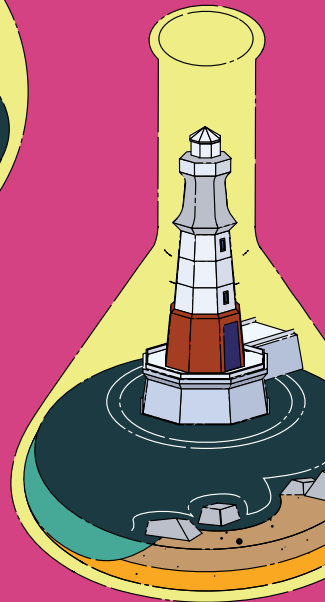
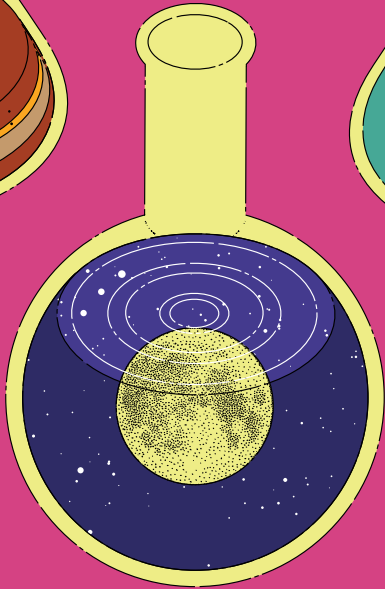
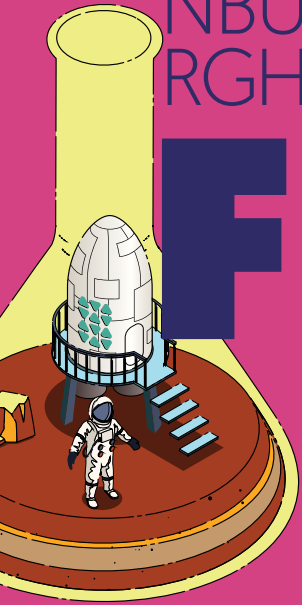
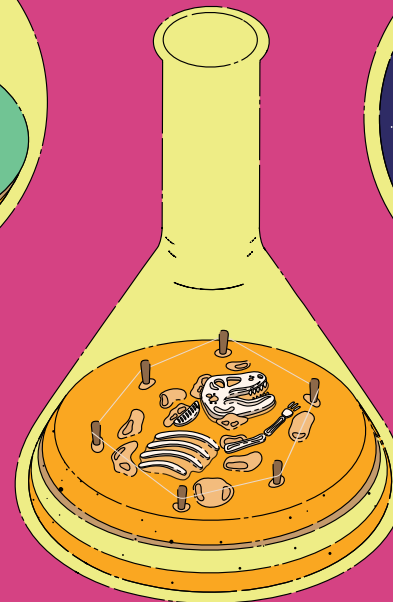


EDI
NBU
RGH

SCIENCE FESTIVAL



Let's
Experiment



1-16
APRIL

2023



THANKS TO OUR 2023 FESTIVAL SUPPORTERS

PRINCIPAL FUNDING PARTNERS



Scottish Government
Riaghaltas na h-Alba
gov.scot

FUNDING PARTNERS



VENUE AND PROGRAMMING PARTNERS



Royal
Botanic Garden
Edinburgh



LET'S EXPERIMENT

William Blake once said that '*The true method of knowledge is experiment*', and who are we to argue with him?

Celebrating a wholehearted and very welcome return to hands-on science, the 2023 Edinburgh Science Festival embraces the concepts of experimentation, innovation, creativity, curiosity and invention.

Using the 2023 Festival as a living laboratory – a space for experimentation with formats, approaches and partnerships – we want audiences of all ages to not just talk about but to get up-close with science of all sorts through a special programme of exciting real-life experiments and special events.

As well as our flagship family venue at City Art Centre we have three exciting new interactive projects to get audiences involved in our experiments.

We're putting all living things under the microscope with *Experimental Life*, exploring the captivating wonder and diversity of life in all its forms. While our new *FutureFest* and *EarthFest* themed weekends provide great opportunities for yet more interactive family fun.

And adults need not fear as our *Big Ideas* events will be back at the National Museum of Scotland, with thought-provoking insights into some of the hottest topics in science. Plus, an expanded programme of *Sociable Science* events that deliver entertaining evenings out with science at their heart.

All of this runs alongside a vibrant and varied wider programme that celebrates the spirit of adventure and enquiry that push the frontiers of our knowledge about ourselves, the world around us and our place in the wider Universe.

We call on people of all ages to join us on a journey of experimentation and discovery – Let's Experiment together!



Amanda Tyndall
Festival and
Creative Director



FESTIVAL INFORMATION

BOOKING

sciencefestival.co.uk

If you experience any issues while attempting to make an online booking, please email the Box Office at boxoffice@scifest.co.uk

0131 226 0005

Tuesday 14 February–Friday 31 March
10.30am–5.30pm (Monday–Friday)
Saturday 1–Sunday 16 April
8.30am–6pm (Monday–Saturday)
11am–4pm (Sunday)

SUPPORT US

Add a donation to your purchase and help us with our year round work delivering science related activities to community groups and schools around Scotland. Read more about our charitable work on [pg.42](#) and sciencefestival.co.uk/our-impact

DISCOUNTS

EARLY BIRD

Save £2 per ticket on our *Big Ideas* events [pg.26–33] at the National Museum of Scotland if booked before Sunday 5 March. Call the box office or book online using the code **EARLYBIRD23**.

ADULTS GO FREE TO CITY ART CENTRE AT EASTER

Book a Child Entry Pass and receive free adult entry on Friday 7, Saturday 8 and Monday 10 April. Call the Box Office or book online – simply add a Child Entry Pass and an Adult Entry Pass to your basket and use the promo code **EASTEREGG23**.

GROUPS

We welcome groups and discounts may be available depending on the event and the size of the party. Please call the Box Office on **0131 226 0005** to discuss your needs.

BABES IN ARMS

Children under three years old do not require a ticket for events, unless the event is specifically for children under three years old. Children under three years old require a free ticket for the *FutureFest* and *EarthFest* activity zones.

CONCESSIONS

Unless otherwise stated, concessions are available to pensioners, the unemployed and disabled persons, with a complimentary ticket available for personal assistants, which can be booked by phoning our Box Office on **0131 226 0005** or emailing boxoffice@scifest.co.uk

REFUNDS

All Science Festival tickets are non-refundable, except in the case of an event cancellation.

VENUE FACILITIES

On each venue page you'll find the following symbols which indicate the facilities available:

-  Wheelchair access throughout
-  Sensory Backpacks
-  Elevator
-  Ramp access
-  Level access throughout
-  Accessible toilet
-  Changing places toilet
-  Lowered counters
-  Access aware staff
-  Hearing loop
-  Exhibition transcripts
-  Assistant dogs welcome
-  Low lighting
-  Cafe
-  Bar
-  Packed lunch area
-  Water available
-  Cloakroom
-  Buggy park
-  Baby changing
-  Parking
-  Mobility scooters and wheelchairs available to book in advance

For any questions regarding accessibility, please call the Box Office on 0131 226 0005 or email boxoffice@scifest.co.uk.

ACCESSIBILITY

If you have specific access requirements or need to book a wheelchair space, please call our box office on 0131 226 0005 or email boxoffice@scifest.co.uk. For information about accessibility provisions across the Festival, visit sciencefestival.co.uk/accessibility.

Look for the following icons throughout our programme for our enhanced performances.



RELAXED PERFORMANCES

These sessions are open to all, but designed for those who prefer smaller crowds, less noise and gentler lighting. For more details on each specific session, please visit our website.

P.21

POUNDS AND PENCE – THE SCIENCE IN YOUR POCKET: COINS
MON 3 APR | 10AM | MUSEUM ON THE MOUND

P.21

POUNDS AND PENCE – THE SCIENCE IN YOUR POCKET: BANKNOTES
MON 3 APR | 11AM | MUSEUM ON THE MOUND

P.11

EMILY DODD
WED 5 APR | 11AM | NATIONAL MUSEUM OF SCOTLAND

P.11

EXPERIMENTAL LIFE RELAXED OPENING SESSION
THU 13 APR | 9AM | NATIONAL MUSEUM OF SCOTLAND

P.13

TWO IN A BARREL
SAT 15 APR | 11.45AM | NATIONAL MUSEUM OF SCOTLAND



BSL INTERPRETED

P.14

BSL GARDEN TOUR
SUN 2 APR | 2PM | ROYAL BOTANIC GARDEN EDINBURGH

P.28

YOU'VE BEEN PLAYED
FRI 7 APR | 6PM | NATIONAL MUSEUM OF SCOTLAND

P.31

WONDERDOG
THU 13 APR | 1PM | NATIONAL MUSEUM OF SCOTLAND

P.33

DEMYSTIFYING BISEXUALITY
FRI 14 APR | 8PM | NATIONAL MUSEUM OF SCOTLAND

P.15

BSL TOUR LIVING SOIL
SUN 16 APR | 2PM | ROYAL BOTANIC GARDEN EDINBURGH



AUDIO DESCRIBED

P.35

SWELL
SAT 1 APR | 6PM | NATIONAL MUSEUM OF SCOTLAND



6-9 CITY ART CENTRE

During the Festival we transform Edinburgh's City Art Centre into a science playground full of workshops and interactive events to keep the kids entertained! Adults can join in with the fun after hours at *Science Festival Late*.



10-13 NATIONAL MUSEUM OF SCOTLAND

Visit the National Museum of Scotland for free drop-in activities, workshops and a chance to conduct some experiments of your own in *Experimental Life*. Don't miss our weekend special events: *EarthFest* and *FutureFest* with shows and activities for families.



14-15 ROYAL BOTANIC GARDEN EDINBURGH

Visit the Royal Botanic Garden Edinburgh for interactive family activities, exhibitions and tours of the garden and beyond for families, adults and young people.



16-18 DYNAMIC EARTH

Discover what lies deep underground, deep underwater and deep in space with exhibitions, events and experiences that can be enjoyed by families and adults alike.



19 EDINBURGH ZOO

Visit Edinburgh Zoo to learn about the animals in their collection. Eat an *Eggsperimental Breakfast* or imbibe at *Gin and Genetics* with special activities and tours for the Easter holidays.



20-22 AROUND EDINBURGH

Enjoy Science Festival events all over the city and in some of Scotland's picturesque coastal towns. From self-guided tours to interactive workshops, take a scientific big day out - right on your doorstep!



24 EDSCIFEST ON DEMAND

Enjoy some of our discussions and fun activities from the comfort of your own home. For armchair scientists of all ages, we've got you covered.



40-41 SUMMERHALL

Interlinked is a series of exhibitions and events from visual artists exploring themes of earth, climate, sustainability, biodiversity, micro-life and humanity by experimenting with scientific processes and practices.



EVENT TYPES

26-33 BIG IDEAS

Our programme of discussions will inspire ideas, debate and, most importantly, hope. Join our experts as they discuss topics including how we can work towards building a sustainable future, working in partnership with robots and the intricacies of sexual and gender identity.



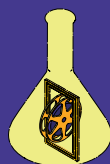
34-36 SOCIABLE SCIENCE

When the sun goes down the science comes out. *LateLab* makes its return in a series of stunning interactive events. Try some epicurean delights or experiment with the lights down low on a big night out with a scientific twist.



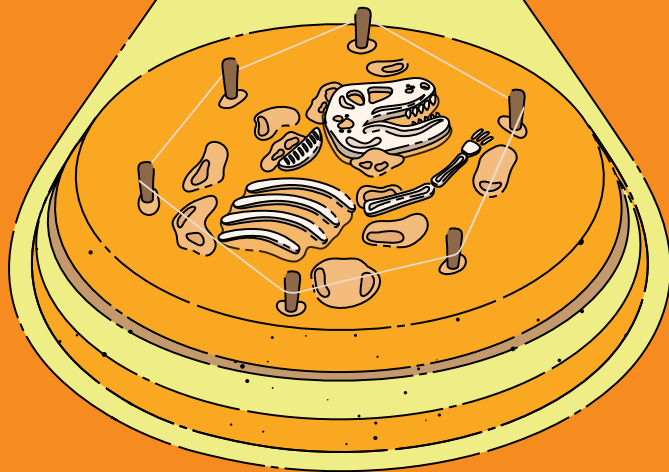
37-41 ART AND FILM

From open air exhibitions to augmented screenings of films, there is a wealth of sci-art to dazzle your eyes and challenge your views.



| DATE | TIME | EVENT | PAGE |
|--------|--------------|--|------|
| 30 MAR | 7.30PM | SCIENCE FESTIVAL LATE | 34 |
| | 6PM | 3607, ARTIST TALK | 41 |
| | 2PM | LOST, ARTIST TALK | 41 |
| 1 APR | 6PM | EARTH, SOIL + FILTH, ARTIST MEET AND GREET | 41 |
| | 6PM | SWELL | 35 |
| 2 APR | 6PM | TAM DALYELL PRIZE LECTURE | 26 |
| | 7PM | STRANGER THE FICTION: THE PANEL GAME | 35 |
| 3 APR | 6PM | IF SCIENCE IS TO SAVE US | 26 |
| | 7PM | THE MATHEMATICS SHOWDOWN | 26 |
| | 8PM | AVOCADO ANXIETY | 27 |
| 4 APR | 7PM | A NIGHT IN THE STARS | 35 |
| | 6PM | FUELLING THE FUTURE: THE PROMISE OF PLASMA FUSION | 27 |
| | 7PM | MAKING AND DEEPPAKING THE NEWS | 27 |
| 5 APR | 8PM | BEING YOU | 27 |
| | 6PM | THE SKY IS FOR EVERYONE | 27 |
| | 6PM | THE SEAWEED REVOLUTION | 27 |
| 5 APR | 7PM | MICROART: LOOK AND DRAW | 21 |
| | 7.30PM | BIOMIMICRY | 35 |
| | 8PM | THE N MOST IMPORTANT SYMBOLS IN MATHEMATICS | 28 |
| 6 APR | 6.30PM | UNICORNS AND RHINOS: ANIMAL MEDICINE | 28 |
| | 7PM | EXPERIMENTAL LIFE AFTER HOURS | 36 |
| | 7PM | OYSTERS IN EDINBURGH | 17 |
| 7 APR | | A CLIMATE OF CHANGE: NICOLA STURGEON IN CONVERSATION WITH AMBASSADOR PATRICIA ESPINOSA | 28 |
| | 6PM | YOU'VE BEEN PLAYED | 28 |
| | 6PM | THE SCIENCE BEHIND HAPPY COUPLES | 28 |
| 8 APR | 8PM | BITCH: A REVOLUTIONARY GUIDE | 28 |
| | 10AM | GUIDED WALK WITH MONICA WILDE | 15 |
| 10 APR | 6PM | GIN AND GENETICS | 19 |
| | 6PM | EDINBURGH CONSERVATION FILM FESTIVAL | 39 |
| 11 APR | 1PM | A VERY SHORT INTRODUCTION TO BACTERIA | 29 |
| | 6PM | SCIENCE FICTION: VOYAGE TO THE EDGE OF IMAGINATION | 29 |
| | 7PM | SENTIENT ROBOTS: FRIENDS OR MONSTERS | 29 |
| 12 APR | 7PM | TASTING CLIMATE CHANGE | 36 |
| | 8PM | THE YOU, THE V AND THE W | 29 |
| | 1PM | RIVERWOODS | 39 |
| 13 APR | 2PM | KNITTING WITH DATA | 30 |
| | 6PM | CAN ROBOTS CARE? | 30 |
| | 6PM | GENERATION SHARE | 30 |
| 13 APR | 7PM | EDINBURGH MEDAL ADDRESS: FOOD POLITICS - WHY IT MATTERS NOW | 31 |
| | 8PM | THE LONG SHOT | 31 |
| | 1PM | WONDERDOG | 31 |
| 13 APR | 6PM | THE KEYS TO KINDNESS | 31 |
| | 7PM | EMOTION AND THE CLIMATE EMERGENCY | 18 |
| | 7PM | GAMES ROBOTS PLAY | 32 |
| 14 APR | 8PM | GAUDI'S SAGRADA FAMILIA IN THE MAKING | 32 |
| | 1PM | A CRACK IN EVERYTHING | 32 |
| | 4PM | LET'S EXPERIMENT: THE PROFESSORS | 32 |
| 14 APR | 6PM | HOW TO SAVE A PLANET IN CRISIS | 32 |
| | 7PM | OUR PLANET, OUR HEALTH AND OUR FUTURE | 18 |
| | 7PM | PSYCHOLOGY OF LEARNING: HUMANS VS MACHINES | 33 |
| 15 APR | 8PM | DEMYSTIFYING BISEXUALITY | 33 |
| | 7PM | ROBOTS AFTER DARK | 36 |
| 15 APR | 7.30PM | WHEN FISH BEGIN TO CRAWL | 18 |
| | 11AM | SCIENCE FESTIVAL CHURCH SERVICE | 33 |
| 16 APR | 5.30PM & 8PM | PONYO | 36 |

CITY ART CENTRE



SAT 1—SAT 15 APRIL (NOT OPEN SUNDAYS)

Edinburgh Science Festival at City Art Centre is the perfect, inspirational day out. Explore five floors packed with workshops and hands-on activities perfect for kids up to 12 years old. Parents can join in the fun too with drop-in workshops and our art exhibitions.



ADVANCE PRICES

CHILD AGED 3–4 £5 | CHILD AGED 5+ £10
ADULTS £8 | CHILD AGED 0–2 FREE
DISABLED PERSONS £5
REGISTERED UNEMPLOYED £5 FOR EACH
FAMILY MEMBER

TICKETS PURCHASED FROM CITY ART CENTRE
 ON THE DAY COST £1 MORE PER TICKET.

ADULTS GO FREE AT EASTER

Book a Child Entry Pass and receive free adult entry on Friday 7, Saturday 8 and Monday 10 April. Call the Box Office or book online – simply add a Child Entry Pass and an Adult Entry Pass to your basket and use the promo code **EASTEREGG23**.

HOW TO BOOK YOUR CITY ART CENTRE ENTRY PASS

An entry pass allows entry to City Art Centre. A child 5+ entry pass includes up to three bookable events. We recommend booking your Entry Pass and selected events in advance to avoid queues and disappointment. Tickets purchased from City Art Centre on the day of the event cost £1 more per ticket.

Timings for our bookable workshops can be found on **pg.9** and on our website. Please keep the minimum age recommendations in mind when selecting workshops for your child – your child may be asked to leave the workshop if they are under the recommended age.

Drop-in activities do not need to be pre-booked and can be enjoyed by all the family, including younger children, throughout your visit.

Please note: when attending City Art Centre, children must be accompanied by an adult and, unfortunately, we do not issue tickets to lone adults. If you would like to discuss large group bookings for City Art Centre please call our Box Office on 0131 226 0005 and they will be happy to help you plan your visit.

SCIENCE FESTIVAL LATE

AGES 18+
LATELAB



CITY ART CENTRE

THU 30 MAR | 7:30PM | 2 HOURS 30 MINS | £12/£10

Don't let the kids hog all the hands-on science fun! Join us as we turn our flagship family venue into the ultimate science party for one night only. Dance the robot with a robot, sidle up to the *Blood Bar* or get down digging up a dinosaur in this night just for the grown-ups!

Supported by

Developed with support from Creative Scotland through the Scottish Government's Festivals Expo Fund



Scottish Government
Riaghaltas na h-Alba
gov.scot

SENSORY BACKPACKS

Sensory backpacks have been created to help provide a more enjoyable experience for children who may find the Festival experience overwhelming. They are available free of charge from the ticketing desk on the ground floor.

SUPPORT OUR WORK THROUGH GIFT AID

Edinburgh Science Foundation, which runs Edinburgh Science Festival, is an educational charity who deliver learning and community engagement projects across Scotland year round. All ticket prices for City Art Centre include a voluntary 10% donation to support our work. For UK tax payers, this also allows us to reclaim the tax you pay through the Gift Aid Scheme; every pound you donate is worth £1.25 to us. If you do not wish to make a charitable donation, the admission prices for City Art Centre are Adult £7.27, Child 5+ £9.09, Child 3–4 £4.54
 Charity number SC003790

giftaid it

CITY ART CENTRE SCHOOL DAYS

Every year before City Art Centre opens to the public, we host three special open days for local schools. This year around 750 school children, many whom wouldn't have the opportunity to visit with their families, get to experience all the activities in our science playground for free.

Find out more about our work with local communities at sciencefestival.co.uk/community-engagement.

City Art Centre School Days supported by John Watson's Trust and Russell Trust



WEE WONDER WORLD

AGES 3+
ACTIVITY



CITY ART CENTRE

DROP-IN

Step up small scientists! Explore why things float, enjoy science story time, construct a tremendous tower, build your own spinning toy or create a musical instrument. It's all possible with some simple science.

IMAGINATION PLAYGROUND

AGES 3+
ACTIVITY



CITY ART CENTRE

DROP-IN

Let your imagination run wild! Unlock your creative spirit and build magical, massive structures with our super-sized construction blocks in our *Imagination Playground*. What amazing structures will you make, and what will inspire your designs? Ideal for young engineers and adults alike.

ELLA'S WOBBLE

AGES 3+
WORKSHOP



CITY ART CENTRE

20 MINS | BOOKING REQUIRED

Join Ella's musical adventure through the wonderful world of sound. In this immersive storytelling journey you will explore how sound travels through the air, discover why some sounds are high and some are low and even create your own musical instrument!

Supported by The Russell Trust

SECRET LIFE OF CORAL

AGES 5+
WORKSHOP



CITY ART CENTRE

DROP-IN

What's life like underwater? Explore the *Secret Life of Coral* and uncover the amazing creatures that live in its communities. Help us build a coral reef by making your own sea creature in this captivating hands-on activity.

ZOOM BOX

AGES 5+
ACTIVITY



CITY ART CENTRE

DROP-IN

Zoom in and get up close with the world around you! Build a microscope you can use with your smartphone camera and get a closer look at scientific samples and the world around you with our USB microscopes.

CONSTRUCTION CHALLENGES

AGES 5+
ACTIVITY



CITY ART CENTRE

DROP-IN

Join our construction team to build and explore with our wooden building blocks. How tall can you build a tower? Can you create a bridge with only blocks? Build, play, explore and challenge yourself in this engineering and building activity.

DIG UP A DINOSAUR

AGES 5+
WORKSHOP



CITY ART CENTRE

20 MINS | BOOKING REQUIRED

Ready to uncover dinosaur remains? Millions of years ago, dinosaurs ruled the Earth – millions of years later, it's time to find out all about them! Learn the techniques and tools scientists use to dig for bones and fossils, and then use your skills to brush away the sand and see what you can learn from your discovery.

ENERGY MAKERS

AGES 5+
WORKSHOP



CITY ART CENTRE

45 MINS | BOOKING REQUIRED

Discover the wonderful world of wind turbines! Learn how air can exert force and why the blades of a wind turbine spin. Get blown away by our awesome wind tunnel and chart the different speeds and directions of the wind. Finally, create your own turbines and test them in our tunnel in this great introduction to renewable energy.

SPLAT-TASTIC

AGES 5+
WORKSHOP



CITY ART CENTRE

20 MINS | BOOKING REQUIRED

Get your goo on in this interactive workshop. Be creative with chemistry and design your own slime to take home. Test its thickness and stickiness under the extreme conditions of our 'Splat-o-Meter' and check out how the appearance and properties of materials can change when a chemical reaction takes place.

Supported by



WILD VETS

AGES 5+
WORKSHOP



CITY ART CENTRE

45 MINS | BOOKING REQUIRED

Take on the role of an animal conservationist in our totally wild workshop. Discover more about Scottish wildlife heritage by exploring the animals that used to live here and the work being carried out to rewild the landscape and reintroduce animals like the beaver to Scotland.

BLOOD BAR



AGES 7+
WORKSHOP

CITY ART CENTRE

20 MINS | DROP-IN

Pull up a chair in our *Blood Bar* and be prepared for things to get gory! Have a go at making your own scabs, mix up a gooey blood clot and even touch a real heart. Explore the science of blood and see how we can diagnose disease with cutting-edge technology. Take a closer look at the heart, lungs and oxygen in our *Don't Hold Your Breath* activity and find out what really happens when we get cuts and bruises in the *Scab Lab* - these workshops alternate throughout the day.

LEGO® BUILD THE CHANGE



AGES 7+
WORKSHOP

NEW

CITY ART CENTRE

45 MINS | BOOKING REQUIRED

A future without waste - imagine that! Join our team of builders to explore how we can design things differently to change the way we take, make, use and waste things. Learn about real-world challenges, devise your own brilliant solution and share it with others in this workshop exploring the circular economy.

Supported by



CREATIVE CODING



AGES 7+
WORKSHOP

NEW

CITY ART CENTRE

45 MINS | BOOKING REQUIRED

Introducing Marty - the dancing robot! Using the Scratch programming language, budding engineers can program Marty to follow commands and navigate around an obstacle course. Before you leave, get yourself a spot at the coolest party in town and make Marty dance at our robot disco.

Developed with support from Digital Xtra Fund

Supported by



SPEEDY SAILS



AGES 7+
WORKSHOP

NEW

CITY ART CENTRE

20 MINS | BOOKING REQUIRED

Join our team to design, build and test your very own land yacht: a special wheeled vehicle that uses sails to travel across ground. You'll consider how designing a project is about solving a problem. Through the workshop you'll explore the principles and roles of thrust, drag, friction and energy transfer in the world of motion. Engineering has never been this fun!

ER SURGERY



AGES 8+
WORKSHOP

CITY ART CENTRE

45 MINS | BOOKING REQUIRED

Paging all surgeons to the emergency room! Scrub up in the ER and help diagnose your 'patient', before performing life-saving surgery on the knee, abdomen and brain! *Please note, this workshop is closed with no viewing area for parents.*

CURIOSITY CORNER



ALL AGES
ACTIVITY

CITY ART CENTRE

DROP-IN

Pop over to curiosity corner to take a break from the excitement of the City Art Centre. There are plenty of books for the adults to find a new passion, and our science mini-cinema for the whole family to watch!

TECH CORNER



ALL AGES
NEW
ACTIVITY

CITY ART CENTRE

DROP-IN

Our lives have been transformed by the power of technology, from smart phones to speakers, healthcare to homes, technology is everywhere. Explore how the internet works, make a recording in our radio studio or discover how technology can be used to recognise objects in our drop-in technology corner.

ART EXHIBITIONS

THE EXPERIMENTERS



ALL AGES
INSTALLATION

CITY ART CENTRE

DROP-IN

Artist **John Brown** has constructed a fictitious miniature laboratory/workshop in which to create various small-scale examples of experiments and constructions. Brown then uses photography to record these three-dimensional sets to play with the idea of what is real or unreal. Using mostly found and recycled materials, he aims to show how limited means, and the viewers imagination, can allow large ideas to be proposed without using up lots of the world's resources. He uses his experience of working in a busy art college and archive imagery to create a wide range of scenarios that aim to echo the energy and discovery taking place in the full-size Science Festival.

Image: *The Elementlists*, John Brown

CONFERENCE FOR CHRONONAUTS



ALL AGES
INSTALLATION

CITY ART CENTRE

DROP-IN

Artist **Robert Powell** and philosopher **Alasdair Richmond** explore the ideas involved in Alasdair's work with the philosophy of time travel. *Conference for Chrononauts* explores philosophical concepts and conundrums in a way that's accessible, engaging and beautiful to look at. Science hasn't yet come up with a way to travel through time, but the philosophy of time travel makes sure that all the intellectual problems have been thoroughly thought through for when it does.

Image: *Blue Dress*, Robert Powell

BIOLOGICAL CLOCK



ALL AGES
INSTALLATION

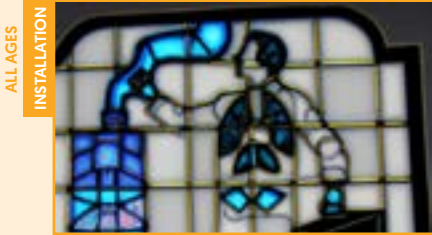
CITY ART CENTRE

DROP-IN

Biological Clock explores ideas around genetics and time by displaying twenty-four electric alarm clocks showing the genome sequence of human individuals. Artist **Alan Brown** has used the bright red digital displays to scan through the genome in one-second intervals and each represents an individual person. Just like the general population, some of the genome sequences in the installation feature mutations which can lead the clock to intermittently 'malfunction'.

Image: *Biological Clock*, Alan Brown

SIGNAL: NOISE



ALL AGES
INSTALLATION

CITY ART CENTRE

DROP-IN

Computer technology is instrumental to modern medical imaging, offering stunning visualisation of the body's interior. However, information technology continues to rely on human programmers and computers sometimes behave in unexpected ways. This visual exhibit by radiologist **Dr Michael Jackson** explores the role computers have in generating and analysing medical images, and the human dimension of making sense of these pictures – occasionally resembling abstract art more than anatomical reality.

Image: *Radiologist in Stained Glass*, DALL·E

PLAN YOUR VISIT

With your City Art Centre Entry Pass, you'll have access to any number of drop-in activities and up to three bookable workshops – the perfect day of science fun! You can mix and match any workshop, or take some inspiration from these suggestions.



FOR LITTLE ADVENTURERS

There's fun to be had by kids of all ages at City Art Centre – even for the littlest of scientists!

- WEE WONDER WORLD | 3+
- IMAGINATION PLAYGROUND | 3+
- ELLA'S WOBBLE | 3+



FOR NATURE EXPLORERS

If you wonder about wildlife or have a curiosity for conservation, these workshops are perfect to dive in to.

- SECRET LIFE OF CORAL | 3+
- WILD VETS | 5+
- DIG UP A DINOSAUR | 5+



FOR INNOVATIVE ENGINEERS

Put on your problem solving hat and explore the worlds of energy, robots and coding.

- IMAGINATION PLAYGROUND | 3+
- ENERGY MAKERS | 5+
- CREATIVE CODING | 7+
- LEGO® BUILD THE CHANGE | 7+



FOR PRACTICAL SCIENTISTS

It's time to get messy with these hands-on experiences that really bring science to life!

- SECRET LIFE OF CORAL | 5+
- SPLAT-TASTIC | 5+
- BLOOD BAR | 7+
- ER SURGERY | 8+



FOR BUDDING BUILDERS

Let your imagination run wild in these creative experiences that will build your construction skills for the future!

- IMAGINATION PLAYGROUND | 3+
- CONSTRUCTION CHALLENGES | 5+
- LEGO® BUILD THE CHANGE | 7+
- SPEEDY SAILS | 7+

Supported by



FOR DYNAMIC DETECTIVES

Satisfy your curiosity and investigate the world around us with these interactive workshops.

- WILD VETS | 5+
- ZOOM BOX | 5+
- DIG UP A DINOSAUR | 5+

CITY ART CENTRE

BOOKABLE WORKSHOPS SCHEDULE

Many of our events are available to drop into during your visit. However, some workshops have a limited capacity and should be booked in advance. You can reserve up to three bookable workshops per Child Entry Pass purchased. Please use the schedule below to plan your day. We would ask you to keep this schedule and the minimum age recommendation in mind when selecting workshops for your child. Your child may be asked to leave the workshop if they are under the recommended age.

| | START TIME | 10.00 | 10.30 | 11.00 | 11.30 | 12.00 | 12.30 | 1.00 | 1.30 | 2.00 | 2.30 | 3.00 | 3.30 | 4.00 | 4.30 |
|----|-----------------------------------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|
| 3+ | ELLA'S WOBBLE 20 MINS | | | | | | | | | | | | | | |
| 5+ | DIG UP A DINOSAUR 20 MINS | | | | | | | | | | | | | | |
| 5+ | ENERGY MAKERS 45 MINS | | | | | | | | | | | | | | |
| 5+ | SPLAT-TASTIC 20 MINS | | | | | | | | | | | | | | |
| 5+ | WILD VETS 45 MINS | | | | | | | | | | | | | | |
| 7+ | LEGO® BUILD THE CHANGE 45 MINS | | | | | | | | | | | | | | |
| 7+ | CREATIVE CODING 45 MINS | | | | | | | | | | | | | | |
| 7+ | SPEEDY SAILS 20 MINS | | | | | | | | | | | | | | |
| 8+ | ER SURGERY 45 MINS | | | | | | | | | | | | | | |

LET'S EXPERIMENT

AT NATIONAL MUSEUM OF SCOTLAND

ALL AGES
SPECIAL EVENT

One of Edinburgh's most iconic buildings, the National Museum of Scotland houses treasures from around the world, all under one roof.

During this year's Science Festival, the wonder of science will be brought to life through incredible hands-on experiments for scientists of all ages! Look to the technology of tomorrow at *FutureFest*, discover life of all kinds at *Experimental Life* and learn more about the world around us at *EarthFest*.

Enjoy explosive family shows, inventive workshops and fun drop-in activities throughout the day, and join us in the evening for our programme of *Big Ideas* talks and discussions for adults and young people [pg.26-33].

OPEN SATURDAY 1 APRIL – SUNDAY 16 APRIL
10AM – 5PM
CHAMBERS STREET, EDINBURGH, EH1 1JF

FOR BIG IDEAS EVENING EVENTS, ENTER THROUGH
LOTHIAN STREET



THE UNIVERSITY OF EDINBURGH

The University of Edinburgh works to connect science and society to make the world a better place. Discover science with real scientists from The University of Edinburgh during the Science Festival. Visit the Learning Centre at National Museum of Scotland for family-friendly activities, and keep an eye out for adult events throughout the programme.



FUTUREFEST

NATIONAL MUSEUM OF SCOTLAND

SAT 1 – SUN 2 APRIL | 10AM – 5PM | DROP-IN



Join us for *FutureFest*, a celebration of technology, robotics, artificial intelligence, coding, computers and space.

Visit the National Museum of Scotland's Grand Gallery for some fun drop-in activities and take a moment to wonder at the stars in our pop-up planetarium and create your vision for the future with *LEGO® Build the Change*. Enjoy our explosion-filled, experimental family spectaculars where you can learn how to build a rocket in *The Rocket Show* and meet some cool aliens in *The Kids Who Fell to Earth*.

Our *FutureFest Activity Zone* is the perfect opportunity for any budding inventor – get hands-on with fun science challenges, learn new tech skills and meet the experts changing our future!

FUTUREFEST ACTIVITY ZONE

AGES 7+
ACTIVITY



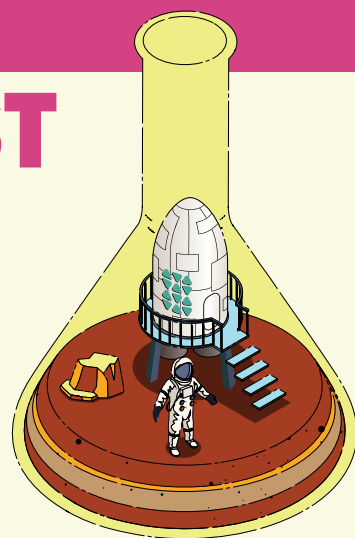
NATIONAL MUSEUM OF SCOTLAND

LEARNING CENTRE

SAT 1 – SUN 2 APR | 10.15AM, 12.45PM & 3.15PM
90 MINS | £3

Try your hand at some fun future science as you explore two floors packed with activities. Make your own jukebox using fruit, try out some *Minecraft* challenges, meet a robot and chat with the experts working on some of the most exciting tech projects in Scotland. Future inventors: we need you! Children must be accompanied by an adult. Visit our website to find out more about the activities on offer.

Presented in partnership with the National Museum of Scotland



THE ROCKET SHOW

AGES 5+
SHOW



NATIONAL MUSEUM OF SCOTLAND

AUDITORIUM

SAT 1 APR | 11.45AM & 2.15PM | 45 MINS | £5

Join our backyard scientist and discover what it takes to build a rocket fit for space. In this experiment-filled family-friendly adventure, delve into rocket science as we test materials, create explosions and prepare for launch. So strap-in, countdown, and blast-off for a show that's out of this world.

THE KIDS WHO FELL TO EARTH

AGES 3+
SHOW



NATIONAL MUSEUM OF SCOTLAND

AUDITORIUM

SUN 2 APR | 11.45AM & 2.15PM | 45 MINS | £5

Meet the heroic Zing and Zong from the planet Jaahrgon, who have just crash-landed on Earth. Can you help them to save their planet from becoming a desert by finding the secret of water? Using some of the coldest substances around and dramatic explosions, will they succeed on their mission?

Presented by Thunderbolts and Lightning

Supported by the Platforms for Creative Excellence [PlaCE] Programme, a partnership between the Scottish Government-through Creative Scotland - the City of Edinburgh Council and the Edinburgh Festivals



EXPERIMENTAL LIFE

NATIONAL MUSEUM OF SCOTLAND | GRAND GALLERY
MON 3–FRI 14 APR | 10AM–5PM | DROP-IN | FREE



Discover life in all its forms in our new experience *Experimental Life*. Science has expanded our understanding of the Tree of Life through experiments – now it's your turn!

Join us in the Grand Gallery for a deep dive into the unbelievable wonder and diversity of life. Investigate the different branches of the Tree of Life, including your place on it. Peer down the microscope and discover weird living things, look at what the future of life might be and get hands-on with how we experiment on our environment and ourselves.

Younger scientists can get their imagination hats on in our specially created *Little Lab*.

RELAXED OPENING SESSION

RP RELAXED PERFORMANCE | THU 13 APR | 9AM
3 HOURS | FREE BOOKING REQUIRED

Visit the Grand Gallery for an hour before the National Museum of Scotland is open to the public and enjoy our *Experimental Life* experience in a more relaxed and less crowded environment. This session is primarily for visitors with additional support needs or sensory needs who may prefer a more relaxed experience, plus their families, friends and carers. The Museum will open to the public from 10am for their regular Relaxed Morning with noisy interactives turned off where possible and a quiet space available.

Presented in partnership with the National Museum of Scotland

TREES OF LIFE

ALL AGES
INSTALLATION



NATIONAL MUSEUM OF SCOTLAND
GRAND GALLERY

SAT 1–SUN 16 APR | 10AM–5PM | DROP-IN | FREE

A special Festival commission for the Grand Gallery, this playable interactive installation explores Charles Darwin's revolutionary theory of evolution through natural selection. Created by Edinburgh-based **We Throw Switches** in collaboration with Berlin-based artist **Robin Baumgarten**, the installation generates tree-like forms that challenge us to understand through play that our part in the natural world is subject to the same controlling forces that govern all life.

Image: We Throw Switches
Supported by

lumo

THE JUNIOR READING EXPERIMENT

We love books, we love science... and we love combining the two! Our *Junior Reading Experiment* offers children the chance to meet different authors who will talk about the science in their books in a series of fun interactive events. This is the place where stories become experimental.

JOSEPH COELHO

AGES 5+
TALK



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM
TUE 4 APR | 2PM | 1 HOUR | £5

Waterstones Children's Laureate **Joseph Coelho** discusses his beautiful book *A Year of Nature Poems*, exploring how poetry and the environment can intertwine perfectly.

EMILY DODD

AGES 7+
TALK



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM
WED 5 APR | 2PM | 1 HOUR | £5

RP RELAXED PERFORMANCE | SEMINAR ROOM
WED 5 APR | 11AM | 30 MINS | £3

Join writer and CBeebies screenwriter **Emily Dodd** on a scientific story adventure! Emily will be chatting about her brilliant books, including *Surfing the Moon*: a story about neurodiversity, finding new friends and following your dreams. In the morning, Emily will be holding a relaxed session for ages 4+ based around her book *Tell Me About: The Human Body*.

ALASTAIR CHISHOLM

AGES 7+
TALK



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM
THU 6 APR | 2PM | 1 HOUR | £5

The fantastic **Alastair Chisholm** discusses his science fiction book *Orion Lost*, asking what you would do if things went wrong in space. Sound tricky? Don't worry – we'll have a scientific expert on-hand to make sure everyone gets back to Earth safely... hopefully!



DOCTOR WHO WORLDS OF WONDER

AGES 7+

EXHIBITION



NATIONAL MUSEUM OF SCOTLAND

SAT 1–SAT 16 APR | 10AM–5PM | [SEE NATIONAL MUSEUM OF SCOTLAND WEBSITE FOR PRICING](#)

Step inside the TARDIS to discover the science behind the global hit television series *Doctor Who* in this must-see exhibition. See amazing props from across the programme's history and learn how cutting-edge science influenced their design, from the 1960's TARDIS console to Cybermen and of course Daleks, alongside fan favourites such as K9 and the Face of Boe.

Presented by Sarner International under license from BBC Studios

AMAZING IMMUNOLOGY: BE A SCIENTIST, BUILD A VACCINE!

AGES 8+

WORKSHOP



NATIONAL MUSEUM OF SCOTLAND

LEARNING CENTRE LEVEL 4, STUDIO 2
TUE 4 APR | 11AM, 2PM & 3.30PM | 1 HOUR | **£5**

FREE FOR ACCOMPANYING ADULTS

Become an immunologist for a day! Build your own vaccine from 3D-printed components, 'vaccinate' a pet through a fun ball game, and explore how vaccines inform the immune system and protect against disease. Get hands-on with University of Edinburgh medical scientists and find out more about cutting-edge immunology research. All children must be accompanied by an adult.

Presented by The University of Edinburgh, Centre for Inflammation Research

DISCOVER OUR SCIENCE

AGES 5+

ACTIVITY



NATIONAL MUSEUM OF SCOTLAND

LEARNING CENTRE LEVEL 2, EVENT SPACE
TUE 4–FRI 7 & MON 10–THU 13 APR | 10.30AM–12.30PM & 1.30PM–4.30PM | DROP-IN | **FREE**

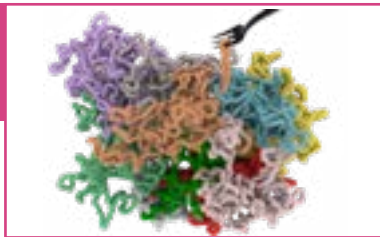
What's it like to work in a laboratory? How are scientists working to better understand our world? What mysteries are they trying to solve? Meet our scientists and discover what they're working on in our drop in space, and have a go yourself at being a scientist. We'll be joined by researchers in biology, physics, computing, maths, geosciences and medicine who will share what they're up to and why. Activities will be different in each week of the Festival! All children must be accompanied by an adult.

Presented by The University of Edinburgh

BECOME A DNA SCIENTIST

AGES 8+

WORKSHOP



NATIONAL MUSEUM OF SCOTLAND

LEARNING CENTRE LEVEL 4, STUDIO 2
WED 5 APR | 11AM, 2PM AND 3.30PM | 1 HOUR | **£5**

FREE FOR ACCOMPANYING ADULTS

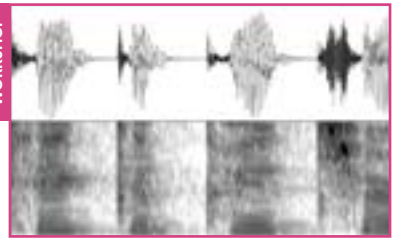
DNA is the molecule that stores all the information to make a living thing, plant animal or microbe! It determines what plants and animals look like and do. So what does it take to become a DNA scientist and what do they do? Meet physicists who will share their insights and guide you through hands-on activities that reveal how DNA makes your body unique. Discover how to study DNA in a lab and how it could be used to make new materials. All children must be accompanied by an adult.

Presented by The University of Edinburgh

WHAT'S IN A VOICE? TALKING WITH AND WITHOUT HEADS

AGES 5+

WORKSHOP



NATIONAL MUSEUM OF SCOTLAND

LEARNING CENTRE LEVEL 4, STUDIO 2
THU 6 APR | 11AM, 2PM & 3.30PM | 50 MINS | **£5**

FREE FOR ACCOMPANYING ADULTS

Have you ever wondered how your phone can understand what you're saying? How does it have a voice if it doesn't have a mouth? And why does it sometimes sound a bit odd? What makes your voice yours? Can you change your voice to sound like your sibling? Or your mum? What is it about your voice that tells other people that you're happy or sad or angry? And what does it look like in digital form? Come find out! All children must be accompanied by an adult.

Presented by The University of Edinburgh

DON'T STRESS ABOUT IT

AGES 8+

WORKSHOP



NATIONAL MUSEUM OF SCOTLAND

LEARNING CENTRE LEVEL 4, STUDIO 2
TUE 11 APR | 11AM, 2PM & 3.30PM | 50 MINS | **£5**

FREE FOR ACCOMPANYING ADULTS

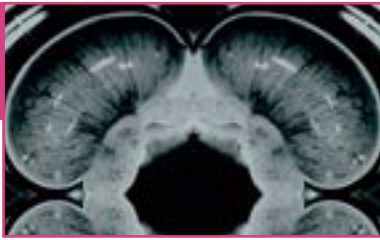
Why do we experience stress? For our ancestors it triggered that all important survival reaction in the face of a sabre-tooth tiger or other danger. It helps our body to get ready to fight or run from danger. We still get stressed today, but there are fewer predators around and too much stress can be bad for us. Join this workshop to find out how scientists look at stress levels using hair and how we can learn to avoid too much stress. All children must be accompanied by an adult.

Presented by The University of Edinburgh

READY, STEADY, GROW: THE LIFECYCLE OF A HUMAN BODY

AGES 8+

WORKSHOP



ALL AGES

SPECIAL EVENT

NATIONAL MUSEUM OF SCOTLAND

LEARNING CENTRE LEVEL 4, STUDIO 2
WED 12 APR | 11AM & 2PM | 45 MINS | £5

FREE FOR ACCOMPANYING ADULTS

Join scientists from the MRC Centre for Reproductive Health to learn about the challenges of creating a new life from successful fertilisation of an egg, to the growth and development of an embryo, and the creation of a healthy human. Examine real mouse embryos to find out how they develop. Use microscopes to discover how cells grow and change to become a healthy body. Finally, uncover what the different cells in your body do and what happens when cell growth goes wrong. All children must be accompanied by an adult.

Presented by The University of Edinburgh

THE GREAT MUSEUM SKETCHPEDITION

ALL AGES

WORKSHOP



NATIONAL MUSEUM OF SCOTLAND | MEET BY THE

EDINBURGH SCIENCE FESTIVAL INFO DESK
THU 13 APR | 11AM AND 2PM | 1 HOUR | £8

In this fun and interactive sketching tour and workshop, explore some of the National Museum of Scotland's galleries with children's book author and illustrator **John Fardell**. John will be sharing his enthusiasm for finding illustrated story inspiration from the museum's exciting exhibits, from amazing animals to intriguing machines, and will be giving us masses of tips and techniques from his own working methods for mixing reality with imagination, and developing draft doodles into picture stories and comic strips. Ideal for all ages and confidence levels! Children must be accompanied by an adult – accompanying adults do not require a ticket.

Presented by John Fardell



PRESENTS

EARTHFEST

NATIONAL MUSEUM OF SCOTLAND

SAT 15–SUN 16 APR | 10AM–5PM | DROP-IN



From prehistoric creatures to the cutting edge of climate science, *EarthFest* is a celebration of the world around us that offers the chance to learn more about our planet, the animals that live here and how we can take care of it.

Visit the National Museum of Scotland's Grand Gallery for some fun drop-in activities where you can build your own dinosaur skeleton from giant bones and create a sustainable utopia with *LEGO® Build the Change*. Enjoy *EarthFest* themed shows that are fun for the whole family – adventure through the world of sustainability in *Two in a Barrel*, and learn about animal intelligence in the interactive *Amazing Animals*.

Our *EarthFest Activity Zone* offers the chance to get hands-on with the world around us with fun Earth-themed activities.

EARTHFEST ACTIVITY ZONE

AGES 5+

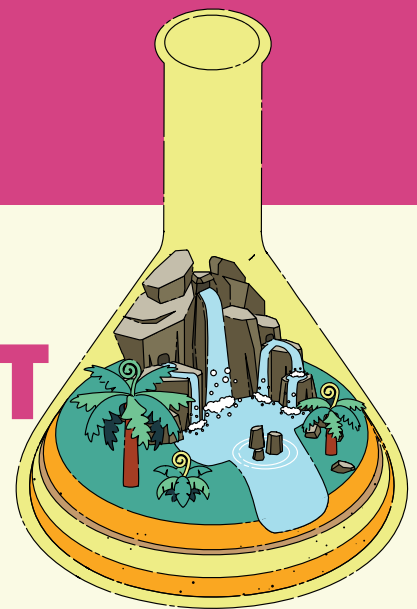
ACTIVITY



NATIONAL MUSEUM OF SCOTLAND

LEARNING CENTRE
SAT 15–SUN 16 APR | 10.15AM, 12.45PM & 3.15PM
90 MINS | £3

Join us in the *EarthFest Activity Zone*, which will be packed full of special guests and activities. Meet our friendly experts, learn about the science of conservation and dig deep into plant life. So whether you'd like to learn more about our brilliant planet, the animals which live on it or how we can build a lush future, *EarthFest* is ready to explore! Visit our website to find out more about the activities on offer.



TWO IN A BARREL

AGES 5+

SHOW



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

SAT 15 APR | **RP** RELAXED PERFORMANCE 11.45AM & 2.15PM | 45 MINS | £5

Join quirky best friends Riri and Moku as they find themselves stuck in a barrel sitting on top of an island of rubbish in the ocean. Laugh yourself silly while they discover treasures in the vast waste that surrounds them and make up their own world of adventure and imagination. But when danger arises and rubbish threatens to cover them altogether, what can Riri and Moku do? *Two in a Barrel* explores the consequences of our habits and the challenges of co-existing in an environment with limited resources. Please note the earlier session is a relaxed performance.

Ruxy Cantir and Sarah Rose Graber presented by Scissor Kick

AMAZING ANIMALS

AGES 5+

SHOW



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

SUN 16 APR | 11.45AM & 2.15PM | 45 MINS | £5

Are you smarter than a chimp? A crow? How about a slime mould? Discover how scientists explore animal intelligence, and see how you match up. You'll need to use all your creativity to beat the puzzles mastered by our animal cousins in this show with **Ginny Smith** from Braintastic! Science.

Presented by Braintastic! Science

Supported by the Platforms for Creative Excellence [PlaCE] Programme, a partnership between the Scottish Government-through Creative Scotland - the City of Edinburgh Council and the Edinburgh Festivals



Scottish Government
Riaghaltas na h-Alba
gov.scot

• EDINBURGH •
THE CITY OF EDINBURGH COUNCIL

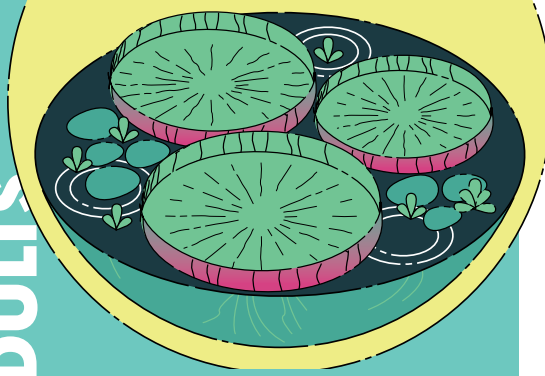


Build
THE Change

ALBA | CHRUTHACHAIL

NATIONAL MUSEUM OF SCOTLAND

ROYAL BOTANIC GARDEN EDINBURGH



The Royal Botanic Garden Edinburgh is a world renowned centre for plant science and education, aiming to explore, conserve and explain the world of plants for a better future.

OPEN SATURDAY 1–SUNDAY 16 APRIL, 10AM–6PM
JOHN HOPE GATEWAY, ARBORETUM PLACE, EH3 5NZ / EAST GATE, INVERLEITH ROW, EH3 5LR

Visit the Royal Botanic Garden Edinburgh for interactive family activities, exhibitions for all ages and discussions for adults and young people.



Royal Botanic Garden Edinburgh

SPRING TRAIL: PLANTS ON THE MOVE

AGES 3+



ROYAL BOTANIC GARDEN EDINBURGH

JOHN HOPE GATEWAY

SAT 1–SUN 16 APR | 10AM–4.30PM | DROP-IN

£3 PER BOOKLET

Spring is a busy time of year in the Garden. Follow our busy Botanics magpie as she moves around the garden building her nest. But did you know that plants can move too? As you go, discover how and why plants travel. Complete the trail and collect a yummy Easter treat.

Presented by Royal Botanic Garden Edinburgh

SHIPPING ROOTS



ROYAL BOTANIC GARDEN EDINBURGH

INVERLEITH HOUSE

SAT 1–SUN 16 APR | 10AM–5.30PM (LAST ENTRY 5.15PM)

DROP-IN | FREE

Plants have always traversed seas, intentionally and inadvertently. In *Shipping Roots*, **Keg de Souza** draws on RBGE's collections to tell tales of eucalyptus, prickly pear and 'alien' seeds, tracing legacies through the British Empire and specifically linking Australia, India and the UK. These stories relate to the artist's own cultural removal, drawn from her lived experiences as a person of Goan heritage whose ancestral lands were colonised, to living as a settler on unceded Gadigal land in Sydney.

Presented by Royal Botanic Garden Edinburgh

LIVING SOIL

ALL AGES



ROYAL BOTANIC GARDEN EDINBURGH

JOHN HOPE GATEWAY

SAT 1–SUN 16 APR | 10AM–5.15PM | DROP-IN | FREE

Artist **Natalie Taylor** celebrates the life beneath our feet, exploring our relationship with soil and the food production systems that rely on it. Over a four-month residency at the Royal Botanic Garden Edinburgh, Taylor has connected with a wide variety of staff and volunteers who care for our soil, from plant health scientists to community gardeners. She brings together her extensive research in this exhibition, making visible the vitality of soil not only through paintings, photographs and workshops, but also DNA analysis, poetic plates and a well-travelled cape.

Presented by Royal Botanic Garden Edinburgh

BSL GARDEN TOUR

ALL AGES



ROYAL BOTANIC GARDEN EDINBURGH

JOHN HOPE GATEWAY

SUN 2 APR | 2PM | 90 MINS | £5 | BSL

Discover the Royal Botanic Garden Edinburgh in British Sign Language (BSL) with guide **John Hay**. Explore *Spring in the Garden*, the diverse *Living Collection* and the inspiring stories and history of the Garden. The tour starts from the John Hope Gateway and will last no longer than 90 minutes.

Presented by Royal Botanic Garden Edinburgh

PLANT PRINTING WORKSHOP WITH TINA SCOPA

AGES 12+



ROYAL BOTANIC GARDEN EDINBURGH

JOHN HOPE GATEWAY

MON 3 APR | 10AM | 3 HOURS | £15

Join artist **Tina Scopa** for a relaxed morning unearthing the wonder of familiar plants and creating unique prints with them. The workshop will begin with a walk to look for the plants, noticing how and where they grow, whilst enjoying a stroll through the Botanics. You will then make simple prints onto paper in which the plants will 'draw' themselves, revealing their fascinating forms and pigments. No previous experience or specific skills are required for this workshop.

Presented by Royal Botanic Garden Edinburgh

MEET THE KEEPERS OF THE SOIL

ALL AGES



ROYAL BOTANIC GARDEN EDINBURGH

JOHN HOPE GATEWAY

TUE 4 APR | 11AM | 90 MINS | FREE BOOKING REQUIRED

Did you know that soil is alive? We are connected to soil in so many ways, but many are unaware of the vast variety of life that depends on it. Meet experts from across the Botanics and artist **Natalie Taylor** to discover more. This event is suitable for all ages but children should be accompanied by a responsible adult.

Presented by Royal Botanic Garden Edinburgh

LIVING SOIL: UNDER THE MICROSCOPE

AGES 5+
WORKSHOP



ROYAL BOTANIC GARDEN EDINBURGH

JOHN HOPE GATEWAY

WED 5 APR | 10.30AM, 11.45AM, 2PM & 3.15PM | 1 HOUR | £5

Ever wondered what life might lurk below ground? In this science and art workshop, you will find out what is happening under your feet, under a microscope. Soil is a living habitat for a rich diversity of interconnected micro creatures, bacteria and fungi. Artist **Natalie Taylor**, agroecologist **Jamie Sommerville** and scientist **Dr Keira Tucker** will lead you into this fascinating world through special microscopes. Come and see living creatures invisible to the naked eye in all their unbelievable detail at 1,000x magnification. You will also have a chance to draw and photograph what you see to make your own artworks.

Presented by Royal Botanic Garden Edinburgh

SPOTLIGHT TOUR: LIVING SOIL

ALL AGES
TOUR



ROYAL BOTANIC GARDEN EDINBURGH

JOHN HOPE GATEWAY

WED 5 APR | 2.30PM | 30 MINS | FREE BOOKING REQUIRED

Join us for a free tour of *Living Soil*, in which one of our volunteers delves into their favourite aspect of this fascinating exhibition. In *Living Soil*, artist **Natalie Taylor** celebrates the life beneath our feet, exploring our relationship with soil and the food production systems that rely on it. See soil come to life through Taylor's paintings, photographs, plates and a well-travelled cape.

Presented by Royal Botanic Garden Edinburgh

GUIDED WALK WITH MONICA WILDE

AGES 18+
WALK



YELLOWCRAIGS BEACH, EAST LOTHIAN

SAT 8 APR | 10AM | 2 HOURS | FREE BOOKING REQUIRED

Take a guided foray along the coastline and discover how to identify, harvest and prepare nutritious wild vegetables and tasty succulent seaweeds. Just as importantly – learn which species are deadly! The foraging walk will be led by forager and author **Monica 'Mo' Wilde**.

Presented by Royal Botanic Garden Edinburgh

ROCKPOOL GUDDLE

AGES 4+
ACTIVITY



PITTENWEEM WEST BRAES CAR PARK

WED 12 APR | 11.30AM | 2 HOURS

FREE BOOKING REQUIRED

Join the Royal Botanic Garden Edinburgh and Fife Coast and Countryside Trust to explore what creatures are left behind in rock pools when the tide goes out. Please dress for the weather – warm clothing and strong footwear advised.

Presented by Royal Botanic Garden Edinburgh

SPOTLIGHT TOUR: SHIPPING ROOTS

ALL AGES
TOUR



ROYAL BOTANIC GARDEN EDINBURGH

INVERLEITH HOUSE

WED 12 APR | 2.30PM | 30 MINS | FREE

BOOKING REQUIRED

Join us for a free tour of *Shipping Roots*, in which one of our volunteers shines a light on their favourite aspect of this intriguing exhibition. In *Shipping Roots*, artist **Keg de Souza** draws on RBGE's collections to tell tales of eucalyptus, prickly pear and 'alien' seeds, tracing legacies through the British Empire and specifically linking Australia, India and the UK.

Presented by Royal Botanic Garden Edinburgh

FUTURE-PROOFING GREENSPACES

ALL AGES
TRAIL



ONLINE

THU 13 6PM | SUN 16 APR 9AM | 1 HOUR

FREE BOOKING REQUIRED

Greenpaces that can cope with the rigours of more frequent extreme weather are important because contact with nature is so good for our health and well-being. Meeting this need is going to take a radical rethink of how we design and manage our greenspace and gardens. Join a tour of the Royal Botanic Garden Edinburgh to explore innovations, from porous paving to rain gardens, that solve problems and improve sustainability. The online experience will be delivered on 'The Botanics' channel at **heyo.com**. Create a free heyo account to book your place.

Presented by Royal Botanic Garden Edinburgh

FRANKENSTEIN'S PLANTS: THE REVENGE

AGES 8+
ACTIVITY



ROYAL BOTANIC GARDEN EDINBURGH

JOHN HOPE GATEWAY

FRI 14, SAT 15 & SUN 16 APR | 12PM–4PM | DROP-IN | FREE

Drop by the John Hope Gateway for the chance to design and make a real herbarium specimen to take home. Learn what data is important to collect and put on a specimen and how plants are named. Then once your specimen is ready, digitise it to an online catalogue so the world can view it.

Presented by Royal Botanic Garden Edinburgh

LICHENS FOR ALL GUIDED TOUR

AGES 14+
TOUR



ROYAL BOTANIC GARDEN EDINBURGH

JOHN HOPE GATEWAY

SAT 15 APR | 2PM | 90 MINS | FREE BOOKING REQUIRED

Explore a fascinating world hiding in plain sight and discover more about lichens on this guided walk at the Royal Botanic Garden Edinburgh. Getting close-up with these enigmatic and often unappreciated inhabitants of trees, rocks and even pavements, participants are promised an entertaining and enlightening excursion.

Presented by Royal Botanic Garden Edinburgh

SPRING IN THE VEGETABLE GARDEN

ALL AGES
ACTIVITY



ROYAL BOTANIC GARDEN EDINBURGH

DEMONSTRATION GARDEN

SUN 16 APR | 12PM–4PM | DROP-IN | FREE

Join our annual spring event to discover how to grow your own food, whatever space you have. Explore our vegetable plots, meet the gardeners and discover fun family friendly activities. From productive windowsill pots to allotments, there is something for everyone to dig into. This event is suitable for all ages, but children should be accompanied by a responsible adult.

Presented by Royal Botanic Garden Edinburgh

BSL TOUR: LIVING SOIL

ALL AGES
TOUR



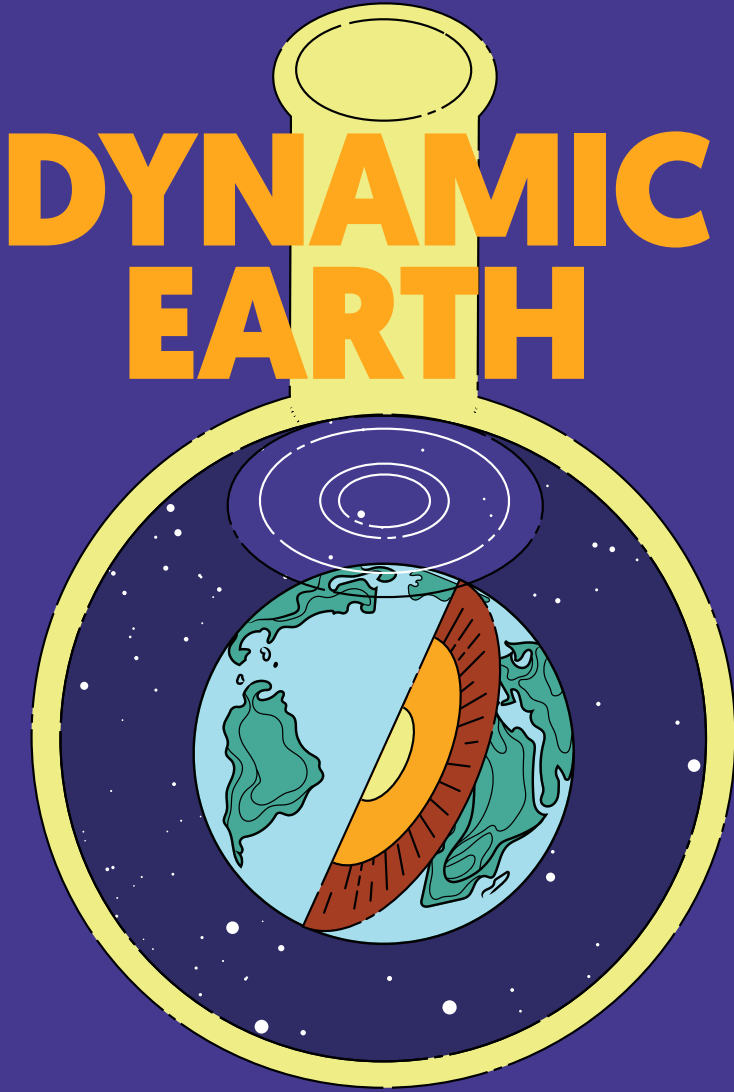
ROYAL BOTANIC GARDEN EDINBURGH

JOHN HOPE GATEWAY

SUN 16 APR | 2PM | 1 HOUR | £5 | BSL

Join us for a BSL tour of *Living Soil*, **Natalie Taylor's** exhibition that celebrates the life beneath our feet, exploring our relationship with soil and the food production systems that rely on it. This tour is in British Sign Language (BSL), led by **Trudi Collier**.

Presented by Royal Botanic Garden Edinburgh



Dynamic Earth is Edinburgh's world-class science centre and planetarium that tells the extraordinary story of planet Earth, from beginning to end. Through our exhibition and events, we open the eyes of all kinds of people about planet Earth – its origin, history, its place in the Universe, its present state and potential future. It features a series of interactive exhibits, state of the art technology and even a 4D encounter – you will feel the heat of a bubbling volcano, face the chill of polar ice and fly across the globe before crash landing in a tropical rainforest.

OPEN SATURDAY 1–SUNDAY 16 APRIL
 CHECK DYNAMIC EARTH WEBSITE FOR OPENING HOURS
 HOLYROOD ROAD, EDINBURGH, EH8 8AS

During the Science Festival, visit Dynamic Earth for a packed programme of events and experiences for families and adults alike.



THE DEEP OCEAN

AGE 5+
ACTIVITY



DYNAMIC EARTH | STRATOSPHERE

SAT 1–TUE 4 APR | 10AM–4PM | DROP-IN

FREE WITH ADMISSION TO DYNAMIC EARTH

Dive to the bottom of the sea and discover the amazing ways that the ocean is a vast and vital part of our planet! Build mountains and trenches with an AR sandbox and listen to the sounds of the deep, as well as getting crafty and creative with lots of fun family activities!

Children must be accompanied by an adult.

Presented by Dynamic Earth

WHAT A WONDERFUL WEBB

AGES 5+
EXHIBITION



DYNAMIC EARTH | OUTDOOR TERRACE

SAT 1–SUN 16 APR | 10AM–4PM | DROP-IN | **FREE**

Since launching on Christmas Day 2021, the James Webb Space Telescope has drawn back the curtain on the Universe's early galaxies, and in doing so has captured the imagination of people worldwide. Marvel at the amazing images it has taken in its first year in space in this awe-inspiring outdoor exhibition.

Presented by Dynamic Earth

USE YOUR VOICE

AGES 5+
EXHIBITION



DYNAMIC EARTH | STRATOSPHERE

SAT 1–SUN 16 APR | 10AM–4PM | DROP-IN

FREE WITH ADMISSION TO DYNAMIC EARTH

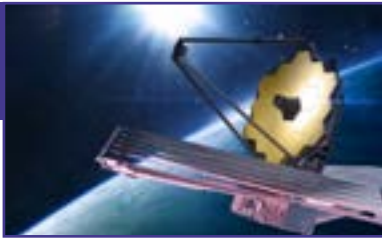
'No one is too small to make a difference.'

– Greta Thunberg. In this indoor mini-exhibition, learn about some of the young climate activists who are demanding action and inspiring hope for the future of the planet that is under threat from the effects of climate change.

Presented by Dynamic Earth

A NIGHT IN THE STARS

AGES 18+
LATELAB



DYNAMIC EARTH | STRATOSPHERE

TUE 4 APR | 7PM | 3 HOURS | **£15/£13**

The James Webb Space Telescope (JWST) is one of the biggest and most ambitious scientific missions of this century, letting us peer deeper into our Universe and sending back the most incredible photographs. Celebrate this groundbreaking scientific achievement with a celestial evening of art, circus, poetry, drop-in activities, planetarium shows and talks with some of the very people who made JWST possible. Ticket includes a welcome drink and planetarium show.

Presented by Edinburgh Science in association with Dynamic Earth

Supported by the Platforms for Creative Excellence [PlaCE] Programme, a partnership between the Scottish Government - through Creative Scotland - the City of Edinburgh Council and the Edinburgh Festivals

THE POWER OF THE PLANET SHOWCASE

AGES 5+
ACTIVITY



DYNAMIC EARTH | STRATOSPHERE

WED 5 APR | 10AM-4PM | DROP-IN

FREE WITH ADMISSION TO DYNAMIC EARTH

Join us at Dynamic Earth for a special event where you can meet Earth's real 'rock stars' - experts in the field of geology! Quiz experts from the British Geological Survey and find out through dazzling displays and fun hands-on activities what deep secrets of the Earth can be unlocked by rocks! All children must be accompanied by an adult.

Presented by Dynamic Earth and the British Geological Survey

ARTFUL EARTH

AGES 5+
WORKSHOP



MEET AT DYNAMIC EARTH

WED 5 APR | 10.30AM & 1.30PM | 90 MINS | **£8/£6**

Use all the colours of nature's palette in this fun and creative outdoor workshop! Do some topsy-turvy tree measuring and get crafty with the chance to pick, squish and paint with natural materials to make your own pieces of art and funky headbands! Children must be accompanied by an adult. All participants require a ticket.

Presented by Dynamic Earth

BIOMIMICRY

AGES 18+
LATELAB



DYNAMIC EARTH | PLANETARIUM

WED 5 APR | 7.30PM | 2 HOURS 30 MINS | **£15/£13**

How can nature help us with our trickiest challenges? Biomimicry is the practice of copying strategies found in nature, and has transformed our understanding of design, AI, art and much more. In this unique event, our special guests will explore all things biomimicry in the artificial rainforest and planetarium dome. **Dr Veronika Kapsali**, Professor of Materials and Design at the London School of Fashion will focus on design, while **Eve Poole** will consider the ethics of artificial minds and bodies. We'll also be joined by boredomresearch - AKA **Vicky Isley** and **Paul Smith** - who will showcase digital artworks inspired by the natural environment. Ticket includes a welcome drink.

Presented by Edinburgh Science in association with Dynamic Earth

Supported by

Developed with support from
Creative Scotland through the
Scottish Government's
Festivals Expo Fund



Scottish Government
Riaghthas na h-Alba
gov.scot

WILD WORLD

AGES 5+
ACTIVITY



DYNAMIC EARTH | STRATOSPHERE

THU 6 - MON 10 APR | 10AM-4PM | DROP-IN

FREE WITH ADMISSION TO DYNAMIC EARTH

Get ready to quake, rattle and roll as we dive into all kinds of different natural hazards and some of the weird and wonderful weather that occurs on planet Earth! Make your own tornado and see if you can design a building that will withstand an earthquake, alongside lots more exciting activities for all the family.

Children must be accompanied by an adult.

Presented by Dynamic Earth

WHATEVER THE WEATHER

AGES 1+
WORKSHOP



DYNAMIC EARTH | DISCOVERY BASES

THU 6 & THU 13 APR | 10.30AM & 1.30PM | 50 MINS | **£6**

FREE FOR ACCOMPANYING ADULT

In our Early Years programme *Whatever the Weather*, children and their grown-ups can enjoy a fun mix of storytelling, singing and crafting, all based around Earth's wonderful weather! As this programme is indoors, we'll be having fun come rain or shine, so you shouldn't need to pack your wellies but you will need your dancing shoes as we'll boogie on down to the water cycle dance, enjoy a fun interactive story, sing songs and get crafty! All children must be accompanied by an adult.

Presented by Dynamic Earth

OYSTERS IN EDINBURGH

AGES 18+
SPECIAL EVENT



DYNAMIC EARTH | OZONE

THU 6 APR | 7PM | 2 HOURS 30 MINS

£20 WITH ALCOHOL PAIRING/£10 WITH NON-ALCOHOL PAIRING

Join us for an evening of sociable science, with tasting and drinks included! With the potential for farmed shellfish to be a major sustainable food source, dive-in and explore how cutting-edge oyster research here in Edinburgh could help play a part in addressing the planetary emergency. Our panel of experts from The University of Edinburgh and Heriot-Watt University will explore the history of oysters in Edinburgh and their role in ecosystem restoration, with the event calling for a revolution in their status from a luxury foodstuff back to a nutritious and sustainable everyday food for people in Edinburgh and beyond. Includes oyster tasters and drinks as part of your ticket.

Presented by The University of Edinburgh and Heriot-Watt University in association with Dynamic Earth

PLANETARIUM LATE: DON'T PANIC

AGES 5+
SHOW



DYNAMIC EARTH | PLANETARIUM
THU 6–FRI 7 & THU 13–SAT 15 APR | 7.30PM | 45 MINS
£12/£10

Join us for a special evening performance of Dynamic Earth's brand-new, live planetarium show for 2023, *Don't Panic*. 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 state-of-the-art planetarium how there's actually a lot of cause for optimism as long as we remember – Don't Panic! Children must be accompanied by an adult. All participants require a ticket.
Presented by Dynamic Earth

DEFENDERS OF THE DEEP

AGES 9+
WORKSHOP



DYNAMIC EARTH | DISCOVERY BASES
FRI 7 & FRI 14 APR | 10.30AM & 1.30PM | 90 MINS | £8/£6

In Dynamic Earth's fantastic indoor family digital workshop, you can become one of the *Defenders of the Deep*, and combine digital skills with crafty creativity! Learn coding skills, explore ocean microplastics and make your own binary code bracelet in a fun family session. Children must be accompanied by an adult. All participants require a ticket.
Presented by Dynamic Earth

PLANET PROTECTORS

AGES 5+
ACTIVITY



DYNAMIC EARTH | STRATOSPHERE
TUE 11–SUN 16 APR | 10AM–4PM | DROP-IN
FREE WITH ADMISSION TO DYNAMIC EARTH

Earth is a beautiful and fragile place, and it's up to us to look after it! Join us at Dynamic Earth and learn about different ways you can become a planet protector, make your own mini bug hotel and natural plant pot, plus lots more exciting activities for the whole family! Children must be accompanied by an adult.
Presented by Dynamic Earth

HOLYROOD HABITATS

AGES 5+
WORKSHOP



DYNAMIC EARTH | STRATOSPHERE
WED 12 APR | 10.30AM & 1.30PM | 90 MINS | £8/£6

Head into the park to discover some of the amazing creatures that share our planet! With nets, pots and magnifying glasses at the ready, take part in a bug hunt; then see how many different types of animal homes you can spot before making your own bird feeder to take home! Children must be accompanied by an adult. All participants require a ticket.
Presented by Dynamic Earth

EMOTION AND THE CLIMATE EMERGENCY

AGES 18+
DISCUSSION



DYNAMIC EARTH | OZONE
THU 13 APR | 7PM | 90 MINS | £10/£8

What emotions do you feel when you consider our future on a warming planet? Are you paralysed by anxiety? Wracked with anger? Seized with hope? Do emotions like these stop us from thinking rationally about climate action, or are there times when emotion is just what we need to make us strive for a better world? Join ethics researcher, emotion theorist and sometime climate activist **Dr James Hutton** and Marine Scientist **Dr Sebastian Hennige** for an exploration of the impacts of climate change on marine environments and a deep dive into the highs and lows of our emotional responses to the climate crisis. Including original poetry readings from Scottish creative **Raymond Wilson**, and hosted by **Dr Hermione Cockburn**, Scientific Director of Dynamic Earth. Ticket includes a welcome drink on arrival.
Presented by the University of Edinburgh in association with Dynamic Earth

OUR PLANET, OUR HEALTH AND OUR FUTURE

AGES 18+
DISCUSSION

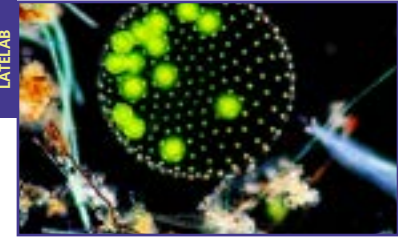


DYNAMIC EARTH | OZONE
FRI 14 APR | 7PM | 90 MINS | £10/£8

Join Edinburgh scientists – **Dr Mark Miller**, **Prof Richard Weller**, **Dr Rosemary Townsend**, **Dr Andrea Ford** and **Dr Shauna Golden** – and healthcare workers for an evening exploring the interaction of environment and climate with our health from the womb throughout our life course. We will explore how everyone can be a citizen scientist and engage with research that can help us to understand, adapt to and shape our environment for a healthy community and planet. Join us for lightning talks, interactive stalls and a welcome drink included as part of your ticket.
Presented by The University of Edinburgh in association with Dynamic Earth

WHEN FISH BEGIN TO CRAWL

AGES 18+
LATELAB



DYNAMIC EARTH | BIOSPHERE
SAT 15 APR | 7.30PM | 2 HOURS 30 MINS | £12/£10

World premiere of a new work by composer **Jim Sutherland** in collaboration with BAFTA-winning filmmaker **Morag Mckinnon**. The work is a meditation on the climate crisis and humanity's relationship with nature, embodying an urgent yet hopeful dialogue between art and science, spanning geological deep time and present-day eco-emergencies. Accompanied by a pre-recorded original score by Evolution Orchestra, a 21-piece ensemble conducted by **Matthew Rooke**. The artists will be joined by Science Director of the Global Soil Health Programme **Prof John Crawford**, University of Glasgow, for a post-screening Q&A. Ticket includes a welcome drink.
Presented by Edinburgh Science in association with Dynamic Earth
Supported by

Developed with support from Creative Scotland through the Scottish Government's Festivals Expo Fund  Scottish Government Rìghaltnas na h-Alba gov.scot

EDINBURGH ZOO



For a great day out this Easter, you can't beat Edinburgh Zoo. Their world-class attractions and extensive animal collection will provide you and your family with memories to last a lifetime!



EVENTS FOR FAMILIES AND ADULTS

EGGSPERIMENTAL BREAKFAST

ALL AGES
TOUR



EDINBURGH ZOO

SAT 1–SUN 2 & SAT 15–SUN 16 APR | 9AM | 2 HOURS
SEE WEBSITE FOR PRICING

Join our zoo rangers for an exclusive pre-opening tour learning all about the latest research and discoveries going on at the Royal Zoological Society of Scotland! Breakfast will then be served in our restaurant followed by crafts and experiments for all the family to enjoy. Meet your guide at the top of the Edinburgh Zoo car park.

Presented by the Royal Zoological Society of Scotland

PRIMATES POP-UP

ALL AGES
ACTIVITY



EDINBURGH ZOO | LIVING LINKS

THU 6–FRI 7 APR | 11AM–3PM | DROP-IN
FREE WITH ZOO ADMISSION

Learn about the evolutionary origins of curiosity, insight and innovation of our resident primates with our University of St Andrews research partners. Visit our pop-up hub where our researchers will inspire with recent experiments and interactive activities!

Presented by the Royal Zoological Society of Scotland

GIN AND GENETICS

AGES 18+
SPECIAL EVENT



EDINBURGH ZOO

SAT 8 APR | 6PM | 2 HOURS

£38 (INCLUDES ZOO DAY TICKET)

Discover the process behind gin distillation with the chance to sample different tipples all while learning about the science behind our tastebuds! Hear from gin experts and our very own 'mixologist' from the RZSS WildGenes lab who will inspire you with the latest conservation work we are doing around the globe! This ticket also includes entry into the zoo for the day.

Presented by the Royal Zoological Society of Scotland

AROUND EDINBURGH



As well as in our core venues, you'll find Science Festival events all over the city and in some of Scotland's picturesque coastal towns. The ultimate science days out – right on your doorstep!

Our trails are outdoors, please ensure you have appropriate wet weather gear for the Edinburgh weather including a warm coat and waterproof shoes.

ALL AGES
EXHIBITION

CHERISH: SHAPING OUR PLANET



PORTOBELLO PROMENADE

THU 23 MAR–THU 4 MAY | DAILY | FREE

Take an incredible journey around the world and explore how human activity is shaping planet Earth. This large-scale, outdoor photography exhibition looks at our impact on the landscapes that support all life and considers how we can cherish its wonders and tread more lightly upon this Earth.

Humans have always left traces of our lives on the world. From the well-worn tracks of desire paths, to the development of agriculture and aquaculture, to our search for minerals, these traces can be dramatic and, in some cases, irreversible. From the deepest seabed to the outer layers of our atmosphere, our impact can be found. This look at the Anthropocene – the recent period of history during which humans have significantly impacted on Earth's geology and ecosystems – explores how modern practices are changing our landscapes and threatening our very existence.

2022 saw the United Nations announce that our global population has now reached a staggering 8 billion people and continues to rise. And our desire to consume – energy, food, water, minerals – grows, too. Alongside this story is another tale: of innovation, of revolution and of a growing global awareness of the critical need for action to protect these environments. Our will to preserve is rising up against our will to consume. We are all custodians of our precious planet and its wonders. This exhibition contains a global message of hope and a call to action: here is our planet. Cherish it.

Images: George Steinmetz

EDINBURGH'S HIDDEN CHEMISTRY

ALL AGES
TRAIL



THE OLD MEDICAL SCHOOL, TEVIOT PLACE

SAT 1–SUN 16 APR | 1 HOUR | SELF-GUIDED | FREE

The history of chemistry cannot be told without mention of The University of Edinburgh. As the subject developed over the centuries, discoveries, revelations and analyses have taken place all over the City of Edinburgh. We have selected just a few of the chemistry highlights within Edinburgh's history and invite you to explore our great city and find out more about the chemistry discoveries which took place here! This self-guided walking tour was created by The School of Chemistry at the University of Edinburgh. Visit the Science Festival website for the trail map.

Presented by The University of Edinburgh

NEUROTRAIL

ALL AGES
TRAIL



QUEEN STREET

SAT 1–SUN 16 APR | 1 HOUR | SELF-GUIDED | FREE

How does your brain change during the course of your life? Consider this question as you discover Edinburgh's neuroscience landmarks past and present in this walking tour. This self-guided walking tour was created by Edinburgh Neuroscience at the University of Edinburgh. Visit the Science Festival website for the trail map.

Presented by The University of Edinburgh

DISCOVER EDINBURGH'S MATHEMATICAL HISTORY

ALL AGES
TRAIL



ROYAL MILE | MEET AT THE WITCHES WELL

SAT 15 & SUN 16 APR | 2PM | 90 MINS | £2

Hear and see the mathematical delights hidden in Edinburgh's city centre. Along the way uncover some of the secret history of Edinburgh, discover some highlights of mathematics developed over the past two thousand years and try your hand at some intriguing puzzles and games. Playfully acquaint yourself with exciting notions of logic, geometry and cryptography. The tour has been designed to be of interest to families, adults, mathematicians and non-mathematicians alike. Join us and have history be brought to life by some of the University of Edinburgh's mathematicians. A self-guided version is also available on the Science Festival website throughout the Festival.

Presented by The University of Edinburgh and the International Centre for Mathematical Sciences

READING THE TREES

ALL AGES
WALK



MEADOWS

SAT 1 APR 11AM | SUN 16 APR 2PM | 90 MINS

FREE BOOKING REQUIRED

Connect with trees on this walk through Edinburgh's Meadows. Bring together art and science as we share what we know about diversity in trees from different perspectives, drawing on literature and the sciences to consider the challenges trees face in the future. Meet outside Soderberg café on Middle Meadow Walk.

Presented by University of Glasgow, UK Centre for Ecology and Hydrology and Robert Gordon University

POUNDS AND PENCE – THE SCIENCE IN YOUR POCKET: COINS

AGES 8+
WORKSHOP



MUSEUM ON THE MOUND

SAT 1 APR 1PM & 2PM | TUE 4, WED 5 & THU 6 APR 10AM, 11AM & 12PM | 50 MINS | FREE BOOKING REQUIRED

RP RELAXED PERFORMANCE | MON 3 APR | 10AM

Using a wealth of fascinating material from the Royal Mint, explore the properties of the metals in our coins, learn how they are made and discover what makes our pound coins the most difficult to copy in the world. You'll even have the opportunity to strike your very own coin! An adapted version of this event can be enjoyed as a relaxed workshop at 10am on Mon 3 Apr.

Presented by Museum on the Mound and the Royal Mint Museum

POUNDS AND PENCE – THE SCIENCE IN YOUR POCKET: BANKNOTES

AGES 8+
WORKSHOP



MUSEUM ON THE MOUND

SAT 1 APR 3PM & 4PM | TUE 4, WED 5 & THU 6 APR 2PM, 3PM & 4PM | 50 MINS | FREE BOOKING REQUIRED

RP RELAXED PERFORMANCE | MON 3 APR | 11AM

Using rarely seen specimens from the Bank of Scotland, examine the complexity of banknote design using microscopes, infrared and ultra-violet lights to explore the security features on banknotes and pit polymer against paper to test for strength and water-resistance. An adapted version of this event can be enjoyed as a relaxed workshop at 11am on Mon 3 Apr.

Presented by Museum on the Mound

MICROART: LOOK AND DRAW

AGES 14+
WORKSHOP



THE BAYES CENTRE

WED 5 APR | 7PM | 90 MINS | £10/£8

What does the leg of a beetle look like up close? Or the body of a parasitic worm? Would you dare to look closer? Join biologists and artists for a creative encounter with science. Use different types of microscopes to look at samples from research and nature. Then, express your scientific observations creatively with the help of an artist. Find out about the amazing life of Burying Beetles, and discover uninvited guests inside the European Shag seabird. What will really capture your interest? Have a closer look and draw!

Presented by The University of Edinburgh

EXPLORE BEACH PEBBLES: WINDOWS TO THE WORLD

ALL AGES
ACTIVITY



BEACHES AROUND EDINBURGH | SEE OUR WEBSITE

FOR DETAILS

THU 6, FRI 7, MON 10 & TUE 11 | 10AM, 11AM & 12PM

1 HOUR | FREE BOOKING REQUIRED

Come and explore beach pebbles and find out about the stories hidden in every stone. We'll discover an amazing variety of different types of pebble, find out where they come from and what they tell us about Scotland's geology. We'll also explore why the beach looks the way it does, and how it might change in the next few decades with climate change. Please dress for the weather. Warm clothing and strong footwear advised. Events take place close to access points but you may need to walk up to 100 metres on sand or pebbles and negotiate ramps or steps. Children must be accompanied by an adult and all participants require a ticket.

Presented by the Edinburgh Geological Society

ROCKPOOL RAMBLE

AGES 5+
ACTIVITY



MEET AT THE SCOTTISH SEABIRD CENTRE

FRI 7–MON 10 APR | 10.30AM | 90 MINS | £10/£7.50

Discover the amazing wildlife that can be found in the rockpools of North Berwick with the expert team from the Scottish Seabird Centre! Enjoy a brief talk followed by a guided ramble along the nearby rocky shore. From scuttling crabs to beautiful anemones and seaweeds, you'll be amazed by the variety of life and the different adaptations of the creatures you meet. Participants will have the opportunity to investigate different areas of the shore, hear interesting facts, and receive advice on how to handle creatures safely and respectfully. No former experience required. Participants are required to wear suitable outdoor footwear and clothing for their time on the shore, and those under 16 must be accompanied by an adult.

Presented by the Scottish Seabird Centre

GUIDED WALK WITH MONICA WILDE

AGES 18+
WALK



YELLOWCRAIGS BEACH, EAST LOTHIAN

SAT 8 APR | 10AM | 2 HOURS | FREE BOOKING REQUIRED

Take a guided foray along the coastline and discover how to identify, harvest and prepare nutritious wild vegetables and tasty succulent seaweeds. Just as importantly – learn which species are deadly! The foraging walk will be led by forager and author **Monica 'Mo' Wilde**.

Presented by Royal Botanic Garden Edinburgh

TEST FLIGHT

ALL AGES
ACTIVITY



NATIONAL MUSEUM OF FLIGHT | CONCORDE HANGAR

MON 10–FRI 14 APR | 11AM–4PM | DROP-IN | FREE WITH

ENTRY TO THE NATIONAL MUSEUM OF FLIGHT

Nearly 120 years ago the Wright Brothers flew the first powered and controlled aeroplane. Take inspiration from our Civil Aviation collection and make your own flying machine.

Presented by National Museums Scotland

ROCKPOOL GUDDLE

AGES 4+
ACTIVITY



PITTENWEEM WEST BRAES CAR PARK

WED 12 APR | 11.30AM | 2 HOURS

FREE BOOKING REQUIRED

Join the Royal Botanic Garden Edinburgh and Fife Coast and Countryside Trust to explore what creatures are left behind in rock pools when the tide goes out. Please dress for the weather – warm clothing and strong footwear advised.

Presented by Royal Botanic Garden Edinburgh

HOLYROOD'S HERBAL HISTORIES

ALL AGES
ACTIVITY



PHYSIC GARDEN, OUTSIDE THE PALACE OF HOLYROODHOUSE

THU 13–SAT 15 APR | 10AM–3PM | DROP-IN (TOURS 10AM, 11AM, 2PM & 3PM) | FREE

Explore fantastic flowers and hundreds of years of herbs in a Physic Garden just outside of the gates of the Palace of Holyroodhouse. Take a guided tour to hear tales of an experimental garden used as a living medical store cupboard by seventeenth-century doctors. Delve deeper into the curious world of medieval medicine in our activity table and explore centuries of cures through textures, techniques and smells. Tours are allocated on a first come, first served basis but drop-in any time for activities.

Presented by the Palace of Holyroodhouse, Royal Collection Trust

BAYES CENTRE TOUR: MEET THE ROBOTS

AGES 5+
TOUR



THE BAYES CENTRE

FRI 14 APR | 9AM, 10AM, 11AM, 2PM, 3PM & 4PM
1 HOUR | £2 PER ADULT/UNDER 18 FREE

The Edinburgh Centre for Robotics are involved in world leading research on robots for human assistance. Visit the laboratory to discover their cutting-edge robotic research, meet humanoid robots and learn the ways robots can assist humans. Children must be accompanied by an adult.

Presented by The University of Edinburgh and The Alan Turing Institute

OPERATION SABOTAGE

AGES 14+
ACTIVITY



NATIONAL MUSEUM OF FLIGHT

FRI 14 & SAT 15 APR | 10.30AM, 12PM, 2PM & 3.30PM |
UP TO 1 HOUR | BOOKING REQUIRED | PRICES VARY,

PLEASE SEE NATIONAL MUSEUM OF FLIGHT WEBSITE

The year is 1942 and you are stationed at the RAF base at East Fortune. There has been an act of sabotage and one of the aircraft is unknowingly carrying live ordnance with instructions to bomb the town. Solve a series of fiendish puzzles to call off the flight and save North Berwick! *Operation Sabotage* is an escape room experience for 4–8 people that lasts up to an hour. Working together as a team, you must race against the clock to decipher the identity of the saboteur before it's too late. Ticket price includes entry to the museum.

Presented by National Museums Scotland



SCIENCE FESTIVAL *Delegates*

The *Edinburgh Science Delegate Programme* is back for 2023, and is perfect for anyone interested in improving their public engagement skills, developing industry contacts and getting a behind-the-scenes look at our flagship venues and events.

Over the course of three days (11–13 April) we'll be running workshops and training sessions on topics such as *Developing Hands-On Activities*, *Communicating with Confidence* and *Tackling Tricky Topics*.

Delegates will have the opportunity to meet Festival Directors and programmers and network at our relaxed Science Salon. Delegates can also enjoy free and discounted entry to a broad range of Science Festival events.

For more information, visit sciencefestival.co.uk/delegate-programme.

Supported by the Platforms for Creative Excellence [PlaCE] Programme, a partnership between the Scottish Government-through Creative Scotland-the City of Edinburgh Council and the Edinburgh Festivals



Save the Date!

Edinburgh International
Children's Festival
27 May – 4 June 2023



Ruth Armstrong

What to expect at the Festival:

- ★ 14 visually stunning theatre, circus and dance shows
- ★ A range of themes to stimulate young minds
- ★ Festival opens with a Free day of performances at the National Museum

Programme announced and tickets on sale from 22 March

www.imagine.org.uk

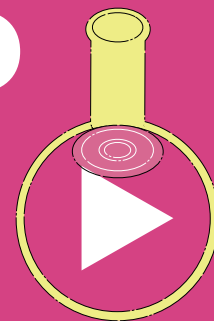


EDSCIFEST ON DEMAND

Enjoy the Edinburgh Science Festival online – no matter where you are! We believe there should be no barriers to science and that it should be accessible to everyone, so these downloadable trails, workshops and videos can be enjoyed throughout the duration of the Science Festival free of charge.

To explore our *On Demand* content, visit sciencefestival.co.uk/on-demand.

Subscribe to the @EdSciFest YouTube channel for year-round science videos.



EVENTS FOR FAMILIES AND ADULTS

THE KIDS WHO FELL TO EARTH – ONLINE



SHOW

ONLINE

FRI 7–MON 10 APR | ON DEMAND | FREE

A digital opportunity for you to meet the heroic Zing and Zong from the planet Jaahrgon through your computer, tablet or mobile! Can you help them to save their planet from becoming a desert by finding the secret of water? Using some of the coldest substances around and dramatic explosions, will they succeed on their mission?

Presented by Thunderbolts and Lightning

Supported by the Platforms for Creative Excellence [PlaCE] Programme, a partnership between the Scottish Government - through Creative Scotland - the City of Edinburgh Council and the Edinburgh Festivals

MAKE AT HOME WORKSHOPS



WORKSHOP

ONLINE

ON DEMAND | FREE

Get crafty and try out our series of *Make at Home Workshops*. Led by our fantastic science communicators through pre-recorded videos, these easy-to-follow workshops can be done with items found in the house at any time – perfect for a rainy day!

DISCUSSIONS ON DEMAND



TALK

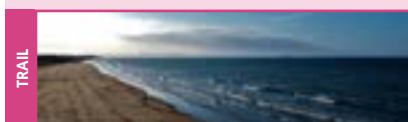
ONLINE

ON DEMAND | FREE

Prepare to be inspired as we bring back some of our favourite talks and panel discussions from previous Science Festivals. Explore a wide range of STEM topics – whenever works for you!

VIRTUAL AND SELF GUIDED TRAILS

SENSORY SEASHORE SCRAPBOOK



TRAIL

A COAST OF YOUR CHOICE

ON DEMAND | FREE

The *Sensory Seashore Scrapbook* is a self-led trail exploring life on our coasts and how to experience it using all of our senses. Through a series of activities for the whole family, experience the sea in a more sensational way and use our guide to note down what you find.

OUR COLOURFUL PARKS



TRAIL

A PARK OF YOUR CHOICE

ON DEMAND | FREE

Parks are really important for our health and the health of the city – but it's not just green you can find there! Our parks are full of colourful plants, animals and other creatures just waiting to be found. Our Colourful Parks is a self-led tour around our urban green spaces for all the family.

| | |
|------|--|
| P.20 | EDINBURGH'S HIDDEN CHEMISTRY SAT 1–SUN 16 APR THE OLD MEDICAL SCHOOL, TEVIOT PLACE |
| P.20 | NEUROTRAIL SAT 1–SUN 16 APR QUEEN STREET |
| P.21 | DISCOVER EDINBURGH'S MATHEMATICAL HISTORY SAT 1–SUN 16 APR ROYAL MILE |
| P.15 | FUTURE-PROOFING GREENSPACES THU 13 APR 6PM SUN 16 9AM |

LET'S EXPERIMENT AT HOME

The excitement of experimentation is for everyone! Explore the wonder and diversity of life wherever you are with our downloadable guides inspired by our *Experimental Life* exhibition. From experiments using everyday items, to contributing to real-world research, these activities will allow you to discover new things about the life around you.

Visit sciencefestival.co.uk/experiment-at-home during the Festival to take part.

Developed with support from Creative Scotland through the Scottish Government's Festivals Expo Fund



Scottish Government
Riaghaltas na h-Alba
gov.scot



PRO-TEENS

ARE YOU AGED BETWEEN 14–18?

Explore the wonders of science, technology, engineering and mathematics for less – use promo code **PROTEENS** to get £5 tickets to our *Big Idea* events at the National Museum of Scotland and The Bayes Centre.

FOR £5 TICKETS USE PROMO CODE
PROTEENS



THIS EASTER
STEP INSIDE
A WORLD
OF PURE
IMAGINATION

**EDINBURGH
PLAYHOUSE**

WED 29 MAR - SAT 15 APR 2023
[ATGTICKETS.COM/Edinburgh](https://atgtickets.com/Edinburgh)*

*Fees apply

BIG IDEAS



Our programme of discussions will inspire ideas, inspire debate and most importantly inspire hope. Join our experts as they share their *Big Ideas* on a range of science, technology, engineering and mathematics topics – understand how we can work towards building a sustainable future, learn how we can work in partnership with robots and explore the intricacies of sexual and gender identity.

BIG IDEAS FOR A SMALL PRICE

Save £2 per ticket on our *Big Ideas* events at the National Museum of Scotland and The Bayes Centre if booked before Sunday 5 March. Call the box office or book online using the code **EARLYBIRD23**



If you are happiest with your nose in a good science book, don't miss our series of author talks. Look for this icon alongside event listings.

If you have a little bookworm in the family check out the *Junior Reading Experiment* on **pg.11**.

SUNDAY 2 APRIL

TAM DALYELL PRIZE LECTURE

DISCUSSION



OLD COLLEGE | PLAYFAIR LIBRARY

SUN 2 APR | 6PM | 90 MINS | **FREE BOOKING REQUIRED**

Neurodivergent children and young people such as those who are autistic, have ADHD or Dyspraxia/DCD, experience difficulties in thinking, learning, relationships and mental health. **Dr Sinead Rhodes** is determined to find ways to facilitate understanding and support for them, and has been awarded the University of Edinburgh's Tam Dalyell Prize for Excellence in Engaging the Public with Science in recognition of her work to include lived experience and the needs of neurodivergent young people in her research. In this prize lecture, she will share how she has developed the EPIC intervention to facilitate better understanding and tailored support for neurodivergent young people.

Presented by The University of Edinburgh

MONDAY 3 APRIL

IF SCIENCE IS TO SAVE US

TALK



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

MON 3 APR | 6PM | 1 HOUR | **£10/£8**

Astronomer Royal and former President of the Royal Society, **Lord Martin Rees** is an eminent voice in the debate about climate change and the future of humanity. At no other point in history have we had such advanced knowledge and technology to determine the future of our planet. In this talk, Lord Rees takes a radical look at the scientific establishment and shows how science is not just for scientists but can make a better world – for everyone.

Presented by Polity Books

THE MATHEMATICS SHOWDOWN

DISCUSSION



THE BAYES CENTRE

MON 3 APR | 7PM | 90 MINS | **£10/£8**

Five mathematicians – five ideas to change the world! We pulled five young mathematical researchers from the University of Edinburgh and Heriot-Watt University out of their comfort zone and set them up with local stand-up comedian **Susan Morrison**. Who can explain their research best? Who can turn complicated calculations into comedy gold? And most importantly: whose proof will change the world? You decide at the Edinburgh Mathematics Showdown!

Presented by The University of Edinburgh

AVOCADO ANXIETY

TALK



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

MON 3 APR | 8PM | 1 HOUR | £10/£8

Author **Louise Gray** explores the environmental impact of our favourite fruits and vegetables. What is the carbon footprint of green beans from Kenya? How much water is used to grow an avocado? Should we only eat strawberries in season? How do we cut food waste from wonky carrots? Is foraged food better for you? The answers are often complex and require all of us to consider how we can help avert the climate crisis through what we eat. Hear the stories behind your Fairtrade bananas and organic potatoes and taste some of the recipes made from foods that may provide the answer.

Presented by Bloomsbury Publishing

TUESDAY 4 APRIL

FUELLING THE FUTURE: THE PROMISE OF PLASMA FUSION

DISCUSSION

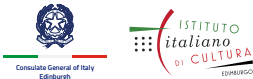


NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

TUE 4 APR | 6PM | 75 MINS | £10/£8

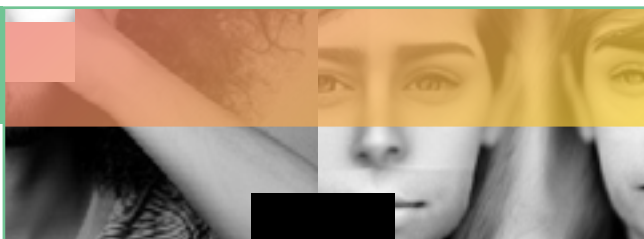
It has long been accepted that plasma fusion could be one of the best ways of tackling the challenge of net-zero electricity production, and major milestones achieved over the past 18 months have brought this dream closer to becoming a reality. Join **Dr Fernanda Rimini**, **Dr Piergiorgio Sonato** and **Dr Luca Antonelli** as they share fascinating insights into the work of the Joint European Torus, explore the challenges of commercialising plasma fusion reactors and illustrate the Italian contribution to this research.

Supported by



MAKING AND DEEPPAKING THE NEWS

DISCUSSION



THE BAYES CENTRE

TUE 4 APR | 6PM | 2 HOURS | £10/£8

Calling all deepfake detectives – synthetic media is making it hard for us to tell fact from fiction and fueling mis- and dis-information. Come along to this interactive session and help our news and media experts from the BBC grapple with the disruptive impact of AI on journalism and explore opportunities to make this technology work in the public interest.

Presented by The University of Edinburgh

BEING YOU

DISCUSSION



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

TUE 4 APR | 8PM | 1 HOUR | £10/£8

Neurologist and author **Jules Montague** interviews neuroscientist **Prof Anil Seth** about his radical new theory of consciousness that challenges our understanding of perception and reality. Join them to plumb the hidden depths of your mind through Seth's latest book, *Being You* which was a Financial Times and Guardian 2021 Science Book of the Year, and an *Economist* and *New Statesman* 2021 Book of the Year.

WEDNESDAY 5 APRIL

THE SEAWEED REVOLUTION

TALK



KING KHALID BUILDING

WED 5 APR | 6PM | 1 HOUR | £10/£8

By 2050 our planet will have around ten billion people to feed. With over 800 million of us already living in hunger, the world needs answers – and fast. Emerging research has shown that seaweed could be the safe and sustainable solution to the world's looming agricultural crisis – as well as addressing climate change, tackling poverty and contributing to a growing ocean economy. This often overlooked algae can contribute to better food sources, replace plastics and fertilisers, boost medical innovations, mitigate global warming, repair biodiversity and support economies in coastal communities. Join internationally renowned sustainability expert **Vincent Doumeizel**, author of *The Seaweed Revolution*, as he takes us on an extraordinary journey of our history with seaweed and how the seaweed revolution might just be a new hope for tomorrow.

Supported by



THE SKY IS FOR EVERYONE

DISCUSSION



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

WED 5 APR | 6PM | 1 HOUR | £10/£8

Join us for a triumphant showcase of the women who broke down barriers and changed the face of modern astronomy. With a panel of world-leading female astronomers including discoverer of pulsars **Prof Dame Jocelyn Bell Burnell**, former Chief Scientific Adviser at the Foreign & Commonwealth Office **Prof Carole Mundell** and Professor of Astronomy at the University of Cambridge **Prof Cathie Clarke**. This extraordinary discussion brings together voices of the inspirational and determined women who flung the doors wide open.

Presented by Princeton University Press

WEDNESDAY 5 APRIL CONTINUED

THE N MOST IMPORTANT SYMBOLS IN MATHEMATICS

DISCUSSION



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

WED 5 APR | 8PM | 1 HOUR | £10/£8

Join mathematician **Katie Steckles** on a journey through the huge array of beautiful symbols and notation we use to communicate mathematical ideas. Learn about the history of some familiar characters and find out how truly ingenious notation can be – helping us to communicate and understand complex and abstract structures and even driving new mathematical discoveries. Bring a pen and paper if you want to join in!

THURSDAY 6 APRIL

UNICORNS AND RHINOS: ANIMAL MEDICINE

DISCUSSION



ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

THU 6 & WED 12 APR | 6.30PM | 1 HOUR | £6

Take a behind-the-scenes tour of the Royal College of Physicians of Edinburgh and discover the central role that animals have played in the history of medicine. Explore the history of diagnosing patients based on which mammal they looked like as well as the medicinal uses of beavers, herrings and 'unicorn' horns. The College's fascinating collections of medical objects and early texts will show the multifaceted relationship between animals and medicine from the 1400s to the present day.

Presented by the Royal College of Physicians of Edinburgh

A CLIMATE OF CHANGE: NICOLA STURGEON IN CONVERSATION WITH AMBASSADOR PATRICIA ESPINOSA

DISCUSSION



CHECK WEBSITE FOR VENUE AND TIME DETAILS

THU 6 APR | £10/£8

Climate change is the greatest challenge of our time, but alongside the challenges come valuable opportunities to work together to transform our world for the better. Navigating this complex web of choices and possibilities requires a truly global perspective, and **Patricia Espinosa** is perfectly placed to provide just this. As Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC, 2016–2022), she has been instrumental in efforts to make the Paris Agreement a reality and led crucial climate conversations at COP26 in Glasgow. Ambassador Espinosa joins Scotland's First Minister, **Nicola Sturgeon**, for a fascinating conversation exploring Scottish, and global, efforts to face up to our climate emergency and guide us through the vital transition to a cleaner, fairer and sustainable future for everyone.

Presented by Edinburgh Science Climate, part of the Edinburgh Science Festival family

FRIDAY 7 APRIL

YOU'VE BEEN PLAYED

TALK



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

FRI 7 APR | 6PM | 1 HOUR | £10/£8 | BSL INTERPRETED

From the creator of one of the most popular gamified apps in the world, *Zombies, Run!*, gaming industry insider **Adrian Hon** explores how schools, corporations and governments' use of games is affecting modern society, from our love life to our workplace. BSL interpretation by **Shaurna Dickson**.

Presented by Ruth Killick Publicity

THE SCIENCE BEHIND HAPPY COUPLES

SHOW



THE BAYES CENTRE

FRI 7 APR | 6PM | 1 HOUR | £10/£8

Have you ever wished you made different choices when communicating with your partner? Do you offer sage-like advice on your friend's relationships? Are you a better agony aunt than the advice column? Put your wisdom to the test and navigate a relationship from choppy waters to sailing off into the sunset! In this audience-interactive, choose-your-own-adventure-style show you'll guide our players' intimate relationship by voting as a group. At key decision points in the story, the audience will vote on what the couple should do next. Can you guide them to a happily ever after? **Dr Sarah Stanton** from the University of Edinburgh will talk about the science behind the choices made by the couple in the film and discuss how that science might apply to your interactions with your own intimate partner(s). A smartphone is recommended but not required.

Presented by The University of Edinburgh

BITCH: A REVOLUTIONARY GUIDE

TALK



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

FRI 7 APR | 8PM | 1 HOUR | £10/£8

What does it mean to be female? Mother, carer, the weaker sex? Think again. Zoologist and National Geographic Explorer **Lucy Cooke** presents the revolutionary research into sex, gender and evolution that is redefining the female of the species. The bitches in *Bitch* overturn outdated binary expectations of bodies, brains, biology and behaviour. This event will change how you think – about sex, sexual identity and sexuality in animals and also the very forces that shape evolution.

Presented by Penguin Random House

TUESDAY 11 APRIL

📖 A VERY SHORT INTRODUCTION TO BACTERIA

TALK



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

TUE 11 APR | 1PM | 1 HOUR | £10/£8

Explore the nature of bacteria in disease and the environment and take a look at their evolution. Join **Prof Sebastian G. B. Amyes** to examine the ethical implications of synthetic bacteria, the evolving technologies used to combat antibiotics resistance, and the role bacteria play in the evolutionary development of humans.

Presented by Oxford University Press

📖 SCIENCE FICTION: VOYAGE TO THE EDGE OF IMAGINATION

DISCUSSION



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

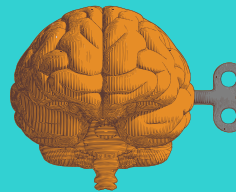
TUE 11 APR | 6PM | 1 HOUR | £10/£8

From dystopias, aliens, time travel and apocalypses, science fiction is a tool for exploring our world, our future, and the human condition. Writer and curator **Dr Glyn Morgan** asks what challenges will humanity have to face in the future and ultimately, what makes us human? Hosted by National Museum of Scotland curator **Sophie Goggins**.

Presented by Thames and Hudson

SENTIENT ROBOTS: FRIENDS OR MONSTERS

DISCUSSION



THE BAYES CENTRE

TUE 11 APR | 7PM | 90 MINS | £10/£8

Robots are doing a larger and larger share of our work. They are no longer confined to laboratories and factories, but are entering our homes and public spaces. This has been made possible by the steady improvement of their capabilities over more than sixty years. It is timely to ask whether the technical cleverness of robotic machines will enable them to become sentient: Can robots experience feelings and sensations? Can robots feel pain? Do they need our protection? Or are we the ones to be protected?

Presented by The University of Edinburgh

📖 THE YOU, THE V AND THE W

DISCUSSION



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

TUE 11 APR | 8PM | 1 HOUR | £10/£8

An exploration of the vulva, the womb and how they create all of us. Join founder of the Vagina Museum **Florence Schechter** and NHS midwife and bestselling author **Leah Hazard** on an adventure exploring the anatomy and celebrating the power of our bodies. This is a stigma-smashing, myth-busting perspective on gynaecological health and sexuality. Chaired by author and journalist **Zoe Cormier**.

Presented by Penguin Random House and Little, Brown Book Group

BIG IDEAS

BUILDING A SUSTAINABLE FESTIVAL



We work hard to be as sustainable as we possibly can and look to improve our performance each year. Many of the materials, sets and artwork that you will see in our Festival are re-deployed year-on-year to eliminate waste. Where we create new exhibitions, we use recycled materials or materials that we know can be repurposed and this very programme is printed on FSC accredited paper from responsible sources. We have implemented internal policies that discourage internal flights by both staff and our Festival guests and encourage travel by bike and bus throughout the Festival.

Read more about our role as a leader in sustainability and commitment to inspiring positive climate action at sciencefestival.co.uk/sustainability.

Climate and sustainability forms a strong theme throughout our Festival programme – here are just a few highlights:

| | |
|------|--|
| P.27 | AVOCADO ANXIETY MON 3 APR 8PM NATIONAL MUSEUM OF SCOTLAND |
| P.27 | THE SEAWEED REVOLUTION WED 6 APR 6PM KING KHALID BUILDING |
| P.36 | TASTING CLIMATE CHANGE TUE 11 APR 7PM GHILLIE DHU |
| P.30 | GENERATION SHARE WED 12 APR 6PM NATIONAL MUSEUM OF SCOTLAND |
| P.32 | EMOTION AND THE CLIMATE EMERGENCY THU 13 APR 7PM DYNAMIC EARTH |
| P.32 | HOW TO SAVE A PLANET IN CRISIS FRI 14 APR 6PM NATIONAL MUSEUM OF SCOTLAND |
| P.33 | OUR PLANET, OUR HEALTH AND OUR FUTURE FRI 14 APR 7PM DYNAMIC EARTH |



SUPPORT OUR CHARITABLE WORK

We are one of Scotland's largest science, technology, engineering and mathematics (STEM) education charities, bringing the wonder of science to thousands of children and communities for over 30 years.

Every year we open the doors of the Edinburgh Science Festival for free to local school pupils and community groups, who would otherwise miss out on these unique experiences. Our year-round education programmes bring immersive science activities directly into classrooms across Scotland, inspiring pupils with the idea that STEM is for everyone.

We can only do this with the support of people like you. **Please consider adding a donation to your booking to help us continue our vital work.**



BE A CATALYST – CREATE CHANGE

Our Catalysts are a dedicated group of individuals who share our vision to inspire, encourage and challenge people of all ages and backgrounds to explore and understand the world around them.

WILL YOU JOIN US?

Make a financial gift today to support our year round work sharing science outwith the Festival to inspire the next generation of innovators and change makers.

For more information on becoming a Catalyst, seeing behind the scenes of our projects, invitation to special events and how your contribution will create change visit sciencefestival.co.uk/catalysts

Email hannahs@scifest.co.uk to speak to Hannah Schlesinger, Director of Development and Marketing.

WITH THANKS TO OUR CATALYSTS

Benefactors

Cunmont Trust
David Milne
The Nimar Charitable Trust

Innovators

Joe Faraday
Ron Inglis
Ian Wall

Patrons

Janet Brown
Brendan Dick
Edina Trust
Simon Gage
Richard Marshall
Chris Masters
Mairi Mickel
Ian Ritchie

And all those who wish to remain anonymous

WEDNESDAY 12 APRIL

KNITTING WITH DATA

DISCUSSION



THE BAYES CENTRE | ROOM G.03

WED 12 APR | 2PM | 1 HOUR | FREE BOOKING REQUIRED

What would you do with data? Knit a piece of art? Meet three people who decided to do just that. Join artists and makers **Jeni Allison**, **Rebecca Kaye** and **Madeleine Shepherd** in conversation with **Nicola Osborne** from Creative Informatics as they share their unique stories of combing data science with art. You'll even have the chance to handle some examples of their beautiful knitted textiles.

Presented by Knot Unknot and The University of Edinburgh

CAN ROBOTS CARE?

DISCUSSION



THE BAYES CENTRE

KNOWLEDGE CAFÉ | 4PM | 2 HOURS | DROP-IN, DISCUSSION TICKET REQUIRED

DISCUSSION | 6PM | 2 HOURS | £10/£8

Robots have escaped the factory floors they were originally designed for. Today we're likely to encounter them in diverse settings, including increasingly health and care. Join us to discuss the latest developments in assistive and care robots and discuss what's at stake for people working in and relying on health and care services. We'll talk about how robots might reshape care practices, from surgery to rehabilitation to managing chronic conditions. Attendees are also invited to join an informal 'knowledge café' beforehand to meet the panellists and start the conversation.

Presented by The University of Edinburgh

GENERATION SHARE

DISCUSSION



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

WED 12 APR | 6PM | 1 HOUR | £10/£8

In a world where resources are limited, how can we learn to share effectively? Join changemaker **Benita Matofska**, as she talks about how sharing and circular economies can radically change lives. As the founder of the global network The People Who Share and author of *Generation Share*, Benita's visit to Edinburgh promises to be an inspirational exploration of trust and fairness in the face of the climate crisis and global change.

Supported by



EDINBURGH MEDAL ADDRESS: FOOD POLITICS – WHY IT MATTERS NOW

SPECIAL EVENT



CITY CHAMBERS | COUNCIL CHAMBER

WED 12 APR | 7PM | 1 HOUR | £12/£10

How can food be fairer?

Each year, *The Edinburgh Medal* is presented to those who have made a significant contribution to the wellbeing and understanding of humanity through the sciences. This year's recipient is **Prof Marion Nestle**, a pioneer in the study of food politics, along with wider issues of nutrition and public health.

Food politics explores the wide-reaching implications of what and how we eat – from production and marketing, to the possibilities of fairer distribution of resources. Through her research, advocacy and public engagement work, Prof Nestle has contributed knowledge and inspiration to the field.

An award-winning writer, Prof Nestle is Paulette Goddard Professor of Nutrition, Food Studies, and Public Health, Emerita, at New York University. Alongside her PhD from the University of California, Berkeley, she has been awarded honorary degrees from Transylvania University in Kentucky and the City University of New York's Macaulay Honors College. Prof Nestle has authored 15 books about food policy and politics. Her memoir, *Slow Cooked: An Unexpected Life in Food Politics* tracks a fascinating career which has placed the importance of nutrition at its heart.

We are delighted that Prof Nestle will be joining us at this year's Festival, with an address which examines *Food Politics: Why It Matters Now*.

This year's oration will be delivered by **Prof Timothy Lang**, Emeritus Professor of Food Policy at the University of London, and the Vote of Thanks will be delivered by **Prof Annie Anderson**.

Supported by



PREVIOUS RECIPIENTS

| | |
|---------------------------------|--------------------------------|
| 2022 Dr Gladys Kalema-Zikusoka | 2005 Prof Colin Blakemore |
| 2021 Prof Heidi Larson | 2004 Prof Steven Rose |
| 2020 Sunita Narain | 2003 Prof Wang Sung |
| 2019 Christiana Figueres | 2002 Dr Lise Kingo |
| 2018 Prof Cordelia Fine | 2001 Sir John Sulston |
| 2017 Prof Peter Piot | 2000 Prof Lynn Margulis |
| 2016 Kevin Govender and the IAU | 1999 Prof Jocelyn Bell Burnell |
| 2015 Mary Midgley | 1998 Sir David Attenborough |
| 2014 Prof Mary Abukutsa-Onyango | 1997 Prof Amartya Sen |
| 2013 Prof Peter Higgs and CERN | 1996 Prof Richard Levins |
| 2012 Dr James Hansen | 1995 Sir John Crofton |
| 2011 Prof Carl Djerassi | 1994 Prof Manuel Pattarroya |
| 2010 Sir Alex Jefferies | 1993 Prof Wangari Maathai |
| 2009 Prof Jonathan Beckwith | 1992 Prof Heinz Wolff |
| 2008 Prof Chris Rapley | 1991 Prof Jane Goodall |
| 2007 Dr Richard Horton | 1990 Prof Stephen J Gould |
| 2006 Prof James Lovelock | 1989 Prof Abdus Salam |

THE LONG SHOT

DISCUSSION



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

WED 12 APR | 8PM | 1 HOUR | £10/£8

An unmissable insider view into how the coordinators of the UK's COVID-19 vaccination programme raced to beat the odds and delivered the scientific miracle we all waited for. With **Dame Kate Bingham**, Chair of the UK Vaccine Taskforce 2020 and **Dr Tim Hames**, writer, consultant and senior advisor. Hosted by broadcaster **Laura Foster**, Health, Science and Environment Reporter at the BBC.

Presented by Oneworld Publications

THURSDAY 13 APRIL

WONDERDOG

TALK



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

THU 13 APR | 1PM | 1 HOUR | £10/£8 | BSL INTERPRETED

What do dogs really think of us? Do their emotions feel like our own? How do they understand the world? Author and Zoologist **Jules Howard** presents a love letter to science celebrating how we came to know what dogs are really capable of. BSL interpretation by **Dr Kyra Pollitt**.

Presented by Jules Howard

THE KEYS TO KINDNESS

DISCUSSION



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

THU 13 APR | 6PM | 1 HOUR | £10/£8

BBC Radio 4's voice of psychology **Claudia Hammond** takes us on an eye-opening tour of kindness: what it is, how we can build it into our lives and why we should practise it. Drawing on the latest research from psychology and neuroscience, Hammond presents the enormous benefits that kindness has for our mental health and wellbeing. Chaired by **Pennie Latin-Stuart**, broadcaster and presenter of BBC radio series *Brainwaves*.

Presented by Canongate Books

THURSDAY 13 APRIL CONTINUED

EMOTION AND THE CLIMATE EMERGENCY

AGES 18+
DISCUSSION

DYNAMIC EARTH | OZONE

THU 13 APR | 7PM | 90 MINS | £10/£8

What emotions do you feel when you consider our future on a warming planet? Are you paralysed by anxiety? Wracked with anger? Seized with hope? Do emotions like these stop us from thinking rationally about climate action, or are there times when emotion is just what we need to make us strive for a better world? Join ethics researcher, emotion theorist and sometime climate activist **Dr James Hutton** and marine scientist **Dr Sebastian Hennige** for an exploration of the impacts of climate change on marine environments and a deep dive into the highs and lows of our emotional responses to the climate crisis. Including original poetry readings from Scottish Creative, **Raymond Wilson**, and hosted by **Dr Hermione Cockburn**, Scientific Director of Dynamic Earth. Ticket includes a welcome drink on arrival.

Presented by The University of Edinburgh in association with Dynamic Earth

GAMES ROBOTS PLAY

TALK



THE BAYES CENTRE

THU 13 APR | 7PM | 90 MINS | £10/£8

Human-competitive game playing agents have been an important part of the development of the field of Artificial Intelligence. How do they now help us address the challenges of robot learning in a human-centered world? Join **Prof Ram Ramamoorthy** to discuss autonomy, interaction and emerging questions around how to make these safe and trustworthy.

Presented by The University of Edinburgh

GAUDÍ'S SAGRADA FAMÍLIA IN THE MAKING

DISCUSSION



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

THU 13 APR | 8PM | 90 MINS | £10/£8

The construction of La Sagrada Família, one of Barcelona's most famous landmarks, began in 1882 and still continues today. The design was the lifetime work of Antoni Gaudí who developed the design of the Basilica over a 43 year period, until his death in 1926. **Tristram Carfrae** has been assisting Sagrada Família Foundation and 2BMGF with expert structural engineering advice for the current phases of work, and in this talk he will explain the main engineering challenges facing the last 40% of the Basilica. He will describe how state-of-the-art understanding of structural engineering and digital fabrication has enabled Gaudí's remarkable creative genius to be realised using methods he could not have imagined possible.

Supported by

ARUP

FRIDAY 14 APRIL

A CRACK IN EVERYTHING

TALK



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

FRI 14 APR | 1PM | 1 HOUR | £10/£8

Einstein believed black holes were too ridiculous to exist. We now know there is a supermassive black hole in the heart of every galaxy, including our own Milky Way. Why are they there? What can they tell us about the origins of our universe? Join writer and broadcaster **Marcus Chown** to have your mind blown by these impossible monstrosities.

Presented by Marcus Chown

LET'S EXPERIMENT: THE PROFESSORS

TALK



CHANGE AND RENEWAL | 50 GEORGE SQUARE | LECTURE THEATRE G.03

HEAD AND HEART | DOORWAY 3, TEVIOT PLACE | ANATOMY LECTURE THEATRE

FRI 14 APR | 4PM | 90 MINS | FREE BOOKING REQUIRED

Behind every technological development or new way of treating disease is someone who has explored innovative ideas. They've tried new things, moved city or country to learn new research techniques or access world leading facilities, and all the time kept pushing the boundaries of their research in medicine and veterinary medicine. *Let's Experiment: The Professors* is two simultaneous talks titled *Change and Renewal* and *Head and Heart*. Choose your topic and hear the stories of the experiments that have shaped the research, and the lives, of these University of Edinburgh professors. Visit our website to see the lineup for each event.

Presented by The University of Edinburgh

HOW TO SAVE A PLANET IN CRISIS

DISCUSSION



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

FRI 14 APR | 6PM | 1 HOUR | £10/£8

Join brilliant young mind **Siddarth Shrikanth** as he explores solutions to the twin crises of biodiversity loss and climate change. In discussion with SSE Energy Solutions' **David Holmes**, Shrikanth introduces the pioneers of the nature-positive revolution. Taking research from his upcoming book *The Case for Nature*, he shows us how valuing our planet's natural capital will motivate us to work in our self-interest and can pull us back from the brink of environmental catastrophe.

Presented by Duckworth Books

Supported by

OUR PLANET, OUR HEALTH AND OUR FUTURE

AGES 18+
DISCUSSION



DYNAMIC EARTH | OZONE
FRI 14 APR | 7PM | 90 MINS | £10/£8

Join Edinburgh scientists – **Dr Mark Miller, Prof Richard Weller, Dr Rosemary Townsend, Dr Andrea Ford** and **Dr Shauna Golden** – and healthcare workers for an evening exploring the interaction of environment and climate with our health from the womb throughout our life course. We will explore how everyone can be a citizen scientist and engage with research that can help us to understand, adapt to and shape our environment for a healthy community and planet. Join us for lightning talks, interactive stalls and a welcome drink included as part of your ticket.

Presented by The University of Edinburgh in association with Dynamic Earth

PSYCHOLOGY OF LEARNING: HUMANS VS MACHINES

DISCUSSION



THE BAYES CENTRE
FRI 14 APR | 7PM | 1 HOUR | £10/£8

Scientists have developed machine learning systems that outperform humans on any given task. However, unlike humans, these systems fail spectacularly when generalising between old and new tasks. Can machines be taught to learn like humans? Can they apply reason and context from their experience of the world? Join **Dr Alex Doumas** to discover if the future of machine learning is a bit more human.

Presented by The University of Edinburgh

DEMISTIFYING BISEXUALITY

DISCUSSION



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM
FRI 14 APR | 8PM | 1 HOUR | £10/£8 | **BSL INTERPRETED**

Psychologist **Dr Julia Shaw** explores all that we know about the world's largest sexual minority. From the hunt for a bi gene, to the relationship between bisexuality and consensual non-monogamy, to bisexuality in animals, this event challenges us to think deeper about who we are and how we love. BSL interpretation by **Nicole Murdoch**.

Presented by Canongate Books

SUNDAY 16 APRIL

SCIENCE FESTIVAL CHURCH SERVICE

SPECIAL EVENT



ST GILES' CATHEDRAL
SUN 16 APR | 11AM | 1 HOUR | FREE

The Lord Provost of Edinburgh and the Minister of St Giles' Cathedral warmly invite you to the annual church service celebrating the Edinburgh Science Festival. **Dr Nick Spencer**, Senior Fellow at Theos and presenter of Radio 4's *The Secret History of Science and Religion*, is this year's featured speaker.

women in

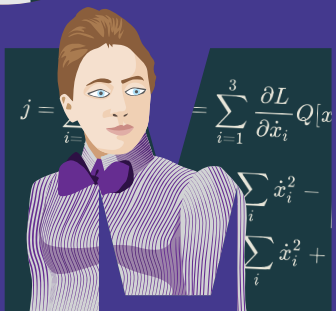


Lise Meitner

Annie Easley



Stephanie Kwolek



Emmy Noether

Edinburgh Science Festival is proud to champion the achievements of women in science and science communication, and strive for a balance representation of gender in our programming. We continue to make a dedicated effort to increase the number of women who participate in the Science Festival, and we are delighted that 60% of the artists and speakers taking part in this year's Festival identify as women.

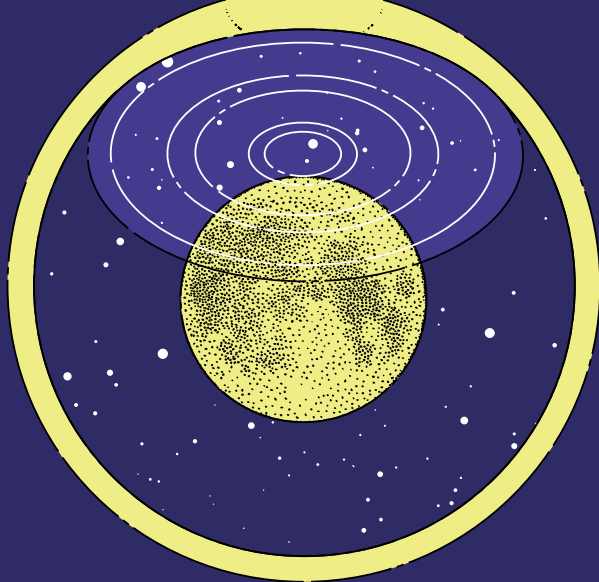
The Edinburgh Science Festival has always strived to promote, encourage and inspire the next generation of women into science, technology, engineering and mathematics (STEM) fields by showing them the amazing women already in STEM via a series of panel events, exhibitions and discussions. Here are just some of the highlights from this year's programme:

- P.27** THE SKY IS FOR EVERYONE
WED 5 APR | 6PM | NATIONAL MUSEUM OF SCOTLAND
- P.28** THE N MOST IMPORTANT SYMBOLS IN MATHEMATICS
WED 5 APR | 8PM | NATIONAL MUSEUM OF SCOTLAND
- P.28** BITCH: A REVOLUTIONARY GUIDE
FRI 7 APR | 8PM | NATIONAL MUSEUM OF SCOTLAND
- P.29** THE YOU, THE V AND THE W
TUE 11 APR | 8PM | NATIONAL MUSEUM OF SCOTLAND
- P.31** THE LONG SHOT
WED 12 APR | 8PM | NATIONAL MUSEUM OF SCOTLAND

Supported by



SOCIABLE SCIENCE



If you enjoy your science with some flair, then you'll love our sociable science evenings!

Enjoy an evening of captivating live theatre with *Swell*, put your myth-busting skills to the test at *Stranger Than Fiction: The Panel Show* and learn about the effects climate change is having on wine production in *Tasting Climate Change*, a wine tasting with a twist!

Enjoy the wonders of science in these adult-only events – after all, life's more fun when you experiment!



Our *LateLab* strand of events has been created by the Edinburgh Science team as a series of unique experiences that combine STEM with the Arts. Highlighting the work of Scottish creatives, these events redefine the idea of a science night out.

LateLab events are supported by

Developed with support from Creative Scotland through the Scottish Government's Festivals Expo Fund



Scottish Government
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gov.scot

Supported by the Platforms for Creative Excellence [PlaCE] Programme, a partnership between the Scottish Government through Creative Scotland - the City of Edinburgh Council and the Edinburgh Festivals.



ALBA | CHRUTHACHAIL

SCIENCE FESTIVAL LATE

AGES 18+
LATELAB



CITY ART CENTRE

THU 30 MAR | 7.30PM | 2 HOURS 30 MINS | £12/£10

Don't let the kids hog all the hands-on science fun! Join us as we turn our flagship family venue into the ultimate science party for one night only. Dance the robot with a robot, sidle up to the *Blood Bar* or get down digging up a dinosaur in this night just for the grown-ups!

Supported by Expo Fund



SWELL

AGES 18+
LATELAB



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

SAT 1 APR | 6PM | 2 HOURS | £12/£10

AD AUDIO DESCRIBED

In 2014, residents of Fairbourne were watching their local news when they found out they were to be Britain's first climate refugees. Their town was set to be decommissioned and depopulated by 2054. Housing prices dropped overnight, insurance disappeared and life savings were lost in the chaos. *Swell* follows the story of two siblings caught in the purgatory of a fictional but analogous town, ready to be abandoned. This evening of captivating live theatre is followed by a discussion and Q&A with **Anna Beswick** of Sniffer and *Swell* director **Tom Foreman** as we explore the changing coastline of the UK and the future of our climate refugees. Audio description is by **Caroline Jaquet**.

Supported by the Platforms for Creative Excellence [PlaCE] Programme, a partnership between the Scottish Government through Creative Scotland - the City of Edinburgh Council and the Edinburgh Festivals.

STRANGER THAN FICTION: THE PANEL GAME

AGES 18+
SPECIAL EVENT



THE VOODOO ROOMS | BALLROOM

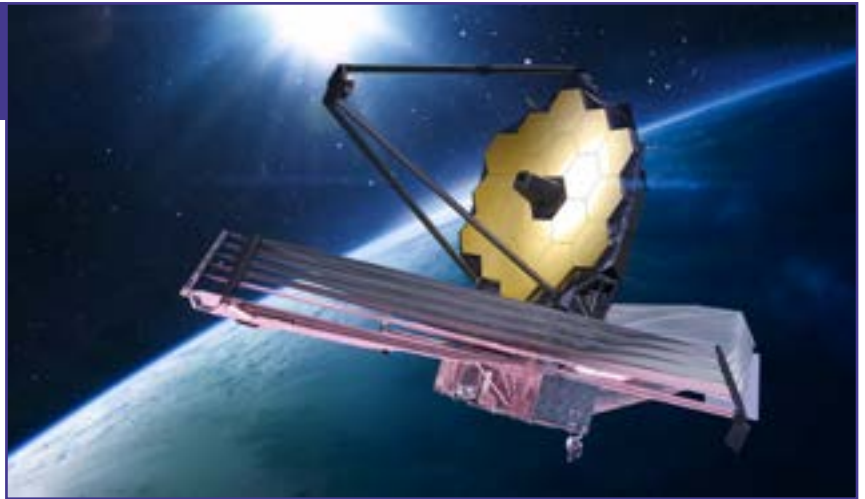
SUN 2 APR | 7PM | 1 HOUR | £10/£8

A panel game with a difference - it's the panel vs the audience. The Science Festival's most popular lie-busting show is back! A motley team of non-fiction writers will try to pull the wool over your eyes by sneaking some surprising facts amongst ridiculous fiction and persistent scientific myth. Each round has a different flavour, ranging from short fictional speeches to quick fire truth-or-fiction. Get ready to make some noise!

Presented by Stranger Than Fiction

A NIGHT IN THE STARS

AGES 18+
LATELAB



DYNAMIC EARTH | STRATOSPHERE

TUE 4 APR | 7PM | 3 HOURS | £15/£13

The James Webb Space Telescope (JWST) is one of the biggest and most ambitious scientific missions of this century, letting us peer deeper into our universe and sending back the most incredible photographs. Celebrate this groundbreaking scientific achievement with a celestial evening of art, circus, poetry, drop-in activities, planetarium shows and talks with some of the very people who made JWST possible. Ticket includes a welcome drink and planetarium show.

Presented by Edinburgh Science in association with Dynamic Earth

Supported by the Platforms for Creative Excellence [PlaCE] Programme, a partnership between the Scottish Government through Creative Scotland - the City of Edinburgh Council and the Edinburgh Festivals.

BIOMIMICRY

AGES 18+
LATELAB



DYNAMIC EARTH | PLANETARIUM

WED 5 APR | 7PM | 2 HOURS 30 MINS | £15/£13

How can nature help us with our trickiest challenges? Biomimicry is the practice of copying strategies found in nature, and has transformed our understanding of design, AI, art and much more. In this unique event, our special guests will explore all things biomimicry in the artificial rainforest and planetarium dome. **Dr Veronika Kapsali**, Professor of Materials and Design at the London School of Fashion will focus on design, while **Eve Poole** will consider the ethics of artificial minds and bodies. We'll also be joined by boredomresearch - AKA **Vicky Isley** and **Paul Smith** - who will showcase digital artworks inspired by the natural environment. Ticket includes a welcome drink.

Presented by Edinburgh Science in association with Dynamic Earth

Supported by Expo Fund

OYSTERS IN EDINBURGH

AGES 18+
SPECIAL EVENT



DYNAMIC EARTH | OZONE

THU 6 APR | 7PM | 2 HOURS 30 MINS | £20 WITH

ALCOHOL PAIRING/£10 WITH NON-ALCOHOL PAIRING

Join us for an evening of sociable science, with tasting and drinks included! With the potential for farmed shellfish to be a major sustainable food source, dive-in and explore how cutting-edge oyster research here in Edinburgh could help play a part in addressing the planetary emergency. Our panel of experts from The University of Edinburgh and Heriot-Watt University will explore the history of oysters in Edinburgh and their role in ecosystem restoration, with the event calling for a revolution in their status from a luxury foodstuff back to a nutritious and sustainable everyday food for people in Edinburgh and beyond. Includes oyster tasters and drinks as part of your ticket.

Presented by The University of Edinburgh and Heriot-Watt University in association with Dynamic Earth

EXPERIMENTAL LIFE AFTER HOURS

AGES 18+
LATELAB



NATIONAL MUSEUM OF SCOTLAND | GRAND GALLERY

THU 6 APR | 7PM | 3 HOURS | £12/£10

Join us at the National Museum of Scotland after hours to celebrate the wonder and diversity of life in an event that is only for grown-ups. Experiments aren't just for the kids – try out all the interactive experiments from our *Experimental Life* experience as you explore the weird and wonderful *Trees of Life*, while enjoying a DJ, bar, talks, live demonstrations and hands-on activities from across this year's Festival.

Presented in partnership with the National Museum of Scotland
Supported by Expo Fund

GIN AND GENETICS

AGES 18+
SPECIAL EVENT



EDINBURGH ZOO

SAT 8 APR | 6PM | 2 HOURS

£38 (INCLUDES ZOO DAY TICKET)

Discover the process behind gin distillation with the chance to sample different tipples all while learning about the science behind our tastebuds! Hear from gin experts and our very own 'mixologist' from the RZSS WildGenes lab who will inspire you with the latest conservation work we are doing around the globe!

Presented by the Royal Zoological Society of Scotland

ROBOTS AFTER DARK

AGES 18+
LATELAB



HERIOT-WATT UNIVERSITY CAMPUS

NATIONAL ROBOTARIUM

SAT 15 APR | 7PM | 3 HOURS | £12/£10

Do you trust robots? Join us at The National Robotarium as we put this question to the test. Get hands-on with interactive demonstrations of the latest robot technology and see for yourself how far you can trust automation. With live demos, activities, discussions, drinks, food and a DJ, this fun yet thought-provoking evening will explore how humans interact with robots and put you face-to-face with the people and technology building the future.

Presented in partnership with Heriot-Watt University
Supported by the Platforms for Creative Excellence [PlaCE] Programme, a partnership between the Scottish Government through Creative Scotland - the City of Edinburgh Council and the Edinburgh Festivals.



TASTING CLIMATE CHANGE

AGES 18+
LATELAB



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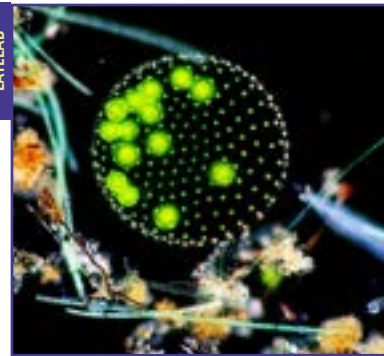
TUE 11 APR | 7PM | 2 HOURS | £20/£18

As the climate continues to change, vineyards across the world are having to adapt to faster-ripening grapes, lower acidity and more alcoholic wines. The threat of wildfires and droughts is making wine production less certain than ever and regions that previously couldn't produce wines are having greater harvests. Join our panel of experts for a tasting evening as we explore how the flavours and production of wine are changing and what the future of this popular tittle might look like. Ticket includes a welcome drink, wine tastings and canapes.

Supported by the Platforms for Creative Excellence [PlaCE] Programme, a partnership between the Scottish Government through Creative Scotland - the City of Edinburgh Council and the Edinburgh Festivals.

WHEN FISH BEGIN TO CRAWL

AGES 18+
LATELAB



DYNAMIC EARTH | BIOSPHERE

SAT 15 APR | 7.30PM | 2 HOURS 30 MINS | £12/£10

World premiere of a new work by composer **Jim Sutherland** in collaboration with BAFTA-winning filmmaker **Morag McKinnon**. The work is a meditation on the climate crisis and humanity's relationship with nature, embodying an urgent yet hopeful dialogue between art and science, spanning geological deep time and present-day eco-emergencies. Accompanied by a pre-recorded original score by Evolution Orchestra, a 21-piece ensemble conducted by **Matthew Rooke**. The artists will be joined by Science Director of the Global Soil Health Programme **Prof John Crawford**, University of Glasgow, for a post-screening Q&A. Ticket includes a welcome drink.

Presented by Edinburgh Science in association with Dynamic Earth
Supported by Expo Fund

PONYO

AGES 10+
LATELAB



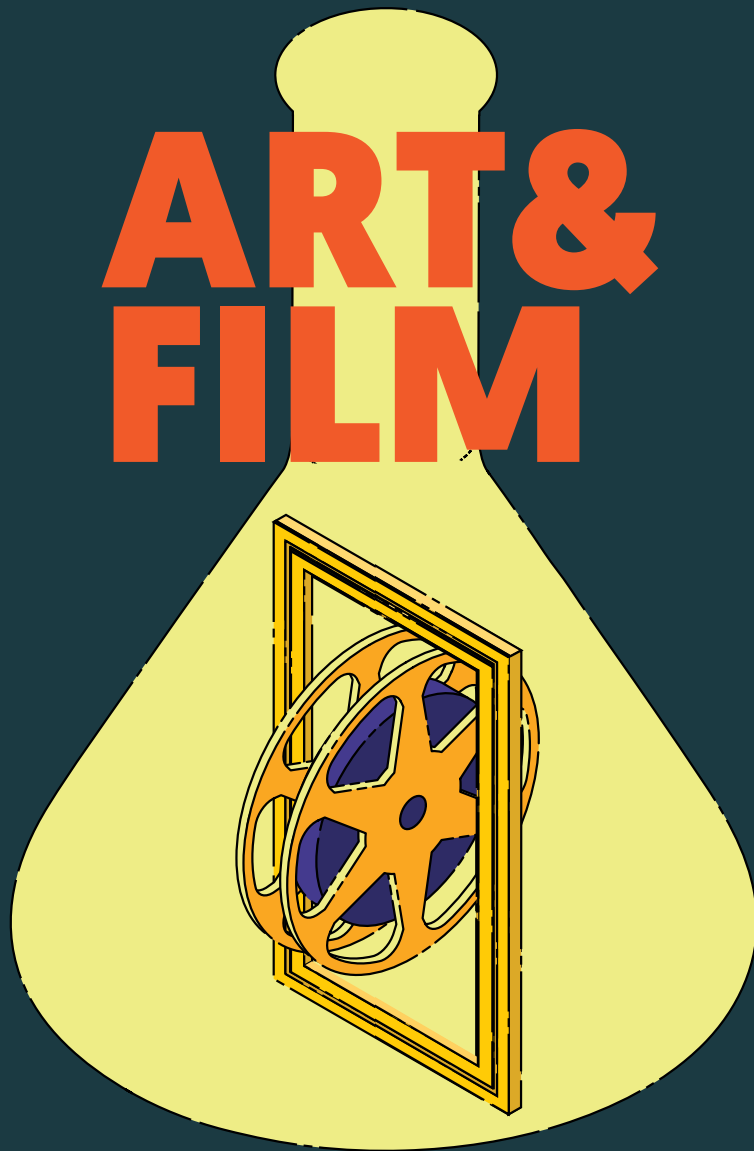
FLOWAVE OCEAN ENERGY RESEARCH FACILITY

SUN 16 APR | 5.30PM & 8PM | 2 HOURS | £12/£10

Join us for a magical evening where we bring critically acclaimed Studio Ghibli animation *Ponyo* to life like never before! Hosted at the FloWave Ocean Energy Research Facility at The University of Edinburgh, the film will be screened alongside their wave simulation tank where 2.4 million litres of water will be synchronised live with the action on screen.

Presented by Edinburgh Science
Image: Chris Scott
Supported by Expo Fund

ART & FILM



From open air exhibitions to augmented film screenings, there is a wealth of sci-art to dazzle your eyes and challenge your views.

See the impact humanity has on the natural world around us without exhibition *Cherish: Shaping Our Planet* at Portobello Promenade.

The *Edinburgh Conservation Film Festival* returns to the Festival, celebrating stories of conservation projects from around the world. Learn about the perilous state of Scotland's salmon in feature-length documentary *Riverwoods*.

Interlinked is a series of exhibitions and events from Summerhall and ASCUS Art and Science that explore themes of earth, climate, sustainability, biodiversity, micro-life and humanity by experimenting with scientific processes and practices.

CHERISH: SHAPING OUR PLANET

ALL AGES
EXHIBITION



PORTOBELLO PROMENADE

THU 23 MAR–THU 4 MAY | DAILY | FREE

Take an incredible journey around the world and explore how human activity is shaping planet Earth. This large-scale, outdoor photography exhibition looks at our impact on the landscapes that support all life and considers how we can cherish its wonders and tread more lightly upon this Earth.

Humans have always left traces of our lives on the world. From the well-worn tracks of desire paths, to the development of agriculture and aquaculture, to our search for minerals, these traces can be dramatic and, in some cases, irreversible. From the deepest seabed to the outer layers of our atmosphere, our impact can be found. This look at the Anthropocene – the recent period of history during which humans have significantly impacted on Earth's geology and ecosystems – explores how modern practices are changing our landscapes and threatening our very existence.

2022 saw the United Nations announce that our global population has now reached a staggering 8 billion people and continues to rise. And our desire to consume – energy, food, water, minerals – grows, too. Alongside this story is another tale: of innovation, of revolution and of a growing global awareness of the critical need for action to protect these environments. Our will to preserve is rising up against our will to consume. We are all custodians of our precious planet and its wonders. This exhibition contains a global message of hope and a call to action: here is our planet. Cherish it.

Images: George Steinmetz

SWELL

AGES 18+
LATELAB



NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

SAT 1 APR | 6PM | 2 HOURS | £12/£10

AD AUDIO DESCRIBED

In 2014, residents of Fairbourne were watching their local news when they found out they were to be Britain's first climate refugees. Their town was set to be decommissioned and depopulated by 2054. Housing prices dropped overnight, insurance disappeared and life savings were lost in the chaos. *Swell* follows the story of two siblings caught in the purgatory of a fictional but analogous town, ready to be abandoned. This evening of captivating live theatre is followed by a discussion and Q&A with **Anna Beswick** of Sniffer and *Swell* director **Tom Foreman** as we explore the changing coastline of the UK and the future of our climate refugees. Audio description is by **Caroline Jaquet**.

Presented by Edinburgh Science

Supported by the Platforms for Creative Excellence (PlaCE) Programme, a partnership between the Scottish Government through Creative Scotland - the City of Edinburgh Council and the Edinburgh Festivals.

DATA AS A MATERIAL

AGES 12+
EXHIBITION



INSPACE

SAT 1-FRI 7 APR | 11AM-5PM | DROP-IN | FREE

Join students from Design Informatics at University of Edinburgh as they explore 'data-as-a-material'. This exhibition will feature work from the Masters students at the University of Edinburgh's Design Informatics course. With two distinct approaches and design briefs - Designing Ecologies' and Fashion Informatics - students have created a series of responses which either question more than human and under-represented "voices" in data collection or seek to examine ways in which we could adorn our human selves through worn-data interfaces.

Presented by Design Informatics

WHAT A WONDERFUL WEBB

AGES 5+
EXHIBITION



DYNAMIC EARTH | OUTDOOR TERRACE

SAT 1-SUN 16 APR | 10AM-4PM | DROP-IN | FREE

Since launching on Christmas Day 2021, the James Webb Space Telescope has drawn back the curtain on the universe's early galaxies, and in doing so has captured the imagination of people worldwide. Marvel at the amazing images it has taken in its first year in space in this awe-inspiring outdoor exhibition.

Presented by Dynamic Earth

USE YOUR VOICE

AGES 5+
EXHIBITION



DYNAMIC EARTH | STRATOSPHERE

SAT 1-SUN 16 APR | 10AM-4PM | DROP-IN

FREE WITH ADMISSION TO DYNAMIC EARTH

'No one is too small to make a difference.'

- Greta Thunberg. In this indoor mini-exhibition, learn about some of the young climate activists who are demanding action and inspiring hope for the future of the planet that is under threat from the effects of climate change.

Presented by Dynamic Earth

SHIPPING ROOTS

ALL AGES
EXHIBITION



ROYAL BOTANIC GARDEN EDINBURGH

INVERLEITH HOUSE

SAT 1-SUN 16 APR | 10AM-5.30PM (LAST ENTRY 5.15PM)

DROP-IN | FREE

Plants have always traversed seas, intentionally and inadvertently. In *Shipping Roots*, **Keg de Souza** draws on the Royal Botanic Garden Edinburgh's collections to tell tales of eucalyptus, prickly pear and 'alien' seeds, tracing legacies through the British Empire and specifically linking Australia, India and the UK. These stories relate to the artist's own cultural removal, drawn from her lived experiences as a person of Goan heritage whose ancestral lands were colonised, to living as a settler on unceded Gadigal land in Sydney.

Presented by Royal Botanic Garden Edinburgh

LIVING SOIL

ALL AGES
EXHIBITION



ROYAL BOTANIC GARDEN EDINBURGH

JOHN HOPE GATEWAY

SAT 1-SUN 16 APR | 10AM-5.45PM | DROP-IN | FREE

Artist **Natalie Taylor** celebrates the life beneath our feet, exploring our relationship with soil and the food production systems that rely on it. Over a four-month residency at the Royal Botanic Garden Edinburgh, Taylor has connected with a wide variety of staff and volunteers who care for our soil, from plant health scientists to community gardeners. She brings together her extensive research in this exhibition, making visible the vitality of soil not only through paintings, photographs and workshops, but also DNA analysis, poetic plates and a well-travelled cape.

Presented by Royal Botanic Garden Edinburgh

GLACIAL NARRATIVES – CRACKS IN THE ICE

ALL AGES
EXHIBITION



CUSTOM HOUSE GALLERY LEITH

SAT 1-SUN 16 | NOT TUE | 11AM-6PM | DROP-IN | FREE

An international exhibition of visual and audio art celebrating the qualities of ice as a material: its past, present and uncertain future.

Presented by Mary Walters

TREES OF LIFE

ALL AGES
INSTALLATION

NATIONAL MUSEUM OF SCOTLAND

GRAND GALLERY

SAT 1–SUN 16 APR | 10AM–5PM | DROP-IN

A special Festival commission for the Grand Gallery, this playable interactive installation explores Charles Darwin's revolutionary theory of evolution through natural selection.

Created by Edinburgh-based **We Throw Switches** in collaboration with Berlin-based artist **Robin Baumgarten**, the installation generates tree-like forms that challenge us to understand through play that our part in the natural world is subject to the same controlling forces that govern all life.

Supported by



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Developed with support from Creative Scotland
through the Scottish Government's
Festivals Expo Fund

TACTILE INTELLIGENCE

ALL AGES
EXHIBITION

INSPACE

MON 10–SUN 16 APR | 11AM–5PM | DROP-IN | FREE

Exhibition featuring the work of Design Informatics Artist in Residence **Theodore Koter** who has been creatively investigating Artificial Intelligence and the human body. Come explore the porous boundaries between us and technology as you interact with an invisible AI learning to communicate with you physically. Will it feel like a poltergeist or an invisible friend? There is a free artist talk on Tuesday 11 April at 5.30pm.

Presented by The University of Edinburgh in partnership with Creative Informatics

EDINBURGH CONSERVATION
FILM FESTIVALAGES 12+
FILM

NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

MON 10 APR | 6PM | 1 HOUR 45 MINS | £3

The Edinburgh Conservation Film Festival is a celebration of conservation stories from around the world that will inspire, engage, and inform you about a few of the multitude of projects helping to protect the world's biodiversity. This year will feature a selection of short films about the links between biodiversity and the health and well-being of people across the planet. Come along for an evening discovering projects and people that are helping preserve our global biodiversity through science, passion and film followed by a prize giving ceremony for the winning films. The films will then be accessible to view on-demand on the Edinburgh Science Festival website Tue 11–Sun 16 Apr.

Presented by Edinburgh Conservation Film Festival

RIVERWOODS

AGES 12+
FILM

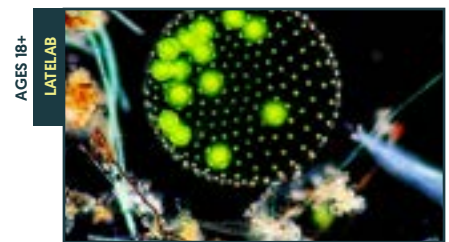
NATIONAL MUSEUM OF SCOTLAND | AUDITORIUM

WED 12 APR | 1PM | 90 MINS | £10/£8

Riverwoods is a spectacular feature-length documentary that shines a light on the perilous state of Scotland's salmon and tells the compelling story of a fish that lives in the forest. The film will be presented by SCOTLAND: The Big Picture's NextGen team, a cohort of young people advocating for rewilding in Scotland. A panel of young people will share their thoughts on rewilding with a lively discussion and Q&A session after the film.

Presented by Scotland: The Big Picture and Next Gen

WHEN FISH BEGIN TO CRAWL

AGES 18+
LATELAB

DYNAMIC EARTH | BIOSPHERE

SAT 15 APR | 7.30PM | 2 HOURS 30 MINS | £12/£10

World premiere of a new work by composer **Jim Sutherland** in collaboration with BAFTA-winning filmmaker **Morag McKinnon**. The work is a meditation on the climate crisis and humanity's relationship with nature, embodying an urgent yet hopeful dialogue between art and science, spanning geological deep time and present-day eco-emergencies. Accompanied by a pre-recorded original score by Evolution Orchestra, a 21-piece ensemble conducted by **Matthew Rooke**. The artists will be joined by Science Director of the Global Soil Health Programme **Prof John Crawford**, University of Glasgow, for a post-screening Q&A. Ticket includes a welcome drink.

Presented by Edinburgh Science in association with

Dynamic Earth

Supported by



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gov.scot

Developed with support from Creative Scotland
through the Scottish Government's
Festivals Expo Fund

PONYO

AGES 10+
LATELAB

FLOWAVE OCEAN ENERGY RESEARCH FACILITY

SUN 16 APR | 5.30PM & 8PM | 2 HOURS | £12/£10

Join us for a magical evening where we bring critically acclaimed Studio Ghibli animation *Ponyo* to life like never before! Hosted at the FloWave Ocean Energy Research Facility at The University of Edinburgh, the film will be screened alongside their wave simulation tank where 2.4 million litres of water will be synchronised live with the action on screen.

Presented by Edinburgh Science

Image: Chris Scott

Supported by



Scottish Government
Riaghaltas na h-Alba
gov.scot

Developed with support from Creative Scotland
through the Scottish Government's
Festivals Expo Fund

INTERLINKED AT SUMMERHALL



Based in the former Royal Dick School of Veterinary Studies, Summerhall is a major arts venue with a host of performance, gallery and workshop spaces, as well as a welcoming cafe and bar.

OPEN SATURDAY 1 APRIL—MONDAY 15 MAY, WED—SUN 12PM—6PM
SUMMERHALL GALLERIES, SUMMERHALL, EH9 1PL

Summerhall and ASCUS Art and Science present *Interlinked*, a series of exhibitions and events from visual artists exploring themes of earth, climate, sustainability, biodiversity, micro-life and humanity by experimenting with scientific processes and practices. Artists talks included in the programme will shed light on their work and associated workshops in ASCUS Lab will invite the public to experiment alongside both artists and scientists.

Join us for drinks and a late opening to celebrate the *Interlinked* Science Festival exhibitions.
FRI 7 APR, 6PM—9PM | SUMMERHALL GALLERY BAR



 SUMMERHALL



ASCUS
ART & SCIENCE

EARTH, SOIL + FILTH

ALL AGES
EXHIBITION



SUMMERHALL | CORNER GALLERY

SAT 1 APR—MON 15 MAY | 12PM—6PM

DROP-IN [WED TO SUN] | FREE

Soil is alive. Soil is an indicator of the future and a record of our human struggle – it's a means of making sense of the world. When degraded, all life is threatened; eradicating civilisations and structuring social narratives. Created by interdisciplinary artist **Agatha Smith**, *EARTH, SOIL + FILTH* is an inquiry into our collective and shared experience of the frequencies of the earth. Relating the health and wellness of soil to our own existence, Smith looks to encourage the viewer to perceive the environmental crisis in alternative literacies.

Presented by Summerhall and ASCUS Art and Science

DARKROOM ECOLOGY

ALL AGES
EXHIBITION



SUMMERHALL | BASEMENT GALLERIES

SAT 1 APR—MON 15 MAY | 12PM—6PM

DROP-IN [WED TO SUN] | FREE

Fusing photography, sculpture, and installation, environmental artist **Scott Hunter** explores the co-existence of ecological and industrial materials by crafting alternative representations of cultural landscapes.

Darkroom Ecology is a sculptural work that proposes photography as a closed-loop ecosystem. By acknowledging photography's complicity in heavy metal pollutants, the installation extends photography – beyond the printed image and camera – to the entire network of beings, processes, and materials involved in making an image, from metal extraction to toxic waste disposal. The work proposes an alternative solution to contaminated industrial landscapes and current analogue photography practices.

Presented by Summerhall and ASCUS Art and Science

3607

AGES 5+
EXHIBITION



SUMMERHALL | MEADOWS GALLERIES

SAT 1 APR – MON 15 MAY | 12PM – 6PM

DROP-IN [WED TO SUN] | **FREE**

Artist **Kexin Liu** examines microorganisms living in the human body and their impact on our sense of "self". Named after the number of bacteria species detected in her body, the series aims to challenge human individuality and celebrate the millions of tiny organisms that make up our identity. Her work includes a soundscape derived from bacterial sequences, textiles dyed with pigmented bacteria, and a visual representation of human-bacteria interactions.

Presented by Summerhall and ASCUS Art and Science

LOST

ALL AGES
EXHIBITION



SUMMERHALL | WAR MEMORIAL GALLERY

SAT 1 APR – MON 15 MAY | 12PM – 6PM

DROP-IN [WED TO SUN] | **FREE**

Climate Action Exhibition featuring a collection of 18 #LitterCUBES made from thousands of pieces of beach litter plastic, collected by artist **Julia Barton** and hundreds of project volunteers in the coastal communities of Eyemouth, Dunbar, Arbroath, Ullapool and Shetland. Each #LitterCUBE was stitched and woven together. This exhibition graphically shows the fossil fuel energy that marine plastic litter and single use plastic represents and aims to show how plastic pollution directly contributes to our climate crisis. Julia's looped film projection illustrates the dripping away of 259 litres of oil which represents the energy embodied in the #LitterCUBES.

Presented by Summerhall and ASCUS Art and Science

3607, ARTIST TALK

AGES 10+
TALK



SUMMERHALL | MEADOWS GALLERIES

SAT 1 APR | 12.30PM | 30 MINS | **FREE**

How did **Kexin Liu** get sucked into the weird and wonderful world of the human microbiome and begin creating music with bacteria living in her body? Join the artist for a fascinating talk on her changing relationship with these tiny organisms and how generative art has helped her capture the elusive beauty of bacterial lifeforms.

Presented by Summerhall and ASCUS Art and Science

LOST, ARTIST TALK

AGES 10+
TALK



SUMMERHALL | WAR MEMORIAL GALLERY

SAT 1 APR | 2PM | 45 MINS | **FREE**

Artist **Julia Barton** will lead a tour around her LOST exhibition and tell of her four year journey making the #LitterCUBES, in five coastal communities around Scotland. She will share how her collaboration with scientist **John McIntyre** enabled her to understand the concept of Embodied Energy and how she worked with volunteers to calculate the energy held within the #LitterCUBES – the equivalent of 259 litres of oil.

Presented by Summerhall and ASCUS Art and Science

EARTH, SOIL + FILTH, ARTIST MEET AND GREET

AGES 10+
DISCUSSION



SUMMERHALL | CORNER GALLERY

FRI 7 APR | 6PM | 1 HOUR | **FREE**

Created by interdisciplinary artist **Agatha Smith**, *EARTH, SOIL + FILTH* is an inquiry into our collective and shared experience of the frequencies of the earth. Join Smith in The Corner Gallery for an opportunity to ask about the inspiration behind her exhibition and gain insight into the processes involved in its creation.

Presented by Summerhall and ASCUS Art and Science

PRINTING WITH PIGMENTED BACTERIA

AGES 6+
WORKSHOP



SUMMERHALL | ASCUS LAB

SAT 8 APR | 1.30PM, 2.45PM & 4PM | 45 MINS | **£15**

This unique, hands-on open lab experience, invites members of the public to learn about the creative application of microorganisms. In this workshop, ASCUS Art & Science and artist **Kexin Liu**, will guide you through making your own colourful textile to take home by painting, printing, and dyeing with pigment-producing bacteria. Children under 18 must be accompanied by an adult.

Presented by Summerhall and ASCUS Art and Science

OUR WORK BEYOND THE FESTIVAL

Edinburgh Science Foundation is one of Scotland's largest science outreach charities, with Learning and Community programmes that run year round. Our mission is to inspire, encourage and challenge people of all ages to explore and understand the world around them, and we can only achieve this thanks to your donations and the contributions of our supporters.

Generation Science brings immersive science shows and workshops directly into primary school classrooms all over Scotland, from the Scottish Borders to the Shetland Islands. In 2023, we're reaching around 25,000 pupils across the country.

Every year we run *Careers Hive* at the National Museum of Scotland – an reimagined interactive careers event for 11–15 year olds that is free for schools to attend and encourages young people to consider further study in science and technology subjects. We welcomed 2,150 pupils from 27 schools to *Careers Hive* in 2022.

We work with community groups year-round from across Edinburgh to help encourage their members to engage with science, working closely to adapt our programmes to their needs. *Beyond the Hive* is one of these initiatives, where we bring an adapted version of *Careers Hive* to young people who are out of formal education or training.

Every year before City Art Centre opens to the public, we host three special open days for local schools. This year around 750 school children, many of whom wouldn't have the opportunity to visit with their families, get to experience all the activities in our science playground for free. Thank you to Baillie Gifford, Digital Xtra Fund, Edina Trust, LEGO® Build the Change, John Watson's Trust, Russell Trust and Royal Society of Chemistry, whose support allows us to run our City Art Centre School Days.

Thanks to visitors like you who add a charitable donation onto their purchase, we are able to offer complimentary tickets and specialised tours to local community groups and refugees who are often unable to engage with our Festival.



SUSTAINABILITY AT EDINBURGH SCIENCE

Our planet is in crisis. The task ahead of us is daunting; our targets ambitious - but if we all work together we can build a better future for everyone. We have a selection of climate and sustainability themed events available in this programme to guide your thoughts and actions. But addressing the climate emergency takes more than individual action. At Edinburgh Science, we are helping businesses, governments and decision-makers to act.

In 2021, we launched *The NetZeroToolkit*, a free online resource to help organisations of any size to address their carbon emissions and influence others to become more sustainable, in eight core components. So far, we have supported almost 500 businesses to get on the road to net zero and we are getting stronger every day. Join the growing community of businesses taking action, over at thenetzerotoolkit.org.

Our *Climate Co-Labs* bring together politicians, business leaders and decision-makers to break down barriers to action. Broaching big topics such as the just transition and green finance, we challenge attendees to speak out, make connections and bring solutions to life.

If you want to join the organisations whose generous and kind support makes our climate work happen, visit sciencefestival.co.uk/sustainability or email hannahs@scifest.co.uk to find out more.



THANKS TO OUR 2023/24 SUPPORTERS

HEADLINE FESTIVAL COMMUNITY ENGAGEMENT PARTNER



PRINCIPAL LEARNING AND COMMUNITY FUNDING PARTNERS



LEARNING AND COMMUNITY FUNDING PARTNERS



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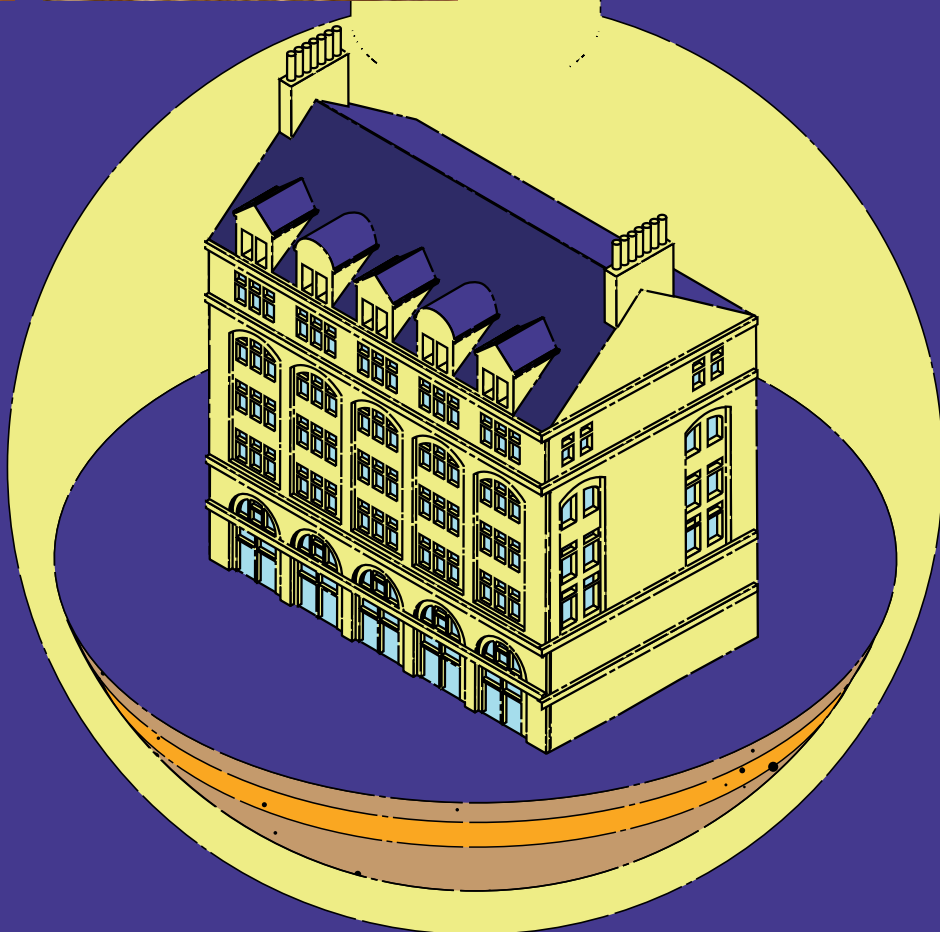
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LET'S EXPERIMENT AT CITY ART CENTRE



**EXPLORE FIVE FLOORS PACKED WITH
WORKSHOPS AND HANDS-ON ACTIVITIES
FOR CHILDREN AGED THREE YEARS AND OVER
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