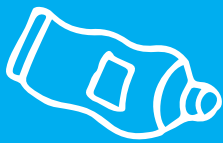




# ESPLORA EDUCATOR'S PACK

## YR1-YR2



GOVERNMENT OF  
MALTA

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



# Education Programme:

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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](mailto:bookings@esplora.org.mt)  
or call on **2360 2299**



## FREE ENTRANCE FOR EDUCATORS

Experience Esplora first-hand before 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 at [bookings@esplora.org.mt](mailto:bookings@esplora.org.mt) or call on 2360 2299 for further details.

*Minimum number of educators per group: 5*

# Pre-Visit Activities

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Here you will find several resources related to Esplora that you can use before 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**.



## OUR SENSES

Exhibition Area: Illusions (Upper Halls)  
Download the [visual aid](#) for this activity.

Esplora's Illusions exhibits are designed to challenge the senses and make us question our expectations.

Before your visit to Esplora, take a look at five of the human senses with your students and explore how the human body receives and processes sensory information.

Use the below questions to guide students and download the visual aid to initiate a discussion:

- Why do we need our senses?
- What can we do with our senses? Ask your students to describe a typical morning or focus on the use of the senses within the classroom.
- Look around the room. What can you see right now? What can you smell? What can you hear? What can you feel?
- What's your favourite smell or food, and why? Invite your students to share memories using the five senses to describe them.
- How would our life change if we did not have one, or more, of our senses?

## LEARNING OPPORTUNITIES:

**Primary Science Year 1 and Year 2:** Recognise different body parts and their function and refer to our five senses as a means to help us experience the world.



## TAKE IT FURTHER:

The senses can be explored through a variety of activities:

**1. Touch:** During a physical education lesson, set hula-hoops on the ground and place different sports equipment inside. Cover the items. Ask students to take turns to come up to the hula hoops, to close their eyes and choose one mystery object. While their eyes are still closed, encourage the students to use their sense of touch to feel the object and then describe and guess what it is.

**2. Smell:** Create short activities to expose students to different problems. Below you can find three activity ideas:

- Use a real-life scenario: Oh no! The labels have fallen off five herb jars. Ask students to help you identify the crushed herbs in the five jars and to assign the correct label to the jar. Use potted herbs to compare colours, smells and texture.
- Use objects that look similar but have a different smell and texture which are typically found at home, such as: oat flakes, white chocolate flakes, soap flakes, coconut flakes.
- Hide items typically found in the classroom inside closed jars with holes at the top, such as playdough and crayons.

First, encourage students to figure out how to solve the problem. Then guide students in how they can use their senses, including their sense of smell, to come up with a plan to experiment and gather data. Ask students to share their method with the rest of the class.

**3. Sight:** Observation skills are important skills used by STEM professionals in their work. For example, biologists need to pay close attention to specimen details to produce accurate scientific drawings. During an art lesson, take your students to an outdoor area and ask them to observe a particular scene or object. Encourage them to draw it as accurately as possible, while paying attention to the details.

**4. Auditory:** Take your class outside to the school yard or garden. Ask the students to sit down comfortably and close their eyes. Facilitate the session by using questions to focus on different types of sounds, and their properties.

**5. Taste:** Did you ever notice that our tongue is covered with tiny bumps? These bumps are receptor cells called taste buds, and they allow us to experience different taste sensations.

Prepare a few food samples for students to taste. Ask students to describe the taste of each food items. What is the difference between them? Is it sweet, salty, bitter or sour?

You can also carry out this activity while students are eating their lunch. Please remind students they shouldn't normally taste things if they don't know what the item is.

**Note for educators:**  
When carrying out any of the above activities, please keep in mind any allergies which students might have and adapt accordingly.



# OUR AMAZING BODY

Exhibition Area: Human Body (Ground Halls)  
*Internal body organs*



Download the [student worksheet](#)

Prior to visiting Esplora's Human Body Gallery, explore how amazing the human body is and take a look at the different roles of human organs. Organs are made from tiny cells which work together as a group to get a job done, and every organ has a very specific job to do.

Using the student worksheet, ask students to try and identify the organs pictured. Encourage students to share with the class what they know about the different organs. The below are some activity ideas to introduce the different organs:

**Heart:** Our heart is made from a very strong muscle, and it sends blood full of nutrients all around our body. One part of the heart collects de-oxygenated blood from the body, which is then pumped into the lungs to add oxygen, and the oxygenated blood is then pumped back out into the body.

1. Can the students feel their heartbeat? Where do they think their heart is?
2. Record their heartbeat: Show students how they can measure their heartbeat by placing your/their fingers on their pulse, or their neck. Take note of their heartbeat/minute.
3. Ask students to jog on the spot. Take note of their heartbeat/minute.

**Lungs:** We use our lungs to breathe. When we breathe in, our body creates more space in our chest to take in the oxygen-rich air which we need to survive. The lungs are spongy, air-filled organs which allow for this gas exchange. Our chest cavities then get smaller, causing the lungs to compress and exhale the carbon dioxide.

Download the Sfera Kids [The Human Body issue](#), and follow the instructions on page 8 and page 9 to build a model of the human lung system together with your students.



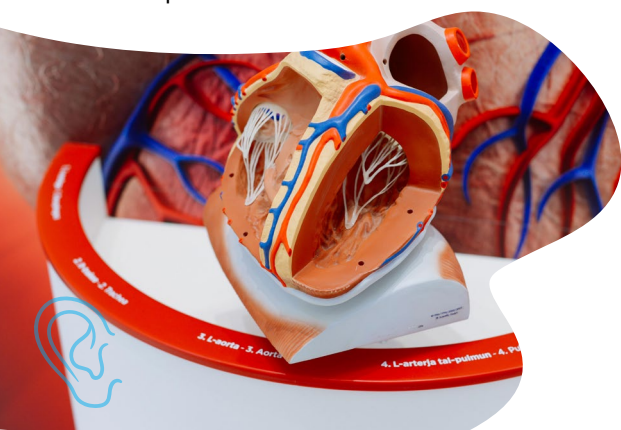
After identifying and discussing the organs, split the students into groups and provide them with modelling clay to create their own set of organs, then assist students in placing the organs in the correct position within the human body outline on the [student worksheet](#).

## LEARNING OPPORTUNITIES:

**Primary Science Year 1 and Year 2:** Recognise different body parts and their function, and refer to our five senses as a means to help us experience the world.

## TAKE IT FURTHER:

- Watch an episode of Esplora's very own TV show, Ġina u l-Esploraturi, to learn more about the human digestive system and how our body works.
  - **Fejn imur l-ikel li nieklu?**  
*This episode is in Maltese and does not contain English subtitles*
  - **Kif jaħdem ġisimna?**  
*This episode is in Maltese and does not contain English subtitles*





# MUSIC OF MALTA

Exhibition Area: Sound (Upper Halls)

*Traditional Maltese musical instruments*



Download the [educator's information sheet](#) and use the information provided to start a discussion on traditional Maltese instruments.

- Have you ever seen these instruments?
- What materials do you think were used in the past to make such musical instruments?
- What sound do you think these instruments make? Why?



Search for these musical instruments in the Sound Gallery at Esplora Interactive Science Centre. Listen to the sounds they make. Is the sound similar to what students imagined?

Connect the *Music of Malta* exhibit to the *Seeing Sound* exhibit and observe the sound waves that the musical instruments make.

## LEARNING OPPORTUNITIES:

**Primary Science Year 1 and Year 2:** Explore musical instruments and different objects that create sound.

## TAKE IT FURTHER:

- Build a full-scale guitar using objects found around the house! (Adult assistance required)

- **Building a Guitar with Esplora**

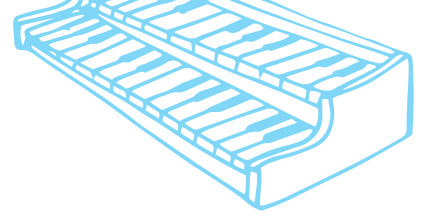
*This video is in Maltese and contains English subtitles*



## SOUND WAVES

Exhibition Area: Sound (Upper Halls)

Seeing sound waves



Download the [student worksheet](#) and [educators' demonstration sheet](#) for this activity.

Demonstrate that sound is made through vibrations by using a bowl covered with cling film. Sprinkle some rice on top of the cling film. Take a musical instrument, or any other object which is able to produce a sound, and use it next to the bowl.

- Predict: What do you think will happen when I play this instrument?
- Explain: Why do you think the rice moves?



When the sound source vibrates, the vibrations are transmitted through the air molecules, to the bowl and plastic, making the rice itself move. Our ears hear sound in the same way. Sound vibrations travel through the air to our eardrum, which vibrates as well.

Use the *Sound Wave* tube at Esplora Interactive Science Centre to make invisible sound waves visible. Turn the knob to change the frequency of the sound to create waves in the tube filled with cork granules.

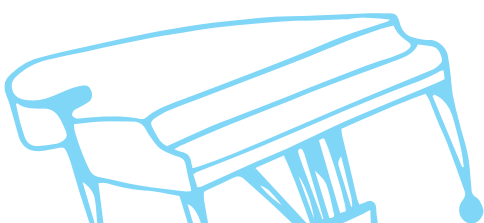
Since molecules in solids are closer to each other, sound travels faster and more efficiently, making it sound louder. Use the [student worksheet](#) as an introduction to sound loudness and use the [educators' demonstration sheet](#) to create a musical instrument from everyday household items to see how sound can be amplified.

## LEARNING OPPORTUNITIES:

**Primary Science Year 1 and Year 2:** Explore musical instruments and different objects that create sound.

## TAKE IT FURTHER:

- 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 l-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 choose to do in class or assign to students to do at home. Some activities can be used when opting for the Option 1 visit **Ground Floor**, whilst others can be used following the Option 2 visit **Upper Halls and Planetarium Building**.

## DIY MUSICAL INSTRUMENTS

Exhibition Area: Sound (Upper Halls)

*Sound and the senses*



After exploring the mechanics of music and sound at Esplora Interactive Science Centre, download the [educator information sheet](#) for instructions on how to create two musical instruments which provide students with the opportunity to listen to the different sounds that different materials make.

What other musical instruments can students create with the resources available in class or at home?



## LEARNING OPPORTUNITIES:

**Primary Science Year 1 and Year 2:**

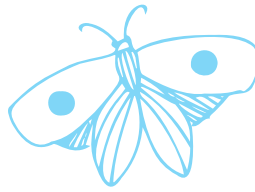
- Explore musical instruments and different objects that create sound.
- Explore and use everyday materials as construction resources. Such materials may include building blocks, lollipop sticks, cards, cups, bottle caps, pasta, pipe cleaners etc.
- Explore properties of different materials e.g. texture, flexibility, elasticity, hardness, waterproof, strength, transparency etc. through simple experimentation.



# SENSORY GARDEN

Exhibition Area: Optics (Ground Floor)

*Sensory experiences*



Download [student worksheet](#)

After exploring the various range of animals depicted in the Colour Absorption room within the Optics gallery, carry out a sensory experience at your school or in a nearby garden.

What kind of animals live in or around the garden? Download [colouring pages](#) of endemic and indigenous species and see whether you can see one of these animals in your garden. If you have a microscope or magnifying glasses available, take a closer look at a sample of garden soil to see what kind of small soil creatures you can find.

Our sense of touch is designed to help us gather information about our environment. Explore the garden and ask students to use their sense of touch to (respectfully) feel the soil, the rocks and the various flower petals that they find around them. Use the printable student worksheet to introduce texture vocabulary within the context of a garden. We recommend that you choose hardy plants which can withstand frequent handling or brushing, and which are not poisonous or prickly.

## LEARNING OPPORTUNITIES:

### Primary Science Year 1 and Year 2:

- Explore the local environment through fieldwork activities and outdoor learning.
- Explore and observe a variety of living things.

### English Year 1:

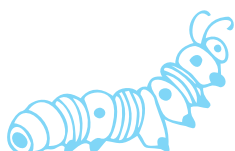
- With support begin to use in writing, theme-related words, sight words and vocabulary related to the classroom environment - Begin to match words with pictures.

### English Year 2:

- Begin to develop an extensive repertoire of vocabulary in context.

## TAKE IT FURTHER:

- Provide students with soil and yoghurt cups and encourage them to get their hands dirty by planting some aromatic herb seeds in the garden! You may also want to grow vegetables from seeds. Take a look at this [science blog post](#) to see how you can germinate seeds indoors.
- Apart from growing plants from seeds, you can also [grow vegetables from food scraps!](#) Investigate which vegetable scraps are ideal for growing in your school garden. Test out different parts of the same vegetable; does it still grow?



# 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**

