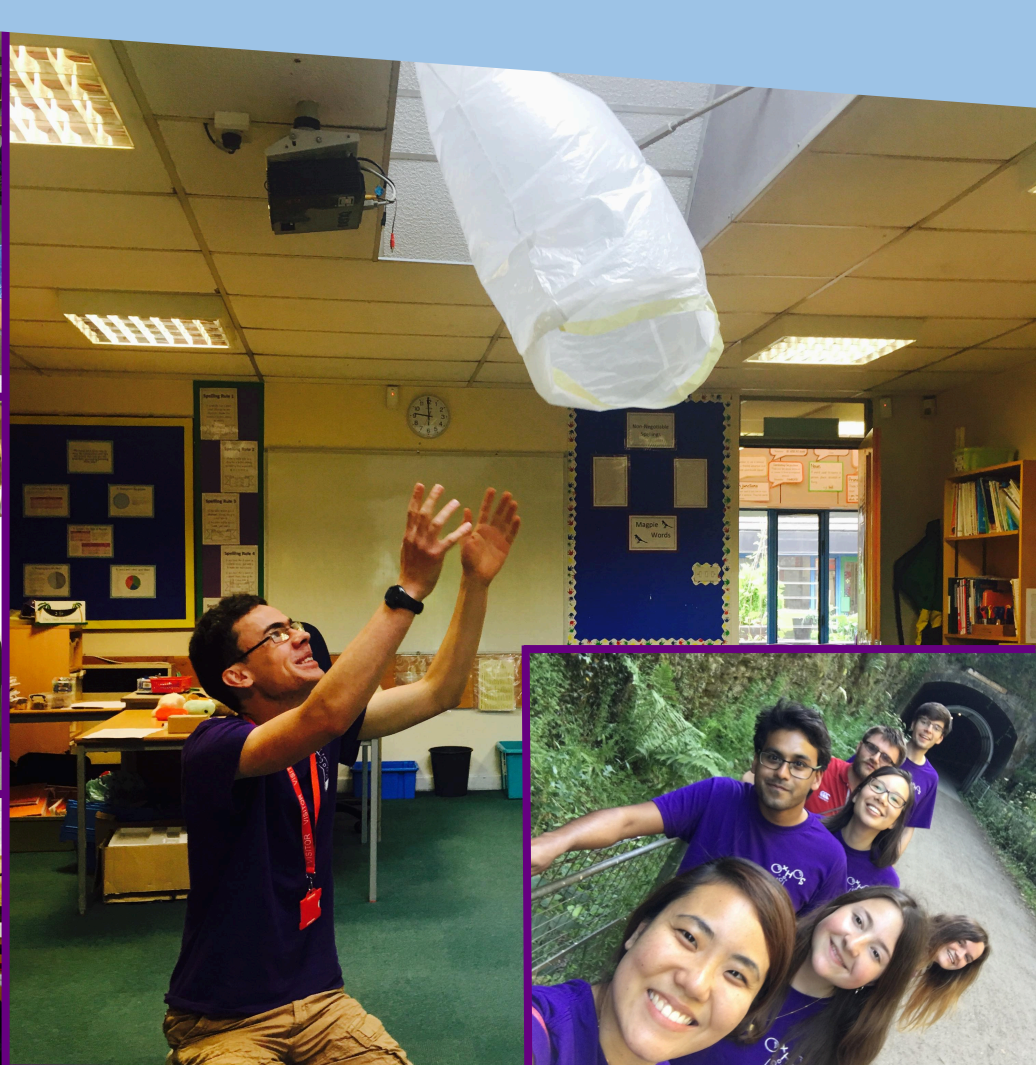
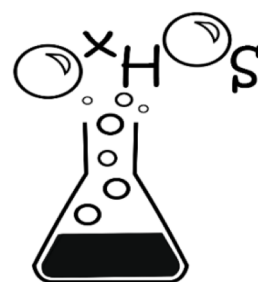


Oxford Hands-On Science (OxHOS) Summer Roadshow 2018 Report



Get in touch with us at contactoxhos@gmail.com

www.oxhos.org



About OxHOS

What is OxHOS?

Oxford Hands-On Science (OxHOS) is a student-run society based at the University of Oxford. We believe that science is fun and relevant to everyone! We aim to spread our enthusiasm for science to children and their families by taking lots of hands-on experiments drawn from a range of subject areas into schools and public venues, with lots of helpful student volunteers explaining the science behind the experiments!

OxHOS was founded in Summer 2015 and we ran our first Roadshow that Autumn, visiting schools and community and shopping centres around Oxfordshire. Since then, we have expanded dramatically, developing new and exciting experiments and taken them on a Roadshow each year to different parts of the country, visiting Oxfordshire, South Wales, Portsmouth, Southampton and the Isle of Wight to great success! This year we've developed even more new and exciting experiments to take out to a whole new set of schools.

[How did the pupils benefit?]

They all enjoyed the experience and using resources we can't always provide in schools

Year 6 teacher

Who runs OxHOS?

The Roadshow is organised by a team of science student volunteers who form the OxHOS committee. We work with public engagement staff and other researchers around Oxford to discuss our ideas too.

Lots of undergraduate and postgraduate students, as well as some staff, from the University of Oxford volunteer their time to make our events happen.

We offer volunteer training, given by experienced OxHOS members, alongside encouraging our volunteers to become STEM Ambassadors, in partnership with Winchester Science Centre.

Pre-Roadshow Events

Before the main Roadshow, OxHOS was involved in several events around Oxford. We wanted to see how everyone liked the new experiments that we've been developing!

On a rainy day in March, a few intrepid OxHOS members made the trip to Abingdon to take part in the ATOM Science Festival. We spent the day engaging with both children and their parents, wowing them with mini explosions and amazing them with our gyroscope's ability to defy gravity. But it was the rather realistic demonstration of the digestive system that had children and their parents alike completely enthralled.



Happy volunteers at the ATOM Science Festival

In late April OxHOS participated in the Marie-Curios event ran by the Oxford Physics department. This was targeted at encouraging girls between 11 and 14 to engage more with science. OxHOS led one of the workshop sessions, demonstrating a range of experiments, from extracting DNA from a kiwi through to demonstrating fluorescence with UV light.

OxHOS were also involved in the Oxford Physics Department's outreach development day, where we showed a few of our physics-based experiments and had the chance to exchange lots of ideas with a wide variety of people.

The Summer Roadshow 2018

Where did the Summer 2018 Roadshow visit?

The Summer 2018 Roadshow lasted for three weeks, starting with schools in Oxfordshire. After this, we set off on the touring section of the Roadshow, spending a week in Chesterfield and a week in Nottingham. During this time we visited 15 schools and also held a public event at Chesterfield Market.

Oxfordshire Events

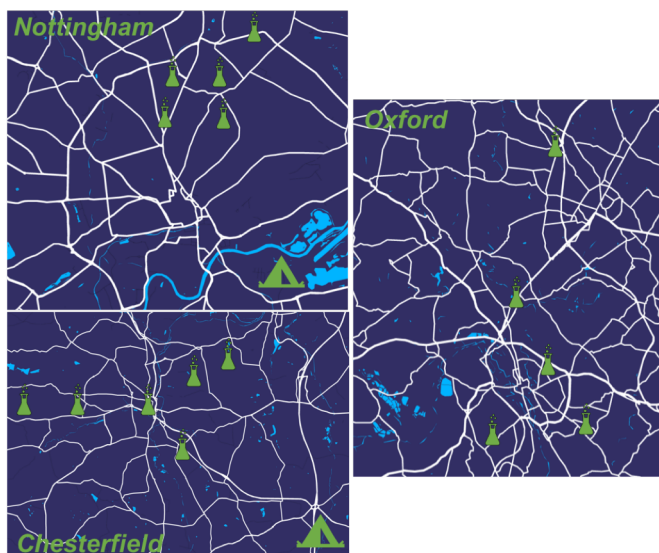
Monday 18th June was the first day of our Roadshow! We started off by visiting Gosford Hill School in Kidlington, where we saw around 180 Year 8 students, who had a go with experiments including making a pasta rocket!

On Tuesday 19th June, we set up at St Nicholas' Primary School in Marston, Oxford. We welcomed the Year 4, 5 and 6 students to join us in the school hall, where they particularly enjoyed making hot air balloons and paper aeroplanes to learn about air flow.

The pupils were able to gain a better understanding of a multitude of different scientific principles

Year 5 Teacher

The next day saw us visiting Heyford Park Free School in Bicester, where we got the chance to use some of our new experiments with the Year 8 and 9 students. From the chemical sciences, we had a go demonstrating making 'hot ice' using sodium acetate, and testing out some electrochemical writing. Some new biology experiments also made their Roadshow debut, including an antibiotic resistance game acting as a springboard to discuss the issues surrounding this topic.



Locations we visited during the 2018 roadshow!

On Thursday 21st June, we went to Wootton St Peter's Church of England Primary School. In a first for OxHOS, we were visited by every student from the whole primary school – making this our broadest age range yet – and our demonstrators adapted our experiments fantastically to meet this challenge! The students had a great time learning about our digestive system (or 'making poo') and were fascinated by our mini explosions!

Our final school in Oxfordshire was the Oxford Academy, where we saw students from Year 8 and 9. Non-Newtonian fluids proved a big hit, alongside learning about how painkillers work (using the Biochemical Society's medicine makers activity as a starting point). We also introduced a new experiment looking at how blood clotting works with the aid of some kitchen chemistry!

[Pupils] found it fascinating and inspiring... Thank you so much for giving up your time to provide the pupils with exciting hands-on science

Year 6 Teacher

Chesterfield

We packed up the minibus and headed out on the touring part of the Roadshow, up to Chesterfield. We stayed at Teversal Camping and Caravanning Club Site. The happy campers enjoyed playing codenames in the evening and strolling in the local Silverhill Wood Country Park.

The first school we visited was Netherthorpe School on 25th June. 180 Year 7 students came to take part in the Roadshow. The favourite experiment of the day was animal skulls, where we explored some amazing features of monkeys, big cats and gazelles and how they help the animals survive.



Extracting DNA from a kiwi

They have absolutely loved it!... Girls and boys equally fascinated. Male and female scientists - excellent role models

Secondary School Science Teacher



Making 'poo' with the 'Digestive System'

On 26th June, we went to Hasland Junior School, where the Year 5 and 6 students got involved in our activities and learnt lots. The kids particularly enjoyed working up a sweat but also learning about the heart in our circulatory system demonstration.

[The pupils benefitted from] being able to discuss their thoughts and hypothesis freely with enthusiastic students

Teacher

Next, we went to Clowne Junior School, where 100 students from Years 5 and 6 enjoyed the Roadshow. We visited Holme Hall Primary School on 28th. We got to spend time with 50 students from Year 5 and 6. They had a blast learning about non-Newtonian fluids and how vaccines work.



Electrochemistry with potato batteries!

The final school we visited in Chesterfield was Brookfield Community School, where we saw 200 Year 8 and 9 students. The students showed great enthusiasm for our ultraviolet light demonstration, proving to be very creative when writing 'glow in the dark' messages.

On Saturday 30th June, we held a public event at Chesterfield market. We had curious participants of all ages learning about animal skulls, the polarisation of light and the organs in the human body with the aid of our fun organ vest!

Nottingham

Joined by a fresh cohort of volunteers, we moved on to Nottingham to start the final leg of our Roadshow!

The first school of our Nottingham week was Carrington Primary School, where we visited 90 students from Years 4, 5 and 6 on Monday 2nd July. The students particularly enjoyed learning about non-Newtonian fluids; playing with cornflour and water mixtures and feeling how the properties changed as a force was applied.

The next day, we visited another primary school - Seely Primary School in Sherwood. Here, we saw 160 Year 5 and 6 students. They loved our 'Cloud in a Bottle' experiment, learning how clouds form from the condensation of water droplets in the air!

The children had a great time and it sparked their interest in science

Year 5 Teacher

On July 4th we visited Arnold Hill Academy, where more than 200 Year 8 students visited the Roadshow in a jam-packed day! They loved our new experiment 'the Alchemist', where they turned copper into gold (well bronze really...!) and learnt some exciting electrochemistry along the way!



Exploring disease with 'Cuddly Microbes'

[The demonstrators] were excellent at building a rapport with the students

Year 7 Teacher

Another primary school, Walter Halls Primary, followed the next day, where we engaged with 110 students from Years 4, 5 and 6. They particularly enjoyed another of our new experiments; learning more about plastics whilst making bouncy balls!



Learning about plastics with polarised light

The final event of our 2018 Roadshow took place at Nottingham Academy, where we saw 100 Year 7 students. They loved finding out about polarisation and making mini explosions with common kitchen ingredients to learn about acids and alkalis!

[The pupils] learnt that science can be cool!

Year 7 Teacher

What did our visitors think?

Public events

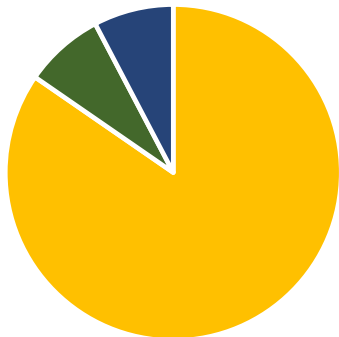
Feedback about our public events on the Roadshow was gathered using questionnaires given to groups of visitors. The responses to some of our questions are shown in the pie charts below. All of our respondents said they wanted to come back to see the Roadshow again!

How much do you feel you have learnt?



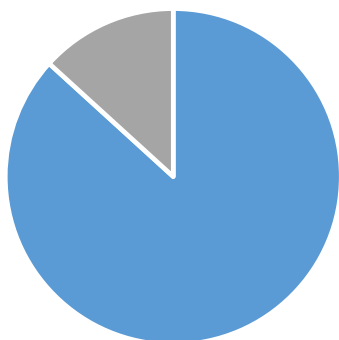
■ A lot ■ Quite a lot ■ A little ■ Not much ■ Nothing new

How did you find the content?



■ Too hard ■ A little hard ■ About right ■ A little easy ■ Too easy

Do you think science is more interesting now?



■ Yes ■ No

School events

To evaluate the contribution that the Roadshow makes to students in schools, we ask teachers at each school to fill out questionnaires following our visit. This year, we have collected responses from 24 teachers and received unanimously positive feedback. Teachers praised the demonstrators' enthusiasm and the relevance of the experiments to the curriculum. They also stressed how much their pupils enjoyed the visit. We're proud to say that all of the teachers would recommend us to other schools!

For the first time this year, OxHOS also aimed to collect some feedback directly from the students participating in our sessions. We trialled an evaluation system based on placing tokens in buckets on the way out of a session, asking students "are you more interested in science now, compared to before you came to our session?", in order to canvas their opinions directly after their visit. Of the 1367 students that responded, 87% said yes!

Can OxHOS visit us?

OxHOS visits schools and public events both in Oxfordshire and further afield in the UK during Roadshows, mainly held during June/July. If you are interested in a visit, request a visit through our website at www.oxhos.org or get in touch at contactoxhos@gmail.com.

How is OxHOS funded?

OxHOS Roadshows are made possible by the generous support of our sponsors, listed on the back cover of this Roadshow report. This financial support has made it possible for us to produce and run our interactive experiments, purchase camping equipment and hire vehicles so that our Roadshow can travel to areas of the country where students may have less access to interactive science.



Our volunteers in 2018 were:

Alex Jackson, Alex Tsui, Alice Maynes, Allison Barry, Anna Vicini, Annabel Elleray, Ashmita Randhawa, Beatrice Tyrrell, Charlotte Gruender, Charlotte Hoskin, Claire Coupland, Clare Antcliff, Connor McGurk, Corinna Kulicke, Darren Valentine, Emma Brass, Grace Stoddart, Helen Norman, Isabel Wilkinson, Jacqueline Gill, Jacqueline Tan, James Famelton, Jessica Phillips, Johanna Hettinga, Joseph Smith, Kalina Naidoo, Katherine Lyon, Laszlo Berencei, Lorel Scriven, Louis Minion, Lydia Simms, Marianne Clemence, Maryn Brown, Natasha Cooke, Nicola Ede, Rachel Cartwright, Rebecca Shantry, Serena Dai, Susan Leung, Syed Munim, Thomas Hird, Tilly Ansell and Timothy Davies

The committee members active in organising the Roadshow were:

Timothy Davies and Darren Valentine (Co-Presidents), Beatrice Tyrrell (Secretary), Charlotte Gruender (Logistics Officer), Jacqueline Gill (Fundraising Officer), Clare West and Leo Spiedel (Webmasters), Johanna Hettinga (Treasurer), Kellie Harkin (Schools Officer), Susan Leung (Volunteers Officer), Serena Dai (Experiments Officer), Thomas Hird (Physics Coordinator), Isabel Wilkinson and Anna Vicini (Chemistry Coordinators), Claire Coupland, Allison Barry and Ellen Pasternack (Biology Coordinators), Jacqueline Tan (Publicity Officer) & Rachel Cartwright (Social Secretary).

With many thanks to:

- All of the schools and public venues for their hospitality and feedback
- Winchester Science Centre
- Professor Keith Gull (St Edmund Hall) & Dr Sian Tedaldi (Department of Physics)
- All of our sponsors, listed below

Generously supported by

