Daresbury Open Week 2020

Free KS3 school event 30th June 2020

As part of the Sci-Tech Daresbury Open Week, we are dedicating two full days delivering activities for school children from upper primary school through to upper secondary school.

- Monday 29 June: Key Stage 2 & Key Stage 5
- Tuesday 30 June: Key Stage 3, Key Stage 4 & Key Stage 5

These exciting days of talks, tours and interactive workshops will fire your students' imagination and inspire them about cutting edge science and technology, as well as STEM career opportunities.

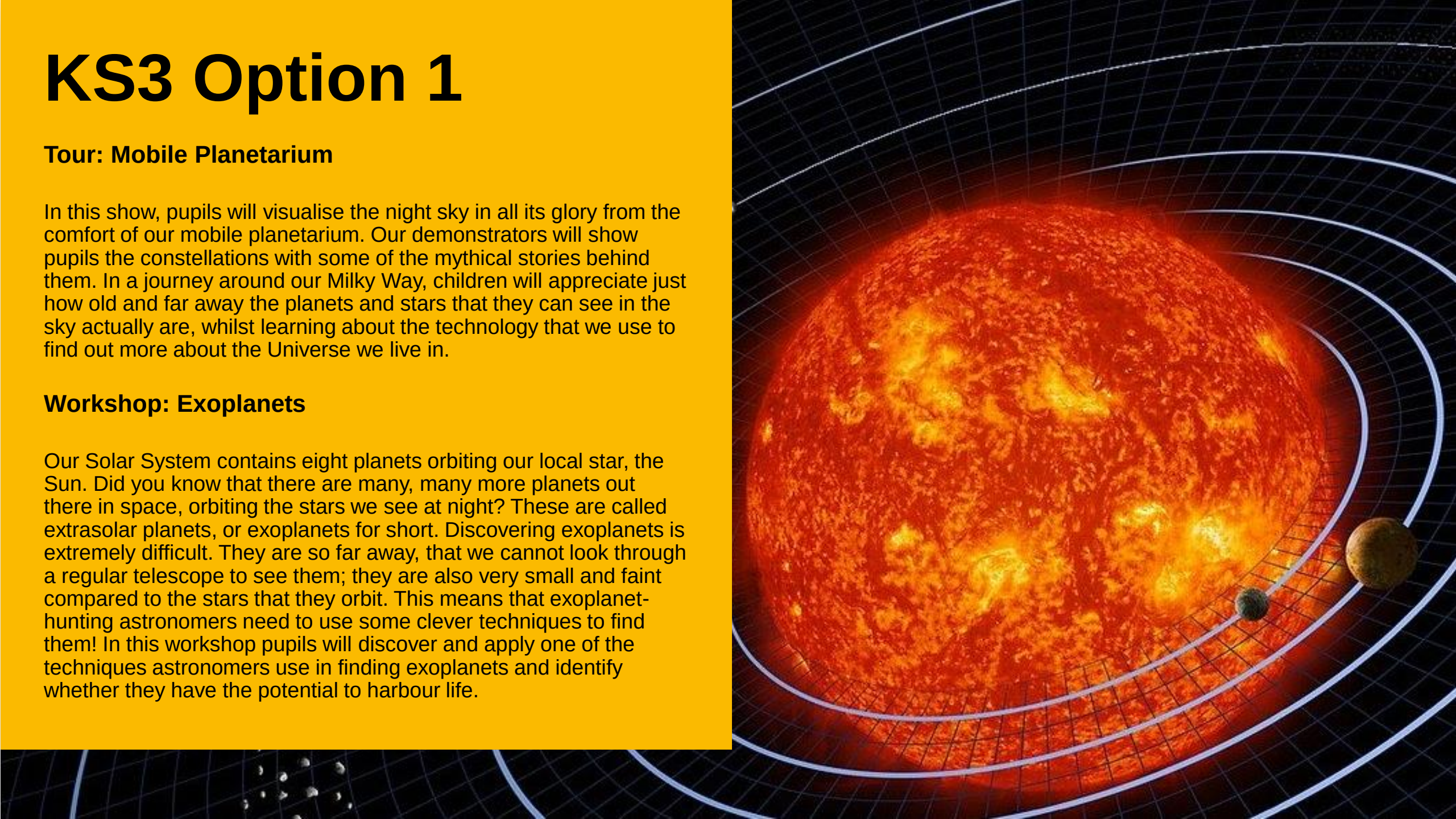
KS3 Option 1

Tour: Mobile Planetarium

In this show, pupils will visualise the night sky in all its glory from the comfort of our mobile planetarium. Our demonstrators will show pupils the constellations with some of the mythical stories behind them. In a journey around our Milky Way, children will appreciate just how old and far away the planets and stars that they can see in the sky actually are, whilst learning about the technology that we use to find out more about the Universe we live in.

Workshop: Exoplanets

Our Solar System contains eight planets orbiting our local star, the Sun. Did you know that there are many, many more planets out there in space, orbiting the stars we see at night? These are called extrasolar planets, or exoplanets for short. Discovering exoplanets is extremely difficult. They are so far away, that we cannot look through a regular telescope to see them; they are also very small and faint compared to the stars that they orbit. This means that exoplanet-hunting astronomers need to use some clever techniques to find them! In this workshop pupils will discover and apply one of the techniques astronomers use in finding exoplanets and identify whether they have the potential to harbour life.



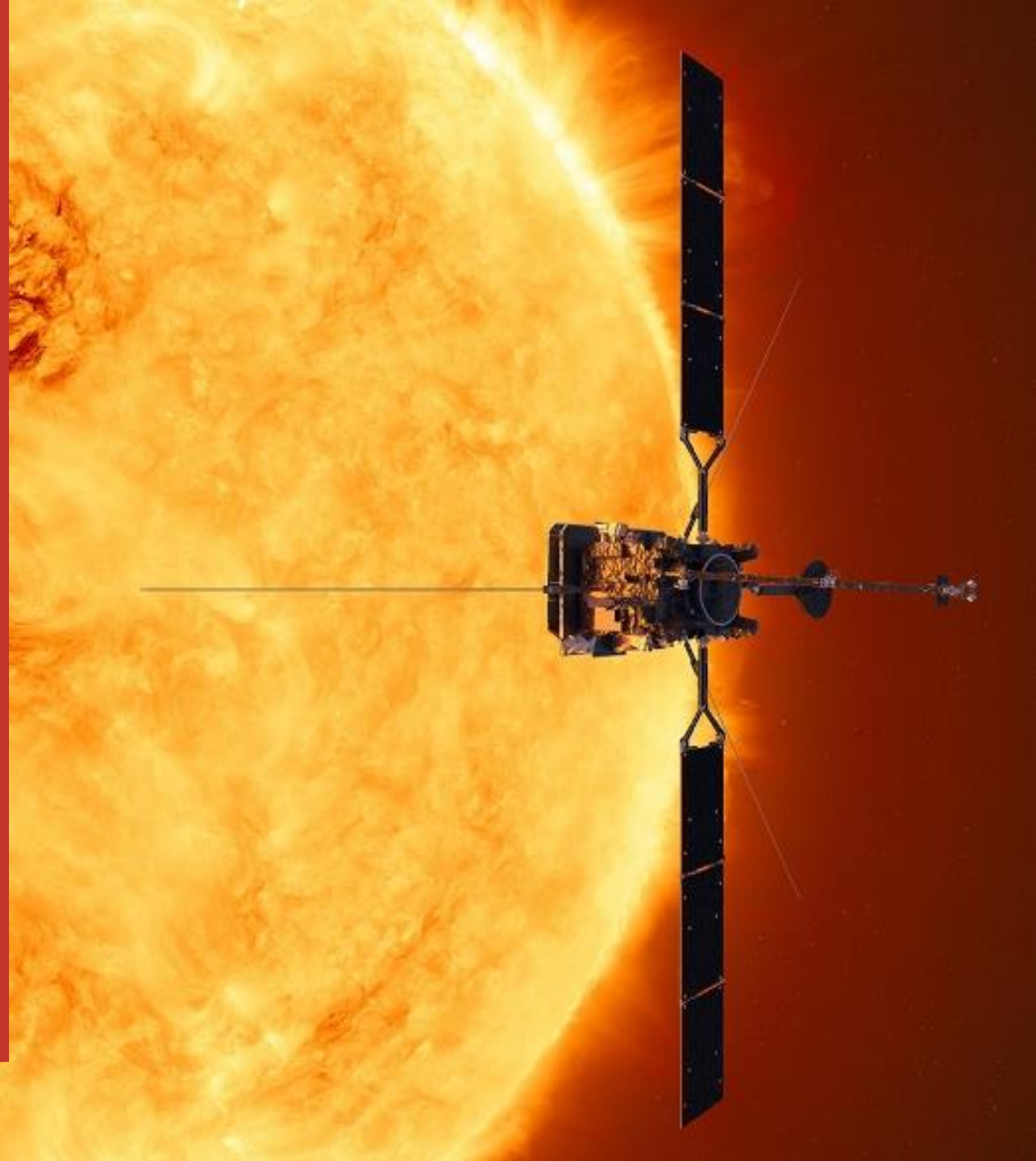
KS3 Option 2

Tour: SUN! Exhibit

Prepare to be dazzled by a seven-metre diameter suspended sphere that will be illuminated to reveal the normally invisible details of the Sun! Several months of the Sun's life will be displayed over the course of minutes, allowing pupils to experience the wonders of our neighbouring star first-hand. Dynamic and inspiring images have been used to highlight the intricate features of our Sun, which would otherwise be lost. Cycling through different temperatures from a cool 4,500 degrees Celsius to an impossibly hot 10 million degrees Celsius, SUN will reveal our star in a completely new light.

Workshop: James Webb Space Telescope

In this interactive workshop, pupils will learn how we use infra-red light to tell the story of the James Webb Space Telescope. Webb will be the premier observatory of the next decade, serving thousands of astronomers worldwide. It will study every phase in the history of our Universe, ranging from the first luminous glows after the Big Bang, to the formation of solar systems and whether exoplanetary atmospheres are capable of supporting life. Pupils will learn about the leading role STFC has played in the construction of the mid Infrared instrument (MIRI) which is one of the primary instruments on-board this amazing space observatory.



KS3 Option 3

Tour: Engineering Technology Centre

The Engineering Technology Centre and Campus Technology Hub is home to a number of our engineers and technicians, who work in teams to deliver our large-scale engineering projects. In the building itself we manufacture mechanical and electrical equipment for use on large scientific facilities, including particle accelerators. During this tour pupils will learn how we train our future engineers before entering our electrical engineering workshop, where they will be able to see and discuss our current projects. Pupils will see our 3D printer at work and view production examples, visit our precision machine shop, see our large assembly areas and ultra-clean rooms, where we build and integrate our accelerator projects.

Workshop: Extreme Engineering

Particle accelerators are used in applications as diverse as cancer treatment and analysis of new materials for batteries. In this hands-on workshop we explore how the fundamental shape and design of an accelerator module can be crucial to their performance. Students will learn about accelerator design, vibration analysis, simulation and will even get to test out a 'module' design f their own, on our interactive shaker table.

Science Fair

The Daresbury Open Week Science and Careers Fair will be a celebration of the Science and Technology being delivered both locally in the North West of England, Nationwide and Internationally. Many exhibitors (including local Universities, Science Discovery Centres, National Sci-Tech companies and National Laboratories) will be on hand to engage pupils in a variety of hands on activities and demonstrations, to showcase the excitement that comes from working within Science, Technology, Engineering and Maths.

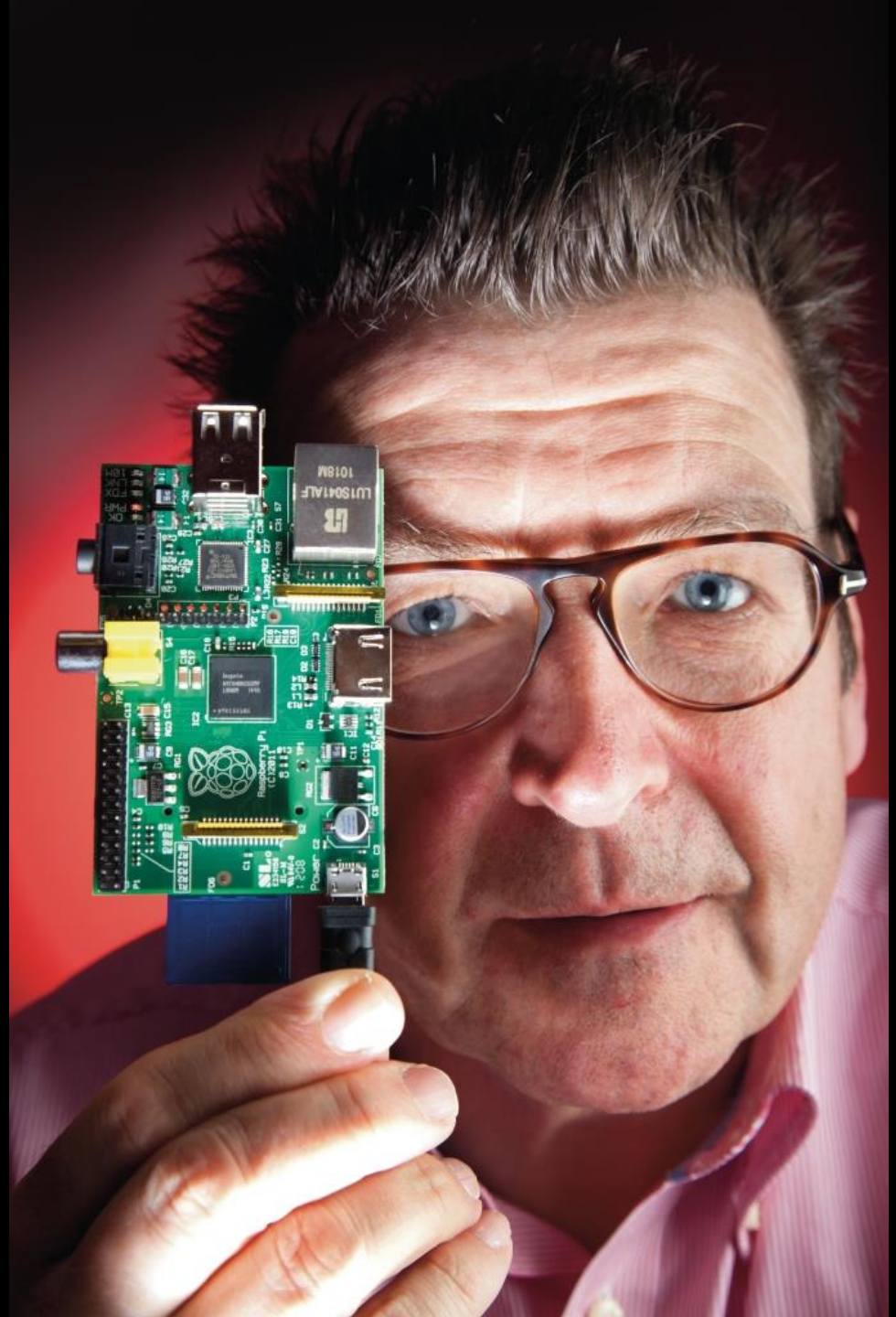
KS3 Inspiring Talk

Pete Lomas, Raspberry Pi Founder and hardware designer

from Cardboard to Space

Raspberry Pi has developed an affordable, accessible computer that is already providing today's children with unparalleled opportunities for learning to program. Digital computing and the Internet, with all the current emphasis on touch-screen visual cues and icons has for many become abstract and remote; with the advent of the Raspberry Pi we now have a credit-card sized computer we can hold in our hands and play with, reminding us of our capacity to tinker with technology, be creative and the inherent mutability of technology and the Internet itself.

During this inspirational talk, Pete, will take pupils on a journey from his humble beginnings in a terraced house in Salford to becoming the Founder and Trustee of Raspberry Pi. Pete will reflect on his own experiences to highlight the need for young people to learn about real computing and discuss the mission to inspire the next generation of engineers through digital making. Along this journey he will illustrate some of the projects he has been involved in, from games, big science and those that are truly "out of this world".



KS3 arrival options

Time	Arrival Option 1	Arrival Option 2	Arrival Option 3	Arrival Option 4
08:45 - 09:30	Allocated Coach Drop off Time Slot			
09:30 - 10:15	Inspiring Science Talk	Allocated Coach Drop off Time Slot		
10:15 - 11:00	Science Fair	Inspiring Science Talk	Allocated Coach Drop off Time Slot	
11:00 - 11:45	Tour and short break	Science Fair	Lunch (please bring your own)	Allocated Coach Drop off Time Slot
11:45 - 12:30	Workshop	Lunch (please bring your own)	Inspiring Science Talk	Lunch (please bring your own)
12:30 - 13:15	Lunch (please bring your own)	Tour	Science Fair	Inspiring Science Talk
13:15 - 14:00	Allocated Coach Pick up Time Slot	Workshop	Tour and short break	Science Fair
14:00 - 14:45		Allocated Coach Pick up Time Slot	Workshop	Tour and short break
14:45 - 15:30			Allocated Coach Pick up Time Slot	Workshop
15:30 – 16:15				Allocated Coach Pick up Time Slot

Registering your interest

Registration for expressing an interest in attending is now open with registrations closing on **Friday 27 March 2020**.

All schools will be contacted by email by **Friday 3 April 2020** to confirm whether or not they have been selected.

Schools that opt to be placed on a waiting list will be contacted again should places become available.

If you want your pupils to find out how science and technology is changing the world, then please register your school's interest via the link below.

Register Now at https://www.smartsurvey.co.uk/s/LYMIU/

UKRI Science and Technology Facilities Council

Important information

1. Due to the vast amount of effort required for delivery, this is a special event delivered just once every four years
2. The event will involve over 100 staff including scientists, engineers and support staff based at Sci-Tech Daresbury together with our partner organisations
3. This event will use public funds to enable schools to attend this event free of charge (this does not include transport costs)
4. Head Teachers from all selected schools will be required to give a written guarantee of attendance on behalf of their school
5. Schools will be required to arrange their own transport to and from Sci-Tech Daresbury
6. A separate registration form will need to be completed for each class that you would like to express an interest in bringing, therefore schools wanting to register more than one class will need to complete multiple registration forms
7. Pupils, teachers and other accompanying adults will need to bring a packed lunch
8. Due to the volume of schools on site, we request that all pupils wear school uniform to be easily identifiable during activities that involve multiple schools participating together
9. A full information pack will be sent out to selected schools prior to the event

UKRI Science and Technology Facilities Council

How places will be allocated

There will be 1,450 pupil places available enabling up to 50 schools to participate. School places will be allocated by blind ballot with the following weightings:

- 52% of KS2, KS3, and KS4 places will be ring fenced for schools located within the 40% most deprived areas of England and Wales (as measured using the English and Welsh Indices of Multiple Deprivation – IMD). 52% corresponds with the IMD profile of the population living within the 40% most deprived areas that are up to 60 minutes' drive from Sci-Tech Daresbury

- Allocated school places will reflect the different localities of schools who register for the event

- Schools will only be placed into the blind ballot for workshop / tour choices that they have already pre-selected

- Schools will only be placed into the blind ballot for arrival time options that they have already pre-selected

UKRI Science and Technology Facilities Council

Ask Wendy

Register your interest here.

If you have any questions that we have not answered, please contact Wendy Cotterill by email or call 01925 603408.

Please note: Although we do not intend to make any changes to the programme, we reserve the right to make changes should the need arise.

UKRI Science and Technology Facilities Council