

SUMMER ROADSHOW REPORT



chaosscience.org.uk

ABOUT THE ROADSHOW

What is CHaOS?

Cambridge Hands-On Science, fondly known as CHaOS, is the student society at the University of Cambridge dedicated to Science, Technology, Engineering, Medicine, & Mathematics (STEMM) outreach.

We are a group of volunteers who want science to be accessible and fun, CHaOS itself not charging the public for an event. Our aim is to transfer our enthusiasm to the general public through fun hands-on experiments, bringing science to as many different people as we can. We especially like to use hands-on experiments to engage children, who may have only ever learnt science from a whiteboard.

The Roadshow

In the summer roadshow, which has been going for nearly 20 years, CHaOS packs a van full of experiments, and tours the country. CHaOS is made up of volunteers, and this year around 75 students from the University gave up part of their summer in order to make the Roadshow a great success!

This year's roadshow was 7 weeks, where the roadshow visits schools filling a class room or gym with experiments, and giving primary school children a fun hands-on experience with science. Typically each child will get to see 5 or 6 experiments and we provide a spread of subjects to engage interest all over STEMM.



Why CHaOS matters

CHaOS provides something unique and accessible. Volunteers who are young, and enthused about their subject, get to really engage children about science. For some children, this can be the first time they find science captivating, and we find teachers at schools often overjoyed in seeing a few specific children become entranced with an experiment, who may have never shown interest in STEMM before.

CHaOS does many events outside the roadshow, including school visits, public events in the Cambridge area, as well as **Crash! Bang! Squelch!** A day we fill the Cambridge zoology department with experiments and open it to the public.

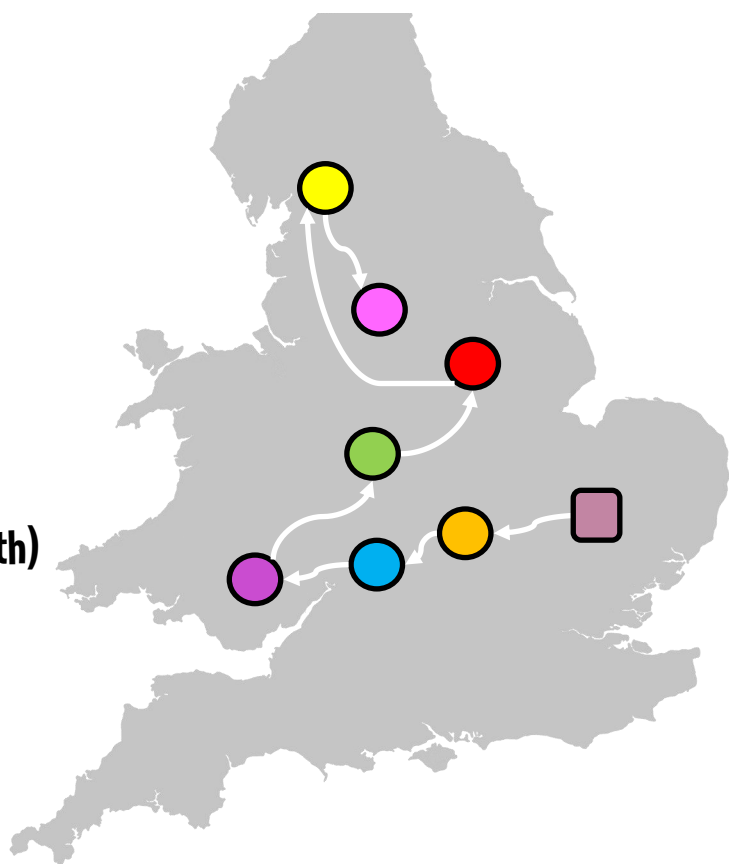
ROADSHOW 2022

What happened in 2022?

CHaOS travelled across England and Wales, visiting 11 schools, attending 16 public events, and 2 jamborees! This years roadshow reached thousands of children, and gave them a unique and accessible hands-on experience with STEMM. When putting on these events as volunteers, we love to see the engagement and enjoyment children get in doing the hands-on experiments we provide.

The summer roadshow this year cost about £14,000 to run. This money is largely spent on travel, including vehicle hire, volunteer travel reimbursement and fuel, but CHaOS also needs to hire campsites and buy food. CHaOS relies on the generous donations of sponsors to be able to run this roadshow.

- Northampton (July 4th to 8th)
- Cheltenham (July 9th to 15th)
- South Wales (July 16th to 22nd)
- Birmingham (July 23rd to 29th)
- Lincolnshire Jamboree (July 30th to Aug 6th)
- Lake District Jamboree (Aug 7th to 13th)
- Sheffield (Aug 14th to 20th)



This report

The rest of this report will detail what happened on tour, as well as the feedback we received. We hope you see why CHaOS is such a great group, and how invaluable what we provide really is.

Week 1



Northampton schools

We started the 2022 roadshow in Northampton. On the Monday CHaOS visited Irchester Community Primary School, stretching a model small intestine across the room! Next on Wednesday, CHaOS went to Studfall Academy, and then finished our tour of Northampton at Rothwell Junior School, where the air streams experiment was especially popular, with the class cuddly toy used for a live demo.

At these school events, CHaOS will typically run a range of experiments that children will do in small groups, rotating through the room. Some of our most popular experiments include exploring angular momentum with our spinny chair, learning about projectile motion and air pressure with the vacuum bazooka, and using the lower density of warm air to make hot air balloons with a toaster and bin bags.



Week 2

Cheltenham

Week 2 CHaOS travelled to Cheltenham. That weekend we had our first two public events at All Pulling Together and The Venture: White City. In the week, we visited schools, spending Monday and Tuesday at Pate's Grammar School where students revelled in using the vortex cannon to knock over stacks of paper cups. On Wednesday we visited Sir Thomas Rich's School who detailed the event on their [website](#). Finally on Thursday we visited Warden Hill Primary School where the water rockets were the star of the show, though some went astray: a few landed on the roof of the school and one even knocked over our cathedral experiment!

A new CHaOS experiment **Bubbly crystals** was first used in week 2! This experiment shows the inner workings of crystalline materials, with a bubble raft forming a crystal structure, including grain boundaries and a hexagonal pattern, creating an excellent demo of how atoms organise inside solids.

Week 3



South Wales

Week 3 started with two public events on the weekend. On Saturday CHaOS was at Cardiff Central Library, and on Sunday visited CRAI. On the Sunday, a star jumps experiment to demonstrate how the body copes with heat and the changes in blood flow during exercise got many of our visitors active and excited about Biology, even with very hot weather!

CHaOS visited the Tondu Primary School on Monday. The children were keen to cool off with our fan blowers while learning how to suspend a ball in a stream of air by using the drag force to balance the ball's weight. CHaOS visited Maesteg Comprehensive on Tuesday and on Wednesday CHaOS went to Lliswerry High school where the sports hall provided an excellent space to fire eye-catching smoke rings across the room while learning about vortices.



Week 4

Birmingham

On the Saturday CHaOS visited Malvern Library, with the outdoor space allowing us to run the experiments cornflour and mini-explosions, which were really popular with visitors. One child even described the cornflour experiment as 'Jaw-dropping'. On Sunday we visited The Hive in Worcester where CHaOS demonstrated a range of experiments to the public.

Cuddly Microbes was perhaps the most popular experiment on Monday's public event at Redditch Library where we had 950 guests! On the Tuesday, CHaOS visited the Midlands Arts Centre, where IR camera surprised one child when they could "see through things". Wednesday was spent at Red House Glass Cone, where one mother told us how much her child had engaged and come out of their shell at the event, with multiple adults very pleased that they could get access to the event for free when "money is tight". Our final event in Birmingham was at The Core Solihull, with around 400 visitors!

Jamborees



Weeks 5 and 6 were spent at the Lincolnshire and Lake district scout jamborees. At jamborees, scouts, guides, and explorers from the region congregate for a week and get to do activities, all in one large site. CHaOS was there to be one of the activities. We setup in a patch at the site, and have a range of experiments and demos for scouts to enjoy. We particularly enjoy the opportunity to run lots of outdoor only experiments, like water-rockets.

We always get quite a few kids who are really interested in science and get a chance to talk to a Cambridge student all about their favourite subject. The jamboree events are often really busy, with lots of scouts really enjoying getting taught science by younger students, and in a hands-on active way.



Week 7



Sheffield

Week 7 started with Cusworth Hall on Sunday. On the Monday, CHaOS setup at Chesterfield Market, where the animal skulls demo was especially popular, and it was fantastic that we attracted many children, who dragged their parents to see the interesting objects we had spread out. Tuesday had CHaOS go to Sheffield Winter Gardens, and on Wednesday we went to Kelham Island Museum, seeing around 200 visitors, and where the alloys experiment tied in nicely with the historical steelworks.

On Thursday, CHaOS could be found at the Bassetlaw Museum, with around 350 visitors, and we had the questions: “why had Boris lost so much hair” (Boris being our skeleton model named many years ago), and “What does the brain need blood for?”. These are simple questions, but we at CHaOS love to hear them, because we know the child is engaged and curious. Our final stop on tour was Mansfield Museum, though we then spent the following day travelling and packing our experiments away in the Cambridge cupboard.



Feedback

When asked

We reached 1000s of children and adults in this years roadshow. We asked our visitors to give us their feedback and collected over 150 questionnaires representing their views. The median visit length to our events was over an hour, with over 90% of those asked staying over half an hour. Around 40% of attendees heard about the event on social media, and around 25% simply walked past and were drawn in by the fun we were having!

82%

Children said they enjoyed the event 'a lot'

92%

Children said they would come again

92%

Children said they learned 'a lot' or 'quite a lot'

What parents said

"Great informative students!"

"Children enjoyed it very much, I would like to see this event more."

"Brilliant and friendly"

"Lovely to see the enthusiasm of presenters and how they passed that on to children. Thank you!"

"Very good and informative for adults and kids. My kids really enjoyed it."

What we can do better

"More events across the UK. Good luck to all the students! :)"

"More chemistry experiments"

"Absolutely brilliant! Only thing I'd say is make sure everyone is wearing CHaOS t-shirts with name labels and pronouns ..."

"More chemistry explosions! and more chemistry to do by yourself"



Thank you!

The CHaOS roadshow is a collaboration between the CHaOS committee, venues across the UK, and our volunteers. We wish to thank the following for hosting CHaOS events:

Irchester Community Primary School, Studfall Academy, Rothwell Junior School, All Pulling Together, The Venture: White City, Pate's Grammar School, Sir Thomas Rich's School, Warden Hill Primary School, Cardiff Central Library, CRAI, Tondu Primary School, Maesteg Comprehensive, Lliswerry High School, Malvern Library, The Hive Worcester, Redditch Library, Midlands Arts Centre, Red House Glass Cone, The Core Solihull, Cusworth Hall Museum, Chesterfield Market, Sheffield Winter Garden, Kelham Island Museum, Bassetlaw Museum, and Mansfield Museum.

CHaOS would also like to thank those who volunteered for the 2022 roadshow as enthusiastic demonstrators.

Special thanks to our sponsors IoP East Anglia and the Ogden Trust who made the 2022 roadshow possible.

