

Into the blue Manchester exhibitor programme

Theme key:



Air



Energy



Health



Water

Events suitable for all

Secret sources of the Earth's superpowers

For more than one million years we've been using the planet's superpowers to generate our energy needs. Discover what's hidden in the layers of the Earth's crust. Join BGS geologists to unlock the secrets of the rocks that power life on the surface. Build a geological layer, play energy Jenga, win a Lego volcanology kit and become a planetary detective!

Sustainable Seas on a Changing Planet

Come and help us explore our amazing oceans. Learn how to spot RIP currents on a beach or go deeper and join the Deep Links team as they explore the UK's deep underwater mountains. Help out with some marine chemistry or find out what a sea angel is. See what you can do to help clean up our oceans with our marine litter experts or help our conservation team to record thriving Marine Protected Areas around the UK.

Why are green spaces important for wellbeing?

We are all familiar with parks and open green spaces - but do you know why they are important for human wellbeing? Reading University scientists explore how and why people connect with green spaces. Come and explore the importance of urban green spaces and why they should be preserved in future urban developments.

Chasing the Monsoon

Come on board the UK's most advanced research jet. You can meet the team who flew across India this summer to investigate a mysterious weather phenomenon. You'll see some of the instruments used and demonstrations of what we know (and don't know) about the Indian monsoon. By the end of the exhibit, you'll really know which way the monsoon winds blow and why Manchester scientists are at the heart of understanding it.

Picture the clouds

Did you know that it really does rain more in Manchester than in neighbouring areas? Learn what scientists know about how clouds form from small particles, changing whether rain (or even snow) falls. Come learn about why we need to understand clouds both for climate and weather forecasting.

Preserving Our Moorlands: Your Actions Count!

Do you know why moorlands like the Peak District matter? Meet the scientists who can explain - and find out how you can help. Local firefighters will be on hand at times throughout the week to talk about how they extinguish wildfires. Also, get messy measuring pollution through the years captured in peat and take part in simple experiments to show how moorland can help reduce flooding.

Fantastic Food Webs

From the sea's salty surface to the dark depths of the ocean, there's an ongoing fight to survive. Animals battle to catch their next meal - or avoid becoming someone else's snack! Find out what tricks they use and see if you can catch them. Work out who eats who, understand how humans fit into the great marine food web and see what happens when species go missing. You'll learn how to help solve the ocean's biggest problems.

Electric Cars: The Solution to Pollution?

Air pollution in cities is already having a huge impact on people's health. Could the electric car be the answer? Find out how they work and why they are a cleaner alternative to conventional cars. We will show why pollution is higher in cities and you will be able to see how traffic emissions are harming health and find out what's being done about it.

Atmospheric detectives!

What are you breathing? Interrogate the atmosphere from the very small scale to the very large. Test your own breath or battle buoyancy by learning how scientists use balloons to probe the atmosphere up to 30km high! Scientists from the University of East Anglia will show you levels of greenhouse gases locally.

Stop the Spread!

Species brought accidentally into the UK from other countries can badly affect our native wildlife, economy and society. Problems like blocked pipes, dead fish and flooding can all be caused by invasive species across the country. Learn how to protect your local environment, especially important fresh water sources. Come and meet the culprits and help stop the spread!

Flash flood!

Flash floods can be devastating. Using the latest in virtual reality technology, Flash Flood! puts you in a river valley during one of these events, allowing you to witness the dramatic "wall of water" first hand. It's based on a real river valley and an actual flood in Northumberland, and has been built using scientific data. You will be able to talk to the scientists behind it and find out how they are helping to reduce risks from flooding in the UK.

Atmospheric science - here, there and everywhere!

Discover what atmospheric measurements and facilities the UK National Centre for Atmospheric Science provides, and meet the scientists behind the stats. Visitors will be able to see real-time atmospheric data and videos from locations across the world and find out why they're important for forecasting weather and understanding air pollution. There will also be activities and demonstrations to see science in action.

SeaDNA - Assessing marine biodiversity using DNA

Can you map the DNA of a sea creature from the traces left behind in the ocean? Absolutely! Learn about DNA-metabarcoding, a new approach combining ecology, genetics and informatics to shed light on what's living in the sea. You'll have the chance to "fish" samples of simulated marine life to instantly work out which species are living in the ecosystems.

Discover Antarctica!

Cute penguins and squidgy sea creatures are on show with the British Antarctic Survey. We will uncover the mysteries of the deep ocean using our new polar ship the RRS *Sir David Attenborough*, currently being built in Liverpool. Discover how the Southern Ocean plays a vital role on our planet and discover how you can monitor the atmosphere from the air.

Young Scientists - The 5th Element

Become a scientist for the day by taking part in some awesome experiments from simulating a tornado to building a volcano. Learn what can be done to protect sharks from extinction. Come and discover how you can make a difference - and make friends with Monty the shark.

Environmental chemistry and detecting pollution

How do humans pollute water, land and the atmosphere? And what role does chemistry play? We will simulate the formation of smog and rapid ocean acidification to bring the issue of pollution to life in this interactive display, where hands-on water testing and filtration let you play the role of environmental consultants in highlighting the consequences of pollution.

Lab in the sky - Atmospheric measurements from a large aircraft

Here's your chance to experience a scientific flight on the UK's most advanced atmospheric research aircraft. Take a seat in a mock-up of the aircraft cabin and don your headphones for a real-life recording of research in action. To complete the picture, instruments will take measurements of the gases in the exhibition hall and provide a live feed of data from the remote monitoring station in Cape Verde.

Living Earth

Why is the North cold? Did dinosaurs die out due to lack of enthusiasm? What did Primordial Soup taste like? Find out the answers and much more on a journey through the Earth's history. You are invited to help construct a 5-ft globe out of natural and recycled material like plastic bottles and fishing nets. Learn as you build, from the basics of plate tectonics, climate zones and life, to the complex processes that shape our beautiful, living planet today.

How Bio-Active Are You?

The biological particles in the air around us are impossible to see with the naked eye - but we are covered in them! A new instrument to detect bio-particles displays data in real-time on a large screen, responding instantly to people moving around the stand or particles blown off leaves and flowers with an air blower. Come and find out what bioaerosols are and why they matter for plant, animal and human health. And who will top our leader board to generate the most particles?

Our watery waste bins

How do litter and pollution affect the creatures and plants living in our rivers and sea? Discover by taking part in an interactive aquatic food web based around species found in North-West rivers and British coasts, see samples of the litter polluting our waterways and find out about efforts nationally to clean up and reduce waste – and commit your own actions to tackle the issue to the Pledge Wall.

Explosive Earth

Simulate a volcanic eruption. 'Make a Shake' yourself and compare the magnitude to volcanic earthquakes. Play our earthquake arrival reaction time game and try to locate an earthquake. And take a look at some rocks that are much younger than you. Featuring lava from the 2014 Bárðarbunga eruption and volcanic ash from the 2010 Eyjafjallajökull eruption.

What's happening to our climate? Modelling the future

Investigate the possibilities of future climates by interacting with an Earth-like projected globe. Find out how gases in the atmosphere, oceans, ice on land and at sea, forests and deserts work to shape the world we live in. Take part in quizzes and puzzles, including Temperature roulette! Would you dare to be the one that reaches 8°C?

Air quality and you

Become an air pollution detective by using plants. Lichens are good indicators of nitrogen pollution. Find out what it is and learn how to identify it in your own area. Can you identify the lichens with our lichen app and identify where they were found? Use your new skills at home and identify if you live in a nitrogen polluted area.

What's the value of Nature to you?

Follow our stepping stones of discovery to find a secret natural world with plants, birdsong and a video installation. Learn about some of the different ways we value the natural world in terms of money, culture, wildlife and for our health - does understanding these values help us make the right decisions? Hear about recent discoveries and new research activities starting soon in Manchester.

Immerse yourself in nature with sensory experiences and nature crafts, explore your own nature values and find out how green space can help your health and wellbeing.

Exploring your Environment with an Infrared Camera

Infrared cameras are used to see 'heat', otherwise invisible to us. Come and see how scientists use them to see the invisible and understand our planet. Try your hand and thermal painting and melting

icebergs. Understanding heat on Earth, especially in the sea is a key part of how our scientists understand our weather and climate.

Sensing the environment

Try your hand as scientist with pieces of field kit, and find out how we monitor rivers and lakes, the air we breathe, and the countryside that we work and play in.

Meet our team, from the Centre for Ecology & Hydrology, who operate a national network of monitoring stations in diverse habitats including lowlands, uplands, wetlands, lakes, rivers, forests and heaths. We have detailed data, from water quality and ecology in the Lake District, to river flows, and butterflies and bees spotted in the UK's countryside. Learn how you can help us by collecting more using your mobile phone.

Chemistry around the world

From the Arctic to Cape Verde to Borneo and back again. Visit the scientists from the Wolfson Atmospheric Chemistry Laboratories in York to find out why air pollution is a global problem, how we measure it and why we get to travel the world. Using experiments find out more about air pollution including why sunlight is so important. Find out about what we have learnt on our travels and tell us where you think we should go next.

Manchester Climate Leaders: re-imagining Manchester

Bringing together climate scientists from the Tyndall Centre, with Manchester Museum and Manchester A Certain Future, our event takes visitors on a journey to a low carbon 2050 Manchester. An immersive installation unfolds so we can experience the effects of climate change through a labyrinth of stories and images.

Save the City! Understand flooding with sand

Learn about the causes of flooding with the 'augmented reality sandbox'. You can build mountains and towns, dams and defences and watch digital water move through your creation in real time. Then destroy it all and start again!

Wonders of the Wild

'Wonders Of The Wild' shares the excitement of the natural world with visitors through a variety of games and activities. Come and play our famous 'Whose poo?' game and discover just how much you can learn from animal poo! Or how about a spot of 'Pollinator Top Trumps' to see which pollinating creatures come out on top?

Ash and aviation

Should aircraft be allowed to fly when there volcanic ash in the atmosphere? The 2010 eruption of Eyjafjallajökull (Iceland) caused havoc to European aircraft flight. Volcanic ash is problematic to jet engines as it can lead to loss of power and engine fires, so passengers were left stranded as flights were cancelled. We will provide insight into how scientific forecasts and computational models are used to assess the hazards and keep our planes safely in the sky.

Atmosphere in a Bottle

The power to recreate a cloud, global warming and acid rain is put in your fingertips. Our simple experiments show how these important phenomena occur and provide a hands-on, safe and easy to understand explanation of the science behind them. You will reproduce the physics and chemistry that controls our weather and climate inside a bottle! Run by scientists from the University of Manchester you will have the chance to discuss what atmospheric research they undertake and how we are helping to understand major issues like climate change.

Events suitable for adults

The atmosphere, emissions and us

The quality of the air we breathe, the planet's changing climate and depletion of the ozone layer are three of the big environmental challenges of our time. Meet experts from Cranfield's Centre for Atmospheric Informatics and Emissions Technology and find out how air pollution affects us and the atmosphere.

My Back Yard

Your garden can be part of science! Come and tell us about your back yard! We are collecting data from members of the public in this unique citizen science project looking at green spaces in Manchester and other areas. Complete the survey and learn how to improve your garden to help protect the environment, improve air quality, and boost biodiversity.

Events suitable for 11-18 year-olds

River in a Box

Ever wondered why rivers meander? What causes bridges to be washed away? And does dredging rivers really reduce flooding? Understanding how rivers work helps us protect ourselves from floods, preserve habitats, harness power from water and build safe bridges. Come see the "River-in-a-box" model which allows scientists to rapidly demonstrate many processes in real rivers. You'll be able to get your hands wet and take charge of the river's route.

Weather Photographer of the Year 2016

Ever wondered what conditions cause a sudden hailstorm, what that smell is just after it rains, or why rainbows appear? As well as seeing stunning photography, enhance your meteorological knowledge. Find out more about the science behind the featured weather phenomena with our informative captions. Even learn to spot the clouds that mean rain is on the way - just make sure you remember your brolly.

Events suitable for 5-11 year-olds

Creatures small and smaller – in water

Meet the scientists from Edge Hill University and learn about the wonders that live in water. Discover the importance of corals and the organisms living in these diverse but sensitive environments, and learn how climate change is damaging our precious coral reefs. Come see fossil coral from the university's collection, use microscopes to spy the miniature underwater world of diatoms, and take part in fun activities including marine top trumps and identifying water-loving invertebrates in a water tank.

1816 the Year without a Summer

The summer of 1816 was unlike any other - instead of blue skies and warm days, temperatures plummeted and Europe and North America were covered in a thick dry fog. But what could cause such a huge change in climate? Only a volcano! In this case, one 11,000 miles away in Indonesia.

You'll get a chance to build a volcano, measure pollution from our mini-volcano, and find out how an 1815 eruption led to the invention of the bicycle, and Frankenstein's monster!

Live events

There will also be a programme of live talks throughout the week. To whet your taste buds, here are two.

The National Park Challenge

A fascinating talk from two physics teachers who ran an incredible 15 marathons through the UK's National Parks this September. Throughout their challenge, they identified and measured different aspects of science within the world around them and have used these to develop new resources for the classroom.

Red Sky at Night

Discover why the sky is blue, how to see stars more clearly and what makes the vapour trails behind aeroplanes. Using simple but fun demonstrations which can be repeated at home, the Park Discoverers team will answer these questions and many more.