

TECHFEST OUTREACH



Catalogue of Workshops



2019 / 2020



If you have any queries please do not hesitate to get in touch with the
Education Team:



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TECHFEST OUTREACH

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Amazing Aberdeen

Pupils will look at the scientists and engineers who have made Aberdeen the incredible city it is. With focus on Charles Abercrombie and the work he did on building the Union Bridge and developing Union Street, the workshop will highlight to the pupils the interpersonal and transferable skills required to be an engineer.

The core skills in engineering we will explore include communication, teamwork, designing, planning, problem solving, time management, project management and creativity.

Age Range:	P1 – P7
Running Time:	45 minutes/1 hour
CfE Links:	Technology, Engineering, Other – Literature LIT 0-02a / ENG 0-03a , LIT 1-02a, TCH 0-12a, TCH 1-12a
Workshop Requirements:	<input type="checkbox"/> Floor space for whole class to sit together <input type="checkbox"/> Chairs for presenter and adults



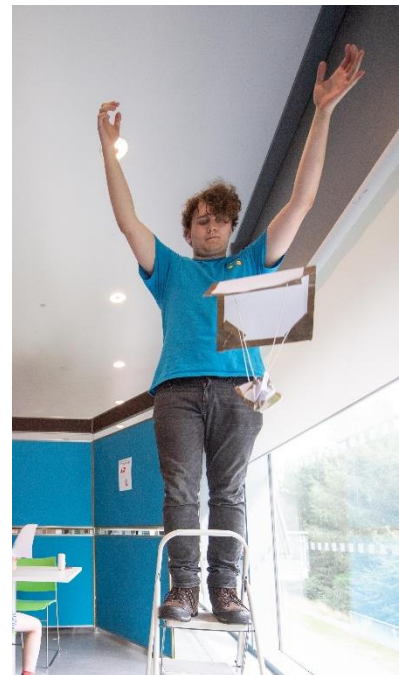
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Apollo 7 Challenge

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.

Age Range:	P4 – P7
Running Time:	45 minutes/1 hour
CfE Links:	Planet Earth (Space) SCN-2.06a Forces, electricity and waves (Forces): SCN 3-08a
Workshop Requirements:	<ul style="list-style-type: none"><input type="checkbox"/> Presenter chair and table<input type="checkbox"/> Chairs and tables for pupils to work at<input type="checkbox"/> Floor space



TECHFEST OUTREACH



Bizarre 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.

Age Range:

P1 – P7

Running Time:

45 minutes/1 hour

CfE Links:

Science, Health & Wellbeing
HWB 0-47b / HWB 1-47b, SCN 1-12a, SCN 2-12a,
SCN 3-12a

Workshop Requirements:

- ☐ Large Presenter Table
- ☐ Space for 33 sitting students
- ☐ Space in for participants to undertake activities in groups (seated at tables or on the floor)
- ☐ Chairs for teachers and presenters
- ☐ Access to running water and sink for set up

TECHFEST OUTREACH

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.

Age Range:

P4 – P7

Running Time:

45 minutes/1 hour

CfE Links:

MTH 1-12a, MTH 2-12a
LIT 0-02a / ENG 0-03a , LIT 1-02a

Workshop Requirements:

- ☐ Presenter table
- ☐ Six workstations / tables for pupils to work round



TECHFEST OUTREACH



Dissolving and Solubility

Use team work and apply the principles of scientific testing to investigate solubility. Learn about making a hypothesis and designing a fair test with hands on investigations and experiments as we consider how solubility affects our every-day lives.

Age Range:

P4 – P7

Running Time:

45 minutes/1 hour

CfE Links:

SCN 1-16a, SCN 2-16b

Workshop Requirements:

- ☐ Presenter Table
- ☐ Chairs for teachers and presenters
- ☐ Access to running water and sink during set up
- ☐ Space for 33 sitting students
- ☐ Tables with space for students to conduct experiments (should be suitable to wipe clean in case of spills)

TECHFEST OUTREACH

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 what lies beneath.

Age Range:

P1 – P7

Running Time:

45 minutes/1 hour

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

Workshop Requirements:

- ☐ Presenter chair and table
- ☐ Chairs and tables for pupils to work at
- ☐ Floor space



TECHFEST OUTREACH

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?

Age Range:

P1 – P7

Running Time:

45 minutes/1 hour

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

Workshop Requirements:

- ☐ Presenter chair and table
- ☐ Chairs and tables for pupils to work at
- ☐ Floor space

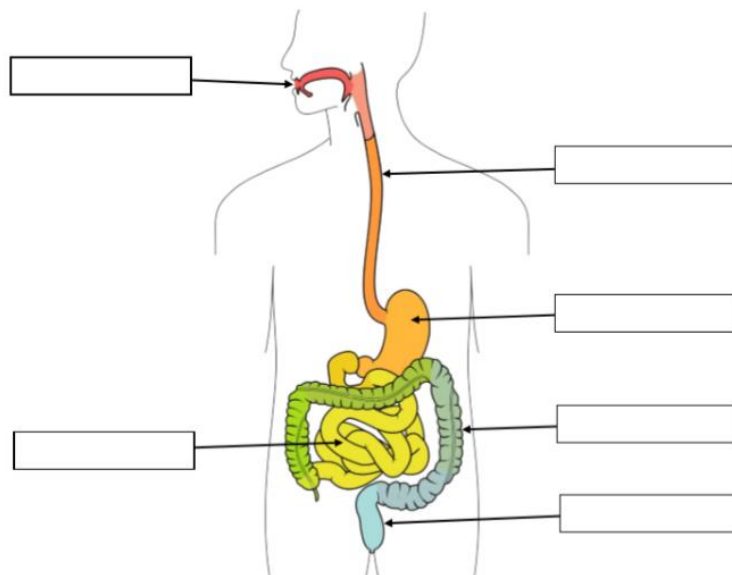


TECHFEST OUTREACH

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.

Age Range:	P1 – P7
Running Time:	45 minutes/1 hour
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 1-12a/SCN 2-12a/ SCN 2-13a
Workshop Requirements:	<input type="checkbox"/> Large table to lay out experiments <input type="checkbox"/> AV to play youtube video (optional) https://www.youtube.com/watch?v=umnnA50IDIY



TECHFEST OUTREACH



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.

Age Range:

EY, P1 – P3

Running Time:

45 minutes

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

Workshop Requirements:

- ☐ Chairs for presenter and adults
- ☐ Floor space to build and test models

TECHFEST OUTREACH

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.

Age Range:	P1 – P7
Running Time:	45 minutes/1 hour
CfE Links:	P1-P3: TCH 0-11a, TCH 0-12a P4-P7: TCH 2-05a, TCH 2-09a, SOC 2-06a
Workshop Requirements:	<input type="checkbox"/> Chairs for presenter and adults <input type="checkbox"/> Floor space to build and test models



TECHFEST OUTREACH



Making Toothpaste

A fun and interactive experiment investigating the science behind a healthy smile.
Make and test a new top secret toothpaste recipe

Age Range:	P1-7
Running Time:	45 minutes/1 hour
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
Workshop Requirements:	<ul style="list-style-type: none"><input type="checkbox"/> Access to water during set up and tidy up<input type="checkbox"/> Floor space for whole class to sit together<input type="checkbox"/> Wipe clean tables for making toothpaste<input type="checkbox"/> Chairs for presenters and adults

TECHFEST OUTREACH

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.

Age Range:	P4-P7 (For the younger pupils we recommend “Wild about Maths instead”)
Running Time:	45 minutes/1 hour
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
Workshop Requirements:	<input type="checkbox"/> Chairs for teachers and presenters <input type="checkbox"/> Activities can be set up on tables or floor



TECHFEST OUTREACH



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.

Age Range:	P5 – P7
Running Time:	45 minutes/1 hour
CfE Links:	Science, Health and Wellbeing SCN 1-13a, SCN 2-13a
Workshop Requirements:	<ul style="list-style-type: none"><input type="checkbox"/> Chairs for presenter and adults<input type="checkbox"/> Access to boiling water during set up<input type="checkbox"/> Tables for model microbes (dependent on class – whole class should be able to stand around tables)

TECHFEST OUTREACH



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.

Age Range:	EY & P1-P3
Running Time:	45 minutes
CfE Links:	MNU 0-09a, MNU 1-09a, MNU 1-09b, SOC 0-20a, SOC 1-20a
Workshop Requirements:	<ul style="list-style-type: none"><input type="checkbox"/> Space for class to sit for story presentation<input type="checkbox"/> Activities can be set up on tables or on the floor.

TECHFEST OUTREACH

Physics of Floating

Learn about the forces of gravity and buoyancy and how physics concepts apply to real life scenarios.

This is an interactive workshop, questions and discussion are encouraged!.

Age Range:	P4 – P7
Running Time:	45 minutes/1 hour
CfE Links:	Sciences (Forces) SCN 2-08b
Workshop Requirements:	<ul style="list-style-type: none"><input type="checkbox"/> Presenter chair and table<input type="checkbox"/> Chairs and tables for pupils to work at



TECHFEST OUTREACH

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.

Age Range:	P4-P7
Running Time:	45 minutes/1 hour
CfE Links:	Sciences: SCN 2-01a, SCN 2-16a, SCN 2-18a Numeracy and Maths: SCN 2-03a
Workshop Requirements:	<ul style="list-style-type: none"><input type="checkbox"/> Chairs for teachers and presenters<input type="checkbox"/> Chairs and Tables for Pupils to work at<input type="checkbox"/> Floor Space<input type="checkbox"/> Access to sink for set up and clear up



TECHFEST OUTREACH



Racing Rockets

The sky's the limit when you put your imagination to the test to design a space rocket that is out of this world. This challenge get you to think about rocket design and to build a rocket that will travel as high as possible.

Age Range:	P4-7
Running Time:	45 minutes/1 hour
CfE Links:	TCH 0-09a, TCH 1-09a, TCH 2-09a TCH 0-12a, TCH 1-12a, TCH 2-12a
Workshop Requirements:	<input type="checkbox"/> Table space for pupils to build.

TECHFEST OUTREACH

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 discoveries and gain an insight how Ancient Egyptians prepared their dead for the afterlife. .

Age Range:	P4 – P7
Running Time:	45 minutes/1 hour
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
Workshop Requirements:	<input type="checkbox"/> Presenter chair and table <input type="checkbox"/> Chairs and tables for pupils to work at <input type="checkbox"/> Floor space .



TECHFEST OUTREACH

Wild About Maths

Take a walk on the wild side with TechFest as pupils undertake puzzles, challenges and problem solving activities inspired by the natural world. In this hands-on maths workshop small teams of pupils work through a series of tasks designed to challenge and build confidence.

Age Range:	P1 – P3 (For the older pupils we recommend “Maths around the World instead)
Running Time:	45 minutes
CfE Links:	MNU 0-01a, MNU 0-02a, MNU 0-03, MNU 0-07a, MNU 0-10a, MNU 0-11a, MTH 0-13a, MTH 0-16a, MTH 0-16a, MTH 0-17a, MTH 0-19a, MNU 0-20a, MNU 0-20b
Workshop Requirements:	<input type="checkbox"/> Floor space for whole class to sit together <input type="checkbox"/> Chairs for presenter and adults <input type="checkbox"/> Extra adult help may be required for younger / less confident readers.



TECHFEST OUTREACH

Booking Information

If you would like to book one of our workshops please contact us:

enquiries@techfest.org.uk or phone 01224 274348

Note:

A minimum of two workshops must be booked per visit.

Fee: £66 per workshop + VAT

Maximum capacity for workshops: 33 pupils

For schools within the Aberdeen and Aberdeenshire authorities we do not charge any travel cost, unfortunately we cannot extend that favour to schools out-with Aberdeenshire and we charge £0.45 per mile, calculated from TechFest offices.

TECHFEST OUTREACH

CREST Awards

Most of the workshops in this catalogue allow you to apply for the British Science Association's CREST Awards. It's suitable for 4 – 25 year olds and can be run in schools, clubs, or at home. You can explore the world around you, using science to find the answers, and even win awards! See the link below for more details



TECHFEST

TechFest is your Regional CREST Support Organisation for Scotland.

www.techfest.org.uk

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

<https://www.crestawards.org/>



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