

What is STEAM?

STEAM is an acronym that stands for Science, Technology, Engineering, Arts and Maths. It is based on Inquiry-Based Learning, the Communicative Approach and CLIL. STEAM encourages experiential and holistic learning and it focuses on 21st-century skills. STEAM-based learning allows for learner-centred and student-led lessons where the teacher has the role of an explorer among the learners.

What are the aims of STEAM in the English classroom?

The use of STEAM in the English classroom aims to:

- encourage the exploration of the world, and help students gain knowledge about real-life situations.
- reinforce independence and autonomy, and make learners responsible for their own learning process.
- develop communication skills by using the English language, and support interaction skills between learners.
- engage and motivate students in their own learning process.

What are the benefits of STEAM in the English classroom?

- Learners gain knowledge about the world around them.
- They collaborate with their peers in order to complete the STEAM challenges.
- They use the English language as the medium of communication and they accomplish their tasks by gaining new learning outcomes.
- They develop important 21st-century skills (Communication, Collaboration, Creativity, Critical Thinking and Problem-Solving).
- They become curious, and they are eager to learn more and continue their learning process.
- They are actively engaged in the learning process.
- They feel secure throughout the learning process and they are able to develop and share ideas with their peers.
- They become autonomous and independent, an extremely important asset for the language-learning process.

Science

Science is commonly used to learn about and explain the natural world through experiments, but it is not only about that. It provides students with a different way of thinking and allows them to predict, observe and draw conclusions from their findings. By encouraging students to ask questions, solve problems and explain ideas, they develop scientific inquiry. Young learners are very interested in experimenting, testing and trying new things so through science they become more motivated and eager to learn.

Technology

Technology is not only used to develop software and apps or to design electronic devices. It refers to a wide range of tools that have got a practical application. In the English language classroom, we use technology to help young learners understand the order and the process behind designing or building something that works.

Engineering

Engineering is a part of STEAM that combines elements of Arts and Maths. It is not only about creating crafts though. Students build projects by calculating, using various materials or searching for appropriate materials. This way, they dive into the process of creating specific mechanisms or equipment. Then, students have to test their designs and reflect on ways to improve them.

Arts

Arts is the most creative part of STEAM and the reason why STEM has been transformed into STEAM. The Arts section reinforces engagement and inspiration, and it promotes chances for innovation in the classroom. Arts includes drawing and painting, but it could also include drama, poetry, theatre, photography, videography, dancing and music. When children have the chance to produce art, they are able to express themselves, think creatively and use their imagination. The process starts with the inspiration stage where students observe and study pieces of art. Then, they create a draft of their pieces of art, which is a great way for students to understand the importance of drafting and redrafting – a useful technique for their future steps in STEAM and learning in general.

Maths

Maths is usually combined with Science and/or Engineering, and plays an important role in developing students' way of thinking by helping them develop their problem-solving and critical-thinking skills. Maths is implemented as a learning process during which students calculate, investigate graphics or experiment with concepts of geometry.



THE REAL STEAM

INTRODUCTION TO THE TEACHER

The Steps

A iWonder: During this initial stage, students answer simple questions to raise their interest in the STEAM activity and activate any previous empirical or academic knowledge of the topic.

B iImagine: In the second stage, learners predict or imagine what is going to happen. This stage promotes students' critical thinking and creativity, and motivates them for what follows.

C iExplore: In this stage, students follow the steps to carry out their experiment or create something. While the teacher is always there to monitor the activity and provide help, it is important for students to do their project/experiment by themselves or in pairs/groups. This way, students develop their critical thinking, collaboration and communication skills.

D iObserve: The observation stage is very important since students have to think critically and understand what they have explored. Students collaborate, discuss and share their thoughts on what they see/observe.

E iCreate: During the creative stage, students present the results of their project/experiment and their observations in the form of a drawing, poster, table, chart, presentation, etc. This allows students to gain a deeper understanding of the STEAM activity and also to improve their presentation skills as well as their overall self-confidence.

F iEvaluate: In this step, learners reflect on the process of the STEAM activity and identify strengths and weaknesses.

The Role of the Teacher

Teachers do not need to be STEAM experts or researchers to teach English through STEAM, as this is an approach to language learning in which students and teachers work together. Teachers need to be enthusiastic and excited for what is coming and eager to learn more about the STEAM mindset. It is a process that allows teachers to encourage curiosity and inquiry. Teachers monitor the activities and give feedback to students when necessary. They also motivate students to complete their STEAM challenge and encourage them to develop their social and thinking skills, thus developing their self-esteem.

STEAM Corner

It is a good idea to create a STEAM corner at the beginning of the school year. This is a corner of the classroom where students can find their tools and their materials and display their creations. Teachers will also be able to use students' creations for future lessons or even as props for higher/lower levels. A STEAM corner will also encourage students' curiosity and organisational skills, since they will be able to find everything that is needed for their challenges there.

Some Tips

- Organise the materials before each lesson so as to have everything ready for the next STEAM activity.
- Set time limits during the stages of the challenges in order for students to carry them out more easily and effectively.
- If a STEAM activity doesn't work, there is no need to feel stressed. What matters most is the process, not necessarily the end result. Find alternative ways to explain the conclusion to your students.
- Give feedback to students when necessary and provide them with help whenever they need it.
- Follow the instructions about pair work/groupwork to ensure communication between students.



Science 1 – Colours Come from Nature

Materials:

For this experiment, you will need:

- 1 teaspoon of baking soda
- 1 red cabbage
- a blender
- 1 teaspoon of turmeric
- white coffee filters
- a paintbrush
- white vinegar
- some sticky tape
- a plastic knife
- two glasses of water

Procedure:

- Explain the aim of the lesson to the Ss.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section.
- Show the materials in the *Imagine* section to the Ss and elicit how they can use them for the experiment. Give Ss some time to work together and answer the question. Monitor the pairs as they are working together.
- You can ask Ss to repeat the materials to practise the new vocabulary.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the steps of the experiment in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to do the experiment. Help and support throughout the process.
- Allow Ss time to work in pairs, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, Ss complete the table according to the instructions.
- After finishing all the steps, Ss answer the questions in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Science 2 – Egg in a Bottle

Materials:

For this experiment, you will need:

- a boiled egg without the shell
- a glass bottle (with a small mouth)
- 2-3 birthday candles
- a lighter
- an egg cup

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/elicite the meanings of the words.
- Organise Ss into pairs and allow some time for them to do the short experiment, think about and answer the questions in the *iWonder* section.
- Show the materials in the *Imagine* section to the Ss and elicit how they can use them for the experiment. Give them some time to work together and answer the question. Monitor the pairs as they are working together.
- You can ask Ss to repeat the materials to practise the new vocabulary.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the steps of the experiment in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to do the experiment. Help and support throughout the process. [Note that adult supervision is necessary when conducting this experiment.]
- Allow Ss time to work in pairs, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, Ss draw the experiment. (They can draw the experiment on an A4 page if they want.)
- After finishing all the steps, Ss answer the question in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Science 3 – Science Behind Magic Tricks

Materials:

For this experiment, you will need:

- some clear sticky tape
- a drawing pin
- some duct tape
- an empty plastic water bottle without the label
- a baking tray
- some water
- a laser pointer

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section.
- Show the materials in the *Imagine* section to the Ss and elicit how they can use them for the experiment. Give them some time to work together and answer the question. Monitor the pairs as they are working together.
- You can ask Ss to repeat the materials to practise the new vocabulary.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the steps of the experiment in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to do the experiment. Help and support throughout the process.
- Allow Ss time to work in pairs, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, Ss work in pairs. They draw the experiment and perform it again in front of all the students at the school (e.g. at a Science Fair).
- After finishing all the steps, Ss answer the questions in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Science 4 – Can Flowing Water Be Still?

Materials:

For this experiment, you will need:

- a balloon
- some duct tape
- some water
- a plastic bowl
- a safety pin

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about the question, try the short experiment and answer the questions in the *iWonder* section.
- Show the materials in the *Imagine* section to the Ss and elicit how they can use them for the experiment. Give them some time to work together and answer the question. Monitor the pairs as they are working together.
- You can ask Ss to repeat the materials to practise the new vocabulary.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the steps of the experiment in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to do the experiment. Help and support throughout the process.
- Allow Ss time to work in pairs, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, Ss can work alone or in pairs. They draw the experiment, present their drawings to the class, and explain what is happening and why.
- After finishing all the steps, Ss answer the questions in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.



Science 5 – The Boat That Doesn't Sink

Materials:

For this experiment, you will need:

- a clear glass
- some water
- a piece of paper (7 cm x 10 cm)
- a bowl

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/elicite the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section.
- Show the materials in the *Imagine* section to the Ss and elicit how they can use them for the experiment. Give them some time to work together, answer the question and draw a design based on what they think they will do. Monitor the pairs as they are working together. You can ask Ss to repeat the materials to practise the new vocabulary.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask one student to read the steps of the experiment in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to do the experiment. Help and support throughout the process.
- Allow Ss time to work in pairs, talk about and write down their observations in the *iObserve* section. As an extension, you can ask Ss to explain how this happens. [Answer: The air is trapped inside the glass and cannot escape; in other words, the glass creates a "bubble" of air inside the water.]
- In the *iCreate* section, Ss can work alone or in pairs. They draw the experiment and other ways people can travel underwater. Then, Ss present their drawings to the class.
- After finishing all the steps, Ss answer the question in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.
- You can do the experiment in the *iExtend* section, if you want.

Technology 1 – Beautiful Ceilings

Materials:

For this tool, you will need:

- toilet roll tubes
- plastic wrap
- clear sticky tape
- a black permanent marker
- a white pen or maker
- a torch

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/elicite the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section.
- Show the materials in the *Imagine* section to the Ss and elicit how they can use them to create a projector. Give them some time to work together and answer the question. Monitor the pairs as they are working together.
- You can ask Ss to repeat the materials to practise the new vocabulary.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask them to draw groups of stars in the space provided. Alternatively, you can give Ss black drawing paper and ask them to draw the groups of stars on that.
- Ask a student to read the steps of the project in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to create the projector. Help and support throughout the process.
- Allow Ss time to work in pairs, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, a student reads the model presentation. Allow Ss some time to write their own short presentations. Then, invite several Ss to present their projectors to the class.
- After finishing all the steps, Ss answer the question in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Technology 2 – A Simple Tool

Materials:

For this tool, you will need:

- a square piece of cardboard
- some duct tape
- a pair of scissors
- 2 pieces of thick string (each 2 m long)

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section.
- Show the materials in the *Imagine* section to the Ss and elicit how they can use them to create a tool to lift things. Give Ss time to work together and answer the question. Monitor the pairs as they are working together.
- You can ask Ss to repeat the materials to practise the new vocabulary.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the steps of the project in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to create the tool. Help and support throughout the process.
- Allow Ss time to work in pairs, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, Ss complete the table based on their observations.
- After finishing all the steps, Ss answer the question in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Technology 3 – Wind Chimes

Materials:

For the wind chimes, you will need:

- 3 clean tin cans
- 3-4 forks
- 3-4 spoons
- some old keys
- a pair of scissors
- some string
- glue
- a black marker
- paints and paintbrushes
- a small plastic hoop
- a key ring

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the question in the *iWonder* section. Then allow some more time for Ss to draw a house and mark where birds usually sit.
- Show the materials in the *Imagine* section to the Ss and elicit how they can use them to create their wind chimes. Give Ss time to work together and answer the question. Monitor the pairs as they are working together. You can ask Ss to repeat the materials to practise the new vocabulary.
- (Optional) Elicit Ss' ideas about what other objects they could use to make wind chimes.
- Allow Ss time to make a design of their wind chimes in the box provided or on a separate piece of paper.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the steps of the project in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to create the wind chimes. Help and support throughout the process.
- Allow Ss time to work in pairs, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, Ss write a short text to present their wind chimes to the class. They can include some information about birds, if they want.
- After finishing all the steps, Ss answer the questions in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.



Technology 4 – A 3D Street

Materials:

For this design, you will need:

- a laptop or computer

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the question in the *iWonder* section. Then allow some more time for Ss to work in pairs, draw a street and add any buildings they like. Then, all the pairs work together to create a final design of a street and write a short description.
- In the *imagine* section, Ss connect various 3D shapes together to create a street.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the steps of the project in the *iExplore* section. Explain/Provide further information if necessary.
- Then Ss work in groups (if there are enough laptops) and start designing the street.
- Allow Ss time to work in pairs, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, Ss print their 3D models and write a short text to describe them to the class.
- After finishing all the steps, Ss answer the questions in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Technology 5 – Computer Language

Materials:

For this project, you will need:

- a laptop or computer
- a notebook
- a pencil (or pen)

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section. Explain any unknown ideas/concepts to the Ss.
- Show the materials in the *imagine* section to the Ss and elicit how they can use them to learn computer language. Give Ss time to work together and answer the question. Monitor the pairs as they are working together.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- In the *iExplore* section, ask Ss to study the English alphabet in binary code. Explain to Ss that this is a language like any other language. It is the language of programming and we use it to communicate through computers, applications and software. Also explain that while in the English language we use the alphabet, in programming every letter is a combination of the numbers 0 and 1.
- Allow Ss time to experiment with the different activities writing their names and their secret messages. Help if/ when necessary.
- Allow Ss time to work in pairs, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, Ss create a poster with a secret message and present it to the class. The rest of the Ss try to guess what the secret message is.
- After finishing all the steps, Ss answer the questions in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Engineering 1 – Bees & the Bee Dance

Materials:

For this project, you will need:

- an empty clean tin can
- some glue
- some string
- scissors
- lots of paper straws
- yellow and black paint
- a paintbrush

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section. Ss can check their answers online. [Key: 5 eyes/6 legs/2 pairs of wings/three: the queen, the workers, the drones]
- Help Ss find videos about the 'bee dance'. Ask Ss more questions about it and encourage a class discussion. (How can bees 'talk' to each other? How can bees tell other bees where they can find flowers? Are bees very clever? What are the steps of the bee dance?)
- Show the materials in the *Imagine* section to the Ss and elicit how they can use them to make a beehive. You can ask Ss to repeat the materials to practise the new vocabulary. Give Ss some time to work together, answer the question and make a design of their beehive. Monitor the pairs.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew these facts.
- Ask a student to read the steps of the project in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to create the beehive. Help and support throughout the process.
- You can hang the beehive outside the school, in a park or a garden. Make sure that none of the Ss are allergic to bees. Allow Ss time to study the beehive, talk about and write down their observations in the *iObserve* section. (Note: to attract bees, put some honey on the straws.)
- In the *iCreate* section, Ss watch the video of the bee dance again and try to draw an illustration of the bee dance. Additionally, they can create a bee poster and include all the new information they learned in this STEAM activity.
- After finishing all the steps, Ss answer the question in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.
- As an extension, invite Ss to do the bee dance.

Engineering 2 – Help the Birds

Materials:

For this project, you will need:

- a roll of tinfoil
- a roll of plastic wrap
- coloured pens
- 2 empty clean cartons of milk
- glue
- some string
- scissors
- sticks of wood
- sheets of foam paper

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section.
- Show the materials in the *Imagine* section to the Ss and elicit which of these materials they can use to make windows that birds can see, which materials they can use to make a bird feeder and which materials they can use to build a birdhouse. You can ask Ss to repeat the materials to practise the new vocabulary. Monitor the pairs while the Ss are working together.
- Organise Ss into 3 groups. Each group will work on one of the projects: Group A will create the windows, group B will create the birdhouses and group C will create the birdfeeder. Before they create their projects, ask Ss to design them in the boxes provided.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew these facts.
- One student in each group reads the steps of the project in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to complete their projects. Help and support throughout the process.
- Allow Ss time to study their projects, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, invite each group to present their project to the class and give a short presentation.
- After finishing all the steps, Ss answer the question in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.



Engineering 3 – Castles & Drawbridges

Materials:

For this project, you will need:

- 6 toilet roll tubes
- a paper straw
- some string
- a cardboard box
- some pieces of cardboard
- glue
- a hole puncher

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about, answer the questions in the *iWonder* section and draw a castle.
- Show the materials in the *Imagine* section to the Ss and elicit how they can use these materials to make a castle and its drawbridge. You can ask Ss to repeat the materials to practise the new vocabulary. Then Ss need to draw a plan of the castle in the box provided. Monitor the pairs while the Ss are working together.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the steps of the project in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to build the castle and its drawbridge. Help and support throughout the process.
- Allow Ss time to study their castle, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, invite Ss to present their castles to the class and explain how the drawbridge works. Optionally, the class can vote for the best castle.
- After finishing all the steps, Ss answer the questions in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Engineering 4 – My Dream School Cafeteria

Materials:

For this project, you will need:

- Plasticine™ or any other modelling clay
- Coloured wooden sticks
- glue
- some pieces of cardboard
- paints and paintbrushes

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section.
- Organise Ss into groups. Allow Ss time to design their dream school cafeteria in the box provided. Ss should only draw tables and chairs at this stage, but they can use any formation they like. Encourage Ss to use their imagination and decide what they would like their school cafeteria to include.
- In the next step of the *Imagine* section, allow Ss time to look at the materials. Elicit how they can use them to make a model of their dream school cafeteria. Monitor the pairs while the Ss are working together. You can ask Ss to repeat the materials to practise the new vocabulary.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the steps of the project in the *iExplore* section. Explain/Provide further information if necessary. Allow Ss time to complete the model of the school cafeteria. Help and support throughout the process.
- Allow Ss time to study their school cafeteria, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, invite Ss to present their models to the class and explain what there is in their dream school cafeteria.
- After finishing all the steps, Ss answer the questions in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Engineering 5 – The Bridge is Falling Down

Materials:

For this project, you will need:

- toothpicks
- glue
- 2 wooden cubes
- a big piece of cardboard
- paints and paintbrushes

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section. Encourage a discussion and elicit Ss' ideas about which bridge is the strongest and why. Then, each student draws a bridge they know/ have seen.
- In the *imagine* section, allow Ss time to look at the materials and elicit how they can use them to make a model of a bridge. You can ask Ss to repeat the materials to practise the new vocabulary. Monitor the pairs while the Ss are working together.
- Then allow Ss more time to draw the model of the bridge in the box provided.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the steps of the project in the *iExplore* section. Explain/ Provide further information if necessary.
- Allow Ss time to complete their models. Help and support throughout the process.
- Allow Ss time to study the bridge they created, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, invite Ss to present their models to the class.
- After finishing all the steps, Ss answer the question in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Arts 1 – What is Art? Unusual Art Materials

Materials:

For this project, you will need:

- some water
- A4 watercolour paper
- an ice cube tray
- watercolours and a paintbrush
- ice cream sticks
- glitter (optional)

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section. Encourage a discussion and allow them time to research online and find pictures of various types of art. Then invite Ss to present the pictures and say a few things about them, as in the example provided.
- In the *imagine* section, allow Ss time to look at the materials and elicit how they can use them to create a piece of art. Monitor the pairs while the Ss are working together. You can ask Ss to repeat the materials to practise the new vocabulary.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the steps of the project in the *iExplore* section. Explain/ Provide further information if necessary.
- Allow Ss time to complete their ice cube paintings. Help and support throughout the process.
- Allow Ss time to study their paintings, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, invite Ss to present their paintings to the class.
- After finishing all the steps, Ss answer the question in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.



Arts 2 – Rubbish Into Toys

Materials:

For this project, you will need:

- toilet roll tubes
- empty cartons
- plastic bottles
- cardboard
- plastic lids
- tin cans

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section. Encourage a discussion and allow Ss time to draw their favourite games in the box provided.
- In the *Imagine* section, allow Ss time to look at the various types of rubbish and elicit which of them they can use to make toys. (**Key:** toilet roll tubes, empty cartons, plastic bottles, cardboard, plastic lids, tin cans). Monitor the pairs while the Ss are working together. You can ask Ss to repeat the materials to practise the new vocabulary.
- Then allow more time for Ss to make a sketch of a toy train and a hoopla using rubbish from the previous task.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Organise Ss into two groups. Group A will make a toy train and group B will make a hoopla. One student from each group reads the steps of the project in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to create their toys. Help and support throughout the process.
- Allow Ss time to study their toys, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, invite the two groups to present their toys to the class and explain how they made them.
- After finishing all the steps, Ss answer the question in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Arts 3 – An Art Celebration

Materials:

For this project, Ss are free to use any materials they like (Plasticine™ or any other modelling clay, plastic bottles, paper, fabric, toothpicks, beads, fruit, pasta, lentils, etc).

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section. (**Key:** 1E, 2B, 3A, 4D, 5F, 6C). Encourage a discussion about unusual materials artists use to create sculptures.
- In the *Imagine* section, allow Ss time to select any materials they like for their sculptures. Encourage Ss to be creative and imaginative. Ss should first make a drawing of the sculpture in the box provided.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the instructions in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to work on their sculptures. Help and support throughout the process.
- Allow Ss time to study their sculptures, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, invite Ss to create a museum label for their work of art. You can search online and show Ss various museum labels so that they have a better idea about how to make them.
- After finishing all the steps, Ss answer the question in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Arts 4 – Toy Sculptures

Materials:

For this project, you will need:

- Plasticine™ or any other modelling material (various colours)
- toothpicks

Procedure:

- Explain the aim of the lesson to the Ss.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section. Encourage a discussion about toys for nursery pupils.
- In the *imagine* section, allow Ss time to look at the materials and think about how they can use them to create a toy sculpture. Monitor the pairs while the Ss are working together. You can ask Ss to repeat the materials to practise the new vocabulary. Then allow more time for Ss to draw the model of the toy sculpture in the box provided.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the instructions in the *iExplore* section. Explain/Provide further information if necessary. Allow Ss time to work on their toy sculptures. Help and support throughout the process.
- Allow Ss time to study their toy sculptures, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, invite Ss to think of a story. The characters of the story will be the toy sculptures the Ss have created. First, Ss can brainstorm for ideas and write them down in the space provided. Then, with the help of the teacher, they develop the whole story and write it in script form on a piece of paper. When the story is ready, Ss can put on a puppet show for the nursery pupils at their school.
- After finishing all the steps, Ss complete the sentence that is true about them in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Arts 5 – Lettering & Bullet Journals

Materials:

For this project, you will need:

- 4 sheets of A4 paper
- coloured pencils or pens
- highlighters
- any stickers you like
- sticky notes (various colours and sizes)

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section. Encourage a discussion about bullet journals. Allow more time for Ss to practise writing their names using different types of lettering.
- In the *imagine* section, allow Ss time to look at the materials and think about how they can use them to create a bullet journal. Monitor the pairs while the Ss are working. Then allow more time for Ss to play a game and revise the names of the week and the months of the year.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the instructions in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to work on their bullet journals. Help and support throughout the process.
- Allow Ss time to study their bullet journals, compare them with their classmates' bullet journals, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, invite Ss to present their bullet journals to the class and explain how they made them.
- After finishing all the steps, Ss answer the question in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.



Maths 1 – Shapes Into Animals

Materials:

For this project, you will need:

- coloured paper
- sheets of A4 paper
- glue
- a ruler
- scissors

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to study the various shapes in the *iWonder* section and do the task to learn/revise the shapes. (**Key:** 1 circle, 2 square, 3 rectangle, 4 triangle, 5 pentagon). Allow more time for Ss to look around the classroom and find objects that have got these shapes.
- In the *imagine* section, allow Ss time to look at the animals and write their names. Monitor the activity while Ss are working. (**Key:** horse, dog, lion, cat, fish, elephant). You can ask Ss to repeat the words to practise the vocabulary. Then allow more time for Ss to think about how they can draw an animal using various shapes. Then Ss can draw the animal using various shapes in the box provided. Alternatively, they can use a separate piece of paper.
- Elicit from Ss how they can use the materials to create animals from shapes.
- Ask a student to read the instructions in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to work on their animals. Help and support throughout the process.
- Allow Ss time to study their animals, compare them with their classmates' animals, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, invite Ss to present their animals to the class and explain what shapes they used to make them.
- After finishing all the steps, Ss answer the question in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Maths 2 – Maths in Art

Materials:

For this project, you will need:

- A4 pieces of paper
- a pencil
- a ruler
- coloured markers or pencils

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to answer the questions in the *iWonder* section. Allow more time for Ss to research online and find examples of maths in art.
- In the *imagine* section, allow Ss time to look at the various examples of symmetry and draw the symmetry line. If you want, you can explain that the symmetry line can be horizontal, vertical or and/or diagonal. Monitor the activity while Ss are working. Follow the same procedure for the letters and numbers. (**Key:** B, X, A, 8, O).
- Explain again (if necessary) what perspective is and allow Ss time to study the painting by Caillebotte to see how he used perspective to draw the people. Follow the same procedure for the painting by Claude Monet. Encourage Ss to find examples of perspective and symmetry.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the instructions in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to work on their paintings. Help and support throughout the process.
- Allow Ss time to study their paintings, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, invite Ss to present their paintings to the class and explain how they used perspective and symmetry.
- After finishing all the steps, Ss answer the question in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Maths 3 – Bar Charts

Materials:

For this project, you will need:

- LEGO® blocks (red, blue, green, pink, purple, orange) or wood blocks that you can paint in these colours
- graph paper
- a pencil
- a ruler
- a smartphone or camera

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to answer the question in the *iWonder* section. Then Ss should think of and draw other ways we can use to show information.
- In the *Imagine* section, allow Ss time to look at the various materials and think how they can use them to make a bar chart. Monitor the activity while Ss are working. You can ask Ss to repeat the materials to practise the new vocabulary.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Organise Ss in groups of three. Explain that each group member has a different job: one student records the process with a smartphone or camera, another collects information and the other writes down the information. Allow Ss time to collect the information and create the bar chart following the steps in the *iExplore* section. Help and support throughout the process.
- Allow Ss time to study their bar charts, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, invite Ss to present their bar charts to the other groups and show the video they recorded to explain the steps they followed.
- After finishing all the steps, Ss choose the best answer for them in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Maths 4 – A Maths Problem

Procedure:

- Explain the aim of the lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to answer the questions in the *iWonder* section.
- In the *Imagine* section, allow Ss time to look at the notes and think how they can solve the problem. An easy way is to organise the information into groups. Allow them time to do the tasks in this section. Monitor the activity while Ss are working.
- In the *iExplore* section, Ss refer back to the previous task to complete the notes and move towards the solution of the maths problem. Help and support throughout the process.
- Allow Ss time to study the steps they've followed so far, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, invite Ss to create cards and solve the maths problem. As an extension, ask Ss to check with the other Ss if they have all come up with the same solution.
- After finishing all the steps, Ss answer the question in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Maths 5 – 3D Holograms

Materials:

For this project, you will need:

- thick clear plastic film
- clear sticky tape
- a smartphone
- a ruler
- scissors
- a black marker

Procedure:

- Explain the aim of the lesson to the Ss. Explain what a hologram is. It might be a good idea to show Ss some examples (e.g. pictures or videos).
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to answer the questions in the *iWonder* section. (**Key:** two-dimensional: B & D, three-dimensional: A & C). Then Ss should read the short text about light and answer the questions. Monitor the Ss while they are working.
- In the *iImagine* section, allow Ss time to look at the various materials and think how they can use them to make a hologram. You can ask Ss to repeat the materials to practise the new vocabulary. Then Ss can draw a design of a hologram in the box provided.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the instructions in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to work on their holograms. Help and support throughout the process.
- Allow Ss time to study their holograms, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, invite Ss to draw how their holograms work. They can also include what they've learned about light (the four symmetrical pieces of film reflect the image from the smartphone. The four reflections together create a 3D image).
- In the next step of the *iCreate* section, allow Ss time to research online and find examples of holograms in famous films (*Star Wars*, *Avatar*, *Spider-Man: Far From Home*, etc).
- After finishing all the steps, Ss answer the question in the *iEvaluate* section and complete the Evaluation Form at the back of their books.
- Encourage a class conversation about the STEAM activity.

Project 1 – Protect the Oceans

Aim

The aim of this project is to understand how important it is to protect our oceans. In this project, we learn about:

- the oceans
- ocean life
- types of pollution
- water pollution
- plastic pollution
- what we can do to help the oceans

Suggested timeline

- Week 1:** We explore the oceans.
- Week 2:** We learn about ocean life.
- Week 3:** We learn about types of pollution and how dangerous they are.
- Week 4:** We learn about water pollution.
- Week 5:** We learn about plastic pollution, microplastics and how they affect sea animals and people.
- Week 6:** We suggest ways to help save the oceans.

TIPS:

- Before you start this long-term project, you can write the timeline on a piece of A4 paper and post it on the wall. You can ask students to brainstorm on the titles of every week and think about what they'll do every week. This way, you can engage your students and make them feel curious and motivated about the project.
- The weekly timeline above is a suggestion only. Teachers can either complete all the tasks in one lesson, or divide them into smaller parts and complete them in more than one lesson.

Week 1: The Oceans

Materials:

- a large jar
- vegetable oil
- washing-up liquid
- corn syrup
- water
- surgical spirit
- food colouring (red, blue and green)
- 5 paper cups
- paper straws

Procedure:

- Explain the aim of this week's lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section.
- Show the materials in the *imagine* section to the Ss and elicit how they can use them for the experiment. Give Ss some time to work together and answer the question. Monitor the pairs as they are working together.
- You can ask Ss to repeat the materials to practise the new vocabulary.
- Ask a student to read the *Did You Know?* boxes. Elicit if Ss knew these facts.
- Ask a student to read the steps of the experiment in the *iExplore* section. Explain/Provide further information if necessary.
- Allow Ss time to do the experiment. Help and support throughout the process.
- Allow Ss time to work in pairs, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, Ss draw the ocean zones and mark how deep each zone is (they can use the information from the *Did You Know?* box).
- After finishing all the steps, Ss answer the questions in the *iEvaluate* section.
- Encourage a class conversation about the STEAM activity.
- As an extension, ask Ss to research online and collect information about the Marianna Trench (*iExtend* section), prepare a poster and present it to the class.



Week 2: Ocean Life

Materials:

- a shoe box
- clear sticky tape
- string
- scissors
- A4 watercolour paper
- paints and paintbrushes
- real sand and seashells (if possible)
- pipe cleaners (various colours)

Procedure:

- Explain the aim of this week's lesson to the Ss.
- Go through the list of animals and elicit which of these animals live in or near oceans (**Key:** all of them). You can ask Ss to repeat the words for extra practice.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section. (You can ask Ss to draw a picture of ocean life. Encourage Ss to use their imagination but also think about what they already know about the ocean and the animals that live there.)
- Show the materials in the *imagine* section to the Ss and elicit how they can use them to create a model of ocean life. Give Ss time to work together and answer the question. Monitor the pairs as they are working together.
- You can ask Ss to repeat the materials to practise the new vocabulary.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the steps of the project in the *iExplore* section. Explain/Provide further information if necessary. Allow Ss time to complete their models. Help and support throughout the process.
- Allow Ss time to work in pairs, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, Ss present their models. Optionally, Ss can vote for the best model.
- After finishing all the steps, Ss answer the question in the *iEvaluate* section.
- Encourage a class conversation about the STEAM activity.
- As an extension, ask Ss to research online and collect information about the animals that live in each ocean zone they learned the previous week (see *iExtend* section).

Week 3: Types of pollution

Materials for the soil pollution experiment:

- a bowl of gelatine
- a wooden knife
- a syringe
- food colouring (any colour you like)
- various objects from nature (pebbles, grass, leaves)

Materials for the air pollution experiment:

- a shoe box
- some toilet roll tubes
- pieces of cotton wool
- glue
- sticky tape
- glitter
- a hairdryer
- scissors

Procedure:

- Explain the aim of this week's lesson to the Ss.
- Go through the new vocabulary and explain/elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section. (**Key:** 1 soil, 2 air, 3 water).
- Show the materials in the *imagine* section to the Ss and elicit which of them they can use for the soil pollution experiment and which for the air pollution experiment. Give Ss time to work together and answer the question. Monitor the pairs as they are working together. You can ask Ss to repeat the materials to practise the new vocabulary.
- Ask a student to read the *Did You Know?* boxes. Elicit if Ss knew these facts.
- Organise Ss into 2 groups. Each group will work on one of the experiments: Group A will work on the soil pollution experiment and group B will work on the air pollution experiment.
- One student in each group reads the steps of the experiment in the *iExplore* section. Explain/Provide further information if necessary. Allow Ss time to complete their experiments. Help and support throughout the process.
- Allow Ss time to work in pairs, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, each group draws a picture that shows soil/air pollution. Then Ss present their drawings to the class, and explain what they have learned about pollution from their experiments.
- After finishing all the steps, Ss answer the question in the *iEvaluate* section.
- Encourage a class conversation about the STEAM activity.

Week 4: Water pollution

Materials (experiment A):

- four white flowers
- four large jars
- scissors
- food colouring (any colour you like)
- water
- white vinegar

Materials (experiment B):

- a large jar
- some soil
- a smartphone
- a plant
- food colouring (any colour you like)
- detergent
- a paper cup

Procedure:

- Explain the aim of this week's lesson to the Ss.
- Go through the new vocabulary and explain/elicite the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section. (**Key:** all of them).
- Show the materials in the *Imagine* section to the Ss and elicit how they can use them to show how dangerous water pollution is. Monitor the pairs while the Ss are working together. You can ask Ss to repeat their materials to practise the new vocabulary.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Organise Ss into 2 groups. Each group will work on one of the experiments: Group A will do experiment A, Group B will do experiment B.
- One student in each group reads the steps of the experiment in the *iExplore* section. Explain/Provide further information if necessary. Allow Ss time to complete their experiments. Help and support throughout the process.
- When the experiments are complete, allow Ss time to study them carefully, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, invite each group to prepare and present a poster to show how dangerous water pollution is.
- After finishing all the steps, Ss answer the question in the *iEvaluate* section.
- Encourage a class conversation about the STEAM activity.

Week 5: Plastic pollution

Materials:

- a bowl
- a spoon
- some warm water
- a jar
- some shampoo
- coffee filters
- a funnel

Procedure:

- Explain the aim of this week's lesson to the Ss.
- Go through the new vocabulary and explain/elicite the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section. [The correct answer for question 2 is C].
- Show the materials in the *Imagine* section to the Ss and elicit how they can use them for an experiment that will help them 'see' microplastics. Monitor the pairs while the Ss are working together. You can ask Ss to repeat the materials to practise the new vocabulary.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew these facts.
- Ask a student to read the steps of the experiment in the *iExplore* section. Explain/Provide further information if necessary. Allow Ss time to complete their experiment. Help and support throughout the process.
- Allow Ss time to study their experiments carefully, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, invite the Ss to prepare a poster to show how microplastics affect marine life and people. (Ss can work individually, in pairs or in groups).
- After finishing all the steps, Ss answer the question in the *iEvaluate* section.
- Encourage a class conversation about the STEAM activity.



Week 6: What can we do?

Procedure:

- Explain the aim of this week's lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section.
- In the *imagine* section, Ss work in pairs and brainstorm for ideas to help protect the oceans. They can also research online if they want. Monitor the pairs while they are working together.
- Ask a student to read the steps of how to prepare a questionnaire in the *iExplore* section. Explain/Provide further information if necessary. Allow Ss time to create their questionnaires on pieces of A4 paper using the questions they came up with in the *imagine* section. Help and support throughout the process.
- Then Ss should have enough time (at least one or two days) to interview friends and family and complete their questionnaires.
- When the Ss return their questionnaires to the class, allow them time to study them, talk about and write down their observations in the *iObserve* section.
- In the *iCreate* section, invite the Ss to work in groups and prepare a poster to encourage people to help protect the oceans. Encourage them to use their creativity and imagination to make their posters as attractive as possible. Alternatively, you can ask Ss to record a short simple podcast to give people advice on how to help protect the oceans. You can upload the podcast to the school platform or website.
- After finishing all the steps, Ss answer the questions in the *iEvaluate* section.
- Encourage a class conversation about the STEAM activity.
- Allow some classroom time to go through the questions in the *iExtend* section and have a class discussion to evaluate this long-term project.

Project 2 – Create a comic

Aim

The aim of this project is to learn about comic books and learn the steps to creating one. In this project, we learn about:

- what a comic is and about famous characters from comics
- how to develop the characters of a comic and the storyline
- how to write dialogue for comics
- how to make the illustrations for a comic

Suggested timeline

- Week 1:** We learn about what comics are and about famous characters from comics.
- Week 2:** We learn about how we create the characters and the storyline of a comic.
- Week 3:** We learn about how to write the dialogue of the comic.
- Week 4:** We illustrate and design the cover of our own comic.

TIPS:

- Before you start this long-term project, you can write the timeline on a piece of A4 paper and post it on the wall. You can ask students to brainstorm on the titles of every week and think about what they'll do every week. This way, you can engage your students and make them feel curious and motivated about the project.
- The timeline above is a suggestion only. Teachers can spend one or two teaching hours to complete all the tasks assigned for each week, or they can break them up into smaller parts and complete them in more than one lesson.

Week 1: What is a comic? Who are the most famous characters from comics

Procedure:

- Explain the aim of this week's lesson to the Ss.
- Go through the new vocabulary and explain/ elicit the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section.
- In the *imagine* section, Ss work in pairs and identify the similarities and differences between children's books and comics. If you can, bring a selection of comics to the class so that Ss can see the authentic material.
- Monitor the pairs while the Ss are working together. Then, Ss talk about famous characters from comics. (**Key:** 1 Superman & Krypto, 2 Gargamel, 3 Minnie Mouse, 4 Naruto, 5 Sandy Cheeks, 6 Jerry, 7 Spider-Man).
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew these facts.
- In the *iExplore* section, Ss complete a quiz to find out how much they know about characters from comics. Explain/ Provide further information if necessary. Allow Ss time to check their answers online (**KEY:** 1B, 2C, 3B, 4C, 5A, 6C, 7B). Help and support throughout the process.
- Allow Ss time to think, talk about and write down their observations about the various characters in the *iObserve* section.
- In the *iCreate* section, invite the Ss to work in groups and prepare a quiz for their classmates to find out how much they know about famous comic book characters and the comics they appear in. Allow Ss enough time (one or two days) to prepare their quizzes. They should then give the quizzes to their classmates to do.
- After finishing all the steps, Ss answer the question in the *iEvaluate* section.
- Encourage a class conversation about the STEAM activity.
- Allow Ss some time (perhaps over a weekend) to choose a comic, read it and then present it to the class. If there is a film or TV series adaptation of the comic, Ss can watch a short clip in the next lesson. (*iExtend* section)

Week 2: Create the characters & the storyline

Procedure:

- Explain the aim of this week's lesson to the Ss.
- Organise Ss into pairs and allow some time for them to think about and answer the question in the *iWonder* section (**KEY:** when the story takes place/where the story takes place/the main characters/what happens in the story/the characters' feelings).
- In the *imagine* section, Ss work in groups and start brainstorming for ideas for their own story. They need to decide where and when their story takes place, and who the main characters will be. Monitor the groups while the Ss are working together. Encourage Ss to use their imagination and come up with their own ideas. They then need to decide what the story will be about and also talk about the characters' feelings. (**Key:** 1 happy, 2 sad, 3 angry, 4 scared).
- In the *iExplore* section, Ss explore how a story develops. Explain to the Ss how any story starts, develops and ends. Then, allow Ss time to write a couple of sentences for each part of their story. Help and support throughout the process.
- Allow Ss time to think, talk about and write down their observations about their storylines in the *iObserve* section.
- In the *iCreate* section, allow Ss time to write their own stories. Ss can also work on this step at home and bring their stories in the next lesson.
- After finishing all the steps, Ss answer the questions in the *iEvaluate* section.
- Encourage a class conversation about the STEAM activity.



Week 3: The dialogue

Procedure:

- Explain the aim of this week's lesson to the Ss.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section. Explain/Elicit the meaning/function of the various speech bubbles. Explain to the Ss that this is very important because the dialogue in their comic will be written in these types of bubbles. (Key: 1 shout bubble, 2 speech bubble, 3 thought bubble).
- In the *imagine* section, Ss work in groups and decide whether the statements are true or false. To answer these, Ss can use real comics if there are any available in the classroom. Monitor the groups while the Ss are working together. (KEY: 1T, 2F, 3T, 4T, 5F).
- In the next step of the *imagine* section, Ss match the various sound words to what they mean. (KEY: 1B, 2E, 3A, 4C, 5D). Explain to Ss that in most languages, there are words that represent sounds. Elicit more examples from the English language (beep, buzz, clap, jingle, knock, pop, tap, zap, zoom, etc). Elicit examples from Ss' L1.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the steps in the *iExplore* section. Allow Ss enough time to write their story in dialogue form. Help and support throughout the process. Explain to the Ss how important it is to draft and redraft their dialogue until they are happy with it.
- Allow Ss time to compare the dialogue they have written, talk about them and write down their observations in the *iObserve* section.
- In the *iCreate* section, allow Ss time to write their dialogue in the format of a comic (i.e. using various bubbles). Ss can also work on this at home and then bring their dialogue to the class in the next lesson.
- After finishing all the steps, Ss swap dialogues with the other groups and answer the questions in the *iEvaluate* section to provide feedback.
- Encourage a class conversation about the STEAM activity.
- In the *iExtend* section, Ss can act out their dialogue to make sure it sounds natural.

Week 4: The illustrations

Materials:

- sheets of A4 paper
- a pencil
- a ruler
- coloured markers or crayons
- a black pen/marker

Procedure:

- Explain the aim of this week's lesson to the Ss.
- Go through the new vocabulary and explain/elicite the meanings of the words.
- Organise Ss into pairs and allow some time for them to think about and answer the questions in the *iWonder* section. For question 2, Ss can work on the image in their books or they can work on the comics you have in class.
- Show the materials in the *imagine* section to the Ss and elicit from them how they can use them to create the illustrations of their comics. Give Ss time to work together and answer the question. Monitor the pairs as they are working together. You can ask Ss to repeat the materials to practise the new vocabulary.
- Ask a student to read the *Did You Know?* box. Elicit if Ss knew this.
- Ask a student to read the steps in the *iExplore* section. Allow Ss enough time to write their story in its final format. Help and support throughout the process. Remind Ss that each panel focuses on one part of the story, and that they need to write the dialogue in bubbles and include sound words. The students' comics can be anything from 1 or 2 pages long to as many pages as they like.
- Allow Ss time to study the comics they created, talk about them and write down their observations in the *iObserve* section.
- In the *iCreate* section, allow Ss time to follow the steps and create the cover of their comics. Then invite all the Ss or all the groups of Ss to present their comics. The school can publish the comics in the school newspaper, or upload them onto their website/platform.
- After finishing all the steps, Ss answer the questions in the *iEvaluate* section.
- Encourage a class conversation about the STEAM activity.
- Allow some classroom time to go through the questions in the *iExtend* section and have a class discussion to evaluate this long-term project.