

EngineeringUK
INSPIRING FUTURES TOGETHER

School report

How teachers engage
with STEM outreach

The School Report briefing series draws on research conducted with 800 STEM teachers from across the UK in August 2024. The purpose is to understand how STEM teachers engage with STEM outreach activities: how they find out about them, what the barriers are to accessing outreach and which students take part. STEM outreach is important to give opportunities and experiences to young people who would not normally have them. For subjects like engineering, which is not included in the curriculum, outreach is an important avenue for young people to gain subject or career knowledge.



8 IN 10 STEM TEACHERS indicated their school had taken part in STEM outreach in the last academic year.

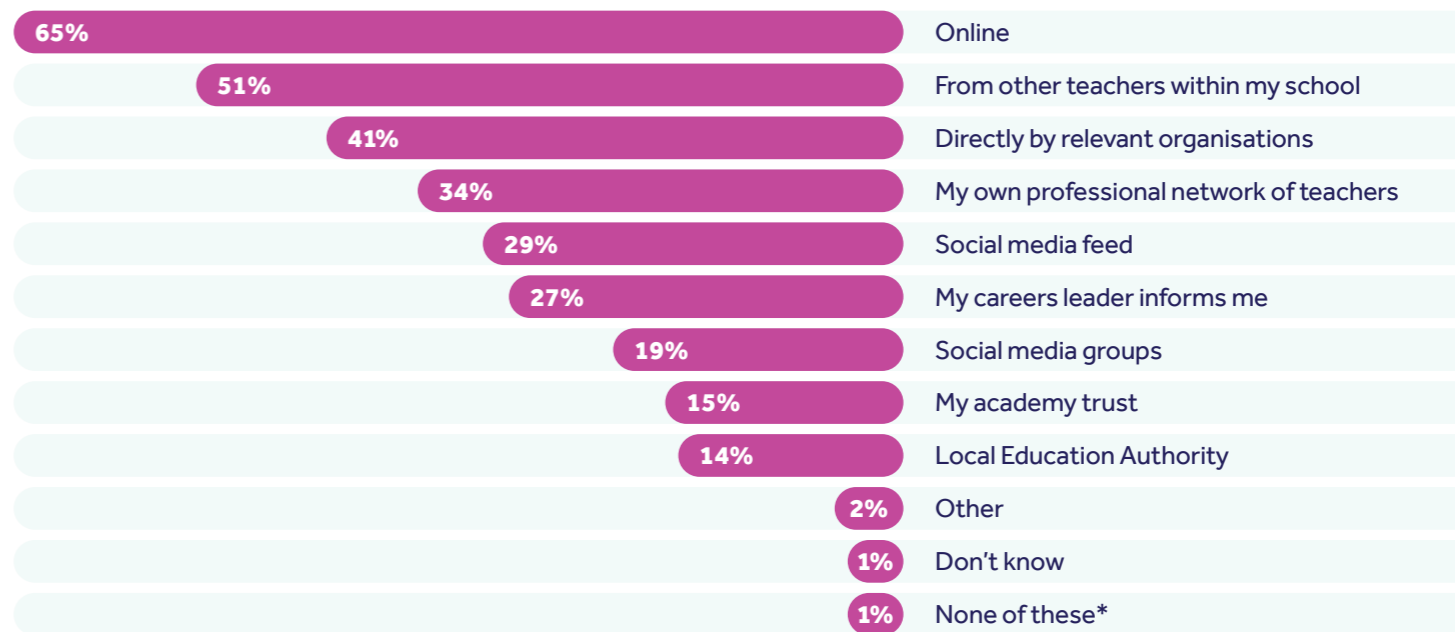
Teachers highlighted the importance of STEM outreach organisations and their marketing and online presence. They indicated they found STEM outreach activities online (65%), directly by relevant organisations (41%), social media either via their feeds (29%) or in groups they are part of (19%). In total 4 in 5 (81%) respondents found STEM outreach activities online via one of these methods.

Professional networks also proved to be an important way that teachers find out about STEM outreach activities. Teachers and careers leaders in their school were sources for 51% and 27% of teachers respectively, and other teachers from their networks accounted for 34%.

These findings show the importance of both traditional professional networks and more direct online marketing. Providers can look to use these existing teacher networks to amplify their opportunities, something that is clearly already happening in an informal way.

Engagement

How STEM teachers find out about STEM outreach activities



*I don't look for information about STEM or engineering outreach activities

“Not enough time to deliver curriculum so must prioritise high quality activities or tried and tested or well-reviewed activities.”



“Not enough money for transportation. Not enough money for cover to release teachers.”



“With GCSE courses taught over 2 years and current A level[s], the breadth and volume of content needed to deliver is constraining on time for broader activities.”



“Money. Many free activities have been missed as we can’t afford to take students and hire a coach”

“Time constraints and demands from other curriculum subjects which worry about losing curriculum time.”



Barriers for STEM outreach activities

ALTHOUGH a high proportion of STEM teachers who responded indicated their schools had engaged with STEM outreach in the last academic year, many indicated that their schools had faced barriers in doing so. Only 7% of teachers said they had not experienced any barriers to providing STEM engagement activities.

Funding (52%) and time (49%) were the major barriers highlighted, while just over a fifth (22%) indicated support staff constraints. In total, 79% of respondents highlighted one or more of these school issues as a barrier

Some teachers also highlighted that the associated additional costs of booking STEM outreach

activities were a barrier, including hiring a cover teacher or travel for out of school activities.

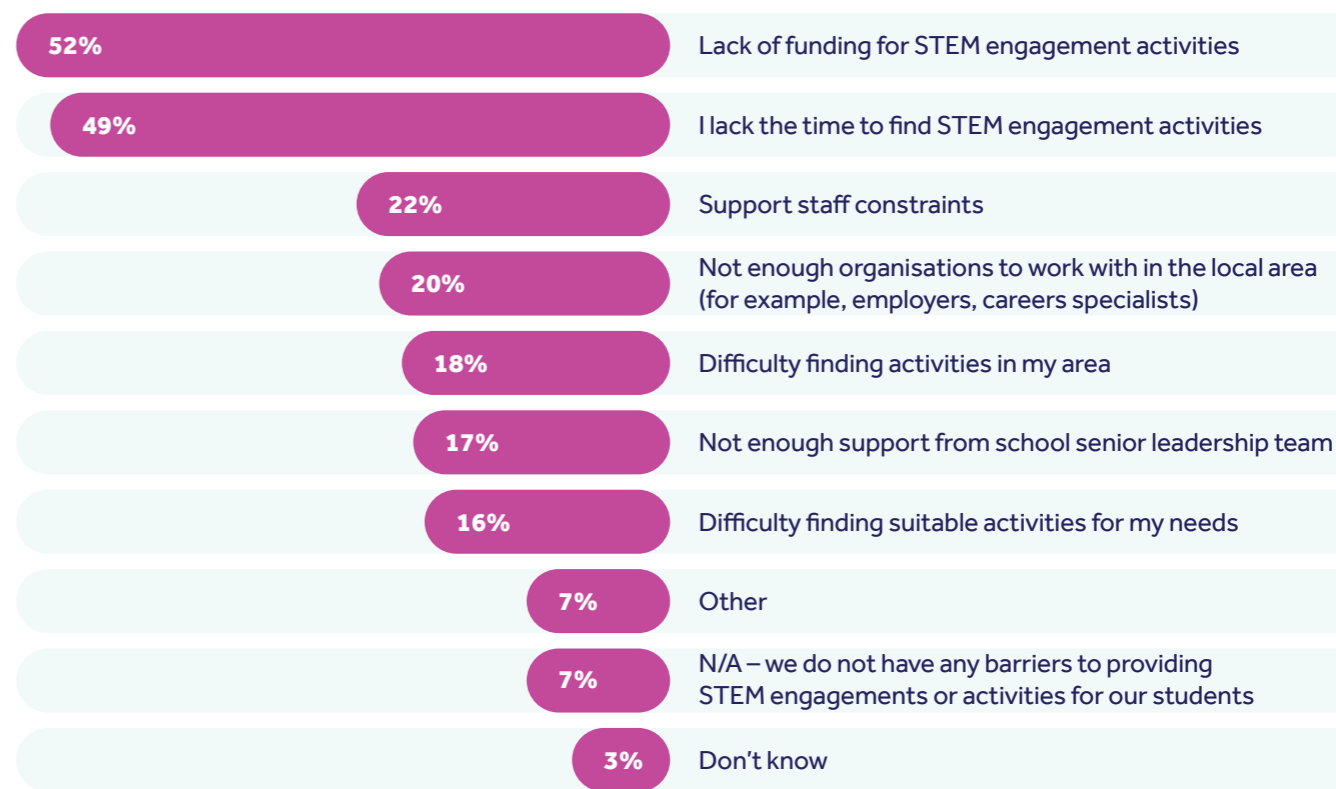
Being unable to find suitable outreach was also selected by a sizable group of respondents (38%). Reasons included: difficulty finding suitable activities in their area (18%), not enough organisations to work with locally (20%) and difficulty finding suitable activities for their needs (16%). This indicates that while time and funding are key, issues around access also need to be addressed.

Just under three quarters of respondents (73%) indicated their schools offered a STEM Club (61%) and or a Climate Action Club (23%). With just over a quarter (27%) saying they didn't run either of these clubs in their

school. Teachers highlighted similar issues of time and resources as a barrier to running these clubs. 81% of teachers whose schools didn't run either of these clubs highlighted a lack of time for teachers to run them. A further 27% highlighted support staff constraints.

When asked about how easy it is to schedule off-timetable STEM activities, around a third indicated it would be difficult or extremely difficult (31%). Of these, most highlighted similar issues around time and financial constraints. Additionally, teachers highlighted the pressures of delivering the curriculum, with a lack of support from SLT and other subject teachers to release students.

Barriers to providing (more) STEM engagement activities or events



Who takes part

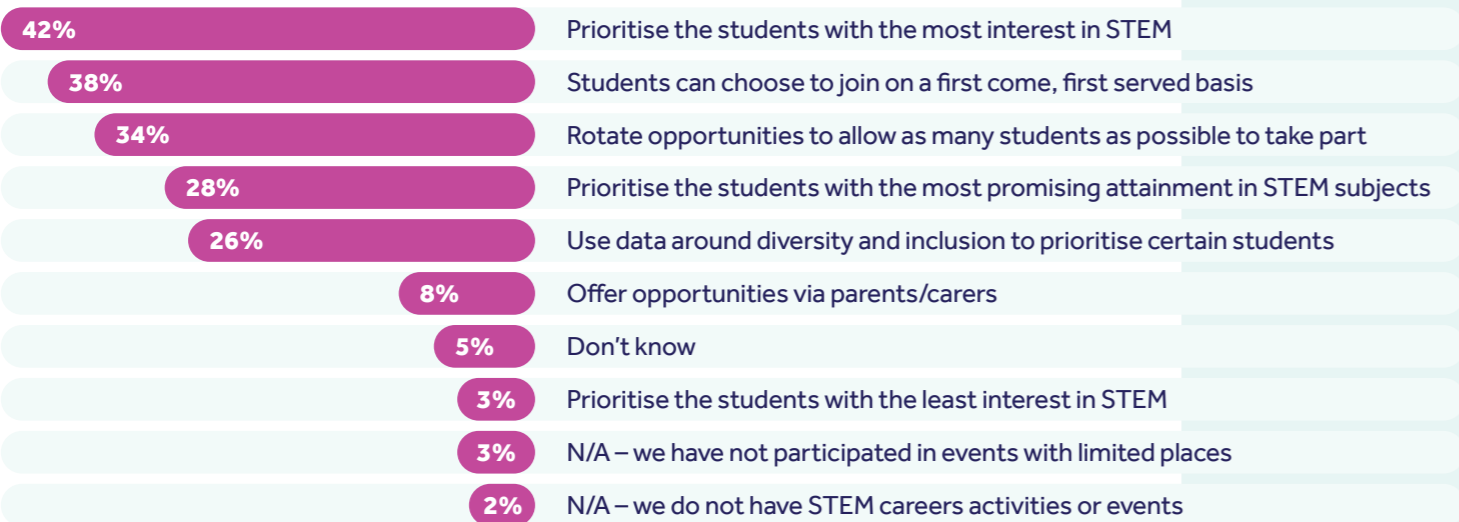
DESPITE STEM outreach being widely delivered in the respondents' schools in the last academic year, teachers and schools are often required to select students, especially when places are limited.

Many teachers prioritise students with the most interest in STEM (42%), or let students join on a first come, first served basis (38%). Prioritisation based on attainment was also a popular way of selecting students (28%). 71% of teachers said they selected students by one or more of these methods. This is likely to result in similar participation as highly STEM-engaged young people are more likely to be aware and keener to participate in these opportunities. By contrast only 3% of teachers said they selected students with the least interest in STEM.

Beyond interest, self-selection and greater perceived suitability, around a third said they rotate opportunities to allow as many students as possible to participate. Around a quarter of respondents use data around diversity and inclusion to prioritise certain students. This is encouraging, given we know how underrepresented certain demographic groups are in the engineering and technology workforce. It would be interesting to further understand if this is led by the schools themselves or by the outreach organisations due to funding arrangements.



How teachers prioritise participation for STEM engagement activities with limited places



Conclusion

IT IS ENCOURAGING to see so many teachers engaging with STEM outreach in the last academic year. Teachers are finding these activities predominantly online, directly from providers, and through their own professional networks. Despite this, barriers to engagement remain for the vast majority of teachers. Funding and time are the biggest barriers highlighted by teachers, with the curriculum and demands of delivering it also impacting on opportunities young people have accessing STEM outreach, particularly outside the classroom. For subjects like engineering and technology, which do not have a strong presence in the curriculum, this could impact on young people's knowledge and perceptions.

Recommendations for providers and funders

- Reach teachers where they are – online through social media or through available websites like Neon
- Use teacher ambassadors who are already engaged with your activity to promote to others in their networks
- Support with bursaries to ensure schools with the tightest budgets aren't missing out, including bursaries to support cover and travel, not only direct participation in the activities
- Promote inclusion of underrepresented groups