

Primary School Programme

We're thrilled to offer again a variety of in-person and online sessions for this year's School's programme.

Please complete the following booking form: <https://forms.gle/nVwHARBX2mbpiXev6>.

Alternatively, please email your enquiries with the following information to orkneyscience@gmail.com and a member of staff will be in touch:

Name of School

Class(es) and number of pupils (for each session)

Preferred date/time and list alternative date(s)/time(s) in order of preference.

Teacher name and contact details (email and phone)

Unplugged Computing for BGE by Claire Griffiths

Suitable for: All primary schools (P1-P7)

Available to Book: Friday 8th September and Monday 11th September

A practical course using a varied range of free online applications, websites and support materials to teach Computer Science and Unplugged Computing. ...

Computational thinking can be introduced right at the start of a child's school life and will be useful to them throughout their school and working life, for example for breaking down tasks and looking for patterns.

Unplugged Computing uses free activities such as puzzles and games to teach computing concepts such as algorithms, logical reasoning, cryptography and binary numbering.

This workshop will introduce fun and very practical ways to learn about Computing Science. Barefoot Computing Resources will be used for some activities. N.B. No Computers needed (literally unplugged!!)

Meet the Fossil Detectives by Neville & Sally Hollingworth

Suitable for: P1-S6 (Whole School Assemblies preferable)

Available to Book: Thursday 7th and Friday 8th September

A fun interactive presentation of their hobby and the discovery that turned into a BBC documentary. They'll take you on a time travel adventure from the Ice Age back to the Jurassic and the time of the dinosaurs.

Scotland's Marine Superstars! By Seabird Centre

Suitable for: P1-P7 (Whole School Assemblies preferable)

Available to Book: Thursday 7th and Friday 8th September

The Scottish Seabird Centre are excited to announce that our popular Scotland's Marine Superstars workshop is returning for Orkney Science Festival 2023!

How many species of shark live in the seas around Scotland? How fast can a Gannet can dive? How long does it take for a fluffy seal pup to turn into an adult? What does an underwater meadow look like? Is climate change and pollution affecting our seas, and can anything be done about it?

Discover answers to questions like these and many more with a fun, interactive workshop delivered by experts from the Scottish Seabird Centre.

This curriculum-linked, interactive session will introduce children to some of Scotland's most iconic, beautiful, and important marine species.

Students will have the opportunity to watch amazing footage of marine life, listen to sounds, marvel at life-sized props and models, and get involved in activities designed to engage children with the marine environment on their doorstep and inspire them to protect it.

Please note: New species will be included if workshop has already been delivered to a class in 2022, however priority will be given to schools/classes that didn't receive the workshop last year.

Block coding using- Scratch by Claire Griffiths

Suitable for: P2+ (N.B. Scratch Jnr (iPad app) can be used with P1 upwards)

Available to Book: Friday 8th September and Monday 11th September

A hands-on course using the free block-based programming language, Scratch 3. Alongside learning how to use the Scratch Online Editor there will be an opportunity for the students to look at and use free downloadable help cards and easy to use Scratch books.

Find out how to download Scratch 3.0. Offline Desktop editor. Learn about the free online Scratch support materials including discussion groups, downloadable teaching manuals / help cards and lessons etc...

Scratch can be used to teach many aspects of the broader curriculum including numeracy, literacy, game development, music creation etc... Examples will be shown.

N.B. Scratch files can be downloaded from the Scratch website/Desktop Offline Version to be opened/edited at a later date.

Introduction to the BBC Microbit by Claire Griffiths

Suitable for: P4+

Available to Book: Friday 8th September and Monday 11th September

A practical course learning how to code a BBC Microbit and use it in a variety of ways e.g. as a thermometer.

The Microbit is a compact microcomputer. It can be used to teach programming using its simple block editor. It has 25 LED lights which can flash messages. There are two programmable buttons to control and pause games. The BBC Microbit can detect sound, light, movement and because it knows what direction it is it can become your very own compass!

It is easy to code the BBC Microbit using the free online editor (similar to Scratch) on the BBC Microbit website. There is also a free ipad app which provides access to code editors and can be linked to any microbit via Bluetooth.

In addition the website offers projects from beginner to advanced. There is also a wide variety of other teaching resources including complete, editable computing units of work and resources with cross-curricular links. N.B. A class set of Microbits is available for use in the workshop or use your own.

Space is Big by Caithness Astronomy Group

Suitable for: P4+

Available to Book: Friday 8th September

Using a computer simulation, join the astronomy group to explore space and how big it is. Followed by an interactive session to illustrate the size of the planets and our solar system if large area is available.

Mini Circular Economy Challenge by Young Enterprise Scotland

Suitable for: P5-S4

Available to Book: Friday 8th - Wednesday 13th September

This is a 2 hour session that introduces pupils to the concept of the circular economy and will include lots of examples of businesses that are working towards a zero waste world. Children will get the opportunity to collaborate in teams to create their own circular business idea, brand it and then pitch their sustainable product or service to their peers. For more information: [What We Do | Young Enterprise Scotland \(yes.org.uk\)](https://www.yes.org.uk/what-we-do)

The 2-hour sessions will be run in your school by a member of the Young Enterprise Scotland team during the Festival. We offer these as **three 2-hour sessions** over one day to accommodate more pupils.

The Circular Economy Challenge is aimed at second and third level learners (P5-S2), however this can be adapted and differentiated to suit the needs of the school. Taking part in the Circular Economy Challenge allows pupils to:

- Develop an enterprising mindset and enterprising skills
- Develop knowledge and understanding of the concept, benefits and principles of the Circular Economy
- Increase resilience and confidence
- Understand the different roles and responsibilities involved in running a business
- Work collaboratively towards a common goal
- Develop understanding of the link between the Circular Economy, Sustainable Development and the UN Global Goals

Light workshop by Young Engineers and Science Clubs

Suitable for: P4-S2

Available to Book: Thursday 7th – Wednesday 13th September

The Sun provides warmth and light, but what is light and colour? Discover the science of light and colour, and how this is used in engineering.

Powering the Future On Tour by Glasgow Science Centre

Suitable for: P5 - P7

Available to Book: Monday 4th – Friday 8th September

Book workshops with Glasgow Science Centre Powering The Future On Tour in which pupils will get hands on and explore how energy underpins our modern lives and the difficult choices to be made about how we will supply and use energy in the future.

These visits come with amazing free resources, Learning Lab Powering the Future which include teacher CLPL, lesson plans, resources and videos to use in class to help investigation of renewables technologies and the pathway to net zero. Pupils will discover opportunities in the energy sector and explore how their skills could change the world.

Rocks under the Microscope by Stromness Museum

Suitable for: P5-S3

Available to Book: Friday 8th and Monday 11th September

The session will include talk by a member of the Quekett microscopy club about the thin section collection of microscope slides.

The Primary school session would be themed on discovering rock colours under the microscope, and the secondary session would be 'build your own microscope' and find out about Stromness Museum's new geology microscope project.

Silicon Croft - Scratch session by Mesomorphic

Suitable for: P5-S2

Available to Book: Thursday 7th – Wednesday 13th September

Have you heard of Scratch? It's a fun program that introduces users to how to code. During our session we will use this tool to create a fun and interactive game and learn about the four building blocks that software engineers use to make their products.

Augmented Fashion by Robert Gordon University

Suitable for: P5+

Available to Book: Thursday 7th – Wednesday 13th September

Textiles is a value of £1.3 million project funded by the Arts and Humanity Research Council, UKRI. The project aims to determine how immersive interactions can be used to communicate the experience and value of creative, artisan fashion and textile products, with a focus on culture, provenance, heritage, the human hand and sustainable clothing consumption. The novelty of this research lies in the interdisciplinary approach and UK-China cross-cultural knowledge exchange employed across fashion and textiles and computing science with both industry and academia.

Turtle Academy by Claire Griffiths

Suitable for: P5+

Available to Book: Friday 8th September and Monday 11th September

To learn text-based programming and use it to make repeating patterns and other creative computer art.

Turtle Academy is a free website which includes a playground for text based programming. The workshop is based on simple 2d shapes. Links with maths -angles and shape.

From this we make repeating patterns using a variety of 2d shapes. This programming leads well into Scratch pattern making. Notes on how to do this are available at the workshop alongside notes on turtle academy coding.

Astronomy outreach by Vassilios Spathopoulos and Thomai Giannakopoulou

Suitable for: P5+

Available to Book: Friday 8th September – Tuesday 12th September

The objective is to present a series of astronomy outreach events that concentrate mainly on the history of astronomy. To achieve this, a replica of the Antikythera mechanism (a historic astronomical device) will be employed. Participants will also engage in activities that involve using the sun to determine direction and time, as well as hands-on experience in creating a sundial.

DNA to Butterflies by Bill Graham

Suitable for: P5+

Available to Book: Monday 11th and Wednesday 13th September

The purpose of the "DNA to Butterflies" school activity is to show how the same piece of information can be held in various forms of media. It also gives an introduction to how DNA stores information using only four different molecules known as A,T,C and G.

After a short introduction on the topic, the pupils work in pairs assembling a sequence of DNA base pairs (A-T, C-G) to create a short strand (codon) of DNA. Some pairs are prescribed but the majority are selected randomly. The generated data is recorded on a paper coding sheet. When all the coding is finished, the ATCG information is then passed verbally, using the phonetic alphabet (Alpha, Tango, Charlie, Golf), to a pupil sitting at my computer. The pupil types the characters into a "Butterfly" computer program, where the data is stored. The program then uses this information to construct a 3-dimensional geometric model of the "butterfly" and appears on the computer screen and projected onto a large screen (if available). After the festival, Bill will 3D print each butterfly and post them to the school with each butterfly created by the pupil pairs and an A3 poster with names assigned by the pupil pairs.

Screen Printing & Exploring Mycelia by Lin Chau

Suitable for: P5-S4

Available to Book: Thursday 7th – Wednesday 13th September

This screen-printing activity intends to highlight the importance of mycelium. Using a silk screen, squeegee, and ink(fluorescent), to print the images of mycelium on top of the card, which has the image of trees and mushrooms pre-printed. The mycelium image would glow in the dark. Create a card through this screen printing activity, using silk screen, squeegee, and fluorescent ink to print the images of mycelium and discuss the importance of mycelium in the world around us.

Robotics & Mathematics by Science Skills Academy

Suitable for: P6-P7 (can accommodate composite class)

Available to Book: Thursday 7th – Wednesday 13th September

Pupils will be challenged for their maths skills to program LEGO robots to travel around a shape and explore strategies to calculate the perimeter of two-dimensional shapes.

Dementia Through Our Eyes by Science Ceilidh & The Scottish Dementia Alumni

Suitable for: P5-P7

Available to Book: Monday 11th – Wednesday 13th September

Dementia through our eyes is an interactive game created by the Scottish Dementia Alumni, a group of individuals with lived experience of dementia, in partnership with Science Ceilidh. The game establishes young people's understanding of dementia while addressing common misconceptions and embedding knowledge on how to look after our brain health.

The game takes the format of a multiple-choice quiz with the questions and answers delivered through short video clips by the alumni, giving a human connection with real people who live with dementia. For these sessions, some of the Alumni will come along in-person to meet the class, answer some of their questions about dementia and offer encouragement as they complete the quiz.

Dynamic Earth's Planetarium Shows

Back by popular demand is the Dynamic Earth's mobile planetarium for this year's Science Festival. The team will be travelling to schools in Orkney with brand-new live shows for 2023, some of which have never been seen outside of Edinburgh! Room requirements for the planetarium includes:

- Step free access
- 7m x 7m floor space and 3.2m room height.
- At least two power sockets.
- 2 trestle tables that we can use for a presence next to the planetarium, including table-top activities
- A briefing area either next to the planetarium or nearby, to provide introduction and H&S briefing and also act as an area where your group can remove their shoes if required

- **STARRYTELLING [EY, P1]**

Sensory education workshop. This session is in two parts beginning with a story ('Bringing down the Moon') which takes place outside the planetarium. Following this we explore day & night, stars, planets and the Moon inside our planetarium.

- **YOU ARE HERE [P2-P7, S1]**

Come with us on a dramatic journey to the very edge of our solar system and back. In real-time we'll be seeing the boundaries of human exploration and following in the footsteps of some very special space missions. Our beginner-friendly space-cruise is a chance for some cosmic perspective in this topsy-turvy time and also a handy wee reminder that: You. Are. Here.

There will be time to chat with Dynamic Earth's astronomers after the show too - we hope you'll join us for the ride!

<https://www.youtube.com/watch?v=b9CLlpax6AM>

- **DON'T PANIC [P3-7, S1-S6] – BRAND NEW FOR 2023**

In days where it seems like Earth is lurching from one disaster to the next, anxieties around the future of our planet mount and it seems like there isn't much we can do. We'll explore in our planetarium how there's actually a lot of cause for optimism as long as we remember - Don't Panic!

- **UNDER PRESSURE - THE OCEAN SHOW [P3-7, S1-S6]**

Come with us as we take a deep dive into the global ocean; we'll explore dark, hidden ecosystems and see the collective efforts of hundreds of marine scientists and engineers, striving to learn all we can about these enigmatic worlds. We'll also ponder on our ability to shape the future of this global ocean we all depend on.

<https://www.youtube.com/watch?v=XEewXepumDs>

- **WHAT'S UP? [P3-7, S1-S6]**

Dynamic Earth's What's Up? is an ever-changing look at the night sky and some of the more exciting astronomy and Earth-science news stories that have caught our eyes in recent weeks. In every seasonal version of the show you'll have time to gaze out on the stars and planets that are visible for our current skies, dive in to beginner-friendly guides on astronomy topics, and be kept up to date on some of the most interesting events and discoveries happening today.

https://www.youtube.com/watch?v=cl23pHb73Zo&embeds_euri=https%3A%2F%2Fwww.dynamicearth.co.uk%2F&source_ve_path=MjM4NTE&feature=emb_title