

Summer Roadshow 2019 Report

Oxford Hands-On Science (OxHOS)



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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 the Summer of 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, ranging from the Isle of Wight to Manchester and the south of Wales! This year we've developed even more new and exciting hands-on experiments to take out to a whole new set of schools.

They said it was 'cool, fun, amazing - some was a recap of what we knew and other bits were brand new. It was exciting!'

Year 4 teacher

Who runs OxHOS?

The Roadshow is organised by a team of science student volunteers who form the OxHOS committee. We work closely with public engagement staff at the University of Oxford, the Oxford colleges and other researchers around Oxford to share ideas and improve our work.

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.

Events throughout 2019

Before the main Roadshow, OxHOS was involved in several events in and around Oxford. This was in part to spread the joy of science in our local community and partly for new volunteers to experience a session with OxHOS.

Marie Curious

The first event OxHOS participated in, was Marie Curious, an event run by the Oxford Physics Department on the 9th of February. This was targeted at encouraging girls between 11 and 14 to engage more with STEM subjects. OxHOS led one of the workshops, where the girls got to do a wide variety of biology experiments. This ranged from isolating kiwi DNA to discussing evolution with Clippy Islands.

ATOM Science Festival

An annual OxHOS favourite is our stall at the ATOM Science Festival in Abingdon. On the 23rd of March, we got to engage both with children and their parents. A new experiment was looking at invertebrates from a local stream under our microscope!

St. Edmund Hall Access Hall Areas

On the 5th of May, we were invited to demonstrate some hands-on experiments at the Access Hall Areas event at St. Edmund Hall. We shared the room with a medieval printing press and geologists. The youngest visitors of the day enjoyed mini explosions and seeing how poo is made with the digestive system!

Christ Church Horizons Days

OxHOS ran workshops for year 10 pupils on the 16th and 22nd of May at Christ Church College as part of the Christchurch Horizons Days. With over a dozen volunteers, we ran experiments from a wide range of sciences! These varied from UV light and blood clotting to turning copper pennies into brass with the Alchemist.

Physics Department's outreach development day

Our last term time event was the Physics Department's outreach development day. Here we showed a few of our physics-based experiments and had the chance to exchange lots of ideas with a wide variety of people interested in outreach.

The Summer Roadshow 2019

Where did the Summer 2019 Roadshow visit?

The flagship OxHOS Summer Roadshow 2019 lasted for three weeks. We started our roadshow in our hometown of Oxford. In our second week, we packed up our experiments and headed out to Essex. After our adventures in Essex, we spent our final week visiting schools in Manchester. During the Roadshow we visited 15 schools and met nearly 2000 students.

Oxfordshire

After a big shopping spree for all our consumables on Sunday, 8 bright-eyed volunteers were ready for the first day of our Roadshow. On the 24th of June, we visited New Marston Primary School, where 98 year 5-6 students joined us and got hands-on with lots of experiments, including the digestive system!

The following day, we went to Rush Common Primary School, where over 100 pupils from year 4-5 took part in our experiments, where they asked lots of interesting questions to our lovely volunteers.

"Children had a great experience carrying out science experiments that would not have been possible in the primary classroom. "

Year 5 Teacher

On the 26th of June, we were welcomed by St. Andrews Primary School. Around 100 students from year 3 to 6, came along to our science fair and could get messy with experiments such as non-Newtonian fluids. We also discussed a lot of biology with our microscope, the organ vest and clippy islands!



Learning about cells and bacteria with our microscope



Learning about hot air with a toaster and a bin liner!

On Thursday, we went to West Oxford Community Primary School. Here we had the biggest age range of the entire Roadshow, meeting children from nursery up to year 6, totalling approximately 200 pupils over 7 sessions. This gave our volunteers the challenge of showcasing experiments that were interesting for all ages and give explanations suited for every class. The teachers were really impressed with how well our volunteers rose to the challenge! The children particularly enjoyed learning about airflow by making and testing their paper airplanes!

We ended the week at Matthew Arnold High School with their pupils from year 7 and 8. We did some more advanced experiments with these older pupils such as blood groups, evolution through animal skulls and isolating DNA from kiwi's.

"The demonstrators were clearly passionate about their subjects and this was reflected in the delivery of their demonstrations. "

Year 6 Teacher

Essex

After repacking the minivan and gathering our camping equipment, the first group of volunteers headed out to Essex on Sunday. They set up camp at Bumpsteads Cottage near Chelmsford. Here they were met by some friendly, neighbourly cows and plenty of countryside.

The first school we visited in Essex, was Great Baddow High School in Chelmsford on the first of July. Here we did our hands-on experiments with year 7 students and spoke to year 10 and 12 about the process of applying to university.

On the 2nd of July, we visited Cherry Tree Primary School in Colchester. Over 200 children from years 3, 4 and 5 joined us for a session, where they got to learn about ink chromatography, hot air balloons and spinning chairs!

The third school on our Essex tour was Lee Chapel Primary School in Basildon. 130 year 4 pupils visited the OxHOS science fair. Here we astonished some students with our blue bottle and traffic light experiments! They were very excited to learn how science can create this magic!

"We were hoping for some experiments that go beyond what we normally do in lessons, which is exactly what the team did. For us, it was perfect."

Year 7 Science Teacher



Getting messy with the digestive system

On Wednesday night a whole new troop of volunteers arrived and we headed up to Colchester to visit Broomgrove Junior school. We had been especially invited by the mother of one of our volunteers, who is the science coordinator at the school! Here we set up in their large dining hall and 230 students from year 3 to 6 joined us in hands-on experiments. A particular crowd-pleasers was the messy digestive system!

"[The pupils] got to see different experiments and interact with the science. Great for them to get hands on and take part."

Teacher



Learning about forces on a spinning chair

We concluded the week at King Edward VI Grammar School in Chelmsford. Approximately 140 year 7 students were scientists for the day, turning copper into brass and learning how to calculate the speed of light, using only a microwave and some marshmallows. Many gasps were heard!

On Saturday, it was finally time for our campers to return to Oxford for some well-deserved sleep!

Manchester

We drove up to Manchester on a beautiful Sunday afternoon with our new van filled to the brim with experiments and camping kit. After a wrong turn turned into an extra hour and a half on the road for Tim, we eventually all reconvened at the campsite for our first dinner and a good sleep before the oncoming week.

The first school we visited was Webster Primary School. We ran experiments with 10 classes in years 3-6. They gazed upwards in wonder at the hot air balloons floating to the top of their hall.

On Tuesday we visited St. Agnes C.E. Primary School. We worked with 180 students from year 4-6 in 4 sessions of 45 students. They exclaimed in equal horror and awe at the result of the digestive system.

"[The pupils] increased their understanding of aspects of science they may not have thought about before."

Year 6 Teacher

On Wednesday we visited The Barlow RC High School. We took 5 classes of year 7-9 students through the delights of the redox in the blue bottle experiment and the complexities of DNA in the Kiwi DNA experiment.

At St. John's RC Primary School on Thursday we ran 4 longer sessions with the students who gaped over the microscope and stayed long after the end of their lesson to ask for more and more slides and parts of the body to be investigated in minute detail.



Volunteers packing up the campsite at the end of the OxHOS Summer Roadshow 2019

"Children were able to draw on their own basic knowledge and extend their understanding from listening to the 'experts'."

Year 3 Teacher

Crumpsall Lane Primary School were running their very first fun day on Friday which OxHOS was privileged to be a part of as our very last event of the year. The students giggled as they fired the air guns at cups and each other and played with the cuddly microbes.

After a week of soggy camping in Manchester we drove back to Oxford on Friday afternoon in glorious sunshine and headed back to our warm beds!



Mashing food in the "mouth" to learn more about the digestive system

[On the demonstrator's enthusiasm and clarity]
"Really superb. They were still enthusiastic after 5 sessions - very impressive. They involved the students so well."

Year 7 Teacher

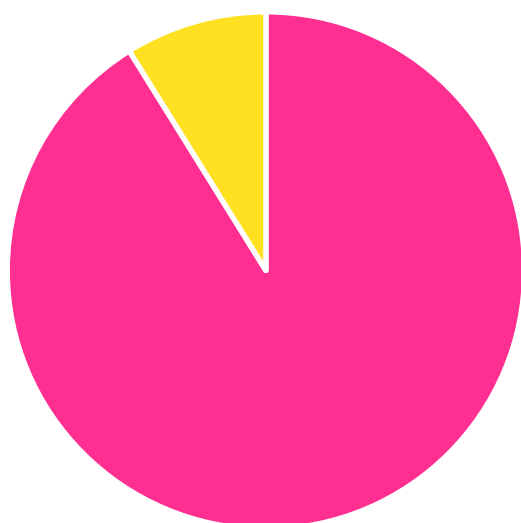
What did our visitors think?

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 27 teachers and received unanimous positive feedback on our science fair. Teachers praised the demonstrators' enthusiasm and the relevance of the experiments to the curriculum, as well as the health and safety standards maintained. They also stressed how much their pupils enjoyed the visit and were buzzing about it afterwards. We're proud to say that all of the teachers would recommend us to other schools!

OxHOS also aimed to collect some feedback directly from the students participating in our sessions. At the end of a session, we would ask the classes: "are you more interested in science now, compared to before you came to our session?". On their way out, they could then place a token in the "yes" or "no" bucket. Of the 508 student responses, 91% said yes!

Do you think science is more interesting now?



Yes No

Volunteers

When students volunteer with OxHOS, they have an opportunity to practice their science communication skills, engage with enthusiastic young pupils and socialize with a passionate group of fellow scientists. We think it is important that our volunteers also have a great time on the roadshow, so this year we asked our volunteers "How likely are you to get involved with OxHOS in the future?". We are happy to say that all volunteers who responded, are neutral, likely or very likely to be involved in future OxHOS events!

How likely are you to get involved with OxHOS in the future?

(1 = unlikely, 7 = very likely)



Can OxHOS visit us?

OxHOS visits schools and public events both in Oxfordshire and further afield in the UK during our flagship Summer 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 without charging the schools a penny. This has enabled our Roadshow to travel to areas of the country where students may have less access to interactive science.



Our volunteers in 2019 were:

Abi Yates, Alex Jackson, Alice Hopkins, Andrew McMahon, Anke Kloock, Atreyi Chakrabart, Charlotte Gruender, Christopher McGarry, Claire Coupland, Connor Scott, Danielle Perro, Darren Valentine, Duncan Martinson, Emily Dixon, Evan Usher, Haoqi Sun, Ilayda Karadag, Jacqueline Gill, Jacqueline Yates, Jessica Crompton, Jessica Ellins, Johanna Hettinga, Jordan Welsh, Josephine Finch, Magda Mareckova, Marcel Stolz, Marius Weber, Matthew Lloyd, Megha Hegde, Mercedes Lee, Natasha Cooke, Nicholas Mitchell, Olivia Shovlin, Raphael Reinbold, Rona Costello, Samvid Kurlekar, Sarah Skeels, Serena Dai, Stephanie Jordan, Syed Munim Husain, Theo Breeze, Thomas Hird and Timothy Parker

The committee members active in organising the Roadshow were:

Natasha Cooke and Johanna Hettinga (Co-Presidents), Annabel Elleray (Secretary), Susan Leung (Treasurer), Alex Jackson (Fundraising Officer), Darren Valentine and Isabel Wilkinson (IT/Website Officer), Munim Syed (Publicity Officer), Claire Coupland (Volunteer & Child Protection Officer), Lara Scofano (Logistics & Safety Officer), Emma Dale (Biology Coordinator), Anna Vicini and Gabriela Opera (Chemistry Coordinators), Tom Hird and Evan Usher (Physics Coordinators), Serena Dai, Jacqueline Gill and Richard Mifsud

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