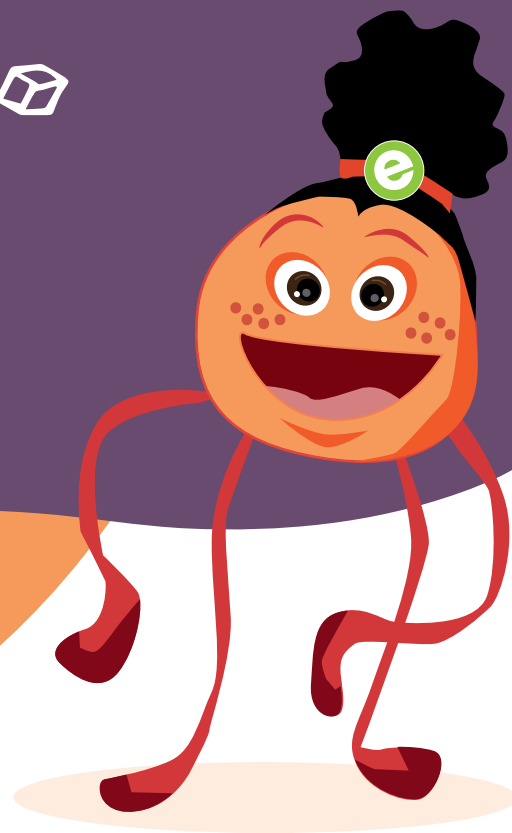




ESPLORA EDUCATOR'S PACK

YR5-YR6



GOVERNMENT OF
MALTA

MINISTRY FOR EDUCATION,
SPORT, YOUTH, RESEARCH
AND INNOVATION
PARLIAMENTARY SECRETARIAT
FOR YOUTH, RESEARCH
AND INNOVATION



Education Programme

Esplora Interactive Science Centre offers a range of inspirational and engaging learning experiences for schools. These include science shows, workshops, planetarium films, 200+ interactive exhibits, exhibition gallery activity packs, artistic performances, events and CPDs for educators. Explore our **Education Programme** to find out more!



The Education Programme booklet is a great tool to use by educators who are planning a visit to Esplora with their students. The booklet itself provides detailed information on age-appropriate activities and experiences that one can book during the different months, with the primary aim of cultivating a culture of scientific curiosity and creativity in our visitors.





FOR SCHOOL BOOKINGS

please contact us on bookings@esplora.org.mt
or call on **2360 2299**



FREE ENTRANCE FOR EDUCATORS

Experience Esplora first-hand prior to planning your visit! Educators and their immediate family members (one other adult and up to two children) are entitled to a FREE entrance to Esplora's exhibition galleries all year round. Please visit **Esplora's website** for more information.

Terms & Conditions apply.

EDUCATOR TOURS

A group of educators can book a visit to Esplora and meet one of our team members. Get in touch on bookings@esplora.org.mt or call on 2360 2299 for further details.

Minimum number of educators per group: 5



Pre-Visit Activities



Here you will find several resources related to Esplora that you can use prior to your visit. Some activities are related to an Option 1 visit **Ground Floor**, whilst others can be used in preparation for an Option 2 visit **Upper Halls and Planetarium Building**.

Each activity below is linked to a particular exhibit and a particular topic covered in the science syllabus.



RUBBER BAND RACERS

Exhibition Area: Eco Life Gallery (Ground Floor)
Energy changes and energy conservation



Download the [student worksheet](#)

Ask students to create their own version of the solar powered racers seen in this exhibit. However, this time, the energy being used to move the vehicles is not solar but elastic potential.

Use this activity to explore how energy is transformed from stored potential energy into kinetic energy as the car moves.

Encourage students to point out the energy changes occurring in the exhibit during their visit at Esplora.



SYLLABUS LINKS:

- **Science Year 5, LO 5.5.2** - I can demonstrate and give examples of different energy transformations namely how electrical energy is transformed into light, sound, heat and kinetic (movement) energy.
- **Science Year 5, LO 5 Learning Opportunity** - Design and create a project to show how energy can be transformed from one form to another.



TAKE IT FURTHER:

- Ask the students to work in teams and encourage them to create different designs. They can then race against each other to see which design travels the longest distance.
- Incorporate an element of safety in the car by including an egg as a passenger who must safely arrive at their destination. This will challenge students to think creatively about their design. Click [here](#) to watch the video for inspiration: **Start Your Engines Challenge**

CAROLINE THE COMET HUNTER

Exhibition Area: Universe Gallery (Planetarium Building)

Outer Space: Stars and Galaxies



Download the [student worksheet](#)

Caroline Herschel was a German astronomer who, despite her rough start in life, became the first woman to ever discover a comet.

Learn more about her and her story in this pre-visit activity before attempting to discover stars, galaxies and nebulae in Esplora's Universe exhibition gallery.

This activity can be used for a storytelling session or as part of a listening or written comprehension exercise in preparation for your visit.

SYLLABUS LINKS:

- **Science Year 6, LO 6.8.5** - I can find out about scientists who made discoveries related to outer space e.g. Hans Lippershey (optical telescope), Caroline Herschel (discovered first comet), etc.
- **English Year 6, LO 6.2.6** - Participate in shared reading experiences.
- **English Year 6, LO 6.2.8** - Read and understand unfamiliar text.

TAKE IT FURTHER:

- Have you ever wondered if women have walked on the moon? So far, only 12 astronauts have had this opportunity, and all of them were men! NASA plans to land the first woman on the moon in 2024 as part of its Artemis programme. But, in the meantime, you can read through this [graphic novel](#) to meet Callie, a fictional astronaut, as she becomes the first woman of colour to land on the moon.



PAPER CUP BASS

Exhibition Area: Sound (Upper Halls)

Musical Mysteries

Download the [student worksheet](#)

This pre-visit activity will allow students to build their own miniature instrument and investigate how a range of notes is produced in music. The paper cup bass is a small-scale version of the washtub bass, a string instrument created using a metal washtub, a broomstick and string.

At Esplora, encourage students to listen to the different sounds produced by the Percussion Tubes exhibit. Make connections between the length of the tubes and the changes in frequency, and how this affects the pitch of the notes we hear.

Search for musical instruments around the science centre during your visit to Esplora. How many can you find? And how are the instruments able to produce a range of notes?



SYLLABUS LINKS:

- **Science Year 6, LO 6.4.2** - I can use or create musical instruments to explore different ways of changing the pitch of sound (a high or low sound).

TAKE IT FURTHER:

- Build a full-scale guitar using objects found around the house! (Adult assistance required)
 - [Building a Guitar with Esplora](#) (*This video contains English subtitles*)
- Watch an episode of Esplora's very own TV show, Ġina u l-Esploraturi, to learn more about how sound is created
 - [Minn fejn jiġu il-ħsejjes?](#) (*This episode is in Maltese, and does not contain English subtitles*)



Post-Visit Activities

Following your visit to Esplora, we prepared some activities that you can opt to do in class or assign to students to do at home. Some activities can be used when opting for Option 1 visit **Ground Floor**, whilst others can be used following an Option 2 visit **Upper Halls** and **Planetarium Building**.

Each activity below is linked to a particular exhibit and a particular topic covered in the science syllabus.

SNACK INVESTIGATORS

Exhibition Area: Human Body (Ground Floor)

Nutrition

Download the [student worksheet](#)

After gaining some insights into their diet using Esplora's Food exhibit, students are encouraged to try out the investigation available in the post-visit worksheet.

The food that we eat may be full of hidden fats which we may not be aware of, therefore this activity will highlight which foods contain fats and which foods don't. This activity will guide students in following the scientific method as they are asked to make predictions, use observations, document data and analyse results.

SYLLABUS LINKS:

- **Science Year 5, LO 6.3.2** - I can interpret food labels and relate to identifying foods that should not be consumed in excess, including amount of sugar, saturated fats, salt, additives.



- **Science Year 5, LO 6.3.3** - I can apply my understanding of a balanced diet to suggest improvements to what I eat.

TAKE IT FURTHER:

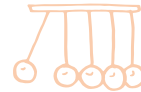
- What happens to the food we eat? Follow the food's journey along our digestive system in this episode of Ġina u I-Esploraturi
 - **Fejn imur l-ikel li nieklu?**
(This episode is in Maltese, and does not contain English subtitles)



CHAIN REACTION MACHINE

Exhibition Area: Motion (Ground Floor)

Energy Conservation



Download the student worksheet

Challenge students to build their very own Rube Goldberg Machine (or Chain Reaction Machine) inspired by Esplora's Ball Wall Fall exhibit. By using items commonly found around the house, this activity will provide students with the opportunity to create a machine which accomplishes a simple task with a domino effect – one action triggers the next, which triggers the next etc.

This activity encourages teamwork, creativity and thinking outside the box, while also encouraging students to think about concepts related to energy conservation and energy transfer. Use it as part of your lesson plan or as a take-home project.



SYLLABUS LINKS:

- **Science Year 5, LO 5.5.2** - I can demonstrate and give examples of different energy transformations namely how electrical energy is transformed into light, sound, heat and kinetic (movement) energy.
- **Science Year 5, LO 5 Learning Opportunity** - Design and create a project to show how energy can be transformed from one form to another.



TAKE IT FURTHER:

- Make the activity more challenging by giving students some restrictions. For example:
 - Give them a pre-determined amount of machine 'steps' they need to include in their chain reaction.
 - List one (or more) item/s which they must include in the machine. Choose an item which is slightly more challenging to incorporate.
 - Create a time-limit for students to create their machine.
- Explore the work of an engineer in Season 2 of Ġina u l-Esploraturi
 - **X'jagħmel inġinier?** (*This episode is in Maltese, and does not contain English subtitles*)



A DAY ON THE ISS

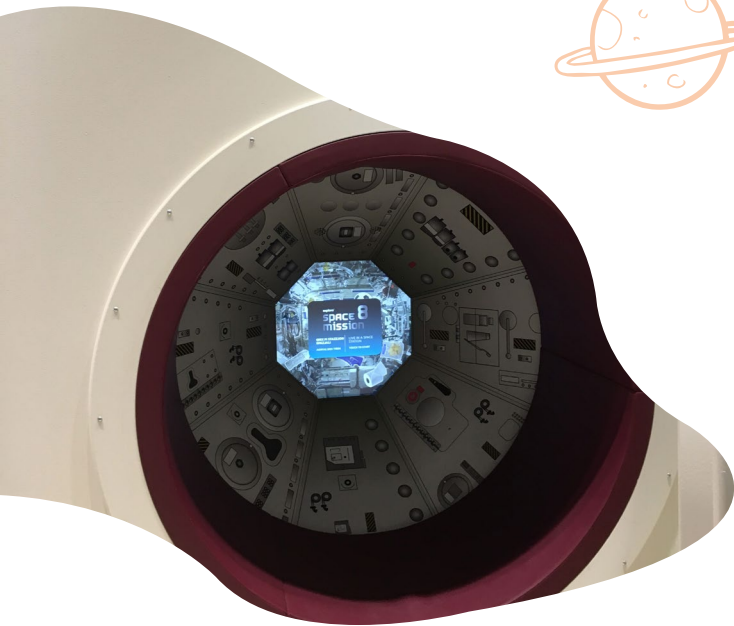
Exhibition Area: Universe (Planetarium Building)
Outer Space

Download the student worksheet

Print this post-visit activity and use the worksheet as part of a creative writing assignment in English lessons.

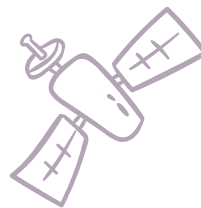
After their visit to the Universe exhibition gallery, students will have gathered information about how astronauts live on the ISS. This will help them think creatively about how they would spend their day in space. What will they eat? How would they exercise? What prompted them to go to space in the first place?

Link the lesson to their science learning by exploring the links below.



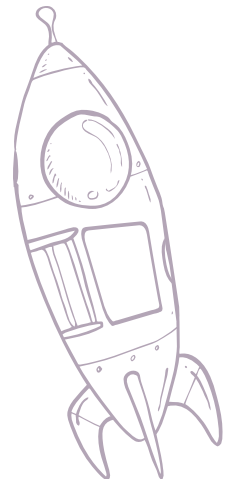
SYLLABUS LINKS:

- **English Year 6, LO 6.3.17** - Demonstrate enjoyment and motivation to participate in writing activities.
- **English Year 6, LO 6.3.5** - Write in a coherent and cohesive manner.



TAKE IT FURTHER:

- How do astronauts come back to Earth after their mission is over? Have a look at the [egg-ronaut challenge](#) to build a capsule and parachute which can land an astronaut safely on Earth.
- Esplora asked kids from all over Malta to submit questions they would ask an astronaut from the European Space Agency. [Watch him answer your questions!](#)
- Listen to astronaut [Tim Peakes' message](#) to Malta.



Visit the **esplorashop**

For a wonderful range of exciting
and unique STEM related gift ideas

VISIT US

Esplora Interactive
Science Centre, Kalkara.

FOR MORE INFORMATION

Call **2360 2300**

