Primary Activity Pack

Activities for learners
at a primary school level

curious minds
Discover STEM

REGENERATION

Taighde Éireann
Research Ireland

Welcome to Science Week!

It's that time of year again and Research Ireland is inviting primary schools to take the leap and get involved in Science Week!

Science Week Fun!

November 10th – 17th, 2024

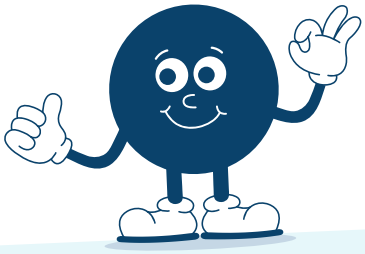
Get ready for an exciting Science Week where we'll dive into the theme of regeneration! This means we'll be learning about how we can help our planet and ourselves grow and heal in new ways.

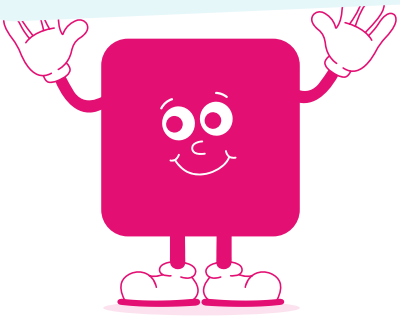
We'll explore how to take care of nature, find smarter ways to use materials and energy, and discover cool solutions for health and healing. It's all about using what we've learned in the past to create a brighter future!

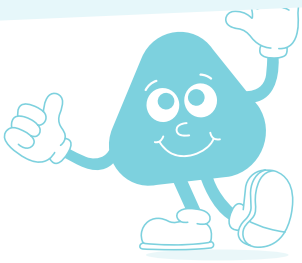
We've planned some fun activities for you to join in and explore the idea of regeneration. Let's reimagine our world together and celebrate our amazing strengths!

Join the conversation, see what's happening and share your Science Week celebrations using #ScienceWeek or tag @CuriousMindSTEM

Contents







What's in this pack?

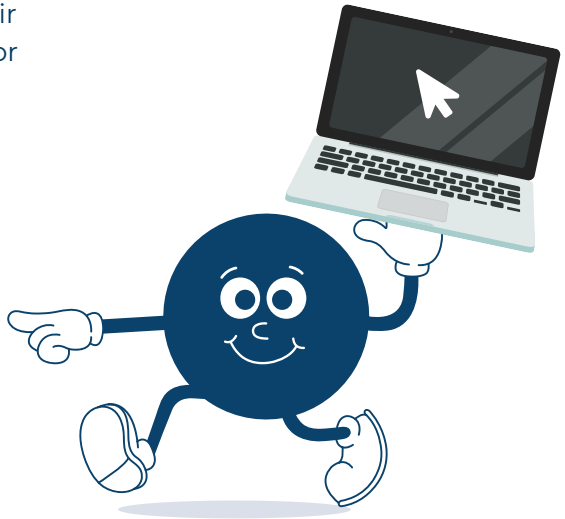
To support teachers in bringing Science Week into their busy classrooms we've put together this pack that gives you everything you need to spark learners' curiosity, through hands-on inquiry-based learning using simple materials.

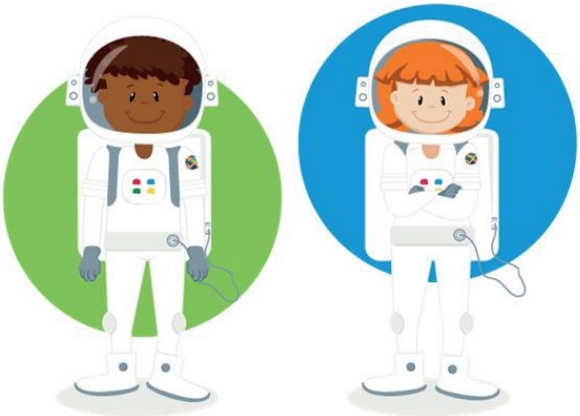
We've also included details of all the other ways you can get involved like the exciting Science Week Shows. So, what are you waiting for?

Ways to get involved

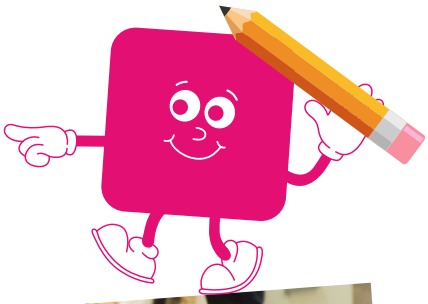
- **Use the activities in this pack** in school (in afterschool clubs or at home) to spark curiosity and get young learners thinking about science in everyday life.
- **Attend a free online Science Week Show with your class** (see page 8-9 for details).
- **Visit a Discover Centre and take part in an accredited STEM workshop** and programmes for primary schools. These centres help schools engage learners in science outside of the classroom in a curriculum-relevant, hands-on way. Find your nearest Centre here.

- **Invite a speaker into your classroom** in person or online to bring Science to life for your learners and give them the opportunity to meet people who use STEM in their jobs. You could consider asking parents to volunteer or contact one of the following organisations:
  - I'm a scientist, get me out of here!
  - Space goes to school with ESERO Ireland.
  - Meet the scientist.
  - Lots of the Discover Centres offer outreach visits to schools Find your nearest Centre here.
- **Train like an astronaut during P.E. lessons** while learning about science with Mission X from ESERO Ireland (page 9).
- **Check out the Science Week events happening in your area** at www.sfi.ie/events/.





STEM – it's not just for Science Week!



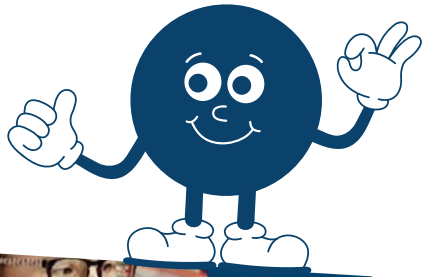
The fun and learning don't have to stop at the end of Science Week - why not get involved in the Curious Minds programme to access free CPD courses and resources teaching STEM in an inquiry-based way:

- **Carry on teaching STEM with the Curious Minds resources**
  - We have over 100 free classroom activities to support inquiry-based teaching of science, technology, engineering and maths.
  - The Curious Minds/ESERO Framework for Inquiry can be used to and teach a topic, or theme, on the SESE Science curriculum in an inquiry based way (Watch: Curious Minds/ESERO Framework For Inquiry).

- **Not sure where to start? Use the Curious Minds support tool to guide you towards the next steps on your STEM teaching journey.** Our STEM support tool will help to identify the resources you or your school needs. Just answer a few quick questions and you will get a STEM roadmap and specific recommendations to help you achieve your goals.

- **Apply for a Curious Minds Award and get the recognition you deserve** for the amazing STEM learning taking place in your school. There are three levels of award, silver, gold and platinum so you can choose which level of Award is most suitable for your school. **And the good news - by getting involved in Science Week you are already meeting part of the criteria for the Award!**
- **Register your school for whole school continuous professional development CPD workshops for teachers** and see how to apply inquiry-based STEM learning to a range of subjects in a fun, hands-on way. A Curious Minds Facilitator will visit the school and deliver three workshops for staff over the course of the school year and guide you through the process of applying for a Curious Minds Award.

What's on this Science Week?

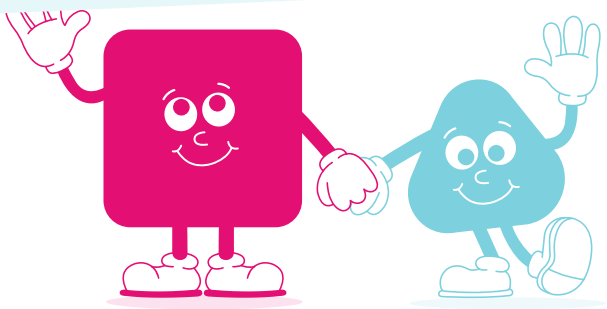


Senior Classes

Celebrate Science Week in your classroom with this 30-minute show full of exciting experiments, show-and-tells and much more!

Hosted by Gráinne Bleasdale this show will get your class ready for Science Week 2024. The investigations from the show are available at the end of this pack. The show will go live from 10am on Monday 11 November and will be available to watch at any stage during Science Week. The ceremony will include an Irish Sign Language interpreter and captions.

Sign up for the show at: curiousmindsscienceshow.eventbrite.ie.
Find out more at: www.scienceweek.ie.



Junior and Senior Classes

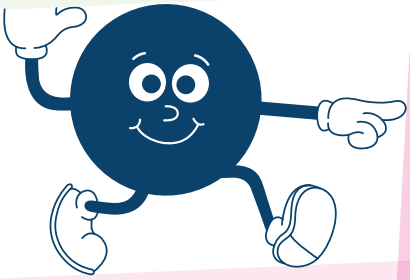
It's time to get up, move your body, and train like an astronaut!

In Mission X, you'll learn the key elements to keeping fit and staying healthy in space and on Earth. Complete physical exercises and scientific investigations developed by scientists and astronaut trainers.

Incorporate science into your P.E. lessons this Science Week with Mark Langtry's videos for astronauts in training. Watch: **www.esero.ie/missionx**.

Mission X is a collaboration between ESA and the UK Space Agency, facilitated by the ESERO Ireland and Research Ireland.

Find more information at **trainlikeanastronaut.org**.



Junior Classes

Let's Find Out Shows and Resources.

All aboard the Spaceship Curiosity for some science experiments, learning and loads of fun! Join Captain Zoom and her crew of two human scientists, Amy and Mark, as they try to answer her questions with the help of some kids.

Made with support from Research Ireland, the shows are all available on RTÉ Player and teachers can download lesson plans and see the individual experiments via the links at: https://www.rte.ie/learn/home-school-hub/2022/0725/1312171-lets-find-out-lesson-plans/.

SCIENCE WEEK

#scienceweek

10-17 November 2024

Science Week events are taking place right across the country.

Find out more on ScienceWeek.ie

1. CAVAN

Cavan Monaghan Science Festival

2. CLARE

'Be a Marine Biologist' and 'Can we speak whale?'

3. CORK

- Science at the Marina
- SpaceFest 2024
- Ballyhoura Science Week Festival Inishowen Rural

4. DONEGAL

Science Festival - Bridging Tradition and Innovation

5. DUBLIN

- Foram / Forum - Giving voice to underrepresented groups in Climate Action
- BIAS - Inequality in Women's Health and Research
- Smart Cities Urban Quest: Adventure in the Docklands
- Science Week at The Ark 2024
- Irish Sign Language and Artificial Intelligence, a performance
- Smalltalk- Big Ideas: Supporting local communities turn ideas into actions
- Dublin Book Festival 2024 (DBF2024)
- Reimagining The Irish Food System (Creating Sustainable Cities and Communities)
- How It's Made: Demystifying IOT in Transportation
- The Bigger Picture: Engaging with Creative Perceptions of AI
- The Science of Theatre - The Light Box & Sound Machine
- Beta Festival 2024 - A critical inquiry in art and technology
- C'mere Til I Tell Ye - Dublin Science Festival

6. DUBLIN/OFFALY

The Blossoming: Cancer Has No Borders

7. KERRY

Kerry Science Festival 2024

8. KILKENNY

Kilkenny Science Festival 2024

9. LIMERICK

Limerick Festival of Science

10. LOUTH

Louth Libraries Science Festival 2024

11. MAYO

- Re-Generation: Sustainable Food for the Ages
- Circus Science by the Sea Festival

12. MIDLANDS

Midlands Science Festival

13. SLIGO

Sligo Science Festival

14. TIPPERARY

Tipperary Festival of Science

15. WATERFORD

South East Science Festival

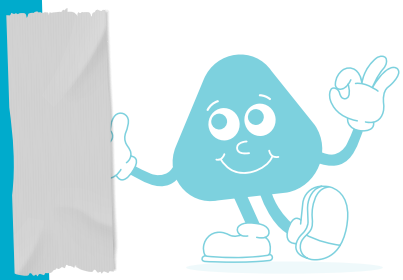
16. WESTMEATH

RegenHERate: Supporting Female Health and Performance

17. WEXFORD

Wexford Science Festival

Tips for using sustainable materials in classroom science activities



We recognise there is a growing concern for the environment and that schools are conscious of the materials they use in the classroom.

Our STEM investigations and design-and-make challenges can be carried out using everyday materials found in the classroom or at home.

Reuse and recycle

We encourage schools and learners to reuse waste materials where possible and avoid including single-use plastics or other plastics, such as glitter, in their work.

Outdoor learning

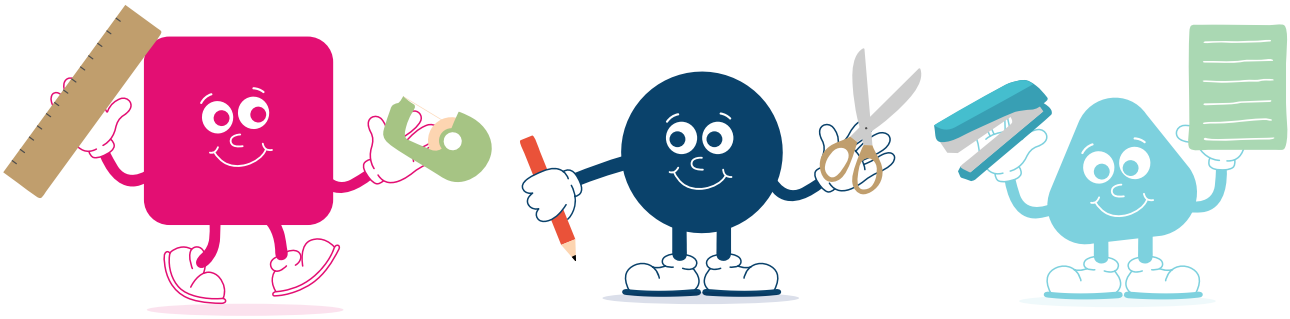
As more schools discover the benefits of working outdoors, we all have the chance to instil respect for animals and plants in our learners. We like to live by the principle: *'take nothing away and leaving nothing behind.'*

Sustainable alternatives

A growing range of school and office suppliers offer sustainable classroom equipment options.

We recommend using:

- brown paper tape (*instead of plastic sticky tape*)
- recycled paper
- A4 whiteboard (*to replace scrap paper*)
- pens and pencils made from recycled materials or sustainable sourced wood
- staplers and scissors made from recycled plastic
- eco rulers made from recycled materials or sustainably-sourced wood



Science Week Classroom Activities

We've put together a selection of the **Curious Minds activities** to help you and your class dive in to Science Week 2024.

Curious Minds/ESERO Framework for Inquiry

THEME		Newts and Biodiversity
CURRICULUM	**Strand:**	Living Things; Environmental Awareness and Care; Data and Chance; Measures; Shape and Space.
	Strand Unit:	Plant and Animal Life; Caring for the Environment; Science and the Environment; Environmental Awareness; Date, Measuring, Spatial Awareness and Location.
	Curriculum Objectives:	Become familiar with the life cycles of common plants and animals; observe, identify and examine the animals and plants that live in local habitats and environments; become familiar with the characteristics of some major groups of living things; identify, discuss and implement simple strategies for improving and caring for the environment; participate in activities that contribute to the enhancement of the environment; explore some examples of the interrelationship of living and non-living aspects of local and other environments; interpret scale maps and create simple scale drawings; describe, interpret and record directional instructions and location; compare, estimate and measure length, weight, capacity, area and volume using appropriate instruments and record and communicate appropriately; pose questions of interest and collect, display and critically analyse data in a range of ways for a range of purposes and communicate the findings.
	Skills Development:	Questioning; Observing; Predicting; Analysing; Investigating; Recording and Communicating; Exploring; Planning: Making. Evaluating.

ENGAGE

THE PROMPT	WONDERING	EXPLORING
• Gardening for Biodiversity Video https://www.youtube.com/watch?v=4yYNNxjX8Cg • How To Build a Garden Pond – Gardening for Biodiversity Video • How To Build a Log Pile – Gardening for Biodiversity Video	• Why is it important to protect biodiversity? • How could we improve our school habitat for wildlife? • What kind of creatures live in ponds? • What is an amphibian? • What amphibian species are native to Ireland? (Smooth, Newt, Common Frog and Natterjack Toad) • What do Newts need to survive? • Do you think there would be much suitable habitat for Newts in your area? • What is the study of reptiles and amphibians called? (herpetology) • Could we learn about our local habitats? • Could we do something to help Newts?	Find out more about Newts from the Herpetological Society of Ireland https://thehsi.org/native-reptiles-and-amphibians/smooth-newt/ The Irish Wildlife Trust Smooth Newt Survey - Irish Wildlife Trust (iwt.ie) and the National Biodiversity Data Centre https://species.biodiversityireland.ie/profile.php?taxonId=6993

Considerations for inclusion

INVESTIGATE NEWT HABITATS

STARTER QUESTION	PREDICTING	CONDUCTING THE INVESTIGATION	SHARING: INTERPRETING THE DATA / RESULTS
• Where could we find Newts in our local area? • How many ponds are there in the local area?	• Are there suitable habitats for Newts in the area around our school? • Do you think there are enough ponds? • Do you think there are areas of vegetation for newts to hide? • Do you think any Newts have been found in your area?	Conduct a survey of ponds and shallow streams in the area close to your school. • Decide on your study area. • Use online maps such as Google Maps / Google Earth or geohive.ie to search for ponds or water bodies in your area. • Do a survey to see how many people have a pond at home or know of a local pond. Find out what Newts have been recorded in your area by searching on https://maps.biodiversityireland.ie/Species/6993.	• How many ponds did you find in your local area? • Did you find any records of newts in your area? • If you want to find out what other species have been recorded in your area, you can follow the tutorial here https://www.youtube.com/watch?v=106pEX3vi7M&t=46s.

BIODIVERSITY MAPS – CREATING LAYERS

STARTER QUESTION	PREDICTING	CONDUCTING THE INVESTIGATION	SHARING: INTERPRETING THE DATA / RESULTS
• How are Biodiversity maps constructed? • How can maps help us learn more about local habitats? • Could we create our own Layered Biodiversity Map? • Video: Mapping Ireland's Biodiversity https://youtu.be/zIMOzqivreo.	Plan what to record on your map. • Pick a study area. • Find a base map to plot your data on. • Choose the layers to record on your map. • Include some layers such as soil type or light levels as well as plants. • Include any ponds or water on your map. • Drawing a grid on your base map and transparent sheets will make it easier to locate features on the map and line up your layers.	Divide the class into groups and assign a layer to each group. They should: • Create the layers on paper using a base map. • Transfer the relevant information to a clear plastic or transparent paper sheet overlain on a base map. • Compare layers by placing one or more transparent sheets together over the base map. • Find the full activity at curious-minds-resource-biodiversity-maps.pdf (sfi.ie)	Combine the map layers in different ways to help answer questions such as: • Do flowers grow taller in areas with the highest sunshine amount? • Are there differences in the types of wild plants growing in the open and under the trees? • Are there more plants growing closer to the pond?

Considerations for inclusion

DESIGN AND MAKE A SCHOOL POND

STARTER QUESTION	PREDICTING	CONDUCTING THE INVESTIGATION	SHARING: INTERPRETING THE DATA / RESULTS
• Can we make a wildlife pond to increase biodiversity in our school?	• Choose a location for your pond. • Decide on the size, shape and materials. • Remember that a pond does not need to be big or deep. Even a very small shallow pond can be good for wildlife. • Decide what plants you will need (avoid invasive species). This resource from An Taisce can help you plan your pond. Ponds for Biodiversity Resources | An Taisce - The National Trust For Ireland.	• Measure and mark out the pond area. • Dig a hole if required. • Remove any sharp stones that may pierce the liner or container. • Lay down a waterproof liner or plastic container. • Add steps or a slope to provide easy entry and exit for animals. • Make sure to cover any exposed plastic with soil, rocks, wood or plants. • Add water and plants. • Do not add fish to a wildlife pond. Watch this video from the Herpetological Society of Ireland to see how to make a simple wildlife pond using a plastic container. https://thehsi.org/publications-and-resources/how-to-build-a-simple-pond/	• Are you happy with your pond design? • Is your pond in a suitable location for wildlife? • Are there long plants nearby to provide cover for insects, frogs and newts to visit? • Are there logs or stones surrounding the pond that could provide shelter for newts or frogs? Once spring comes you should start to see life in your pond. Survey your pond through spring and summer and in future years to see what creatures have made their home in it. Are more birds and other wildlife attracted to your school since you installed the pond?

Considerations for inclusion

TAKE THE NEXT STEP

APPLYING LEARNING	MAKING CONNECTIONS	THOUGHTFUL ACTIONS

STEM

- Consider connecting with parents, grandparents or members of a local wildlife group to help with designing a pond or other habitat area in your school.
- Use technology to record the making of your pond through photos and video clips and share with parents as inspiration for families to build a pond at home.
- Study the life cycle of the Newt and discuss what makes a Newt an amphibian.
- Try out this pond maze Puffin_Rock_activity_book_Pond_Maze.pdf (heritagecouncil.ie) from the Puffin Rock Activity Book and explore wetland and other habitats. https://puffinrockhabitats.com/activity-book
- Plan a visit to the Irish Peatland Conservation Council https://www.ipcc.ie/discover-and-learn/school-visits/ to learn more about wetland habitats or one of the other Research Ireland Discovery Centres. https://www.sfi.ie/engagement/curious-minds/discover-centres/find-a-centre/index.xml
- Download the Gardening for Biodiversity Book https://laois.ie/wp-content/uploads/Garden-Wildlife-Booklet-WEB-17MB.pdf as inspiration for improving habitats in your school or ask your local Environmental Awareness Officer for a copy. Use the colouring pages to learn about species you might find in your school. https://laois.ie/wp-content/uploads/Gardening-for-Biodversity-Colouring-book-FINAL-WEB.pdf

Maths

- Calculate the surface area and volume of the pond? How much water will you need to fill it?
- Use maps, graphs and species data from the National Biodiversity Data Centre for the study of data in maths.

Citizen Science

- Become Citizen Scientists and help add Biodiversity sightings to Biodiversity maps. Record some of the plants and animals that visit your pond or school grounds with the National Biodiversity Data Centre https://biodiversityireland.ie/. You can learn more about getting involved with Citizen Science here https://biodiversityireland.ie/projects/citizen-science/.
- Your pond can provide a valuable source of water for bees and other pollinators. Go to the website of the All-Ireland Pollinator Plan https://pollinators.ie/ to learn about enhancing the school habitat for pollinators and to add your school to the map.

Geography

- Learn about the wetlands and other habitats that can be found in your local area and in Ireland. See if you can locate them on a map.

Language and Literacy

- Download the story The Newt Who Needed a New Home. Once you have read the story, learners can colour in the worksheet and write a poem: https://www.macnas.com/education/macnas-at-school.
- Read other stories about Irish wildlife or create your own stories about newts or other wildlife. Look at http://www.shanecaseybooks.ie/ for inspiration.
- Discover your own local wildlife and learn to identify some plants and animals with the aid of books and websites on Irish wildlife.

Considerations for inclusion

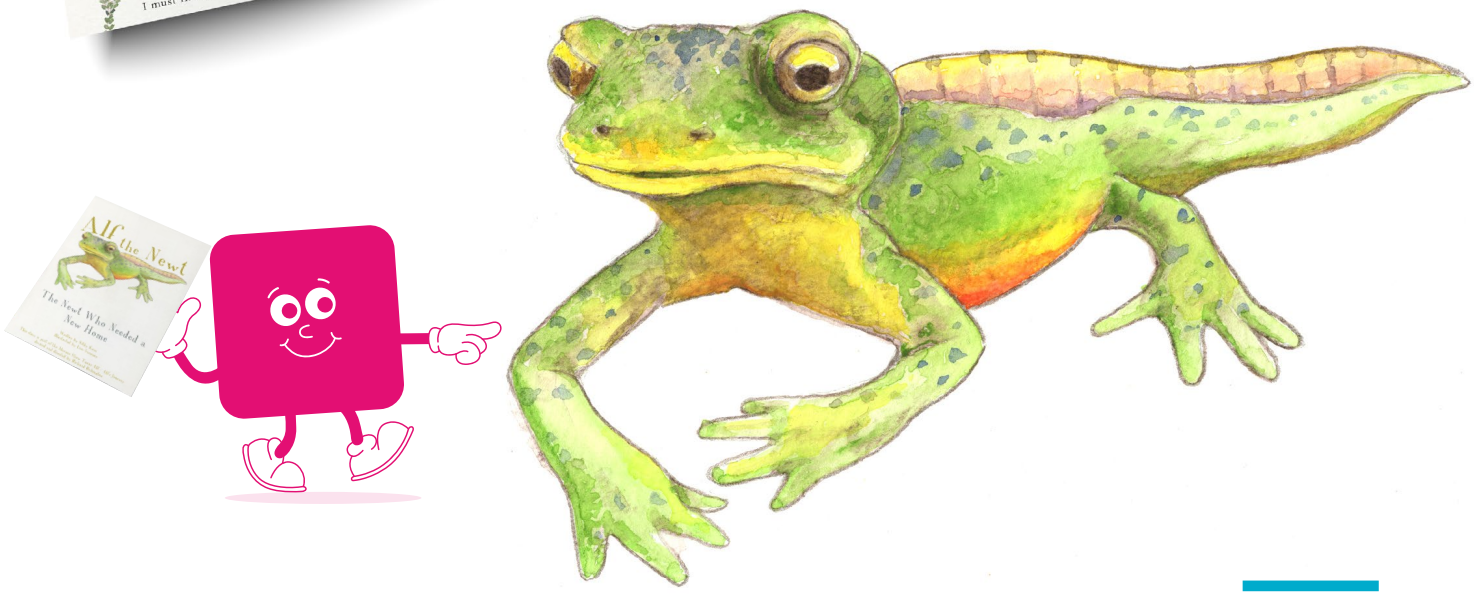
REFLECTION	

Language and Literacy Extension:
Alf's Journey

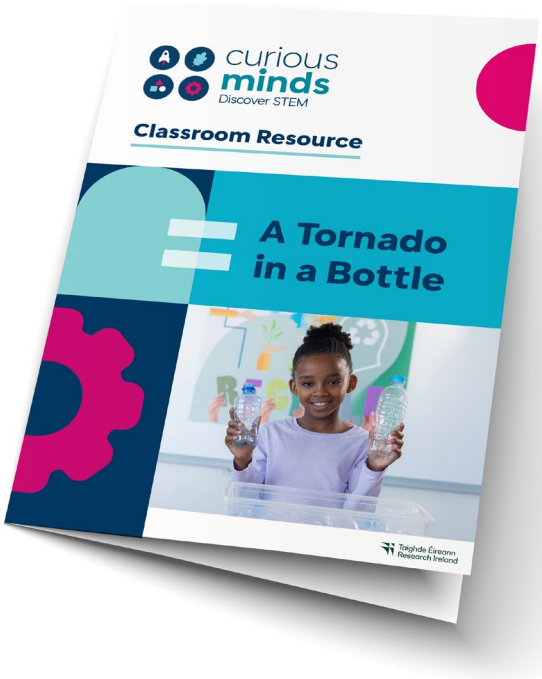
This Science Week, as part of their latest artistic show *"Turas Alf / Alf's Journey"*, Macnas is inviting young people to learn about the adventures of Alf the Newt.

Download the story **The Newt Who Needed a New Home.** Once you have read the story, learners are invited to colour in the worksheet and **write a poem**.

Find out more about Alf's adventures and where his journey will take him at macnas.com and keep your eyes peeled for him during Science Week!



A Tornado in a Bottle



Investigation

Class Level - All

Curriculum Links

Strand:	Energy and Forces, Materials
Strand Unit:	Forces, Materials and change
Curriculum Objectives:	Identify and explore how objects and materials may be moved; Examine the changes that take place in materials when physical forces are applied
Skills Development:	Investigating and Experimenting, Observing, Measuring, Recording
New words / vocabulary:	Tornado, Vortex, Gravity
Focail nua:	Tornádó (tornado), Cuilithe (Vortex), Gravity (Domhantarraingt)
Cross curricular links:	Geography
Equipment / materials	• Four identical 2 litre clear plastic bottles • Water • Food colouring • Packing tape or duct tape • A large container/basin • Two identical 500ml clear plastic bottles (Optional senior learner activity)

Engage

Prompt questions:

- Has anyone seen films with tornados in them?
- Can you remember what a tornado looks like?
- Do we get tornados here in Ireland?
- What causes tornados?

Background information:

A tornado is a column of violently rotating air developed within a cloud which is in contact with the ground. Tornadoes usually happen in association with thunderstorms.

We get approximately ten mini tornadoes here in Ireland every year. Most tornados look like a funnel of clouds and dust travelling at high speed along the ground. Inside the tornado, the wind may be swirling at 300km/hr. It can be strong enough to lift cars, uproot trees or flatten houses. Most tornados last for no longer than an hour.

Another word for the whirling motion of fluid or air, especially a whirlpool or whirlwind is a vortex. In this activity, learners will observe the creation of a vortex using water.

Investigate

Starter question:

How can you make a vortex in a water bottle?

Will swirling the water (making a vortex) in a bottle, make it it drain faster or slower?

Predicting:

Throughout this activity, learners can predict what they think will happen and compare predictions to observed findings.

Conducting the investigation:

1. Fill two 2 litre plastic bottles three quarters full of water. Measure the liquid to ensure there is an even amount in both.
2. Add a couple of drops of food colouring.
3. Tape the top of the empty 2 litre bottles to the tops of the bottles filled with water.
4. Make sure the tape is secure around the bottle tops, as we don't want any water leaking out. As a precaution, place a container/basin underneath the bottles when carrying out demonstrations. Demonstrate to learners how to create a vortex/tornado in a bottle by turning the bottles upside down, swirling the water in the upper bottle, and observing it drain, then, learners can try it out themselves.
5. Learners can then predict whether simply turning a bottle upside down, or using a vortex will drain a bottle faster.
6. Set up both bottle systems (one with a vortex, the other without) at the same time, and learners can watch to see which empties the fastest by observing. Repeat the test three times to see if there is any difference in the results.
7. Learners can record which is faster each time.

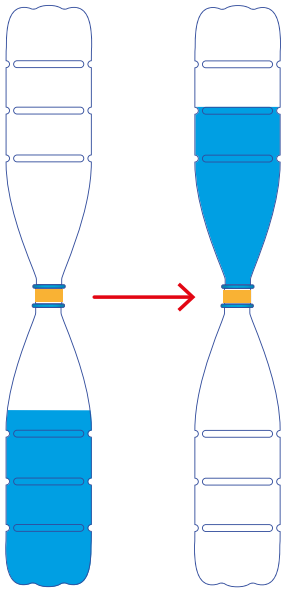
What do you notice?

The water flows slowly from the top bottle into the bottom bottle. Also air bubbles travel up through the water in the top bottle, making a noise. Hold the bottles where they are connected and quickly swirl them in a circular motion for a few seconds. Stop and look inside the bottles.

Take note of what is happening. Learners will notice that there is a mini tornado in the top bottle as the water flows quickly and quietly into the bottom bottle.

Why?

The circular motion of swirling the bottles caused the water to flow in a spiral down into the bottom bottle. Air from the bottom bottle can move more easily to the top bottle. We call our activity a tornado in a bottle because it looks like a tornado, except a tornado happens in air not in water.



Adapt for senior level:

In our investigation, the force that keeps the water moving in a circle is called **centripetal force**. Centripetal force always points toward the centre of a circle. Gravity is also at work, pulling the water down into the lower bottle.

Senior learners could use their maths skills to measure and record the differences between how long it takes for each bottle to drain:

1. Predict which bottle system will drain faster-by turning it upside down only, or by creating a vortex? Record predictions.
2. Time how long it takes for the water to flow from the top bottle into the bottom bottle without rotating the bottles.
3. Then time how long it takes the water to flow from the top to the bottom bottle after rotating the bottles. Repeat three times and create averages.

Take the Next Step

Learners can then take it a step further by comparing the vortex draining speed of a 2 litre bottle to that of a 500ml bottle. Which do they predict will be faster and why?

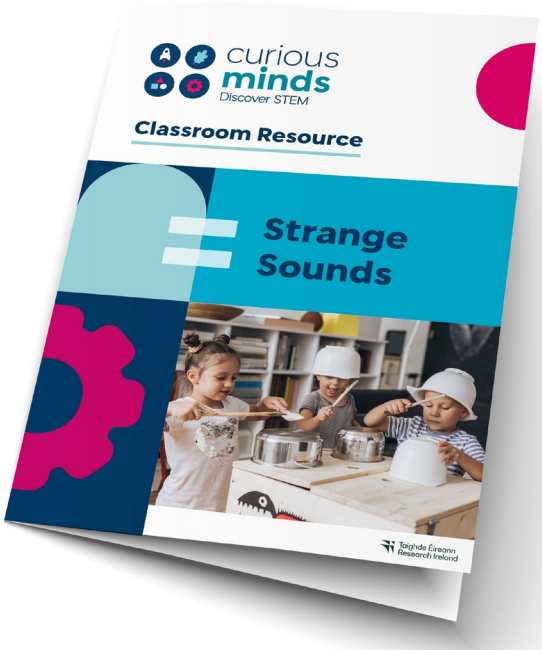
Learners can discuss and agree in advance how to ensure fair testing by creating the vortex-can we swirl them an equal amount of times to create the vortex? Use the same person for both? Etc.

By measuring the liquid in each system, and the time it takes to drain by creating a vortex, they can calculate the flow rate by dividing the liquid volume/time. The higher the flow rate, the faster the system.

Results:

Record findings. Consider creating graphs for the senior level results. Discuss the real-life practical applications for the learners findings-when washing out bottles for recycling at home, etc.

Strange Sounds



Investigation

Class Level - First to sixth class

Curriculum Links

Strand:	Living Things, Energy and Forces
Strand Unit:	Myself, Sound
Curriculum Objectives:	Recognise and or measure physical similarities and differences between individuals; Use all the senses to become aware of and explore environments
Skills Development:	Questioning; Investigating; Experimenting; Observing
New words / vocabulary:	Senses, Vibrations
Focail nua:	Éisteacht (Hearing)
Cross curricular links:	Music
Equipment / materials	• Seeing sound – Plastic bowl, compostable cling film, Rubber band, Uncooked rice, Light saucepan, Biscuit tin, Large spoon, Scissors, Sticky tape • Feeling sounds - A partner, Balloon • Making weird sounds – Drinking straw, Strip of plastic, Balloon

Engage

Prompt questions:

- What do we use our ears for?
- What is sound?
- How are sounds made?
- What are vibrations?
- Why do you need air or some other substance for sound to travel?
- Can you see sound?

Exploring:

Learners are asked to close their eyes while the teacher holds up an item. The learners are asked to identify what the teacher is holding while their eyes are closed - can sound help us to identify items? Ask learners to cover their ears - can they identify a sound being made by the teacher?

Ask the children to put their fingers on the outside of their throat when they are talking – do they feel anything?

Ask the children to tap the desk and listen; then to tap the desk again, this time listening with their ear touching the desk. Do they notice any difference?

Does sound travel better through the air or through the desk?

Background information:

Sound is made of vibrations that travel through air, solids and liquids and they can be heard when they reach a person's ear e.g. someone talking, a car beeping or music. These vibrations are largely otherwise unnoticeable unless they are very loud or have a lot of bass.

When sounds are very loud or have a lot of bass the vibrations in the air can be physically felt in the rest of our bodies (not just our ears). Sound cannot travel through a vacuum because there is nothing to pass on the vibrations.

Real-world application:

For society to be more inclusive, everyone's needs have to be considered. Much of our everyday life is still not designed for people with additional needs or disabilities. By investigating the world around us using other senses we can expand our understanding of how someone with impaired hearing, sight, smell, taste or touch navigates the world. This will empower learners to consider factors that impact different people, which they may not have considered. Today's learners are the engineers, leaders and scientists of the future and will determine how well designed our world will be for everyone.

Investigate

Starter question:

Can we "hear" sound in parts of our body, other than our ears?

Conducting the investigation:

(i) Seeing sound: Cut the piece of compostable cling film so that it is bigger than the top of the bowl. Stretch the cling film over the top of the bowl and secure it with the rubber band. Tape the cling film down to keep it stretched. This is your 'drum'. Sprinkle a few grains of rice on top of the 'drum'. Ask learners to predict what will happen to the rice if you hold the saucepan near the 'drum' and hit it sharply with the spoon. What do you notice?

(ii) Feeling sound: Blow up the balloon and hold it against your ear. Ask your partner to press their lips against the balloon and speak; then swap around. What do you notice?

(iii) Making weird sounds:

a. Hold a strip of plastic tightly between your thumbs and the heel of your hands and blow hard across the strip.

b. Press one end of the straw flat; cut the sides to form a point, put the pointed end of the straw in your mouth and blow hard.

c. Blow up a balloon and hold the neck to stop the air escaping. Grip the neck of the balloon and stretch it vertically and horizontally. What happens as the air escapes?

Sharing data / results

What have you found out about sound?

(i) Seeing sound

Does the loudness of the sound affect the way the rice dances?

Does the distance between the saucepan and the 'drum' affect the way the rice dances?

(ii) Feeling sound

Is there any difference in what you feel when your partner speaks loudly and softly?

(iii) Making weird sounds

Try different lengths of straw. Does this make any difference to the sound produced?

Take the Next Step

How could you use what you have learnt about sound to investigate a musical instrument?

What vibrates when playing a drum?

What vibrates when playing a guitar or a flute?

Design and make a musical instrument. How can you vary the sound produced by your instrument? Why does this affect the sound?

What would the world be like without sound? How would people communicate with each other?

Discuss speech as one of the forms of communication. What other forms are there?

Follow-up challenge/project:

After the investigation above, have the learners examine several musical instruments/pictures of musical instruments (wind, string, percussion). Ask the learners to try and pinpoint the part of the instrument that creates the sound through creating vibrations. Is there any part of that instrument whose job it is to amplify that sound? If so have them try and pinpoint that also.

Be a Soil Scientist

Soil your Pants for Soil Health!

Measuring the biological activity in the soil can be difficult as there are so many different organisms and fungi at work.

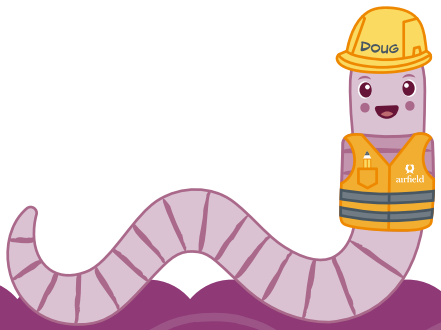
However, an easy method of measuring how active they all are is by burying some cotton pants! As cotton is an organic material, the micro-organisms in the soil will be able to eat it and break it down into its component parts. The more micro-organisms the faster the pants will break down and the more biologically active and healthy the soil is.

Let's Find Out How Healthy Our Soil Is!

We want you to test how biologically active your soil is by burying a pair of pure cotton underpants in soil for a few weeks.

We would like you to let us know how much of them are left after a few weeks so that we can get a picture of how active and healthy the soil is across Ireland! Follow the instructions below, fill in the answers and then log onto the Airfield Estate website at: www.airfield.ie/world-of-soil/soil-scientist/.

Download the full experiment and worksheet here.



The Curious Minds programme has hundreds of other captivating classroom investigations you can choose from: https://www.sfi.ie/engagement/curious-minds/teacher-resources/classroom-resources/

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