February 2021

The Purple Zone (**purple21.imascientist.org.uk**) ran from 1 to 26 February 2021 and was funded by the **Science and Technologies Facilities Council (STFC)**.

The activity featured 24 scientists working across a broad range of fields. Each scientist was either funded by STFC, worked at an STFC facility, or used data from an STFC facility.

Key activity figures

Schools	29
Students logged in	878
Active students	73%
Scientists	24
Active scientists	100%
Questions asked	268
Questions approved	147
Answers given	280
Scientist comments	38
Student comments	9
Live chats (total)	71
Live chats (schools)	52
Lines of live chat	15,539
Average lines per chat	219

Scientists

24 scientists took part. They included:

- **Viviene Dela Cruz**, Development Scientist at the Rutherford-Appleton Laboratory
- **Amal Lavender**, Head of Department (Chemical & Biological Sciences) at the National Physical Laboratory
- **Philip Ratcliffe**, Associate Professor of Nuclear and Sub-nuclear Physics at Insubria University

Students

878 students from 27 schools and 1 youth group logged into the Zone.

43% of active students were from target schools: 27% from widening participation schools and 19% from underserved schools.

Live chats

71 live chats took place. 52 were booked by teachers and 19 were additional chats, open to the students and members of the public.

On average, 4 scientists attended each school chat.

There were 4 live chats where teachers asked questions on behalf of their students. In 1 of those, 5 classes were watching the chat. Therefore, the number of students reached may be higher by up to 250.

School activity

Students from 25 UK schools, 2 international schools, and 1 youth group took part.

School	Active users	Live chats attended	Lines of live chat	Questions approved
Hornsey School for Girls, London (WP)	94	7	1405	19
St Bridget's Primary School, Glasgow City	60	5	986	2
Alford Academy, Aberdeenshire (U)	53	5	292	13
The Palmer Catholic Academy, Ilford (WP)	40	6	320	8
The Cooper School, Bicester	35	9	394	3
Reepham High School and College, Norwich (U)	28	3	448	8
Clytha Primary School, Newport (U)	24	1	440	4
Swanbourne House School, Milton Keynes	24	3	521	3
Orley Farm School, Harrow	21	1	355	1
St Philip's Catholic Primary, Leeds	19	1	310	6
Hilbre High School, Wirral	18	2	121	0
Lawrence Community Primary School, Liverpool (WP)	18	1	216	7
Victoria Primary School, Edinburgh	16	6	311	17
Colton Hills Community School, Wolverhampton (WP/U)	14	1	66	0
Cox Green School, Maidenhead	13	1	107	3
1st Bradford on Avon Scouts (youth group)	12	1	180	12
Great Walstead School, Haywards Heath	11	1	116	0
Dagenham Park CofE School, Dagenham (WP)	9	1	35	0
Outwood Academy Shafton, Barnsley (WP/U)*	8	2	137	0
Our Lady of Walsingham Catholic Primary School, Corby	7	1	131	1
Gumley House RC Convent School, FCJ, Isleworth	6	1	64	5
Colne Community School and College, Colchester †	2	2	49	0
Bournemouth School, Bournemouth †	1	2	13	0
Kenmont Primary School, London †	1	18	860	0
Parmiter's School, Watford †	1	1	19	0
Sandfield Close Primary School, Leicester*	1	2	77	0
Gymnázium Párovská, Slovakia	98	6	595	34
Dubai British School Jumeirah Park, UAE	33	2	249	0

** In these chats teachers typed questions on behalf of their students.*

† Students from these schools attended open chats only.

We want to increase the participation of under-represented groups. Find out what we mean by under-served (U) and widening participation (WP) schools, and how you can support us in working with more of these: about.imascientist.org.uk/under-served-and-wp

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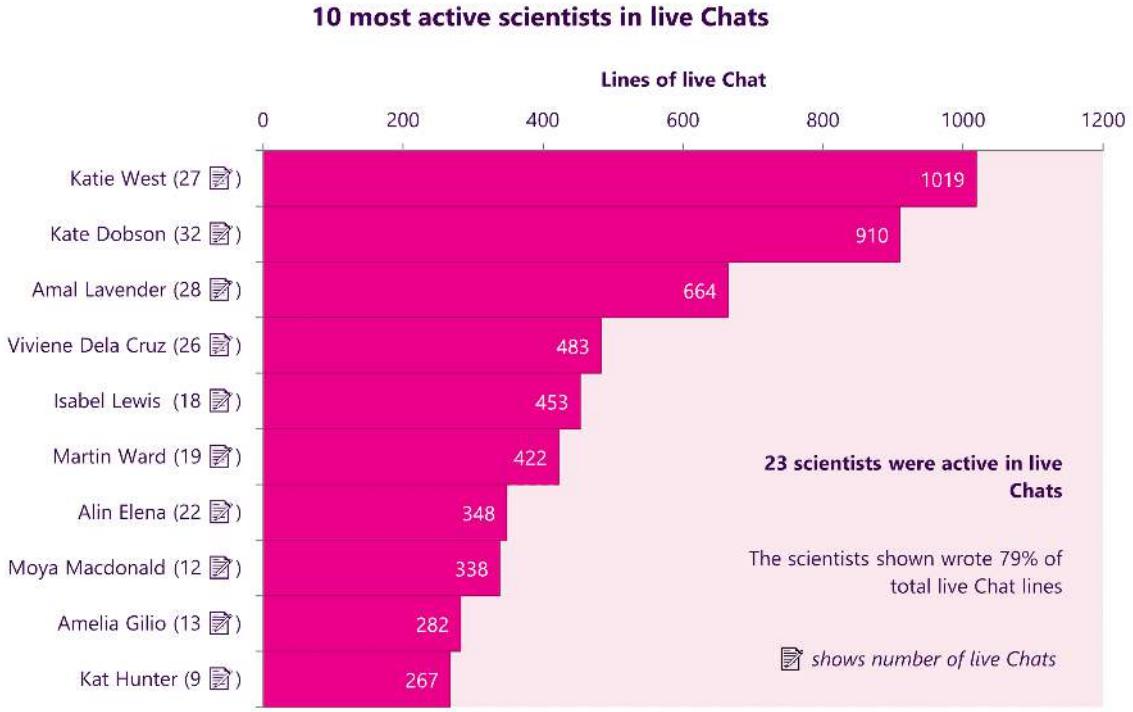
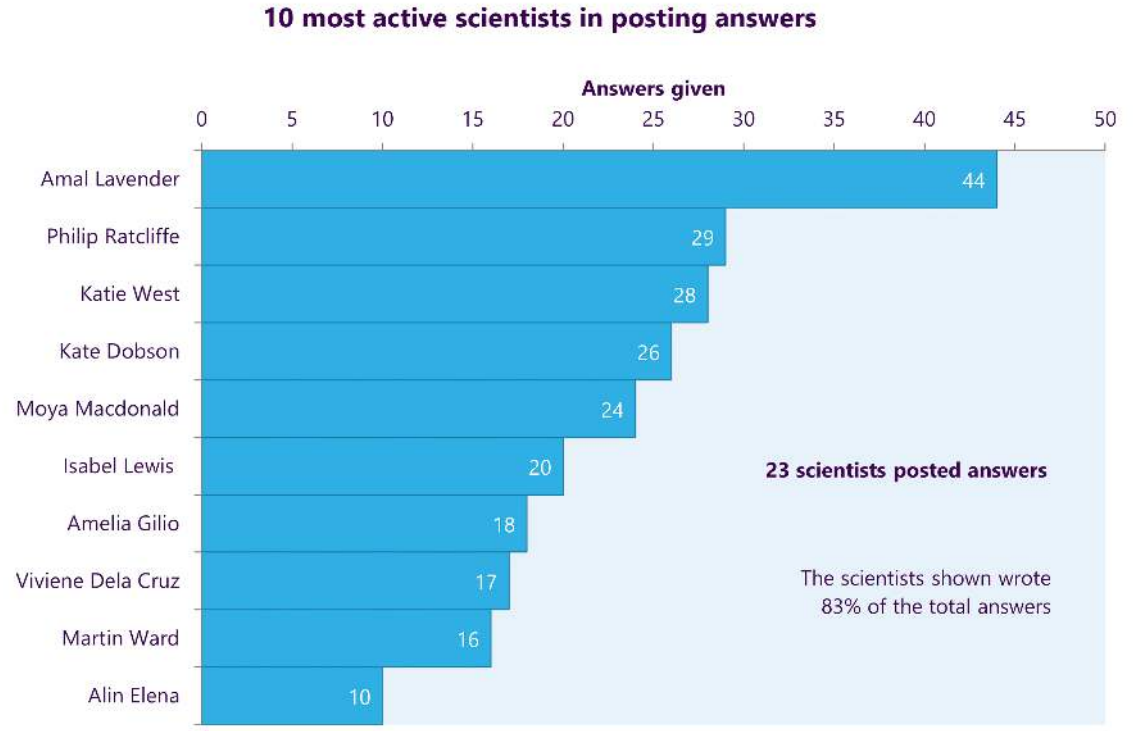
Scientist activity

24 scientists were active in the Zone, writing 6,711 lines of live chat, and providing 280 answers to 147 posted questions.





See all the participating scientists: **purple21.imascientist.org.uk/scientists**

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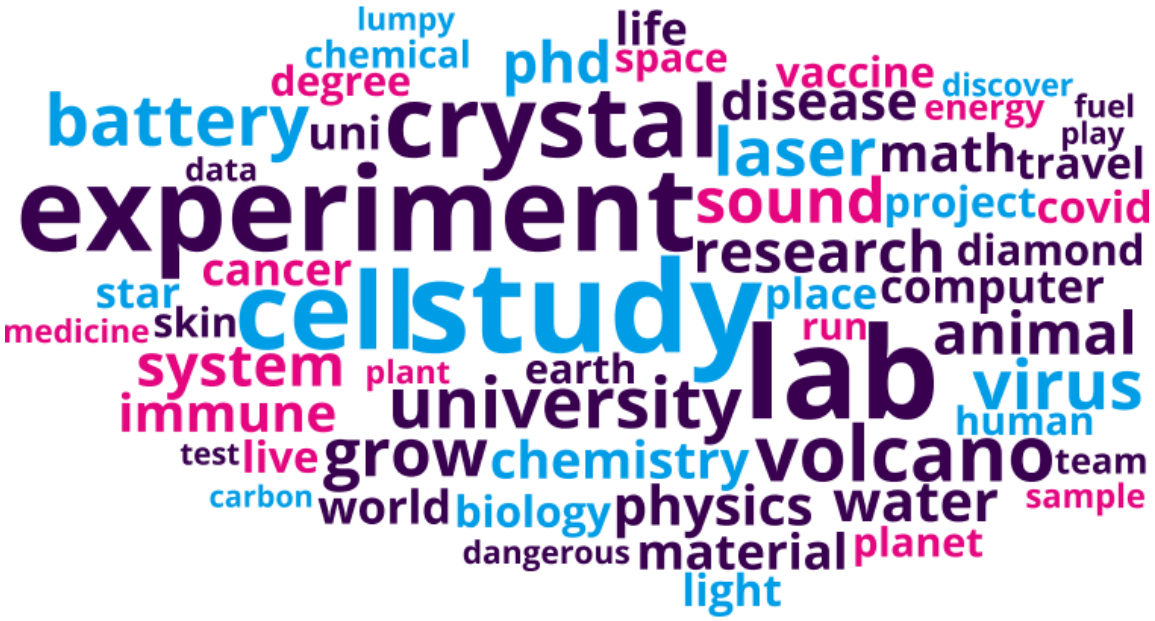
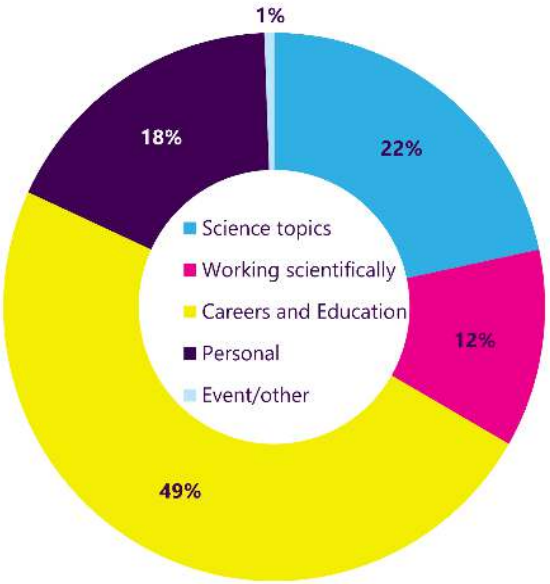
Frequent words used in live chats

The word cloud below demonstrates what students and scientists talked about in live chats. The bigger the word, the more frequently it was used.



Question themes and examples

The chart below shows a breakdown of questions students sent to the scientists/contributors. Examples are coloured by category.



Why did we find a cure to the Corona virus so quickly but still cant cure other things like cancer

Are the colours of the galaxy's in marvel films realistic?

Based on your research do you think that our drinking water supplies will once disappear from Earth? What can we do about it if yes?

When you were younger what was your chosen career path? Was it always a scientist?

Did you always have faith that you would be able to achieve your dream job?

What surprised you the most during your career?

Can you solve a Rubix cube?

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Examples of good engagement

Students wanted to know whether the expectation of being a scientist, matched the reality:

Student 1: is being a scientist today as you might of imagined the life of a scientist when you were a child.

Kat (scientist): Good question. I think my job is quite like i imagined it - i get to make lots of things in the lab and come up with new ideas. It is probably a bit more computer work than i thought but actually this bit is really good too as it helps you improve your ideas. there are less explosions than i used to imagine. Although once i burnt off my eyelashes!

Student 2: that seems very scary

Amal (scientist): definately not! i didnt realise as a kid how broad it was - thus i went to engineering as i was exposed to it and understood it. Now i am amazed about what my teams do everyday!

Isabel (scientist): No I thought it was limited to certain areas I was not interested in and as Amal says it so broad and I can research so many different things.

Students also learnt that just because someone is a scientist, it doesn't mean they know everything:

Student: Did you help develop the Coronavirus vaccine?

Kate (scientist): no - I leave that the experts in their field

Student: Aren't you an expert?

Kate: i am, but that just means I know more about what we don't know! I work in research so my job is to solve problems we don;t have answers for yet - so almost by definition we don;t know the answer. I've been doing this for nealry 20 years now and there's more work to do :)

Students were keen to find out the real world applications of the scientists' work. This understandings contributes to their science capital:

Student: what are the possible real world applications of your researches?

James (scientist): batteries that last longer, power stations that produce the electricity to go in the batteries

Viviene (scientist): more research about tiny particles (electrons!!) to know more about space and the things around us using lasers :)

Kate (scientist): ways to store CO2 underground, more efficent houses, railway and road systems that are less effected by changing weather

Students also learnt about the importance of resilience:

Student: have you ever felt like quitting your job?

Katie (scientist): Some times! It can be challenging if things aren't working properly but it usually works out ok in the end :) I really like having a practical job so I don't think I'll switch any time soon

Moya (scientist): During my PhD there was a couple of times I did because my project didn't really work out for the first two years! But I decided to stay and try and make it work, and it worked out in the end!

Adam (scientist): I've certainly had days where I wanted to quit. Part of the reason that I'm in my current job was two weeks in my last job where I didn't get off work until one in the morning. More importantly, that meant my spouse couldn't eat dinner. So now I have a job that isn't in the lab as often, but I can make lunch and dinner every day.

Scientist winners

Students voted each week for their favourite scientist to be named Scientist of the Week.

The Scientists of the Week were:

- **Katie West**, PhD student at the University of York
- **Kate Dobson**, volcanologist at the University of Strathclyde
- **Martin Ward**, Post-Doctoral research fellow at the University of Strathclyde



The overall winner, with the most votes at the end of the Zone was:

- **Amelia Gilio**, PhD Student at York Structural Biology Laboratories, University of York

As Zone winner, Amelia receives £500 to spend on further public engagement projects.

"Engaging with [the students] over the past month has been an enlightening experience; I have learnt a lot about myself and [the] questions have made me think about my research from a new perspective.

I would definitely recommend participating in *I'm a Scientist* to both schools and scientists as it is a rewarding experience from both sides.

I look forward to being able to use the prize money to develop engagement and outreach activities with my research group and the chemistry department at the University of York, we already have some ideas in the pipeline..."

You can read Amelia's full statement at **imascientist.org.uk/2021/03/februarys-winner**

Feedback

Thank you so much your input has helped a lot of descion making for me

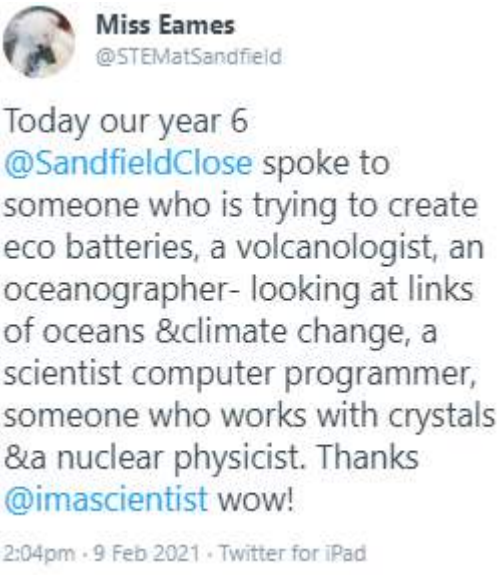
Student

Students here are saying a massive thank you - they have learned a lot and found everything you've told them really interesting! I think we've definitely created some budding scientists today.

Teacher

The variety of the specialisation of the scientists contributed in how exciting the questions are--scientists learn from other fields as well.

Scientist



I really really liked it because it was something new that i have not done before so i really enjoyed it and it helped me because i am shy :D It was new experience that we should take because it will help us to talk more with other people about our and their opinions and then we can discuss it together like today. So thank you!

Student

Can I just say a HUGE thank you to all the scientists for giving your time to chat to and inspire our class of future Scientists. They have all loved being able to chat to you and have learnt a lot in the process! Thank you thank you thank you!

Teacher

I really lked the chat with the scientist because I would like to work in science or medicine.For me it was great to hear real scientist´s opinions.And to see that they are not just boring scientist but normal people with classic interests and hobbys and great personalities.

Student