

GROW YOUR PALS PROGRAM GUIDE



THE NATIONAL FFA MENTORING PROGRAM

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LESSON 1

Surrounded by Technology

Unit:
TECHNOLOGY

PRECEPTS

- E. Awareness
 - E1. Address issues important to the community
- N. Decision-making
 - N2. Demonstrate problem-solving skills



Lesson Type:
Large Group

NATIONAL STANDARDS

- NS.K-4.5 Science and Technology
- NT.K-12.1 Basic Operations and Concepts
- NT.K-12.3 Technology Productivity Tools
- NT.K-12.4 Technology Communication Tools

STUDENT LEARNING OBJECTIVES

As a result of this lesson, the student will ...

1. Define technology.
2. List technologies that are common between themselves and agriculturalists.





TIME

Instruction time for this lesson: **45 minutes.**



RESOURCES

None



TOOLS, EQUIPMENT AND SUPPLIES

- ✓ scrap paper – 1 sheet per student
- ✓ writing surface
- ✓ PALS.1.AS.A – 1 set per group of 3

KEY TERMS



technology
agriculturalist

INTEREST APPROACH

*Begin by giving the students the directions listed below. You will challenge the students to think of all the examples of **technology** in their school. They will have two minutes to create their list of technologies. Upon completion of giving the directions, give each student a piece of scrap paper to write down their answers and tell them to begin. Students may need an example or two to get them started. Examples could include computers, televisions, projectors and calculators. In fact, you could even offer the pencil sharpener as an example, because at one time someone had to design it in order to accomplish the task of sharpening a pencil.*



Thank you for quieting down and focusing your attention as eager learners.

Every day we are surrounded by many kinds of **technology**. A simple example would be a calculator. A calculator was designed to help us with various types of arithmetic. Look around. I bet you can see several other examples in this room. Think about some of the **technology** outside this room, maybe in the lunchroom, library or gym. When you hear the word GO you will have two minutes to list on these pieces of paper (*show scrap paper*) as many types of **technologies** that you can think of that are in this school. What questions do you have?

Hand out scrap paper.

GO.

Move around the room to help students that may be struggling or have questions. Tell the students when there is one minute left and then when they have 30 seconds remaining.

One minute left.

Thirty seconds left.



Time is up. Finish writing your last type of **technology** and put your pen or pencil down. It looks like all of you came up with several examples. Let's share some of them you have written down. Raise your hand to be the first to share with the group.

List the examples on the writing surface. You may want to add some at the end to increase the list, if necessary. Examples students may not consider as **technology** would include the phone, clock, scoreboard in the gym or maybe the cash register in the lunchroom.



Wow, that is quite the list. We are surrounded by **technology** all the time! Today we will investigate technologies and discover how they are important to our lives.

SUMMARY OF CONTENT AND TEACHING STRATEGIES

OBJECTIVE 1. | Define technology.



I. Technology – the application of science and innovation to make tasks easier and/or better

Lead students through a Me-You-Us e-Moment. Me-You-Us asks students to reflect on a question posed by the teacher (Me), and then allows pairs of students to share thoughts (You), finally the pairs share with larger groups, or the entire class, in order to combine all students' thoughts (Us). On the back of their scrap paper you will first have them write down a definition for **technology**, then they will share those definitions with their neighbor in an attempt to make their definition better. And finally they will share their definitions with the class.



Our list is full of examples of **technology**, but how would you define the word **technology**? If we were to look in the dictionary, how would it define **technology**? When I say BEGIN you will have one minute to write down your personal definition for technology.

What questions are there?

BEGIN.

Move around the room to help students that may be struggling or have questions. If the students are struggling you may want to mention words like science, knowledge, innovation, invention, easier, quicker, better and beneficial to help them develop their definition. Tell the students when they have 30 seconds remaining.

Thirty seconds left.



Time is up. Let's see if we can make those definitions even better. When you hear the word SHARE you will have one minute to share your definition with your neighbor and put your best thoughts together. Make your definition even better by combining what you both have. What questions do you have?

SHARE.

Move around the room to help students that may be struggling or have questions. Tell the students when they have 30 seconds remaining.

Thirty seconds remaining.



Stop. Turn to your neighbor and thank them for sharing their definition.

Thank you for sharing your definition.



Now it is time to share with the entire group. What group will be the first to share their definition for **technology**?

Have students share their definitions and listen for terms such as science, knowledge, innovation, invention, easier, quicker, better and beneficial.



Those are quality definitions you developed. Taking all those thoughts, we could define **technology** as the application of science and innovation to make tasks easier and/or better. In agriculture there have been major changes in the use of **technology** over time, just like there has been in this classroom.



How about tractors? That is a form of **technology** that has helped agriculture. What did farmers use before tractors?

Allow students to give answers. Answers that can be expected are oxen, mules, donkeys, horses and people.



Farmers began by doing everything by hand, next came the use of animals such as oxen and horses, then engines came along and finally tractors were designed.



Before we move on, here is a fairly standard definition of technology. Write it beside your definition and raise your hand when you're finished.

Technology – the application of science and innovation to make tasks easier and/or better

OBJECTIVE 2. | List technologies that are common between themselves and agriculturalists.



Card Matches Would Include:

(Pictures)

Animal Identification Chip

Cell Phone

Combine

Computer

Digital Cameras

Fertilizer

Genetically Enhanced Crops

Global Positioning System (GPS)

Insecticide

Irrigation

Podcasting

Radio

Television

Tractor

(Words)

Used to track livestock.

Used to communicate with other agriculturalists.

Used to harvest a crop.

Used to keep financial records.

Used to take pictures for management decisions.

Used to increase growth in plants.

Used to provide plants with special characteristics.

Used to navigate equipment in the field.

Used to get rid of insects.

Used to provide water to plants.

Used to learn about agriculture.

Used to listen to the news, weather and markets.

Used to watch the news, weather and markets.

Used to work in the fields.

II. List common technologies between **agriculturalists** and the mentee.

*Engage the students in a matching challenge. You will need to have a set of the Technology Cards for every four students in the class. These cards can be cut out from Technology-1-AS.1. Give them the directions listed below. Their task is to match the forms of **technology** with how it is used in agriculture. Move around the room during the time and answer questions the students might have. As the mentor, you may need to help them figure out the correct matches.*



Now that we have a specific definition of *technology*, let's put our thinking caps on to discover how technology helps **agriculturalists**.

A farmer is an example of an **agriculturalist**. An **agriculturalist** is someone working in or concerned with the food and fiber industry. **Agriculturalists** use a lot of different types of technologies every day. In a moment you will receive a set of Technology Cards. Some have the names of different types of technologies used by **agriculturalists**, and others have definitions for those types of **technology**.



Your task is to match the right **technology** with their definition. An example might be if a card said “television” on it and you matched it with “used to watch cartoons, sports and the news.” When you have matched all your cards, raise your hand and one of us will come over to check your work. When I say GOOD LUCK you will have eight minutes to correctly complete your matching challenge. When we pass out the cards, I am going to number you off into groups of three to work through this challenge. What questions do you have?

(Number the students off into groups of three as you pass out the cards. If the class is not divisible by three you may end up with a group of two at the end, or if you have one student left you can either add that student to another group to make a group of four or split the final group into two groups of two).

GOOD LUCK.

*Pass out cards to groups and move around the room to answer questions that may arise. As groups finish matching the cards, challenge them to think if they have ever used any of these forms of **technology**.*

Card Matches Would Include:

(Pictures)

Animal Identification Chip
Cell Phone

Combine
Computer
Digital Cameras

Fertilizer
Genetically Enhanced Crops

Global Positioning System (GPS)
Insecticide
Irrigation
Podcasting
Radio

Television
Tractor

(Words)

Used to track livestock.

Used to communicate with other
agriculturalists.

Used to harvest a crop.

Used to keep financial records.

Used to take pictures for management
decisions.

Used to increase growth in plants.

Used to provide plants with special
characteristics.

Used to navigate equipment in the field.

Used to get rid of insects.

Used to provide water to plants.

Used to learn about agriculture.

Used to listen to the news, weather and
markets.

Used to watch the news, weather and markets.

Used to work in the fields.

*Work with the groups to make sure they have all the correct matches. You may have to explain some of the cards and uses to the students if they do not understand. Then ask them which technologies they have used in the past that are the same as the **agriculturalists**. Discuss how they or their parents have used them. An example might be a GPS when they went camping or in a vehicle they have ridden in. Another might be a computer they use for their homework. Have them put those cards in a line to make a list.*



Which of these technologies have you used?

Allow students to answer.



Take those cards that you just mentioned and put them in a row. You now have a list of technologies that you have used just like the **agriculturalist**. Are there other technologies that you think you have in common with **agriculturalists**?

Allow students to answer. You may receive answers and you may not.



Agriculturalists use many of the same technologies that you do. They use them every day to help produce the food that we eat and many of the products that we use.



REVIEW / SUMMARY

Listed below are the directions to quickly review the main objectives from the lesson. Ask them to define **technology** and have them take turns listing a **technology** that they use just like an **agriculturalist**. Ask each group to share a **technology** that they have in common with **agriculturalists** when you point to their group.



Listen closely and see if you can fill in the blanks.

Technology is the (application) of (science) and (innovation) to make tasks (easier) and/or (better).



When I point to your group, list one of the technologies that you have in common with **agriculturalists**.

Point to each group a couple of times.



Thank you for sharing your lists. Remember, **technology** is not only an important part of our lives, but also in the life of agriculture.

APPLICATION



Small Group Suggestion: Show the students the Technology Cards and match the **technology** with the use. Take a few minutes to explain each pair. Then use the Technology Cards in a memory game-type format. Place all cards facedown and have the students try to make matches. The matches would be to pair up the **technology** with its use. As the mentor, you may need to help them remember the correct matches.



One-on-One Session: Look through a magazine with the student and cut out pictures of all the technologies that the two of you can find. Glue them onto a piece of construction paper, making a **technology** collage.



ASSESS.1 | EVALUATION ANSWER KEY

1. Define *technology*. (*Technology is the application of science and innovation to make tasks easier and/or better*)
2. List four technologies that you have in common with an *agriculturalist*. (*Answers will vary.*)



PALS.1 ASSESS.A | EVALUATION

Surrounded by Technology

Answer the following questions to the best of your ability.

1. Define technology.
2. List four technologies that you have in common with an agriculturalist.

PALS.1.AS.A

Technology Cards (match the picture of the technology to the description of how it is used by agriculturalists).

Pictures	Words
Animal Identification Chip	Used to track livestock.
Cell Phone	Used to communicate with other agriculturalists.
Combine	Used to harvest a crop.
Computer	Used to keep financial records.
Digital Cameras	Used to take pictures for management decisions.
Fertilizer	Used to increase growth in plants.
Genetically Enhanced Crops	Used to provide plants with special characteristics.
Global Positioning System (GPS)	Used to navigate equipment in the field.
Insecticide	Used to get rid of insects.
Irrigation	Used to provide water to plants.
Podcasting	Used to learn about agriculture.
Radio	Used to listen to the news, weather and markets.
Television	Used to watch the news, weather, and markets.
Tractor	Used to work in the fields.

Example Cards:

	Used to communicate with other agriculturalists.
	Used to navigate equipment in the field.
	Used to work in the fields.
	Used to keep financial records.