



SCIENCE FOR ALL



Scan to review worksheet

Expemo code:
1BEE-A389-9UZU



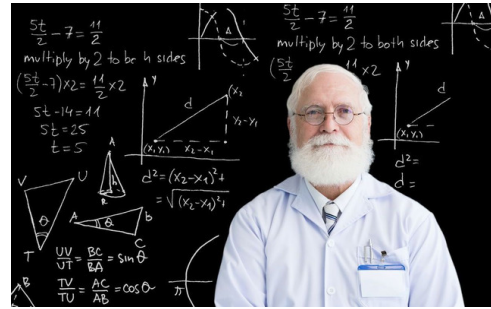
1

Warm up

Look at the images on this page with a classmate. Who can you see? What are their jobs? Would you like to do these jobs? Is there anyone missing in the images?



Picture 1



Picture 2



Picture 3



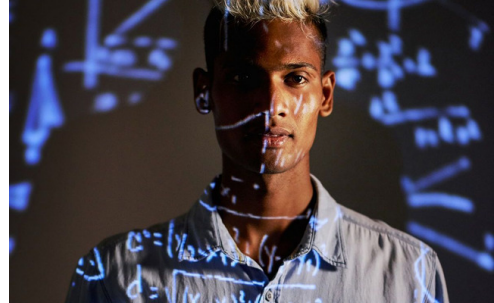
Picture 4



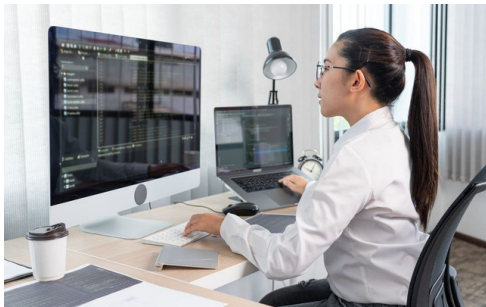
Now, look at these images. Who can you see? What are their jobs? Are there any differences between this set of photos and the set of photos on the previous page?



Picture 1



Picture 2



Picture 3



Picture 4

In this lesson, we are going to learn more about STEM. It is an abbreviation we use to refer to a group of subjects when we talk about jobs and education. What do you think STEM stands for?

S

T

E

M





2

Focus on vocabulary

Part A: Match each word or phrase to its correct definition.

Group 1

- | | |
|---------------------------------|--|
| 1. <u>diverse</u> (adj.) | a. typical of a specific group of people or a typical example of something |
| 2. <u>sector</u> (n) | b. a specific area of activity in the economy |
| 3. <u>representative</u> (adj.) | c. rich |
| 4. <u>exclude</u> (v) | d. different from each other and of different types |
| 5. <u>wealthy</u> (adj.) | e. not include something or someone in what you are doing |

Group 2

- | | |
|----------------------------|--|
| 1. <u>contribution</u> (n) | a. share something by separating it into smaller parts |
| 2. <u>display</u> (v) | b. something that is liked more than something else |
| 3. <u>proportion</u> (n) | c. put something in a place where people can see it |
| 4. <u>preference</u> (n) | d. a part or share of something |
| 5. <u>split</u> (v) | e. an action that helps cause or increase something (usually positive) |

Part B: Read part of a talk about the images you looked at earlier. Write the correct word or phrase from Part A in each space.

Hello everybody and welcome to my talk about the way images are used to represent people in STEM in schoolbooks. As you probably know, the STEM _____¹ includes the areas or subjects of science, technology, engineering and mathematics. I'm going to show you images that are _____² into two sections. Each section _____³ four photos that have been used in schoolbooks. The four photos in the first section are not very _____⁴. They are all men, and they are all white and they are probably based in _____⁵ countries although I can't be certain of this. Using this type of image is not _____⁶ of the people who work in STEM and my _____⁷ would be for images to show people that make a _____⁸ to STEM from a variety of backgrounds. The second set of images includes a higher _____⁹ of women and people of colour, which I believe we need to see in our schoolbooks. It's important not to _____¹⁰ any group from images in educational material and we have to consider other people that need including such as ...



Part C: Discuss these questions with a classmate and use the phrase in bold in your answer.

1. Which jobs do you think are evenly **split** between men and women?
2. Do you think anyone ever feels **excluded** in your school/community/society? Why?

**3****Language tip: abbreviations**

Look at this sentence from the previous exercise:

"My preference would be for images to show people that make a contribution to STEM from a variety of backgrounds."

STEM is an abbreviation that stands for science, technology, engineering and mathematics. Look at the following abbreviations. Write what they stand for in the table below. Do you know any others?

Abbreviation	What does it stand for?
STEM	(0) science, technology, engineering and mathematics
BBC	(1)
UNESCO	(2)
VIP	(3)
Dr	(4)
US	(5)
UK	(6)

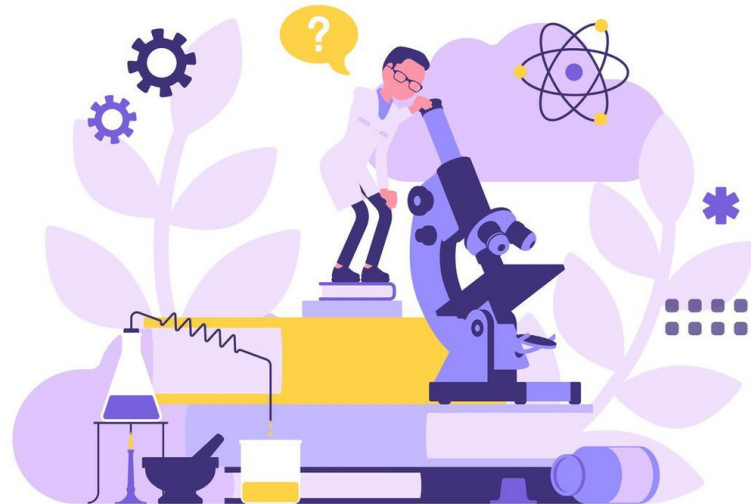


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Reading

You are going to read an article called 'Science for all' about the number of women and girls working in STEM and studying STEM subjects and how to encourage more people into STEM. Tick the things that you think might encourage more women and girls into STEM. Read the article and check which points are mentioned.

1. financial support
2. making STEM subjects more interesting
3. prizes and awards
4. trips and excursions
5. competitions
6. free toys and gadgets
7. extra training





Science for all!

Getting more people into STEM.

1. In 1886, the president of the British Medical Association warned that it would be dangerous to educate women too much, because it might make them go mad.
2. This, as we all know, proved to be as untrue and silly as it sounds. Due to changes in society and the law, girls, in most countries in the world, can now get high-level qualifications and find work in areas that interest them.
3. However, there are still many fewer women working in a number of sectors today. In the US, only 27% of people who work in science, technology, engineering and maths are women. This is true across the world, too. Many organisations are trying to increase this number and help talented women scientists achieve great things in STEM.
4. UNESCO and the L'Oréal Foundation offer the Girls in Science Programme, which chooses girls who are interested in science to take part in scientific challenges and go on visits connected to science. The same organisations run the Women in Science Programme, which offers €15,000 and leadership training to help women develop their careers in science. In addition to this, there is also the Women in Science Award for important contributions to the progress of science.
5. In higher education, the picture for women in STEM is improving. Between 2011 and 2020, the proportion of women entering STEM university courses increased from 33.6% to 41.4%.
6. "Without women in science and engineering, the people who are making decisions are not representative of everyone. We need women to be part of that conversation to make sure that female voices are being heard in the scientific community," says Charlotte Grace, a UK physics teacher.
7. The purpose of all this is not to exclude men and boys, however. There are many science prizes, including the Nobel Prize, open to all. In fact, many boys also need help to get an education in STEM. Studies have shown 30% of boys from wealthy communities think they might go on to work in STEM. However, only 8% of boys from communities with less money think the same.
8. It's important not to force girls to study subjects that don't interest them. But many girls and boys receive lots of messages from a very young age about what their preferences should be. Boys are more often given construction toys while girls are given toys connected to caring such as dolls. This is also being questioned. In 2021, the state of California passed a law that large stores needed to display toys without splitting them into products "for boys" and those "for girls".
9. With the barriers to going into STEM being examined and taken down like this, it is hoped that the future of science is as diverse as it is fascinating.

Sources: *The Conversation*, BBC, Wikipedia

Glossary:

Nobel Prize - international prizes given each year for excellent work in physics, chemistry, medicine, literature, economics and work towards world peace





Read the text again and decide whether the statements are true (T), false (F) or the information is not given (NG). Talk to a classmate and give reasons for your answers.

1. In the past, women weren't allowed to study STEM subjects in the UK. _____
2. Girls everywhere can study whatever subject they want these days. _____
3. Less than a third of people who work in STEM in the US are women. _____
4. UNESCO offers girls money to study STEM subjects at university. _____
5. Charlotte Grace believes that scientists need to listen to more women's opinions in science. _____
6. The richer you are, the more likely you are to have a career in STEM. _____
7. More boys are interested in STEM subjects than girls. _____
8. Supermarkets in California separate toys based on gender. _____

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Discussion: Toys & Games

Answer the following questions.

1. What toys and games did you play with when you were younger? Did your sister or brother play with the same things? What was different? What was the same?
2. Who would you give the following gifts to? Why?
3. Which toys are connected to STEM? Why do you think we are encouraged to give some kinds of toys to girls and others to boys? Should we stop doing this? Why?



a chemistry kit



Lego



a toy kitchen



a doll



a race track



a jewellery box



6

Focus on language: relative clauses

Part 1: Look at the example sentences and write similar definitions in the table.

"I'm going to show you a group of images **which** are split into two sections."

"In the USA, only 27% of people **who** work in science, technology, engineering and maths are women."

"Girls are often given toys **that** are connected to old-fashioned ideas such as women doing most of the cooking, cleaning and caring."

"Children **that** play with STEM toys will develop skills and knowledge in this area more quickly than other children."

We use relative pronouns to introduce relative clauses. We can use a number of different relative pronouns. Look at the example sentences above and complete the table below.

Relative Pronoun	Use
who	(1) We use 'who' to refer back to people.
which	(2)
that	(3)

Part 2: We use relative clauses, so we don't become repetitive, and it makes our language more complex. Look at these two sentences and then look again at the first example in exercise 1.

"I'm going to show you a group of images. The images are split into two sections."



Look at the sentences below and write one sentence using a relative clause with who, that or which.

1. I want a new mobile phone. The new mobile phone must have a better camera.

2. The school is looking for a new construction company. The company must be able to build modern science rooms.

3. My sister was very happy with her new science kit. I bought it for her birthday.

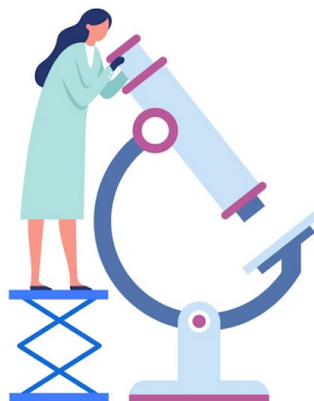
4. I've been watching these scientists online. They do some amazing experiments.

Part 3: Write down the people or things that your teacher describes in the table below.

Part 4: Take it in turns to explain the words in the table to a classmate using relative clauses.

It's a thing that/which ...

It's a person who/that ...





7

Listening for general understanding

You are about to hear a conversation between two friends talking about what they would like to study in the future.

1. What subjects does Amanda want to study?
2. What subjects does Maria want to study?



Listen to the conversation again and decide if these statements are true or false.

1. Next year, Amanda and Maria will study more subjects than they do now. _____
2. Amanda and Maria are late in deciding what subjects to study next year. _____
3. Amanda's aunt studied biology, which is also what Amanda wants to do. _____
4. Amanda's aunt would like to improve her German. _____
5. Maria found a teacher to be very helpful. _____
6. Maria isn't able to choose the subjects that she wants. _____

Glossary:

Clash (v) - to happen at the same time so that you cannot go to or see them both

Look at these sentences from what you just heard. What do you think the words in bold mean?

1. Maria: No, when's the **deadline**? Amanda: We've got another month, but the school emailed us all the list the other day.
 - a. the time something must be finished by
 - b. the time something must be started by
2. Amanda: No, she's a chemist. They're working on a solution to clean up **deadly** pollution in rivers and lakes.
 - a. dirty
 - b. likely to kill you
3. Maria: That sounds so cool and really **fascinating**. Amanda: It really is. She gets to visit colleagues in different cities sometimes, and she gets her work translated into lots of different languages.
 - a. very tiring
 - b. very interesting
4. Maria: So, you're kind of **following in her footsteps**, then. Science and languages. You could be a biologist in Spain.
 - a. to do the same job or do the same as somebody else



- b. to travel to different places and learn the same languages
5. Maria: Yeah, I had a problem with advanced maths last year – she **sorted me out** some extra classes no problem.
- a. to organise something successfully
- b. to make a decision about something
6. Amanda: Yes, look. They're **every other** day, but history has double lessons on Tuesdays and Thursdays, and maths is on Monday, Wednesday and Friday, so you can go to both.
- a. twice a week
- b. not each one in a series, but every two

8

Speaking: what to study?

Part 1: Look at the subjects in the box below and give each one a score depending on the factors in the table. The more points you get, the more suitable that subject is for you!

	1 point	2 points	3 points
Do you think you would like this subject?	Not so much.	I think I would quite like doing this.	I'm sure I'd love doing this.
Do you think you would be good at this subject?	No, I've never really been very good at this type of thing.	Yes, I think I would be good at this.	I've done this kind of subject before, and I always get good marks.
Do you think this subject will get you a good job?	I'm not sure because lots of people want to do it and the pay is not great.	I think people who do this enjoy their work and earn a good salary.	If I study this, I think I could get the job I've always dreamed of.
Do you think this subject will allow you to do things you want to do in the future?	What I want to do is not really connected to this subject.	If I studied this, I'm sure I could do a few things I want to do.	If I studied this and then got a job related to it, I think I'd be able to do whatever I wanted.



Part 2: Talk to a classmate and tell them your favourite and least favourite subjects from the list. Which subjects do you get good marks in?

Economics / Sports Science / Music / Art History / Physics
Engineering / Computer programming / Languages

What would you like to study in the future? What would you like to study at university if you decide to go? What would you like to do in the future? Tell a classmate.

9

Writing

Write a letter (100 words) to a university to apply for a course. Answer these questions in your letter:

- 1. What course would you like to study and why?
- 2. Why do you think their university would be a good place to study?
- 3. Why should the university accept you on this course?

Begin your letter like this:

Dear Sir/Madam,

I am writing to apply for a place on the (name of course) at (name) University.
