

GROW YOUR PALS PROGRAM GUIDE



THE NATIONAL FFA MENTORING PROGRAM

Sponsored by



LESSON 2

Paving the Road with Technology

Unit:
TECHNOLOGY

PRECEPTS

F. Continuous Improvement

F4. Acquire new knowledge

N. Decision-making

N1. Demonstrate the decision-making process



Lesson Type:
Large Group

NATIONAL STANDARDS

NT.K-12.2 Social, Ethical and Human Issues

NT.K-12.6 Technology Problem-solving and Decision-making Tools

NSS-USH.K-4.1 Living and Working Together in Families and communities, Now and Long Ago

STUDENT LEARNING OBJECTIVES

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

1. Generate examples of how technology has developed over time.
2. Describe benefits and challenges that occur through the use of technology.





TIME

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



RESOURCES

None



TOOLS, EQUIPMENT AND SUPPLIES

- ✓ **rotary dial phone** (real phone or picture included)
- ✓ **touch key phone** (real phone or picture included)
- ✓ **cordless phone** (real phone or picture included)
- ✓ **cell phone** (real phone or picture included)
- ✓ **scrap paper** (1 piece for each student)
- ✓ **can outfit fashioned for an elderly person** (optional if the character of History Henry/Harriet wants to dress the part)



KEY TERMS

technology

INTEREST APPROACH

Begin by giving the students the directions listed below. You will ask the students to remember a time they have heard a phone ring and to explain what it sounded like when it rang. You will then challenge the students to draw a picture of a phone on a piece of scrap paper. They will have two minutes to draw the picture of a phone. Upon completion of giving the directions, give each student a piece of scrap paper and tell them to begin. If they ask what kind of phone they should draw, simply tell them to draw an image of the phone that first came to mind.



How many of you have heard a phone ring?

Allow students to raise their hands.



What did it sound like?

Allow students to answer. Answers may be a ringing sound, beeping sound, music and a voice.



In your mind's eye, what does that phone look like? When you hear the word DRAW, you will have two minutes to draw a picture of a phone on these pieces of paper (*show scrap paper*). What questions do you have?

Hand out scrap paper.

DRAW.

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

One minute left.

Thirty seconds left.



Time is up. Finish your fantastic artwork and set your pen or pencil down. On the count of three everyone hold up their artwork to be displayed to everyone in the room. One. Two. Three. *Look around at all the phones.*

*After everyone has had a chance to look at each other's artwork show them examples of older phones. This will give them the chance to see how **technology** has progressed throughout the years. During this time explain the definition of **technology** to them so they understand what **technology** is, and you may want to offer other examples such as the television, computer, microwave and automobile.*



Great drawings! I have my own examples of phones, but they may be a little different than yours thanks to **technology**. Have you ever seen these?

Show students the different types of phones.



These are some examples of how phones have changed over the years. This would be an example of advancement in **technology**. **Technology** is the application of science and innovation to make tasks easier and/or better. People have invented new types of phones using their knowledge and skills to make it easier to talk with each other. Computers are another example of **technology**. Before the invention of computers, if you wanted to write a letter you might have used a typewriter. And before that your only choice may have been a pen and paper. Now computers are used for all types of tasks.

SUMMARY OF CONTENT AND TEACHING STRATEGIES

OBJECTIVE 1. | Generate examples of how technology has developed over time.



*It will take two mentors to perform the following skit. The skit will be done in a modified version of an Eyewitness News e-Moment. The Eyewitness News e-Moment is a strategy that challenges students to role-play a talk show host, news anchor, interviewer or multiple interviewees in order to learn or review a concept. Capturing the news as it breaks helps your students review and communicate what they learn. One mentor will be History Henry/Harriet. This character's role is to give examples of old-time **technology**. The reporter then talks about what current **technology** is used to do the same task.*

*If only one mentor is available, this can be adapted to be done with one mentor and a volunteer student. The student could play the role of the news reporter by asking History Henry/Harriet the questions. But this time History Henry/Harriet would explain both the past and present **technology**.*

The mentor that plays History Henry/Harriet may want to dress up in an outfit fashioned for an elderly person in order to make the character look older.

Now, let's turn our drawings over and discover the benefits of **technology**. You know that **technology** is the application of science and innovation to make tasks easier and/or better. Let me introduce History Henry/Harriet. He/she is here today to give examples of how **technology** has changed over time. Welcome History Henry/Harriet.

History Henry/Harriet: Well hello there.

News Reporter: How was your trip here?

History Henry/Harriet: It took a long time because we had to stop three times for my horse to get water, and then we had to rest for an hour because he got plumb wore out.

News Reporter: You know History Henry/Harriet, we have cars and trucks now. They are examples of how **technology** has made it easier to travel.

History Henry/Harriet: Really? That is quite an example. My horse would like that.

News Reporter: What is your favorite food?

History Henry/Harriet: Well, it is popcorn but it takes forever to get it to pop over a fire.

News Reporter: You know History Henry/Harriet, you don't have to use a fire these days. People invented stoves to cook on. And today we have microwaves where you can pop popcorn in a bag in just a couple of minutes.

History Henry/Harriet: You don't say, another example of **technology**.

News Reporter: How do you suppose that popcorn is grown these days?

History Henry/Harriet: I assume a farmer uses horses to get the soil ready, plants the crop and then picks the corn by hand and takes it to market. That is how we used to do it when I was growing up.

News Reporter: Not exactly. Farmers prepare the soil using tractors and machinery. They plant the crop with machinery and then might even use a combine to harvest the corn. It is taken to a processor that gets the popcorn ready to sell, and it is sent to stores for you and me to buy.

History Henry/Harriet: Let me guess, just another example of **technology**?

News Reporter: Well History Henry/Harriet, we are out of time but thanks for stopping by today. Hopefully the students have learned from your fine examples just how much **technology** has changed over the years. Give History Henry/Harriet a round of applause.



We talked with History Henry/Harriet about how **technology** has changed and some of the benefits with **technology**. Behind each of those technologies are numerous ideas, patience and hours of work. **Technology** is not easy to create and can come with challenges as well, but usually the benefits outweigh those challenges. Let's look at some of these benefits and challenges.

OBJECTIVE 2. | Describe benefits and challenges that occur through the use of technology.



*Students will be given a scenario that will require them to think about the benefits and challenges of different forms of **technology**. The scenario is that they have been snowed in at school and they are not going to be able to leave for two days. There is no electricity. They have a list of items that are available to them and they must decide what five items are the most important to them to make it through the next two days. After giving them the directions below, you will put them in groups and pass out the PALS.2.AS.A.*

Technology is the application of science and innovation to make tasks easier and/or better. Advancements in **technology** benefit us in our everyday lives, but sometimes **technology** can come with challenges.



Imagine that it is winter and there is snow falling outside the school. It is nice and warm in the school and you have just finished lunch. You are headed back to your classroom to work for the afternoon and you look out the window. The snow is getting deeper and the lights flicker a little. You make it back to your classroom and you are working with your classmates on science. All of a sudden the lights in the school go out because the snow and wind have knocked out the electricity. You can still see in the classroom because light is coming through the windows. Out those windows you can see the snow is really deep. The teacher says that the electricity will not come back on for two days and that all the roads are blocked. You and all your classmates are going to be at school for the next two days before the roads can be cleared. The teacher says that you and your classmates are going to have to make some decisions about the next two days.

He/She has a list of 25 items from which you have to decide what are the five most important items that you and your classmates will need to make it through the next two days. This is an important decision we will have to make.

When I say DECIDE, you will have four minutes to choose five items from this list (*hold up list*). Choose wisely and think about what will be needed over the next two days.

What questions do you have?

DECIDE.

As you pass out the list, put the students in groups of approximately four to work through the challenge.

The list includes the following items:

*blankets and pillows
books and puzzles
bottled water
boxes of cereal
candle and matches
canned fruit and vegetables
cell Phone
clock with batteries
computer*

electric heater
flashlight with batteries
frozen chicken nuggets
frozen pizza
generator with fuel that can run two items
granola bars and fruit snacks
lamp
microwave
milk
radio with batteries
refrigerator
snow shovel
teacher's desk phone
television with DVD player
un-popped popcorn
video games

Move around the room during the time and answer questions the students might have. Tell the students when they have two minutes left, one minute and then 30 seconds. Upon completion have the students share their list and question them as to why they picked the items they did.

Two minutes remaining.

One minute remaining.

Thirty seconds remaining.



Stop. Look at the classmates in your group and tell them thank you for sharing their ideas.

Thank you for sharing your ideas.



Now it is time to share with the entire group. There is not a right or wrong answer to this challenge but rather several perspectives of what would be the most important items over the next two days. Each group will have the opportunity to tell us the items they picked, and get ready because I may ask you to explain why you picked some of the items you did.

Who will be the first to share?

*Have the groups share their lists and ask questions as to why they picked some of the items that they did. There may be items they pick that wouldn't work without electricity, and you will want to discuss that with them. You may want to ask questions as to what they would do if the batteries ran out on some of the items. The discussion is used to get them to think about all the benefits we have due to **technology**. But to also realize that with **technology** there can be challenges.*



Thank you for sharing your lists. One might say we are spoiled because of **technology** and we don't realize it until we don't have the use of it. Past methods of doing things are not bad and in some situations we still have to rely on them. But we are lucky to have had many innovative people before us who looked at situations and realized there were easier or better ways to do them. We benefit from all their innovations and ideas.



REVIEW / SUMMARY

Have students stay in their groups to participate in reviewing the objectives. Ask them to think back through the lesson and recall the answers to the questions you will ask. You will want to have the phones you used at the beginning of the lesson so you can show those again.



Think back to the phones we talked about at the beginning of the class. **Technology** has changed what phones have looked like over the years. Which one of these is the oldest version of a phone?

Answer: Rotary dial phone

Then?

Answer: Touch key phone

Then?

Answer: Cordless phone

And now?

Answer: Cell phone



What about History Henry/Harriet? He/She talked about riding a horse here today. How has transportation changed over the years, thanks to **technology**?

Listen for the use of animals, bicycles, cars and airplanes.



In your group, come up with an example of where **technology** has made a situation easier or better. Then think about a challenge that comes with that **technology**. Remember the two examples we just talked about and all the items you chose from when you were snowed in at school.



An example might be that it is quicker for me to get to school in a car than to walk, but the car and the gas for the car cost money. Another example might be that it is easier for me to type a report for class on the computer than write it on a piece of paper, but to do this I need electricity.

Take one minute and come up with an example in your group.

Have students share their answers.



Thanks for sharing your examples. Remember **technology** has developed over time and will continue to advance, as all of you become the inventors and innovators in the future.

APPLICATION



Small Group Suggestion: *Bring in an older person to talk about the **technology** changes he or she has seen in a lifetime. Have that person explain how **technology** has made many tasks easier and of higher quality.*



One-on-One Session: *Have the student interview an older person (grandmother, grandfather or someone in the community that they know). Ask the person about the technological changes he or she has seen throughout his or her life and how **technology** has made many tasks easier and of higher quality.*

PALS.2.ASSESS.A | EVALUATION KEY

1. Define **technology**. (*Technology is the application of science and innovation to make tasks easier and/or better.*)
2. What is an example of how **technology** has developed over time? (*Answers may vary. An example might be Transportation: by foot/animal/bicycle/car/plane. Another example might be Telephones: rotary dial/touch key/cordless/cell.*)
3. List two benefits of **technology**. (*Answers will relate to making a task or situation easier and/or better.*)
4. List a challenge of **technology**. (*Answers will vary. An example might be that **technology** can be expensive or that if the needed resources are not available the **technology** may not be useful.*)

PALS.2Assess.A | EVALUATION

Name _____

Paving the Road with Technology

Answer the following questions to the best of your ability.

1. Define technology.
2. What is an example of how technology has developed over time?
3. List two benefits of technology.
4. List a challenge of technology.

PALS.2.AS.A

The winter snow has hit your school. You will be snowed in for the next two days without electricity. Your teacher has given you and your classmates the following list of items. As a team you must decide which of the five items below are the most important to have over the next two days. You may only pick five, and be ready to explain why your team picked the five items you did. Good luck.

The list includes the following items: (pictures could be added with words, if needed)

- blankets and pillows
- books and puzzles
- bottled water
- boxes of cereal
- candle and matches
- canned fruit and vegetables
- cell Phone
- clock with batteries
- computer
- electric heater
- flashlight with batteries
- frozen chicken nuggets
- frozen pizza
- generator with fuel that can run two items
- granola bars and fruit snacks
- lamp
- microwave
- milk
- radio with batteries
- refrigerator
- snow shovel
- teacher's desk phone
- television with DVD player
- un-popped popcorn
- video games

Example Picture of a Rotary Phone:



Example Pictures with Words for the Snowstorm Item List:



Candle and Matches