

Hands-on workshops are available at most times throughout the year, but may be limited during some of the special event weeks. Please ring to check availability. Some workshops are suitable for more than one age group, the content therefore is adjusted appropriately. Most workshops last approximately 45, 60 or 90 minutes and are priced accordingly. **The prices below are workshop prices for classes of up to 32 pupils. Please add £3.50 per pupil admission to these prices.**

## EYFS and KSI

### **Investigative Play - 1 hour - £2 per pupil - EYFS**

This session takes place in our Observatory gallery and uses the views around us for inspired play with a range of different toys and resources. This is priced as a one hour session in the Observatory only, it is not designed to form part of a full day visit.

### **Science of the Senses - 45 mins - £40 per session - EYFS and Y1**

A workshop designed especially for younger pupils. Children can take part in experiments which explore the senses. Activities include guessing the smell and taking part in the 'feel it' challenge by finding out what is inside our 'feely' boxes.

### **Recycle Fun - 1 hour - £50 per session - KSI**

An interactive session with an emphasis on fun. Activities are based around our need to recycle, looking at how we can reduce the amount of rubbish we send to landfill sites. (This links well with the Storytime session "Herbie the Hedgehog Investigates Recycling" which is suitable for groups of 15 at a time.)

### **Fabulous Fabrics - 90 mins - £60 per session - KSI and Y3**

Children will learn about the difference between natural and synthetic dyes and the difference between dye and paint. Each child will tie dye a piece of material to take away with them. They will also learn the basic technique for screen printing using a simple template. They will screen print the design onto material using one colour of ink. The screen printed material can be taken away to use for display purposes back at school.

### **Story Time - 25 mins - 75p per pupil - Y1, 2, 3**

A relaxing session in which pupils listen to an interactive story which uses props and activities to explore science topics. Choose from stories which look at Recycling (Y1), Life Cycles (Y2) or Light and Dark (Y3).

### **Soap Suds - 45 mins - £40 per session - KSI KS2 KS3 KS4**

Pupils will learn about the process of making soap, a product which was manufactured here at Catalyst when it was a soap factory. They will look at the history of soap and how soap is made. They then make their own bar of perfumed and coloured soap which they can take home to use! *This workshop is supported by Stephenson Group*

### **Explore Your Universe for KSI - 30 mins – 75p per pupil – KSI**

An interactive science show which takes pupils on a 'tour' of our part of the Universe. This show uses exciting equipment such as an IR camera, a Van de Graaff generator and a plasma ball to get pupils thinking about space and how different and exciting it can be. *This workshop is supported by the STFC*

### **Light Fantastic Show – 45 minutes - £40 per session – KSI, KS2**

This 45 minute interactive show includes many different demonstrations and cover concepts such as; white light is a mixture of colours / the primary colours of light (demonstrations using prisms and 'laser specs'), light travels in straight lines, the formation of shadows, different sources of natural and man-made light (including demonstrations using UV light, fluorescent lamp, fibre optics and glow-in-the-dark objects).

**KS2** The prices below are workshop prices for classes of up to 32 pupils. Please add £3.50 per pupil admission to these prices.

**Magnets and Springs - 1 hour - £50 - Y3**

Pupils will investigate the uses and behaviour of magnets in this fun workshop and carry out some experiments to compress and stretch springs.

**Rocks, Volcanoes and Fossils - 1 hour - £50 - Y3, 4**

Pupils practice their observations skills by looking at rocks and find out about how some different types of rocks are formed. They learn about volcanoes and volcanic eruptions and have a go at making their own. Finally they discover how fossils are formed and make their own "fossil" to take away.

**Investigating Science Skills - "I am a Scientist" - 1 hour - £50 per session - Y3, 4**

This workshop aims to enhance pupils understanding of scientific language and stimulate an interest in being a real scientist. Pupils will learn about making fair tests, predictions, recording measurements, gathering results and drawing conclusions by taking part in a series of fun, hands-on experiments.

**Tasty Toothpaste - 1 hour - £50 per session - Y4**

Pupils look at the effects that fizzy drinks have on their teeth - emphasizing the need to keep teeth clean. They discuss different types of teeth and follow our recipe to make their own toothpaste. They can then assess how effective their own toothpaste is and compare it to a range of real toothpastes (using "toothbrushes" on ceramic tiles – not in their mouths!)

**Homemade Switches - 1 hour - £50 per session – Y4, 5**

Pupils use their knowledge of electrical circuits and then investigate how different switches can be used to turn things on and off. They then use everyday materials to construct some simple switches of their own and test them. The switches can be taken home at the end of the workshop. *This workshop is supported by Scottish Power*

**Salt - 45 mins - £40 per session - Y4, 5**

Children learn about rock salt and how salt is used by the chemical industry for many different purposes. With an emphasis on using scientific language, they will purify a sample of rock salt using simple scientific processes and laboratory equipment.

**Data-logging - 1 hour - £50 per session - Y4, 5, 6**

Pupils will use our class set of LOGBOX data-loggers to help link science and ICT. Investigate either light, sound or temperature depending on your programme of study.

**Further Investigation Skills "I am a Chemist" - £50 per session - Y5, 6**

This is designed to be a follow on from our "I'm a scientist workshop". Pupils take on the role of a development chemist, make and test different medicines while practising their scientific enquiry skills.

Positioned between the old and the new Mersey Crossings, Catalyst is the ideal place for pupils to investigate, construct and experiment with various types of bridges. We have two bridges workshops, which can be combined to make a bridges day.

**Building Bridges - 1 hour - £50 per session - KS2**

This session takes place in our observatory. Using local bridges for inspiration, pupils find out about simple ways of constructing bridges. They are challenged to build and test their own bridge using our special K'nex kits.

**Bridges to Schools - 90 mins - £60 per session – Y4, 5, 6, KS3**

Inspired by the new Mersey Gateway Bridge, being constructed just outside Catalyst, your pupils will find out about Cable-Stayed Bridges. They will take on roles as engineers and work as a team to construct their very own 13m cable stayed bridge. Will they be brave enough to try walking across it when it's complete? *This workshop is supported by the Institution of Civil Engineers NW*

**Potions - 1 hour - £50 per session - Y5, 6**

A chance to have fun getting your pupils excited about chemistry. Pupils get an introduction to some surprising chemical reactions. They then use their investigative skills to have a go themselves at mixing some 'potions' and seeing how their potions behave.

### **Mystery at the Manor -90 mins - £60 per session - Y5, 6, 7**

A great way to combine practical science with collaborative skills. Pupils will work in small groups to collect evidence to enable them to solve 'The Mystery at the Manor' using a variety of forensic techniques. The sessions will be held in the Catalyst Crime Lab and areas covered by the clues are: scene of crime observation, using simple soil analysis, using a microscope to match fibres, testing unknown powders, separating colours using chromatography, lifting and matching fingerprints, constructing an electrical circuit to create a burglar alarm, matching footprints, blood testing and DNA matching.

### **Fantastic Plastic - 45 mins - £40 per session - Y5, 6, KS3 KS4**

Pupils will learn about the properties and applications of some interesting and novel materials including plastics known as thermoplastics. They melt and mould a thermoplastic and use it to make a key ring to take away. *This workshop is supported by Perstorp*

### **Outbreak! - 3 hours (with breaks) - £7.25 per pupil including admission - Y, 6, 7**

Following the aftermath of a meteorite strike, a strange new disease has arisen in the local area. Pupils take on the role of investigative scientists and carry out a range of unfamiliar and exciting science experiments. Can your class work collaboratively to seek answers and save the day? *This workshop is supported by RSC CICAG and RSC HG*

### **Vitamin C – 45mins - £40 per session - Y6, KS3**

We all know that Vitamin C is good for us but how much is there in fruit juice? Pupils will use their practical laboratory skills by chemically analysing a range of fruit juices to see just what we are drinking.

### **Explore Your Universe - 1 hour - £50 per session - KS2, KS3**

An interactive science show which aims to inspire pupils to think about the big questions being asked by people who work in physical sciences. Using equipment such as a Van de Graaff generator, IR camera and plasma ball, pupils will see how exciting the physical sciences can be. *This workshop is supported by the STFC*

### **Recycle It – 1 hour - £50 per session – KS2**

This workshop aims to stimulate pupils thoughts about waste and what happens to it. Pupils discuss types of waste, how that waste can be disposed of, recycling and then make a fridge magnet which they can take home.

### **Suitcase Kids - 75p per pupil - 25 mins - KS2**

Explore what it was like to be evacuated in war time Britain using actual artefacts from our own collection. A stimulating starter for creative writing and literacy work linked to history. This is suitable for groups of 15 at a time.

### **Over the Mersey – 1 hour - £50 per session – KS2**

Recreate the days of the transporter bridge in this fascinating session looking at the geography through our windows. Discover how people have managed to cross the Mersey through the ages.

### **Glorious Gases – 1 hour - £50 per session – Y4, 5 KS2**

Aimed at year 4/5, this workshop allows pupils to experiment with gases. From simple tests to prove that air really is there, to weird and wonderful demonstrations showing what would happen if there was no air, this workshop will help your pupils explore all kinds of ideas about gases. This workshop is supported by RSC SCS

### **Rocks Volcanoes and Fossils – 1 hour - £50 per session – Y3 KS2**

Developed specially for year 3 pupils, this workshop looks at some of the exciting science related to volcanoes, fossils and rocks. Examine rocks, make a volcano erupt and make your own fossils to take home.

### **WaterWatch NorthWest – 1 hour - £50 per session – KS2, KS3**

A chance for your pupils to try some real analytical chemistry. They will use special kits and a variety of chemicals tests to analyse stream water and find out what it really contains. We can provide water samples or you can bring your own to find out how healthy the school pond or local river really is! The kits can also be borrowed by schools and community groups so that you can use them at school (terms and conditions apply, please contact us for more details). *This workshop and kit has been provided by and is supported by the RSC Analytical Division NW*

**Light Fantastic Show – 45 minutes - £40 per session – KS1, KS2**

This 45 minute interactive show includes many different demonstrations and cover concepts such as; white light is a mixture of colours / the primary colours of light (demonstrations using prisms and 'laser specs'), light travels in straight lines, the formation of shadows, different sources of natural and man-made light (including demonstrations using UV light, fluorescent lamp, fibre optics and glow-in-the-dark objects).

**KS3 and KS4** The prices below are workshop prices for classes of up to 32 pupils. Please add £3.50 per pupil admission to these prices.

**Mystery at the Manor -90 mins - £60 per session – Y6, Y7**

A great way to combine practical science with collaborative skills. Pupils will work in small groups to collect evidence to enable them to solve 'The Mystery at the Manor' using a variety of forensic techniques. The sessions will be held in the Catalyst Crime Lab and areas covered by the clues are: scene of crime observation, using simple soil analysis, using a microscope to match fibres, testing unknown powders, separating colours using chromatography, lifting and matching fingerprints, constructing an electrical circuit to create a burglar alarm, matching footprints, blood testing and DNA matching.

**Outbreak! - 3 hours (with breaks) - £7.25 per pupil including admission - Y6, Y7**

Following the aftermath of a meteorite strike, a strange new disease has arisen in the local area. Pupils take on the role of investigative scientists and carry out a range of unfamiliar and exciting science experiments. Can your class work collaboratively to seek answers and save the day? *This workshop is supported by RSC CICAG and RSC HG*

**Bridges to Schools – 90 mins - £60 per session – Y5, 6, KS3**

Inspired by the new Mersey Gateway Bridge, being constructed just outside Catalyst your pupils will find out about Cable-Stayed Bridges. They will take on roles as engineers and need to work as a team to construct their very own 13m cable stayed bridge. Will they be brave enough to try walking across it when it's complete? *This workshop is supported by the Institution of Civil Engineers NW*

**Explore Your Universe - 1 hour - £50 per session - KS2, KS3**

An interactive science show which aims to inspire pupils to think about the big questions being asked by people who work in physical sciences. Using equipment such as a Van de Graaff generator, IR camera and plasma ball pupils will see how exciting the physical sciences can be. *This workshop is supported by the STFC*

**Stings - 1 hour - £50 per session - KS3**

Find out what's in a sting by looking at the venom of bees, wasps and others. Pupils will improve their investigation skills and practice using simple laboratory equipment as they find out how to neutralise them. *This workshop was devised by the Centre for Life, Newcastle*

**Energy from Waste – 1 hour - £50 per session - KS3**

This workshop considers the technology involved in disposal of waste by converting it into energy. Using a mixture of demonstrations and hands on activities, pupils learn about anaerobic digestion and ideas from school science to find out how gases emitted from an Energy from Waste plant are cleaned. *This workshop is supported by Viridor*

**Ludicrous Liquids - 1 hour - £50 per session – KS3**

Together with our Education team, pupils will investigate the ludicrous world of liquids. This hands-on experience will showcase liquids that can defy gravity, liquids that can stand up and dance and liquids that refuse to evaporate! With focus on water pressure and density, pupils will come away from the session being able to construct a liquid lava lamp which they can then recreate back at school.

**Fantastic Plastic – 45 mins - £40 per session – Y5, 6, KS3 KS4**

Pupils will learn about the properties and applications of some interesting and novel materials including plastics known as thermoplastics. They melt and mould a thermoplastic and use it to make a key ring to take away. *This workshop is supported by Perstorp*

**Soap Suds - 45 mins - £40 per session - KS3, KS4**

Pupils will learn about the process of making soap, a product which was manufactured here at Catalyst when it was a soap factory. They will look at the history of soap making, discuss how the raw materials are combined and processed to make soap and find out how soap actually works. They then make their own bar of perfumed and coloured soap which they can take home to use! *This workshop is supported by Stephenson Group*

### **Alternative Energy - 1 hour - £50 per session - Y8, 9, KS4**

Pupils think about challenges related to energy production and the environment and are introduced to hydrogen power technology. Each group is then challenged to construct their own miniature hydrogen powered car to help them learn how this alternative technology could revolutionise the automotive industry.

### **Showering with Surfactants - £50 per session - KS3, KS4**

In this workshop pupils will investigate why we need to wash. They will explore the science behind their favourite bodywash products and find out how surfactants work before making their own bodywash/shampoo to take home. *This workshop is supported by Innospec*

### **Oil for All – 1 hour - £50 per session – KS3, KS4**

A journey through the life of an oil drop, from learning what crude oil is made of, through processing of oil and ending with the conversion of oil into polymers. Pupils take part in several activities looking at the constituents of oil, before having some fun learning about polymers by making slime.

### **Origins - 1 hour - £50 per session - KS3, KS4**

This nationally recognised, award winning workshop takes students on a journey from the birth of the chemical elements. Through hands on activities and explosive demonstrations, pupils will discover atoms, the properties of different elements and make their own supernova explosion in a saucer of milk. This workshop is supported by RSC CICAG and RSC HG

### **Explore Your Universe Masterclass - 3 hours - £6.50 per pupil - KS4**

An intensive day consisting of two 1 hour GCSE Masterclasses (“The Atomic Playground” and “Spectrum Inspectors”) plus an additional hour of interaction with expert scientists working at the forefront of scientific research. Using exciting new equipment (including a salad bowl particle accelerator, thermal imaging camera, ferro-fluid, cloud chamber and a liquid nitrogen super cooled super conducting magnet) we explore the links between GCSE science and what is currently happening in leading scientific institutions right now in the UK. *This workshop is supported by the STFC*

### **WaterWatch NorthWest – 1 hour - £50 per session – KS2, KS3**

A chance for your pupils to try some real analytical chemistry. They will use special kits and a variety of chemicals tests to analyse stream water and find out what it really contains. We can provide water samples or you can bring your own to find out how healthy the school pond or local river really is! The kits can also be borrowed by schools and community groups so that you can use them at school (terms and conditions apply, please contact us for more details). *This workshop and kit has been provided by and is supported by the RSC Analytical Division NW*