

STEM LEARNING PROGRAMME 2018 / 19

Aberdeen Science Centre is a registered Scottish Charity, No. SC014922



**Encouraging curiosity
and life-long learning**

Bringing Science, Technology, Engineering & Mathematics to life



Aberdeen Science Centre is a dynamic charity whose enthusiastic and dedicated STEM Learning Team aim to provide:

- An important and valuable educational resource for the whole community where people of all ages, backgrounds and abilities can come and engage with STEM and be enthused and inspired.
- STEM learning experiences that encourage active involvement in learning with hands-on exhibits, investigative workshops and exciting shows and demonstrations.
- An environment that promotes curiosity and life-long learning by demonstrating the relevance of STEM to everyday life and career opportunities.

Aberdeen Science Centre's STEM Learning Programme has been thoughtfully developed to complement and support the Curriculum for Excellence (CfE) through alignment to the Experiences & Outcomes and Benchmarks. We aim to help pupils develop their capacity to be successful learners, confident individuals, effective contributors to society and responsible citizens.

A visit to Aberdeen Science Centre also addresses the 7 principles for curriculum design; challenge & enjoyment, breadth, progression, depth, personalisation & choice, coherence and relevance.

STEM Learning Programme

Aberdeen Science Centre's well established STEM Learning Programme of shows and workshops for early years, primary, secondary and ASN audiences covers a range of








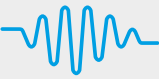





STEM topics in a varied and cross-cultural approach.

This curriculum-linked programme is available to all early years settings, schools, home education groups and community groups in the Science Centre. Our programme can also










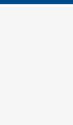


















be delivered as outreach in your school or community setting.

STEM Shows and Workshops – description and levels

| Early | First | Second | Third |
|-------|-------|--------|-------|
| | | | |

| Title | Description | Levels | | | |
|--|---|--------|--|--|--|
| The Bubble Show  | Explore the shape, size and colour of bubbles – one of our favourites! | | | | |
| Floating & Sinking Investigation  | Investigate the basic principles of floating and sinking using a variety of materials and shapes. | | | | |
| Getting Around with BeeBots UPDATED  | Work in small groups to program robots exploring directional language and programming technology. | | | | |
| The Day & Night Show UPDATED  | Discover why it's dark at night and light through the day in this interactive show. | | | | |
| Feel the Forces! UPDATED  | Get pulled into our fun and interactive workshop. Pupils will work in small groups to investigate the forces all around us. | | | | |
| Amazing Bodies NEW  | Explore how different parts of our body work and what's inside our Giant Joe in this fun and interactive show. | | | | |
| Sense-ational NEW  | A fun-filled show to learn about the different senses we use to understand the world around us. | | | | |
| Circuits & Electronics Workshop NEW Early/ 1st Level Show  | Early and Lower 1st - Act as an electron and discover how electricity works. Create simple circuits and explore the conductive properties of various materials and more. Upper 1st & 2nd Level – What is inside our everyday electrical items? Pupils will find out in this exciting workshop, before getting an opportunity to build your own circuits and electrical devices. | | | | |
| How to Make the Perfect Poo  | Follow the journey of one meal through the digestive system to find out what happens at each stage of digestion in this ikky but interactive show. | | | | |
| Erupting Volcanoes UPDATED  | Build and erupt your own volcano as we journey into the ground beneath our feet in this chemistry based interactive workshop. | | | | |
| Sounds Like Fun!  | Make some noise in this interactive show exploring what causes sound and how humans and other animals hear. | | | | |
| Medieval Construction Show  | Discover how people built monumental structures with the aid of physics, cleverly using forces in this interactive workshop created by Historic Environment Scotland. | | | | |
| Crime Scene Chemistry  | Use chemistry to investigate a crime scene and identify the suspect in this lab based workshop. | | | | |



| Title | Description | Levels |
|---|--|---|
| The Water Cycle:  | Where does water come from? Where does it go? Work in small groups to investigate the water cycle through all its stages. |   |
| Destination Space  | Do you have what it takes to be an astronaut? Find out about the skills needed and challenges faced in space. Level 1 – Interactive Show Level 2 + 3 - workshop |    |
| Electrifying Electromagnetism  | Work in groups to discover magnets, electromagnets and their applications in the world around us. Each group will have the chance to build their own electromagnet. |   |
| Lego Enterprise Inc NEW  | Using a hands-on approach, work in a team to select and build a winning Lego design, under a tight deadline. Assess and prioritise your company's goals, and use your business enterprise expertise to advertise your product. |   |
| To the Moon with Lego MindStorms  | Discover how to program Lego MindStorm robots in groups and take on ASC's moon buggy challenge. |   |
| Explore Your Universe  | An exciting show created by STFC and ASDC exploring how current UK science is shaping what we know about space and how we learn about the universe. |   |
| Disaster Relief Workshop  | Disaster has struck. Flooding has washed away a bridge. Become engineers for the day and work in a small group in this highly interactive workshop to build a replacement. |   |
| Amazing Air: The Power of Wind Turbines  | Discover how wind farms and other renewable energy help us meet our energy demands while combating climate change. Pupils will build and test their own wind turbine in this hands-on, engaging workshop. Funded and created in partnership with Vattenfall. |   |
| The Great Gas Journey!  | Build your own pipeline to take gas from the North Sea to your home in this hands-on, problem solving, enterprise based workshop. Funded and created in partnership with CATS management. |   |

PROJECT SPONSORS

For further information on all our school shows and workshops, including CfE links, please visit our website www.aberdeensciencecentre.org



CLPL Programme

(Career Long Professional Learning)

ASC aims to support STEM learning and teaching in schools by providing extensive Career Long Professional Learning opportunities for teachers.

| Early | First | Second | CfE |
|-------|-------|--------|-----|
| | | | |



All About Inside Me

Discover what goes on inside our bodies everyday using hands-on activities that you can use with your pupils.

CfE links

HWB 0-15a, 0-30a, 0-47a & 0-47b. SCN 0-11a, 0-12a, 1-12a.

Planet Earth

Unearth what gives us day and night, the seasons plus explore ways to introduce animal and plant life to your pupils.

CfE links

SCN 0-01a, 0-03a, 0-06a. SOC 0-08a, 012a.

Weather Around Us

Investigate the science of weather and discover how to create a weather station to record the weather with your pupils.

CfE links

SCN 0-05a, 0-20a. SOC 0-12a.

NEW Flashes and Bangs

Get noisy and make rainbows in this interactive workshop exploring the properties of sound and light. You will create easy-to-make instruments and explore how light and sound behave in different media.

CfE links

SCN 0-11a, 0-12a, SCN 1-15a, 1-16a, SCN 2-15a, 2-16a, 2-16b, 2-17a 2-18a, 2-19a

Fun with Forces

Equip yourself with the tools and knowledge to teach about forces like gravity, magnetism and static electricity. Interactive and hands-on session with lots of activity ideas to do with your pupils.

CfE links

SCN 0-04a, 0-07a, 0-09a, 0-15a, SCN 1-07a, 1-08a, SCN 2-07a, 2-08a, 2-08b.

Kitchen Chemistry

Investigate the use of everyday household items, such as vinegar and bicarbonate of soda in a variety of simple, yet effective, science experiments.

CfE links

SCN 0-15a, SCN 1-15a, 1-16a, SCN 2-15a, 2-16a, 2-19a.

NEW Marvellous Materials

Investigate the amazing properties of different materials, the states of matter, soluble and insoluble materials and much more in this hands-on workshop.

CfE links

SCN 0-05a, 0-15a, 020a, SCN 1-15a, , 1-16a, SCN 2-15a 2-16a, 2-16b, 2-17a, 2-18a, 2-19a.

Facilitating Science Investigations

Equip yourself with the knowledge and confidence to carry out scientific investigations in your classroom.

Developed in partnership with Aberdeen City Council

CfE links

Science inquiry and investigative skills

Fish, Fossils & Fuel (Energy4Me)

Explore a number of lesson plans that teach about the oil and gas industry. From the formation of oil and gas, how to find it, how to get it out of the ground, how to refine it to what we do with it.

Funded by SPE

CfE links

SCN, 1-15a, 1-20a, SCN 2-14a, 2-15a, 2-17a. TCH 1-02a, 1-14a, 2-14a.

Life Under the Sea (Subsea Channel UK)

Discover the Subsea Channel that includes free lesson plans and videos around various topics of the Subsea industry: Marine Biology, Diving and Health, Vessels, Robots and ROVs and Surveying the Sea.

Funded by Subsea UK

CfE links

SCN 1-02a, 2-02a, 2-07a, 2-08a, 2-11a, 2-11b, 2-12a. TCH 1-09a, 1-09b.

NEW NASA in Aberdeen

In this session developed in collaboration with physics teachers, you will be introduced to NASA's freely available teaching resources and learn all about space exploration, space travel and more.

Funded by NASA in Aberdeen

CfE links

SCN 1-06a, 2-06a, 1-07a, 1-07b, 2-19a (SCN 1-20a, 2-20a & 2-20b).

Our Amazing Body

Discover how our body works, what happens when something goes wrong and how germs can spread and cause disease in this interactive workshop.

CfE links

SCN 1-12a, 2-12a, 1-12b, 2-12b, 1-13a, 2-13a.

Plants Vs Science

In this session you will learn about different parts of plants and their function and how to carry out investigations in your classroom to find out what plants need to grow.

CfE links

SCN 1-01a, 1-03a, SCN 2-01a, 2-02b, 2-03a.

Switch It On

Ever wanted to be an electron? In this fun interactive session you will act as an electron and discover how electricity works. Create simple circuits, explore the conductive properties of various materials and more.

CfE links

SCN1-09a, 2-09a, 2-10a.

What Makes You... You?

Learn how to teach the basics of genetics and inheritance. Meet the Reebop, a fantastical animal that provides a fun and simple way for introducing children to ideas of inherited characteristics and variation within a species.

CfE links

SCN1-14a, 2-14a, 2-14b.

PROJECT SPONSORS



Little Explorer Days are both fun and educational while encouraging active learning through discovery



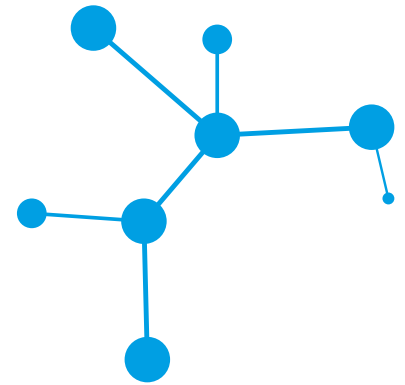
Little Explorer Days

Little Explorer Days are held throughout the year for children aged 3-5.

These are themed days where the centre's activities are focused specifically on early years STEM learning.

Little Explorers investigate STEM concepts through a variety of activities including shows, hands-on investigations, interactive stories, discovery trails and crafts.

Children also have time to explore the hands-on interactive exhibits.



| Little Explorer Day Programme | | |
|-------------------------------|------------------------------------|------------------------|
| Nursery / Group Booking Date | Theme | CfE Link |
| 14th JULY 2018 | Make it Move | SCN 0-07a |
| 14th AUGUST 2018 | It's Electric! | SCN 0-09a |
| 11th SEPTEMBER 2018 | Count On! | MNU 0-02a MNU 0-03a |
| 9th OCTOBER 2018 | Sounds All Around | SCN 0-11a |
| NOVEMBER 2018 | No LED scheduled due to relocation | |
| 11th DECEMBER 2018 | What's On Your Plate? | HWB 0-30a |
| 15th JANUARY 2019 | Water World | SCN 0-05a |
| 19th FEBRUARY 2019 | Colour, Light & All Things Bright | EXA 0-02a |
| 19th MARCH 2019 | Mission to Mars | SCN 0-06a |
| 23rd APRIL 2019 | Life | SCN 0-01a SCN 0-03a |
| 14th MAY 2019 | Fun with Fossils | SOC 0-01a |
| 18th JUNE 2019 | People Who Help Us | SOC 0-16a |



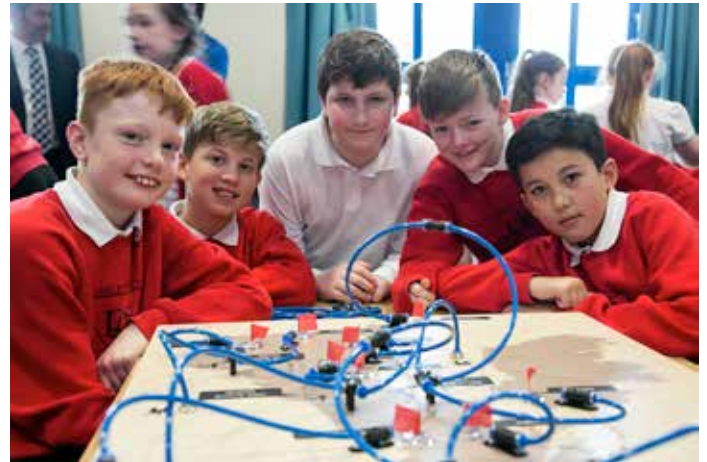
Cost

Discounted education rates apply, starting from **£3.75 (incl. VAT) per pupil.**

Supplementary workshops or shows are available, at an additional cost.

There is no charge for teachers and group leaders at a ratio of 1:3 for nursery to P3, and 1:6 for P4 and up. Additional adults will be charged at **£4.50 (incl.VAT)**

Outreach visits to your school or community setting priced from **£300 (incl. VAT)** for a half day and from **£540 (incl. VAT)** for a full day, plus travel costs.



TO BOOK:

email education@asc.scot
or call 01224 640340

NB if you are booking an outreach visit on behalf of a community group you may qualify for funding to help with the cost of your STEM activity. **Please enquire when booking.**

Planning Your Visit

Our STEM Learning Team is on hand to help you book your visit.

Entry to the centre is £3.75 (incl. VAT) per pupil which includes a show or workshop of your choice, time to explore the exhibition floor and a science on the spot demonstration OR planetarium show. Science on the Spot is a 15 minute interactive general science demonstration which takes place on the exhibition floor.

You will be provided with a teacher's timetable upon your arrival, this is a guide to your class's booked activities.

A few things to have in mind when you call to book:

- A selection of dates when you have availability to visit
- The age range and number of pupils
- Shows and workshops you are interested in
- We recommend two hours as a minimum to fit in one show or workshop, time to explore the exhibition floor and a science on the spot demonstration/ planetarium show
- If you wish to include snack or lunch time during your visit please let us know so we can provide space and plan accordingly

Advise us, in advance, if any children have specific needs that we should make arrangements to accommodate.

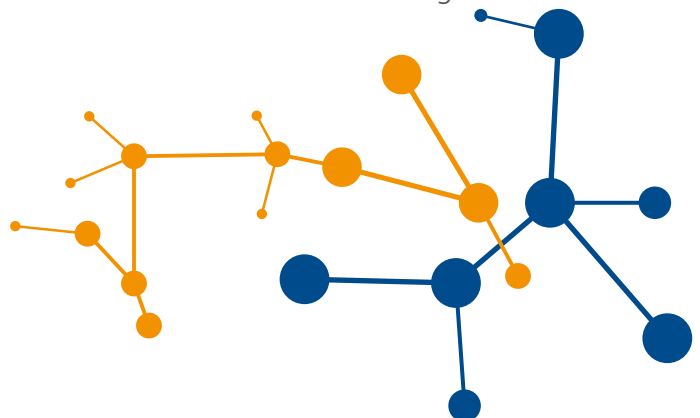
Your school or community may qualify for travel funding provided by the Scottish Government – please enquire.

We do have a shop with many pocket-money educational items; if you would like to include a visit to the shop please inform the member of staff who welcomes your group and they will help to facilitate this.

All prices correct at time of printing but are subject to change.

Please check our website:

www.aberdeensciencecentre.org







Contact

STEM Learning Team
Aberdeen Science Centre
179 Constitution Street
Aberdeen AB24 5TU

01224 640340

education@ASC.scot

Support

Aberdeen Science Centre is a recognised Scottish charity and relies on external funding to sustain the provision of STEM Learning experiences that are stimulating, valuable, relevant and high quality. We are always extremely grateful to receive support and would welcome hearing from individuals, groups or companies to discuss options for supporting the STEM Learning Team and STEM Learning programmes. Charity No. SC014922.

www.aberdeensciencecentre.org