



SUMMER ROADSHOW 2017

About the CHaOS Roadshow

What is CHaOS?

Cambridge Hands-On Science, fondly known as CHaOS, is a nonprofit voluntary student group based at the University of Cambridge which believes that science is exciting and relevant to everyone. 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.

How did CHaOS and the Roadshow begin?

CHaOS has been running for nearly 20 years. Our first events were held in Cambridge as part of the Cambridge Science Week. In 2002, some of our members thought it would be fun to pack some of our experiments into a van and take them around the country for a week - and hence the Roadshow was born! From these humble beginnings, our volunteers have developed the Roadshow so that every year we are on the road for over a month, with this year's trip being 6 weeks long!

How does the CHaOS Roadshow work?

Our events are based around hands-on experiments which all ages can try, covering all aspects of science from physics and engineering to biology and how our body works. Small groups are guided through each experiment by an enthusiastic volunteer, experienced in demonstrating the science behind it at an interesting and accessible level, tailored to the ability of the children. In July and August 2017, CHaOS brought these experiments to schools, town halls, community centres and other events and venues around the country. In 6 weeks we visited 25 venues across the breadth of the country and saw over 6,000 visitors. Over 90 volunteers from the University of Cambridge gave up part of their summer in order to make the Roadshow a great success!



Who funds CHaOS?

CHaOS is committed to making our experiments accessible to as many people as possible, so we do not charge for entry into our public events. We do ask that schools make a small contribution to our running costs, but each visit is heavily subsidised by the generosity of our financial supporters (this year: University of Cambridge, Royal Society of Chemistry, Biochemical Society, Institute of Physics and Holmes Hines). Careful budgeting keeps the cost of the Roadshow to below £3 per person reached. We keep our costs down by accommodating our demonstrators in campsites whilst on the Roadshow, filling up on delicious school dinners and doing as much of the rest of our cooking as possible on a camp stove.

How much does the Roadshow cost?

Each year CHaOS spends approximately £15,000 over the course of the Roadshow, with the main costs being transport (around £8,000, including vehicle hire and demonstrators' train fares), food (£2,500) and venue hire (around £500). We are therefore hugely grateful to our sponsors for enabling the Roadshow to take place!



2017 Roadshow Route

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1st Unitarian Meeting House, Bury St Edmunds	2nd Bressingham Steam Museum
3th	4th Ormiston Deans Academy	5th Harlston C.E.V.A. Primary	6th Archbishop Sancroft School	7th	8th Spinney Hill, Leicestershire	9th Recreational Ground, Lutterworth
10th	11th Yew Tree Primary	12th St Francis of Assisi College	13th Wilson Stuart School	14th	15th St Johns Market, Liverpool	16th St Luke's Methodist Church, Hoylake
17th	18th Brookdale Primary	19th Bebington High	20th Hoylake Holy Trinity Primary	21st	22nd Hanley Market, Stoke-on-Trent	23th Pottery Museum, Stoke-on-Trent
24th	25th St Anne's Church, Worksop	26th Sheffield Winter Gardens	27th Rykneld Square, Chesterfield	28th	29th Poacher Scout Jamboree	30th Poacher Scout Jamboree
31st	1st Poacher Scout Jamboree	2nd Poacher Scout Jamboree	3rd Poacher Scout Jamboree	4th Poacher Scout Jamboree	5th	6th St Denys Church Hall, Sleaford
7th Spalding Library, Lincolnshire	8th Church Village Farm, Skegness	9th Boston Library				

Where did the Roadshow visit in 2017?

One of the main aims of the CHaOS Roadshow is to visit areas of the country where access to science is difficult, for example with no permanent science museums locally or where other tour groups don't venture.

This year, the Roadshow ventured a long way from Cambridge - going as far as Liverpool! We went to Suffolk, Norfolk, Leicestershire, Sheffield, Chesterfield, Stoke-on-Trent, Lincolnshire and Liverpool. We visited schools as well as holding public events, ranging from fairs to museums! We also spent a week at the Poacher Scout Jamboree. At the end of our 6 packed weeks we brought back our experiments to Cambridge.



Weekend 1

Suffolk and Norfolk

Once again, the roadshow's first move was to head East from Cambridge to Norfolk and Suffolk. We spent our first Saturday at the Unitarian Meeting House in Bury St Edmunds, eagerly spreading our enthusiasm for science. On the Sunday we enjoyed demonstrating our messier experiments outside in the sunny weather at Bressingham Steam Museum near Diss - special thanks go to the museum for feeding us and letting us camp there for the weekend! Boris the Skeleton particularly enjoyed having the chance to meet people and discuss the body on walks and train rides around the site!

30th June-3rd July

Week 1

Norfolk

Next we stayed in the Norfolk area to visit three schools. We went to Ormiston Dean Academy, Harleston C.E.V.A Primary School and Archbishop Sancroft School. The students loved being able to come to our events during school time and teachers enjoying seeing their student engage with science. We had three intense but very enjoyable days engaging with the students!

3rd - 7th July



Weekend 2

Leicestershire



On Saturday, we visited the Spinney Hill Park Fun Day in Leicester, where despite heavy competition from some bouncy castles, the allure of hands-on science meant we were always busy demonstrating, with several families coming back repeatedly throughout the day! On Sunday, we were part of the Picnic in the Park Fair in Lutterworth. Some extra advertising from some of our demonstrators on the main stage of the fair made the day at least as successful as the one before, especially after we unleashed our water rockets experiment. No-one could resist having a go firing the rockets, though some got a bit wet during the launch!

7th-10th July

Week 2

West Midlands



On week two CHaOS wandered around the Midlands to various schools, including a primary school with disco tunes played at lunch (dancing ensued) and a secondary school with some enthusiastic year 10s!

We also saw many pupils with special educational needs and disabilities who thoroughly enjoyed the experience and even asked to come along to other sessions in the afternoon to try out all the experiments again!

10th-14th July

The Wirral and Liverpool

Mid-way through tour, CHaOS ventured to the so-called 'Venice of the North' – the Wirral Peninsular! The demonstrators were treated to a campsite with a brand-new facilities block containing more than one shower – a luxury!

Over the weekend we helped bring in punters to St John's Market in Liverpool (where the stall holders got into a heated competition about who was the best thrower with prism goggles on!) and demonstrated to many enthusiastic families in the coastal town of Hoylake.

Week 3

St Luke's Church was a perfect venue with an outdoor space that made the most of the lovely weather (though the bottle from the water rockets experiment may stay on top of the church roof forever...).

During the week, we went to the last few schools of tour, including a demonstrator's old primary school, where the teachers were surprised at how much he had changed (in body but perhaps not mind)! We rounded off a successful week with a barbecue on the beach.

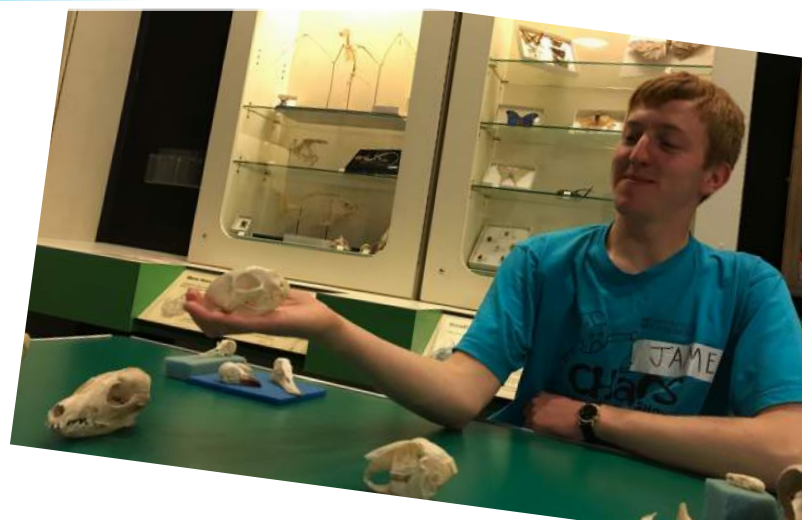
17th- 21st July

Weekend 4

Stoke-on-Trent

Next we went to Stoke-on-Trent, famous for its pottery. We had the chance to demonstrate at the Hanley Market and the Pottery Museum. In the museum, the room we were given was actually in the natural history section. The biologists had a field day - there were many extra skulls for our demonstrations! We had a fantastic turn out of keen families ready to do some science in their summer holidays!

21st-24th July



Week 4

Chesterfield

This week we travelled, first to Worksop, then to Sheffield and finally to Chesterfield itself. We were greeted by the famous warmth of the North (and debates about whether we were in the North). Sheffield Winter Markets was a huge success - perhaps it was because we were placed under a giant E. coli! The rest of the week, we spent a lot of time busking on the streets, asking passersby whether they'd "like to try a science experiment?" People seemed quite keen to let us know that Boris wasn't looking too healthy and the "Ear Switching Hat" was also quite a hit!

24th - 28th July



Week 5

Poacher Scout Jamboree

We spent week 5 of the roadshow demonstrating as part of the Poacher International Scout Jamboree in Lincolnshire, a 6-day camp attended by over 8,500 very excited Scouts, Guides and leaders.

It was great to see that so many Scouts and Guides made repeat visits throughout the week; some even made repeat visits each day, and a few groups hardly ever left! One of these groups (a group of newly-enthralled future computer scientists) tested the robots experiment to new extremes by building and programming a full size robot-maze game over several days. Throughout the week, we received daily requests for repeats of specific favourite experiments. Unsurprisingly, this meant that water rockets were demonstrated almost every day, and by the end of the week, one water-rocket aficionado couldn't resist coming back for more, so they brought their family along to one of the week 6 public events!

28th July - 5th August

Lincolnshire

Week 6

The sixth week of this year's Summer Roadshow was spent in Lincolnshire where lots of local advertising led to impressive turnouts across the four days. Our first event of the week was in St Denys' Church Hall, Sleaford. The following day Spalding library hosted us with visitors impressed by the prism goggles and the ear-switching hat before (sensibly!) stopping off to learn about cornflour on the way home.

On Tuesday we visited the Church Village Farm, an open air farming museum in Skegness, and, despite a bleak start to the day, the weather picked up and the room was shortly packed with members of the public eager to learn about the kiwi DNA and hot air balloons experiments. Tour was brought to a successful close with a final event in Boston Library where young and old, drawn in by the skulls on display, explored the other experiments on offer, often challenging the demonstrator's scientific knowledge.

5th - 11th August

What was new this year?

Feedback sessions and Teacher Packs

This year we continued our long-term project to improve how we collect feedback and measure our impact on those we visit. During school visits in the first week of tour, we handed out questionnaires both before and after our sessions, to see how the attitudes of students towards science and scientists changed after we visited. Children were asked to draw what they thought scientists looked like - pleasingly, after our demonstrations more children drew female scientists and there were less men with messy hair and lab coats!

We also continued to give out materials to teaching staff to extend our impact to beyond our visit. The teacher packs consisted of guides to three of our experiments that can easily be performed in class or at home: Mini Explosions, Red Cabbage, and the Amazing Sounds from an Oven Shelf test! We hope to make even more in the future.

After our event:
"Anyone can be a scientist!"



"The students running the activities were enthusiastic and entertaining"

"What a fantastic idea. Children loved participating in activities!"



CHaOS+

Throughout the year we have been adapting some of our demonstrations for an older age group, to try to show teenagers doing GCSEs and A-Levels what science at university is like and to reinvigorate their enthusiasm for it. At a few schools we saw Year 9's and 10's, as well as a few sixth-form students, so we could trial some of the more complicated experiments with them.

"The bottle rockets were a particular favourite!"

"Such a great set of activities to encourage children to learn about science."

CHaOS On Camera

We have also started to make videos of our demonstrations so even more people can share our enthusiasm about science! We hope to link them to our teacher packs so that people can see how the experiment is meant to be done and can then try it out themselves.

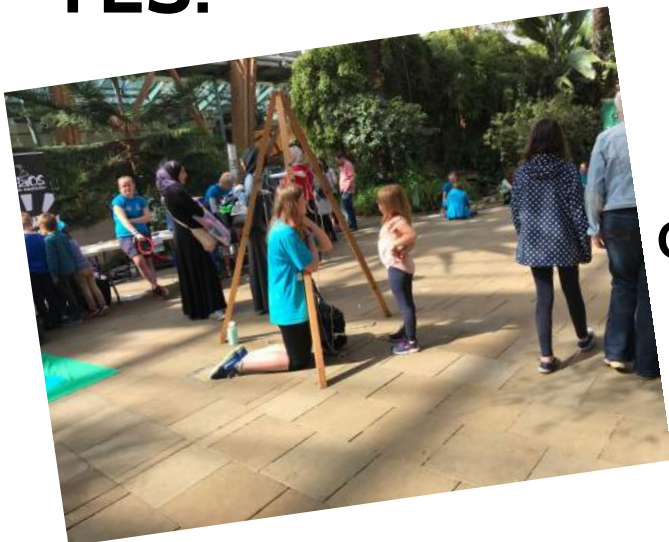
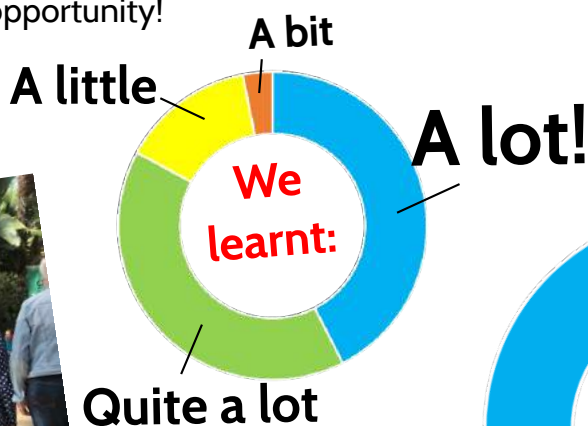


What did families think?

"I had a great time!"



We reached 1000's of people in public events this year. We asked our visitors to give us their feedback and collected nearly 200 questionnaires representing their views. The average visit to our events was over an hour long, and most people were intending on coming, having heard about them through various different sources. A quarter of families had never tried a science experiment at home, so it was good to give them that opportunity!



What's next?

We have shown consistently that the CHaOS model is a successful and cost-effective way of communicating the relevance and excitement of science to the public.

If you would like to host CHaOS in your school, town hall or community centre, please let us know. We always receive more requests for visits than we can fulfil each year (often from people who have seen us in action before), but we will try our best to visit everyone! Planning for the 2018 Roadshow is already in progress and we are always looking for sponsors.



If you are part of, or know of, an organisation which could help CHaOS with the funding it needs to continue the Roadshows, please get in touch at:

contact@chaossience.org.uk

"My kids have kept coming back time and time again to try different experiments. What a great idea to engage their young minds"

The student demonstrators of 2017 were:



Alexandra Ashcroft, Alice Edney, Alice Flint, Andrew Sellek, Angela Herbert, Anna Munday, Benjamin Akrill, Boris Bones, Buffy Eldridge-Thomas, Callum Jones, Catrina Eldridge, Celia Kessler, Charlotte Attwood, Charlotte Griffiths, Conor Cafolla, Danny He, Dave Ansell, David Bebb, Eleanor Nicholson, Elisabeth Gaberdiel, Elizabeth Robinson, Ella Strudley, Emese Ratkai, Emese Thamo, Emma Vinen, Fiona Coventry, Gemma Shaw, Georgia Harris, Georgina McCosh, Gideon Gray, Giedre Sirvinskaite, Greg Palmer, Hannah Kemp, Haydn Lloyd, Helen Gildersleeves, Ivana Yeow, Jacqueline Siu, James Famelton, Jan Mieszcza, Jared Jeyaretnam, Jessica Payne, Jiali Gao, Jiaqi Chen, Joanna Tumelty, Josh Garfinkel, Katarina Blow, Katherine Angell, Kieran Heal, Lara Tritton, Laura Wells, Leah Ward, Leonardo Buizza, Louise Rockall, Lucy Allington, Lucy Binsted, Lucy Crocker, Lucy Hart, Luke Johnson, Malavika Nair, Marta Ferraresso, Marta Wylot, Martha Smith, Matt Le Maitre, Matt Worsam, Matthew Kemp, Michael Hu, Michael Ita, Miriam Apsley, Mithuna Yoganathan, Morgan Lowther, Nye Rhys Potter, Olivia Armitage, Pui May Wong, Rachael Young, Rebecca Thrush, Robert Gayer, Roberta Wilkinson, Rory Hennell James, Rosa Barnard, Rosy Ansell, Roxanne Armfield, Sam Thomas, Sarah Wiseman, Shaista Madad, Shuhui Ren, Simon Brackley, Simon Matthews, Simon Thomas, Thanuja Galhena, Tim Morgan Boyd, Tom Perkins, Tom Wang, Tom Webster, Xanthe Malcolm, Yaron Bernstein, Zhiyuan James Ou

With many thanks to:

Barbara Kryś at the Unitarian Meeting House; Philip Rooke and Alistair Baker at the Bressingham Steam Museum; Julie Mayo at Ormiston Denes Academy; Claire Leeder at Archbishop Sancroft School; Elizabeth Ingram at Harleston C.E.V.A Primary School; Laura and Greg from The Future Project Leicester; Holly Guy from Picnic in the Park; Rachel Hawkins at Yew Tree Primary School; Neil Barratt at St Francis of Assisi Catholic Technology College; Toni Salisbury at Wilson Stuart School; David Wightman at St John's Market; Sam Hepworth and the members of St Luke's Methodist Church; Karen Dodd at Brookdale Primary School; Victoria Birch at Bebington High Sports College; Sally Evans and Nadine Love at Hoylake Holy Trinity C of E Primary School; Kelly White and Paul Pike from Hanley Market; Melanie from the Pottery Museum; Sarah Prior from St Anne's Church; Angela Gower from Sheffield Winter Gardens; James Branson and Karen Walker from Chesterfield Tourist Information; Steve Newton and the team at Lincolnshire Scout Jamboree; Paula Ireland from St Denys Church; Sharman Morriss at Spalding Library; Trevor Monahan at Church Village Farm; Alison Wade from Boston County Hall

Also thanks to the rest of the CHaOS team in Cambridge and countless others who were involved in helping the CHaOS Roadshow 2017 run smoothly. A special thanks goes as ever to our many drivers, without whom the roadshow couldn't happen!

Finally, thanks to all of the school pupils and families who attended our events and made our efforts worthwhile with their enthusiasm and enjoyment.

Generously supported by:



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