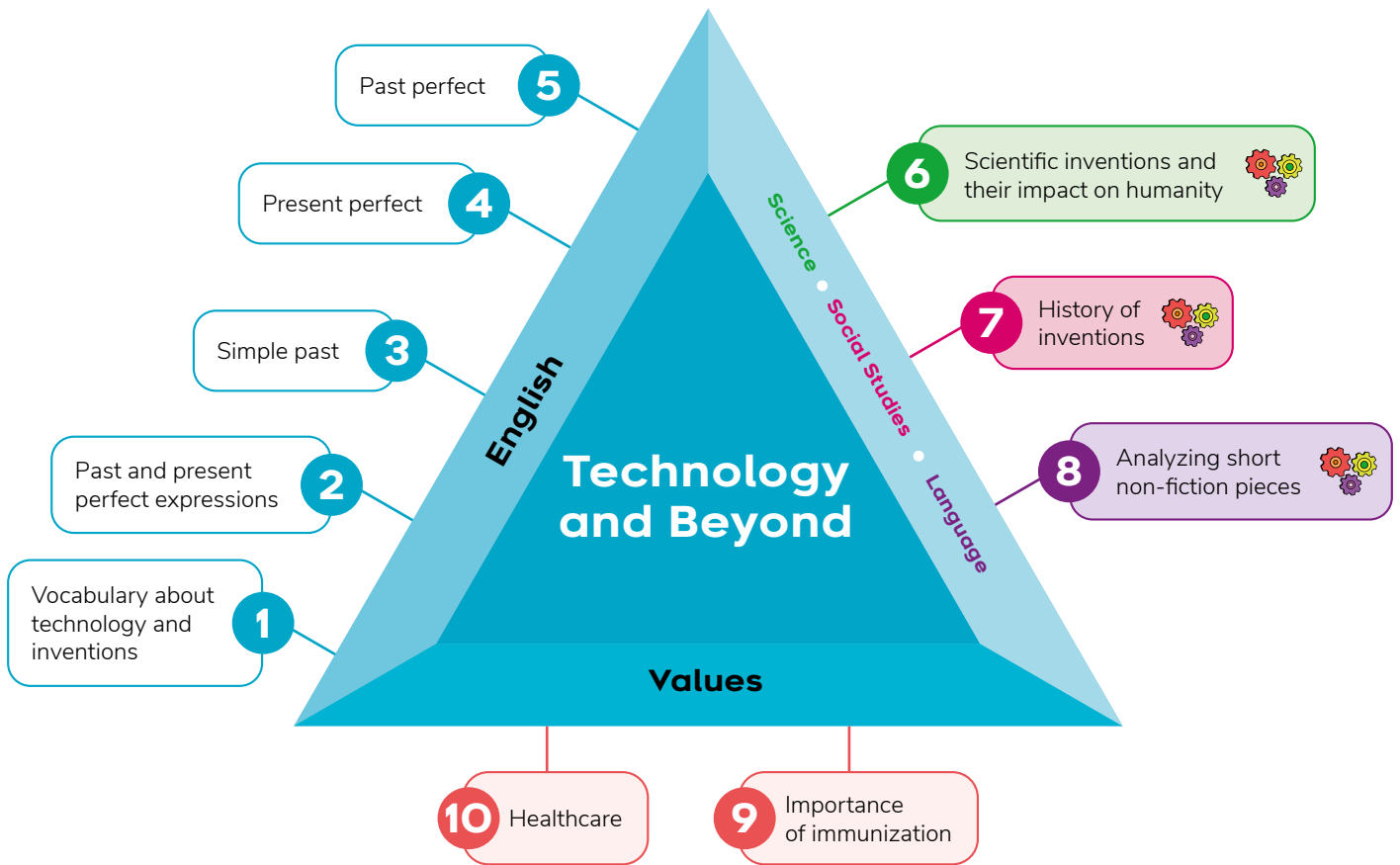


First Course BGU



Incredible Inventions

Have you ever imagined a world without cars or television? Imagine waiting for months to hear from your loved ones. Imagine getting sick and having no medicine. We are going to travel through history and observe human's infinite curiosity and inventions that have changed the world. Discover creations that have shaped culture and lifestyle. Our brains have even taken our people to the moon and

we have created powerful devices that allow us see the vast universe.

Nowadays it is possible to video chat with anyone anywhere for free. We have access to infinite amounts of information and we can post our own thoughts and opinions. Technology has developed a lot during the last hundred years and will continue to develop in the future.



What positive and negative impacts have human inventions had?

Communication and Cultural Awareness

Social Studies

How have humans' creations changed the world?

Interesting Facts

Mayan and Incan creations

The Mayas used cacao beans to make a special beverage with cornmeal and pepper. They had a writing system called glyphs and most of these symbols are still understood. The Incas performed brain surgery, which was first used to reduce inflammation. They used coca as an anesthetic. They also built rope bridges and huge highway systems.

Vocabulary

beverage. a liquid you can drink, like coffee, soda, or juice

cornmeal. flour made from crushed corn

rope. a strong, thick string that is made by twisting many thin strings or fibers together

nowadays. at the present time

ash. the soft gray powder that remains after burning something

seismograph. a device that measures and records the movement of the earth during an earthquake

accurate. free from mistakes or errors

somewhat. a little, relatively

replacement. something that takes the place of something else

Discoveries from Ancient Cultures

Believe it or not, people that lived many years ago invented things that are still used nowadays.

Concrete: About 2,100 years ago, Romans created a really hard material by mixing rocks with volcanic ash. It was used to build the famous Coliseum in Rome.

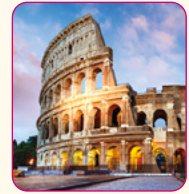
Earthquake detector: The Chinese invented the first seismograph 2,000 years ago. It was made of bronze and was very accurate in detecting earth movements.

Paper: Around 3,000 BC, Egyptians made the first paper from the fiber of the papyrus plant and also invented a special pen to write on it. The quality was so good that Egyptian papyrus remains intact.

Telescope: The Assyrians could see the stars and the sky 3,000 years ago because they created a special lens that could have been the first telescope.

The number zero: This number is somewhat new in human history. Both the Mayans and the Babylonians had the idea of zero; not as a number, but as a replacement for other numbers. The Mayans used it to make their calendars. A Hindu astronomer introduced the concept of zero as an independent number.

Source: <https://n9.cl/456b>



Concrete



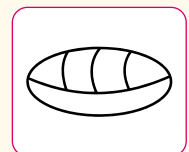
Earthquake Detector



Egyptian Papyrus



Egyptian Papyrus



Mayans zero



Discuss the following questions in groups. Then write your answers on the lines below.

- Which of the inventions is the most important in your opinion? Why?

- Do you think you could have invented one of the items above? What does someone need to be a good inventor?

Oral Communication

How have human inventions and discoveries changed the world?

Have you ever thought about the things we use daily? Where do they come from? Who invented them? When were they invented? Listen to the following news reports and complete the activities.



The wheel



Fire



Steam engine train

Interesting Facts

Gasoline

It is a transparent liquid derived from petroleum that powers cars. It was discovered by accident. It was thrown away at first, but its potential was recognized by the end of the XIX century. Since then it has been essential to our transportation.



Mark the incorrect statements with an X and write the correct ones on the line below.

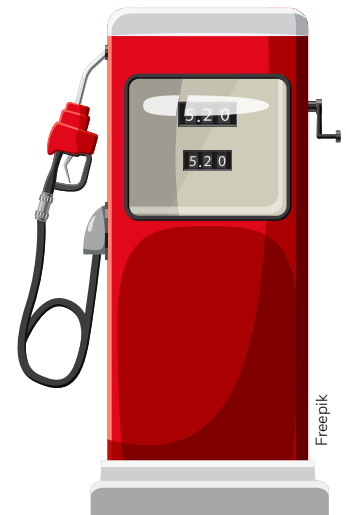
- a. Humanity has been shaped by inventions and discoveries.

- b. Most inventions have a single creator.

- c. The first humans discovered fire but could not control it.

- d. Fire was the first great discovery.

- e. The steam engine was not useful and did not improve people's lives.



Petrol pump



- List 4 inventions that you consider important for everyday life.

- Compare your list with your classmates and talk about the importance of each one. Do you agree?



Vocabulary

steam. the hot gas that is created when water is boiled

engine. a machine that changes energy (such as heat from burning fuel) into mechanical motion

figure out. to understand or find (something, such as a reason or a solution) by thinking

Reading

Science

What inventions have improved humans' health?

Interesting Facts

Ants use “social immunization”. If one ant in the colony is infected with a fungus, the other ants wash the infected insect to transmit the infection to the colony. This makes all ants in the colony immune to the fungus.

Source: <https://n9.cl/k592>



Ants



Edward Jenner inoculating babies



Vaccine

Vaccination

One of the greatest inventions that has impacted human health is **vaccination**. It has saved millions of lives **worldwide** and has caused many **diseases** to disappear. Vaccines **immunize** people by mobilizing antibodies (defenses) that fight the disease so that defenses learn to fight if the body is exposed to illnesses in the future.

This first happened in 1796 when Edward Jenner prevented a child from getting **smallpox**. A century before, the Chinese had tried to use an infected skin tear to immunize against it. The vaccine for smallpox was first developed in 1798 and by 1979 it was globally **eradicated**. Before vaccines, smallpox had killed millions of people. Most vaccines we still use today were created in the early XX century and eliminated several terrible illnesses. Vaccines are older than antibiotics or anesthesia.

Source: <https://bit.ly/3dnfMQv>

Vocabulary

vaccination (vaccine). a substance that is usually injected into a person or animal to protect against a particular disease

worldwide. happening or existing in all parts of the world

disease/illness. a condition that prevents the body or mind from working normally

immunize. to give (someone) a vaccine to prevent infection by a disease

smallpox. a serious disease that causes fever and a rash and often death

eradicate. eliminate or destroy (something harmful)

Circle the correct answer

- What is **not** true about vaccination?
 - a. It has not had any impact on people.
 - b. It has eliminated illnesses.
 - c. Antibiotics were developed before vaccines.
- What is true about vaccines? Mark all that apply.
 - a. They prepare the body to defend itself.
 - b. They are antibodies.
 - c. They enter the body and fight against diseases.
- Are humans the only species that immunize?
 - a. Yes, only people immunize against illnesses.
 - b. No, there are other species that fight against illnesses by preparing their defenses.

Writing



Language

What inventions have impacted the development of humanity?

Read the following text about printing presses. Choose the correct verb from the box and conjugate it in the present perfect or the past perfect, depending on the context.

become

work

be able

have

write

buy

study

Printing Press

Printed materials are part of our daily life; newspapers, magazines, and books are just some examples. The printing press is a machine used for **mass** production of these printed elements.

This machine _____ one of the most significant inventions.

Before it appeared, **monks** _____ books by hand so just a few

people _____ to access information. Only very rich families were lucky enough to have a book, which was usually the Bible.

The ancient Chinese used pieces of wood with symbols and drawings to make books. Around the beginning of 1440, a German man called Gutenberg,

who _____ in basic forms of printing, started experimenting with improving the process and finally discovered that using metal **instead of** wood and blocks with many words could allow people to reproduce texts

in great quantity. The printing press is one of the inventions that _____ great impact in the world. After books could be printed in mass quantities, knowledge became available for most people and the first libraries were

founded. Since then we all _____ a book.

Source: <https://bit.ly/3bjDF9F>



Monk writing by hand



Early printing press



Modern printer

Grammar Note

Present perfect

Have / has +
past participle of verb

Uses:

- Actions started in the past and continuing in the present
- Unfinished period of time
- Unspecified period of time
- Experiences.

Gasoline **has been** essential to our transportation.

Many diseases **have not been** eradicated yet.

Have vaccinations **impacted** human health?

Past perfect

Had + past participle

Uses:

- Actions finished before other actions in past

Before the invention of vaccines, smallpox **had killed** millions of people.

Scientists thought previous cultures **had not immunized** themselves against illnesses.

Had ancient cultures **eaten** meat before they discovered fire?



Vocabulary

mass. a large number or amount of something

monk. a member of a religious community of men

instead of. in place of someone or something

Language Through the Arts

How do inventions start?



How does an artist create a new masterpiece?
Do you think there is a process? Discuss this as a class.

Leonardo Da Vinci

Interesting Facts

A young African boy invented a **windmill** to give electricity and water to his extremely poor town. This shows that anyone can be creative and invent something necessary.

Vocabulary

windmill. a type of tall structure that has vanes that are powered by the wind

portrait. a painting, drawing, or photograph of a person that usually only includes the person's head and shoulders

parachute. a piece of equipment usually made of cloth that is fastened to people or things and that allows them to fall slowly and land safely

weapons. something that is used for fighting or attacking someone or for defending yourself when someone is attacking you

armored. covered in flat pieces of metal, protected by armor

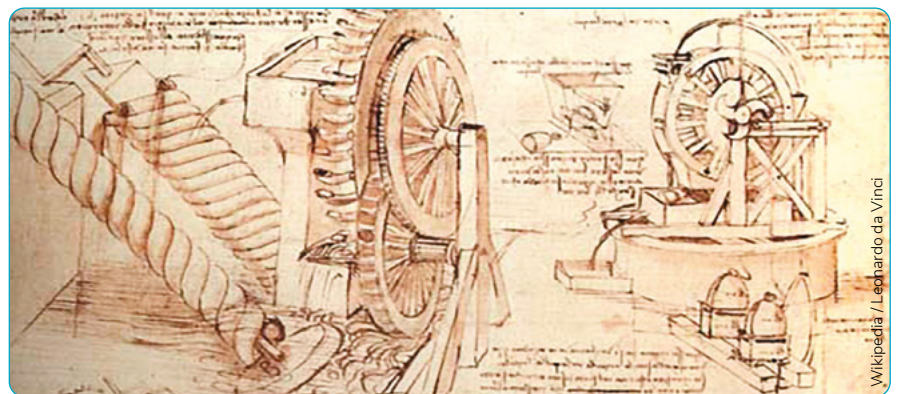
tanks. a military vehicle that moves on two large metal belts with wheels inside them and that is covered in heavy armor

sketch. a quick, rough drawing that shows the main features of an object or scene

Leonardo DaVinci was a famous artist. His works of art **have impressed** the world for centuries because of their beauty and unique techniques. Works such as The Mona Lisa and The Last Supper are the most famous **portraits** of all time. However, did you know that DaVinci was also a scientist, engineer, inventor, anatomist, architect, botanist, musician, and writer? For some people, he is the most talented person that **has ever lived**. Besides his famous paintings, his notebooks with drawings and diagrams **have been** a treasure for all generations.

His drawings show ideas such as a helicopter, a **parachute**, and a flying machine. He also drew some **weapons** like an **armored** car that later became **tanks**, and the first car that moved by itself and a transportable bridge. We would not know about his great ideas without his **sketches**.

Source: <https://www.leonardoda-vinci.org/>



Leonardo Da Vinci's sketch



Have you ever imagined creating something that can help your community? Let's start now!

1. Identify a necessity in your town or community.
2. Think of an invention that can help with this need.
3. List the materials you need. Are they available around you?
4. Draw a sketch of your invention. You may need some colors.
5. Label the parts of your invention.
6. Present your drawing to a partner and explain how it is used.

Oral Communication



Social Studies

What inventions have made the world what it is now?

Useful Inventions

Wikimedia / Marbregal



The first complete alphabet with consonants and vowels appeared around 1050 **B.C.**

Freepik



The Chinese created it first for fireworks in 904 **A.D.**, but then they realized it would make weapons more powerful.

Freepik



Compass

Invented 2,000 years ago in China. It was used to guide sailors.

Alphabet

Gunpowder

Communication

Warfare



Freepik

Telephone

Inventions

Communication

First designed by Meucci in 1849 and finally **patented** by Graham Bell in 1876. Telephones **have helped** the world communicate for a long time.

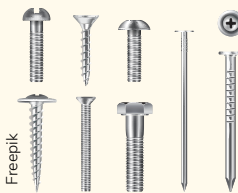
Navigation

Media

Construction

Radio

Nails



Freepik

You **have used** one of them to put a painting or photo on the wall. They were invented by Egyptians about 3400 **B.C.**

Freepik



The first **wireless** radio was presented by Nikola Tesla but a fire destroyed his laboratory in 1895. Later Marconi presented a radio and is credited for its creation.

Vocabulary

B.C., before Christ - used to refer to the years that came before the birth of Jesus Christ

A.D., used to refer to the years since the birth of Christ

patent, the exclusive right granted by a government to an inventor to manufacture, use, or sell an invention

wireless, not using wires to send and receive electronic signals

Which of the inventions from the graphic do you think has been the most useful? Discuss it with a partner.

I think the most useful invention is _____
because _____

What inventions are the most common in your community?

Communication and Cultural Awareness

Science

What can we find in outer space?

Culture

Latin American civilizations like the Mayas had vast knowledge about the stars and planets. They created a special accessory to help observe the sky and develop the calendar. The Incas, on the other hand, were a horizon-based culture. Their temples pointed to specific astronomical points. This was very important for Incan agriculture.



View of the Milky Way



Mayan calendar

Beyond Our World

From our planet, outer space starts about 100 km above the surface. Farther away, there are only **isolated** particles of gas and dust in the **emptiness** of the universe. Some regions have planets and galaxies. Some scientists say that there is radiation all around space, but we cannot see it. Now, we have some powerful **devices** that help us see what is out there. Humans have been curious about outer space since they noticed there was something beyond our Earth.

The study of the stars was the foundation of past cultures and civilizations. Since the sky was always changing, it caused fascination and curiosity. People noticed patterns in the sun and moon, also in the stars and planets. Astronomy **shaped** their beliefs and **mindsets**. The Babylonians were one of the first civilizations to register the movements of the moon and sun. A brilliant Persian astronomer invented a giant device that **accurately** calculated the Earth's axis.

Source: <https://n9.cl/180f>

Vocabulary

- isolated.** separate from others
- emptiness.** containing nothing
- device.** an object, machine, or piece of equipment that has been made for some special purpose
- shaped.** a definite form or arrangement of something
- mindsets.** a particular way of thinking, a person's attitude or set of opinions about something
- accurately.** done in a way that is free from mistakes or errors



- Talk to your classmates and teacher about the beliefs in your community related to the sun, moon, and stars. Do you have any special celebrations related to them? Write them here.

- Investigate another culture's relationship with the stars, planets, sun, and moon. Write two interesting facts. Use your own words and complete sentences.

Oral Communication

How do we know what is in the universe?

Telescope

Do you know what we can use to see what is in outer space?
Listen to the teacher's lecture and complete the following activities.



The Butterfly Nebula



Hubble Space Telescope

Interesting Facts

Hubble Telescope

This telescope was named in honor of Edward Hubble who discovered thousands of galaxies from an observatory in California. It is located 547 km from the planet's surface and can travel the complete orbit in 95 minutes. Since 1990, Hubble has made more than 1.3 million observations.

<https://n9.cl/9id>



Home Telescope

Answer **True (T)** or **False (F)**. If it is false, correct it to make it true.

- a. Humans have always been interested in learning about the sky.
- b. The telescope has always been the same.
- c. The first patented telescope in 1608 was used to see the sky.
- d. Galileo Galilei was the first person to see the moon and its craters.
- e. The first telescope was invented in 1694 by Christian Hygens.
- f. Isaac Newton invented a smaller, portable telescope.
- g. M51 is a star.
- h. Giant telescopes were built in the XVIII century.
- i. Radio telescopes were invented before giant telescopes.
- j. Space telescopes are the most powerful telescopes.

What did you learn about telescopes?
Write an interesting fact.

Reading

Social Studies

How did we start visiting outer space?

Interesting Facts

Space Race

It began in 1955 with the USA and USSR after World War II. It was the Cold War, which meant competition in every area, including space. Soviets launched the first artificial satellite, Sputnik I in 1957, Sputnik II with the first living thing in space, and then Sputnik III. Even though the US was trying to send a rocket with a man to orbit the planet quickly, the Soviets had already done it in 1961, sending Yuri Gagarin, the first man to enter the Earth's orbit.

<https://n9.cl/a8bs>



Laika, Russian cosmonaut dog, 1957



What do you know about the first astronaut?

Laika

During the era of the Space Race between the USA and USSR, the Soviet Union **launched** the first living thing into space. It was a dog named Laika. The objective of the trip was to prove that space travel for humans was safe but technology **hadn't advanced** enough to bring ships back **yet**. Laika was a street dog that became an astronaut because of her size and calmness. After some training, she was ready to go into space. Her ship called Sputnik 2 was launched on November 3, 1957. Laika was supposed to orbit the planet some days and the first reports from Russian space programs said so. However, in 1993, some Russian space program scientists revealed that Laika died soon after leaving the planet's atmosphere because of stress and **overheating**. Many people in the world were in great **sorrow** because of her death. Since then, her story has spread around the world and has inspired many **tales**, songs, and poems. Some of them say that Laika became a star in the sky.

Source: <https://bit.ly/3dnjY2H>



Vocabulary

race. a contest or competition in which different people or teams try to win something or to do something first

launch. to send or shoot (something, such as a rocket) into the air or water or into outer space

overheating. to cause (something) to become too hot

sorrow. a feeling of sadness or grief caused especially by the loss of someone or something

tale. an exciting story that may not be completely true



Answer the following questions based on what you read.

- Why has Laika's story been so famous around the world?

- Why did the Soviet Union and the United States want to get to space first?

- How many ships had the Soviets sent to space before the first man went?

- What really happened to Laika?

Writing

What have we learned?

Summarizing



- Choose any of the topics we have studied during lessons A and B and summarize it.
- Work on the writing process in your notebook and write the final product here.

First

Title _____

Main idea _____

Next

Four important details _____

Then

1. _____

2. _____

3. _____

Finally

4. _____

Summary



Answer the following questions

1. Why did you choose that topic? I chose that topic because...

2. What is summarizing?

Tip

Writing Process

Summarizing is analyzing information and determining what is important to mention and what is not.

It reduces the original text to a few sentences or a short paragraph in your own words.

Steps to summarize:

1. Read the passage.
2. Determine the most important idea of the passage.
3. Highlight important details.
4. Find keywords and use them to write the topic sentence.

It is also a good idea to answer some questions in order to complete the idea:

“Who did what, where, and when?”

“What is the main idea of the text?”

“What are the supporting points?”

<https://n9.cl/t5mf>
<https://n9.cl/79wg>
<https://n9.cl/x8g>

Language Through the Arts

Language

Can we do art through writing?

Poems

People write poems to express their feelings about an experience, to communicate to the reader, and to get an emotional response.

Language used in poems is a bit different from the language we use to talk about facts and scientific information.

<https://n9.cl/c8p5textiles/9382382>



Analyze the phrases of the poem and discuss their meanings with your class. In this poem, there may be a lot of words you don't recognize. Underline them. First, try to use context to help you understand them. If the context doesn't help, use a dictionary. Write down their meaning in the margin.

Laika

by: Adnana Zeljkovic

*Never have I seen
sadder eyes than Laika's,
never so lost a look!
Paddling with her soft paws
in inimical vacuum,
(nothing to draw you
to your bosom
like Mother Earth's gravitation)
herself soft snowflake,
opening her soundless mouth
trying to utter either
cry or sigh,
just a tiny, tiniest cry,
no matter if no one hears...
But as in a dream,
her efforts were in vain.
To send a dog up there
to be first living creature*

*in space,
how insane!
After in her mind,
like a prayer,
wishing farewell
to stray dogs and stray cats
of Moscow streets,
to her beloved four
leg fellow,
she probably thought
I shall surely perish,
but my spirit will bellow
of man's cruelty -
Vast universe will echo...
Never, never have I seen
sadder eyes than Laika's.*

Retrieved from: <https://n9.cl/085>



Vocabulary

utter. to say something or make a sound, usually with difficulty

no matter. short form of "it doesn't matter", it's not important

perish. die



Laika

Wikimedia



Answer the following questions in groups of three.

1. What words and expressions does the writer use to describe Laika's possible feelings?

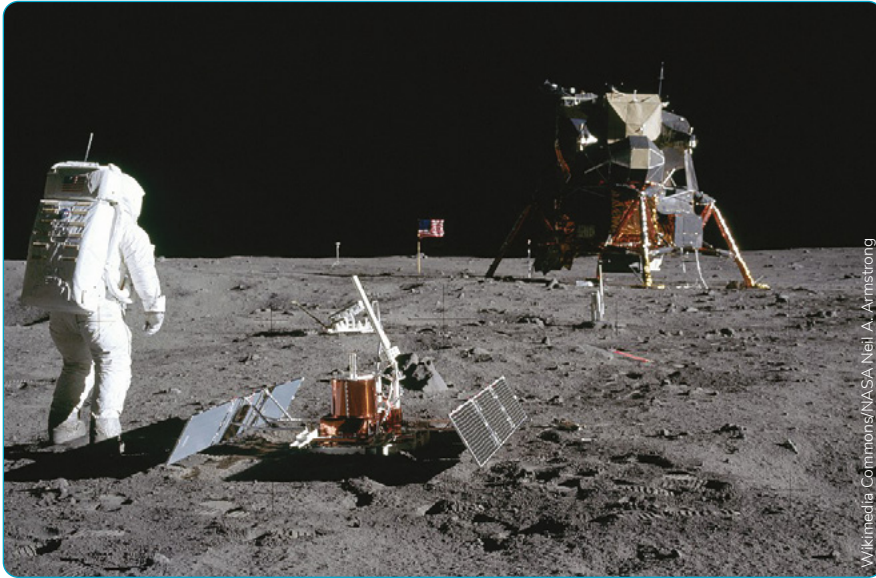
2. What do you think the writer expresses? Is she happy, is she sad, is she upset? What makes you think this?

Non-Commercial Licence

Oral Communication

Would you like to walk on the moon?

The Moon



First Man on the Moon



Vocabulary

concern. a feeling of worry usually shared by many people

threaten. saying someone will be harmed if you do not do what someone wants you to do

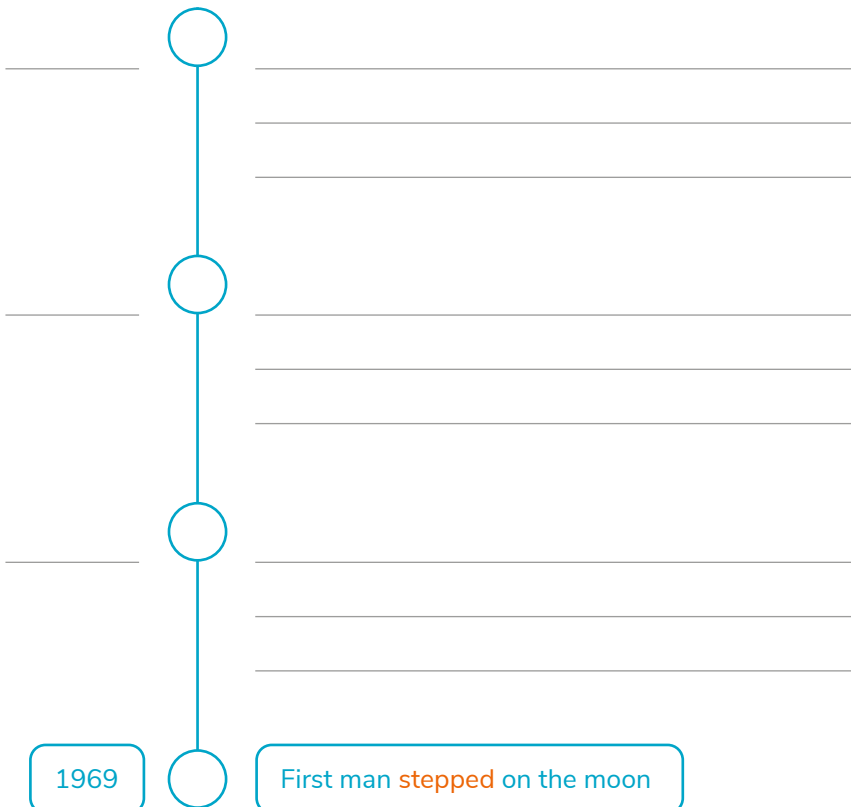
step. a movement made by lifting your foot and putting it down in a different place

manned. done by a person

claim. to say that something is true when some people may say it is not true



Listen to a person talk about space travel. Complete the timeline with all the events and years until man stepped on the moon.



Interesting Facts

The Dark Side of the Moon

Have you ever looked at the moon? Did you know there is one side that we cannot see? People call this the “dark side of the moon” or the “far side of the moon”. It is the part that is not lit by the sun. In 1959, a small spaceship called Luna 3 brought pictures of it to Earth. In 1968, the astronauts of Apollo 8 were the first humans to see it. China is now investigating this part of the moon.

source: <https://n9.cl/emwz>



The Moon

Achievement Level - Listening

Individual activity

- 1 — Listen to the story of astronaut Story Musgrave. Underline the correct statements.
1. What is not true about Story Musgrave?
 - a. He finished school with honors.
 - b. He never went to space.
 - c. He repaired the Hubble telescope.
 - d. He finished school with honors.
 2. What did Story Musgrave do?
 - a. He was the pilot of many different aircrafts.
 - b. He went to the moon.
 - c. He went parachute jumping.
 - d. He was the pilot of many different aircrafts.
 3. What hasn't Musgrave done?
 - a. Been in a war.
 - b. Traveled in space.
 - c. Lived in Europe.
 - d. Been in a war.

Achievement Level - Reading

Individual activity

- 2 — Read the following passage.

Ohio, 'Birthplace of Aviation'

NASA has had about 355 astronauts. Becoming an astronaut is not easy. It is important to know how to repair spaceships, you have to be a laboratory scientist and also stay in good shape.

The state of Ohio has produced the most American astronauts in history. In the same state, the Wright Brothers built and piloted the first powered airplane. Some famous astronauts such as John Glenn, the first American to orbit the Earth in 1962 and Neil Armstrong, the first man who stepped on the moon in 1969, were both from Ohio, too. Jim Lovell, another

famous astronaut, participated in four spaceflight missions but the most famous was Apollo 13, known for suffering an explosion in space but returning safely to Earth. However, not all astronauts came back. Judith Resnick, the second woman to go to space sadly died in 1986 in the Challenger mission that exploded 78 seconds after launch.

Many astronauts have also helped their communities by sharing their knowledge with young people and preparing the next generation of scientists and explorers.

- 3 — Answer the following questions based on the reading.
1. What is TRUE about Ohio astronauts?
Circle or highlight the correct answer.
 - b. NASA has 355 astronauts from Ohio.
 - c. 38 astronauts are on space missions now.
 - d. A great number of astronauts come from Ohio.
 2. What is NOT true about Ohio astronauts?
Circle or highlight all possible answers.
 - c. John Glenn was the first man who stepped on the moon.
 - d. Apollo 13 had a small explosion in space.
 - e. Challenger came back to Earth safely.
 3. What did the Wright Brothers do? Answer in complete sentences.

Achievement Level - Writing

Individual activity

- 4 — Use the following words to write a complete sentence.
- a. Nowadays _____
 - b. Sorrow _____
 - c. Concern _____
 - d. Acquire _____

I'm completing this self-evaluation based on what I learned in the module.

Self-evaluation Topics	I check (✓) the box that most applies to me			
	I do it very well	I do it somewhat well	I can improve	I can't do it without help
Read and understand scientific information				
Identify and use present, past, and present perfect				
Write a short opinion paragraph				



Project 1



Rocket into outer space

Materials:

- One empty soda bottle (big)
- Bright cardboard for the cone and fins
- 4 pencils, popsicle sticks, or any sticks you find around that are the same size
- A cork or something that can be used as a cap
- Vinegar and 2 teaspoons of baking soda
- A paper napkin
- Tape

How do rockets work?

"To achieve great things, two things are needed: a plan and not quite enough time."

- Leonard Bernstein

Let's make our space rocket!

Have you ever thought about how a space rocket is made? Now it's your turn to make your own!

Tip

Instructions

1. Cut the cardboard to make a cone and two triangles for the fins.
2. Tape the cone and fins to the bottle.
3. Tape the four sticks to the bottle to make the stand.
4. Pour the vinegar in the bottle.
5. Put the baking soda on the napkin and then fold it carefully.
6. Put it inside the bottle and put the cork in it.
7. Put the bottle upside down on the stand.
8. Watch it launch!

Draw your rocket launch. Did it work?

Useful expressions:

1. The materials are...
2. First we...
3. Then... Next...
4. Finally

Let's Review

Communication and Cultural Awareness

We have learned about inventions in ancient cultures and their influence in later creations.

What ancient invention do you think influenced modern inventions the most? Why?

Writing

We have learned how to summarize. We can order and structure sentences in present, past, present perfect, and past perfect.

Can you write a sentence about inventions using each one of the tenses above?

Oral Communication

We are learning to understand what others say in every day conversations as well as scientific facts. We have learned to identify specific information when people speak.

Talk to your classmates about why you think some inventions are successful and others are not.

Reading

We have read information and academic texts.

We can find specific information and recognize when events happened. We can understand some words in context.

How are academic texts different from blogs or social media posts?

Language Through the Arts

We have used our imagination to draw future inventions. We learned how great inventors drew their ideas before they became real. We have learned that language changes in poetry and how it touches our heart by understanding someone else's feelings.

Why do you think poems could be considered "art"?

Project

We learned how to make a rocket with similar principles to real rockets.

Did you like your project? Did it work? What did you enjoy the most about the project?

Communication and Cultural Awareness

Social Studies

Do you know how our ancestors communicated?

Culture

Many ancient civilizations such as Egypt, Assyria, Persia, Rome, and China had postal systems that were used to **deliver** messages to part of their empires; and Incas used special **roads** to deliver packages and information. Ancient written communications found by archeologists allowed us to know a lot about those times.

Adapted from: <https://bit.ly/2UXWKYq>



Communication in Ancient Cultures

Language has shaped cultures around the world. Since spoken messages do not stay the same when they are transmitted through many people, written language was created so that messages arrived the way they were sent.

Written language also served as a **means** to transport messages in an easy way. As we know, Egyptians first created papyrus which was light, so messages could travel much faster. The Persian Empire had a **successful** mail system which permitted them to take messages as far as 3,200 km in only ten days.

At the beginning, the speed of communication only depended on the speed of people. Some animals were used to help speed up communication such as horses and then domesticated **pigeons** in the 11th century.

Source: <https://bit.ly/3drsEou> | <https://bit.ly/3agmF3U>



Papyrus

Vocabulary

deliver. to take (something) to a person or place

roads. a hard, flat surface for vehicles, people, and animals to travel on

means. through the use of (something)

successful. having the correct or desired result, ending in success

pigeons. a gray bird that is common in cities and that has a fat body and short legs

elder. a person who has authority because of age and experience

Answer the following questions.

1. How did people communicate in the past?

2. Ask your parents, grandparents or any **elder** in your community how they communicated long-distance in the past.

Oral Communication

What does “communication” mean to you?

Different Kinds of Communication



As a class, think of all of the forms of communication that exist. Which are the most effective?



Listen to facts about other means of communication. Circle the correct answers.

Mazateco **whistle** language

1. What is true about the Mazateco whistle language?
 - a. Everybody can use it to communicate.
 - b. All sounds are very similar.
 - c. Whistles represent phrases and words that express the same as spoken language.
 - d. The Mazatecos are an indigenous group of people that lives in Guatemala.

Smoke signals in native North American tribes

2. What is not true about Native American smoke signals?
 - a. Only Native Americans used the language.
 - b. They used smoke signals to send messages fast.
 - c. Others could see the smoke from short distances.
 - d. **Blankets** covered the fire to produce smoke.

<https://bit.ly/3bNNwoi>

Interesting Facts

During World War II, the United States Marines used the Navajo language, one of the most difficult languages in the world, to codify communication **among** military units. It was very hard for the **enemies** to understand messages.



Native American's smoking signals



- Do you think whistling or smoke signals would work as communication in your community? Why or why not?

- Can you think of a new and creative way to communicate?



Vocabulary

whistle. a high and loud sound made by forcing air through your lips or teeth

blanket. a covering made of cloth that is used especially on a bed to keep you warm

among. in or through (a group of people or things)

enemy. person or group of people who are against you

wet. covered or soaked with water or another liquid, not dry

Reading

How did people communicate across long distances?



Have you ever heard about letters and post cards?
What do you know about them?

Interesting Facts

The U.S. postal service delivers more than 44% of the world's cards and letters. The service delivers about 212 billion (212,000,000,000) pieces of mail each year. There are over 40,000 post offices in the country and its territories. The postal service delivers the mail rain or shine, using different methods of transport from planes to mules.

<https://bit.ly/3af4plo>



Vocabulary

pharaoh. a ruler of ancient Egypt

decree. an official order given by a person with power or by a government

throughout. in or to every part of (something)

hollow. having nothing inside, not solid

clay. a heavy, sticky material from the earth that is made into different shapes and that becomes hard when it is baked or dried

spheres. a round, 3D object

stamps. a small piece of paper that you buy and then stick to an envelope or package to pay the cost of mailing it

Evolution of the Postal Service and Courier

The postal service has made the exchange of letters possible for years. It has helped people communicate around the world.

The history of postal service goes back to the invention of writing and the need for communication. Some evidence shows that an organized postal service existed in Egypt with papyrus from 255 B.C. It seems that **pharaohs** had used some kind of courier system to send a **decree throughout** the empire by 2400 B.C. Some ancient cultures such as Persia, China, India, and Rome had created postal systems before we thought.

The letters we know are sent in an envelope, but at the beginning there were no envelopes at all to protect the letters. Paper envelopes were first invented in China, but before then Babylonians had already invented something to protect messages: **hollow, clay spheres**.

Stamps have been an important part of the postal service; they were created in 1837 by an English man named Rowland Hill. They established the first systematic prices based on weight. Now we continue to use the system, but the prices have definitely increased!

Source: <https://bit.ly/2xYtKYF>



For each of the sentences below, decide which happened first and which happened second. Write "first" and "second". Pay attention to the verb forms to help you.

1. Ancient cultures had invented writing before the first postal service.
 - a. The postal system was invented. _____
 - b. The postal system was invented. _____
 - c. Ancient cultures invented writing. _____
2. Before Egyptians had an organized postal system, pharaohs had used a kind of courier system.
 - a. Pharaohs used a kind of courier. _____
 - b. Pharaohs used a kind of courier. _____
 - c. Pharaohs used a kind of courier. _____
 - d. Egyptians had an organized postal service. _____
3. Persia, China, and Rome had created a postal system. We started using a more modern postal system.
 - a. Persia, China, and Rome created a postal system. _____
 - b. Persia, China, and Rome created a postal system. _____
 - c. Persia, China, and Rome created a postal system. _____
 - d. Persia, China, and Rome created a postal system. _____
 - e. We started using a more modern postal system. _____

Writing

What inventions made communications faster?

Informational Paragraph



Rewrite the following sentences to form one sentence using past perfect and simple past. Use words such as after or before.

- a. Samuel F.B. Morse transmitted his first message in 1844.
 - b. Long before transmission, people used signal systems such as flags or lights.
1. _____

- a. Morse created the system of **dots** and **dashes** (Morse Code) in 1835.
 - b. Morse first demonstrated the use of telegraph to his friends in 1837.
2. _____

- a. In 1849, Reuters started using a telegraphic press service.
 - b. In 1856, Western Union became the dominant telegraph company in the United States.
3. _____



Step 1. Ask your parents, grandparents, or an older person how they communicated before. Take notes on what they say.

Step 2. Write a paragraph (50-60 words) about how things were different before compared to now. Be sure to use at least three different verbs in the past perfect.

Ex. My grandmother *had sent* letters before e-mail was invented.

Grammar Note

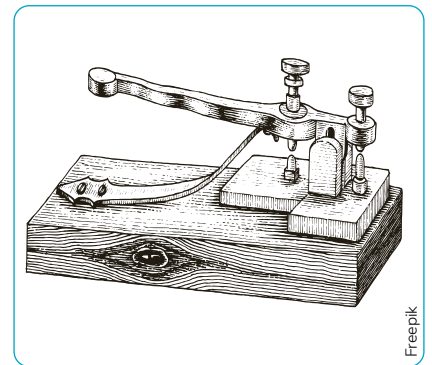
Past perfect

The past perfect is used to talk about an action that happened in the past before another action that is normally expressed using the simple past.

Some inventors **had created** visual telegraphs before Morse **invented** the electrical telegraph.

Some inventors **had not (hadn't) created** visual telegraphs before Morse **invented** the electrical telegraph.

Had some inventors **created** visual telegraphs before Morse **invented** the electrical telegraph?



Morse Telegraph (1837)



Vocabulary

dot. a small round mark

dash. a punctuation mark — that is used especially to show a break in thought or in the structure of a sentence

Language Through the Arts

How can we use codes to communicate?

Vocabulary

complex. not easy to understand or explain, not simple

Morse Code

Samuel Morse invented the Morse Code. It is a code that has dashes and dots. Letters commonly used such as “E” have a simple code, and those that were not frequently used, for example “Q”, have longer and more **complex** codes.

<https://bit.ly/33Gqu3X> | <https://bit.ly/3boENJl>

Morse code letters and numbers

A	• —
B	— •••
C	— • — •
D	— •••
E	•
F	•• — •
G	— — •
H	••••
I	••
J	• — — —
K	— • —
L	• — ••
M	— —
N	— •
O	— — —
P	• — — •
Q	— — • —
R	• — •
S	•••
T	—
U	•• —
V	••• —
W	• — —
X	— •• —
Y	— • — —
Z	— — ••
1	• — — — —
2	•• — — —
3	••• — —
4	•••• —
5	•••••
6	— ••••
7	— — •••
8	— — — ••
9	— — — — •
0	— — — — —



Is it easy to communicate using codes? Discuss your opinions as a class.



Let's have some fun sending messages using Morse Code.

Write a message to your teacher, family, and classmates using Morse Code. Then, show them to your classmates and teacher. Do the same with your family. First write the message in your notebook and check grammar and spelling. Be sure to write nice messages and not something offensive.

1. To my teacher: _____

2. To my family: _____

3. To my classmates: _____

Oral Communication



Social Studies

How did people start communicating faster?

The Invention that Rings

Talk about the images below. Which ones have you seen?



Telephone's evolution.

Interesting Facts

The New York Telephone Company had 6,000 female telephone operators by 1910.

When Alexander Graham Bell died in 1922, all telephones stopped ringing for one full minute as a tribute to the creator.

The first transatlantic telephone cable was used in 1956. The cable runs across the Atlantic Ocean from Canada to Scotland.

There are about 150 million telephone lines in the world and the number increases by thousands daily.

The phone continues to evolve today. Now we have much more advanced **features** like caller ID, texting, mobile video, safe caller ID, internet, and many more features. Phones connect people, facilitate business, and even save lives.

<https://bit.ly/39aWXwn>



Listen to the story about the invention of the telephone. Decide if each sentence is **True (T)** or **False (F)**. If it is false, correct it to make it true.

- Alexander Graham Bell did not invent the telephone.
- The telephone had been invented before the telegraph.
- The telephone turns electricity into voice.
- The first phone call was from Graham Bell to the Queen.
- Most operators were young boys.
- Telephone calls have always been automatic.



Vocabulary

features. an interesting or important part, quality, ability, etc.



Ask your classmates how they communicate. Do they use a landline phone? Talk to at least three classmates and write their answers here.

Communication and Cultural Awareness

How has technology changed our culture?

Technology Changes Cultures Worldwide

Interesting Facts

Sociologist William F. Ogburn created the term “culture lag” to define the time that passes by between the introduction of a new item or device and its recognition as a part of everyday life. It can cause misunderstandings between generations.

<https://bit.ly/2V0o4Fl>

Culture is always evolving; each time a new material item appears, **nonmaterial** culture modifies. It changes when something new adjusts ways of living. Adopting new ways of facing everyday situations by using new inventions can change cultural **values**. In addition, people need new norms for new situations. When society changes quickly and culture is influenced by new inventions, it can cause generation **gaps**. Sometimes a new device can take only months to become part of a group of young people but it might take long time to be accepted by older generations.

One clear example of cultural change is the process of globalization. It has brought international cultures to all homes through the television or internet. It has caused changes in values and **lifestyles**, and it shows how ideas from one culture are introduced into another and **reshape** it.

<https://bit.ly/2x1V88b>

Vocabulary

nonmaterial. not physical

values. a strong belief about what is valuable, important, or acceptable

gap. a space between two people or things

lifestyle. a particular way of living, the way a person or a group of people live

shape. to influence the development of something



Two different generations using technology



Discuss in class.

- Do you think technology affects culture positively or negatively? Explain.

- Are there any examples of cultural lag in your life?



Circle the correct answer.

1. Cultural lag is:
 - a. Difference in age of people
 - b. Difference in age of people
 - c. The time it takes for people to accept new items
 - d. Older people that cannot use new devices
2. The fact that we find McDonald's in our country is an example of:
 - a. Culture lag
 - b. Globalization
 - c. Culture lag
 - d. Globalization
 - e. Generation gap

Oral Communication



Social Studies

How would society be different without television?



Young girl watching TV

Tip

Think about movies or sitcoms, TV shows and other programs. Which ones are your favorite? Have you ever imagined life without all the images we watch on TV?

Invention of Television

Listen to the conversation between a teenager and an elder who talks about the invention of television. For each year you see, write what happened.

1926

1938

1941

1954

1955

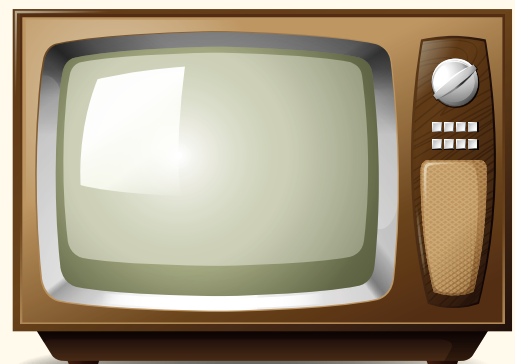
1966

2005

Listen again and circle or highlight all the correct statements according to the story.

- The first televisions were mechanical.
- The first TV transmission was the image of the dollar sign.
- WRGB TV station has been operating continuously since 1926.
- At the beginning, programs were commercial-free.
- Remote controls were invented before color TVs.
- By the time color TVs were sold, all programs were recorded in color, too.
- The first 3D flat screen appeared in 2005.

Have you ever seen a very old TV? Does your family have a TV? Do you think TVs are common in most homes in your country? Discuss these questions in groups of three and take notes on what it is said.



Reading

What is the most important contribution to technology?



Do you know what a transistor is? Have you ever heard about its use? Discuss it as a class.

Interesting Facts

Bardeen, Brattain, and Shockley won the Nobel Prize for Chemistry in 1956 for inventing the transistor.

A transistor is like a miniature on-off switch that allows a computer to process information.

A computer can't operate without an integrated circuit (chip), and a chip can't operate without a transistor.

The first Intel computer chip had 2,300 transistors, while the latest one has 820 million.

<https://bit.ly/3aD10TQ>

Vocabulary

underappreciated. not appreciated or valued enough

work out. to achieve by resolving difficulties

acquired. to get (something); to come to own (something)

afterwards. at a later time, after something has happened

vacuum. an empty space in which there is no air or other gas

The Transistor: A New Era

The transistor is an **underappreciated** invention that changed the world forever. Believe it or not, it is the crucial component of an electronic device. Our televisions, radios, cell phones, and computers work with them. Televisions used to work with some tubes that were slow and used a lot of energy before transistors were used.

Three people invented the transistor: William Shockley, John Bardeen and Walter Brattain. Shockley started working in 1936 on the transistor. Although he could successfully **work out** the theory, he could not build a working model in eight years. Bardeen and Brattain helped him develop the model. Sometime later, Texas Instruments of Dallas first started commercial production of some transistors for portable radios in 1954. The Sony Company of Japan soon **acquired** the right to produce transistors and dominated the market. In the 1960's, Sony began to manufacture television sets using transistors instead of tubes. **Afterwards**, **vacuum** tube technology became obsolete.

<https://bit.ly/2X9SIyS>



Decide if each sentence is **True (T)** or **False (F)**. If it is false, correct it to make it true.

1. Televisions have always worked with transistors.
2. Transistors are the key piece in every single electronic device.
3. William Shockley invented a working transistor.
4. Transistors were first used in portable radios.
5. The first company that created a device using transistors was Sony.

Writing



Language

How has our life changed due to technology?

Cause and Effect Paragraph



How has our society changed due to the inventions that we have studied?

You are going to write a cause and effect paragraph about the effects technology has had on society. These can be positive and negative effects.

First, brainstorm some ideas. In what aspects of society has technology changed the way we do things?

Next, write some ideas in the graphic organizer below. Determine what the cause is and what effect is the result.

Then, put your paragraph together. Start with a topic sentence to introduce the main idea. Then present your information from the graphic organizer.

Finally, finish with a concluding sentence that is similar to your topic sentence. Your paragraph should be 50-60 words.

Tip

A cause and effect paragraph explains the consequences of an action, event, decision, etc. A cause and effect paragraph can be organized in different ways. It can be organized chronologically or based on the importance of the events. It is useful to complete the entire writing process in order to write a correct paragraph.

Cause	Effect
	Effect
	Effect

Grammar Note

Some useful expressions for cause and effect are:

- Because of ...
- As a result of ...
- As a consequence of ...
- ...resulting from ...
- ... is due to ...
- ... is because of ...

Some useful expressions to express effect are:

- The first effect of ... is ...
- Another result of ... is ...
- As a result, ...
- As a consequence, ...
- Consequently ...
- Therefore, ...
- ... is the reason for ...

<https://bit.ly/347djoW>

Language Through the Arts

Are all programs appropriate for all ages?

Let's Make a Television Set!

Materials

- Carboard boxes any sizes, a little one if you want to make a remote control
- Any useful material you find in your community
- Paintings
- Scissors or box **cutter**
- Carboard of many different colors



Modern television

Instructions

- Cut the carboard box in the shape you want your television to have.
- Add any decorations you would like to have on a TV set.
- Paint it with any color you want.



Cardboard televisions

- Describe the television according to its characteristics. (flat screen, old television, etc.)

- List the kinds of programs children and adolescents should watch and share it with classmates.

Vocabulary

cutter, a tool that cuts something

Oral Communication

What has technology brought us?

Computers and Cellphones



What do you think about the latest electronic devices? Are they useful? Do you like them?

Dr. Lisa P. Wayne is going to tell some students about changes due to technological advances and how they have affected our society positively and negatively. Listen to the class and complete the activities.



Teenagers using electronic devices



- Discuss the positive and negative aspects of the use of technology with the class. Is it affecting you? How?

- Discuss the use of social networks. Are they **appropriate** for every person? Is it good that little kids have access to social networks? Why or why not?



Circle or highlight the statements expressed in the audio.

1. Technology has changed the world in a very profound way.
2. Technology is very important in our daily activities.
3. Life was easier before the invention of cellphones and computers.
4. Cellphones help us stay away from society.
5. We cannot find all information on the internet.
6. Technology helps people to be around others.
7. Kids and adolescents are always expecting the approval of others on social networks.
8. It is good to be contacted by strange people.



Vocabulary

appropriate. right or suited for some purpose or situation

Achievement Level - Listening

Individual activity

1— Listen to the person talking about the history of computers. Decide if each statement is **True (T)** or **False (F)**.

- a. Charles Babbage created two different models of early computers.
- b. All computers have been the same since the beginning.
- c. The first computer was used for math calculations.
- d. Old computers had punched films or cards to calculate.
- e. Vacuum tubes made computers become faster and more accurate.
- f. Old computers were exact in math calculations.
- g. Cellphones are little computers.
- h. The first electric computers were very little.
- i. Microprocessors changed the size of computers.
- j. Some computers were used in war.

2— What do you think is the most important invention that changed technology in computers?

Achievement Level - Writing

Individual activity

3— Write a short cause and effect paragraph (60-70 words) about changes in society because of computers. Use your notebook for the writing process.

Achievement Level - Reading

Individual activity

4 — Read the following article and complete the activities as indicated.

Social networking is a topic that divides opinion - some people think it's an amazing tool but others are worried about the impact it has on people's lives.

Some people decided to find out the benefits - and potential risks - of using social networks. Here are some of their conclusions as to the main benefits and drawbacks of social media.

Not everyone may think about the negative effects of having social networking accounts - but simple things like not setting your privacy properly or liking someone's photo can have bad results.

Social networking has a lot of good points. You can express yourself, post your favorite songs or your latest picture with friends. It is a lot easier to do it over the internet than in person. You can keep in touch with your friends and relatives around the world.

Taken and adapted from: <https://bbc.in/3aT2VUF>

5 — Answer the following questions:

- a. What do you think is the most important negative aspect about social networks?

- b. Why should we be careful with strangers on social networks?

- c. List the positive points that you consider the most important about social networks.

I'm completing this self-evaluation based on what I learned in the module.

Self-evaluation	I check ✓ the box that most applies to me			
	Topics	I do it very well	I do it somewhat well	I can improve
Use simple past and past perfect correctly				
Understand conversations and identify details				
Write a cause and effect paragraph				

