

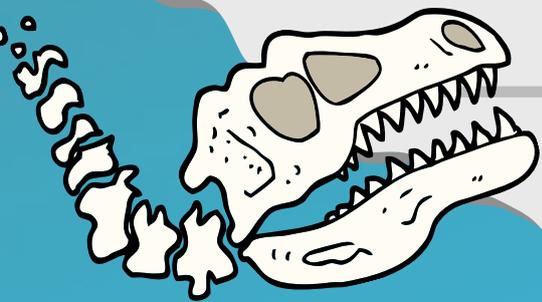
TECHFEST

digital



EARLY YEARS AND PRIMARY PROGRAMME

2021



LIVE | TOURING | ON DEMAND

MON 10 MAY > FRI 14 MAY



JOINT PRINCIPAL SPONSORS



techfest.org.uk

Scottish Charity No. SC010349



WELCOME TO

TECHFEST DIGITAL EARLY YEARS AND PRIMARY SCHOOL PROGRAMME 2021

TechFest is delighted to present its Digital Early Years and Primary Schools Programme for 2021 - an exciting line-up of Science, Technology, Engineering and Mathematics (STEM) workshops and shows, all chosen with the capacities, principles, experiences and outcomes of Curriculum for Excellence in mind.

This year although we had hoped to run a physical event, due to the global pandemic our TechFest programme will consist of digital presentations and activities from presenters old and new and will run from 10th – 14th May. As so many things have this year, we have had to change our method of operating and while we continue to work remotely, this year has been a great example of how we have all adapted to the change in the circumstances that we find ourselves in. TechFest has embraced these changes in order to continue our mission to promote STEM to a wider audience.

We are also delighted that events like our school's programme can help your school inspire and inform our future workforce. Thanks to our extensive sponsorship and the time volunteers give to working with us, it is never too early to help our young people raise awareness of all the jobs there are that match their interests and increase their confidence. TechFest is working with SDS to ensure that our work is in line with the growth sectors and hopes that events like our schools' programme allow our young people to hear first-hand from inspirational industry professionals who work in STEM related careers that may be of interest to students as well as the common transferable skills our young people share with our presenters.

TechFest's joint principal sponsors are bp and Shell. The commitment of our sponsors and supporters not only makes the Festival possible but also contributes to the continued development of this inspiring Festival, providing enjoyment and inspiration for the next generation of scientists and engineers.

We would like to take this opportunity to thank everyone involved in making the Festival such a success this year, particularly our programme contributors, many of whom we have worked with for several years and we aim to continue to develop these relationships further to ensure we are maximising the opportunities that moving to a digital platform has offered. Collaboration is a key stone to all our programmes and we actively seek to collaborate with others as well as ensuring that we are promoting others in our sector.

Disclaimer - All details in this programme are correct at the time of going to print. TechFest reserves the right to alter the programme information and events without prior notice if required. Apologies for any inconvenience.



A NOTE FROM TECHFEST'S JOINT PRINCIPAL SPONSORS 2021



As joint principal Sponsors of TechFest 2021, bp and Shell are delighted to once again pledge our support to Aberdeen and the North-East of Scotland's premier annual festival of Science, Technology, Engineering and Maths (STEM).

TechFest aims to inform young people in these key subjects and inspire them to become the next generation of engineers, scientists, technologists and mathematicians.

This year, TechFest has developed a diverse and entertaining digital programme to complement the classroom work delivered through the Curriculum for Excellence and we are confident young people will find the festival experience both educational and fun.

We look forward to another successful festival which we hope will encourage pupil's interest in these important subjects from an early age.

Emeka Emembolu
Senior Vice President
North Sea, bp

Steve Phimister
Upstream Director U.K. & Ireland
Shell U.K. Limited

THIS YEAR

Our programme of events for primary and early years is fully digital and is split into three categories: Live, Touring and On Demand. All of these events are free and can be enjoyed from the comfort of your classroom.

LIVE

As requested by teachers, the Live Events will take place on Google Meet everyday in the morning and afternoon. To book a space for your class please follow the link to the booking form.

TOURING

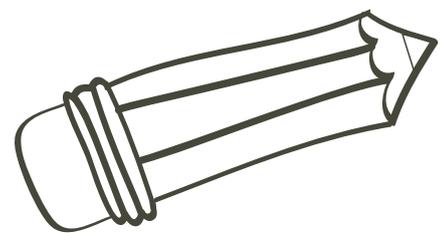
We have a range of resources from trusted providers that you can book through TechFest and complete at a time that suits you.

ON DEMAND

We are offering schools access to TechFest's catalogue of festival activities which can be accessed whenever is most convenient for you and your class.

I'M FREE TO
ATTEND!

ALL FROM THE
**COMFORT
& SAFETY**
OF YOUR OWN
CLASSROOM



AT A GLANCE



LIVE

MON 10 MAY 9:30AM

Dr Elsa Panciroli:
Meet the Palaeontologist

MON 10 MAY 11AM

Aberdeen Science Centre:
Destination Space!

MON 10 MAY 2PM

Keenan Recycling Ltd.:
Tour of Keenan Recycling Ltd.

TUE 11 MAY 9:30AM

Macduff Marine Aquarium:
A look at marine plastics with Emily Penn and Macduff Marine Aquarium

TUE 11 MAY 11AM

Jim McNab of Oceaneering, TechFest and Aberdeen Science Centre
an Audience with Astronauts Part 1

TUE 11 MAY 2PM

The Critter Keeper:
Mini Beasts

WED 12 MAY 9:30AM

Greyhope Bay:
Greyhope Bay

WED 12 MAY 11AM

Dynamic Earth:
Climate Questions with Dynamic Earth

WED 12 MAY 2PM

Jim McNab of Oceaneering, TechFest and Aberdeen Science Centre
an Audience with Astronauts Part 2

THU 13 MAY 9:30AM

The Ark Open Farm:
Springtime down on the Farm

FRI 14 MAY 9:30AM

Aberdeen Science Centre:
Destination Space!

FRI 14 MAY 11AM

The Critter Keeper:
Mini Beasts

FRI 14 MAY 1:30PM

Carl Walz of Oceaneering, TechFest and Aberdeen Science Centre
an Audience with Astronauts Part 3

FRI 14 MAY 2:30PM

Louisa Taylor:
Meet the Scientist

TOURING

TECHFEST

TechFest TV Tours-STEM in the Installation goes on the road!

MY WORLD OF WORK LIVE BY SKILLS DEVELOPMENT SCOTLAND

- Virtual Games Design
- Virtual Cracking Cryptography
- Virtual Code Art

ON DEMAND

MY WORLD OF WORK LIVE

- Spinning Water
- Invisibility
- Cornflower Goo

GLASGOW SCIENCE CENTRE

Curious About: Our Planet

ABERDEEN SCIENCE CENTRE

Space Junk

DYNAMIC EARTH

- Destination Space: Beyond the Visible Universe
- Learning Pathways on Dynamic Earth Online

DUTHIE PARK RANGER SERVICE

Tricky Tracks

BOOKBUGS

Bookbugs water Activities

TECHFEST

- TechFest@Home
- Codebreaker
- DNA Detectives Wildlife Investigators

K'NEXT GENERATION

K'NEXT Generation Online Learning

DESIGN TASKS FOR KIDS

Dinosaur themed activities



LIVE EVENTS

HOW TO BOOK

Book your class into as many of our live events as you want by filling in our google form ([click here](#)).

Please indicate which events you would like to attend by filling in your email for each one and we will send you the links to all relevant events which will be taking place on Google Meet.

MEET THE PALAEOLOGIST

Live Q&A session

Ask questions about extinct animals and how to study fossils in this live Question and Answer session with palaeontologist, Dr Elsa Panciroli. Elsa studies the evolution of mammals in the time of dinosaurs, including new discoveries from Scotland and beyond.

You and your class can watch the talk Elsa gave during TechFest 2020 on our YouTube channel here.

PRESENTED BY: ELSA PANCIROLI, OXFORD UNIVERSITY MUSEUM OF NATURAL HISTORY

AGE RANGE: P4-P7

DATE: MON 10 MAY **TIME:** 09:30

DESTINATION SPACE!

Join us to explore all things space, discover what it is like to live in space and the hazards of space junk. We'll also explore how the space industry is leading in new technologies as part of the latest space missions including the Rosalind Franklin Mars rover which is due to launch in 2022.

PRESENTED BY: ABERDEEN

SCIENCE CENTRE

AGE RANGE: P4-P7

DATE: MON 10 MAY **TIME:** 11:00

KEENANS RECYCLING

Keenan's collect food waste from hotels, care homes, hospitals and cafes. Join us for a behind the scenes tour of their recycling facility and find out how the food waste collected is then transformed into electricity, heat and fuel.

PRESENTED BY: KEENAN RECYCLING LTD.

AGE RANGE: P4-P7

DATE: MON 10 MAY **TIME:** 14:00

A LOOK AT MARINE PLASTICS

Macduff Marine Aquarium and TAQA present 'A look at marine plastics with Emily Penn'

Ocean advocate and skipper, Emily Penn, spent the last decade exploring plastic pollution in the oceans. She tells us of her journey and research into this global problem and inspires us to help. After the short film one of the aquarium's marine masters will join in to answer your questions and explore solutions to the plastics problem.

PRESENTED BY: MACDUFF MARINE

AQUARIUM AND EMILY PENN

AGE RANGE: P4-P7

DATE: TUE 11 MAY

TIME: 09:30



AN AUDIENCE WITH ASTRONAUTS

Part One: Join Jim McNab of Oceaneering as he reality checks an interview involving two former astronaut colleagues, Carl Walz and Mike Bloomfield, who describe their background and journey to their current jobs with Oceaneering with links to the energy industry. We will make up questions together in the two sessions and the best will be asked at Fridays live session with Carl calling in from the Neutral Buoyancy Laboratory in Houston Texas.

PRESENTED BY: JIM MCNAB OF OCEANEERING, ABERDEEN SCIENCE CENTRE AND TECHFEST

AGE RANGE: P1-P7

DATE: TUE 11 MAY **TIME:** 11:00

MINI BEASTS

Join The Critter Keeper as we explore the wonderful world of mini beasts and find out how to identify one, from insects to molluscs. In this funpacked live virtual session using real life animal demonstrations, you will discover just how mighty our little bugs are in helping us and the ecosystem of planet Earth.

PRESENTED BY: THE CRITTER KEEPER

AGE RANGE: P1-P7

DATE: TUE 11 MAY

TIME: 14:00



GREYHOPE BAY

Join project founder, Dr. Fiona McIntyre, and project lead, Carole Monnier, as they take you on the unique journey of how Greyhope Bay is building a low impact community space and café at Torry Battery. The Greyhope 'Build It' team have brought together an innovative mix of cutting-edge tech and upcycled materials to make this concept possible. Put on your surveyor's hat and dive into the exciting future of sustainable spaces right here in Aberdeen!

PRESENTED BY: GREYHOPE BAY

AGE RANGE: P4-P7

DATE: WED 12 MAY **TIME:** 09:30

CLIMATE QUESTIONS

With Dynamic Earth

We are living through a climate emergency and we need to act fast to fix it! Join Dynamic Earth for a live session to explore some of the background science as well as solutions that could help us build a better future for everyone. Bring along your climate questions, a pencil, paper and plenty of imagination!

PRESENTED BY: DYNAMIC EARTH

AGE RANGE: P5-P7

DATE: WED 12 MAY

TIME: 11:00



AN AUDIENCE WITH ASTRONAUTS

Part Two

Join the second session with Jim McNab of Oceaneering as he reality checks an interview involving two former astronaut colleagues, Carl Walz and Mike Bloomfield, who describe their background and journey to their current jobs with Oceaneering with links to the energy industry. We will make up questions together in the two sessions and the best will be asked at Fridays live session with Carl calling in from the Neutral Buoyancy Laboratory in Houston Texas.

PRESENTED BY: JIM MCNAB OF OCEANEERING, ABERDEEN SCIENCE CENTRE AND TECHFEST

AGE RANGE: P1-P7

DATE: WED 12 MAY **TIME:** 14:00

SPRINGTIME DOWN ON THE FARM

Live Q&A session

with pre-recorded video

Join Farmer Lyndy for a Springtime tour of The Ark Open Farm (Northern Ireland). On the tour you will meet lots of amazing farmyard animals and welcome some of the newest arrivals including baby rabbits and lambs. After the video we will have a live Q&A session where you just might meet another of the farm's residents.

PRESENTED BY: THE ARK OPEN FARM

AGE RANGE: EY & P1-P3

DATE: THU 13 MAY

TIME: 09:30

DESTINATION SPACE!

Join us to explore all things space, discover what it is like to live in space and the hazards of space junk. We'll also explore how the space industry is leading in new technologies as part of the latest space missions including the Rosalind Franklin Mars rover which is due to launch in 2022.

PRESENTED BY: ABERDEEN SCIENCE CENTRE

AGE RANGE: P1-P7

DATE: FRI 14 MAY **TIME:** 09:30



MINI BEASTS

Join The Critter Keeper as we explore the wonderful world of mini beasts and find out how to identify a mini beast, from insects to molluscs. In this funpacked live virtual session using real life animal demonstrations, you will discover just how mighty our little bugs are in helping us and the ecosystem of planet Earth.

PRESENTED BY: THE CRITTER KEEPER

DATE: FRI 14 MAY **TIME:** 11:00

AGE RANGE: P1-P7



AN AUDIENCE WITH ASTRONAUTS

Part Three: Join Carl Walz of Oceaneering and a former NASA astronaut, live from the Neutral Buoyancy Laboratory in Houston, Texas. This facility provides not only a safe environment for astronauts to train and interact with a life size model International Space Station but also a place to test new concepts and technologies in the ROV sector and includes a helicopter survival training facility. You can put your questions directly to Carl based on the previous interview sessions.

PRESENTED BY: CARL WALZ **AGE RANGE:** P1-P7
DATE: FRI 14 MAY **TIME:** 13:30

MEET THE SCIENTIST

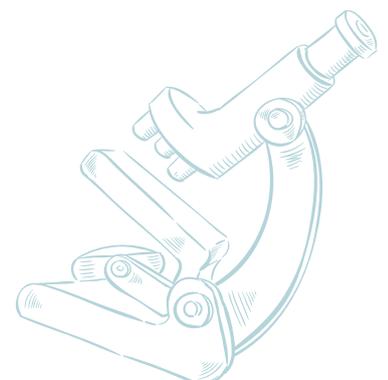
Presentation with live Q&A session

Have you ever wondered what it's like being a scientist? Or how you become one? Or what it is that scientists actually do all day? Sit down with biologist Louisa Taylor as she answers all of your questions!

PRESENTED BY: LOUISA TAYLOR, UNIVERSITY OF NOTTINGHAM

AGE RANGE: P4-P7

DATE: FRI 14 MAY **TIME:** 14:30



HOW TO BOOK

You can book touring workshops through TechFest by emailing us ([click here](#)).

TOURING

OUR TOURING WORKSHOPS ARE DESIGNED FOR YOU AND YOUR CLASS TO TAKE PART IN AT A TIME THAT SUITS YOU.

TECHFEST TV TOURS - STEM IN THE INSTALLATION GOES ON THE ROAD!

Invite TechFest into your classroom and immerse yourself in the mysterious mechanics of energy!

We all use energy in our daily lives. Every time we turn on a light switch, get into a car, or even just get out of bed – it's all energy! But how can we harness different sources of energy in order to meet our global energy demand? Together, we will investigate different types of energy and explore how they are used.

What's more, our friends at CNOOC International challenge you to use the energy of the wind by designing your very own wind turbines – who will be able to create the best design?!

This workshop is suitable for P1 – P7. At time of booking let us know the age range of your class and we will send you the appropriate resources.

For P4-P7, students will be tasked with designing two different types of wind turbines and will take part in an experiment to see which design is better in terms of function and structure (all templates and information will be available to download).

Pre-recorded video footage and teacher resources will be provided so the main activity in this workshop can be completed at your leisure, prior to a live visit from one of the TechFest team who will be delighted to join you in the classroom and discuss the results of the student's activity, as well as answering any questions.



VIRTUAL GAMES DESIGN

During this workshop students will make their own video game using Microsoft Make Code. This activity will give them a chance to learn about careers in digital technology and learn all about valuable programming skills.

AGE RANGE: P7-S3

VIRTUAL CRACKING CRYPTOGRAPHY

Try out your skills as a forensic computer analyst by using programs to encrypt and decrypt messages. This activity is the perfect introduction to cyber security! During the workshop pupils will learn about cryptography and will use programs to encrypt and decrypt messages. The workshop will also give the pupils a chance to explore careers in cyber security.

AGE RANGE: P7-S3

VIRTUAL CODE ART

Provided by My World of Work Live by Skills Development Scotland this workshop uses code to create shapes and allows young people to program their own artwork while learning basic programming skills. After the workshop it gives students a chance to discuss the skills used and how they can link this to future careers.

AGE RANGE: P7-S3



ON DEMAND

This section is full of content that is ready to access when you are. Simply click below and you will be taken to The workshops. They will all be available by 10th May.

[CLICK HERE](#)

CURIOUS ABOUT OUR PLANET

from Glasgow Science Centre

Explore our planet and the science of climate change through our collection of digital talks and tours, creative workshops and exhibitions, all without leaving the comfort of your home or school. Get behind the scenes with tours from Edinburgh Zoo, discover workshop activities with our #GSCAtHome videos, or find talks with climate scientists and wildlife conservationists. Get inspired and find out how you can contribute to a more sustainable future.

AGE RANGE: P5-P7

K'NEXT GENERATION

K'NEXT Generation Online Learning

All the challenge, learning and fun of K'NEXT Generation workshops, available on-demand and to download. Choose from Curriculum for Excellence-linked lessons, STEAM challenges and resources including "how-to" videos and jigsaw puzzles.

No K'NEX or KAPLA?

No problem - alternatives are suggested.

AGE RANGE: EY-P7

TRICKY TRACKS

from Duthie Park Ranger Service

Is it a fox or is it a badger? The Duthie Park Rangers are sharing the tricks of the tracking trade with you! Find out why tracking is important, which animals walk on their nails, and go outside to investigate nature yourself! What signs can you find that the animals left behind?

AGE RANGE: P3-P7



SPINNING WATER

In this fun activity, you will learn about Newton's Laws of Motion and learn about job roles that use this type of physics. You can find accompanying worksheets at www.myworldofwork.co.uk/live

PRESENTED BY: SKILLS DEVELOPMENT SCOTLAND

AGE RANGE: P7-S1

INVISIBILITY

In this activity you will learn about light, how it travels through different mediums and the science of light refraction. You will also learn how this science is being used in the world of work. You can find accompanying worksheets at www.myworldofwork.co.uk/live

PRESENTED BY: SKILLS DEVELOPMENT SCOTLAND

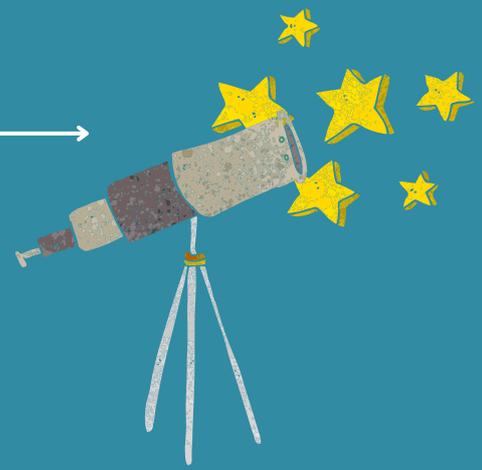
AGE RANGE: P7-S1

CORNFLOUR GOO

In this hands-on, messy experiment you will learn about non-Newtonian fluids, understand how and where they are used in everyday life and learn more about the job roles connected to them. You can find accompanying worksheets at www.myworldofwork.co.uk/live

PRESENTED BY: SKILLS DEVELOPMENT SCOTLAND

AGE RANGE: P7-S1



CODE BREAKER

from TechFest

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?!

AGE RANGE: P5-P7

DNA DETECTIVES

from TechFest

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!

AGE RANGE: P5-P7

WILDLIFE INVESTIGATORS

from TechFest

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!

AGE RANGE: P5-P7

BOOKBUGS

from TechFest and Scottish Book trust

Bookbugs week 2021 is about all things water; take a look at TechFest's video and activities that are related to the science of water

AGE RANGE: EY

DESIGN TASKS FOR KIDS

a range of activities, crafts, games and videos on a dinosaur theme.

AGE RANGE: EY-P7

TECHFEST@HOME

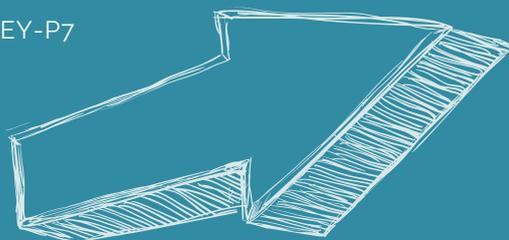
Remember to check out our TechFest website for more exciting activities.

SPACE JUNK

from Aberdeen Science Centre

Follow along with hands-on activities exploring space technologies and learn how the UK space industry is leading innovations in the latest space missions.

AGE RANGE: EY-P7



DESTINATION SPACE: BEYOND THE VISIBLE UNIVERSE

from Dynamic Earth

In October 2021, an exciting new space telescope will begin its four week journey to a special spot four times further from the Earth than the Moon is. This is the James Webb Space Telescope, known as Webb. Through these videos and activities you will find out more about what Webb is, how it works and what it is searching for. From Dynamic Earth in Edinburgh, supported by the UK Space Agency. (1.5 to 3 hours total duration)

AGE RANGE: P5-P7

LEARNING PATHWAYS ON DYNAMIC EARTH ONLINE

from Dynamic Earth

Dynamic Earth is the only UK science centre dedicated to the story of our planet. A visit to our centre is like nothing else, but for activities that can be done at home or in the classroom, DynamicEarthOnline.co.uk has got you covered! Not sure where to start? Our curriculum-linked Learning Pathways are designed to weave together a variety of videos, activities and resources to take learners on a journey of discovery!

AGE RANGE: P5-P7

CLASSROOM CHEMISTRY

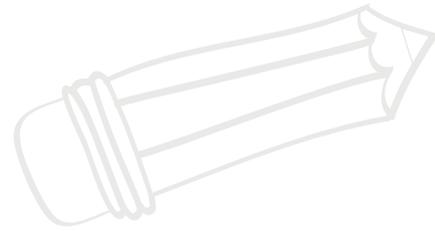
from Inverness Science Festival

Would you like to find out more about Chemistry? Join in with Inverness Science Festival's online chemistry experiments to find out about chromatography, magnification, acids and bases, and chemical reactions! The accompanying video and teacher resource will be available [here](#) from April 29th.

AGE RANGE: P1-P7



ADVERTS & UPCOMING EVENTS



THE FOLLOWING WORKSHOPS AND EVENTS ARE FROM TRUSTED TECHFEST FRIENDS AND COLLABORATORS. THEY ARE NOT PART OF TECHFEST 2021 SO ARE NOT ALL FREE AND ANY BOOKINGS MUST BE ARRANGED DIRECTLY WITH THE PROVIDER.

CURIOUS ABOUT: INNOVATION

from Glasgow Science Centre

This is our second digital festival and it celebrates the innovative spirit in us all and how that spirit can change the world. Join us to explore the technology and innovations that are driving our future and helping solve global challenges as we fuel the imaginations of the next generation of problem-solvers and creative thinkers. Live activities run 19-21 May and include workshops, interviews and Q&A sessions, along with family activities in the evening.

AGE RANGE: P5-P7 S1-S4

[CLICK HERE](#)

DINOSAUR WORKSHOPS

www.dinosaurworkshops.co.uk

We are offering virtual Dinosaur Workshops in schools direct from our museum.

[CLICK HERE](#)

SUPERMARKET SCIENCE

Science2Life

We are using Science Week to launch our 3rd Virtual Activity Supermarket Science!

The show & e-book is £125. The teaching notes will include the shopping list for each of the 10 sketches performed by Scientific Sue. It is a pre-recorded event with a twist – you can personalise it with your own messages to your students or festival followers (£25) and have your own customised Outro Video produced (£25). Creating special messages for your students or audiences make them feel part of the event! You can use the outro video to thank your sponsors or make your own logo 'pop'!

AGE RANGE: P4-P7 EMAIL FOR MORE INFO: SCIENTIFICSUE@SCIENCE2LIFE.COM



THE **CREST AWARDS** SCHEME IS THE BRITISH SCIENCE ASSOCIATIONS 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.techfestsetpoint.org.uk/crest or email: kirstycranna@techfest.org.uk

TECHFEST
digital

TechFest is your Regional CREST Support Organisation for Scotland..

TechFest.org.uk

To find out more information about CREST and how to register for awards follow the link below:

www.crestawards.org

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value from data

Scottish Business
Resilience Centre

PROGRAMME COLLABORATOR



SUPPORTED BY





THANK YOU



TO ALL OF OUR CONTRIBUTORS WHO HELPED MAKE THE TECHFEST 2021
EARLY YEARS AND PRIMARY PROGRAMME



**Get in touch
with us...**

Butchart Centre, University of Aberdeen
University Road, Aberdeen AB24 3UT
T. +44 (0)1224 274348
E. enquiries@techfest.org.uk

techfest.org.uk



Scottish Charity No. SC010349