

# TECHFEST

Promoting Science, Technology, Engineering and Mathematics

Scottish Charity No SC010349

## PROGRAMME DIRECTORY

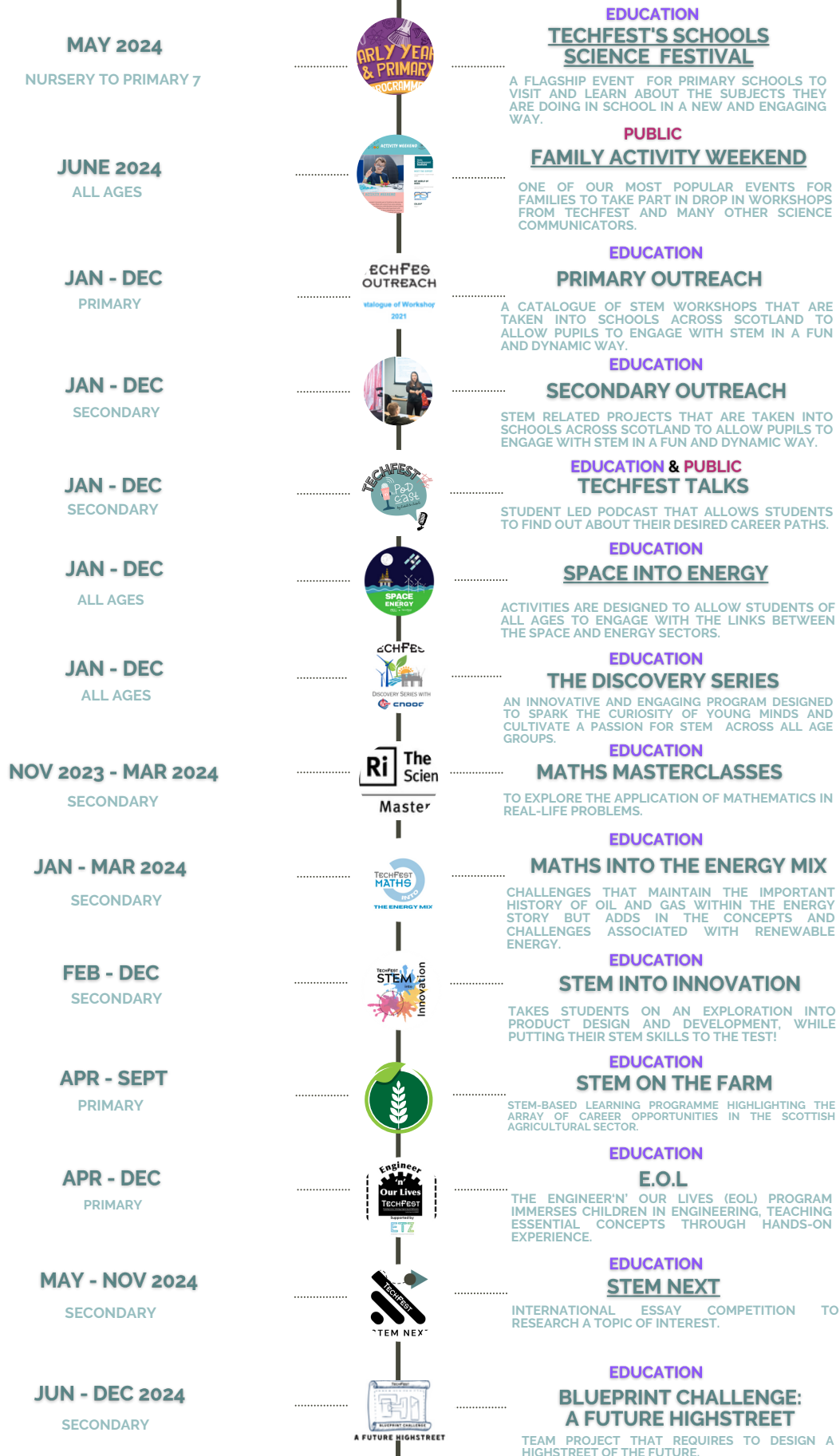
Get ready to explore the wonderful world of TechFest's programs and events that cater to everyone! We're thrilled to offer a wide range of activities designed to bring joy and learning to all ages.

In this document you will find events, projects and workshops that have been crafted to engage schools and inspire young minds.



For more information contact Sarah Chew, Managing Director, TechFest at [sarahchew@techfest.org.uk](mailto:sarahchew@techfest.org.uk)

## FULL PROGRAMME OVERVIEW



**SUMMER 2024**  
ALL AGES



**PUBLIC**  
**STEM IN THE PARK**

TO ENGAGE IN STEM ACTIVITIES THAT ARE DONE IN THE PARK BY UTILISING TEAMWORK AND CREATIVITY.

**SUMMER 2024**  
ALL AGES



**PUBLIC**  
**SOCIABLE SCIENCE**

TO ENGAGE IN STEM ACTIVITIES THAT ARE DONE IN CONVERSATION BY UTILISING TEAMWORK AND CREATIVITY.

**AUG - DEC 2024**  
SECONDARY



**EDUCATION**  
**STEM IN THE PIPELINE**

CHALLENGES 17-18 YEAR OLDS TO PRODUCE A FIELD DEVELOPMENT PLAN WHILE WORKING ALONGSIDE INDUSTRY PROFESSIONALS.

**SEP 2024**  
PUBLIC



**PUBLIC**  
**ABERDEEN SCIENCE FESTIVAL**

A FLAGSHIP EVENT THAT OFFERS FACE TO FACE EVENTS, OPEN TO ANYONE WITH AN INTEREST IN STEM

**SEP 2024**  
SECONDARY



**PUBLIC**  
**EXPLORATHON**

EVENTS THAT SUPPORT THE COMMUNICATION OF CUTTING-EDGE SCIENCE FROM UNIVERSITY OF ABERDEEN RESEARCHERS

**NOV 2024**  
PUBLIC



**PUBLIC**  
**TECHFEST DIGITAL SCIENCE FESTIVAL (ONLINE)**

A FLAGSHIP EVENT THAT OFFERS ONLINE EVENTS, FREE AND OPEN TO ANYONE WITH AN INTEREST IN STEM

**DEC 2024**  
ALL AGES



**EDUCATION & PUBLIC**  
**STEM ADVENT CALENDAR**

AN INTERACTIVE ADVENT CALENDAR TO HELP COUNTDOWN THE DAYS TILL CHRISTMAS BY UNLOCKING AN EXCITING STEM CHALLENGE THROUGHOUT DECEMBER.

**DECEMBER 2024**  
SECONDARY



**PUBLIC**  
**CHRISTMAS LECTURES**

THE ROYAL INSTITUTION'S CHRISTMAS LECTURES ARE SERIES OF SCIENCE LECTURES FOR YOUNG AUDIENCES, AIMING TO MAKE SCIENTIFIC CONCEPTS ENGAGING AND ACCESSIBLE.

**DATE TBC**  
SECONDARY



**EDUCATION**  
**MATHS INTO**

MATHEMATICAL BASED REAL-LIFE CHALLENGES TO GIVE PUPILS AN INSIGHT INTO THE CAREER POTENTIAL OF THE SECTOR.

**JAN - DEC**  
SECONDARY



**EDUCATION**  
**CAREER READY**

TO EMPOWER YOUNG PEOPLE IN S5/6 TO KICK-START THEIR CAREER THROUGH MENTORING & PAID INTERNSHIP.

**JAN - DEC**  
ALL AGES



**EDUCATION & PUBLIC**  
**CREST**

NATIONALLY RECOGNISED ACCREDITATION SCHEME TO INSPIRE AND ENGAGE 5-TO-19-YEAR OLDS IN SCIENCE ACTIVITIES.

#### OUR SPONSORS AND SUPPORTERS





## TECHFEST'S SCHOOLS SCIENCE FESTIVAL

Developments in science, technology, engineering and mathematics (STEM) will continue to have potentially the most significant impact on our day-to-day lives. As we see these fields develop and prosper, previously unknown career paths are now opening up - some that may eventually lead to roles we haven't even thought of yet! By showcasing these fascinating subjects to children as young as possible, we hope to pique their interest in the wonderful world of STEM. ,



TechFest's Schools Science Festival aims to inspire and inform the STEM leaders of tomorrow. Our Schools Science Festival, aimed at children aged 3-12, includes interactive workshops and entertaining shows where they get valuable insights into the world of STEM.

We aim to promote STEM to young people as early as possible, knowing that the interests and skills they begin to develop now form the foundation for their exciting future careers.

TechFest's Schools Science Festival is predominantly promoted across Aberdeen City and Aberdeenshire, but there is scope to tour any of our workshops across Scotland,

For more information contact [jennytaylor@techfest.org.uk](mailto:jennytaylor@techfest.org.uk).

### JOINT PRINCIPAL SPONSORS



### SPONSORS







# TECHFEST TALKS

Launched in 2021, TechFest Talks isn't just any talk series – it's a student-powered podcast designed to set young minds ablaze with inspiration and possibility!

Imagine a world where students take the reins, steering the conversation towards their passions and career aspirations. That's exactly what TechFest Talks is all about – empowering students of all ages to explore their interests, uncover their dreams, and chart their course towards an exhilarating future.



But wait, there's more! In every heart-pounding episode, students hailing from all corners of the UK step into the spotlight, seizing the opportunity to interview industry professionals from a myriad of sectors. This podcast is full of insights, advice, and insider knowledge, all served up with a side of pure excitement.

For the hosting students and eager listeners alike, TechFest Talks isn't just a podcast – it's a gateway to unlimited possibilities. So buckle up and get ready to dive headfirst into the world of tomorrow, because with TechFest Talks, the adventure is just beginning!

For more information contact [gabijablazyte@techfest.org.uk](mailto:gabijablazyte@techfest.org.uk)

TECHFEST digital

Skills Development Scotland

SCOTTISH CAREER'S WEEK

PODCAST HOST  
JASMINE KIERAN-EJIMADU

Jasmine is a fifth year student who loves all things anatomy and French. She is currently working towards her medicine application in the hopes that she will be able to do take part in some medical research in the future. She is also a member of the Young Scot Health Panel which promotes health information for young people living in Scotland. She has a passion for teaching and hopes that one day she can teach others, both in English and in French.

PODCAST GUEST  
VICTORIA ALLAN

Victoria Allan has recently completed her graduate scheme and is a Mechanical Engineer at CNOOC International, currently working in the Maintenance Delivery Team. Victoria graduated from Robert Gordon University in 2017 with a Masters in Mechanical and Offshore Engineering. She joined CNOOC International in 2017 and has worked in a variety of roles both onshore and offshore, including within Facilities Engineering, Hydrocarbon Release Prevention and as Offshore Operations Engineer, on the Golden Eagle and Buzzard Platforms. She is a very active STEM Ambassador and is currently part of an internal project to begin a STEM Ambassador Programme within CNOOC and was shortlisted for OGUK's Graduate of the Year in 2019.

LEARNING ABOUT THE ENERGY INDUSTRY

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# SPACE INTO ENERGY

From systems engineering to satellites, the discoveries and developments made in space exploration have informed the energy industry for decades, and vice versa.

A collaboration between Aberdeen Science Centre and TechFest, supported by the Institute of Physics (IOP), the 'Space into Energy' programme gives young people a glimpse into the inner workings of these exciting fields and how the skill sets required for each sector often overlap.

Featuring experts from each industry, participants will learn about innovation, teamwork and leadership through hands-on activities and interactive sessions, empowering them to discover their unique talents and how they can be the problem-solvers of the future.

From family days at Aberdeen Science Centre to interviews with industry professionals, there is something to inspire everyone.

For more information contact [evenebbiolo@techfest.org.uk](mailto:evenebbiolo@techfest.org.uk)



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## THE DISCOVERY SERIES

Step into the extraordinary world of TechFest's Discovery Series, powered by the innovative spirit of CNOOC International!

Prepare to be dazzled and inspired as we embark on a thrilling journey of curiosity and passion for STEM (Science, Technology, Engineering, and Mathematics) across all age groups..



Our four-phase Discovery Series has been designed to cater to a wide range of age groups, starting from as early as three years old. At TechFest, we believe in laying the groundwork for greatness by nurturing skills that transcend age and time. That's why our workshops and programs aren't just about learning – they're about experiencing, experimenting, and exploring the boundless wonders of the STEM universe.

With hands-on activities, mind-bending challenges, and immersive experiences, we don't just captivate young minds – we equip them with the tools they need to conquer the world of tomorrow. So why wait? Dive into the adventure today and unlock a future bursting with endless possibilities!

For more information contact [jennytaylor@techfest.org.uk](mailto:jennytaylor@techfest.org.uk)



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## MATHS MASTERCLASSES

The Royal Institution Mathematics Masterclasses gives S2 pupils an insight into how Mathematics can be applied and utilised outside of the classroom.



**Masterclass network**

The Aberdeen Maths Masterclasses series has been running in Aberdeen for over 12 years and the Masterclasses have become very popular with students and teachers in this time.

The main focus of the series is the application of Mathematics to real life problems, a message which can often get lost in the school environment.

All presenters give engaging and interactive sessions on a variety of Mathematical topics, such as codes and ciphers, measuring big numbers in space, million dollar equations, fractals and probability and more!

For more information contact [yashkasmith@techfest.org.uk](mailto:yashkasmith@techfest.org.uk)



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## MATHS INTO THE ENERGY MIX

### "Maths Into" series

There is a fantastic sponsorship opportunity for a new series of "Maths into" Programmes that addresses different aspects of the energy industry for S3-S4 students. The evolving energy industry is going through significant change, and we aim to inform and inspire the next generation to become the workforce that will have careers in these emerging industries.



**Maths into the Energy Mix** – This event aims to demonstrate to pupils the difference between different engineers and the role that they play in the different aspects of the energy sector. Introductions will cover the rationale of the need to maintain an energy mix, and the way in which the energy industry has reacted to the transition from relying heavily on petrochemicals.

For more information contact [yashkasmith@techfest.org.uk](mailto:yashkasmith@techfest.org.uk)



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## STEM ON THE FARM

“STEM on the Farm” is a five-day programme (delivered one day per week over five weeks) that invites P6 pupils from schools across the North East of Scotland to participate in project-based, curriculum-linked learning and explore each stage of the food production supply chain.



Aimed at P6 pupils, each day of the programme addresses a part of the food production process, including the work of agricultural engineers, farm workers, food scientists, logistics experts, etc. Guided by expert STEM Ambassadors from each section of the supply chain, pupils develop their STEM knowledge through immersive workshops and discover the impact agricultural innovations have on food production.

The knowledge they gain from the programme is then used to create eye-catching display boards and instruct the script for an end-of-project assembly attended by parents, carers, and the school community.

By participating in ‘STEM on the Farm’, pupils learn about food security, climate impact, health & nutrition, modern agricultural innovations, animal care, and how STEM plays a vital role in all of these.

By highlighting how these young people could be part of the generation that makes food production more secure with less environmental impact, the programme sends a powerful and long-lasting message that they can see play out in their daily lives every time they sit down to eat.

For more information contact [sarahchew@techfest.org.uk](mailto:sarahchew@techfest.org.uk)

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STEM Ambassadors Programme Targeted Interventions 2023-24 Grant A



## STEM INTO INNOVATION

TechFest's STEM into Innovation - 'Pioneers of Progress' is a remote project-based learning programme that dives into the evolution of instant communication, including its fascinating history, its significant impact on our everyday lives, and what could be in store in the near future.



With STEM at its heart, the programme reveals the many skills required to design, build, and distribute the devices and programs we use daily to communicate. As well as STEM competencies, meta-skills such as adaptiveness, collaboration, curiosity, and creativity are also key components of the programme.

'Pioneers of Progress' is aimed at S1 and S2 pupils and is available to teachers of any subject throughout the school year for free. Incorporating interactive challenges that focus on topics including wireframing, app development and product design, pupils are encouraged to approach challenges creatively, drawing on their communication, research, data analysis and project management skills to solve problems with novel ideas and strategic thinking.

For more information contact [gabijablazyte@techfest.org.uk](mailto:gabijablazyte@techfest.org.uk)



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## ENGINEER'N' OUR LIVES

The Engineer'n' Our Lives (EOL) programme puts engineering into the hands of every child taking part and teaches primary school pupils essential things about engineering:

Engineer'n' Our Lives (EOL) also emphasises to primary school-aged children that the skills they learn in school are the skills engineers use in the real-world.



The five-day programme involves the whole school and is divided into three age ranges. Each age range participates in four curriculum-based, interactive, age-appropriate skills and knowledge sessions namely the Properties (of materials) Challenge; Design Challenge; Prototype Challenge and Process Challenge. While undertaking their challenges, the children will follow a brief, meet deadlines, solve problems and work as a team.

All the kit and materials provided are designed for oral, visual, and kinaesthetic learning. For example, the challenges link an art class to civil engineering, a drama class to electrical engineering, a maths class to design engineering and a science materials class to chemical engineering.

With such a broad range of activities and learning methods, the pupils can play to their strengths, and have the opportunity to excel in workshops that most closely correlate to their interests and the way they learn best.

The programme culminates at the end of the week in a celebration event for the whole school attended by industry professionals where pupils are able to share their experience of the programme and display their work.

For more information contact [juliachew@techfest.org.uk](mailto:juliachew@techfest.org.uk)

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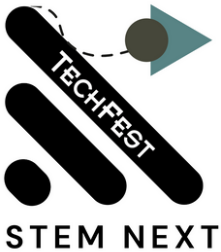






# STEM NEXT

As senior secondary school students think about continuing their education at college or university or entering the world of work, we want to help give them the best possible start - introducing them to skills they'll need on their journey beyond school.



Our STEM Next Essay Competition bridges the gap between school education and higher education/working environments with industry-linked, project-based learning that positively facilitates their transition.

Due to student demand, STEM Next is open to any student aged 16 - 18 years old, with no geographical restraints. As STEM Next is a digital project, it's hugely inclusive and accessible, and we are delighted to have students from round the world taking part.

Students are required to complete independent research and write an essay on the topic of their choice. Students are supported by live webinars and online resources created in collaboration with the University of Aberdeen. These sessions and resources teach pupils the valuable skills they need to write a successful essay, including planning, citing references and writing style.

"I came across a lot of essay competitions, but STEM Next really stood out to me because the topics and the questions we were able to choose from were really interesting. There were things that were so niche which you could go into a lot of details and there were also topics that were very broad that affect every aspect of our life." - student participant.



Amazon vouchers are awarded to 1st, 2nd and 3rd place in each essay category.

As well as prize money, all winning essays are published on the [STEM Next webpage](#), and all are eligible to be submitted at the [CREST Awards](#), hosted by the British Science Association (BSA).

For more information contact [gabijablazyte@techfest.org.uk](mailto:gabijablazyte@techfest.org.uk)

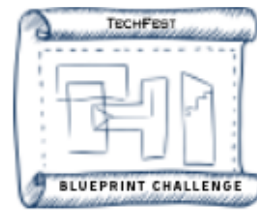
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# **BLUEPRINT** **CHALLENGE: A FUTURE HIGHSTREET**

This project challenges S3 - S6 pupils from schools across Scotland to redesign a high street and create a space which allows society to thrive while celebrating the natural world at the same time. Pupils are challenged to tackle the below 'modern problems' and their ideas had to be backed up with some evidence.



**A FUTURE HIGHSTREET**

- Architecture – architectural design should meet functional needs as well as incorporating nature, which has been shown to create a calming environment which can reduce feelings of tension, anxiety, frustration and fatigue.
- Power generation and consumption – how your future high street will support a low carbon future in the journey towards net zero.
- Economic Stability – demonstrate how the safeguarding of urban biodiversity can be a driver of business opportunities and job creation.
- Well-being – both physical and mental health and well-being.

For more information contact [gabijablazyte@techfest.org.uk](mailto:gabijablazyte@techfest.org.uk)



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## STEM IN THE PIPELINE

STEM in the Pipeline: Energising the Transition is a long running project that year on year receives exceptionally positive feedback from students, teachers and industry professionals. The project was designed to bridge the knowledge gap between education and the energy sector's workforce. S6 pupils are invited to apply their knowledge cultivated from STEM subjects to a hypothetical yet realistic industry project.



Building their technical knowledge and honing their skills in project management, communication and teamwork, participants gain valuable insight into the roles available within the industry and how they can forge a path to a STEM career that aligns with their interests and skill set.



The aim of the project is to produce a field development plan for 'The STEM Oil Field', in the form of a written report and a verbal presentation. Last year, the project was updated to provide an accurate view of where the Energy Industry is now, and how it is evolving into the future.

STEM in the Pipeline is split into 3 parts: a project Introduction Day, a 3 month period of independent project work at school and a Presentation Day. Each part of the process allows the students to advance their knowledge of STEM subjects whilst encouraging them to develop both their personal and teamworking skills. The competing teams are given a range of resources during STEM in the Pipeline that they can utilise during the project. These learning tools cover a broad range of subjects, including geoscience, process engineering, reservoir engineering and finance.

For more information contact [marthagavan@techfest.org.uk](mailto:marthagavan@techfest.org.uk)

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# STEM ADVENT CALENDAR

The TechFest STEM Advent Calendar is a highly interactive, online space for young people and their families and teachers to participate in a range of exciting activities throughout December.



Developed to be inclusive of all interests and skill levels, the STEM Advent Calendar - '24 Days of STEM' - help those who take part to develop science, design and coding skills, with more than a few fun and festive surprises along the way.

Eliminating barriers to participation, we aim to develop engaging challenges that require a minimum level of everyday or easily accessible items, with some activities only requiring a piece of paper and some imagination.

There is no cost attached to participation, and we would ensure each countdown can be accessed from desktop, mobile and tablet devices.

For more information contact [kirstycranna@techfest.org.uk](mailto:kirstycranna@techfest.org.uk)



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# CAREER READY

Career Ready is a transformative program that empowers young people across the UK to realise their full potential and kickstart their careers with confidence.

Through Career Ready program, students are equipped with the skills, knowledge, and networks they need to thrive in today's competitive job market. From practical workshops and industry insights to internships and mentorship opportunities, Career Ready provides a holistic approach to career readiness, tailored to meet the unique needs of each participant.

Career Ready network of dedicated mentors, drawn from a diverse range of industries, such as TechFest, play a pivotal role in guiding and supporting students on their journey. By offering invaluable advice, sharing personal experiences, and fostering meaningful connections, our mentors empower students to navigate the complexities of the professional world with confidence and resilience.



2022/2023 programme TechFest mentee.

Career Ready is committed to breaking down barriers, bridging the gap between education and employment, and paving the way for a brighter future for young people across the UK.

For more information contact [kirstycranna@techfest.org.uk](mailto:kirstycranna@techfest.org.uk)

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2023/2024 programme TechFest mentees.



## CREST

The Crest Awards, powered by the British Science Association, is a dynamic and innovative platform designed to inspire and recognise young people's achievements in science, technology, engineering, and mathematics (STEM).



The CREST Regional Support Organisation for Scotland is TechFest.

With a focus on hands-on learning and real-world application, the Crest Awards provides students with the opportunity to explore their curiosity, develop critical thinking skills, and unleash their creativity through exciting STEM projects.

Whether it's conducting experiments, designing solutions to real-world problems, or exploring the wonders of the natural world, the Crest Awards offer a wide range of project options to suit every interest and ability level. Students can choose from a variety of award levels, including Discovery, Bronze, Silver, and Gold, each offering a progressively more challenging and rewarding experience.

The Crest Awards program is flexible and accessible, making it ideal for use in schools, youth clubs, and other educational settings. Teachers, mentors, and adult volunteers play a vital role in supporting and guiding students through their Crest Awards journey, providing encouragement, resources, and feedback along the way.

Through participation in the Crest Awards, students not only gain valuable STEM skills and knowledge but also develop essential life skills such as teamwork, communication, and problem-solving. Additionally, Crest Awards provide a valuable opportunity for students to showcase their achievements, build confidence, and inspire others to pursue their passion for STEM.

For more information contact [kirstycranna@techfest.org.uk](mailto:kirstycranna@techfest.org.uk)

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# TECHFEST

Promoting Science, Technology, Engineering and Mathematics

Scottish Charity No SC010349

## PRIMARY OUTREACH WORKSHOPS 2023/2024

For enquiries, please contact:

Jenny Taylor, **Festival Manager**

E: [jennytaylor@techfest.org.uk](mailto:jennytaylor@techfest.org.uk)

AGE RANGE	WORKSHOP
EY & P1-P2	K'NEX DINOSAURS
	ENERGISING THE TRANSITION: ENERGY EXPLORERS
EY & P1-P3	MONEY MATHS: SHORT CHANGED
P1-P3	ISAAC'S BIG IDEA
	TECHFEST DOME: NIGHT AND DAY
	WILD ABOUT MATHS
P3-P5	ENERGISING THE TRANSITION: ELECTROMAGNETISM!
P1-P7	BRILLIANT BONES
	GEOLOGY ROCKS
	GLORIOUS GERMS
	GRUESOME GUTS
	K'NEX LIGHTHOUSES
	TERRIFIC TEETH
P4-P7	APOLLO 7 CHALLENGE
	CODES AND CYPHERS
	MATHS AROUND THE WORLD
	STEM THROUGH THE AGES
	POLLUTION INVESTIGATORS
	TECHFEST DOME: NIGHT SKIES
	BUILD A STARSHADE: ORIGAMI IN SPACE <small>ON DEMAND</small>
P5-P7	EUREKA MOMENT
	ENERGISING THE TRANSITION: BRIGHT IDEAS
	DNA DETECTIVES <small>ON DEMAND</small>
	WILDLIFE INVESTIGATORS <small>ON DEMAND</small>
	CODE BREAKERS <small>ON DEMAND</small>
	MICROBIOLOGY

For more information and to book contact [jennytaylor@techfest.org.uk](mailto:jennytaylor@techfest.org.uk)



## K'NEX DINOSAURS

An introduction to the fascinating world of engineering design. Kid K'NEX allows younger children to develop their construction skills and build up their creative confidence by producing their own unique model.



subsea 7

### CfE Links:

TCH 0-12a, TCH 1-12a, TCH 0-14a, TCH 0-15a, LIT 0-09a, LIT 1-09a, LIT 0-10a, LIT 1-10a

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## ENERGISING THE TRANSITION: ENERGY EXPLORERS

Welcome Energy Explorers! In this fun and interactive workshop learn about different types of energy and the various energy sources helping to power our world!

In this energy inspired workshop, pupils get the opportunity to explore the science behind energy, from oil and gas to renewables, and take part in hands-on activities. Join us on this exciting energy journey and discover more about the world around you!



Apache

### CfE Links:

Science, Engineering, Renewable Energy

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## MONEY MATHS: SHORT CHANGED

Join us for a hands-on maths add-venture to learn all about money. Puzzles, games and challenges explore how we use currency. Guaranteed high interest! Takeaway resources for using back in the classroom.



Interested in sponsoring this workshop?

**Get in touch**

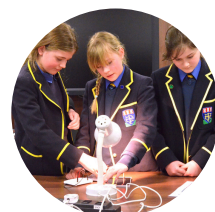
### CfE Links:

MNU 0-09a, MNU 1-09a, MNU 1-09b, SOC 0-20a, SOC 1-20a

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## ISAAC'S BIG IDEA

Pupils will hear the story of Isaac Newton and learn how forces interact with objects. Through storytelling and a range of fun activities students will learn about different forces, and the role they play in everyday life.



Interested in sponsoring this workshop?

**Get in touch**

### CfE Links:

SCN 0-07a, SCN 1-07a, SCN 1-08a

## TECHFEST DOME: NIGHT & DAY

What makes day and night? Where does the sun go at night? This show demonstrates how the Sun moves across the sky during the day in both summer and winter. Find the North Star, the Plough, Orion, Betelgeuse, and Sirius in the night sky and relate them to the Greek constellations.

### CfE Links:

SCN 0-06A



**Apache**

## WILD ABOUT MATHS

Explore the Maths that can be found in the natural world, by looking at lots of legs! This fun interactive workshop covers the concepts of classification, number place, number bonds and addition.

### CfE Links:

MNU 1-02a, MNU 1-03a, MNU 1-20b, SCN 1-01a



**equinor**

## ENERGISING THE TRANSITION: ELECTROMAGNETISM!

Understanding the properties of magnets is central to the energy industry and to many aspects of our daily lives. In this hands-on investigative workshop, working in small teams, pupils discover the properties and uses of magnets and magnetism and are introduced to the amazing phenomenon of electromagnetism.

### CfE Links:

science



**CNOOC**

## BRILLIANT BONES

What part of your body is stronger than steel and harder than granite? Find out the answer to these questions and discover many more incredible facts about the skeleton as we investigate the hardest organ in the human body: bones. We'll take a closer look and investigate the structure and function of skeletons from across the animal kingdom with lots of experiments and practical activities for the whole class.

### CfE Links:

SCN 0-07a, SCN 1-07a, SCN 1-08a



Interested in  
sponsoring this  
workshop?  
**Get in touch**

## GEOLOGY ROCKS

Get your hands on some exciting rocks in this interactive workshop, learn about natural processes that have shaped the surface of the earth and delve underground to explore

### CfE Links:

Earth Materials: TCH 1-024a, SCN 2-17a, SCN 3-17a Processes of the planet: SCN 2-05a, SCN 3-05b, Forces: SCN 2-08b

Properties: SCN 2-15a

Exploring uses of materials: TCH 0-10a, TCH 1- Properties: SCN 2-15a



Interested in sponsoring this workshop?

[Get in touch](#)

## GLORIOUS GERMS

Plunge into the mysterious world of sickness and disease. Learn about the transmission of germs and how to protect your body. How long would you have lasted during an outbreak of the Black Death?

### CfE Links:

Health and Wellbeing (Physical wellbeing) HWB-1- 15a/HWB 2-15a & HWB 1-16a/HWB 2.16a

Health and Wellbeing (Safe and Hygienic practices) HWB 1-33a/HWB 2-33a

Sciences (Body systems and cells) SCN 1-13a/SCN 2- 13a/ SCN 3-13c



Interested in sponsoring this workshop?

[Get in touch](#)

## GRUESOME GUTS

Follow the journey of food from your mouth, through the acid bath in your stomach, along metre after metre of pulsating guts and out the other end! Find out how the body gets energy and nutrients from food, and what waste we leave behind. Children learn about the key organs and functions in the digestion system. The idea is that we follow the journey of a piece of food from the mouth all the way through the digestive system and out the other end.

### CfE Links:

Health and Wellbeing (Physical wellbeing) HWB-1- 15a/HWB 2-15a & HWB 1-16a/HWB 2.16a

Health and Wellbeing (Safe and Hygienic practices) HWB 1-33a/HWB 2-33a

Sciences (Body systems and cells) SCN 1-13a/SCN 2- 13a/ SCN 3-13c



Interested in sponsoring this workshop?

[Get in touch](#)

## K'NEX LIGHTHOUSES

Shine a light of creativity to tackle a historic engineering challenge. Investigate challenges associated with the construction of lighthouses. Use your engineering skills to develop a lighthouse prototype.

### CfE Links:

P1-P3: TCH 0-11a, TCH 0-12a P4-P7: TCH 2-05a, TCH 2-09a, SOC 2-06a



Interested in sponsoring this workshop?

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## TERRIFIC TEETH

A fun and interactive experiment investigating the science behind a healthy smile. Pupils will help scientists at the Bright Smile Toothpaste Company make and test a new, top secret toothpaste recipe. Examination of ingredients and simple experiments encourage pupils to build their investigative skills and scientific understanding.

### CfE Links:

SCN 0-07a SCN 1-07a SCN 2-07a TCH 0-14a TCH 1-14a TCH 2-14a TCH 1-14b TCH 2-14b



Interested in sponsoring this workshop?

**Get in touch**

## APOLLO 7 CHALLENGE

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

### CfE Links:

Planet Earth (Space) SCN-2.06a

Forces, electricity and waves (Forces): SCN 3-08a



apollo  cnooc

 equinor

 TAQA

## CODES AND CYPHERS

Explore the enigmatic history of codes and cyphers in this hands-on session. Students will learn how to send secret messages and how they can be broken, inspired by dastardly deeds and historical intrigue.

### CfE Links:

MTH 1-12a, MTH 2-12a

LIT 0-02a / ENG 0-03a , LIT 1-02a



Interested in sponsoring this workshop?

**Get in touch**

## 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 around the room. In small teams, pupils travel around each puzzle with a customised passport logging the countries they have visited. Help and encouragement is at hand and solutions checked.

### CfE Links:

MNU 0-07a, MNU 1-07b, MTH 1-07c, MTH 1-12a, MTH 0-13a, MTH 1-13a, MTH 1-13b, MTH 2-13a, MTH 1-15b, MTH 0-16a, MTH 1-16a, MTH 1-16b, MTH 2-16a, MTH 0-17a, MTH 1-17a, MTH 2-17b, MTH 2-17c, MTH 1-18a, MTH 0-19a, MTH 1-19a



 equinor



## STEM THROUGH THE AGES

Learn about the Science, Technology, Engineering and Maths that helped ancient civilisations become so successful. Learn about Roman health and hygiene and how they make fresh water accessible. Learn about some of the world's greatest Greek thinkers, their discoveries and gain an insight how Ancient Egyptians prepared their dead for the afterlife.

### CfE Links:

Numeracy and Mathematics MNU 2-03a MNU 2- 11a/MNU 2-11c/MNU 2-20b  
Sciences SCN 2-08b/SCN 2-20b Technology TCH 2-12a  
Health and Wellbeing HWB 2-15a



## POLLUTION INVESTIGATORS

As part of the environmental pollution monitoring team you have been called to a fish kill incident. Using scientific tests, you must uncover what happened and put a plan in place to prevent future incidents.

### CfE Links:

Sciences: SCN 2-01a, SCN 2-16a, SCN 2-18a Numeracy and Maths: SCN 2-03a



## TECHFEST DOME: NIGHT SKIES

A tour of the night sky includes the North Star, the Plough and Orion. Watch how the stars move at night and discover how we get different constellations with the changing seasons. Listen to the amazing story of Perseus and Andromeda and find out which planets you can see in the sky tonight.

### CfE Links:

SCN 1-06a, SCN 2-06a



*Apache*

## BUILD A STARSHADE: ORIGAMI IN SPACE

ON DEMAND

This workshop explores principals of engineering with the example of NASA using origami to transport vital equipment into space. Part one of the workshop will be done in your own time and consists of watching a video and building origami star shades. Part two will be a virtual visit from an industry professional, giving pupils the opportunity to discuss their work and ask questions.

### CfE Links:

TCH 1-05a, TCH 1-06a, TCH 2-07a, TCH 1-09a, TCH 2-09a, TCH 2-10a, TCH 2-12a

You can choose to do this workshop in your own time without a visit from TechFest. Get in touch for more info.



*apollo*

## EUREKA MOMENT

Pupils will learn about Archimedes Principle, and then apply their knowledge to designing a boat and testing how many marbles it can hold. This workshop contains lots of experimenting with different materials and an introduction to concepts such as Archimedes Principle and density

### CfE Links:

SCN 0-07a, SCN 1-07a, SCN 1-08a



Interested in sponsoring this workshop?

**Get in touch**

## ENERGISING THE TRANSITION: BRIGHT IDEAS!

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. In this workshop, 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. Which energy source will you choose to power your future?

### CfE Links:

Science, Engineering, Renewable Energy



## DNA DETECTIVES

ON DEMAND

You can choose to do this workshop in your own time without a visit from TechFest. Get in touch for more info.

Dive into the wonderful world of genetics! Learn about DNA, the marvellous molecule that contains the instructions for all life on earth! You can even try your hand at translating some DNA sequences to find the hidden meaning. Find out what your DNA says about you!

### CfE Links:

SCN 1-14a, SCN 2-14b,



Interested in sponsoring this workshop?

**Get in touch**

## WILDLIFE INVESTIGATORS

ON DEMAND

You can choose to do this workshop in your own time without a visit from TechFest. Get in touch for more info.

Growing tired of going on the same daily walk? Need to add in more excitement? Well, why not put on your investigators hat and find out how much biodiversity is just outside your door! Plus, take part in some fun DIY projects to make your outdoor area even more wildlife friendly!

### CfE Links:

SCN 2-02a, SCN 0-01a



Interested in sponsoring this workshop?

**Get in touch**

## CODE BREAKERS

ON DEMAND

You can choose to do this workshop in your own time without a visit from TechFest. Get in touch for more info.

Put your problem-solving skills to the test and see if you can crack the code! You'll learn about different types of codes and ciphers as well as creating your own code to send your own secret messages. Will you be able to get a coded message to TechFest's team of secret agents before it's too late?!

### CfE Links:

TCH 2-13a, MNU 3-03b



Interested in sponsoring this workshop?

**Get in touch**

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## MICROBIOLOGY

Discover the hidden world of the microbe in TechFest's introduction to microbiology. Through observation and practical investigation explore the impact of microorganisms (or germs) on health. Experiment with the roles of microorganisms in breaking down materials with yeast.

### CfE Links:

Science, Health and Wellbeing SCN 1-13a, SCN 2-13a



Interested in sponsoring this workshop?

**Get in touch**