of careers investigation is based on completion or if there is a specific protocol developed by the teacher.