

# GLASGOW SCIENCE FESTIVAL

1st-18th June 2011  
[www.glasgowsciencefestival.org.uk](http://www.glasgowsciencefestival.org.uk)



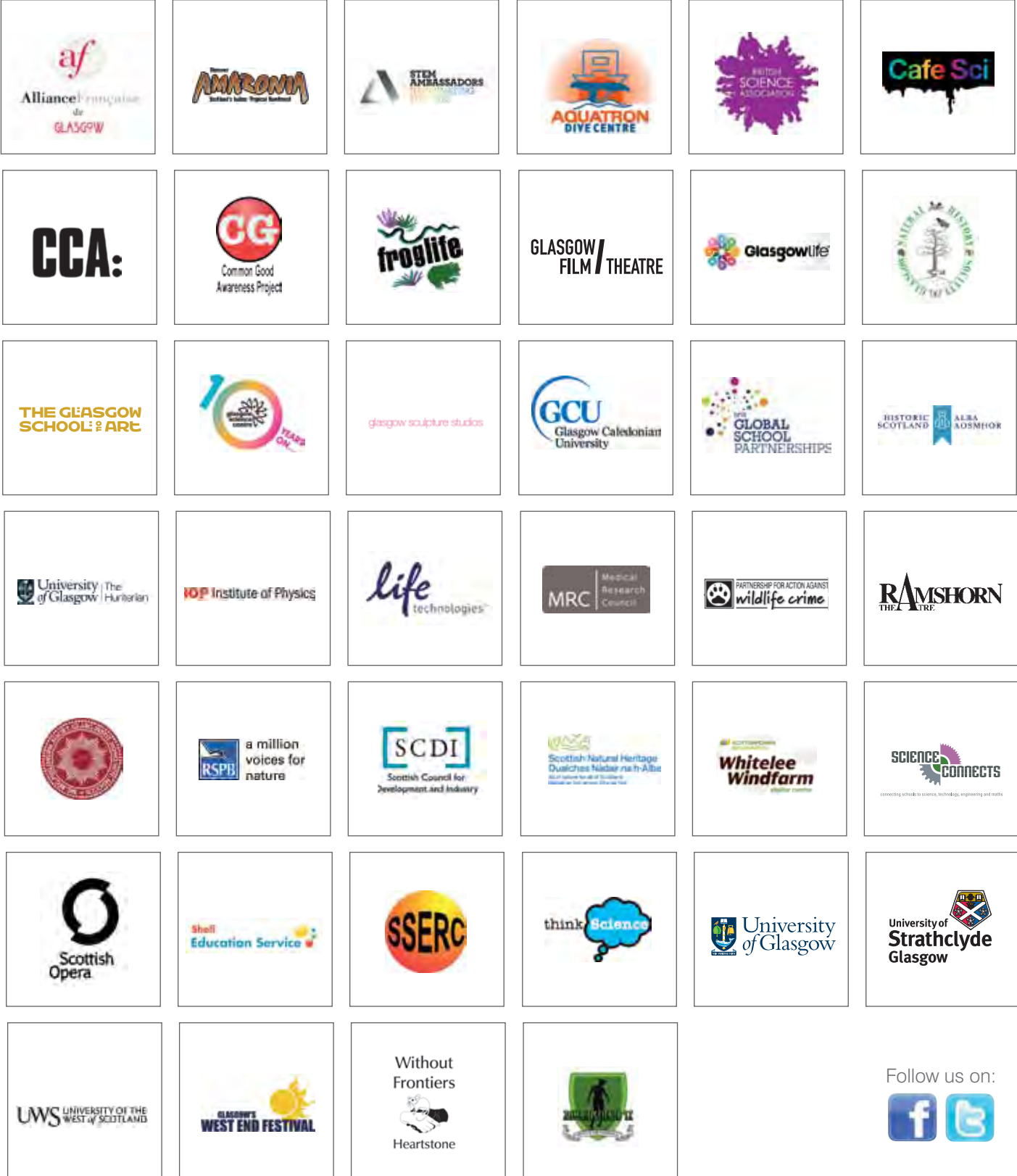
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# A warm welcome to the fifth annual Glasgow Science Festival



**Glasgow often takes people by surprise. It is such a warm, friendly, cultured city and the sun always shines here.**

**OK, we're kidding about the weather. Sometimes it rains. But the rest of it's true. Glasgow is a creative powerhouse, the "most significant city" for arts and culture outside London, according to a recent report.**

Combine this with our world-leading strengths in science and engineering, and you get the best of both worlds. And a little bit of magic

"We launch this year with a science musical in Glasgow University's concert hall," says festival director Deborah McNeill. "It's performed by schoolchildren who have been working with Scottish Opera."

"We have big stars lined up," she adds with a smile. "Like Albert Einstein."

Elsewhere in the city, visitors can chat to an author, knit woolly brain cells, build castles and cathedrals, or follow a woman's search for her sperm-donor dad. "We'll have events with scientists and artists working together, answering questions, offering their own perspectives," Debbie says.

There will be wildlife and dark matter, stars and galaxies, pond-dipping, brain science and bug safaris. Families, children and adults can get a fitness test, visit a windfarm, try crime scene investigation or join scientists in their search for climate clues, under southern seas. "We don't know how sensitive Antarctic ice is to temperature," James Bendle tells of an ocean expedition just last year. "So we drilled back in time through layers of sediment to find out.

"At one point the setting sun broke through and cast the waters in reds, purples and golds. It silhouetted the distant waves on the horizon, so I could pick out the real monsters."

There will be no monsters at Glasgow Science Festival, from 1st-17th June, Debbie reassures us. "Apart from Night of the Living Dead and a talk on zombie genetics.

**"What there will be is cool science, good fun, arts, culture and real nice people."**

**And sunshine?**

**She smiles again. "I guarantee it."**

Text by Douglas Blane



## “La chimie dans notre quotidien” / “Chemistry in our everyday life”

This exhibition is part of the International Year of Chemistry 2011. Industry, medicine, heritage, environment, agriculture, food and habitat are all fields which are evolving thanks to chemistry. Designed for a wide audience with a bilingual approach (French & English), it offers the public the opportunity to discover a new chemistry in full renewal which explores unexpected areas of our lives. **Alliance Française de Glasgow, All ages, 1st June onwards, Mon-Thurs: 10am-9pm Fri: 10am-4pm Sat: 10-1pm, Drop in**

## Glasgow Science Centre Exhibitions

**Be Creative, Be Innovative:** New set of interactive exhibits, games and activities, including the Build It, Test It, Deconstruct It and Think It zones, taking up almost 650 square metres. Try the Theremin, see yourself on the Snibbe Screen, experiment in the Foley booth or demonstrate the exchange of potential and kinetic energy as you make a roller coaster.

**Runs from Feb 2011**

**MindWorks:** New set of interactive exhibits, games and activities exploring perceptions and the workings of the mind. Try visual illusions, tactile deceptions and auditory experiences beyond the norm. Shrink your friends and experience the Vortex Tunnel and the Video Ball, whilst learning something of the science of consciousness.

**Runs from April 2011 Glasgow Science Centre All ages, 1st June onwards, 10-5pm, Entry to Science Mall includes exhibition £9.95/ £7.95 +44 (0)141 420 5000, [www.gsc.org.uk](http://www.gsc.org.uk)**



## Scottish Opera: Big Bang Show

Three singers play Professor Einstein, Lord Kelvin and Gaia (the personification of Earth) and the three character groups represent different types of energy. GAIA (wind/water/sun) BURN group (fossil fuels) and REACT group (nuclear). Led by their champions, the groups debate which energy is best: until Gaia points out that unless humans begin to take real responsibility for their use of fossil and nuclear powers, the Earth will die. She urges them to learn the lessons of natural powers while there is still time...

**University of Glasgow, Concert Hall, All ages, Thurs 2nd June, 6-8pm, Invitation only**

## The Physicists

Strathclyde Theatre Group present a rehearsed reading of Friedrich Dürrenmatt's popular satiric drama, The Physicists. Written in 1962, a time when science seemed to have outstripped man's ability to use it for the betterment of humanity, the physicists of the play protect their work by getting themselves locked up in a lunatic asylum. **Ramshorn, Age 14+, Fri 3rd June 7:30-9:30pm, £8 full/ £6 concessions.**

**<http://onlineshop.strath.ac.uk> or +44 (0)141 552 3489**

## Whitelee Windfarm Visitors Centre

Includes interactive exhibits, a range of tracks and trails winding through the turbines, a short bus tour and workshops: **Electricity and Renewables:** Learn about the effects of fossil fuel consumption and why they're running out. Learn about different options of renewable energy sources for fuelling Scotland's future.

Sat 4th/11th 14.30-15.15, Sun 5th/12th

13:00-13.45 **WindWorks:** Wind Works – Investigate wind turbine design by testing four different turbine blade shapes to find out which give the most energy output. Sat 4th/11th 12.00-12.45, Sun 5th/12th 15:00-15.45 **Managed by the Glasgow Science Centre, Whitelee Windfarm Visitor Centre, Age 8+, Sat 4th, Sun 5th, Sat 11th and Sun 12th June 10-5pm, +44 (0)141 568 5480, [www.whiteleewindfarm.co.uk](http://www.whiteleewindfarm.co.uk)**

### **Glasgow Science Centre Family Weekends**

Glasgow Science Centre is one of Scotland's must-see visitor attractions, presenting science concepts in unique and inspiring ways.

#### **Perception Deception and Phenomenal Phenomena:**

Make sense of your senses through a range of hands on challenges and experiments.

**Stargazers:** Suitable for families with under 8s, this live star show explores the night sky from the city to the countryside.

**The Sky Tonight:** A live star show about the present night sky and naked eye objects visitors can see for themselves from their own back gardens.

#### **Glasgow Science Centre, All ages**

**Sat 4th, Sun 5th, Sat 11th and Sun 12th June, 10-5pm, Entry to Science Mall £9.95/ £7.95. +44 (0)141 420 5000, [www.gsc.org.uk](http://www.gsc.org.uk)**

### **Govan Science Shuffle**

Exploring the themes of public health, gardening, green space and healthy eating. Build a cardboard village, have a go at knitting, gardening, and bread-making. Take part in creative science art activity and make your own brain cell! Meet scientists from Glasgow and Glasgow Caledonian Universities to chat about current medical research. Come along join the fun, help out and learn something new with the Common Good Project 2011. **Pearce Institute, Govan Cross Shopping Centre and Elder Park Community Gardens, All ages, Sat 4th June, 12-5pm, Drop in**



### **Hunterian Art Gallery Family Weekend**

Founded in 1807, The Hunterian is Scotland's oldest public museum and home to over a million items, including diverse collections of artefacts, art and an array of animal life. During the first 2 weekends in June, the Hunterian Art Gallery will be showcasing a number of exciting hands-on drop-in activities suitable for all the family. **Hunterian Art Gallery, University of Glasgow, All ages, Sat 4th, Sun 5th, Sat 11th and Sun 12th, 11-4pm, Drop in**

### **Robroyston Park Local Nature Reserve Open Day**

Come and learn more about Robroyston Local Nature Reserve with lots of fun events such as wildflower planting, wildlife quizzes and bug safaris. Froglife will be running pond dipping sessions to find some of this years frogs and toads (12:30; 1:45). **Robroyston Park Local Nature Reserve - Quarrywood Road entrance. All ages, Sat 4th June, 12-3pm, Drop in**

### **Science on the Streets**

If you would like to see the 'tape measure' in George Square, hear the story of the two Glasgow scientists' attempt to bring an executed murderer back to life using electricity, or find out how the James Watt steam engine works then come on the tour and find out about the history of science and engineering behind everyday Glasgow. <http://scienceonstreets.phys.strath.ac.uk>

**George Square, James Watt Statue, South West Corner, recommended for Age 14+, Sat 4th June, 2-3:30pm, GSF booking +44 (0)141 330 5370**



## **University of Glasgow: Science Sunday**

Welcome to the 5th annual Science Sunday extravaganza at the University of Glasgow, Fraser Building. Our staff and students will be on hand to showcase just some of the world class research happening right here on campus. There will be loads of workshops, shows, displays and hands-on activities from the Science Festival team and our specially invited guests. Featuring events in the Hunterian Art Gallery and the 'Without Frontiers' Wildlife exhibition. Cool Science. Real nice people **University of Glasgow, Fraser Building, All ages, Sun 5th June, 10-4pm, Drop in**

## **Without Frontiers Wildlife Exhibition**

'Without Frontiers' This new Heartstone exhibition brings together stunning images of the natural world in Scotland and beyond with the scientists currently researching them. The event includes dance and story telling, presenting myths and legends from across the world and across history. A colourful, captivating and dynamic event for all ages. **University of Glasgow, Hunter Halls, All ages, Sun 5th June, 10-4pm, Drop in**

## **Hunterian Museum Reopening - Roman Exhibition**

The University of Glasgow's Hunterian Museum re-opens on the 10 June 2011 with a fabulous new Roman Frontier gallery, which will highlight the interaction between the people of Scotland and the occupying Roman army. Objects from the Hunterian's internationally acclaimed collection will include superb sculptured stones and other unique artefacts illustrating life on the edge of the Roman empire 2000 years ago.

**Hunterian Museum, University of Glasgow  
All ages, Fri 10th June, 9:30-5pm, Drop in**

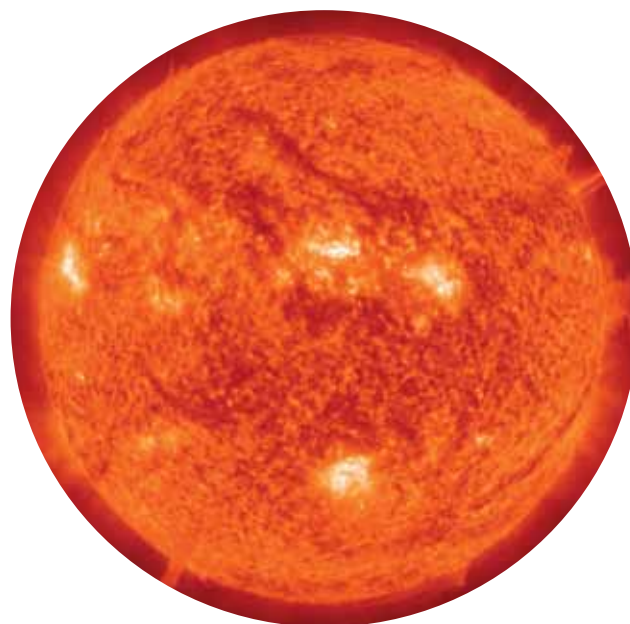
## **Discover Our Solar System**

Kelvingrove in partnership with the Glasgow Science Festival brings you a weekend of astronomy themed events. Find out about our solar system and meet some of the researchers who study it. Get involved with some great hands-on activities for all ages'

**Kelvingrove Museum and Art Gallery,  
All ages Sat 11th June, 11-12:30, 1:30- 3:30  
and Sun 12th June, 1-4pm, Drop in**

## **Science Knit and Knatter**

Learn to knit and help Glasgow Science Festival staff make Mr Stuff, our woolly anatomy model. He's missing all his organs and we need your help to make them. Knit brains, brains, livers, hearts and intestines. Talk to medical students and meet experienced knitters from our friends at The Yarn Cake knitting cafe. Includes our fabulous 'Knit a Neuron' wholly brainy artwork. **CCA, Suitable for all ages and knitting abilities, Sat 11th June 12-4pm, Drop in**



### **Medieval Engineering Family Day - Building the Future**

Past meets the present when Historic Scotland, St Mungo Museum and the Glasgow Science Festival join forces to bring you this fun packed day of shows, workshops, tours and hands-on activities. Learn how the stunning cathedral was built using 13th Century technology, meet our Medieval and modern stone masons and handle medieval tools. Glasgow experts will be on hand to show you the future of engineering and sustainable development. **Glasgow Cathedral/ St Mungo Museum, All ages, Sun 12th June, 11-4pm, Drop in**

### **Knit a Neuron Artwork**

Knit a Neuron is a collaborative art project from the University of the West of England. Knitters across the UK have created hundreds of woolly brain cells to create a fabulous brainy artwork which is on display during at Scotland's only dedicated knitting cafe. Visit Glasgow Science Festival website for knitting patterns (brain cells and others) then bring it along to The Yarn Cake café to add to the display.

**The Yarn Cake, Queen Margaret Drive, All ages 12th to 30th June, Tue-Fri 11-6pm, Sat and Sun, 11-5pm, Drop in**

### **See our active Sun for yourself**

After a few unusually quiet years, the dark patches called 'sunspots' are starting to appear on the Sun's surface again. Join University of Glasgow lecturer Dr Alec MacKinnon to use telescopes and filters to view them safely, discussing what they are and why they matter to us here on Earth. In the event of bad weather a short talk will look at how we use spacecraft to study the Sun in more detail. **University of Glasgow, St Andrews Bld, Age 12+, Wed 15th June, 10-11am, +44 (0)141 330 1860**



### **University of Strathclyde Science Busking**

Be entertained by the science of rocket balloons, rope handcuffs, spinning plates and whirly tubes and more! **Shopping Centre Venue TBA - see website for further details, All ages, Thurs 16th June, 6-8pm, Drop in**

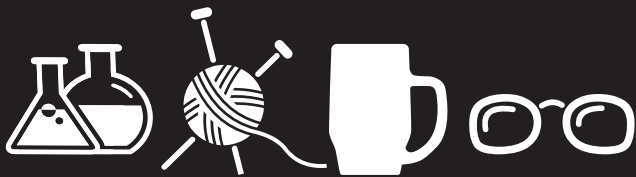
### **Young Researchers - Improving Lives Award Ceremony**

Glasgow, City of Science in partnership with the Glasgow Science Festival are launching a new competition aimed at early years researchers in West of Scotland Universities and Industry. Entrants will showcase how their research will improve the quality of lives across Scotland and beyond. Local Glasgow school pupils will help select the winners.

**All ages, Fri 17th June, Invitation only**

### **Building Newark Castle Family Day**

Have you visited a huge castle or cathedral and wondered how on earth it was built? Now you can find out in this interactive show where you follow the journey of a block of stone, solving problems and discovering the science and technology behind medieval construction as you go. Tours of the Castle may also be available. **Newark Castle, All ages, Event free with admission price to castle, Sat 18th June, 11-4pm, Newark Castle Booking +44 (0)1475 741 858**



## **Big Science Pub Quiz**

Pub quizzes don't all have to be about sport and the movies. Glasgow Science Festival brings you this light-hearted pub quiz all about science, with plenty of "what happens next?" live demonstrations. Don't worry if science isn't your strong point – there'll be lots of chances for inspired guesswork! **CCA, Age 18+, Wed 1st June, 8pm, No booking required**

## **Glasgow Sculpture Studio Lunchtime Talks**

The visual arts offer an innovative way of sparking debate focusing on the social, cultural and ethical issues around contemporary science. The Glasgow Sculpture Studios will host a short series of lunchtime talks, bringing together artists in conversation with University of Glasgow scientists. Including writer Jonathan Bonfiglio, Norwegian dancer/choreographer Mia Habib and sculptor Charles Engebretsen.

**Glasgow Sculpture Studios, Age 16+, Thurs 2nd, Thurs 9th and Thurs 16th June, 1-2pm, Booking via [info@glasgowsculpturestudios.org](mailto:info@glasgowsculpturestudios.org)**

## **Café Sci**

Our atmosphere is travelling back through time, with carbon dioxide levels set to be higher than any time during the last 35 million years and average planetary temperature expected to rise. So what will the world look like? What will it feel like? James Bendle, Palaeoclimatology Lecturer at the University of Glasgow, travels back through Geological time, to understand what evidence of past "Greenhouse" worlds, preserved in sediments, can tell us about our planetary future.

**Tron Theatre, Recommended for adults Mon 6th June, 7pm, No booking required**

## **University of Strathclyde Research Day**

Come along and learn about some of the current research being conducted at Strathclyde. There will be over 100 researchers presenting their research in a friendly environment where members of the public can meet with them and discuss the research face to face. There will also be a Dragons Den style event where researchers pitch for research funding. **University of Strathclyde, Barony Hall, Age 16+, Tue 7th June, 12:30-5pm, visit the website [www.strath.ac.uk/researchday](http://www.strath.ac.uk/researchday) to book your free place**

## **Stitch n Bitch**

What happens in your brain when you learn to knit? Join us at Scotland's only dedicated Knitting Café, learn to knit and have a science natter. You'll meet fellow knitters and neuroscientists will be on hand to share their brain expertise. We will be knitting brains, livers, hearts and lungs for our anatomical teaching model - 'Mr Stuff'. Come along, and get the hooks out!

**The Yarn Cake, Queen Margaret Drive, recommended for adults, Tue 7th June 6-10pm & Wed 8th June 3-6pm Yarn Cake Booking +44 (0)141 946 5305**

## **Donor Unknown**

Donor Unknown is a documentary feature film following the story of JoEllen Marsh, 20, as she goes in search of the sperm donor father she only knows as Donor 150. What she discovers is moving, provocative and surprising. A uniquely 21st century story, Donor Unknown raises intriguing questions about identity, parenting, family – and the strange power of our genetic connections. Screening plus Q+A with the film-makers and specialists from the fields of reproductive medicine/fertility/medical ethics.

**GFT, Age 16+, Thurs 9th June, 6-8pm, £7/£5.50 GFT Booking +44 (0)141 332 6535**

### **What nature did and did not give aerospace**

Lecture by Prof Roderick Galbraith, University of Glasgow. Co-sponsored by the Royal Philosophical Society of Glasgow and the Institution of Engineers and Shipbuilders in Scotland. The talk will focus on the development of special aspects of aerospace systems and the way in which the natural world has influenced their development. Topics will include wing design, jet engine development, digital flight control and autonomous aircraft. **University of Glasgow, Boyd Orr Lt1, recommended for adults Thurs 9th June, 7-8pm, No booking required**

### **Walking Tour: Hillhead Burgh Boundary**

Hillhead was an independent burgh from 1869 until 1891, when it was absorbed into Glasgow. The burgh boundary, which snakes through the West End, offers an illuminating tour through the history of the West End, including Glasgow University, the former BBC Scotland HQ, Glasgow Academy, North Woodside Flint Mill and the site of Hillhead Burgh Hall.

**University of Glasgow Age 16+, Fri 10th June, 6-8pm, +44 (0)141 330 1860**

### **Walking Tour: University of Glasgow Campus**

The campus was laid out in 1870, when the ancient university decamped from the overcrowded High Street. The main building, designed in Flemish Gothic by Sir George Gilbert Scott, has since been complemented by a range of buildings in a variety of styles. The tour looks at the architecture and history of the campus.

**University of Glasgow, Age 16+, Sat 11th June, 1-3pm, +44 (0)141 330 1860**

### **Walking Tour: Western Necropolis**

The Western Necropolis, which opened in 1882, offered a grand resting place for the great and good of the West End. The tour examines its development and visits the graves of architects, schoolmasters, entertainers, the founder of the Boys' Brigade and even the radio operator on the Titanic.

**University of Glasgow, Age 16+, Sun 12th June, 1-3pm, +44 (0)141 330 1860**

### **Zombie Science 1Z: Night of the Living Dead**

George A Romero's legendary masterpiece of 1968 is the granddaddy of all zombie fiction. The story's simple: Brother and sister visit parent's grave ("They're coming to get you Barbara..."), zombies rise, brother gets killed, girl goes and hides in a farmhouse and gets besieged by the undead. It's a recipe for a sleepless night. The screening will be introduced by world renowned Theoretical Zombiologist Doctor Austin, followed by a 30min spoof lecture demo on the real science behind the undead. Sit the online exam certified by the Zombie Institute for Theoretical Studies (ZITS). [www.zombiescience.co.uk](http://www.zombiescience.co.uk) **CCA cinema, Age 18+, Tue 14th June, 7-9:30pm, £5/£3 CCA Booking +44 (0)141 352 4900**



## **Sights and Sites around the West End**

Where did Barr and Stroud begin? Where was the suspension bridge tensioned from below? What different means of transport were developed in and around Kelvinbridge? Where did the raw material come from for the Finnieston/ Verreville Pottery? Find out about the West End's early medical buildings, learn about shipbuilding on the Clyde and about early bridges on parts of the Kelvin. **Hillhead Talk:** Tue 14th June, 10-12pm **Kelvinside Talk:** Tue 14th June, 2-4pm **Partick Walk:** Wed 15th June, 10-12pm **Partickhill Walk:** Wed 15th June, 2-4pm

**University of Glasgow, Age 16+,  
+44 (0)141 330 1860**

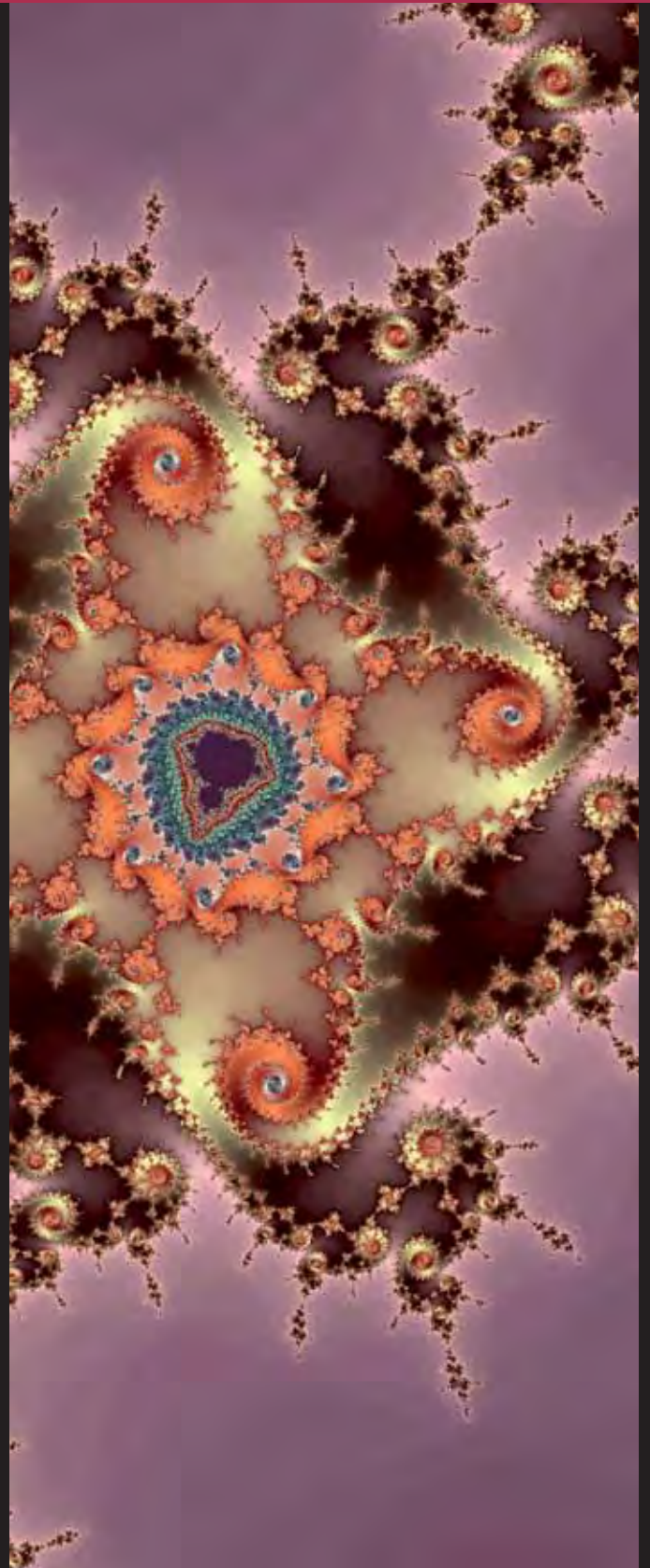
## **Science behind fitness and physical activity in older people**

Are you an older adult? Do you want to know how your fitness and activity levels compare to others? Or how you can improve your fitness and ability to maintain independence, with the least possible effort? Come and have a fitness MOT with professionals from the School of Health, Glasgow Caledonian University.

**Glasgow Caledonian University, ARC leisure Centre, Adults esp age 60+, Wed 15th June, 9:30-11:30am, No booking required**

## **Fat tails, stock market crashes and the extinction of the dinosaurs: thinking about unlikely events**

Asteroid impacts, stock market crashes, "black swans": individual, extreme events we can't predict. Are there nonetheless methods for thinking about how likely they might be, for addressing their consequences? University of Glasgow lecturer Dr Alec MacKinnon brings a non-mathematical introduction to the mathematics of "Levy flights" and "Fat tails". **University of Glasgow, St Andrews Bld, Age 16+, Wed 15th June, 2-3pm, +44 (0)141 330 1860**



## “La chimie dans notre quotidien” / “Chemistry in our everyday life”

The exhibition is part of the International Year of Chemistry 2011. Industry, medicine, heritage, environment, agriculture, food and habitat are all fields which are evolving thanks to chemistry. Designed for a wide audience with a bilingual approach (French & English), it offers the public the opportunity to discover a new chemistry in full renewal which explores unexpected areas of our lives. **Alliance Française de Glasgow, S5-6, 1st June onwards, Mon-Thu : 10am-9pm Fri: 10-4pm, Sat: 10am-1pm, AF Booking +44 (0)141 331 4080**

## Glasgow Science Centre Schools Programme

Glasgow Science Centre is one of Scotland's must-see visitor attractions, presenting science concepts in unique and inspiring ways.

**Journey through My Body:** Specially designed for early years this activity takes pupils on a journey through their body. Find out how food travels through the body, the importance of diet and how to make healthy choices. (P1-3)

**Sky Safari:** As the sun sets you'll discover the wonders of the night sky under the twinkling stars of the planetarium (P1-3)

**CARazy Circuits:** The Challenge is on....work collaboratively to design, build and race your own electrically powered CAR-azy car. (P4-7)

**Imagine That:** What do Velcro, Dyson vacuums, bendy straws and light bulbs have in common? Find out in our innovative show as we discover the wonderful world of inventions and learn how these cracking ideas got from the drawing board into our homes? (P4-S2)

**Our Place in Space:** See the sky as it should be seen under the glittering dome of our state of the art planetarium. Investigate the nature of the Sun, Moon, planets and stars. (P4-S2)

**Destination Space:** Explore the solar system, our neighbouring stars and galaxies. Discover what a light year is and where everything- the stars, galaxies, planets and you and me came from. (S3-6)

**Hubble 3D:** This immersive film takes you on a journey to distant galaxies to explore their grandeur and mysteries. Accompany space-walking astronauts on their mission to assemble the Hubble telescope and gaze in wonder at the fantastic images. (S3-6)

**Glasgow Science Centre, 1st-3rd, 6th-10th, 13th-17th June, various times, Science Mall + 1 activity = £4 per pupil; Science Mall + 2 activities = £6 per pupil. Science Centre may be able to assist with coach/travel costs. +44 (0)141 420 5000**

## Without Frontiers Wildlife Exhibition

'Without Frontiers' This new Heartstone exhibition brings together stunning images of the natural world in Scotland and beyond with the scientists currently researching them. The event includes dance and story telling, presenting myths and legends from across the world and across history. A colourful, captivating and dynamic event for all ages. **University of Glasgow, Hunter Halls, P6-7, Fri 3rd June, 10-12pm, 12:30-2:30pm, GSF Booking +44 (0)141 330 5370**

## A Look at Optometrists

The workshop you're about to take part in is designed to test the way you see the world, both the one around you, and the world inside your head. Explore how your eyes and brain work together with intriguing tests.

We'll show you what amazing tools your eyes are!

**Glasgow Caledonian University, S3-4, Mon 6th, Fri 10th, Mon 13th and Tue 14th June, 10-12pm, GSF Booking +44 (0)141 330 5370**



## **From Sellotape® to Fireflies: Things That Glow in the Dark!**

Demonstrations explore what do fireflies and glow-worms have in common with disposable nappies, why do your clothes glow under the lights in a disco, and why the 'Blue People' of Troublesome Creek skin was blue.

Fun demonstrations look at where light might be produced or utilised in chemical, physical and biological settings. **University of Glasgow S3-6, Mon 6th June, 1:30-2:30pm, GSF Booking +44 (0)141 330 5370**

## **SSERC CPD For Primary Teachers: Plant life cycles**

We will carry out a variety of practical classroom activities that will engage pupils and support the development of scientific skills and better understanding of plant structure and life cycles. The activities will focus on Experiences and Outcomes at Level 2, with some also suitable for Early and Level 1. **University of Glasgow, primary teachers, Mon 6th June, 4.30-6pm, GSF Booking +44 (0)141 330 5370**

## **SSERC CPD For Secondary Teachers: Photosynthesis and Respiration**

We will explore how a range of different practical techniques can be used to promote better understanding of plant respiration and photosynthesis. We will use Cabomba to investigate CO<sub>2</sub> exchange in plants under both light and dark conditions. By adapting the basic technique, pupils can design their own practical investigation.

**University of Glasgow, secondary teachers Mon 6th June, 4.30-6pm, GSF Booking +44 (0)141 330 5370**

## **See Glasgow, See the World @ University of Glasgow**

The British Council and Glasgow Science Festival come together in the 'Global Schools Partnership' linking Glasgow and Trinidad. Glasgow University staff and students have a long standing relationship with Trinidad and invite pupils to participate in a lively afternoon of talks and discussions based on environmental issues concerning both Scotland and Trinidad. **University of Glasgow, S3-6, Tue 7th and Wed 8th June, 10-12pm, 12:30-2:30pm, Invitation only**

## **Forensic Investigation**

Get an insight into the work of a Forensic Investigator with an interactive lecture on Face Recognition, a talk on blood analysis including analysis of blood spatter patterns and DNA fingerprinting then carry out a microscopy workshop, learning about differences between e.g. hairs, fibres and bullets. **Glasgow Caledonian University, S3-4, Tue 7th and Wed 8th June, 10-12pm, GSF Booking +44 (0)141 330 5370**

## **Human Body In Action**

Pull a body apart and put it together again; compare a human skeleton with the skeletons of bats, cats and reptiles; investigate how your own lungs, heart and muscles work. This laboratory workshop will take you on a journey of discovery through the wonders of the living body. **Glasgow Caledonian University, P4-7, Tue 7th, Wed 8th, Thurs 9th, Tue 14th, Wed 15th and Thurs 16th June, 10-11:30am, GSF Booking +44 (0)141 330 5370**



### **Maths and Stats Taster @University of Glasgow**

University of Glasgow staff in the School of Maths and Stats bring you an afternoon of activities designed to challenge your pupils. The 'Funmaths show' focuses on mathematical enjoyment, with interactive puzzles to help develop pupils' mathematical skills (logic, numeracy and decision making). In the stats lab 'Getting into Shape: How to Tell the Boys from the Girls', size measurement data is used to distinguish the sexes in species that aren't visually distinct. Explore what it is that makes human faces different between the sexes.

**University of Glasgow, S1-3, Tue 7th June, 12:30-2:30pm, GSF Booking +44 (0)141 330 5370**

### **Medieval Construction - Glasgow Cathedral**

Have you visited a huge castle or cathedral and wondered how on earth it was built? Pupils can find out in this interactive show where they follow the journey of a block of stone, undertaking problem solving and challenges as they go, to discover the science and technology behind medieval construction.

**Glasgow Cathedral, P5-S1, Tue 7th, Wed 8th and Thurs 9th June, various times, Historic Scotland Booking +44 (0)131 668 8793**

### **Engineering Taster @ University of Glasgow**

Learn about how engineering has shaped the modern world and how engineers are working to address the grand challenges we face today and take part in one of three workshops with University of Glasgow engineers. **Workshop 1:** Chocolate Engineering- test the structural properties of chocolate bars with the Mechanical Engineers or **Workshop 2:** Solar Cars- design, build and race your solar powered cars with the Aeronautical Engineers or **Workshop 3:** Madlab- build your very own electronic circuit with the Electronic and Nanoscale Engineers. **University of Glasgow, S3-4, Wed 8th, 10-12pm, GSF Booking , +44 (0)141 330 5370**

### **Chemistry Taster @ University of Glasgow**

Join staff in the University of Glasgow chemistry labs for a CSI Forensics workshop to discover who pinched Penelope the prized Pooch. Then take part in an interactive lecture-demo. **University of Glasgow, S1-2, Wed 8th June, 10-12pm, 12:30-2:30pm, GSF Booking +44 (0)141 330 5370**

### **Physics Taster @ University of Glasgow**

Meet University of Glasgow cosmologist Martin Hendry to explore the mysterious 'dark matter' and 'dark energy' that makes up almost everything in the Universe. Learn about the latest theories for their origin and how they will determine the ultimate fate of our Universe through an interactive lecture demo and hands-on activities. **University of Glasgow S1-2, Wed 8th June, 10-12pm, 12:30-2:30pm, GSF Booking +44 (0)141 330 5370**

### **Wildlife Crime Conference**

A chance to learn about wildlife crime and how you can help to prevent it. Participants will have the chance to be wildlife crime officers in wildlife CSI Glasgow, investigating wildlife crimes and look for evidence to find out whodunnit! Outdoor clothing will be required.

**University of Glasgow, P6-7, Thurs 9th June, 10-12pm, 12:30-2:30pm, GSF Booking +44 (0)141 330 5370**

### **Junior Café Scientifique - It's your parents fault**

**Nature vs Nurture'**: Ever wondered why you look and behave the way you do? Your parents have provided both the genes (nature) and environment (nurture), so in a sense the way you've turned out is their fault. But how much is genes and how much environment? Dr Kevin O'Dell is a lecturer in Genetics at the University of Glasgow. **University of Glasgow, S5-6, Thurs 9th June, 12:30-2pm, GSF Booking +44 (0)141 330 5370**



## Bugs and Brains

Enjoy the interactive 'Brain' science show, where you will learn about the really clever things your brain does every day and some of the simple things it can't. Then take part in activities looking at microorganisms (bugs)- how useful they can be for humans and how to get rid of them from your skin. **University of the West of Scotland, Hamilton Campus, P6-7, Fri 10th, 9:30-11:30am, 12:30-2:30pm, GSF Booking +44 (0)141 330 5370**

## Celebration of Science and Engineering

Organised by the Scottish Council for Development and Industry. Young Engineers and Science Clubs across Scotland will showcase their projects. In addition, new Scottish Government Junior Saltire Prize Awards and a range of Green Energy Awards will be presented by the First Minister. The jam-packed programme includes STEM challenges, science shows and a 3D IMAX movie. **Glasgow Science Centre, P7-S6, Fri 10th June, 9:30-2pm, Participation by Invitation only, but spectators welcome. Please contact jane.martin@scdi.org.uk for further information.**

## CSI: Glasgow - with Life Technologies

Who ate the porridge? Was it one of the three bears or could it have been somebody else? Come and visit our real life labs and put your problem-solving skills to the test. We need your help in solving this grizzly crime. Be a crime fighter with CSI: Glasgow. Use the real high-tech equipment that helps scientists unravel the clues behind police lines, bagging and swabbing every piece of evidence to nail the bad guys. **Life Technologies, Inchinnan, Fri 10th June, Porridge, P1-3, 10-11:30am; CSI, P4-7, 12:30-2pm, GSF Booking +44 (0)141 330 5370**

## Product Design Engineering Taster @ University of Glasgow and Glasgow School of Art

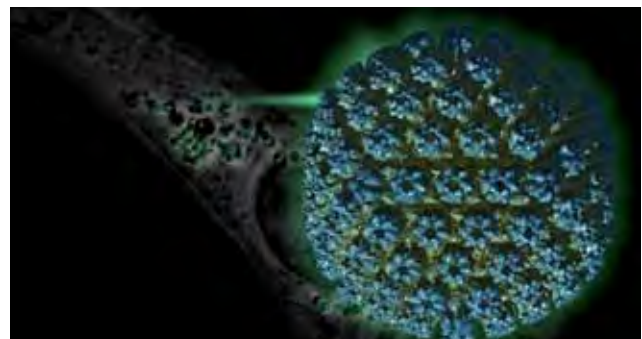
This event gives pupils a flavour of life on the Product Design Engineering course run by Glasgow University (Mech. Eng.) and Glasgow School of Art. Pupils will take part in an idea-generation activity and a design-and-build challenge, and current undergraduates will talk about the projects they're working on. **GSA, S3, Mon 13th June, 10-12am, 12:30-2:30pm, GSF Booking +44 (0)141 330 5370**

## Measuring Music @ University of Glasgow

Physics, Technology, and Playing Instruments  
Everybody can tell the difference between an amateur and professional musician, Yet the measured differences in how they play are tiny. We wire up four pros: a pianist, singer, violinist, and clarinettist. We'll tell you how and what the sensors do, and the relationship between physics and musical artistry. Funded by Institute of Physics **University of Glasgow, Concert hall, S5-6 - General public, Mon 13th June, 12:30-2:30pm, GSF Booking +44 (0)141 330 5370**

## Medieval Construction - Bothwell Castle

Have you visited a huge castle or cathedral and wondered how on earth it was built? Pupils can find out in this interactive show where they follow the journey of a block of stone, undertaking problem solving and challenges as they go, to discover the science and technology behind medieval construction. **Bothwell Castle, P5-S1, Mon 13th, Tue 14th, Wed 15th June, various times, Historic Scotland Booking +44 (0)131 668 8793**





### **Forces & Flight @ University of Glasgow**

University of Glasgow invites your class to join us on campus for our science show 'Fantastic Forces', exploring the surprises, delights, and noises of forces and movement. Then get hands-on with 'Fabulous Flight' investigating flying, hovering, tumbling and a little bit of electricity. **University of Glasgow, P4-7, Tue 14th, Wed 15th June, 10-12pm, 12:30-2:30pm, GSF Booking +44 (0)141 330 5370**

### **Biology Taster @ University of Glasgow**

Zombie Science 1Z - Enrol now for a spoof lecture as Theoretical Zombiologist, Doctor Austin teaches how a zombie outbreak might occur, its effect on humans and how to stop it. Supported by Wellcome Trust. Then take part in one of two workshops with University of Glasgow scientists. **Workshop 1:** Be a Microbiologist! - During this diagnostics lab, students will explore microbial diseases before diagnosing a 'patient' through analysis of recent medical history and microscopic and/or biochemical tests on 'blood' or 'stool' samples. or **Workshop 2:** Genetics- Doctor Austin is looking for genes that protect you against becoming a Zombie, but how do scientists do that? Using flies as our model of human disease, we'll give you a beginner's guide to linking genes to inherited genetic conditions.

**University of Glasgow, S5-6, Wed 15th June, 10-12am, 12:30-2:30pm, GSF Booking +44 (0)141 330 5370**

### **A Lot of Hot Air**

We are all aware of the increasing activity in harnessing the 'forces of nature' as alternative energy sources. The lecture will focus on our atmosphere and develop from a few simple concepts an appreciation of the forces and energy associated with the air around us. During the lecture we will: weigh air; consider some effects of heated air, determine the forces caused by the wind; and discuss the amount of wind energy that can be extracted. **Glasgow Caledonian University, S3-5, Wed 15th June, 10-11am , GSF Booking +44 (0)141 330 5370**

### **Medieval Construction- Newark Castle**

Have you visited a huge castle or cathedral and wondered how on earth it was built? Pupils can find out in this interactive show where they follow the journey of a block of stone, undertaking problem solving and challenges as they go, to discover the science and technology behind medieval construction.





**Newark Castle, P5-S1, Thurs 16th, Fri 17th June, various times, Historic Scotland Booking +44 (0)1475 741 858**

### **Aurora with Julie Bertagna**




The award winning Glasgow author Julie Bertagna will talk about her brilliant new novel Aurora -the eagerly anticipated conclusion to her best selling Exodus and Zenith. This is a book of extraordinary imaginative vision and emotional power. Set in a frighteningly realistic future, this thought-provoking novel raises important environmental issues. **Hillhead Library, S1-2, Thurs 16th June, 10:15-11:15am, To book, email [class.connections@glasgowlife.org.uk](mailto:class.connections@glasgowlife.org.uk)**

# Glasgow Science Festival at a Glance




## Wed 1st

-  "La chimie dans notre quotidien" / "Chemistry in our everyday life"
-  GSC Schools Programme
-  GSC Exhibitions
-  Big Science Pub Quiz

## Thurs 2nd

-  GSC Schools Programme
-  Glasgow Sculpture Studio: Lunchtime Talks
-  Scottish Opera: Big Bang Show

## Fri 3rd

-  GSC Schools Programme
-  Without Frontiers Wildlife Exhibition
-  The Physicist







## Sat 4th

-  Whitelee Windfarm Visitors Centre
-  GSC Family Weekends
-  Hunterian Art Gallery Family Weekend
-  Govan Science Shuffle
-  Robroyston Park Local Nature Reserve Open Day
-  Science on the Streets

## Sun 5th

-  University of Glasgow: Science Sunday
-  Without Frontiers Wildlife Exhibition
-  Whitelee Windfarm
-  GSC Family Weekends
-  Hunterian Art Gallery Family Weekend

## Mon 6th

-  GSC Schools Programme
-  A Look at Optometrists
-  From Sellotape® to Fireflies: Things That Glow in the Dark!
-  SSERC CPD For Primary Teachers: Plant life cycles
-  SSERC CPD For Secondary Teachers: Photosynthesis and Respiration
-  Café Sci

## Tues 7th

-  See Glasgow, See the World @ University of Glasgow
-  GSC Schools Programme
-  Forensic Investigation
-  Human Body In Action
-  Medieval Construction - Glasgow Cathedral
-  Maths and Stats Taster @ University of Glasgow
-  University of Strathclyde Research Day
-  Stitch n Bitch








## Wed 8th

-  Forensic Investigation
-  Human Body In Action
-  See Glasgow, See the World @ University of Glasgow
-  Engineering Taster @ University of Glasgow
-  Chemistry Taster @ University of Glasgow
-  Physics Taster @ University of Glasgow
-  GSC Schools Programme
-  Medieval Construction - Glasgow Cathedral
-  Stitch n Bitch







## Thurs 9th

-  GSC Schools Programme
-  Human Body In Action
-  Medieval Construction - Glasgow Cathedral
-  Wildlife Crime Conference
-  Junior Café Scientifique
-  Glasgow Sculpture Studio: Lunchtime Talks
-  Donor Unknown
-  What nature did and did not give aerospace

## Fri 10th

-  Bugs and Brains
-  Celebration of Science and Engineering
-  Hunterian Museum Reopening-Roman Exhibition
-  CSI: Glasgow with Life Technologies
-  GSC Schools Programme
-  Walking Tour: Hillhead
-  A Look at Optometrists






## Sat 11th

-  Whitelee Windfarm
-  GSC Family Weekends
-  Hunterian Art Gallery Family Weekend
-  Discover our Solar System
-  Science Knit and Knatter
-  Walking Tour: University of Glasgow Campus

## Sun 12th

-  Whitelee Windfarm
-  GSC Family Weekends
-  Medieval Engineering - Building the Future
-  Hunterian Art Gallery Family Weekend
-  Discover our Solar System
-  Knit a Neuron
-  Walking Tour: Western Necropolis

## Mon 13th

-  A Look at Optometrists
-  GSC Schools Programme
-  Medieval Construction - Bothwell Castle
-  Product Design Engineering Taster @ University of Glasgow and Glasgow School of Art
-  Measuring Music @ University of Glasgow

## Tues 14th

-  Forces & Flight @ University of Glasgow
-  GSC Schools Programme
-  A Look at Optometrists
-  Human Body In Action
-  Medieval Construction - Bothwell Castle
-  Sights and Sites around the West End: Talks
-  Zombie Science 1Z: Night of the Living Dead

## Wed 15th

-  Science behind fitness and physical activity in older people
-  GSC Schools Programme
-  Forces & Flight @ University of Glasgow
-  Biology Taster @ University of Glasgow
-  See our Active Sun for Yourself
-  Human Body In Action
-  A Lot of Hot Air
-  Medieval Construction - Bothwell Castle
-  Sights and Sites around West End: Walks
-  Fat tails, stock market crashes - talk

## Thurs 16th




-  Medieval Construction - Newark Castle
-  GSC Schools Programme
-  Human Body In Action
-  Aurora with Julie Bertagna
-  Glasgow Sculpture Studio: Lunchtime Talks
-  University of Strathclyde Science Busking

## Fri 17th

-  Medieval Construction - Newark Castle
-  GSC Schools Programme
-  Young Researchers-Improving Lives Award Ceremony

## Sat 18th

-  Building Newark Castle

	All Ages
	Adult
	Schools

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