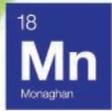




PRESENTS

cavan & monaghan



SCIENCE FESTIVAL

science in everyday life



FREE EVENTS



MONAGHAN EVENTS GUIDE

10<sup>TH</sup>-24<sup>TH</sup> NOV 2018

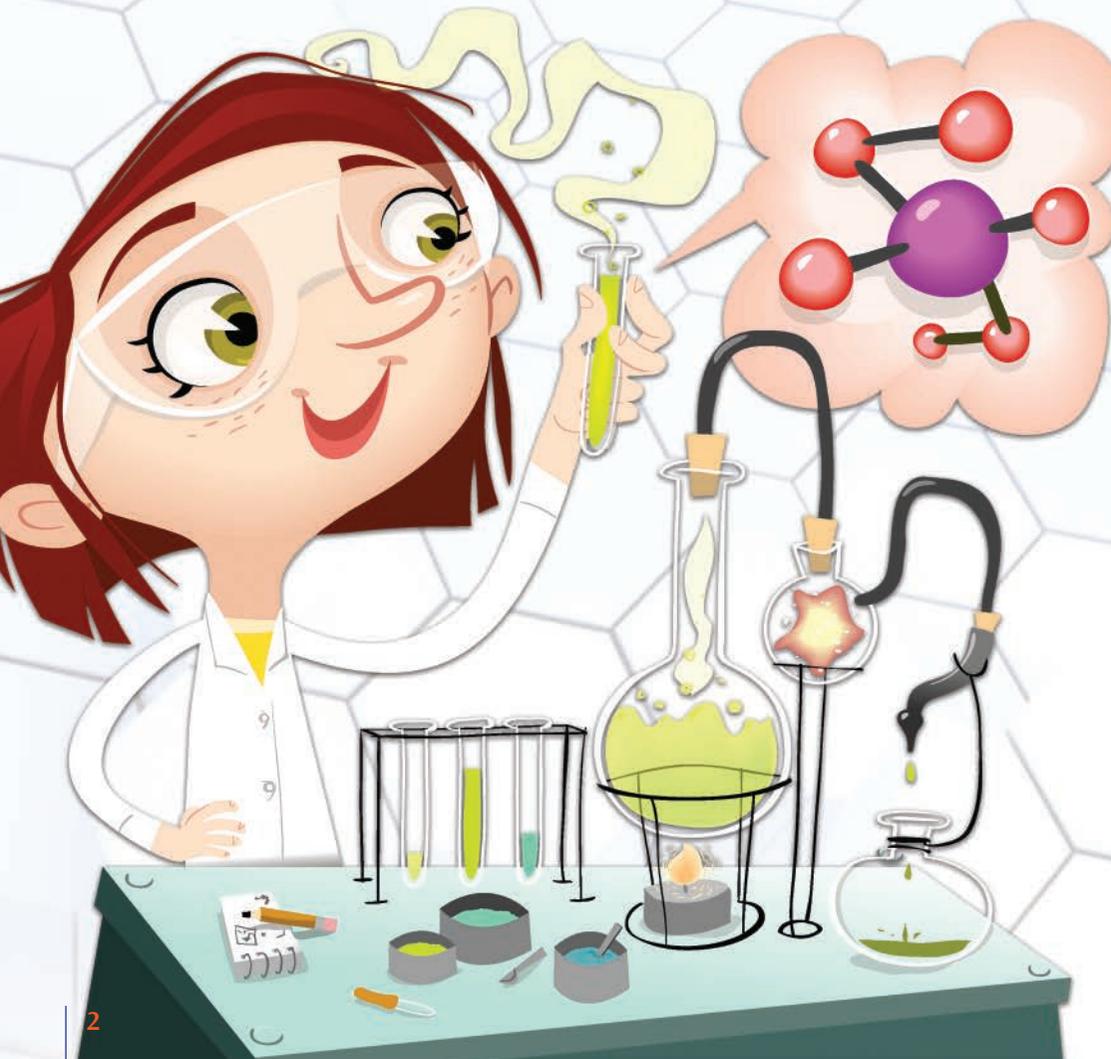
[cavanmonaghansciencefestival.ie](http://cavanmonaghansciencefestival.ie)

cavan & monaghan



# SCIENCE FESTIVAL

science in everyday life



## INTRODUCTION

Welcome to the Cavan Monaghan Science Festival 2018 - an award winning regional festival celebrating, exploring and promoting the wonders of science, technology, engineering, arts and maths in our everyday lives. This year the festival will take place from the 10th – 24th November across the two counties.

**The festival is a Monaghan County Council and Cavan County Council initiative in partnership with Cavan Monaghan ETB, and generously funded by Science Foundation Ireland. We work in partnership with a number of local, regional and national agencies, organisations and companies.**

We are celebrating our 3rd birthday this year – the magic three! And we will be celebrating for 15 days with a fantastic line up of events for everyone to get involved in. We have planned an extensive schools programme with over 200 workshops being offered to schools across the two counties and up to 100 workshops, talks open to the general public. The festival was 4th in the country in 2017 for the number of events being provided for the community and that is behind Dublin, Galway and Cork!

The festival won the Chambers Ireland Best Local Authority Collaborative Award at the end of 2017.

With events from astronomy to zoology, this year's festival wants everyone to come out again to discover more wonders of science in our everyday lives. Science is very important in our lives. We all benefit from scientific knowledge from the food we eat, the air we breath to how we sleep. Science and technology power our world, improves our health and can even entertain us. Everywhere you look, there is science!

We are delighted to welcome some of the best national and international scientists, researchers, speakers, creators and artists to our counties who will take you on a new road of discovery from the science of singing, gluten free baking to the story of sepsis, autism, why babies cry or have you wondered about going to space, or how to solve the worse case zombie epidemic!

**We hope you enjoy our festival of discovery, learning and fun!**

We appreciate your feedback and you do so by emailing us at [sciencefestival@cavancoco.ie](mailto:sciencefestival@cavancoco.ie)

**Discover! Be inspired!**  
Science Festival Steering Committee

## Essential Information:

Please note that all events listed can be subject to change. Check on the website for the most up-to-date information.

## Bookings:

Bookings are required for all events except the Family Fun Day. To pre-book your ticket, visit [www.cavanmonaghsciencefestival.ie](http://www.cavanmonaghsciencefestival.ie) Bookings open from Monday 22nd October 2018. You may be refused entry if you arrive after an event has started even if you have booked.

## Queries:

Queries in relation to events in County Cavan please contact **049-4378506** or [sciencefestival@cavancoco.ie](mailto:sciencefestival@cavancoco.ie)

Queries in relation to events in County Monaghan please contact **047-74700** or [sciencefestival@monaghancoco.ie](mailto:sciencefestival@monaghancoco.ie)

## Your Opinions Matter:

We will be carrying out short evaluations at events, so please let us know what you think so we can make the next festival even bigger and better! You can also email your suggestions to [sciencefestival@monaghancoco.ie](mailto:sciencefestival@monaghancoco.ie)

## Film and Photography:

We will be documenting the festival for use in future publicity. Please speak to a member of staff if you prefer not to be photographed or filmed.

## Schools Programme

During the festival we will deliver a dedicated STEAM educational programme to preschools, primary and secondary schools. A comprehensive programme of hands on activities, interactive workshops,

demonstrations and shows will be facilitated by some of the best scientists, creators and artists along with County Council staff. From STEM storytelling and literacy, to coding, geology, renewable energy, robotics, arts and music, all schools will be given the opportunity to book a workshop.

## LEGO Design a Monaghan Spitfire Competition (Monaghan)

We are searching for future architects and creators amongst our primary school aged children to 'Design a Monaghan Spitfire'. Details of how to enter the competition can be found on our website and Facebook.

## Reading about Science

'The more you read, the more things you know, the more that you learn, the more places you'll go' (Dr Seuss). This couldn't be more true...diving into a good book opens up a whole world of discovery and knowledge at any age. With this in mind, the library service has a broad range of titles on STEAM for both adults and children to borrow from your local library. You can find out more details from your local library or check out the website. Bookclubs - we encourage our local book clubs to read a science themed book during our festival. Ask a member of staff in your local library about reserving titles.

## Billboard Poster Competition

The Environment sections of both county councils are running a poster competition with schools to raise awareness of science and the environment. The two county winners will be announced before the festival and their winning poster will be displayed on a billboard in both counties during the festival.

## Family STEAM Table Quiz (Monaghan)

On Thursday 15th November, Monaghan will host a family STEAM table quiz in the Glencarn Hotel at 7pm. This will be a fun and interactive quiz, along with some experiments and surprises on the night. Each team must consist of two adults and two under 18's. Information and booking can be made by emailing [sciencefestival@monaghancoco.ie](mailto:sciencefestival@monaghancoco.ie)



# GUIDE TO MONAGHAN OPEN EVENTS

Booking required on our website or  
 at your local library



## Science & Technology Fun Morning

**Venue:** Carrickmacross Library

**Date:** Saturday 10th November **Time:** 10am – 2pm

Come along to a fun interactive morning with our Techspace zone, Science is Magic Shows or get up and close with some creepy crawlies with the Reptile Zoo.

Science is Magic Shows take place at 10am, 11.30am and 1pm (each show lasts 45 minutes)

**Suitable for all ages. No booking required for this event.**



## Niamh Shaw is Walking (slowly) towards Space

**Venue:** Íontas Theatre, Castleblayney

**Date:** Saturday 10th November **Time:** 7pm

In 2014 Niamh Shaw announced to the world that she wanted to go to space; and then she made a show about it. 'To Space' explored her impossible dream and the current state of the space industry. It's now 2018 and where is she on her lifelong dream and how has it evolved in the past four years?

“Walking slowly Towards Space” will see Niamh sharing her journey, illuminating the relevance of space in our society, her progress, her struggles and challenges, and explaining why she has devoted the remainder of her life to fulfilling a childhood dream.

**Book your tickets through our website or Eventbrite.**



## Using Apps on your Smartphone

**Venue:** Carrickmacross Library

**Date:** Monday 12th November **Time:** 10am – 1pm

This workshop gives people a better understanding of Smartphones and Tablets. In the workshop we cover phone basics like saving numbers in contacts, using the camera to take selfies, downloading apps, connecting to the Internet or Wi-Fi, conserving Battery Life, optimizing phone settings, Operating Systems and updates, data usage and storage, as well as how to manage and delete apps or files. This talk gives attendees a better understanding of their own devices.



## Understanding your tax entitlements

**Venue:** Carrickmacross Workhouse

**Date:** Monday 12th November **Time:** 6.30pm – 9.30pm

This workshop will cover what you can earn at 20% and what tax credits you are entitled to in order to reduce your tax. An overview will also be given of the different medical and dental expenses you are entitled to claim back.



## Gluten Free Baking

**Venue:** Monaghan Institute

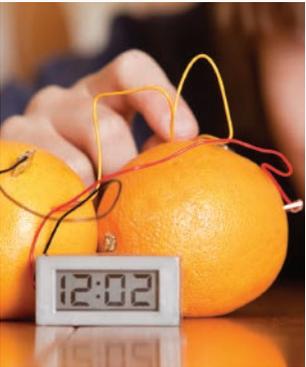
**Date:** Tuesday 13th November **Time:** 10am-1pm

**Venue:** Largy College Clones

**Date:** Wednesday 14th November

**Time:** 6.30pm-9.30pm

Don't let an intolerance of wheat starve you of home baking. Come along to this gluten free baking session which will give you the skills to cater for the needs of Coeliacs.



## Science is Magic Show

**Venue:** Carrickmacross Library

**Date:** Monday 12th November **Time:** 6.30pm

In this interactive show you will do the science experiments yourself. Why does static electricity make your hair stand on end? Is it found in nature? Can you hold a bucket full of water held upside down over your head and not get wet? How do you make a magnet with a wire, battery and a nail? How does a hot air balloon fly and how do I make my own one? Join Michael Moylan for this entertaining interactive show' Suitable for everyone aged 7+



## Zombie Science: Worst Case Scenario

**Venue:** Market House, Monaghan

**Date:** Tuesday 13th November **Time:** 7pm

Zombie Science returns with a spoof tutorial on the real science behind a Zombie epidemic. Join Theoretical Zombiologist Doctor Smith as he puts you at the heart of a hypothetical Zombiism outbreak and teaches you what to do when the inevitable Zombie pandemic occurs.

Worst Case Scenario is the second show in the Zombie Science spoof lecture series which has attracted audiences of over 36,000 at more than 400 lectures across the UK and Ireland performances at the London Horror Festival and Green Man Festival.

Zombie Science: Worst Case Scenario focuses on identifying, containing and controlling disease, and at key points in the show, the audience is invited to vote on courses of action that will determine the outcome of the show. Only science can save you from the worst case scenario. **Suitable for everyone.**



## Creative Approaches to Primary School STEM in Education for Primary school Teachers

**Venue:** Monaghan Education Centre

**Date:** Tuesday 13th November **Time:** 7pm

From puppets to play and from stories to sustainability this hands-on workshop, will explore a range of creative and inquiry based approaches to teaching and learning in primary science. There will be an opportunity to try out some of the suggested approaches and to discuss their suitability for your own practice. This research informed workshop will also give insights to the theory underpinning these approaches.

**Booking through festival website or Eventbrite**



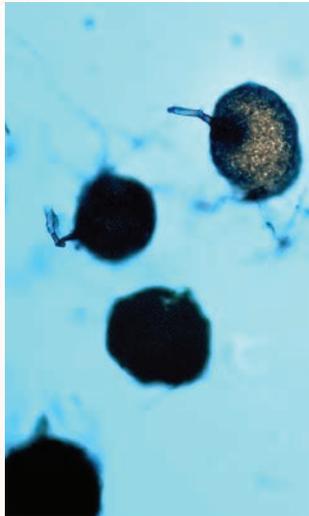


## Mindfulness

**Venue:** Cavan and Monaghan ETB, Scoil Mhuire Campus, Clones Road, Monaghan

**Date:** Wednesday 14th November **Time:** 10am – 1pm  
There's good evidence that mindfulness meditation improves brain function, balances mood, improves sleep and digestion, boosts the immune system, supports our capacity to deal with stress....and can even make us happier!

During this session you will learn a variety of easy and enjoyable mindfulness practices designed to help you discover a calmer and more peaceful you.



## Microbe Graphia

**Photo Exhibition 10th - 24th November**

*"Sometimes Science is more Art than Science"* - Rick Sanchez

**Venue:** Market House, Monaghan **Time:** 7pm

**Date:** *Launch Night & Workshop* Wednesday 14th November  
As microbe imagery is mostly generated for academic purposes, the beauty in their forms is often lost to scientific analysis. Microbe Graphia offers a unique perspective on microbes by blending both science and art, thus allowing the emotional expression embedded in life at the edge of human sight to be captured. Consisting of compelling images of the smallest organisms on our planet, this exhibition explores the complexity and patterns repeated in nature on a microscopic scale.

**About the artist:** Kelly Dwyer has been interested in nature and the science of living beings for as long as she can remember. After years of exploring fungi as sources of enzymes for waste-reduction and environmental sustainability in the bio-economy, she has gained a deeper sense of the role of microorganisms in the energy flow of earth's delicate ecosystem.

This will be Kelly's first exhibition, launching on Wednesday 14th November at 7:00 pm in The Market House, Monaghan. The exhibition will be available to view for the duration of Cavan Monaghan Science Festival. Attendees of the launch will have the opportunity to see specimens through a microscope and grow up their personal microbes on nutrient plates.



## Farmers field trip: Explore the benefits of the Agricultural Catchments programme

**Venue:** Corduff Community Centre

**Date:** Thursday 15th November **Time:** 12pm-3.30pm

After an introductory talk by Teagasc and local farmers will be followed by refreshments. Then there will be a bus trip to the Agricultural Catchments programme site near Sreenty Lough Corduff. This will be an opportunity to showcase the work done by the local farmers working with scientists to improve local water quality. Guest speakers will also include Mark Horton of the Rivers Trust and Brian McDonald of the National Federation Group Water Schemes.

**Any other info relevant:** This event involves outdoor activity so please wear raingear and suitable footwear. Not wheelchair friendly. Supported by the Local Authority Waters and Communities Office along with Cavan Monaghan Science Festival.



## DIY Health check

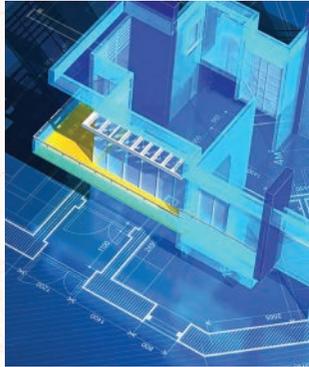
**Venue:** Cavan and Monaghan ETB, Scoil Mhuire Campus, Clones Road, Monaghan

**Date:** Thursday 15th November

**Time:** 10am - 11.30am  
and 7pm - 8.30pm

Understanding blood pressure and it's relationship with type two diabetes, how to identify, monitor and minimise your risk. DIY blood pressure health check and diabetes risk assessment will be carried out during this session.





## Solidworks 3D

**Venue:** Cavan and Monaghan ETB, Scoil Mhuire Campus, Clones Road, Monaghan

**Date:** Thursday 15th November **Time:** 7pm - 10pm

Learn how to use Solidworks 3D to create your own shapes and drawings. Are you an aspiring architect, maybe a future game designer, want to work in design manufacturing or perhaps an engineer, or you simply like to draw, well here is a great opportunity to come along to this fun interactive introductory workshop on 3D CAD. Learn how to use Solidworks 3D to create your own shapes and drawings. 3D CAD allows you to create a virtual "model" of how an object will behave in the real world, even before it is ever built.



## STEM Primary School Quiz

*Sponsored by Leonard Engineering, Ballybay, Monaghan.*

**Venue:** Glencarn Hotel, Castleblayney

**Date:** Thursday 15th November **Time:** 6.30pm

Open to all primary schools in County Monaghan. Each school can send 2 teams, 4 on each team. Each team must consist of one adult (18+), and three primary school students. Closing date for booking is strictly Friday 9th November. Booking can be made sending email with School Name, Members of Team and contact details to [sciencefestival@monaghancoco.ie](mailto:sciencefestival@monaghancoco.ie)



## Exploring citizen science along the Dromore River corridor

**Venue:** Tanagh Outdoor Education Centre, Cootehill

**Date:** Friday 16th November **Time:** 9.45am

**Must be over 18.**

The morning event will show citizen science in action and Guest speakers from Met Eireann and the Biodiversity Data Centre will show the how and what citizen science records have been taken in Monaghan in recent years. The event will also showcase how everyone can get involved in recording nature with local citizen science projects. In the afternoon we will try it for ourselves on a boat trip down the Dromore or in the wetlands of Tanagh. Registration commences at 9.45am sharp and event starts at 10am.

**Any other info relevant:** This event involves outdoor activity so please wear raingear and suitable footwear. Not wheelchair friendly. Supported by the Local Authority Waters and Communities Office.



## Music & Science Workshops

**Venue:** Íontas Arts & Community Centre

**Date:** Saturday 17th November

**Make Your Own Keyboard workshop 11am – 2pm**

**For children aged 8-12**

Participants will learn how to make their own laser cut synthesiser keyboard using some everyday materials and a small circuit board!

**Sound Walker Workshop 2pm-5pm**

**For young people aged 12-15**

The Sound Walker is a new instrument that produces both sound and light. It is designed to be played while walking and responds to changes as you move around spaces. During this workshop, participants will assemble the instrument made from laser cut cardboard and MDF, and install a custom circuit board, a speaker and a high powered LED. Through putting the kit together, learn about the processes involved in its production, and how to manipulate materials to make a desired shape, electronics and mechanisms.



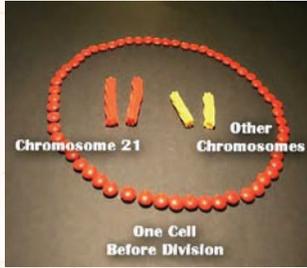
## Secrets of Superhero Physiology

**Venue:** Market House, Monaghan

**Date:** Monday 19th November **Time:** 7pm

Superheroes such as Captain America, Wonder Woman, Spider-Man and Wolverine all possess incredible superpowers and these characters gained their superpowers in unique ways. For example, Captain America was subject to an experimental super-soldier treatment, a radioactive spider bit Spider-Man, and Wolverine's regenerative healing powers are due to natural genetic mutations. On the other hand, Wonder Woman is an Amazonian god, and her DNA is likely to differ considerably from human DNA.

One important aspect of many superheroes is that they possess a unique physiology, which refers to how the body functions or works everyday. In the Secrets of Superhero Physiology, you will learn about the physiology of many of your favourite superheroes and by how much their physiology differs from the physiology of your body. You'll hear about the advanced eyesight of Hawkeye, the impenetrable skin of Colossus, the effects of different radiation types on Supergirl, and what happens to the human body when you could shrink like Ant-Man or the Wasp.



## The Science of Down Syndrome

An Information Session with Fiona Mc Grane, Clinical Nurse Manager for children with Down Syndrome.

**Venue:** Down Syndrome Centre North East, C:Tek Building, Carrickmacross

**Date:** Tuesday 20th November **Time:** 7.30pm

Fiona Mc Grane is the Clinical Nurse Manager for children with Down Syndrome and is based in Tallaght Hospital. She is also the Down Syndrome Research Nurse with the department of paediatrics, Trinity College Dublin and a steering group member of the Down Syndrome Medical Interest Group in the UK & Ireland. She lectures in nursing, midwifery and to medical students in TCD.



## Internet Safety for Parents

**Venue:** Cavan and Monaghan ETB, Scoil Mhuire Campus, Clones Road, Monaghan

**Date:** Tuesday 20th November **Time:** 7pm – 10pm

**Venue:** Carrickmacross Library

**Date:** Wednesday 21st November **Time:** 10am-1pm

This talk will outline the dangers that are always lurking online for your children and how to oversee what they are viewing. You will get practical tips to enable you to ensure your children stay safe online, as well as advice on cyber-bullying, general internet safety for the entire family and tips on using social media safely.



## CombiLift Factory Tour

**Date:** Wednesday 21st November

**Time:** 7pm

Innovation, Flexibility and Service is the ethos on which CombiLift's success is built and has seen them become the world's fastest-growing forklift manufacturer, exporting to more than 85 countries and with more than 40,000 trucks in use worldwide. Engineering is at the heart of CombiLift and attendees who avail of this Factory tour will have a chance to see for themselves how this Global leader operates on a daily basis as well as learning about the broad range of STEM based Careers within the company.



## 'You, your dog and arthritis'

**Venue:** Monaghan Institute

**Date:** Thursday 22nd November **Time:** 10am – 1pm

An anatomical and physiological background to the causes of arthritis and some basic interventions that people can use for their own joints and their dogs' joints.



## LET YOUR HEART SING

with Shane Martin and The Greatest Showman

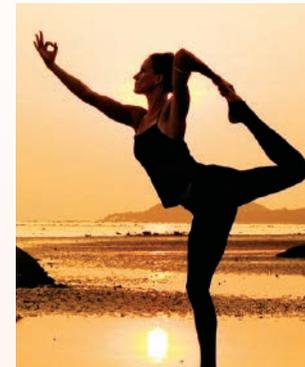
*Sponsored by McAree Engineering, Ballinode, Monaghan.*

**Venue:** Monaghan Omniplex

**Date:** Thursday 22nd November **Time:** 7pm

Do you sing in the shower? Or in a local choir? Do you listen to music? Or play a tune yourself? Music, more than any other art form, has the power to initiate an immediate emotional response from deep within. Everyone has a song that makes them want to cry, or a pumping melody they can't help but dance to. But can singing help you feel better? Can music really lift your mood?

Shane will explore the latest scientific studies about the therapeutic benefits of music and make some recommendations based on this exciting research. This will be followed by a showing of 'The Greatest Showman' starring Hugh Jackman, a movie full of heart lifting music. A night not to be missed.



## The Science of Yoga and Music

**Venue:** Peace Link, Clones

**Date:** Friday 23rd November **Time:** 11am

Exploring the relationship between yoga and music, this workshop will introduce participants to Yin yoga, a mindful and meditative practice, accompanied by Irish harp and vocal music that is carefully curated to suit the movement and atmosphere of the workshop. Yoga is thought to have been developed over 5,000 years ago in Northern India, while Music's therapeutic qualities were celebrated in the times of Ancient Greece. This workshop explores how music and yoga have been used together historically, the science behind their positive impact on both mind and body and their preventative medicinal properties.

This workshop is open to all ages and abilities. No prior yoga experience required. Yoga mats and blocks will be provided but participants are welcome to bring their own yoga equipment.

# AFTERSCHOOL WORKSHOPS FOR CHILDREN

## Precious Corals, Jewels of the Ocean

*For children aged 8-12 years*

These workshops will explore through art the importance of coral reefs in our oceans. What they are, what their role is, and how they are in danger from pollution etc. Beautiful images of corals will decorate the walls and we will look at how diverse they are and which aquatic animals depend on them. We at the art work of Stephanie Kilgast who makes coral sculptures on old tin cans. Children will make their own coral sculpture using FIMO clay on a piece of plastic to highlight how pollution effects our world.



### Dates

Monday 12th November  
Tuesday 13th November  
Thursday 15th November  
Monday 19th November  
Tuesday 20th November

### Time & Venue

Clones Library at 4pm  
Monaghan Library at 3.30pm  
Ballybay Library at 4pm  
Castleblayney Library at 4pm  
Carrickmacross Library at 3.30pm

## Make your own Lego Movie!

*For children 8-12 years*

Combine Creative & Technological skills to create your own Movie Masterpiece using Stop Motion Animation. We'll be using ipads to record your awesome creations Frame by Frame. Learn how to add opening credits, sound effects and other tips & tricks to create an Oscar winning production.



### Dates

Monday 19th November  
Tuesday 20th November  
Thursday 22nd November

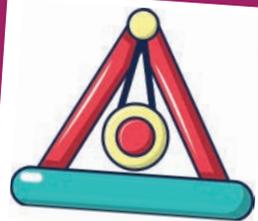
### Time & Venue

Monaghan Library 4-5pm  
Clones Library 4-5pm  
Castleblayney Library 4-5pm

## Paint, Pendulums & Acrobats Workshop

*For children aged 6-10 years*

Learn about force, motion through art. Make a magical gravity defying acrobat, participate in the Cup Racing Game and create a messy pendulum painting project! This is a fun interactive workshop for children aged 8-12 years to learn.



### Dates

Saturday 17th November  
Monday 19th November  
Thursday 22nd November

### Time & Venue

Monaghan Library 10am-12pm  
Clones Library 4-6pm  
Ballybay Library 4-6pm



# FAMILY FUN DAY

**Saturday**

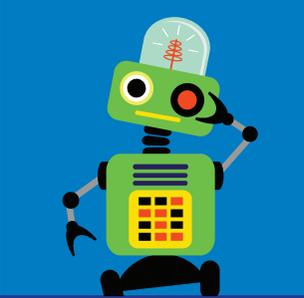
**24th November**

12-5pm

Monaghan Institute

No booking required – but come early to guarantee entry to workshops and shows.





## Ozobot Problem - Solving Workshop for 10-12 Year Olds

Ozobots are pocket-sized smart robots that are programmable through hand-drawn colour-coded lines. Ozobots connect children to the world of robotics and teach them how to code, design and solve problems. This workshop aims to develop in students the collaborative problem-solving skills that are vital to subjects including Mathematics. It introduces concepts and experiences early in a child's lifetime that are increasingly present in everyday life.



## The Monaghan Spitfire

Monaghan County Museum will be displaying parts of the RAF Spitfire which crash landed in the north of the county during World War II and you'll get the opportunity to view the remains of the Rolls Royce Engine which powered this iconic war plane. There will also be a replica of the 500kg German bomb that was dropped near Lough Egish in Monaghan in 1940. Come and find out a little bit about the science behind this remarkable warplane and the enormous bomb that nearly wiped out an entire community.



## Build it, Make it Play Area

Want to build the highest tower? Maybe make the next new fastest model car? Or simply relax and use your imagination to build with lego, knex, meccano and a host of other wonderful educational and fun equipment to try out. Suitable for all ages



## Introduction to Coderdojo

All young people aged 7 years + are invited to come along and try out Coderdojo, explore the games and technology in an informal and creative environment.



## Lego Mindstorm

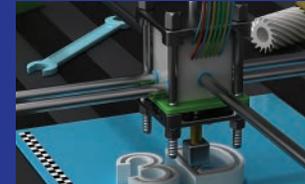
Lego mindstorm is programmable lego- learn how to get your lego to move. Learn to build frogs and programme them to jump or build small robots and get them to move. **Note: There will be two workshops on the day at 12.30pm and 3pm – first come first served.**



## The Science of Colour

### - The Magical Transformation of Colour Mixing

Looking at how colours change when you mix them together. Children will experiment with mixing paints together to make other colours and paint an abstract painting using two colours next to each other on the colour wheel. When they have finished, one half of their painting will be covered in a different coloured acrylic sheet to demonstrate dramatically how colour transforms their paintings.



## FabLab

The FabLab from the Nerve Centre in Derry are returning to the festival with their 3D printers, laser cutters and an array of equipment for everyone to get creating and making various objects to bring home.



## Anyone for Science

Anyone 4 Science, the fun, hands-on science education organisation will be doing a range of hands-on experiments and science activities for everyone to participate in. If you always wanted to make slime, learn how to read minds or just see if you are full of hot air we will be there to help you and explain some of the science behind our activities.



## Tales from the Riverside Farm

Listen to the 'Tales from Riverside Farm' by author and AgriKids founder Alma Jordan in this fun and engaging farm safety workshop. From slurry to safety signs to finding out about animal behavior, Alma's unique approach to creating awareness has continued to delight children all over Ireland. A number of interactive storytelling sessions will take place throughout the day.



## Mad Professor Science Shows

These shows educational and fun interactive shows will have everyone laughing, entertained and educated for 60 minutes. It will spark that imagination with their mad and educational experiments, while explaining the facts and involve as many children as possible. The show consists of up to 16 different experiments and covers air, sound, visual puzzles, density, oil and water, explosions and gases! It's really great science for everyone!



## Science of the Circus shows

Roll up, roll up and explore the science behind the thrills and spills of the circus. Dr Ken takes you on a voyage of discovery investigating how performers make use of many scientific principles in their tricks and stunts. Find out why jugglers love gravity, how clowns use the force like a Jedi and why unicyclists need to keep moving to stay still. It's science but not as you may know it!!!



## Interactive Animal Encounters

Want to get up close to a tarantula, scorpion or a bird of prey? Hear from Karl and the gang from the Mantella Environmental Education group how these animals adapt in different environments such as warning coloration, camouflage, vegetarian vs predatory lifestyles, animal senses etc.



## Diversity of Aquatic Life in Our Rivers & Lakes

Members of Monaghan EPA will be joining us to show what lives in our rivers! The Unit undertake biological monitoring programmes in our rivers, lakes and marine environments. These studies help us to assess water quality by looking at the biological data and combining it with chemical data. Members of the Unit will bring a sample from a local river to show the diversity of aquatic life found in our waters. The Laboratory team based in EPA Monaghan will demonstrate some of the tests they carry out to help keep our rivers and lakes clean and healthy. Come along and try your hand at some scientific experiments using our local rivers and lakes!



## Nee Naw Nee Naw

Monaghan Fire Service will be on site from 2-4pm to demonstrate a chip pan fire along with the appliance familiarisation. Get up close with our local fire brigade engine and fire staff, learn about fire safety and the science behind all that equipment!



## Laser Lights Demos/Show

Find out how powerful light is and using fluorescence see how light is energy. Come join the PhD students from Queens University (Centre for Plasmas Physics) who work with high power lasers. By using different colour lasers and popping colour balloons you will find out how we see the colours we do. Do you know what diffraction is? Using polarising glasses, plasma balls for this fun interactive demonstration which will have everyone in awe of Light!



## Planet Science Kidz Demos

These facilitating shows will introduce children to STEM topics allowing them to explore the Microscopic world, Slimy polymers, Acid base reactions, Coke geysers, Exothermic heat as well as learn about the Science of light & energy and so much more. A number of shows will take place throughout the day – first come served to each show.



## The Roll Over & Shuttle - Never Forget Your Seatbelt!

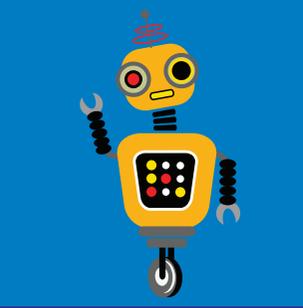
We are delighted to have the RSA roll-over simulator and shuttle visit our family fun day. The simulator is fitted to a hydraulic platform which can simulate a 90 degree and 180 degree roll-over which demonstrates how it would feel if you were a driver or passenger involved in a less than desirable incident. It will show you the effects of being suspended by your seat belt. After this demonstration, people will never travel in a car without a seat belt on. We will also do demonstrations using real size dummies which will also show where you can end up when you are not using your seatbelt.

The shuttle uses the latest simulations and immersive technologies this experience aims to raise awareness around killer behaviours such as speeding, driver distraction, driver fatigue, driving under the influence of alcohol, and many other issues. Test your driving skills and reaction time on the car simulators and break reaction timer. Try to avoid distractions in busy city traffic or stay awake on a late night drive in the virtual reality simulators.



## Skullduggery!

How do scientists know what extinct animals eat? What can a skull and teeth tell us about their owner? Zoologist Catherine McGuinness will answer these questions and more with the help of some Dead Zoo friends!



## Universal Robot Ur5 Demos

We are really excited to have the gang from Confirm – Smart Manufacturing Research Centre with the Universal Robot Ur5. The Robot which is an arm with 6 degrees of freedom. The robot will be showing its range of motions through carrying out basic tasks while displaying what happens during a human interference, showing its easily programmable interface and its versatility of using different tools and props. We will be showing off the robot and its abilities, while offering some of the explanation to the technology behind the robot and giving something of a spectacle and opportunities for the public to interact with the robotic arm.



## Bubbly Maths Shows

Festival visitors get to make fun giant balloon sculptures and fun giant bubbles! Does it get much more fun than that? Did we mention that what we do is fun? We do make maths fun but we didn't say we make it easy! The best maths activity is the one that grabs you where you are, engages your mind and takes you to the next level. Our fun activities do just that. We call it Edutainment - Experience making mathematics beyond fun for yourselves!



## Want to be a Scientist?

Are you the next Einstein? Or maybe Newtown? Or perhaps the modern day Iron Man? Visit our Science Selfie and dress up area on the day, along with face painters.



## Exploration Dome

Explore science, astronomy, geology and geography in a fun and interactive way in the Exploration Dome. We are delighted to welcome one of Ireland's premier educational state of the art full dome 360 degree 3-D digital projection technology, stunning graphics and advanced computer simulations. A series of shows will run throughout the day suitable for all ages to watch in this amazing structure!



## Techspace

Create – Invent – Inspire: These are the aims of the Techspace! We welcome our Carrickmacross Library Techspace Club to the festival and what a treat is in store for everyone. From coding, animation, videoing this is an opportunity to get a taster of what happens at a Techspace Club.