I'm a Scientist,
Get me out of here:

2023 RSC Funding Summary Report

June 2024

MangorollaCIC

ROYAL SOCIETY OF CHEMISTRY

Background

I'm a Scientist, Get me out of here **(IAS, imascientist.org.uk) is an online, student-led, public engagement project that gives school students across the UK real interactions with scientists and other STEM professionals.**

Scientists create profiles on the website and engage directly with school students through answering posted questions, and in real-time, text-based chats. Students ask questions about whatever they want; questions about careers, research, as well as their wider interests and lives outside of work.

Through taking part, students engage with STEM professionals from a diverse range of backgrounds, disciplines, and industries. They get to see scientists as ordinary people with hobbies, interests, pets, and families. They learn about STEM careers and opportunities in higher education, while seeing how what they learn in school relates to the world around them.

In 2023 the Royal Society of Chemistry (RSC, rsc.org) funded 3 IAS zones to engage students with RSC research. Additionally, RSC members participated in a further 7 zones. This report is a summary of the activity in, and impact of those zones.

Contents

Summary

- **We ran 3 RSC funded zones between March and December 2023.** Additionally, RSC members took part in a further 7 zones.

- **7,103 students logged in across the 9 zones**
    - 2,386 students logged in to the 3 RSC funded zones, with 91% actively engaged through joining a chat, asking a follow up question, posting a comment, or casting a vote
    - 196 unique schools took part in chats
    - 70% of participating schools were priority schools

- **68 RSC members took part:**
    - 52 members took part in 3 RSC funded zones
    - An additional 16 RSC members took part in other zones during 2023
    - RSC members represented a wide range of backgrounds and routes into chemistry

- **RSC members took part in 243 chats**
    - RSC members contributed 234.5 hours interaction in chats

- **Taking part has a positive impact on scientists:**
    - 78% report an increase in communication skills
    - 75% report an increase in enthusiasm for public engagement
    - 82% report increased interest in taking part in future public engagement activities
    - Scientists report that the platform reduces barriers to engagement, and provides opportunities for flexible and high quality engagement.

It was different [to other public engagement activities] because I usually take part in person so the chat format was new and interesting. It was more comfortable for the students to ask their questions and enabled greater focus.
Dr Maryam Sani, Molecule Zone

- **Taking part supports students' science capital and provides opportunities for whole class engagement:**

It was amazing to see how engaged the students were. They interacted with the scientist as well as each other. One of my favourite moments was hearing and seeing a student jumping up and shouting 'They answered my question'
Teacher

- **94% of scientists and 97% of teachers would take part in a future *I'm a Scientist* activity**

Participants and activity

List of zones

RSC funded zones

In 2023 there were 3 RSC funded zones:

Molecule Zone	March 2023	molecule23.imascientist.org.uk
Cancer Zone	June 2023	cancer23.imascientist.org.uk
Climate Zone	November to December 2023	climate23.imascientist.org.uk

Other zones in which RSC members took part

In 2023, RSC members took part across an additional 7 zones:

Forensics Zone	January to February 2023	1 RSC member	forensics.imascientist.org.uk
Great Science Share Zone	January to March 2023	1 RSC member	gss23.imascientist.org.uk
Physics Zone	March 2023	1 RSC member	physics23.imascientist.org.uk
Plant Zone	March 2023	1 RSC member	plant23.imascientist.org.uk
Health Zone	March 2023	1 RSC member	health23.imascientist.org.uk
Research and Innovation Zone	April to May 2023	5 RSC members	innovation23.imascientist.org.uk
Low Carbon Zone	June 2023	12 RSC members	lowcarbon23.imascientist.org.uk

Summary of activity

	Total		Median	
	RSC funded zones	Other zones	RSC funded zones	Other zones
RSC members	52	16	13	3
Total researchers	96	251	33	29
Schools	89	196	63	28
Students logged in	2,386	4,717	971	729
Students active[1]	91%	91%	91%	91%
Chats	124	269	36	38
Lines of chat	39,280	77,007	13,328	10,212
Follow up questions asked	536	1,547	203	229
Follow up questions approved	438	1,078	159	148
Answers to follow up questions	1,455	2,840	439	439
Votes	1,457	2,216	529	388

Zone reports

For each zone, zone reports comprise summary activity data, examples of good engagement, and preliminary feedback.

These are published following each event and are available online:

- RSC funded zones: about.imascientist.org.uk/category/zone-reports/rsc-zone-reports/
- Other 2023 zones: about.imascientist.org.uk/category/zone-reports/2023/

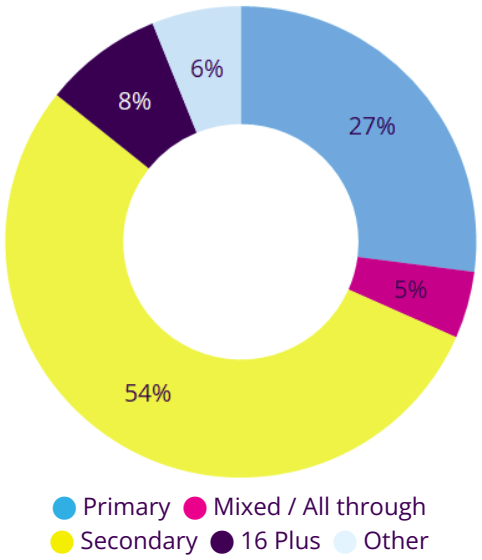
[1] % of students logged in who actively engaged in Chats, asked a follow up question, posted a comment, or cast a vote.

Schools

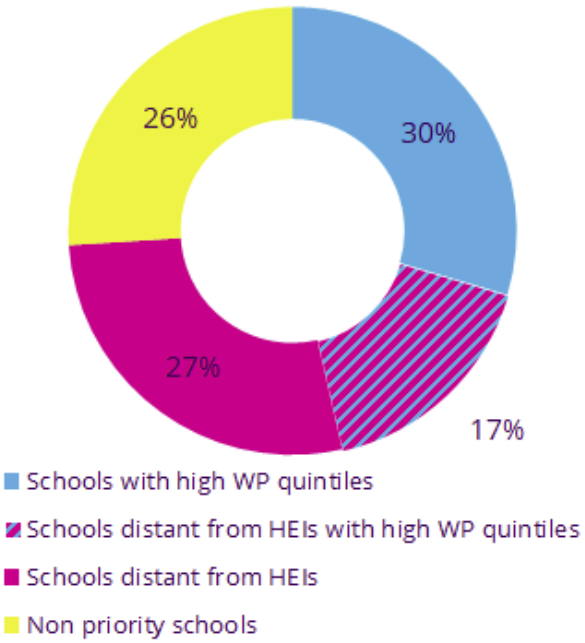
In total, 196 schools took part in Chats in zones in which RSC members took part during 2023, with 89 schools taking part in the 3 RSC funded zones.

Charts and map below show phase, priority type, and location of the 196 schools which took part in zones in which RSC members took part.

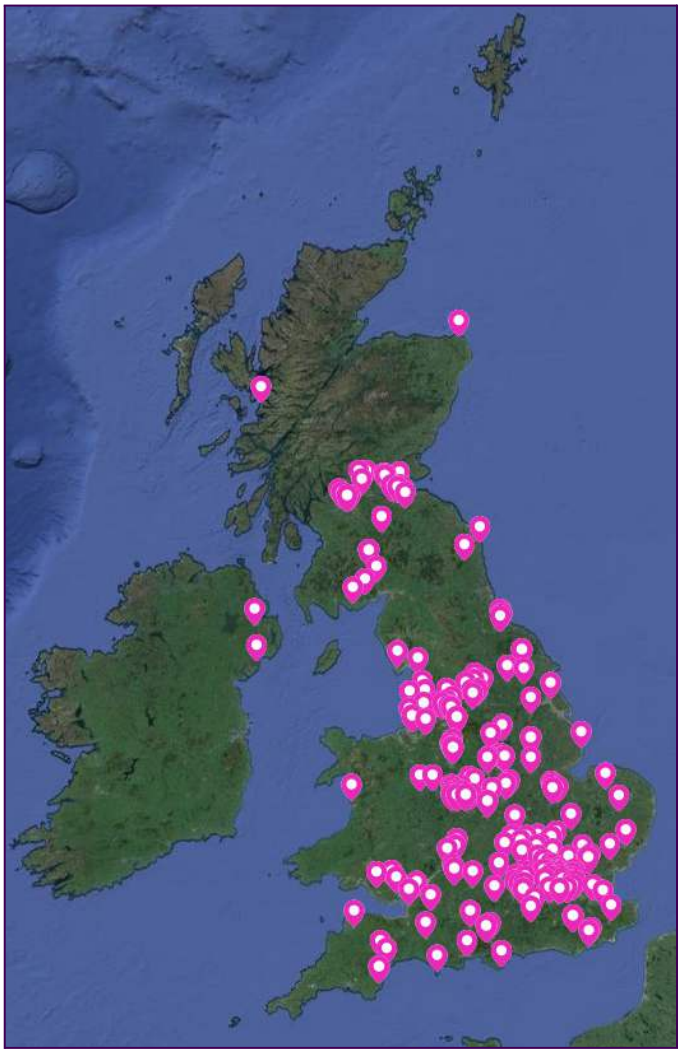
School phase



Priority schools



Locations of participating schools



Map data: Google, Imagery ©2024 TerraMetrics

We prioritise opportunities for widening participation schools[2], and schools distant from major research HEIs[3]. Teachers at these schools are offered additional support, and earlier booking for chats.

70% of participating schools were priority schools: 47% were widening participation schools, and 44% were more than 30 minutes travel time from their nearest major research HEI.

Participating researchers

68 RSC members took part in zones during 2023. 52 took part in the 3 RSC funded zones, with a further 16 taking part in other zones.

Participants represented and gave students insight into a wide range of STEM and Chemistry careers, and areas in research.

Fields of work, sectors, and backgrounds

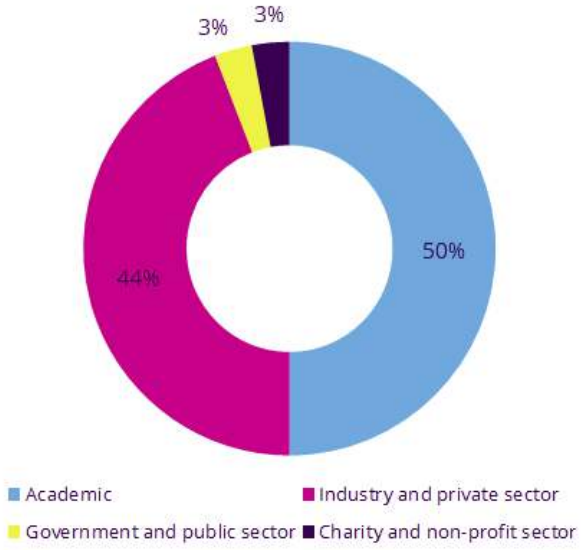
The word cloud shows common words used in the work summaries of participating RSC members, and highlights the diversity of fields and careers represented by participating researchers.

[2] We define a priority widening participation school as one with a high proportion of students (quintiles 4 and 5) receiving Free School Meals, or Pupil Premium; or living in the most deprived areas in the Scottish Index of Multiple Deprivation (SIMD). Additionally, FE colleges, SEND schools, and PRUs are considered priority schools.

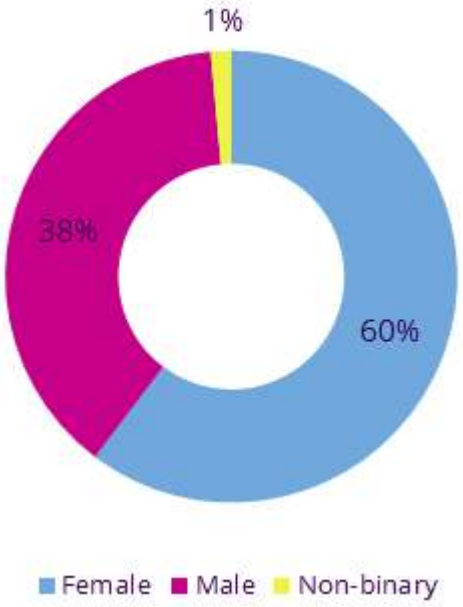
[3] Schools more than 30 minutes from their nearest major research HEI are half as likely to receive a visit from a scientist as those within 15 minutes travel time. State schools more than 30 minutes from a HEI are priority distant schools. See: about.imascientist.org.uk/2017/school-engagement-in-stem-enrichment-effect-of-school-location/

Sector

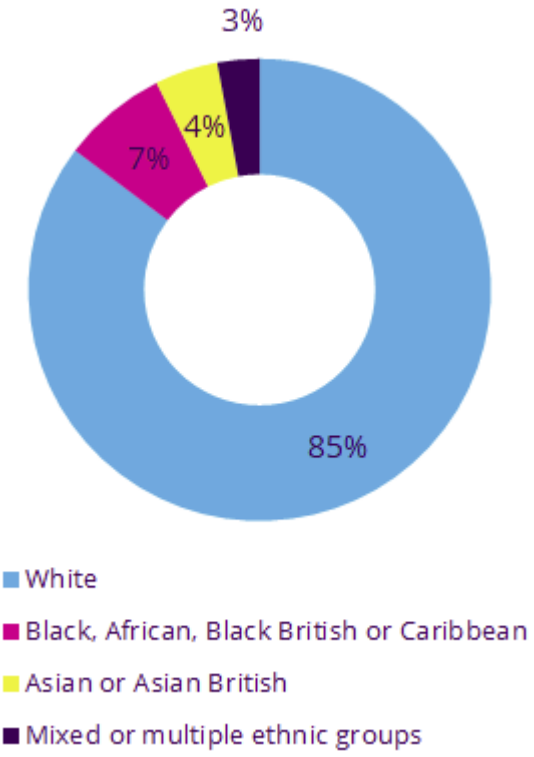
50% of participating RSC members work outside of academia, in industry, the public sector, or charities; representing and giving insight into a wide range of potential career paths and routes into STEM careers.



Gender



Ethnic background

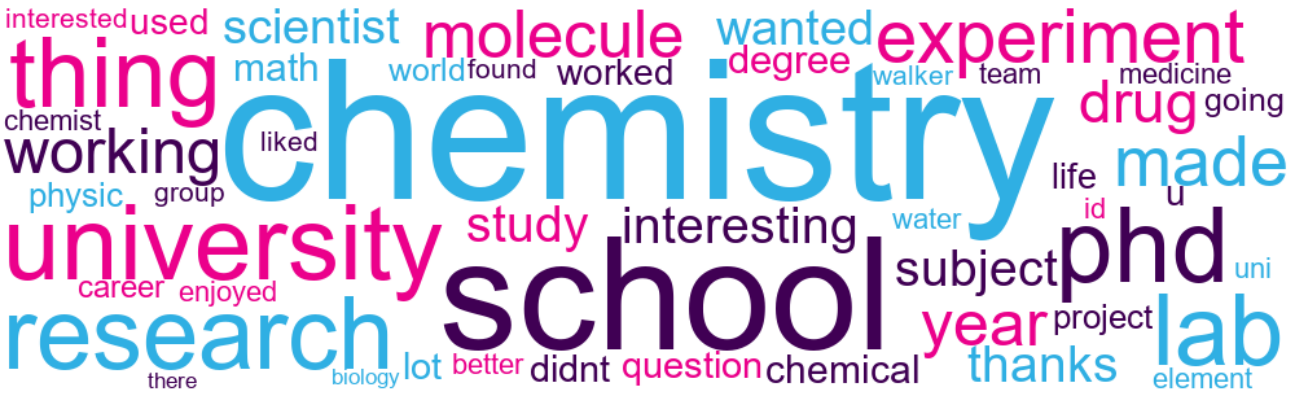


Discussion topics

Topics in chats

The images below show common words used in chats in the different zones. Size of the word is proportional to frequency of use. (Colour has no relevance.)

Molecule Zone



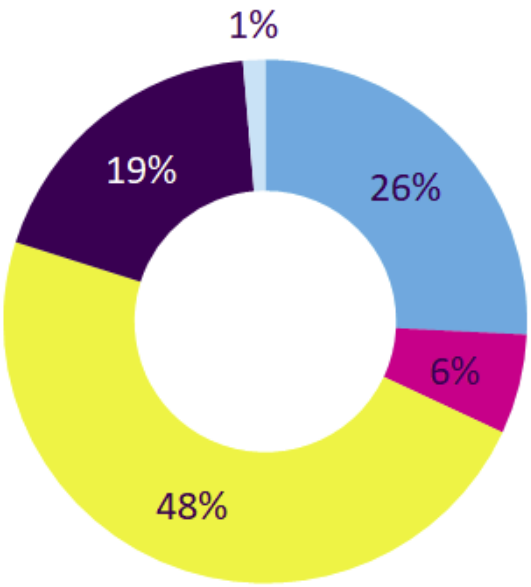
Cancer Zone

Climate Zone

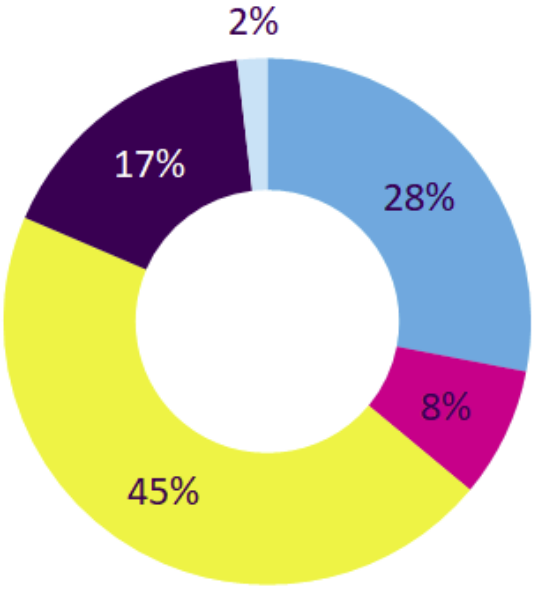
Themes of follow up questions

Follow up questions submitted by students are coded according to their theme. The charts show the proportions of questions in each theme.

RSC funded zones



All zones in which RSC members took part



STEM topics · Working scientifically · Careers and education · Personal · Event/Other

Feedback and impact

Researcher feedback

Feedback surveys are sent to researchers after taking part in the activity. Data looks at responses received between March and December 2023.

Time spent

When asked how the time spent in chats compared with their expectations before taking part, there was a relatively even split between people taking part in more (31%), fewer (30%), and the same as expected (39%).

Those who took part in more chats than anticipated often reported finding the chats to be fun and engaging and wanting to take part in more. They found the time slots flexible to fit around work, and the chats easy to drop in to.

> *It was easy to fit chats in around my work schedule without reducing my productivity.*
> **Emmajay, Molecule Zone**

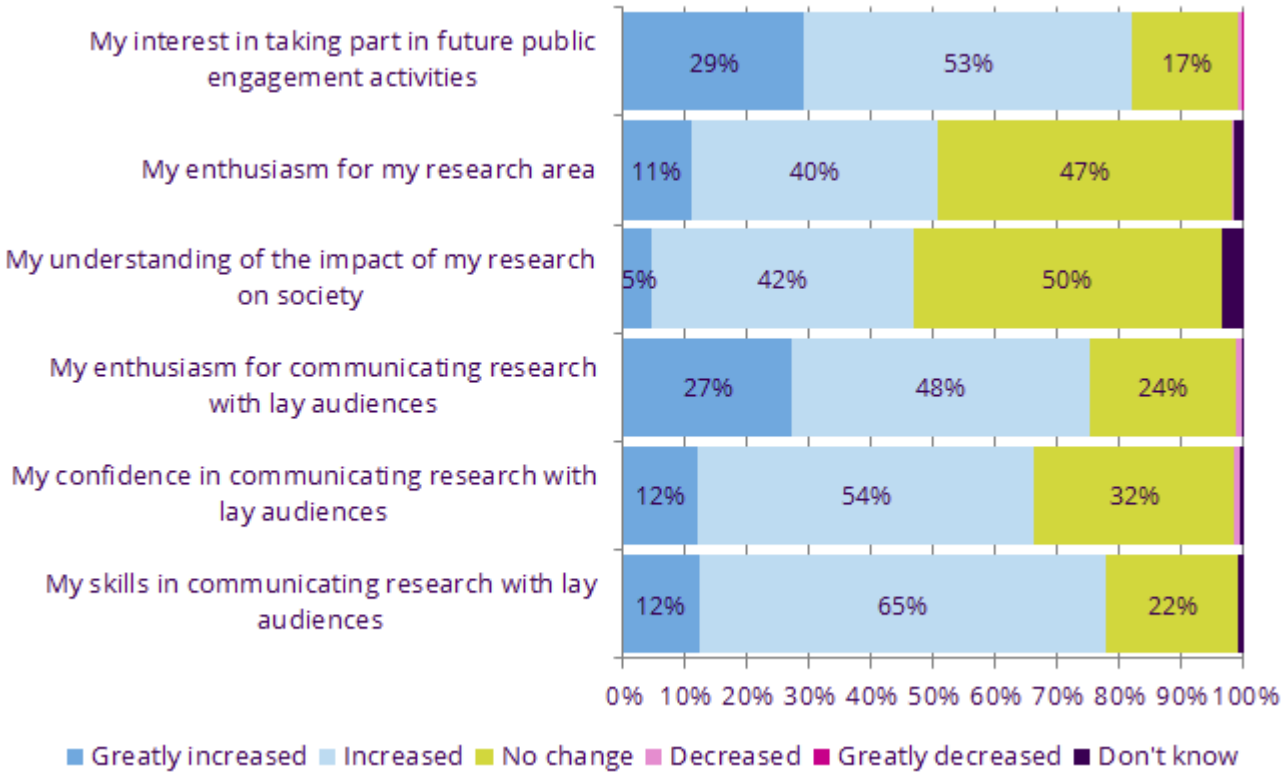
> *I found [the chats] easy and enjoyable and they fitted in so well with my day that I found myself accepting invites whenever I could.*
> **Sharron, Low Carbon Zone**

> *I wasn't sure I'd be able to answer questions quickly and concisely, especially because it's been a long time since GCSE / A-levels.*
>
> *However, after doing a couple of the chats I found that I really enjoyed the variety of questions and fast paced nature of the chats and I did as many as I could.*
>
> **Andrew Lyon, Climate Zone**

Scientists who took part in fewer chats than expected most commonly reported outside scheduling conflicts.

Skills impact

Researchers were asked how taking part in *I'm a Scientist* had impacted their skills, confidence, and enthusiasm for public engagement. The activity had the most positive impact on participants' communication skills (78% reported an increase) and on enthusiasm for communicating research with lay audiences (75% reported increase). 82% of respondents reported increased interest in taking part in future public engagement activities.



Comments and comparison to other public engagement activities

Commonly, scientists commented on the flexibility of the activity, and relatively low time commitment compared to other activities. Researchers also highlighted the advantages of the pseudo-anonymity of the activity — not seeing the students face-to-face — encouraging them to ask the questions that were important to them. Other researchers commented on the high number of schools and students with whom they were able to engage.

I really enjoyed it because it was easy to do along with my usual work because it was online (I did not have to travel anywhere for it). Also I felt that the engagement was a lot better as it was online.
Clara Zehe, Molecule Zone

The online web-text platform made it easy to schedule engagement into my normal working day rather than having to take half or a full work day off to take part in public engagement
Sarah, Molecule Zone

It's very different from face-to-face events like delivering a lecture in a school or participating in a "Pint of Science" event. The Q+A format works really well!
Martin McCoustra, Molecule Zone

It takes away some of the barriers from a face to face situation, for example it makes it easier for shy students to participate and prevents one or two students dominating the discussion.

The chat format is more spontaneous, it can capture what the student is really thinking. This is because the sort of filters you'd apply in a face to face situation don't tend to be applied when typing. I also think it makes the opportunity accessible to many more students because it can be done online and from anywhere so no travelling is required by students or scientists.

The other benefit is that students get a much briefer and concise answer (hopefully!) than they would in a face to face environment because we have to think and type quickly!

Andrew Lyon, Climate Zone

It was easy to fit chats in around my work schedule without reducing my productivity.
Emmajay, Molecule Zone

It was different because I usually take part in person so the chat format was new and interesting. It was more comfortable for the students to ask their questions and enabled greater focus.
Dr Maryam Sani, Molecule Zone

This is my 3rd event. I really enjoy it, particularly as I can easily fit it around work and life.
Amy Stockwell, Climate Zone

Overall satisfaction

94% of researchers reported that they would take part in a future *I'm a Scientist* activity. 95% would recommend the project to a colleague, 52% already had.

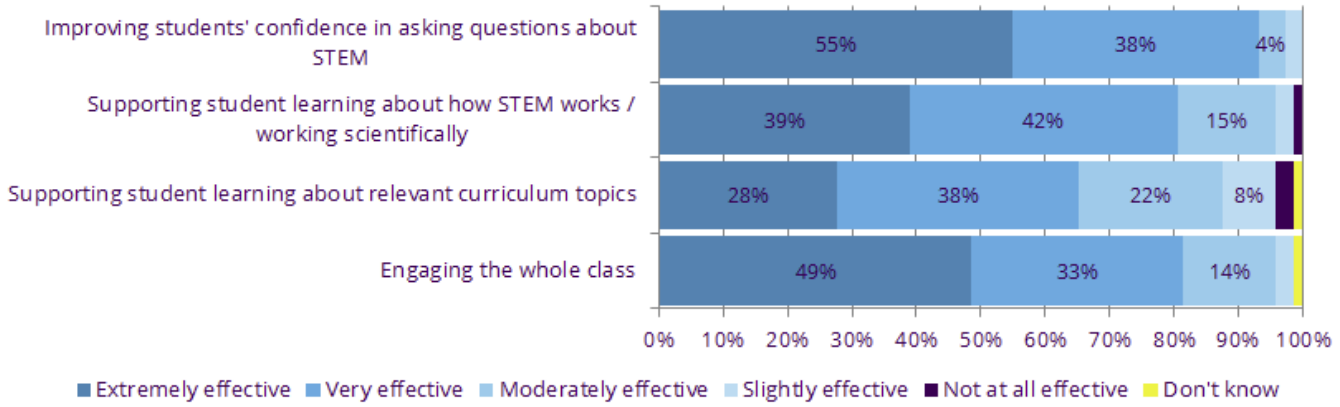
Teacher feedback

Feedback surveys are sent to teachers after taking part in the activity. Data looks at responses received between March and December 2023.

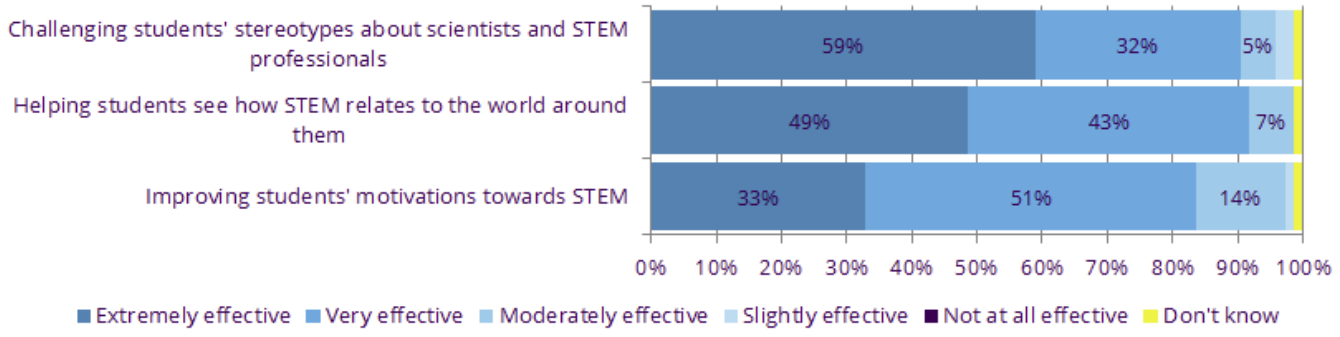
Effectiveness of the activity

Teachers were asked to rate the effectiveness of the activity relative to supporting student learning, attitudes and motivations, and careers awareness.

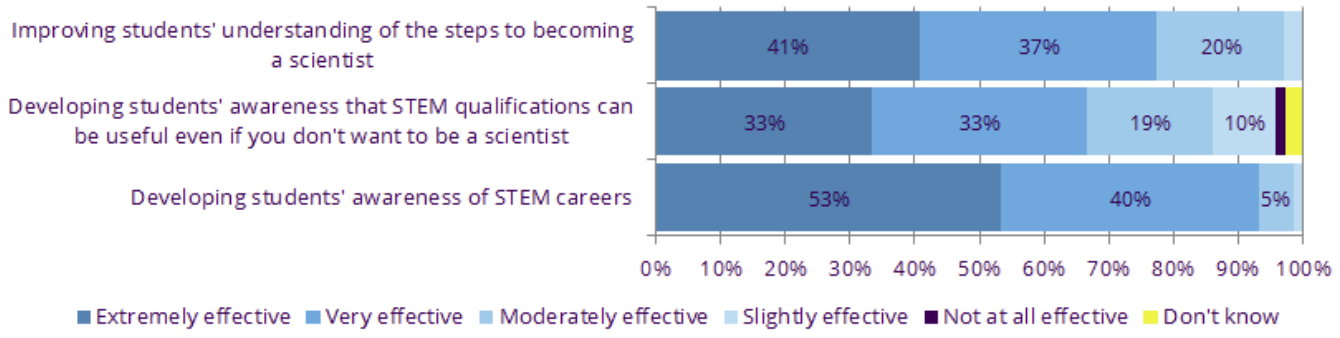
Student learning



Attitudes and motivations



Careers awareness



Comments

The enthusiasm emanating from the scientists themselves was infectious. I only have 3 students in this group so the conversation that initiated between the scientists hooked my students in nicely. The scientists then took the lead from the students and it made them feel really included. Initially they were worried about asking "stupid" questions but the scientists really responded brilliantly and made them feel like they were good questions after all!

Another aspect of the benefit was the range of specialisms the scientists were working in. My students have very little idea of the work that is happening out there in academia and so to be able to find out what people were working on, and what gets them excited, was fantastic! The students have talked about "Mike C" several times since the chat. Some have begun to doubt their UCAS choices!

Gemma

This program is highly effective & I am extremely grateful to everyone involved in making it happen. The children are excited and engaged & never made to feel that any question is too basic or silly.

Excellent resource, user friendly and GDPR conscious. All scientists present were quick to respond and my students really enjoyed it. We will do it again and i will link sessions to parts of their course as well as careers etc
Sarah Shuttleworth

Children were engaged & interested throughout. They were excited to get responses to their individual question, no matter how (ir)relevant to the scientists' speciality! The scientists were extremely open & approachable; no question was too basic!

They realised they were real people!
Hannah Povey [in response to a question on why engagement levels were higher than expected]

Our engagement is low due to being a CAMHS provision but those who did engage gained invaluable insights that will be life changing
Ms Gilkes

I'm a Scientist *is fantastic as it is text chats our pupils are not nervous about being on camera [or] having to talk face to face.*
Jo Wetherill

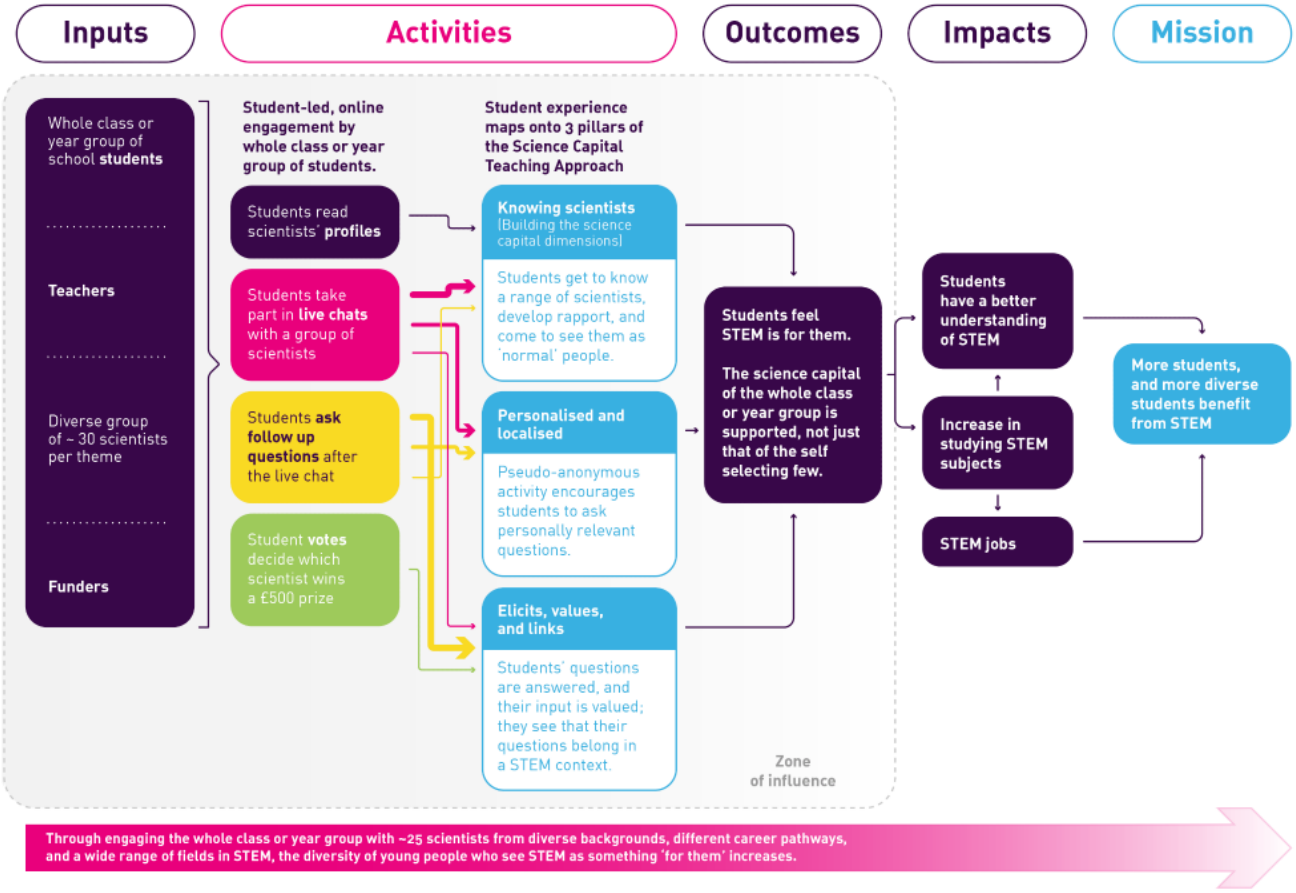
They can give free-responses and ask anything they are interested in. I think they enjoy the autonomy. They also feel privileged to be able to chat directly with people they view as 'important'!!!
Zoe Davison

Overall satisfaction

97% of teachers reported being likely or very likely to take part in a future *I'm a Scientist* activity. 99% were likely to recommend the activity to a colleague, 77% already had.

Supporting Science Capital

Theory of Change



Read our Theory of Change in more detail: about.imascientist.org.uk/theoryofchange/

I'm a Scientist, Supporting Science Capital

In 2019 Jen DeWitt, PhD, an independent research and evaluation consultant, and member of the core team developing and applying the concept of science capital, conducted an evaluation of IAS to see how the experience might support students' science capital.

The research comprised student focus groups, teacher interviews, surveys and analysis of content generated on the IAS site including transcripts of live chats and questions asked by students.

The evidence produced by this research demonstrates that the experience of IAS maps onto elements of the Science Capital Teaching Approach. In turn, this supports science capital-related outcomes of participating in IAS.

The research discussed in the following section applies to the IAS project as a whole.

Read the full report (PDF):
about.imascientist.org.uk/files/2019/11/IAS-Science-Capital-Main-Report-Sep-2019.pdf

Background: Science capital

Science capital[4] is a set of resources that helps individuals engage and identify with science. Young people with higher levels of science capital are more likely to see science as 'for me' and to choose to study science subjects at a higher level.

The Science Capital Teaching Approach (Godec, King, & Archer, 2017)[5] aims to enhance young people's engagement with science, supporting them in seeing science as relevant to their lives and 'for me'.

The foundation of this approach involves broadening what counts in the science classroom: creating a learning environment where all students feel able to offer contributions from their own experiences and interests. The approach also consists of three main pillars:

1. **Personalising and localising:** Going beyond contextualising, to connect to the actual experiences, understandings, attitudes and interests of young people.
2. **Eliciting-valuing-linking:** Inviting students to share knowledge, attitudes and experiences; recognising these as having value; and connecting this back to the science.
3. **Building the dimensions of science capital:** Considering the eight dimensions when developing activities, lessons or programmes.

Supporting science capital

The research found evidence that IAS provides support for four of the science capital 'dimensions':

- **Science literacy** (Dimension 1)
- **Seeing science as relevant to everyday life** (Dimension 2)
- **Knowledge about the transferability of science/science qualifications** (Dimension 3)
- **Knowing people in science-related jobs** (Dimension 7)

Science literacy (Dimension 1)

By providing the opportunity to ask about science content, taking part in IAS contributes to science literacy.

Seeing science as relevant to everyday life (Dimension 2)

Because students can ask questions of interest to them personally, taking part in IAS can enhance science-related attitudes and values, helping students to see science as relevant to their everyday lives.

[4] ucl.ac.uk/ioe/departments-and-centres/departments/education-practice-and-society/science-capital-research
[5] discovery.ucl.ac.uk/id/eprint/10080166/

Knowledge about the transferability of science (skills, knowledge, qualifications) (Dimension 3)

When students ask about qualifications, participation may improve their knowledge of the range of jobs that science can lead to.

Knowing people in science-related jobs (Dimension 7)

Most importantly, however, IAS provides an opportunity to get to know scientists — about the paths they took to their current work, about a range of aspects of their work (e.g. travel, teamwork) and about their lives outside of work. Students may even discover that scientists are not all 'super geniuses' — that they are normal individuals, albeit with interesting jobs.

In sum, IAS is personally relevant to students and their lives, elicits and values students' questions and experiences, and provides support for building dimensions of science capital. Together, its various elements create an environment in which students are able to contribute from their own interests and experiences.

Consequently, through participating in IAS, students can come to see science as personally relevant to them and to appreciate that scientists are 'normal people'. Moreover, ultimately it is the participating students who are in control — it is their votes that determine the winner.

This environment, we believe, reinforces that the arena of *I'm a Scientist* is one in which it is students' valued and valuable opinions that count the most. Together, then, the elements of IAS can support students' science capital, meaning IAS has an important role in helping young people see that science just might be 'for me' which, in turn, can contribute to nurturing science aspirations.

Contact

***I'm a Scientist, Get me out of here* is produced by:**

Mangorolla CIC
7–9 North Parade Buildings, Bath, BA1 1NS
01225 667 922

Shane McCracken, Director
shane@mangorol.la

Josh Doyle, Evaluation and data
josh@mangorol.la