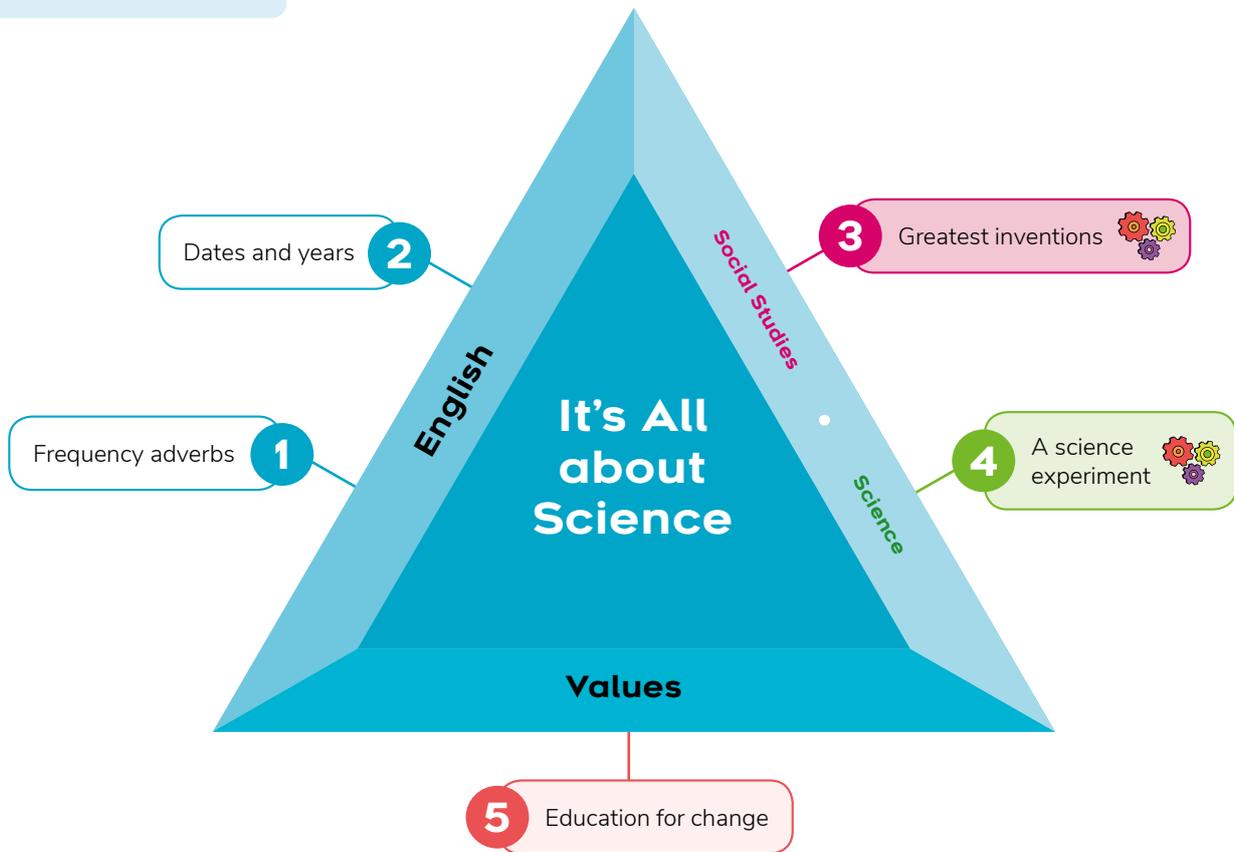


English Pedagogical Module 1

What do you know about science and technology?

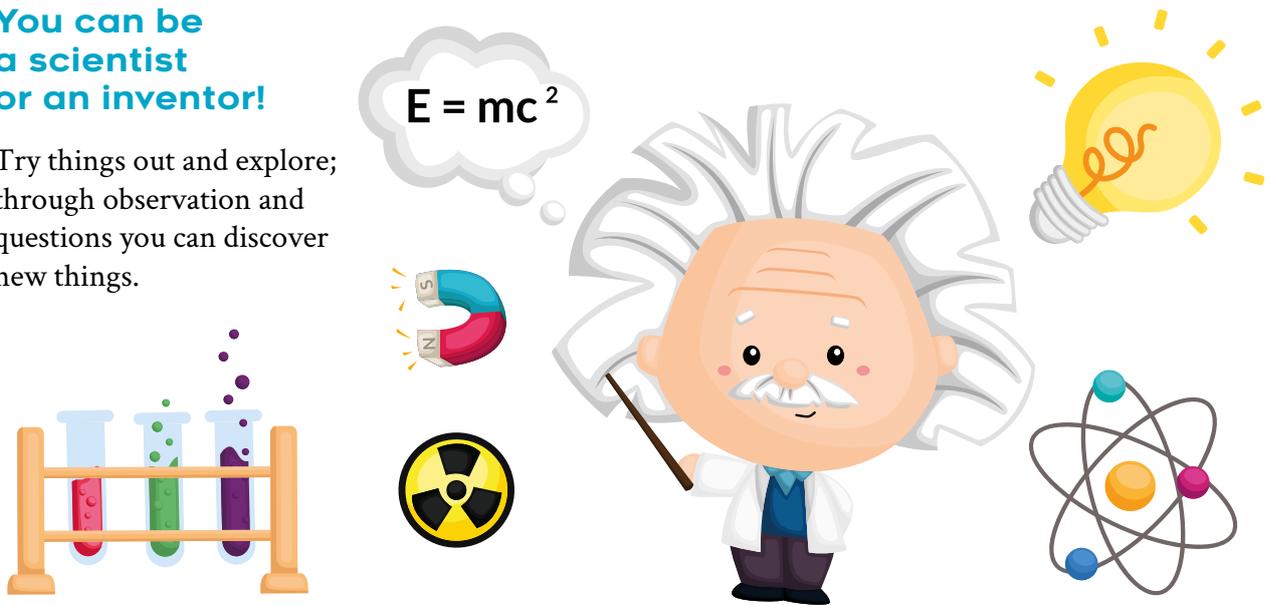
Curricular Threads: Communication and Cultural Awareness, Language Through the Arts, Reading, Writing, Oral Communication.

Sixth Grade EGB



You can be a scientist or an inventor!

Try things out and explore; through observation and questions you can discover new things.



Freepik



Do you know about the greatest inventions of all times? Do you want to learn about the history of computers? Do you know if there is a robot especially designed for children?

Communication and Cultural Awareness

Inventions and Discoveries Around the World

Most of these famous inventors were born in the United States, and most of these inventions were invented by men, but Marie Curie was from Poland, and one of the few female scientists to win a Nobel Prize for her work.



Freepik



Audio

Listen to the recording

Exercise 1. Pair work. Look at the pictures and write the names under the pictures. There is one extra name.

radioactivity

microscope

printing press

telephone

airplane

light bulb

Apple Inc.



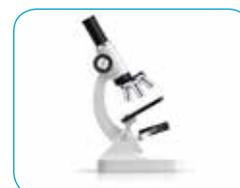
Wikimedia Commons



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Exercise 2. Listen to the audio. Match the invention or the discovery with its year.

Numbers are important in science.

Apple Inc.	1906
The internet	1969
Radioactivity	1976
Light bulb	1903
The first airplane flight	1911
Telephone	1450
Printing press	1876

Freepik



Vocabulary

invention. creation

discovery. important thing that scientists learn for the first time

radioactivity. a type of energy that can be very harmful

Exercise 3. Listen and check (✓) the years you hear.

1	<input type="radio"/> 2002
	<input type="radio"/> 1911
2	<input type="radio"/> 1989
	<input type="radio"/> 1450
3	<input type="radio"/> 1903
	<input type="radio"/> 1913
4	<input type="radio"/> 1876
	<input type="radio"/> 2019

Oral Communication

Have you ever invented something?

Newspaper Headline

Exercise 1. What does he mention? Check the correct box.

- a. His name
- b. His school
- c. His age
- d. His invention
- e. Who uses the toothbrush



Exercise 2. Write five questions to ask Danny. Here are some ideas: his name, his age, how he got the idea, if he will sell it and how much he will sell it for.

1. _____
2. _____
3. _____
4. _____
5. _____



Audio
Listen to the recording

Child invents new toothbrush!

A child in Los Angeles, in the United States, invented a new toothbrush. It has the toothpaste inside the brush, so you have everything in one place. Listen to Danny Lewis talk about his invention.



Reading

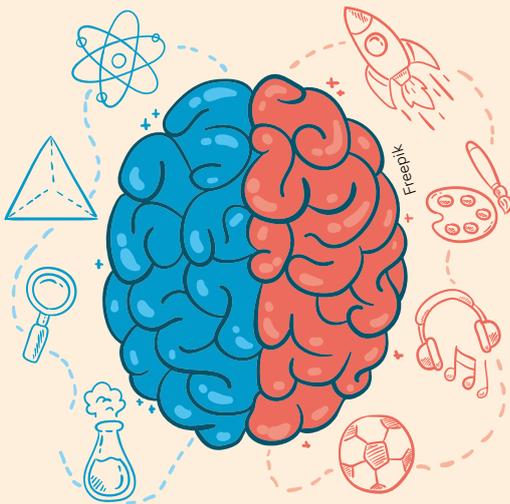
Human Brain vs. Computers

The human brain is an amazing **organ**. It is faster than any machine and directs and controls all of your movements.

Your brain commands your muscles by telling them how and when to move.

You can feel different emotions and protect yourself from **dangerous** situations thanks to your brain's instructions.

When you sleep, your brain does not stop working. There are billions of tiny little cells called neurons inside your brain. Neurons control your body's chemical and electrical messages.

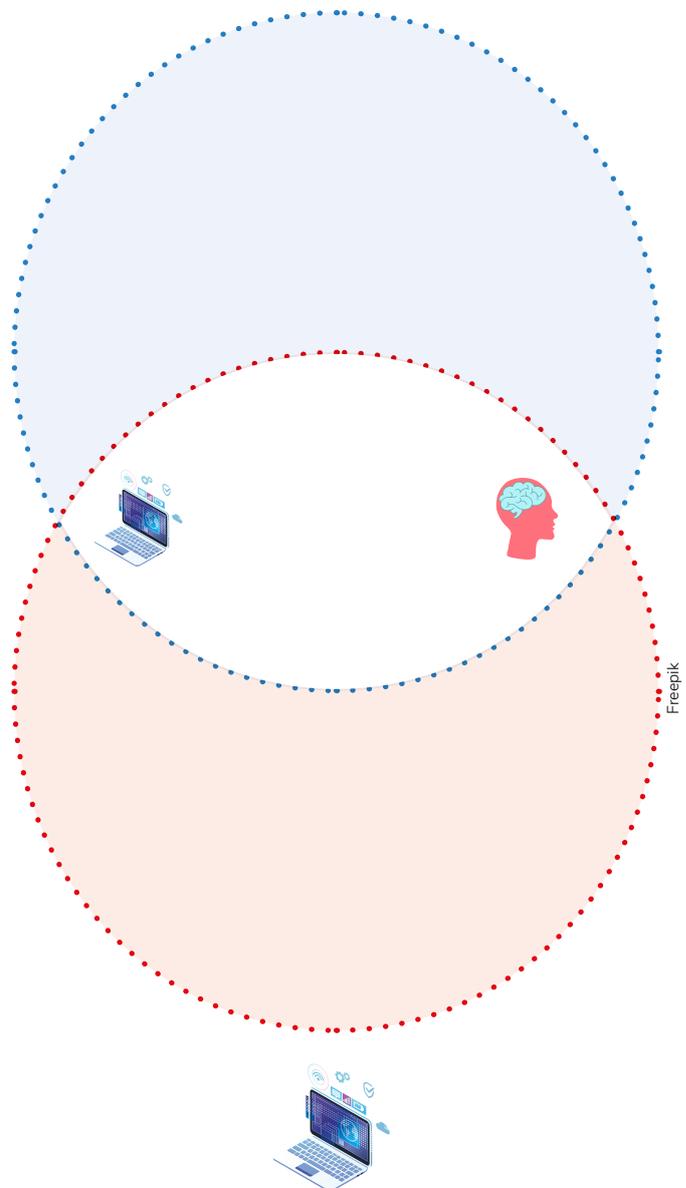


Retrieved from: <https://bit.ly/2XmAXwX>

Exercise 1. Read the text. Then, write (T) if the sentence is true about the human brain or (F) if the sentence is false.

- a. It does not control your body's chemical and electrical messages.
- b. It is slower than any machine.
- c. It is an organ.
- d. It does not stop working.
- e. It controls your movements.

Exercise 2. Think! What do you know about computers? Are they similar to the human brain? Put the information you know about computers in the red circle and put the information you learned about the brain in the blue circle. Put any similarities between computers and the brain in the middle.



Freepik

Vocabulary

organ. inside the body, like a stomach, the intestine

dangerous. not safe

Inventing a Monster

Exercise 1. Put the sentences of the story of Frankenstein in the correct order.

- Dr. Frankenstein didn't invent a human being but a very strong monster.
- Next, the scientist joined the parts together.
- She wrote about a scientist who wanted to create creating human life.
- But he didn't know how to make a creature come to life.
- A bolt of lightning woke the creature up.
- He sent his assistant Igor to dig in a cemetery and take parts of people's bodies.
- Mary Shelly invented the story of a fantasy monster called Frankenstein.
- Dr. Frankenstein needed a body.

Exercise 2. Write the story of Frankenstein. Use the ideas from Exercise 1. Link your sentences with *first*, *then*, *next*, *after that*, and *finally* to make the order clear.

Exercise 3. Pair work. Use your own words to tell the story of Frankenstein to a classmate. Who remembers more details about the story?

Mary Shelly invented the story of a fantasy monster called Frankenstein. She wrote about a scientist who wanted to create life. First, Dr. Frankenstein needed a body. He sent his assistant Igor to dig in a cemetery and take parts of people's bodies. Next, the scientist joined the parts together, but he didn't know how to make the creature come to life. After that, a bolt of lightning woke the creature up. Finally, Dr. Frankenstein didn't invent a human being but a very strong monster.



Language Through the Arts



Leonardo, the Artist and Scientist

Leonardo da Vinci was an Italian genius. He was born in the town of Anchiano, Italy on April 15, 1452.

He was an artist, sculptor, inventor, scientist, mathematician, architect, and engineer.

Leonardo Da Vinci is also known around the world for his drawings and paintings.

The *Mona Lisa* is his most popular piece of art. You can see it in the Louvre Museum. It is one of the most famous paintings in the world.

Retrieved from: <https://bit.ly/2L0lxqq>

Exercise 1. Color the Mona Lisa. Use the requested colors.



Key

1. Dark Blue
2. Light Blue
3. Brown
4. Light Brown
5. Green
6. Yellow



Oral Communication

Do you like popsicles?

A Child's Invention: the Popsicle



Way back in 1905, eleven year old Frank Epperson combined fruit juice and water in a glass; he stirred it with a stick, and promptly left his drink outside on the porch. When he awoke, the cold temperature had transformed his drink into a frozen drink on a stick. By accident, Frank had invented the popsicle!



Freepik

Exercise 1. Pair work. Imagine that Frank visits your class. What questions can you ask him about his life, his curiosity, and his popsicle? Make a list of five questions. Write them on the lines.

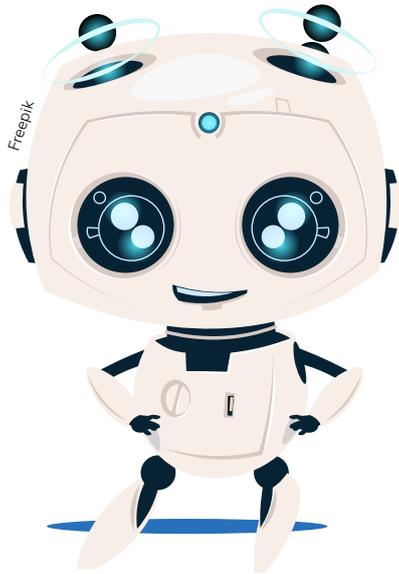
- a. _____
- _____
- b. _____
- _____
- c. _____
- _____
- d. _____
- _____
- e. _____
- _____

Exercise 2. Now, working with your partner, think of what Frank would answer to the previous questions and write them here.

- a. _____
- _____
- b. _____
- _____
- c. _____
- _____
- d. _____
- _____
- e. _____
- _____

Communication and Cultural Awareness

Robots and Technology

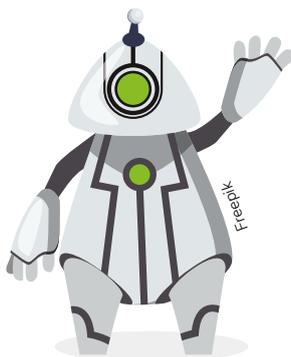


Artificial Intelligence - AI

Computers or robots that find solutions to problems are called “intelligent.” Artificial intelligence are computers that can perform human actions.

Computers only use logic to solve a problem. Humans use other abilities to make a decision. They use their imagination, emotions, and values. Do you think scientists will program a computer with human abilities in the future?

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



Exercise 1. Pair work. Ask your partner: “In which column should we put this phrase?”

Do difficult and dangerous jobs - Don't make decisions - Don't get sick or grow old - Take people's jobs - Do the heavy and repetitive work - Don't express emotion - Help people with disabilities - Don't eat or sleep - Make the world a better place

Retrieved from: <https://bit.ly/2FpYzXd>

Good things about robots	Bad things about robots
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Exercise 2. Do you think there will be robot doctors in the future? Why? What about robot engineers? Robot secretaries? Robot bus drivers?

Ask a partner for their opinions. Put them on the chart.

	Yes/No	Why?
Robot doctors	_____	_____ _____
Robot engineers	_____	_____ _____
Robot secretaries	_____	_____ _____
Robot bus drivers	_____	_____ _____

Oral communication

She Can Do Everything!

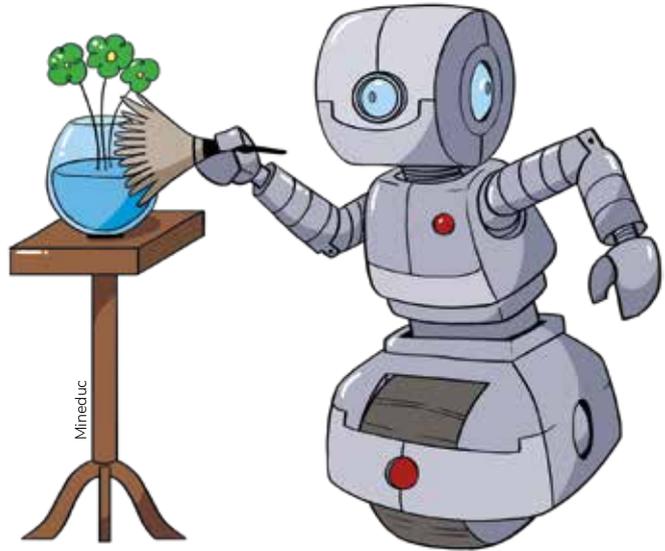
Exercise 1. Gina has an AR (Assistant Robot). She is telling the reporter how the robot helps her with **chores**. Listen to the audio and circle the answers that you hear.



Audio
Listen to the recording

The Assistant Robot (AR):

- a. plays with the children
- b. helps with the chores in the house
- c. makes the bed
- d. goes shopping for food
- e. prepares breakfast
- f. walks the dog
- g. serves breakfast in bed
- h. cleans the floor



Exercise 2. Put the adverbs of frequency in the correct place on the timeline.

sometimes

usually

never

often

always

100%

0%

sometimes

Exercise 3. Underline all the verbs in the following sentences. Then, use adverbs of frequency plus those verbs to write your own sentences about the AR.

- a. It puts the dishes in the washing machine.
- b. The AR cleans the floor.
- c. It serves breakfast in bed.
- d. It cleans the windows.
- e. It cooks.
- f. It does do the laundry.

Vocabulary

chores. work in the house

laundry. the dirty clothes that need to be washed

Language Through the Arts

A Robot Nurse



Big Hero 6 is a movie about robots. It is a Disney animated movie. A teenager called Hiro interacts with Baymax, an inflatable robot nurse.

Hiro's older brother, Tadashi, designed a chip for Baymax's artificial intelligence. This nurse robot always cares for people and treats any health problem.

Baymax is usually **devoted** to his patients.

He is also very curious; that is why he sometimes is distracted. He is often soft, calm and attentive, but his personality sometimes changes with another chip that gives him the ability to fight. But Baymax never harms people. The robot becomes a hero and the teenager's best friend.

Adapted from: <https://url2.cl/y8dNL>

Grammar Tip

Adverbs of frequency

Baymax is **often** soft, calm and attentive.

- The nurse robot **never** harms people.
- He **sometimes** gets distracted.

Exercise 1. Read and underline all the frequency adverbs in the text.

Exercises 2. Read the text again. Choose the correct option.

- Baymax takes care of people.
- A different chip changes his personality.
- He doesn't pay attention.
- The nurse robot is calm.



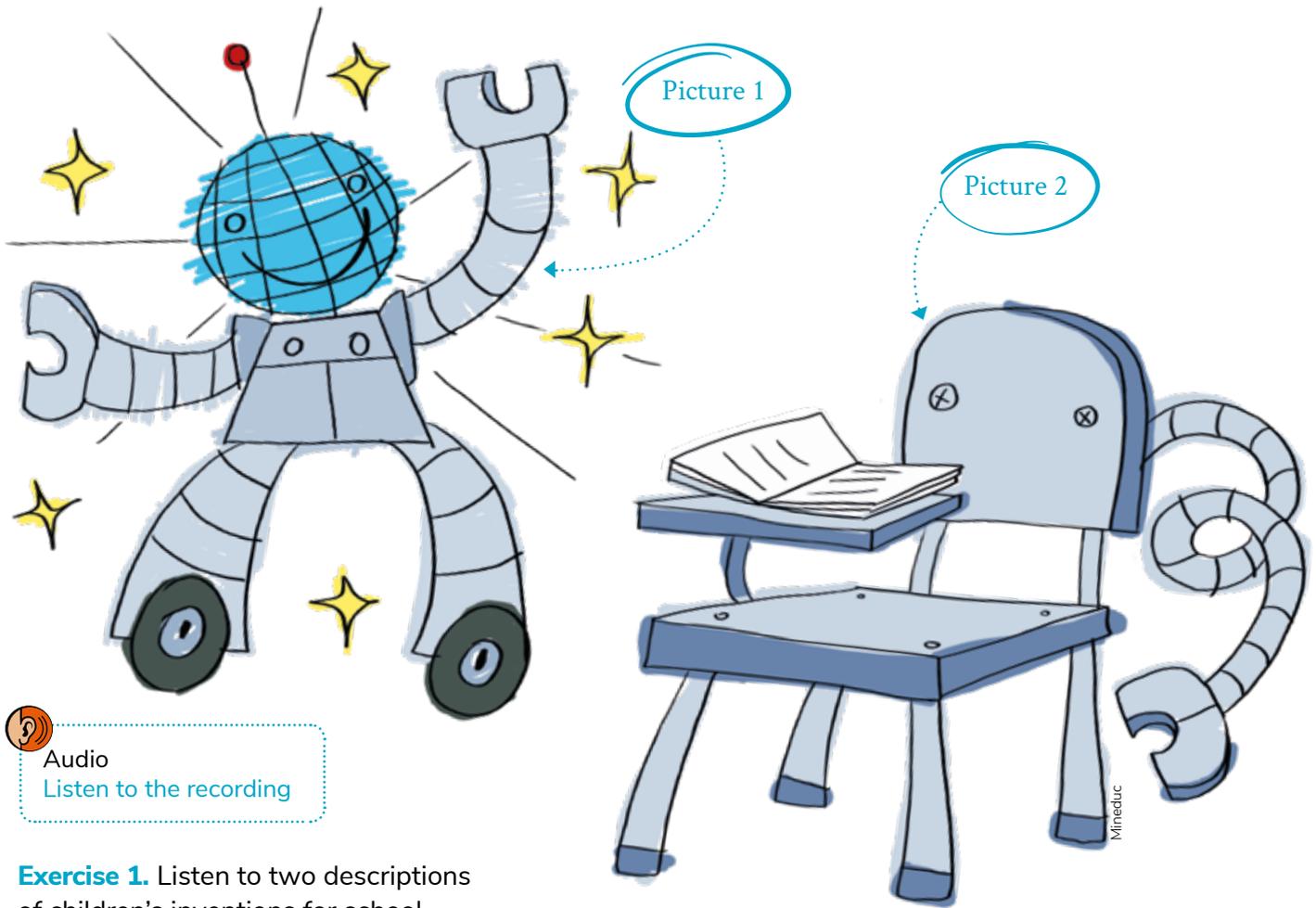
Vocabulary

devoted. extremely loving and loyal

Exercise 3. Pair work. Imagine you have a robot. Ask your partner: "What does your robot do?"

- My robot always cleans my room.
- My robot is never angry.

Oral Communication:



Audio
Listen to the recording

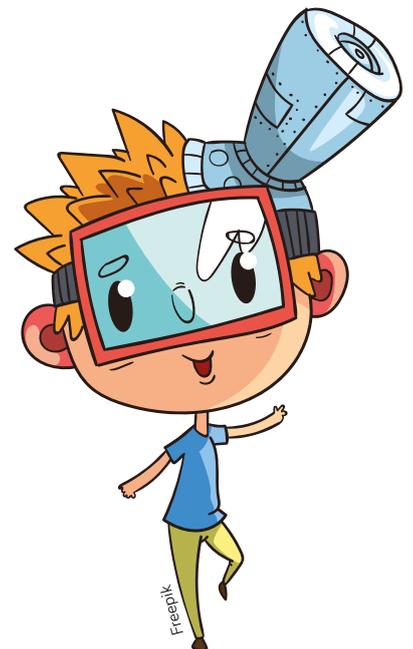
Exercise 1. Listen to two descriptions of children's inventions for school.

Exercise 2. Read the sentences about the children's inventions and write True (T) or False (F).

- a. Grace's invention is used to help you with homework.
- b. Grace's invention plays music.
- c. Megan's invention helps you with Math.
- d. Grace's robot is in sleep mode.
- e. The robot arm hypnotizes the teacher.

Exercise 3. Pair work.

Ask your partner: "Which of the two inventions do you like more? Why?"



Reading

Will Robots Make Life Better?

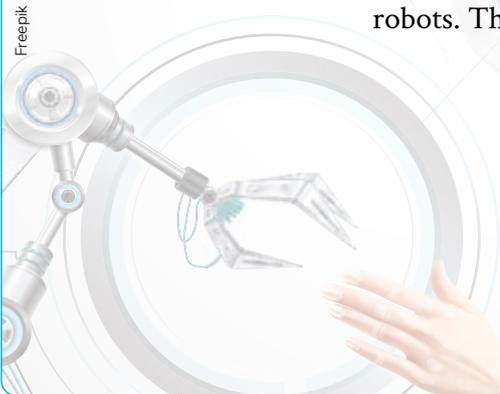
Exercise 1. What jobs do you think robots can do? Write as many different jobs as you can in the box

pilot,

A robot is a machine that obeys orders. It moves and follows instructions. Robots do not get tired and are usually precise and correct.

We can see robots everywhere. Some robots help make things like cars, others explore dangerous places like volcanoes. Robots help clean things or find objects underwater. Most robots look like machines and not like human beings.

In the next few decades we will be surrounded by robots. They will do tasks that people cannot do or that are too dangerous. Robots will help us fighting wars, fires or sicknesses and they will make life better.



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Exercise 2. Read the passage. Then, write (T) if the statements are True or (F) if they are False. Correct the statements if they are False.

- a. These days, robots can be used to explore volcanoes.

- b. Paragraph 2 explains how easy it is to make a robot.

- c. Robots can make cars.

- d. The author thinks that robots are dangerous.

Exercise 3. Pair work. Do you agree with the idea that robots will help make life better? Why or why not?

Exercise 4. Pair work. You have a robot to help you at home and school. Which three jobs would you like your robot to do?

- a.
- b.
- c.



Writing



A Fun Experiment: sink or swim?

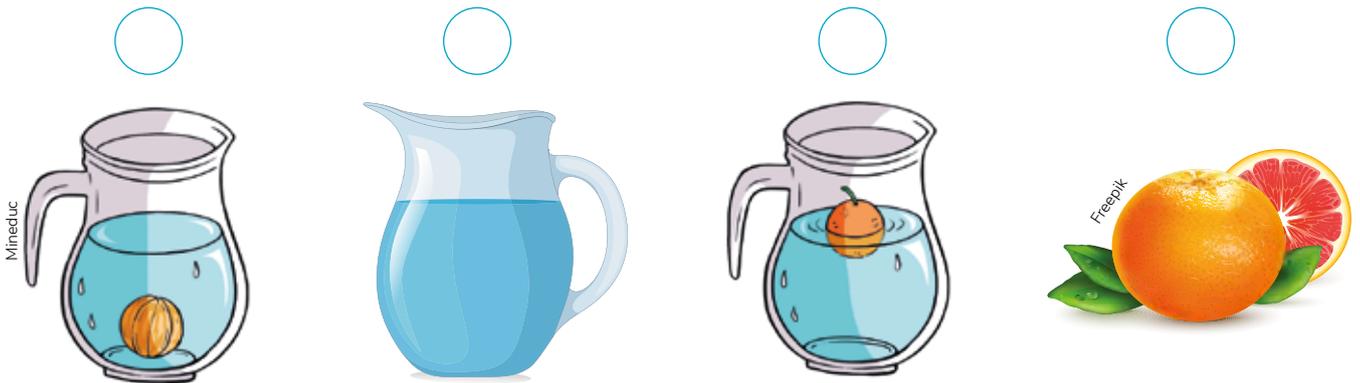
We can do this experiment with things that we can find in the house. For this experiment, you need one **pitcher** of water and two oranges: one **peeled** and one unpeeled.

We put the oranges in the water and we see which orange sinks and which one floats.

First, put the unpeeled orange in the water. What do you see? It is sinking!

Then you can test the peeled orange. What happens? It floats! The air in the unpeeled orange makes it **float** and it doesn't **sink**.

Exercise 1. Read the experiment again and number the pictures in the correct order (1-4).



Exercise 2. Put the sentences in the correct order to describe the experiment's process. Use: *first*, *then*, *next*, *after that*, and *finally* to make the order clear.

Blank lined area for writing the answer to Exercise 2.



Vocabulary

pitcher. a container for liquids

peel. to remove the skin of fruits and vegetables

float. to stay on the surface of a liquid

sink. to go to the bottom of a liquid

Assessment

Reading and Grammar

1. Complete the text with the simple past of the verbs in the box. There is one extra verb.

move be x2 help motivate live experiment love dedicate use

Alexander Graham Bell was born in 1847 in Scotland. Young Alexander (1) _____ curious about the science of sound. He (2) _____ music and taught himself to play the piano. When he (3) _____ a teenager, his mother began to lose her hearing and that (4) _____ him to learn more about sound. In 1871, he (5) _____ to Boston in the United States and (6) _____ his time to his inventions. He (7) _____ with a telegraph and (8) _____ different sound frequencies. He believed that it was possible to send the human voice over wires. In 1874, he met Thomas Watson, an electrical designer and mechanic who (9) _____ him with his work. In 1876 he made the first telephone.



Wikimedia Commons

Adapted form: <https://bit.ly/29yWEck>



Freepik

2. Read the text in Exercise 1 again. Answer the questions with a complete sentence.

a. Where was Alexander Graham Bell born?

b. Who was Thomas Watson?

c. Where was Bell in 1871?

d. Why was Bell interested in learning about sound?

e. When was the first telephone invented?

3. Listen to the biography of Alexander Graham Bell. Check (✓) the years you hear.

a. 1847 1827

b. 1871 1925

c. 1784 1874

d. 1876 1878

Writing and Speaking

Pair work. Ask a partner, "What is your favorite invention?"

- My favorite invention is _____.

- I like it because _____.

Reading and Grammar

Little Sophia

Little Sophia is an innovation in robotics designed by Hanson Robotics Limited. She is an intelligent robot who loves to play and interact with children.

She was created especially for girls who are 7 to 13 years old. Little Sophia is the perfect educational friend because she helps children learn new things in robotics, science, technology, and math.

Little Sophia shows different emotions. She can be happy, sad, angry, etc. She can have a conversation and interact by talking, singing, or telling jokes. Little Sophia is also a great Artificial Intelligence (AI) home assistant.



Retrieved from: <https://bly/2XpXNDT>

- Read the article. What is it about? Choose the correct answer (a-c).
 - The benefits of Artificial Intelligence.
 - Little Sophia's inventors.
 - The characteristics of the Little Sophia innovation.
- Complete the chart with Little Sophia's description and actions.

Description	Actions
intelligent	helps kids learn

Writing

Write 5 sentences about Sophia, about her emotions, or what she does.

- _____
- _____
- _____
- _____
- _____

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.	I can't do it without help.
I can talk about inventions and robots.				
I can use routines and frequency adverbs.				

Communication and Cultural Awareness

Science and Space



Exercise 1. Complete the text with the past tense of the verbs in the box. There is one extra verb.

- dream
- do
- be
- motivate
- teach
- get
- travel
- go

The First Woman in Space

1. Sally Ride was the first American woman to go to space.
2. She _____ a doctor in Physics and _____ a job in NASA.
3. She _____ in the Challenger space shuttle in 1983.
4. She _____ scientific experiments and helped to launch satellites. Her trip to space _____ women to follow her example.
5. She _____ into space in 1984 for the second time and later there were other women in space.
6. As a result, more people _____ of becoming astronauts and traveling to space.



Vocabulary

shuttle. a vehicle or aircraft that travels regularly between two places

launch. an occasion when a spacecraft is sent into space for the first time

Exercise 2. Complete the table with the correct verb forms. Choose three verbs and write three sentences in the past about you or people you know.

Base form	Simple Past (Irregular verbs)
be (am/is/are)	
do	
	got
go	
see	

1. _____

2. _____

3. _____

Oral Communication

Would you like to travel to space?

Voyager I: The First Trip to Space



On August 20, 1977 a spacecraft called Voyager I traveled to space. This **journey** across the solar system was very long and difficult. Voyager I flew past new places and sent photos of planets and moons to NASA (National Aeronautics and Space Administration).

Voyager I arrived on Jupiter, 480 million miles from Earth. It sent pictures to scientists and they learned new information about the climate there. They learned that Jupiter had clouds, **lightning** and **wind**.

They discovered that it had a **moon** with volcanoes. Later, Voyager I visited Saturn. This planet is famous for its rings. With the photographs from the **spacecraft**, scientists found out that the rings from Saturn contained mostly water and ice.

Exercise 1. Read the text and answer the questions.

a. Which planets did Voyager I visit?

b. Where did Voyager I send photos?

Exercise 2. Read the first two sentences of the text again. Which one is an opinion and which one is a fact? Write it on the line.

a. On August 20, 1977 a spacecraft called Voyager I traveled to space.

b. This journey across the solar system was very long and difficult.



Vocabulary

journey. the act of travelling from one place to another

lightning. a flash of bright light in the sky that is produced by electricity

wind. a current of air

moon. an object similar to a planet that moves around a planet

spacecraft. a vehicle used for travel in space

Reading

Falling Stars

A meteorite fell in Russia in 1908. It landed in a forest and burnt an area of 2,000 square kilometers with trees. Fortunately, no people were hurt.

Exercise 1. Underline the adjectives in the text “Falling Stars.”

Sometimes people see lines that move in the sky. They call them “**falling** stars” or “shooting stars.” They use a **telescope** to see them because they are far away. But, they are not stars. They are pieces of stone or **iron** that fall from the sky. Most of them are very small, and when they come to the earth, they are so bright and hot that they **burn**. The big stones that fall to the earth are called meteorites. They look like balls of fire.

Exercise 2. Complete the table with the opposite adjectives from the text. Then, complete the box with two additional adjectives.

	big
near	
	cold
dark	

Vocabulary

- fall.** to suddenly go down onto the ground
- telescope.** a cylinder-shaped device to look closer at objects that are far away
- iron.** a strong chemical element used in making steel
- burn.** to be destroyed by fire



Writing

On September 5, 1977 Voyager II left planet Earth. First, it visited Jupiter and Saturn. Next, it continued to Uranus. Uranus has a lot of ice on its surface, so it's a very cold planet. Later, Voyager II traveled to Neptune that is located 2.8 billion miles from the Sun. It is very far away. Voyager II continues traveling now. Recently, it sent important information to scientists. They learned that there are winds not only on the sun, but also on other stars.



Exercise 1. Number the sentences about Voyager II in the correct order.

- Recently, it sent important information to scientists.
- First, it visited Jupiter and Saturn.
- Uranus has a lot of ice on its surface, so it's a very cold planet.
- Next, it continued to Uranus.
- 1 On September 5, 1977 Voyager II left planet Earth.
- It is very far away.
- Voyager II continues traveling now.
- They learned that there are winds not only in the sun, but also in other stars.
- Later, Voyager II traveled to Neptune that is located at 2.8 billion miles.

Exercise 2. Join the sentences from Exercise 1 to write a paragraph. Then give a title to the text.

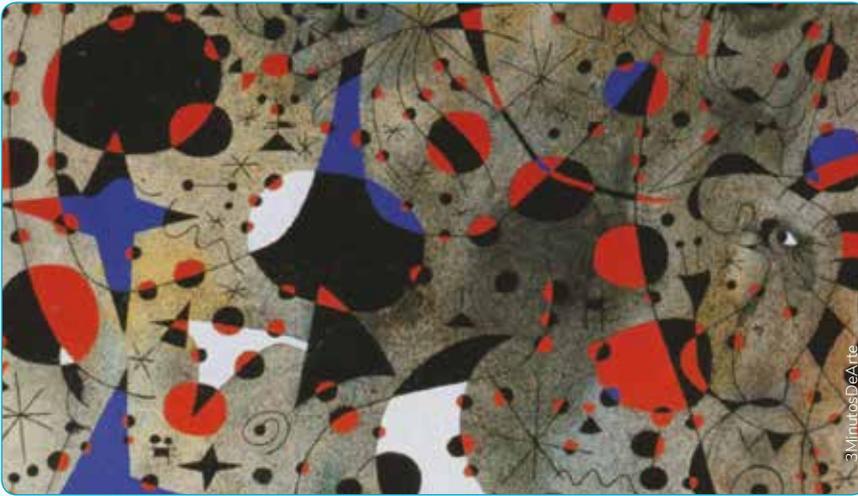
A large light blue rectangular box containing ten horizontal lines for writing.

Tip

When we describe a set of events, the words first, next and later help us make the order clear.



Language Through the Arts



Joan Miró was born in 1893 in Barcelona and died in 1983 in his adoptive city Palma de Mallorca. There is a museum called the Joan Miró Foundation dedicated to his work. It opened in 1975 in Barcelona.

Adapted from
https://kids.kiddle.co/Joan_Miró

Exercise 1. Make your own painting of space. Include suns, moons and stars. Use colors and creative shapes.

Exercise 2. Pair work. Describe your work of art to a partner.

Oral Communication

The Greatest Invention of All

Exercise 1. Pair work. Ask a partner, "What are some important discoveries or inventions?" Make a list together of 5-6 examples.



Now, listen to two friends talking about the greatest invention of all. Maybe the inventions they talk about are on your list!

Exercise 2. Here is a list of important inventions/discoveries.

Mark the ones you hear in the dialogue.

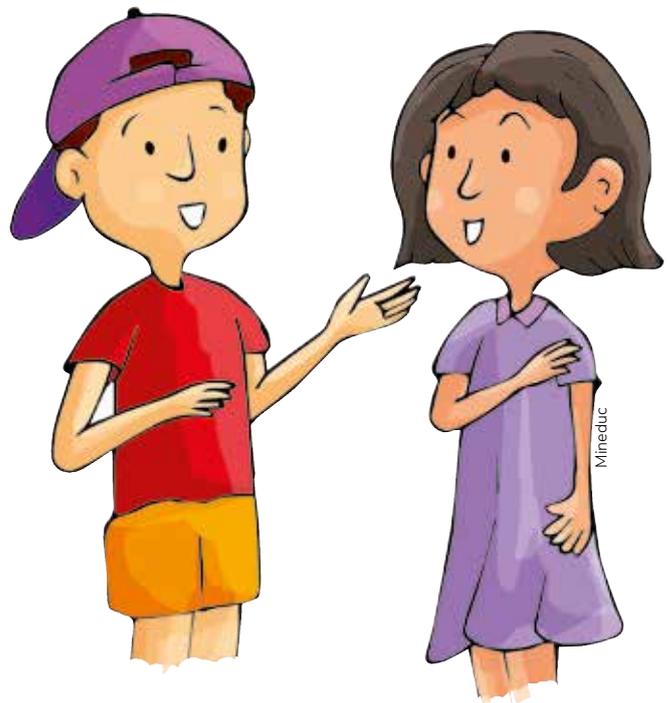
- a. Train
- b. Penicillin
- c. Computers
- d. Electricity
- e. Vaccinations
- f. Wheel
- g. Cars

Exercise 3. Pair work. With a partner, say why these inventions are important.

E.g.: "The train is important because it moves many people easily."



Audio
Listen to the recording



Assessment

Writing



Choose one of these planets and look for information about it.
Write 5 sentences about the planet to describe it.
Use frequency adverbs such as *always*, *sometimes*, *never*.

Mars

Saturn

Uranus

Venus



Reading

Read the text and write five questions about it.

Charles Darwin’s contribution to humankind is enormous. Nowadays, inspired in Darwin’s legacy, Charles Darwin Research Station, CDRS, works in the preservation of species in the Galapagos Islands. Scientists conduct important research studies and monitor special projects in the Galapagos Islands, together with National Park Galapagos. Experts in different areas direct those interesting projects. There are biologists, naturalists, ecologists, educators, and volunteer students from Ecuador and other countries from around the world.

Interesting Fact



Galapagos penguins are the only ones that live in the northern hemisphere (except for the ones who live in zoos). There are some species living outside Antarctica, like the Humboldt penguins who live along the Pacific coast of Chile and Peru, but only Galapagos penguins live above the equator.

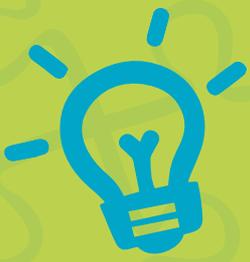
Adapted from: <https://bit.ly/2JAQzVC>



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

Self-evaluation

Topics	I check <input checked="" type="checkbox"/> 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.
I can use simple past in negative sentences.				
I can describe using adjectives.				
I can talk about inventions and discoveries.				



Project

Create a Rainbow

How many times have you peeked out the window on a rainy day and seen a rainbow (or two)? Let's make our own!

Procedure:

1. Mix 1/2 cup of the sugar syrup with 1 drop of blue and 1 drop of red food coloring to get purple.
2. Carefully **pour** it into the bottom of your **jar**.
3. Carefully pour the blue dish soap down the side of the jar.
4. Mix 1/2 cup of water with 2 drops of green food coloring.
5. Carefully pour in your green water down the side of the jar.
6. Gently pour 1/2 cup oil down the side of your jar.
7. Mix 1/2 cup of alcohol with 2 drops of red food coloring.
8. Carefully pour the red rubbing alcohol down the inside of your jar.
9. Being careful not to disturb your liquids, set your jar down on the table and enjoy your rainbow!



Wikimedia Commons

Number the pictures in the correct order.



Mineduc

Materials

- 1 jar
- 1/2 cup blue dishwashing liquid
- 1/2 cup oil
- 1/2 cup alcohol
- 1/2 cup sugar syrup
- Food coloring
- 5 spoons
- 5 plastic containers

Why does this happen?

So, what keeps all these layers all separated from each other? It's how dense, or heavy, each liquid is. The syrup is heaviest, and sits on the bottom. The dishwashing soap is not quite as heavy as the syrup, but it's heavier than the oil.

What if you had added the layers in the reverse order? Would you still see a rainbow? Try it. What happens if you mix your rainbow with a spoon? No matter which new experiments you do, be sure to write your results, like a scientist.



Vocabulary

pour. to make a liquid flow from one recipient to another

jar. a glass or clay container with a wide opening at the top