



# TECHFEST

Aberdeen and North-East Scotland's  
Festival of Science, Technology,  
Engineering & Mathematics  
[www.techfest.org.uk/festival](http://www.techfest.org.uk/festival)



# 2024

# ACTIVITY WEEKEND PROGRAMME

**Saturday 1 June – Sunday 2 June**

**Robert Gordon University, Garthdee Campus, AB10 7GJ**



JOINT PRINCIPAL SPONSORS



[WWW.TECHFEST.ORG.UK](http://WWW.TECHFEST.ORG.UK)

Scottish Charity No. SC010349

# WELCOME TO TECHFEST ACTIVITY WEEKEND 2024



Shell and bp are proud, as Joint Principal Sponsors, to welcome you to TechFest, as we celebrate the 30th annual festival of Science, Technology, Engineering and Mathematics (STEM).

We are delighted to support the public programme of fascinating events, which allow audiences to explore STEM. The varied programme encourages visitors to get involved in activities throughout the North-East of Scotland through the exciting variety of shows, presentations and workshops on offer.

By supporting TechFest we aim to provide both enjoyment for the public and inspiration for the next generation of scientists and engineers. We look forward to another successful festival.

**Simon Roddy**  
**Senior Vice-President Upstream**  
**Shell U.K. Limited**

**Doris Reiter**  
**Senior Vice President**  
**bp North Sea**

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## HERE'S WHAT YOU NEED TO KNOW

### Venue Opening Times

The Sir Ian Wood Building, Robert Gordon University, Garthdee Campus, Aberdeen AB10 7GJ  
Saturday 1 & Sunday 2 June 2024, 09.30 – 16.00 each day

### Admission Costs

With over 20 hands-on workshops, shows and demonstrations, the TechFest Activity Weekend continues to provide fun, exciting and inspiring activities for all ages. No need to pre-book as this year we are **'In for a Penny, In for a Pound'** adults pay £1 and children pay 1p; or donations! **Cash only.**

### Picnics and Packed Lunches

Although there are catering providers on site please feel free to bring your own food and soft drinks.

### Buggies and Pushchairs

We have provided a Buggy Park at the Activity Weekend. Please be aware that it is not staffed and items are left at the owner's risk.

### Baby Change Area

There will be a baby change area provided at the Activity Weekend.

### First Aid

If you require First Aid Treatment – please visit Reception 

### Quiet Space /Time

If you feel that you would prefer to attend TechFest when it is quieter then please be aware that Saturday mornings tend to be less busy than later on in the day or on Sunday. Quiet spaces will be available at all times for anyone who needs time out. Just ask a member of staff and they will point them out.'

# AT A GLANCE



## energy & technology zone

Powering Progress Together  
Build and Program Lego Robots  
Energising the Transition  
Smart Home Solutions

## under 5s zone

ToddleFest  
K'NEX Under the Sea with Subsea 7

## maths zone

Maths Week Scotland  
Wild About Maths  
Maths Around the World

## show zone

Roxy and her Rock Pool Friends  
The Air and Water Show

## biology / medical zone

Bodyvision Exhibits  
IBMS VR Spacelab  
Clinical Skills at Foresterhill with Teddy Bears Hospital and AUPS

## space zone

The TechFest Dome *BOOK ON THE DAY!*  
Our World From Space  
Apollo 7  
Build A Starshade – Origami in Space

## outdoors zone

STEM in the Park  
Forces of Nature  
Tough Monkees Obstacle Course *BOOK ON THE DAY!*  
AFCCT STEM challenges

## other activities

The Wonderful Rainforest  
Build It with ASC  
K'Nex Engineering  
STEM Through The Ages  
Rainbow strings and electroplating  
Going on a Plant Munch  
Construct a Mechanical Valve  
Make an Earthquake Prediction  
TechFest Blueprint Challenge exhibition  
Sensational Senses  
Butterfly Bonanza!



# TECHFEST

Promoting Science, Technology, Engineering and Mathematics

Scottish Charity No SC010349

The CREST Regional Support Organisation for Scotland is TechFest.

For advice about undertaking CREST Awards in Scotland, please contact Kirsty Cranna by email at [kirstycranna@techfest.org.uk](mailto:kirstycranna@techfest.org.uk).

**Take part in activities at our Activity Weekend and collect your award stickers!**



## SUPERSTAR



## PASSPORT

Name \_\_\_\_\_

Collect stickers for your passport after completing each activity!

**Start**  
your journey here



Great job!



Only two more to go!



Nearly there!



**Well done**  
you have completed your CREST SuperStar Award!



# ENERGY & TECHNOLOGY ZONE

## ENERGY OF THE FUTURE ACTIVITY TABLE

Join us to learn all about different types of energy and have a go at designing and constructing an energy system of the future.



**SPONSORED BY:** Shell UK

**PRESENTED BY:** Shell UK



## BUILD AND PROGRAM LEGO ROBOTS



Using Lego robotics technology to build and program an amazing robotic model of a wind turbine which builders will program to switch on only when the wind is strong enough. Additionally, the model turbine can also be modified to have turbine blades that can be angled to make best use of the wind speed as, in real life, changing the angle of the blades will change the blade area facing the wind. This drop-in workshop is great fun and ideal for nurturing and enhancing Science, Technology, Engineering and Maths (STEM) skills.

**PRESENTED BY:** JOHN MCGILL OF COMPUTERXPLORES

**SPONSORED BY:** bp

## ENERGISING THE TRANSITION

Look around you. Are the lights on? Is your computer running? Or the TV playing? All of these things require energy! We use energy every day to power our world.

Come and delve into the exciting future of energy and take part in hands-on, interactive experiments to learn about different energy sources, and the trade-offs associated with each, it explains the fundamentals of wind energy and introduces the concept that energy cannot be created or destroyed, only changed from one form to another. Which energy source will you choose to power your future?

**PRESENTED BY:** TechFest

**SPONSORED AND SUPPORTED BY:** STROMAR, APACHE & CNOOC INTERNATIONAL

STROMAR

Apache

CNOOC

## SMART HOME SOLUTIONS



At TL Tech we design, install and maintain smart home systems using affordable hardware combined with our clever computer know-how to integrate the functions you need in the home together. We aim to make smart home technology accessible to all regardless of age, ability or financial status.

**PRESENTED BY:** TL TECH



# UNDER 5s ZONE

## TODDLIFEST

When they're little, playing is just another way of learning. Let your under 5's discover the fun of playing in our soft play area, an ideal place for TechFest's youngest visitors.



## K'NEX UNDER THE SEA WITH SUBSEA 7

Discover the unique challenges of exploring the subsea world. Find out how science and technology can push the limits of this intriguing environment. Learn about how people dive and work under the sea and how technology can help us go even further.

**PRESENTED BY:** TechFest

**SPONSORED BY:** SUBSEA 7

subsea 7



# MATHS ZONE

## MATHS WEEK SCOTLAND



Maths Week Scotland (23 September –29 September 2024)

Join TechFest as we celebrate the upcoming Maths Week Scotland by exploring a series of interactive puzzles and challenges. Visit Maths Week Scotland at [www.mathsweek.scot](http://www.mathsweek.scot) or follow us @mathsweekscot on Twitter.

## WILD ABOUT MATHS



Take a walk on the wild side with TechFest as you undertake puzzles, challenges and problem solving activities inspired by the natural world. In these hands-on maths activities you can work through a series of puzzles designed to challenge your idea of how much fun maths can be.

**PRESENTED BY:** TechFest  
**SPONSORED BY:** EQUINOR



## MATHS AROUND THE WORLD



A fun, hands-on maths workshop designed to challenge and build confidence. A variety of puzzles, representing different countries, are set out. Help and encouragement is at hand and solutions checked.

**PRESENTED BY:** TechFest  
**SPONSORED BY:** EQUINOR



# SHOW ZONE

## ROXY AND HER ROCK POOL FRIENDS



Join Roxy on an adventure looking for the Creepy Crab in a rock pool she is helped by her magical friend CC and meets the Boring Barnacles, the Laughing Limpets, the Prickly Prawns, Starry the Sea Star, and Aggie Anemone.

**PRESENTED BY:** TechFest  
**SPONSORED BY:** bp, Shell

## THE AIR AND WATER SHOW

Air and Water - (photosynthesis...but without the sunlight) ...hot air, breaking the sound barrier, buckets of bubbly water and a thousand jaggy nails..!

**PRESENTED BY:** THINKSCIENCE  
**SPONSORED BY:** bp, Shell

SUNDAY ONLY





# BIOLOGY / MEDICAL ZONE

## CLINICAL SKILLS AT FORESTERHILL WITH TEDDY BEARS HOSPITAL AND AUPS



Don't forget to bring your own teddy!!

Come along and join the Medical School Clinical Skills Teaching Team and find out how we train healthcare professionals of the future using the latest state of the art technology with our family of Human Patient Simulators and 360 degree cameras.

As always for our younger clinical skills trainees, don't forget to bring your teddy bear or soft toy to the Teddy Bear's Hospital for a check-up. You can even watch and assist the doctors in the operating theatre as they help a teddy bear get better.

**PRESENTED BY:** UNIVERSITY OF ABERDEEN – MEDICAL SCHOOL CLINICAL SKILLS CENTRE AND

**SPONSORED BY:** TEDDY BEAR HOSPITAL WITH AUPS SAVE A CHILD'S LIFE



## BODYVISION EXHIBITS



Get hands-on with a range of engaging physiology and anatomy themed exhibits. They will explore themes like cardio-vascular fitness, body composition and the effects of lifestyle choices like smoking.



**PRESENTED BY:**  
GLASGOW SCIENCE CENTRE

## IBMS VR SPACELAB



Biomedical science is at the heart of everybody's healthcare and many biomedical scientists work for the NHS. Come and experience biomedical science like never before using VR headsets, could you work in a lab?

**PRESENTED BY:** INSTITUTE OF BIOMEDICAL SCIENCE





# SPACE ZONE

## THE TECHFEST DOME

BOOK ON THE DAY!

Enjoy a visit to the unique environment of the TechFest Dome. Find out why we have day and night, wonder at a sky full of stars and discover the constellations.

Not suitable for under 5 years.

PRESENTED BY: TechFest

SPONSORED BY: APACHE

Apache



## OUR WORLD FROM SPACE

This explores the relevance of UK space science for the future health and sustainability of our home planet. More specifically the workshops contain an introduction to satellites and discuss how infra-red cameras and satellite imaging can assist with data analysis related to climate change.

dundee  
science  
centre

PRESENTED BY: DUNDEE SCIENCE CENTRE

## APOLLO 7

Ensuring astronaut safety is one of the biggest challenges faced by NASA engineers. Work as a team to apply physics and engineering principles in a dynamic and creative way to bring an astronaut safely back to Earth.

PRESENTED BY: TechFest

SPONSORED BY: APOLLO

apollo



## BUILD A STARSHADE – ORIGAMI IN SPACE

NASA is planning to capture the first images of planets in another solar system trillions of miles away. Some of these planets, called exoplanets, are thought to be similar to Earth.

A new device, called Starshade, could shield a telescope's camera from the light of a distant star. When it's unfolded, Starshade is too big to fit in a rocket, so NASA has used origami to create a perfect design and develop a way of folding it for launch.

PRESENTED BY: TechFest

SPONSORED BY: APOLLO

apollo



## ACTIVITY WEEKEND FEEDBACK FORM





# OUTDOORS ZONE

BOOK ON THE DAY!

## TOUGH MONKEES OBSTACLE COURSE



The Movement Bothy are delighted to be attending the TechFest Activity Weekend with the Tough Monkees Obstacle Course. The Tough Monkees Obstacle Course is made up of ten large obstacles all designed to challenge Basic Athletic Skills in a fun and playful environment. Athletic Skills challenged include climbing; swinging; balancing; bounding; jumping; landing; crawling and clambering. Developing these skills helps to develop healthy and confident children who are fit for their future.

**PRESENTED BY:** MOVEMENT EVOLUTION

**SOCIAL MEDIA:** [www.facebook.com/TheMovementBothy](https://www.facebook.com/TheMovementBothy)  
[www.instagram.com/the\\_movement\\_bothy](https://www.instagram.com/the_movement_bothy)



## STEM IN THE PARK



The aim of STEM in the Park is to engage all ages in science activities that are done outside utilising teamwork, creativity and most of all fun while learning.

**PRESENTED BY:** TechFest

**SPONSORED BY:** TAQA

## FORCES OF NATURE

Join us to look at different types of weather and how they are associated with the Earth's climate zones. Find out about Greenhouse Gases and the effect they have on our climate.

**PRESENTED BY:** TechFest

**SPONSORED BY:** VATTENFALL

## AFCT STEM CHALLENGES



Come and test yourself at our STEM challenges that are based on the methods used within sports science in football to measure the speed of players. Try and beat your fastest time to get to the top of our leaderboard for the day.

**PRESENTED BY:** AFC COMMUNITY TRUST





# OTHER ACTIVITIES

## STEM THROUGH THE AGES

History is all around us, but have you ever considered how science, technology, engineering and maths have impacted on the ancient world? Investigate the challenges that civilisations overcame to make their environments safer.

Discover how they were able to navigate incredible distances successfully and learn how to do it yourself.

**PRESENTED BY:** TechFest

## RAINBOW STRINGS AND ELECTROPLATING

Come along to create colourful strings from alginate derived from seaweed and make copper shapes and convert these into zinc shapes to learn how materials can be changed into something more valuable through chemical reactions.

**PRESENTED AND SUPPORTED BY:** ROBERT GORDON UNIVERSITY SCHOOL OF PHARMACY AND LIFE SCIENCES

## GOING ON A PLANT MUNCH

Plants are an important part of our diet. Although we eat a wide range of plants, we don't eat every part of every plant, come and explore the parts and types of plants we do eat and where they come from.

**PRESENTED BY:** TechFest



## BUILD IT WITH ASC



Discover the engineering skills needed whilst you take part in a range of 'Build It' challenges including our Ko-do marble runs, building the strongest shape with magnets and our table overhanging challenge.

**PRESENTED BY:** ABERDEEN SCIENCE CENTRE

## THE WONDERFUL RAINFOREST



Rainforests only cover 2 percent of our earth's surface, yet house over 50 percent of all living creatures and plant life on our planet.

Using real life animal demonstrations, we will travel to different countries meeting some amazing animals that live in rainforests around the world. Get up close to real rainforest animals in this workshop. You'll learn what makes our rainforests so important, not only to our planet, but to the animals who call the rainforest home.

**PRESENTED BY:**

THE CRITTER KEEPER



## CONSTRUCT A MECHANICAL VALVE

Join the iChemE team as they construct mechanical valves using everyday equipment.

**PRESENTED BY:** iChemE

## MAKE AN EARTHQUAKE PREDICTION



Join the Geophysics team from the University of Aberdeen and learn how to predict earthquakes using a seismometer and a slinkie! Solve the tectonic plate puzzle and find out why earthquakes happen.

**PRESENTED BY:** THE UNIVERSITY OF ABERDEEN SCHOOL OF GEOPHYSICS

## BLUEPRINT CHALLENGE EXHIBITION

Our Blueprint Challenge: Future High Street exhibition showcases S3-S6 students' creative and sustainable designs for the high streets of the future.

**PRESENTED BY:** TechFest





# OTHER ACTIVITIES

## SENSATIONAL SENSES

We use our senses every day. You are using them right now reading this page.

You have five senses: touch, taste, sound, sight and smell. You can experience these different senses, like the sweetness of a sticky toffee pudding, the smell of a flower and the sound of your favourite song, because of your sensory organs - namely, your eyes, nose, tongue, ears and skin - and of course the sensory receptors on them.

PRESENTED BY: STEM YOUTH BOARD



## BUTTERFLY BONANZA!



Come meet the Duthie Park Rangers and explore the beautiful world of butterflies!

Take a closer look at their lifecycle and make a butterfly bracelet to take home! Put your knowledge to the test and learn how caterpillars turn into butterflies! You may even get to see some special guests crawling or fluttering!

PRESENTED BY: DUTHIE PARK RANGERS



ACTIVITY  
WEEKEND  
FEEDBACK FORM



# UPCOMING EVENTS

## ACTIVITIES TO DO AT YOUR OWN PACE!

The aim of Sociable Science is to engage all ages in science activities that are done in conversation utilising teamwork, creativity and most of all fun while learning.



Visit our [website](#) or scan the qr code to view the programme:



# UPCOMING EVENTS

Aberdeen Science Festival      September 21–28<sup>th</sup> 2024      www.techfest.org.uk      Powered by **TECHFEST**

Speaker Events  
Hands-on Workshops  
STEM Challenges  
ASF After Dark  
Behind Scenes  
& More

# Aberdeen Science Festival

Powered by **TECHFEST**

September 21–28<sup>th</sup> 2024

www.techfest.org.uk

Joint principal sponsors  



THE **CREST AWARDS** SCHEME IS THE BRITISH SCIENCE ASSOCIATION'S FLAGSHIP PROGRAMME FOR YOUNG PEOPLE, PROVIDING SCIENCE ENRICHMENT ACTIVITIES TO INSPIRE AND ENGAGE 5–19 YEAR OLDS.

It is the only nationally recognised accreditation scheme for project work in science, technology, engineering and mathematics (STEM) subjects.

In addition to giving young people the opportunity to undertake hands-on science, CREST Awards are designed to help develop skills that are transferrable to other subjects, further education and future employment.

To find out more about CREST Awards and to see how you can get involved visit the TechFest website: [www.techfest.org.uk/educationcrest](http://www.techfest.org.uk/educationcrest) or email: [kirstycranna@techfest.org.uk](mailto:kirstycranna@techfest.org.uk)

**TECHFEST**  
*digital*

TechFest is your Regional CREST Support Organisation for Scotland.

[TechFest.org.uk](http://TechFest.org.uk)

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Follow the link below to find out more about CREST, and how to register for Awards;

[www.crestawards.org](http://www.crestawards.org)

## WE WOULD LIKE TO THANK OUR SPONSORS AND SUPPORTERS\*

### JOINT PRINCIPAL SPONSORS



### SPONSORS



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### SUPPORTED BY





# THANK YOU



TO ALL OF OUR CONTRIBUTORS WHO HELPED MAKE THE TECHFEST SCHOOLS SCIENCE FESTIVAL AND FAMILY ACTIVITY WEEKEND POSSIBLE



Get in touch with us...

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[techfest.org.uk](http://techfest.org.uk)



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## DON'T FORGET TO FOLLOW US!



**PLEASE GIVE US YOUR FEEDBACK**



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