

December 2020

The Orange Zone ran from 30 November to 18 December 2020 and was funded by the Wellcome Trust. It was a general science Zone featuring scientists working across a broad range of fields.

The activity ran as a part of *I'm a Scientist: On Demand*, which offers greater flexibility to teachers in how, and when, they can take part. This is in response to the COVID-19 pandemic and greater restrictions and uncertainty in schools. *I'm a Scientist: On Demand* runs throughout term-time, with month-long Zones.

Scientists

- 31 scientists took part. They included:
 - Kate Dobson - singing volcanologist and engineer, University of Strathclyde
 - Zahara Mortimer - research engineer, Deep Branch Biotechnology Ltd. and University of Nottingham
 - Alex Ramadan - Postdoctoral Research Associate, University of Oxford

Students

- 746 students from 21 schools logged into the Zone.
- 72% of active students were from target schools: 38% from widening participation schools and 59% from underserved schools.

Live Chats and Questions

- 40 live Chats took place during the activity.
- 55 live Chats were booked, but dropout was higher than usual with 12 cancellations and 3 'school no shows'.
- On average, 5 scientists attended each live Chat session.
- 2 teachers typed questions in a live Chat on behalf of their students, so the number of students engaged may be higher by up to 50.
- 179 student questions were sent to scientists, who responded with 280 answers.

Key figures

Schools	21
Students logged in	746
% of students active	82%
Scientists onboarded	32
% of scientists active	97%
Questions asked	231
Questions approved	179
Answers given	280
Scientist comments	48
Student comments	12
Votes	421
Live Chats	40
Lines of live Chat	15,081
Average lines per Chat	377

Impact of the COVID-19 pandemic

The COVID-19 pandemic increased uncertainty and pressure in schools. Many teachers reported lost time due to school closures and students isolating, and a need to focus on the core curriculum.

Student attendance dropped to an average of 79% for UK schools in December. The rapidly changing situation made it difficult for teachers to plan ahead. Many schools restricted access to shared IT equipment, leading some teachers to ask questions in live Chats on behalf of their students, projecting the Chat on a screen. The average class size attending a chat was 25% below normal.

School activity

School	Active students	Live Chats Attended (Booked)	Lines of Chat Total (Per student)	Questions Approved (Asked)	Votes cast
Robert May's School, Hook (U)	138	6 (7)	2837 (21)	30 (49)	127
Todmorden High School, Todmorden (WP/U)	127	6 (6)	1530 (12)	5 (12)	75
Shirenewton Junior & Infant School, Monmouthshire	69	3 (3)	1351 (20)	34 (37)	49
St Brendan's Catholic Primary School (U)	60	4 (4)	719 (12)	44 (56)	23
Colne Community School and College, Colchester	50	2 (5)	445 (9)	15 (15)	46
The Oratory School, Nr Reading	40	2 (4)	387 (10)	30 (36)	12
Sir Herbert Leon Academy, Milton Keynes (WP)	35	2 (3)	390 (11)	1 (1)	29
Prendergast Ladywell School, London (WP)	23	3 (5)	307 (13)	0 (0)	15
Frome Community College, Frome (WP)	15	1 (1)	60 (4)	0 (0)	10
Lynn Grove Academy, Great Yarmouth (WP/U)	14	1 (1)	174 (12)	0 (0)	9
The Holmesdale School, Snodland (WP/U)*	12	2 (2)	378 (32)	0 (0)	11
Brompton-on-Swale Church of England Primary School, North Yorkshire (U)	9	0 (0)	0 (0)	11 (12)	6
Roding Valley High School, Loughton	8	0 (1)	0 (0)	7 (11)	6
Birkenhead School, Prenton	5	2 (2)	51 (10)	0 (0)	0
Queen Elizabeth's Girls' School, Barnet (WP)**	2	0 (0)	6 (3)	2 (2)	1
Bournemouth School, Bournemouth (U)**	1	0 (0)	44 (44)	0 (0)	0
Kenmont Primary School, London (WP)**	1	0 (0)	43 (43)	0 (0)	0
Sandymoor, Runcorn (WP/U)**	1	0 (0)	35 (35)	0 (0)	0
Millais School, Horsham (U)	1	1 (1)	32 (32)	0 (0)	1
St Thomas More Catholic Primary School, Kettering (U)*	1	1 (2)	16 (16)	0 (0)	1

*In at least 1 live Chat these schools took part through the teacher account only.

**These schools did not book a live Chat for a class: students took part in an Open Chat.

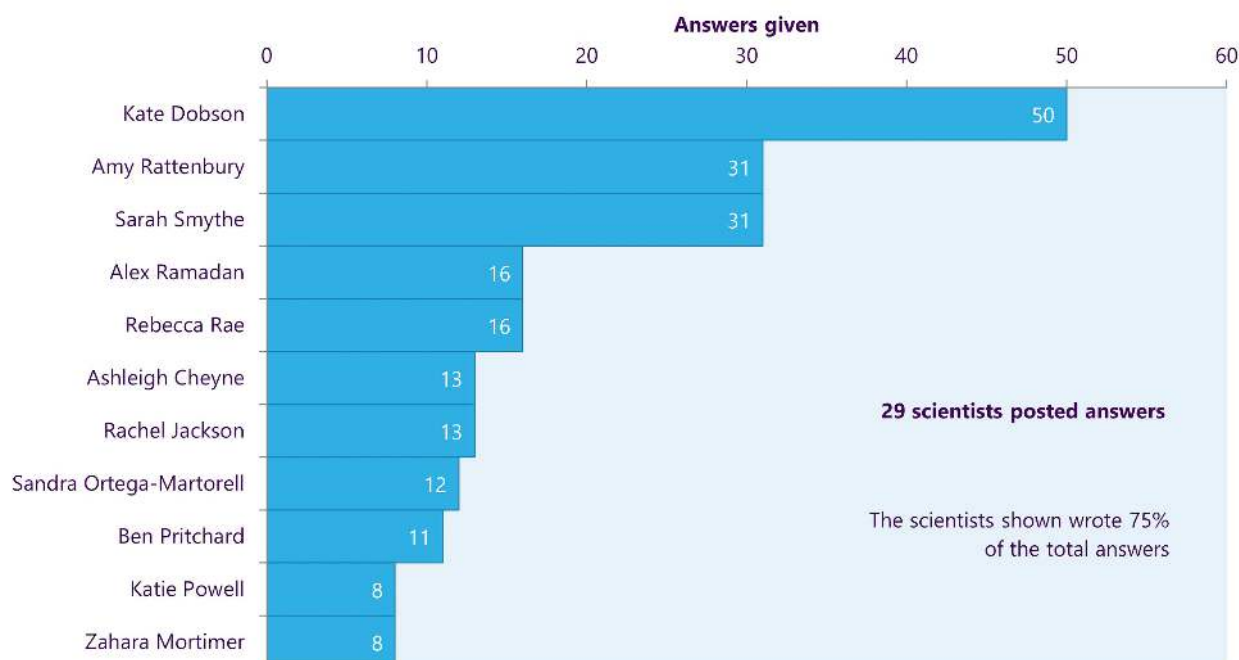
We want to increase the participation of under-represented groups going into STEM careers. Find out what we mean by our under-served (U) and WP schools (WP), and how you can support us in working with more of these at:

about.imascientist.org.uk/under-served-and-wp

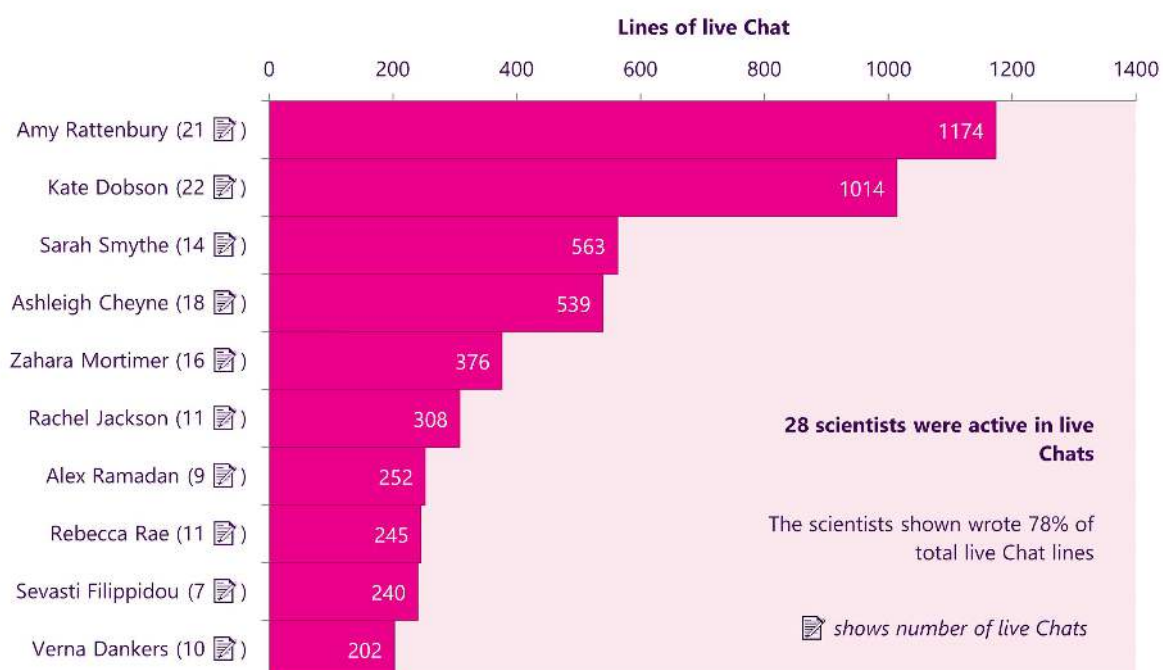
Scientist activity

31 scientists were active in the Zone, writing 6,271 lines of live Chat, and providing 280 answers to 179 posted questions.

10 most active scientists in posting answers

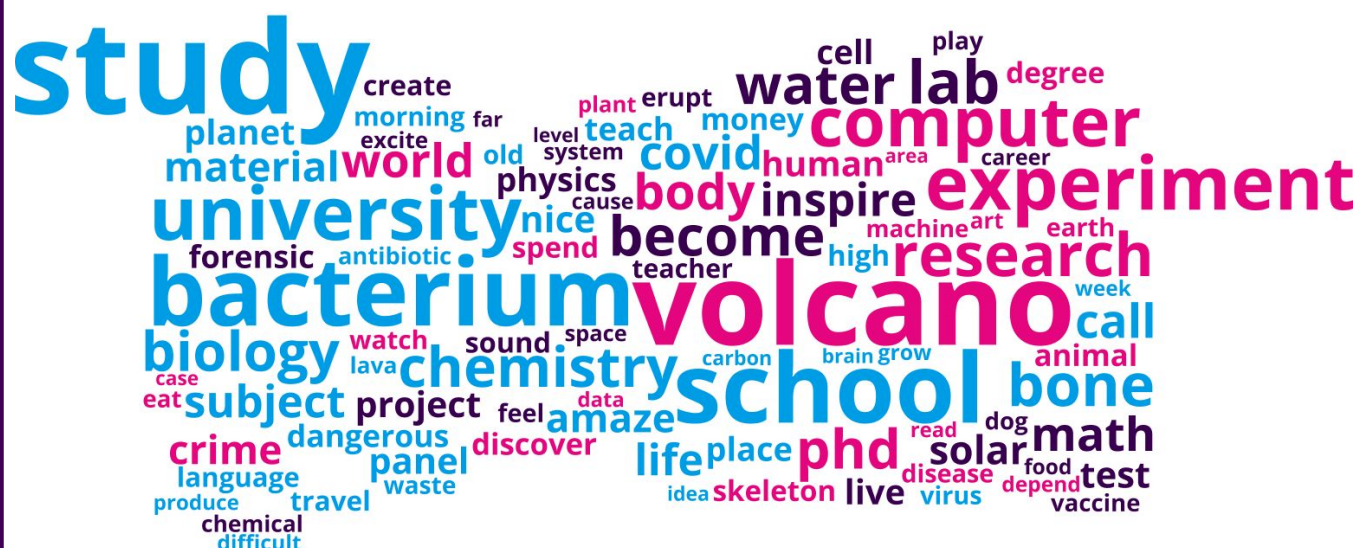


10 most active scientists in live Chats

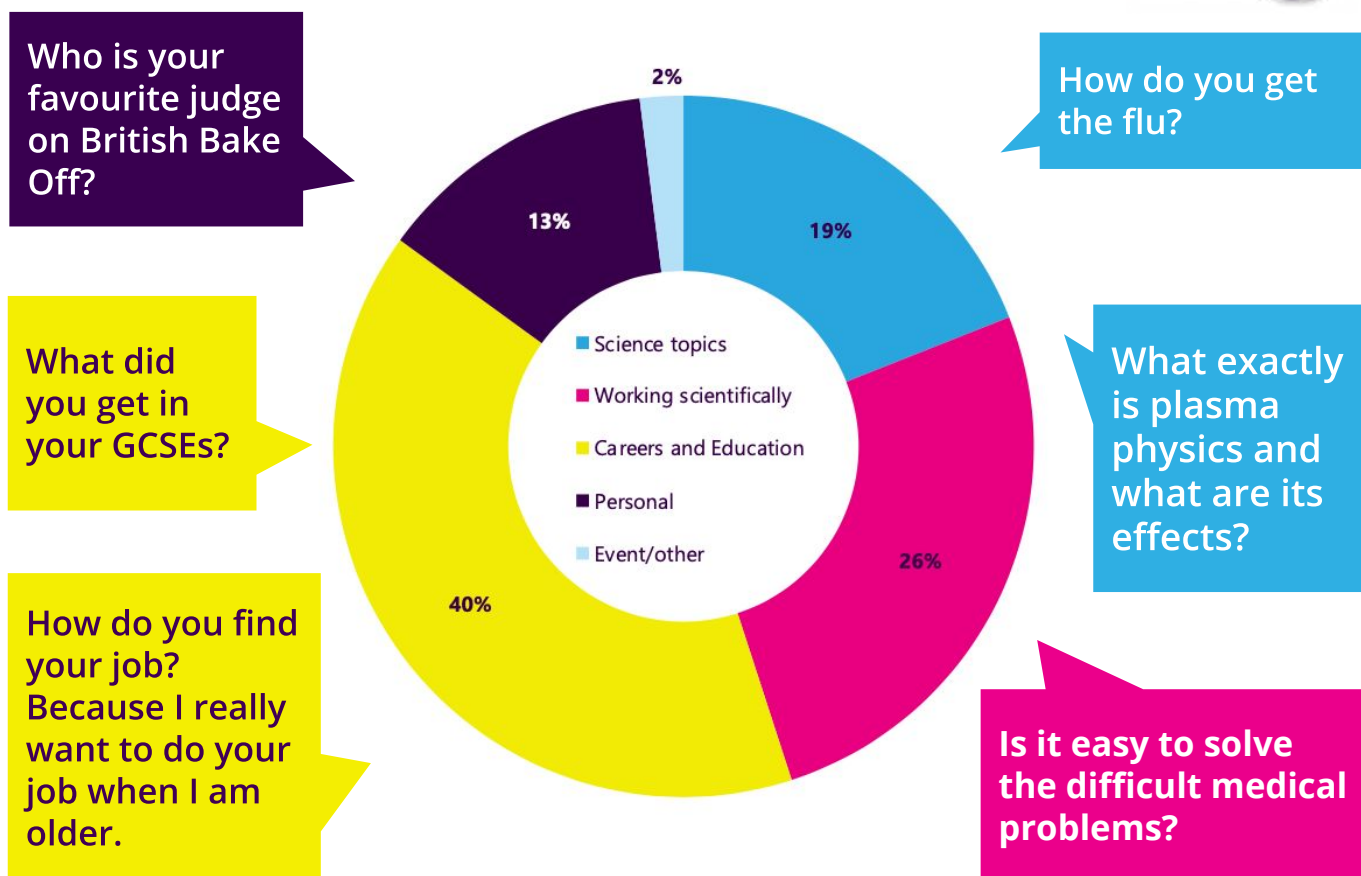


See all the participating scientists: orange20.imascientist.org.uk/scientists

Frequent words used in live Chats by students and scientists



Ask?



Examples of good engagement

In the chats, students asked about the scientists' research areas, showing interest in their profiles. In these conversations, students learned how science can help us to understand, and to help improve, social problems.

GEORGES24 @Rebecca Do you know how other countries cope with not having fresh/clean water?

Rebecca @GEORGES24: its very hard, without clean water to drink a lot of people can get sick. also pollution in rivers can mean that the animals and fish that live in or near the river will die and this could mean less food for the people that would usually catch the fish

GEORGES24 @Rebecca: That is very true.

Rebecca @GEORGES24: different scientists are all working on ways to clean up all the different ways that water can be dirty, it can be bacteria or pollution from factories. my work looks at pollution for factories and industries

GEORGES24 @Rebecca: How do you clean the water?

Rebecca @GEORGES24: I have made a material that can be added into the water and it attaches to the specific pollutants and makes them solid so they can be easily filtered or sieved out

GEORGES24 @Rebecca: That is SOOOOOOOO clever!

Rebecca @GEORGES24: Thank you :) I work with a great group of scientists and we're all doing similar things and working together to remove lots of different wastes

Students wanted to know the kinds of difficulties scientists might face in their work.

Lauren D @all Have you ever wanted to give up?

Sandra @Lauren D: oh yes, sometimes. But then I remember: if it had been easy, it would have been solved already. I take a little break and then I carry on

Rebecca @Lauren D: whenever i feel like that i just take a little break or maybe a little holiday, after a break i always remember why i want to do this, to help people, and go back inspired again, rest is important!

Lauren D @Rebecca: It makes sense. When you love something so much you can't leave it for to long.

Examples of good engagement (continued)

Students were surprised at the breadth of roles and careers available to people in STEM.

RoseM @Kate : have you ever used x - ray imaging for any of the things in the profile thingy

Kate @RoseM: I've looked at chocolate, ice cream, magma, molten metal, mouse knees, fossils, meteorites, batteries you name it

RoseM @ Kate : I didn't know you could do that for a job? when you were in year 6 did you know you could look at batteries for a job

Kate @RoseM: Nope. As you get older and learn more in your science classes you begin to learn more about the options.

Scientists of the Week

Students voted each week for their favourite scientist to be named *Scientist of the Week*. The second week was a tie between three scientists.

The *Scientists of the Week* were:

Amy Rattenbury, Ben Pritchard, Rebecca Rae and Sarah Smythe.

The overall winner of the Zone was **Amy Rattenbury**.



Amy Rattenbury is a forensic scientist at Wrexham Glyndwr University.

Ben Pritchard is a plasma physics and fusion PhD student at the University of York.

Rebecca Rae is a chemistry PhD student at the University of Edinburgh.

Sarah Smythe is a PhD student in metallurgy and chemistry at the University of Sheffield.

Feedback from the Orange Zone

This was Amazing!

Student



Amy Rattenbury
@amy_rattenbury



Chuffed to have won the #OrangeZone of @imascientist! The student questions have been brilliant. Thanks to all involved & to @wellcometrust for supporting the event. Looking forward to using this opportunity to launch some forensic outreach activities for local schools! #IASUK



I'm a Scientist Team @imascientist

It's the final day of the #OrangeZone! What a 3 weeks it's been! But who won? Congratulations go to... @amy_rattenbury who received the most votes from students! Well done Amy! 🎉👏👏 #IASUK

orange20.imascientist.org.uk/2020/12/18/ora...
pic.twitter.com/XTJfW0a9eO

3:10 PM · Dec 18, 2020



Thank you for your time, scientists. As we say in education: every lesson shapes a life. Maybe one of you shaped and changed someone's path today. Thank you very much and happy holidays

Teacher

On behalf of my class thank you for chatting with us this afternoon

Teacher

Saint Bernadette class would like to say a very big thank you to you all. We had great fun and learnt a lot.

Teacher



Shirenewton Year 4
@Shire_Year4



Super live chat with @imascientist today. It opened the children's minds up to a whole world of possibilities in STEM and they asked some wonderful questions. Gwaith ardderchog 🌟 @Shire_STEM @shire_dcf



THX FOR THE BRILLIANT LESSON
LEARNED SO MUCH

Student