Evaluation of Explorify

Final report for STEM Learning and the Primary Science Teaching Trust

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CFE research

Acknowledgments

We would like to express our sincere gratitude to all in the primary science community who contributed to this research.

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Established in 1997, CFE is an independent not-for-profit company specialising in the provision of research and evaluation services across the broad fields of well-being, education and economy.

Contents

Executive summary

Explorify is a free digital resource consisting of a comprehensive set of engaging activities and supporting resources for primary teachers, promoting children's learning in science. Created by the Wellcome Trust and launched in 2017, the activities are designed to stimulate curiosity, discussion and debate in primary classrooms. In 2021, responsibility for the management, ongoing development and delivery of Explorify was transferred to STEM Learning in partnership with the Primary Science Teaching Trust (PSTT). Wellcome continue to support the website financially through a significant grant.

The uptake and reach of Explorify has significantly increased across the UK since STEM Learning and PSTT assumed responsibility for the resource, with 141,000 registered website users as of the end of June 2024. STEM Learning and PSTT have successfully upheld the Explorify brand and have further expanded the suite of high-quality resources that have demonstrable impacts on educators and pupils. Explorify is used extensively both within and outside of science lessons by educators, who are passionate about the resources and their potential for teacher and pupil development. Teachers actively promote Explorify and its benefits within their networks.

This independent report by CFE Research presents the findings of a two-year process and impact evaluation of Explorify, which explores teachers' awareness and use of Explorify and the outcomes and impacts of the resources on pupils and educators (teachers, science leaders and senior leaders from educational settings across the UK and home educators).

Evaluation approach

The evaluation draws on two online surveys of teachers, science leaders, senior leaders and home educators across the UK, which were disseminated in 2023[1] and 2024 and achieved 598 and 1421 responses, respectively. The focus of this report is on the 2024 findings; however, comparisons with the 2023 survey results are included where applicable. Depth interviews with six science leaders and two Explorify Champions were carried out in each year (16 in total), along with four teacher interviews.

[1] https://www.stem.org.uk/all-news/explorify-evaluation-report-2023

Key findings

– 96% of educators recommend and promote Explorify both within their own schools and via their primary science networks.

We heartily recommend Explorify [to teachers] and certainly when I've done my observations of other teachers, it appears in every science unit within school.

Science Leader

Since 2020, evidence suggests that as well as being used in science lessons, there is an increasing trend for using Explorify outside of formal science lessons with 64% using it during other subject lessons, 52% using it as part of registration or tutorial time and 43% using it during other times in the school day, for example lunch and break times.

Impact on educators

– **99%** of educators using the teacher support area find it a valuable form of CPD.

– **87%** report that Explorify has positively impacted on their teaching practice.

– **80%** agree that they more frequently encourage children to predict what will happen when they carry out a science investigation.

– **78%** agree that they more frequently encourage children to take part in class discussions about science because of using Explorify.

– **75%** agree that they feel more confident in their science subject knowledge.

– **74%** agree that they enjoy teaching science more since using Explorify.

– **72%** agree that they feel more confident teaching science since using Explorify.

– **60%** agree that they feel more confident to undertake a formative (ongoing) assessment of children in science.

– **46%** of teachers report spending less time on planning science lessons since using Explorify.

Science is the subject that I have feared the most…I'm not very confident in the subject, it's not something that I'd naturally gravitate towards. So, I think having Explorify as a base and being able to make sure you are using the correct vocabulary, you are doing the right things and seeing that it is having an impact, is valuable.

Early Career Teacher

Pupil impacts

– **96%** of educators report that Explorify positively impacts their pupils, with teachers who use it in their classes more than once a fortnight seeing the most impact on pupils.

– Educators agree that children's engagement in science lessons has increased:

99%

agree that Explorify has encouraged children to engage in discussions.

81%

agree that children enjoy science lessons more since using Explorify.

Pupils love it. I think "Odd One Out" gives children the confidence that they don't have to give the right answer [from the outset of the activity]

Teacher

Children's science knowledge and skills have also improved because of the use of Explorify:

– **81%** agree that children's science knowledge has improved.

– **80%** agree that children's scientific vocabulary has improved.

– **79%** agree that children's scientific reasoning when answering questions has improved.

– **78%** agree that children's ability to build connections between different scientific concepts has improved.

– **75%** agree that children make connections between science and their everyday lives more easily.

– **63%** agree that children's ability to link science to other subjects has improved.

Educators report improvements among children in other areas because of the use of Explorify**:**

77%

agree that children's speaking skills have improved.

74%

agree that children's overall confidence has increased.

56%[2]

agree that children's listening skills have improved.

[2] The survey statement about listening skills was added to the 2024 survey.

Educators who use Explorify more than once a fortnight, compared with educators who use it less frequently, report a greater impact on pupils' enjoyment of science lessons, listening skills, and confidence.

Explorify is an inclusive resource that can benefit children of all backgrounds and abilities equally. Educators also report that it can have even more positive impacts on some pupil groups:

43%	**42%**	**31%**	**23%**
report a more positive impact on SEND children.	report a more positive impact on children below the national average achievement in literacy.	report a more positive impact on children with English as an additional language (EAL)	report a more positive impact on children from disadvantaged backgrounds/in receipt of Pupil Premium.

Introduction

This report presents the findings of an independent evaluation of Explorify conducted between 2022 and 2024. It explores educators' awareness and use of Explorify, its strengths and any challenges experienced by those who use it. It also identifies the outcomes and impacts of Explorify on science leaders, classroom teachers, pupils, and schools as a whole and how Explorify is bringing about these changes.

About Explorify

Explorify is a free digital resource of engaging creative science activities and supporting resources for primary teachers.[3] It was created and launched by the Wellcome Trust in 2017 to stimulate curiosity, discussion, and debate about science in primary classrooms. In 2021, responsibility for the management, development, and delivery of Explorify was transferred to STEM Learning and the Primary Science Teaching Trust (PSTT). Wellcome continue to support the website financially through a significant grant which ends in September 2024.

Four Explorify Engagement Leads were employed for two years from January 2022 to develop and disseminate content and to raise awareness of Explorify. The latter is supported by Explorify Champions, a network of voluntary advocates. The vision for Explorify continues to be that it is a trusted resource for teachers and school leaders, which supports them to offer an inspiring and engaging science curriculum for young children. It builds the confidence of teachers by improving their subject knowledge and highlights how to use the activities effectively in the classroom.

Approach

Data and insights for the evaluation were collected via surveys and depth interviews conducted at two points. The first data collection was undertaken from December 2022 to April 2023 and the findings were published in a 2023 interim report.[4] The second took place between January and May 2024 with the subsequent findings providing the focus for this report.

Online survey of educators

In both 2023 and 2024, STEM Learning invited all those registered with Explorify to take part in the survey via email. The survey was also promoted via STEM Learning newsletters and a link to the survey was included in a pop-up on the Explorify website.

Individuals could complete one or both surveys. Responses were received from educators (teachers, science leaders and senior leaders from educational settings across the UK and home educators). In 2023, 598 survey responses were received.

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[3] https://explorify.uk

[4] https://www.stem.org.uk/all-news/explorify-evaluation-report-2023

In 2024, the number of responses increased to 1,421.[5] Because of a technical issue with the 2024 survey, the base is lower for the pupil impact questions. An analysis by nation was not undertaken as the sample size from Scotland, Wales, and Northern Ireland was not sufficiently large to be statistically significant. The key characteristics of each sample (e.g., educational setting, job role, and gender) are similar, but a lower proportion of respondents to the 2024 survey report that they have a science or STEM-related qualification (Appendix 1).

Modifications were made to the 2024 survey to gather wider feedback on new content. New questions exploring the perceptions of the "Teacher Support" area, which supports teachers' continued professional development and/or learning CPD/CPDL, and how Explorify activities support science teaching in the early years were added. Questions about how science is taught in primary schools; the educators' level of confidence to teach science, maths and English; and engagement in CPD/CPDL were removed to ensure that the survey remained a reasonable length and did not overburden respondents.

– On average, respondents to the 2024 survey had been using Explorify for 2.9 years.[6]
– Almost a fifth of the 2024 respondents (19%) had been using Explorify for five or more years.

The responses to questions that were included in both surveys are compared where applicable throughout this report. However, note that any differences in the findings could be the result of several factors, including, but not limited to, the changes in Explorify. Where relevant, the survey findings are also compared with CFE's earlier evaluation of the outcomes and impacts of Explorify on behalf of the Wellcome Trust.[7] An analysis of the comparisons between the perceptions of science leaders and non-science leaders and frequent and non-frequent users is included in this report with the significance reported at $p < 0.5$.

[5] 2023 survey: 585 respondents (98%) worked in a primary school, 7 respondents (1%) worked in an alternative setting for children aged 4–11 years, and 6 respondents (1%) were home educators. 2024 survey: 1,400 respondents (98.5%) worked in a primary school, 6 respondents (0.5%) worked in an alternative setting for children aged 3–11 years, and 15 respondents (1%) were home educators. Home educators were not required to respond to questions focused on science teaching in schools, so throughout this report, the survey will be referred to as the "teacher survey" and the survey respondents will be collectively referred to as "teachers." Sub-group analysis by the "Science Leader" role and the other teachers who are "non-Science Leaders" will be clearly specified.

[6] Note that the questions about length of time using Explorify were not the same in the 2024 survey as in the 2023 survey and therefore not directly comparable.

[7] CFE Research (2020) Evaluation of the Primary Science Campaign. Published online by The Wellcome Trust: https://cms.wellcome.org/sites/default/files/2020-10/evaluation-of-the-primary-science-campaign-2020.pdf

Depth interviews

In all, 12 semi-structured interviews with science leaders working in primary schools were carried out over two years. The interviews explored science teaching in schools, teachers' use of Explorify and the impact of the resource on teaching practice and pupils' enjoyment and understanding of science. Six interviewees were identified via a recall question in the 2023 survey. In 2024, two interviewees were recruited directly from the survey. The other four teacher interviewees were recruited via a general email to all Explorify users.

Interviews also took place with four Explorify Champions recruited by STEM Learning to explore how they support teachers to use Explorify through science CPD/CPDL for new and experienced qualified teachers, as well as through initial teacher education programmes. The interviews also captured their perceptions of what works well with Explorify, how the resource could be improved and the impact of the Champions' role on teachers and themselves.

Teachers' experience of using Explorify

Take-up of Explorify

Monitoring data collected by STEM Learning indicates that the uptake of Explorify and reach across the UK have increased since the programme was transferred to STEM Learning and PSTT. Before the transfer, there were 51,000 registered Explorify users. By the end of May 2023, the figure had risen to 97,500; at the end of June 2024, it stood at 141,000 - an increase of 45%. Primary school teachers are the largest user group (102,000), followed by science leaders and trainee teachers. There are 4,500 home educators using the site. Between March 2023 and June 2024, the number of primary schools with at least one registered Explorify user increased by 12%, from 13,962 to 15,573. This represents 73% of all UK primary schools. However, the percentage of primary schools using the site varies across the UK nations:

– England = 78%
– Wales = 64%
– Scotland = 53%
– Northern Ireland = 31%

In addition, there are now more than 1,200 UK secondary schools using the site, representing 18% of the schools in this phase.

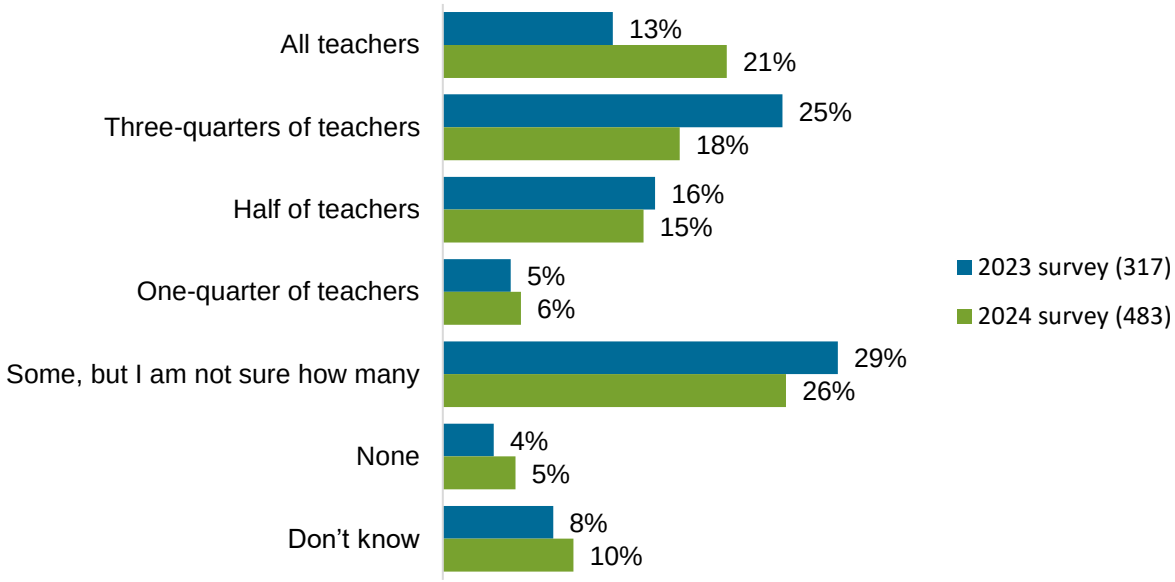
Science leaders report that teachers are introduced to Explorify in a variety of ways, such as recommendations from other teachers, other schools within their Multi Academy Trust (MAT), primary science networks, CPD/CDPL delivered by the school, STEM Learning and science leaders, or because of working toward the Primary Science Quality Mark (PSQM). Explorify Champions recommend the use of Explorify in their termly updates to subject leaders. This encourages science leaders to familiarise themselves with the website and any new content and share it with their teaching staff. Explorify Champions encourage science leaders to practice using the resource with teachers to help develop their teaching practice.

> If you do it in staff training, you use it for developing pedagogy, that's all one to six of the recommendations in the EEF guidance[8].
>
> **Explorify Champion**

The take-up of Explorify activities varies considerably within schools. In the 2024 survey, 21% of science leaders report that all teachers in their setting use Explorify compared with 13% in the 2023 survey (Figure 1).

[8] EEF guidance reports summarise the best available research evidence on a particular aspect of teaching and learning and present actionable recommendations for practice. https://educationendowmentfoundation.org.uk/education-evidence/guidance-reports/primary-science-ks1-ks2

Figure 1: Science leaders' perceptions about the proportion of teachers that use Explorify activities in their classes (2023 survey base = 317; 2024 survey base = 483)



Initial motivations

The science leaders interviewed describe a range of motivations for engaging with Explorify. One interviewee wanted a resource to support early career teachers (ECTs) and teachers at their school who were not confident about teaching science. Explorify was perceived to be a particularly useful resource for these groups, as it provided them with ideas and activities to help them generate scientific discussions amongst pupils in the classroom.

I'd come across Explorify and I just felt it was a really nice way [for ECTs] to start dipping their toe into science or for maybe supporting more anxious teachers to teach science.

Science Leader

Another interviewee was attracted to Explorify, prior to its management by STEM Learning and PSTT, after seeing a demonstration during a Wellcome Trust CPD/CPDL session hosted a few years ago. They perceive Explorify activities as a way for pupils to engage with science concepts without the fear of "getting it wrong," allowing them to question each other and themselves.

[Science] is not about always knowing the answers, it's about asking questions and changing your mind, and I love the fact that [Explorify activities] are low stakes. Children can change their minds as they go through an activity.

Science Leader

Other interviewees report that they were initially motivated to use Explorify because of the user-friendly, accessible nature of the resource. They report finding it easier to navigate than some other free science resources available to schools.

It's just so easy to go on Explorify and filter down to your current topic.

Teacher

The high-quality, informative videos and background knowledge provided in Explorify to support teachers further motivates the interviewees to use Explorify for CPD/CPDL. These elements help to build teachers' confidence and helps them save time when lesson planning. A further motivation cited was that the resource was constantly evolving through the addition of new activities and support. This ensures that it remains relevant and aligned with changes to the science curriculum.

It's very easy to see the interface and activities. What I think has been good with Explorify is the depth that it goes into, in terms of resourcing, in terms of vocabulary, in terms of CPD, there are so many other elements to it that have developed into being incredibly useful for me.

Science Leader

Teaching science and use of Explorify

A majority of survey respondents report that classroom teachers teach science:

– 92% report that classroom teachers teach science.

– 4% report that a science teacher teaches science.

– 4% report that a combination of specialist science teachers and classroom teachers teach science.

Most schools report teaching science weekly throughout the year as a discrete 1-to-2-hour lesson. Survey respondents who engage with Explorify report using it in science lessons, as well as in a variety of other contexts:

– 96% use Explorify during science lessons.[9]

– 64% use Explorify during other subject lessons.

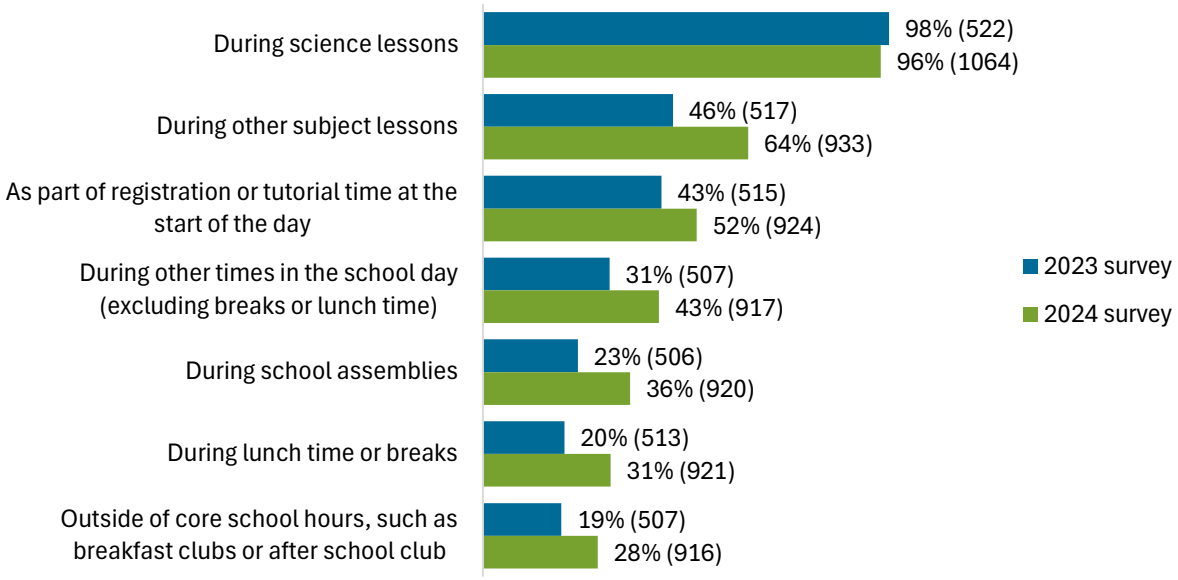
– 52% use Explorify as part of registration or tutorial time at the start of the day.

The 2024 survey respondents report using Explorify in contexts other than science lessons much more than those who responded in the 2023 survey (Figure 2 and the 2020 Wellcome report).

[9] 96% of the respondents to the science leadership and teaching survey evaluation of Explorify on behalf of the Wellcome Trust reported that Explorify was used during "science lessons" and 31% reported that the resource was used during "other subject lessons." - Wellcome Trust report (2020)

Interviewees further elaborated on the range of settings where Explorify was used, including during registration, at break times and at the end of the school day. Explorify is generally used in these contexts as a conduit between lessons to reinforce learning and support children's retrieval. Videos asking, "What's going on?" (for example, "Where does the water go when it falls on a plant?") are sometimes used to show the outcome of a practical investigation that might not be complete or fully understood by some pupils during the science lesson.

Figure 2: Contexts where teachers use Explorify (bases in parentheses).[10]



As science leaders became more familiar with Explorify, they advocate its use in other subjects to support the delivery of cross-curricular topics where appropriate. This helps to embed science across the school curriculum, including in literacy to support the development of scientific vocabulary and oracy skills, in numeracy; Personal, Social, Health, and Economics (PSHE); geography; art; and design.

> We can have a completely science-focused topic which runs through the whole term, and that leads into our literacy and maths. For example, we're doing the world of entertainment and looking at film, so we've been looking at light and how things are captured on images.
>
> **Science Leader**

> Science isn't just isolated. We do try, where we can, to make other cross-curricular links. We do rivers in geography at the same time as we do "changing states" in science because of the water cycle link.
>
> **Science Leader**

[10] Proportions collated for response options "not regularly," "every term," "every half term," "every month," "every two weeks," "every week or more," and "other frequency."

Explorify is also used to support home learning. For example, one science leader interviewee demonstrated Explorify to parents during a parent–teacher evening to show how they could perform activities at home with their child to support science learning and discussion beyond the classroom. Assemblies, wet playtimes and STEM clubs presented further opportunities for teachers to use Explorify activities, for example, a "Zoom In, Zoom Out," that fit with a particular topic that the children were studying at the time.

Teacher support area and Explorify CPD/CDPL activities

A third (36%) of respondents have used the teacher support area of Explorify. Of those respondents that have not, a lack of awareness is cited as the most common reason (75%). Just over one in ten (12%) respondents report not having the time to look at the teacher support area. Interviewees convey the same sentiment and report that despite being aware of and interested in using the support pages, they have limited time to do so.

Of the respondents who said that they *did* undertake the CPD activities for their own development:

– 66% use the teacher support pages, including "tackling the tricky bits" science topic guides.

– 58% use the topic-based planning support videos.

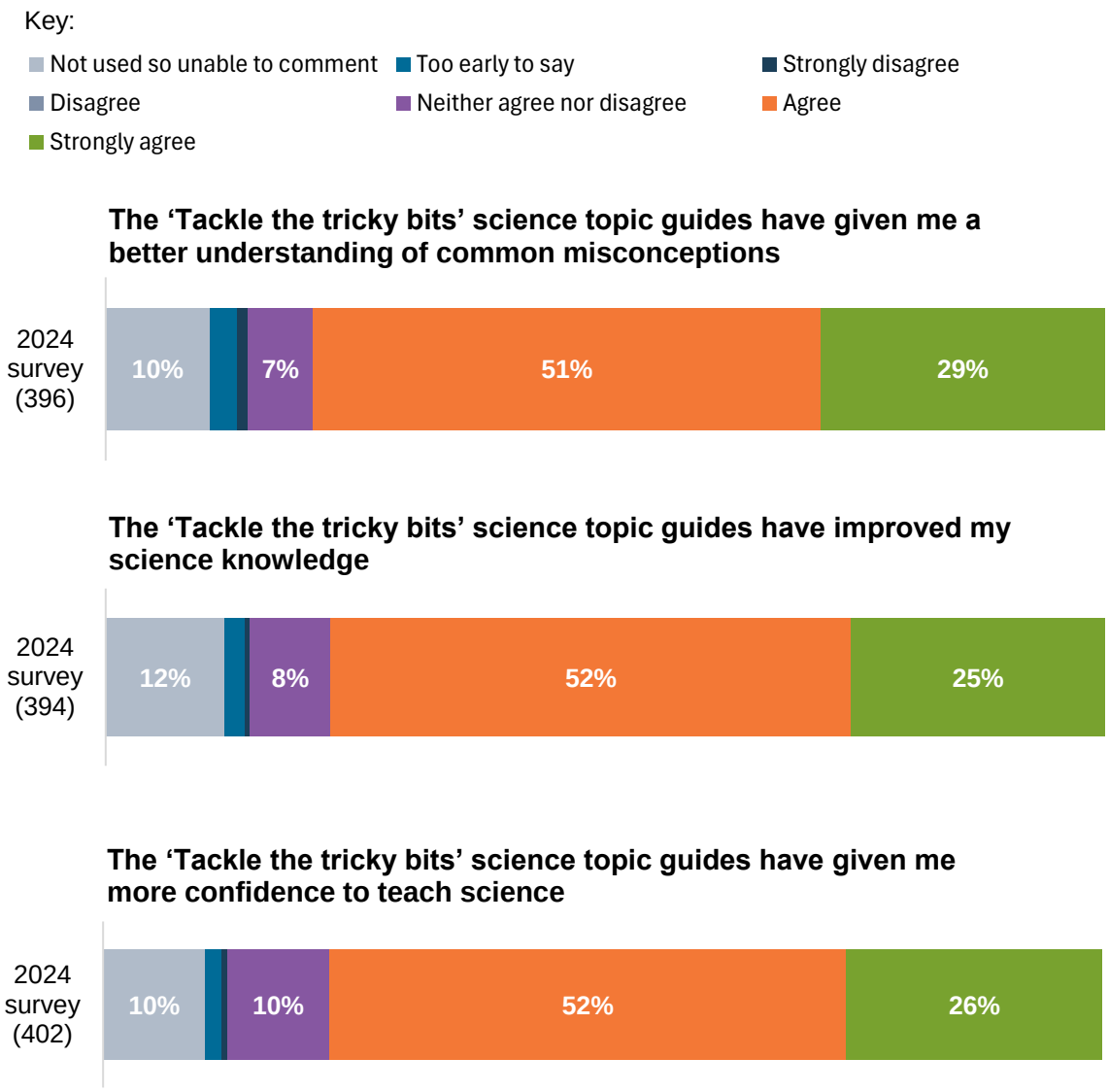
Most of these respondents found the support pages (99%) and videos (98%) a valuable form of CPD/CDPL, mirroring the 2023 survey findings. Additional insights from the 2024 survey show that of those who have used the teacher support area of the Explorify website (Figure 3):

– 80% strongly agree or agree that after using the "tackling the tricky bits" science topic guides, they now have a better understanding of common misconceptions.

– 77% strongly agree or agree that after using the "tackling the tricky bits" science topic guides, their science knowledge has improved.

– 78% strongly agree or agree that using the "tackling the tricky bits" science topic guides has improved their confidence.

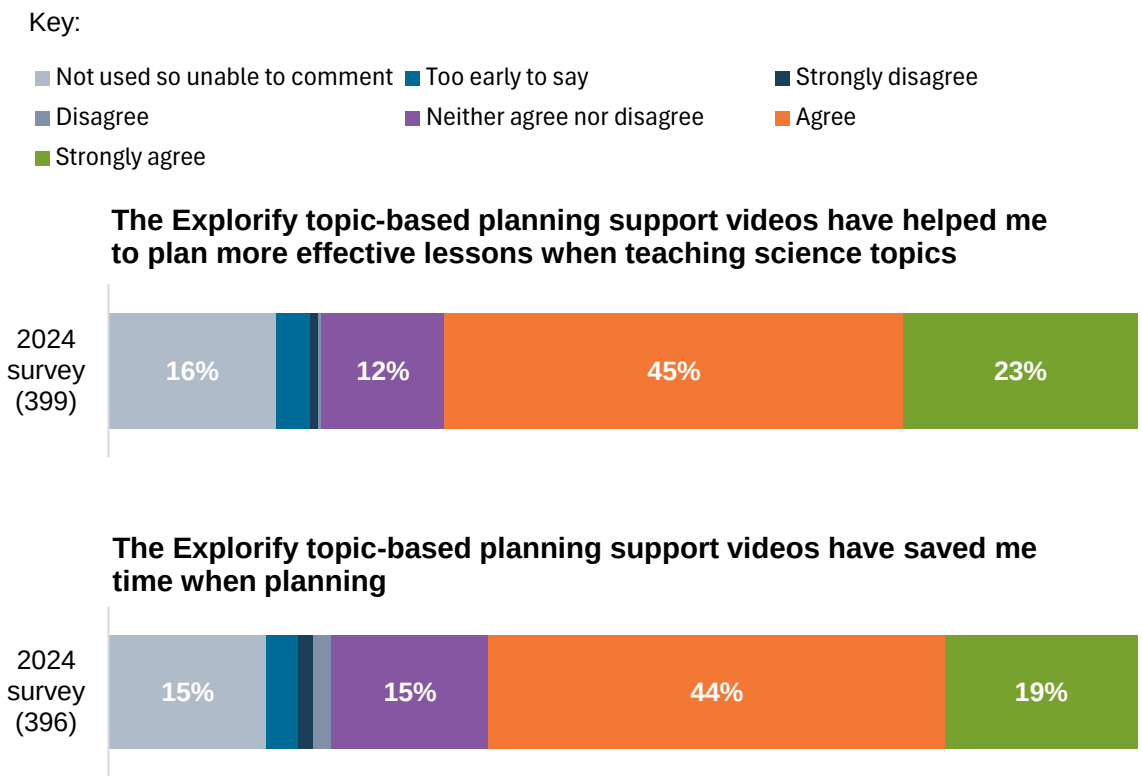
Figure 3: Extent of agreement about the impact of "Tackle the tricky bits" of the teacher support area on educators[11].



The topic-based planning support videos also have a positive impact on those using it. Around two-thirds strongly agree or agree that the videos have helped them to plan more effective science lessons (68%) and alleviated their workload by saving time when planning (63%). More than three-quarters also strongly agree or agree that the helpful reads support their teaching practice (77%) (Figure 4).

[11] Percentages of <5% were not included in these charts.

Figure 4: Extent of agreement about the impact of the Explorify topic-based planning support videos on educators.



Around one in five science leaders who responded to the 2024 survey have engaged with the Explorify Science Leader Toolkit (19%), which is comparable to the 2023 survey (21%). However, a considerably higher proportion of science leaders in the 2024 survey perceive it as a valuable resource (98%) than in the 2023 survey (56%).

According to science leader interviewees, the Explorify Science Leader Toolkit compares favourably with other CPD/CDPL because of the clear connections to the national science curriculum. Science leaders describe how they find the Toolkit useful for preparing and planning the science curriculum, supporting ECTs in their lesson planning and collecting feedback in pupil and staff surveys. They also report using the Toolkit for classroom observations and to signpost staff to other CPD/CDPL.

I think there are a lot of great suggestions on the Explorify website, from community links and plans, examples of how to do pupil and staff voice. They provide a good toolkit, which has enriched our curriculum.

Science Leader

Strengths of Explorify

Explorify is perceived by interviewees to deliver a positive user experience. The reasons why teachers value Explorify are summarised in Table 1 below:

Table 1: Reasons why teachers value Explorify.

Web platform	
Information is easy to find by topic and year group	"It was really simple to use and it doesn't involve lots of preparation, you can just click and go." **Science Leader** "Having everything line up, down to the wording, makes it very user-friendly for someone new coming in and if we can get them using it once or twice then that snowballs." **Explorify Champion**
Suggests future activities based on earlier searches	
Easily accessible for new teachers and clearly aligned to the curriculum	
Compares favourably to other web-based science resources	
Content	
Topics and enquiry maps link with the primary curriculum	"You can sort it by year group, or you can sort it by topic as well. You can just go in, and think 'Right, I'm doing Year 3 plants.' So, you can just go in and get all the Year 3 plants stuff that's coming up, so children are not repeating activities." **Science Leader** "It's developed massively since we first started using it…there's just loads to delve into. Which is why I quite like to keep the staff updated when something new comes along." **Science Leader** "It's helped them to develop the subject knowledge of children in early years and they are starting to use scientific vocabulary more regularly and it's not just the case that they're using it because that's the specific thing that they're studying at the time." **Science Leader**
Content supports the development of subject knowledge for ECTs and teachers without scientific training	
Specifically designed activities for children aged 3–5-years-old develop their scientific thinking and oracy	
New content is constantly added, which keeps the website fresh and stimulates new ideas	

<table>
<tr><th colspan="2">Activities</th></tr>
<tr><td>Fun and engaging</td><td rowspan="7">"I love the 'Zoom In, Zoom Out' activities. What they say in the early stages is: 'It's a leaf,' and as they develop their oracy skills and their scientific skills, they start to explain why they think it's a leaf." Teacher

"I'm having less marking to do; I'm having less planning to do and actually I'm getting to spend my time in lessons going round and listening to the children and talking to the children and observing the children." Science Leader</td></tr>
<tr><td>Encourages discussion and debate about science, which supports children's vocabulary development</td></tr>
<tr><td>Supports inclusion and removes barriers to learning</td></tr>
<tr><td>Accessible pre-prepared activities that alleviate teacher workload, saving them time on planning</td></tr>
<tr><td>The "Zoom In, Zoom Out" activity helps to develop children's scientific skills, e.g. observation and reasoning skills</td></tr>
<tr><td>The "Have you ever?" activity helps teachers explain abstract concepts and gives all pupils an opportunity to share their experiences</td></tr>
<tr><td>Teachers can use it to conduct formative and summative assessments</td></tr>
<tr><th colspan="2">Used across different settings</th></tr>
<tr><td>Activities can be built into science lesson plans and used as stand-alone activities in assemblies, tutor time, after school clubs and science clubs</td><td rowspan="2">"In history we have studied the Stone Age. This links perfectly to rocks and soils in science. We have that one distinct lesson a week but wherever we can we weave the subjects together, so that's a big push within school." Science Leader

"Staff see a task that maybe is part of the science lesson and then start to link it to other things, and then look at the background science and think, 'Oh, that would link to geography or history.'" Science Leader</td></tr>
<tr><td>Activities can be used in other subjects (e.g., to develop oracy and literacy and to link to history and geography)</td></tr>
<tr><th colspan="2">CPD/CPDL resources</th></tr>
<tr><td>Planning support videos—highly rated by most science leaders who direct classroom teachers to these videos</td><td rowspan="2">"I find that everything that we've had to add or change in our science lesson planning, we've been able to find in Explorify, so that's been really helpful."
Teacher</td></tr>
<tr><td>Science Leader Toolkit is helpful (but not extensively used)</td></tr>
</table>

Barriers to engaging with Explorify

Teachers report that they do not use the Explorify website because they are not teaching science or they do not have time to look at the Explorify resources before using them. [12]

As highlighted in the previous section, the most common reason why teachers did not engage with the teaching support area of Explorify is their lack of awareness of the teacher support area and a lack of time to use it. [13]

Most science leader interviewees from the 2023 survey reported that they did not have sufficient time to dedicate to the science leader role. This limited their ability to familiarise themselves with the CPD/CDPL areas of the website and disseminate resources to classroom teachers as regularly and effectively as they would like. This sentiment is not reflected by the science leaders consulted in 2024, although some do highlight the pressure placed upon classroom teachers to deliver a high volume of curriculum content in science lessons. Although the addition of new content is regarded as a strength, science leaders reflected on the time pressures teachers face and this can sometimes make it difficult for them to keep pace with the new resources as they are released. Consequently, one science leader reports that teachers in their setting could get "a bit overloaded with what's new" and rather than review the resources themselves, they tend to use Explorify as directed in pre-prepared lesson plans.

Recommending use of Explorify

Explorify is widely recommended to teachers by science leaders (Figure 5).

– 96% of science leaders would recommend and promote Explorify both within their own schools and via their primary science networks.

– 61% informally recommend the resource to "all" teachers in their school.

– 38% formally advocate the use of the resource by teachers in their school, e.g., by building it into schemes of work.

– 30% informally recommend Explorify to "some" teachers in their school, for example, through discussions with a specific group of teachers or during staff meetings.

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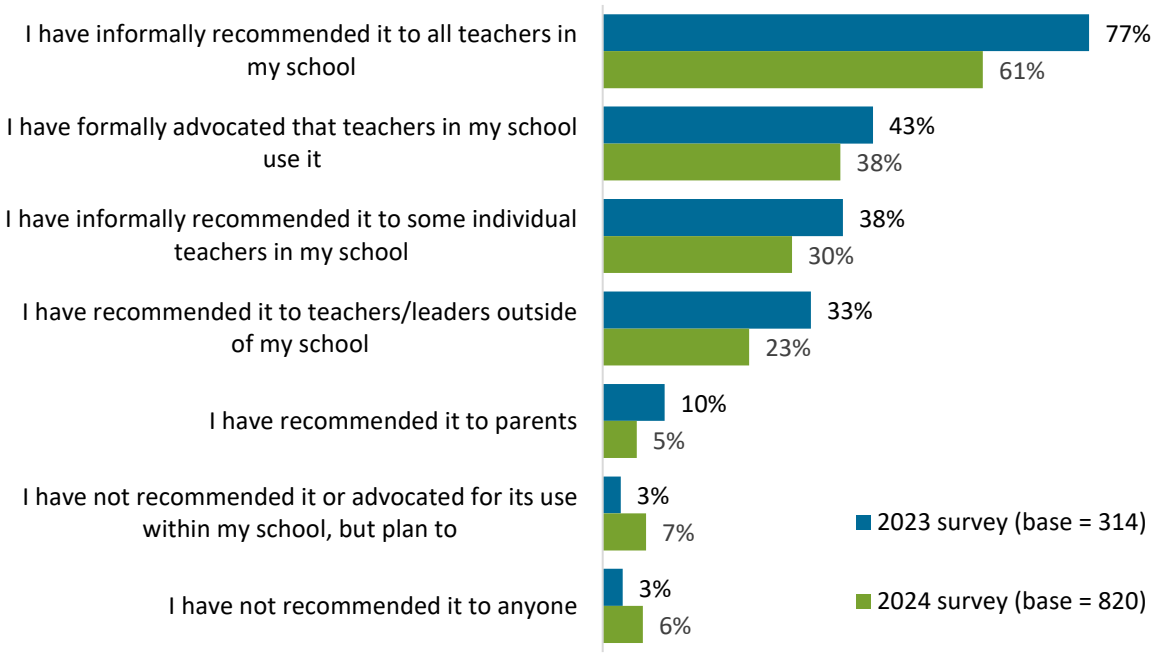
[12] "I don't understand what it is," 2023 survey = 3 (6%, base = 48), 2024 survey = 41 (12%, base = 344); not teaching science, 2023 survey = 3 (6%, base = 48), 2024 survey = 26 (7%, base = 344); "I do not have time to prepare to use these in lessons," 2023 survey = 7 (15%, base = 48), 2024 survey = 15 (4%, base = 344).

[13] "I have not had the time to look at the resources," 2023 survey = 32 (67%, base = 48); 2024 survey = 242 (69%, base = 352).

Figure 5: "In your role as a Science Leader, what methods have you used to recommend Explorify to others?"



Interviewees describe how they promote Explorify within their own schools and to other schools, usually within their MAT or school cluster. Explorify Champions, for example, showcase Explorify to science leaders at trust-wide events, emphasising its capabilities and versatility and encouraging them to cascade this information to classroom teachers in their setting. The Explorify Champions advocate that the resource is used incrementally by classroom teachers to prevent them from being overburdened.

> The best bit of Explorify is not just the amazing resources but the [background information]. I always say to science leaders, "Make sure you read that, make sure [you] share that with your staff, your teachers, and [ensure you are] reflecting on [your practice]."
>
> **Explorify Champion**

Science leader interviewees highlight specific Explorify activities in lesson plans that can be used by teachers when teaching a science topic. They also deliver regular Explorify CPD/CPDL sessions for teachers in staff meetings where they demonstrate how activities link to different topics.

> We will build Explorify into the curriculum through the unit plans and we will specifically highlight Explorify activities.
>
> **Science Leader**

Some science leaders report that they are developing a new science curriculum and are taking this opportunity to formally integrate Explorify into their schemes of work. They do, however, emphasise the importance of ensuring that teachers have autonomy and flexibility about when and how to use Explorify.

I think some direction is always needed, but I think that [Explorify] is a great tool that we can show to staff to say, "You're not going to go completely off on one tangent, but you're going to have the focus, and know what tasks you can pick."

Science Leader

I started using it within my class as a trial, and then it's literally within our curriculum now, and within our expectations within science teaching. I expect staff, as part of our practice, as part our science teaching within school to use it regularly within lessons.

Science Leader

Future development of Explorify

Explorify Champions identify areas of Explorify that could be further developed. One Champion suggests that science leaders could benefit from a "Help" section whereby Explorify could offer suggestions to specific questions—for example: "We're trying to develop [issue] in the science curriculum. How can Explorify help me with this?"– with options to click on examples.

Another Champion suggests that more curriculum-linked frameworks highlighting more explicitly what the measurable outcomes should be within each unit, could further assist science leaders to incorporate Explorify into their lesson planning. A distinction between beginner, intermediate and advanced Explorify users might also prevent science leaders and teachers from being overburdened by the amount of material that they can access at once. According to one Explorify Champion, this approach could help to ensure teachers develop meaningful pedagogy and use Explorify in the most impactful way.

One science leader also identifies the need for more information on short, cost-effective practical activities that can be done in the classroom when budgets and resources are more limited.

Impact of Explorify on educators

Most respondents to both surveys report that Explorify has had a moderate to high positive impact on their teaching (2023 survey: 93%, 2024 survey: 87%). Frequency of use was associated with stronger perceived, positive impacts on their teaching practice.

Impact on educators' practice

Respondents who report that Explorify has a positive impact on their teaching were asked to what extent they agree that the resource had impacted on specific aspects of their practice.

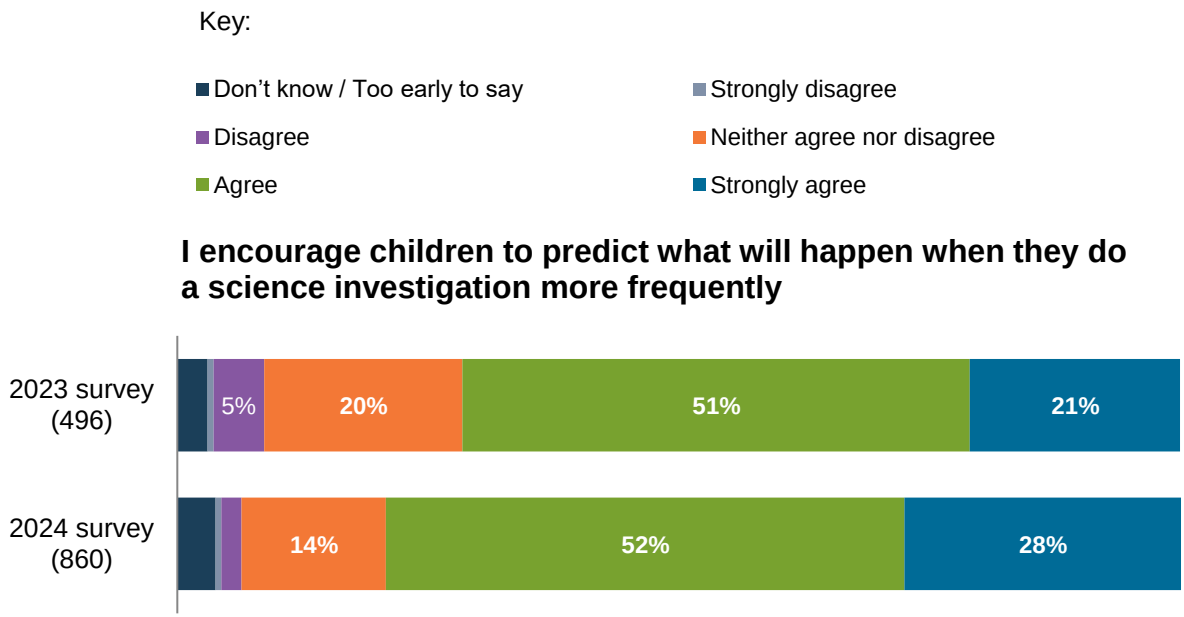
– 80% strongly agree or agree that they more frequently encourage children to predict what will happen when they conduct a science investigation.

– 78% strongly agree or agree that Explorify had led to them encourage children to participate in class discussions about science more frequently.

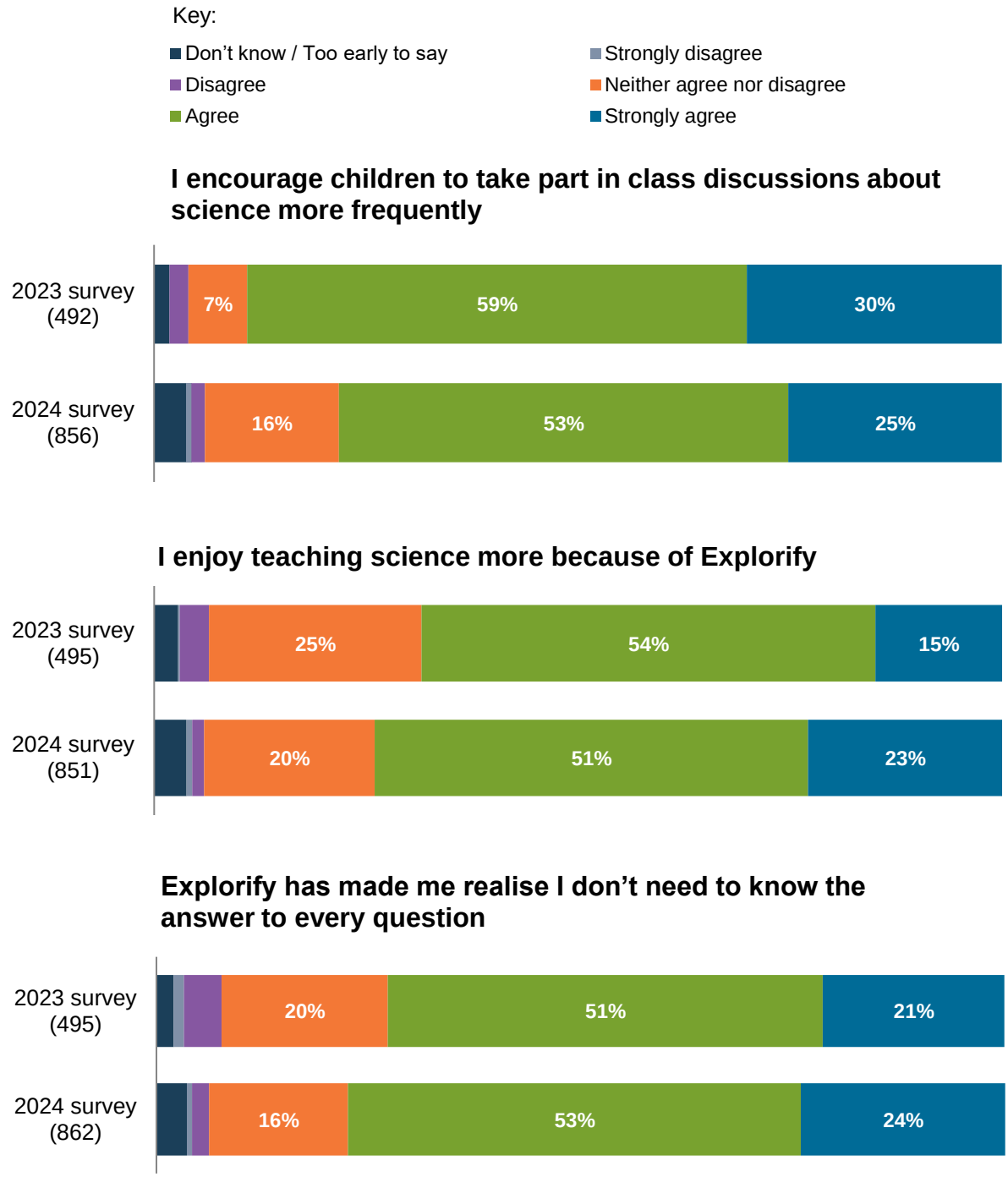
– 74% report that they enjoy teaching science more since using Explorify.[14]

– 77% strongly agree or agree that Explorify has made them realise that they do not always need to know the answer to every question.

Figure 6: Extent of agreement about the impact of Explorify on teaching practice among those who use Explorify and teach science where a "moderate" to "high" positive impact is reported.



[14] 93% of the respondents to the science leadership and teacher surveys as part of CFE's evaluation of Explorify on behalf of the Wellcome Trust strongly agreed or agreed that Explorify had led them to "more frequently encourage pupils to take part in class discussions about science," 80% strongly agreed or agreed that "Explorify had led them to enjoying teaching science more," and 67% strongly agreed or agreed that Explorify had "led them to more frequently encourage pupils to predict what will happen when they do a science investigation." - Wellcome Trust report (2020).



Frequent users[15] of Explorify are more likely to strongly agree that the resource has a positive impact on their teaching practice than infrequent users,[16] particularly among the 2024 survey sample.

[15] Respondents who use Explorify at least once a fortnight

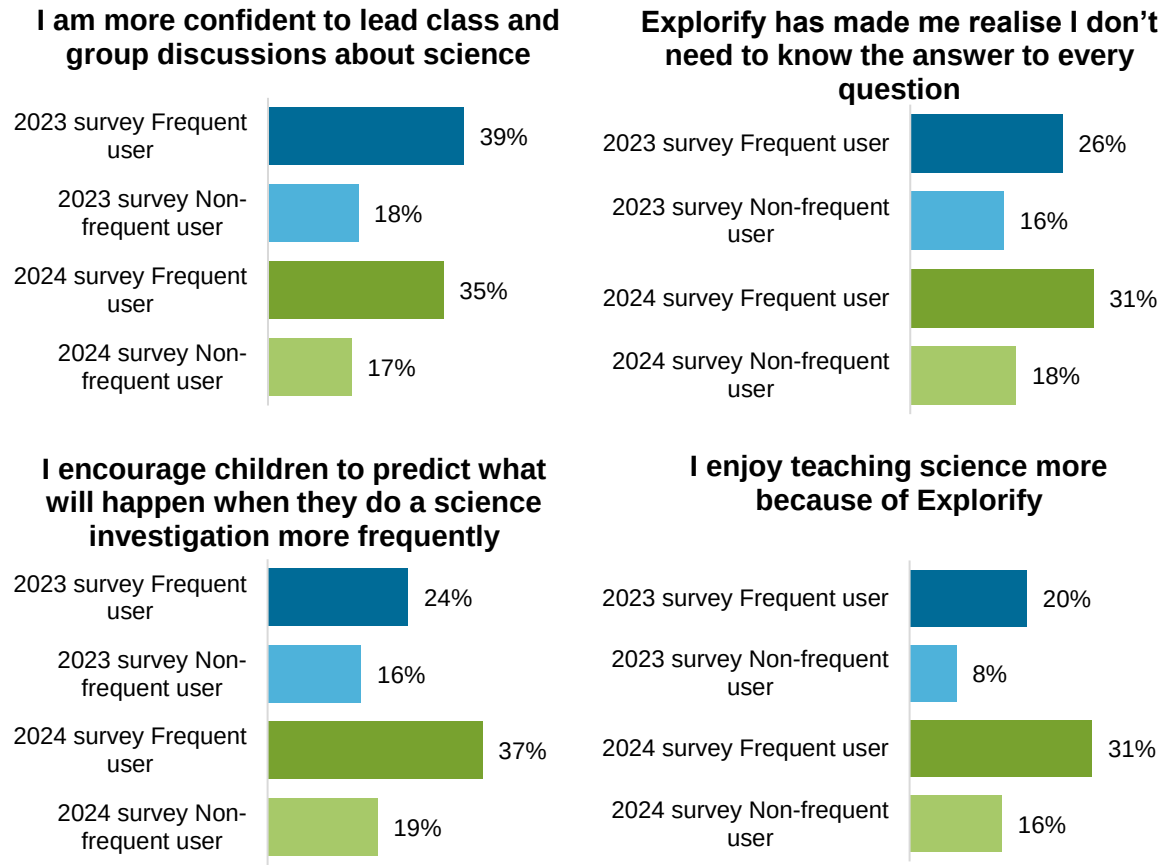
[16] Respondents who use Explorify less than once a fortnight

Twice as many frequent as infrequent users strongly agree:

- They encourage children to participate in class discussions about science more frequently.
- Explorify helps them to encourage children to predict what will happen in science investigations.

A similar pattern is observed in relation to enjoyment of teaching science: 31% of the frequent users report that they enjoy teaching science more because of Explorify, compared to 16% of infrequent users (Figure 7).

Figure 7: Extent of those who strongly agree about the impact of Explorify on teaching practice among "frequent" and "non-frequent" users (bases: 2023 survey frequent users = 288–290, non-frequent users = 204–208; 2024 survey frequent users = 400–406; non-frequent users = 432–438).



The science leader interviewees also agree that classroom teachers are more able to engage pupils in open-ended discussions because of Explorify use. This is particularly evident among those who are less experienced in teaching science.

> We watched a video "Who is Maggie Aderin-Pocock?" and she was explaining what made her choose a career in science and her lifelong love of science. This led to a discussion with the children around the careers available to them and the qualifications that she may have done."
>
> **Science Leader**

The teachers interviewed report that they draw on the background knowledge in Explorify to help them guide classroom discussions and encourage their pupils to ask questions and share ideas. Having access to this information reduces the pressure on teachers to "always have the answer" to every question that a pupil might ask and gives them confidence to support pupils to try and find out the answers for themselves. Teachers' improved confidence enables them to adopt a more flexible and exploratory approach in their science lessons, which contributes to higher levels of enjoyment of teaching the subject.

> My class love science and they will often ask me the most obscure questions and, rather than panicking and thinking, "I don't know the answer to this, I will try and encourage them to go and research themselves."
>
> **Teacher**

Impact of specific activities

The 2024 survey provides new insights into the Explorify content which has the most positive impact on teachers' practice. Most respondents strongly agree or agree (90%) that the background science in the activity guidance improves their understanding of what children need to know. Teachers also report that the guidance is useful for providing age-appropriate follow-up activities (85%).

New activities were added in 2023, specifically designed for staff working with children in Early Years (pupils aged 3 to 5 years).

- 73% strongly agree or agree that the guidance on age-appropriate follow-up activities was suitable for those working with children in Early Years classes.
- 70% strongly agree or agree that these tailored activities encourage them to use Explorify more often.
- 66% strongly agree or agree that the "Listen what can you hear?" activity improves children's listening skills.
- 66% strongly agree or agree that the "What just happened?" activity helps pupils to recognise and describe observations over time.
- 58% strongly agree or agree that links to suitable story books in the activity guidance are useful.

> [The new Early Years activities] have helped [teachers] to develop their subject knowledge because science isn't as discrete in Early Years. The activities have allowed science to raise its head a little bit more clearly.
>
> **Science Leader**

The interviews provide further insights into the impact of Explorify activities in an Early Years context on pupils' scientific understanding and skills. For example, interviewees report that the recording of a heartbeat in "Listen, what can you hear?" helps to develop children's listening skills and stimulates discussion about the body.

The images in “Zoom In, Zoom Out” helps younger pupils make connections between science and the real world, by encouraging them to “describe what they see,” this activity also supports the development of their oracy and reasoning skills. Teachers also report that other activities, such as “Have you ever?” also provides a mechanism for relating scientific concepts to children’s prior experiences. For example, one teacher, when talking about condensation, asked the class “Have you ever not been able to see yourself in a bathroom mirror?” This stimulated a discussion about how condensation formed on a mirror after a shower or bath.

It’s the hook at the beginning of the lesson, prompting that conversation about condensation before we even start talking about the key vocabulary, it just gets them thinking about their real-world experiences.

Teacher

Impact on educators’ confidence

Most respondents attribute their increased confidence in all aspects of their teaching to Explorify.

– 75% strongly agree or agree that they are more confident in their science subject knowledge.

– 72% strongly agree or agree that they feel more confident to teach science since using Explorify.[17]

– 69% strongly agree or agree that they are more confident in teaching skills to work scientifically (Figure 8).

Science leader interviewees agree that Explorify helps to increase the confidence of classroom teachers, particularly ECTs and those with less experience in teaching science. They observe that the “Tackle the tricky bits of science” topic guides can help to dispel the fears some have about teaching science by addressing gaps in their subject knowledge and giving them the tools to effectively support pupils in lessons.

Science is probably the subject that I have feared the most…I’m not very confident in the subject, it’s not something that I’d naturally gravitate towards. So, I think having Explorify as a base and being able to make sure you are using the correct vocabulary, you are doing the right things and seeing that it is having an impact, is valuable.

Early Career Teacher

[17] 64% of the respondents to the science leadership and teacher surveys as part of CFE’s evaluation of Explorify on behalf of the Wellcome Trust strongly agreed or agreed that Explorify “had increased their confidence to teach science.” - Wellcome Trust report (2020)

To a lesser extent, Explorify is also perceived to improve teachers' confidence to assess children's progress in science.

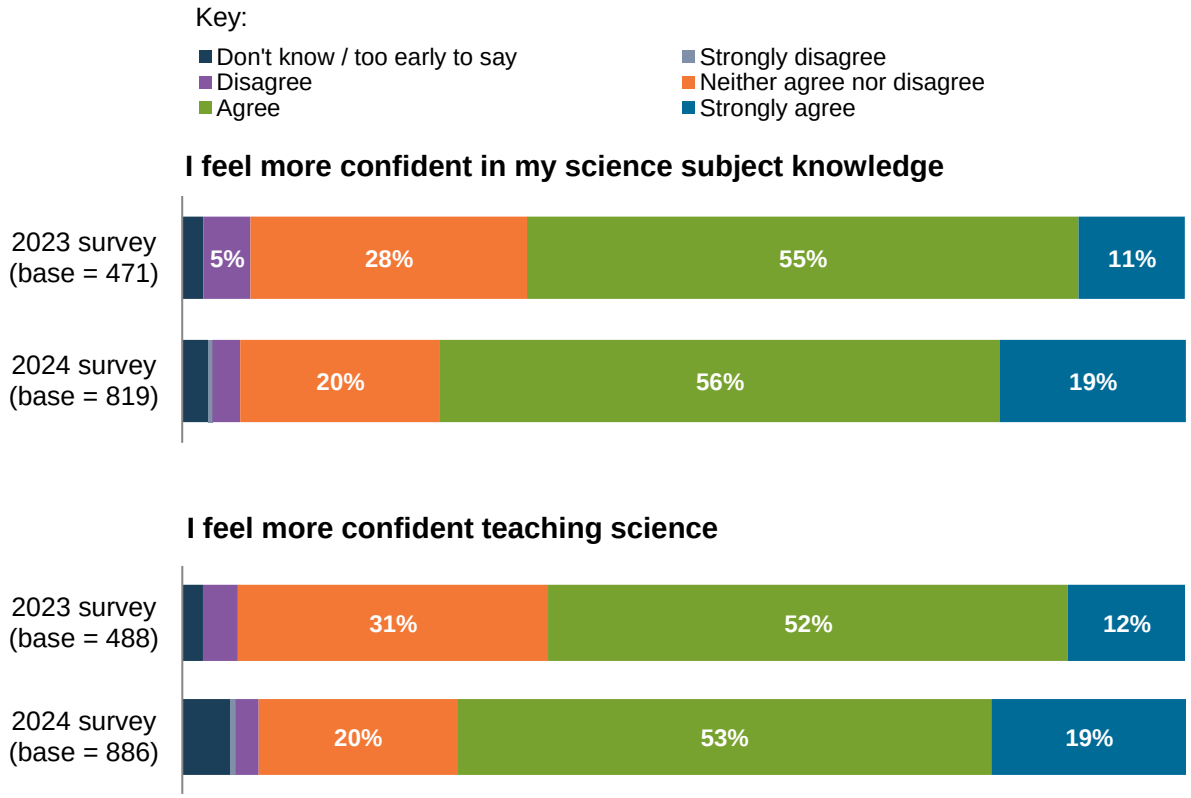
– 60% strongly agree or agree that they now feel more confident to undertake a formative (ongoing) assessment.
– 51% are more confident to undertake summative assessments since using Explorify (Figure 8).

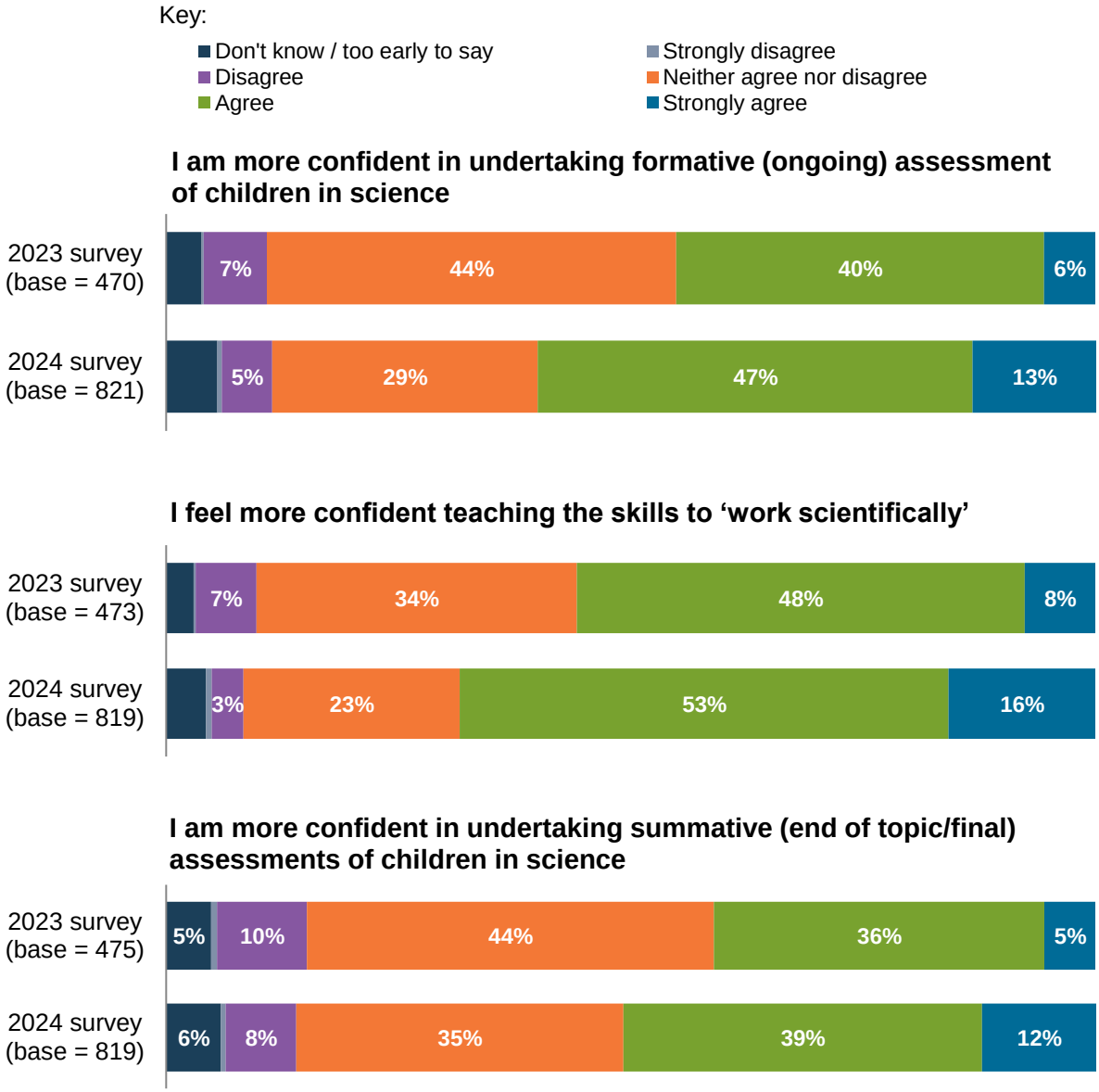
Science leader interviewees also highlight the benefits of using Explorify to enhance assessment practices, such as retrieval. Explorify activities are used to assess pupils' recall and understanding and identify gaps that need to be addressed before moving on to the next topic.

As an assessment for learning [Explorify] is good. If misconceptions have arisen, we can pre-empt a little bit more and try to eradicate as much as we can. It saves on planning time because we've got a one-stop-shop of where to go to for some of those retrieval exercises.

Science Leader

Figure 8: Impact of using Explorify on teachers' confidence for various aspects of teaching (for those who use Explorify and teach science and report a "moderate" to "high" positive impact).




Key:
Don't know / too early to say
Disagree
Agree
Strongly disagree
Neither agree nor disagree
Strongly agree
I am more confident in undertaking formative (ongoing) assessment of children in science
2023 survey (base = 470)
7%
44%
40%
6%
2024 survey (base = 821)
5%
29%
47%
13%
I feel more confident teaching the skills to 'work scientifically'
2023 survey (base = 473)
7%
34%
48%
8%
2024 survey (base = 819)
3%
23%
53%
16%
I am more confident in undertaking summative (end of topic/final) assessments of children in science
2023 survey (base = 475)
5%
10%
44%
36%
5%
2024 survey (base = 819)
6%
8%
35%
39%
12%

Wider impacts on educators' practice

Explorify encourages some teachers to spend less time on lesson planning and engage in CPD/CDPL science opportunities.

– 64% strongly agree or agree that Explorify supports them to plan science lessons more independently.

– 46% strongly agree or agree that they now spend less time on lesson planning[18] (Figure 9).[19]

– 43% strongly agree or agree that Explorify has led them to search for, or undertake, professional development about teaching and learning in science.

Interviewees provide some insights into the ways in which Explorify helps to reduce the amount of time they spend on lesson planning. For example, Explorify provides access to a wide range of activities and is easy to search. This reduces the amount of time that teachers spend looking for suitable activities to integrate into their lesson plans.

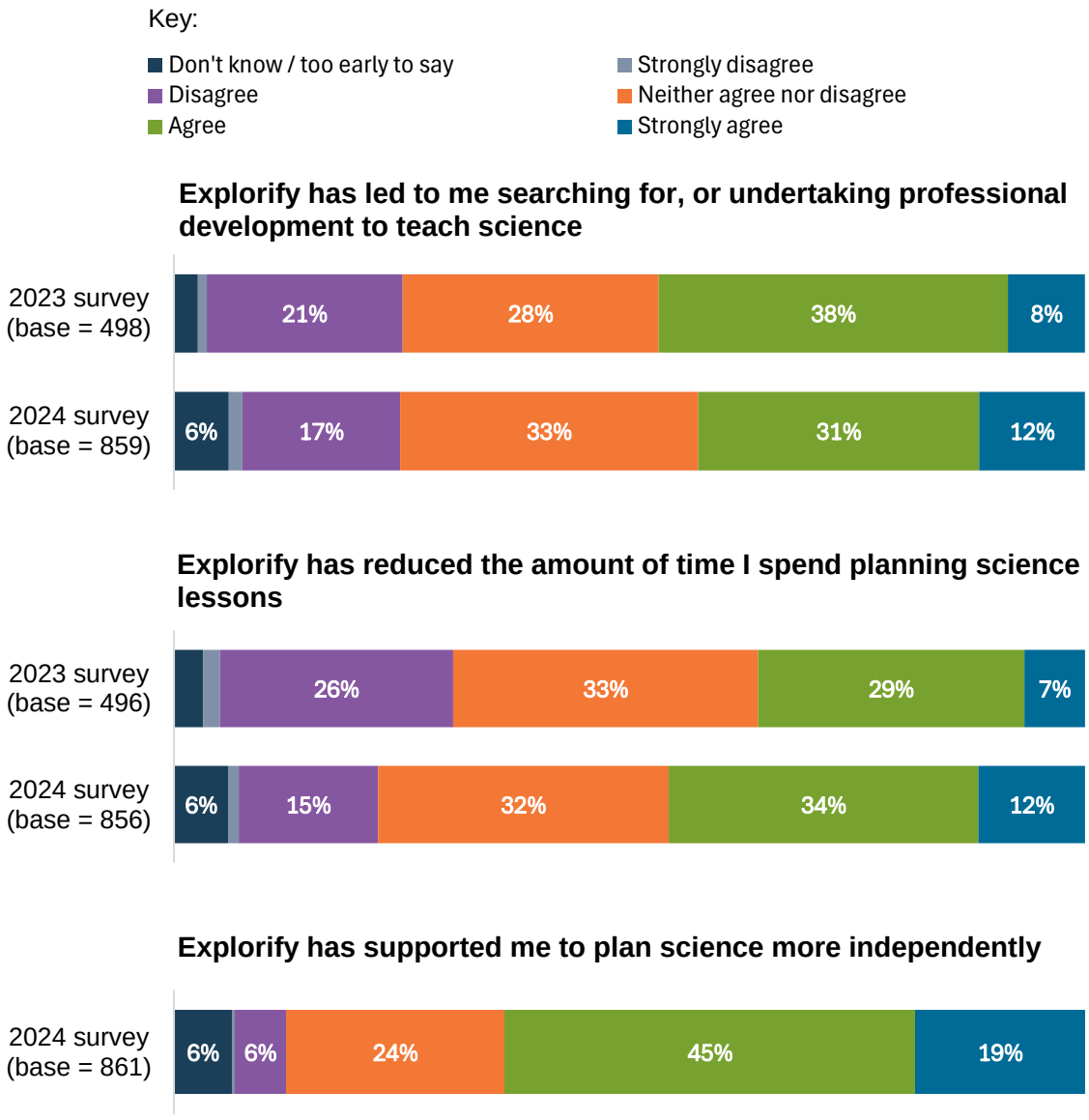
> Whether it's communication, EAL[20] pupils, getting children talking, or assessment, there's always something to add to your planning. I find that everything that we've had to add or change we've been able to find in the Explorify website, so that's been helpful for me.
>
> **Teacher**

[18] 36% of the respondents in the 2023 survey strongly agreed or agreed with this statement.

[19] 37% of the respondents to the science leadership and teacher surveys as part of CFE's evaluation of Explorify on behalf of the Wellcome Trust strongly agreed or agreed that Explorify had led them to "searching for or undertaking professional development to teach science." - Wellcome Trust report (2020)

[20] English as an Additional Language.

Figure 9: Extent of agreement about the impact of Explorify on other aspects of teaching practice where a "moderate" to "high" positive impact is reported.



Impact on time spent teaching science

Respondents were asked if the time they spend teaching science overall has changed because of the use of Explorify. Most report that they spend the same amount of time on science teaching (69%). However, Explorify has supported around one-fifth of the respondents to increase the amount of time they allocate to teaching this subject (22%). According to science leaders, there is limited scope within the curriculum to increase the volume of science taught. Any increase is likely to be a result of science leaders and teachers fitting in short Explorify sessions, as retrieval exercises, in other parts of the school day. For example, as “soft starters” in the morning, at break times, or at lunch times to reinforce learning.

> Our discrete science lessons, I would like them to be longer, but we don’t have time in our curriculum. We use [Explorify activities] as a soft start in the morning, afternoon and at the end of the day. They’re brilliant because you put the children in-charge of them, so they can be getting that discussion going.
>
> **Science Leader**

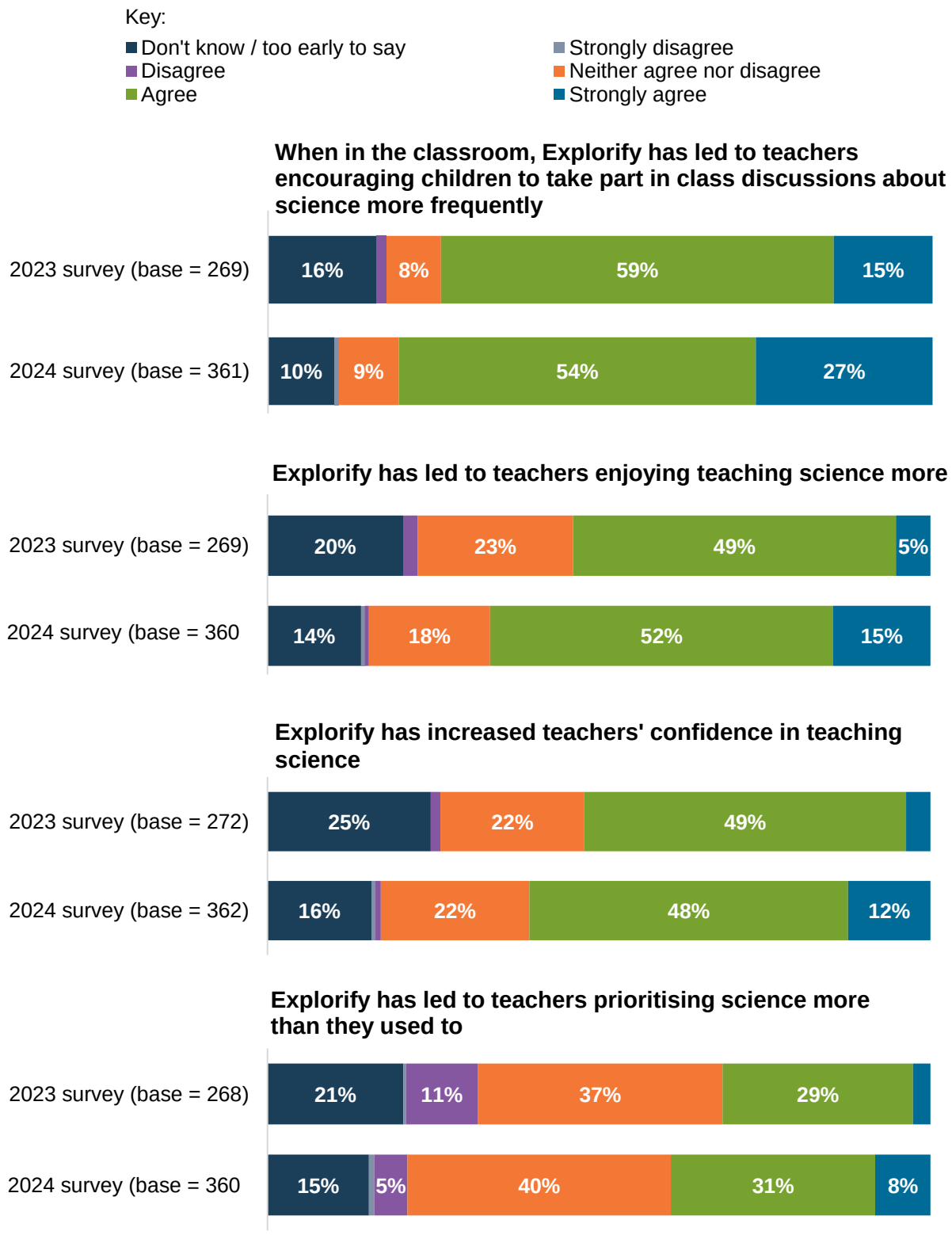
Impact on other teachers in a school setting

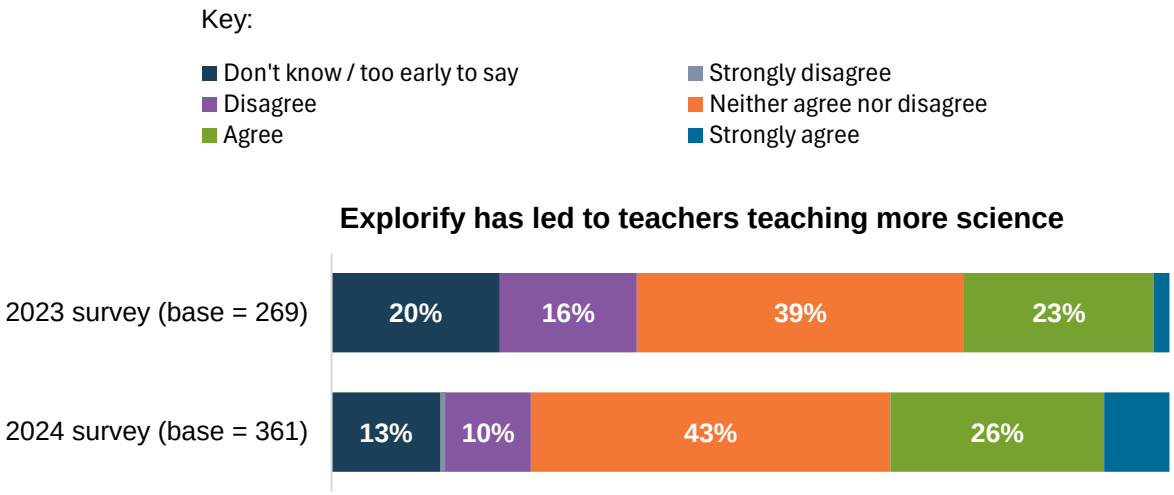
Science leaders were asked about the impact of Explorify on other teachers in their school. In both years, most science leaders agree that Explorify has a positive impact on the teachers in their school, although 2024 survey respondents consistently report stronger levels of agreement.

– 81% strongly agree or agree that Explorify led teachers to encourage children to participate in classroom discussions about science more frequently.
– 67% strongly agree or agree that Explorify has a positive impact on teachers’ enjoyment of teaching science.

More than half of the respondents report that teachers’ confidence in teaching science had increased and science leaders report that Explorify has a positive impact on the priority given to science by teachers within their school and the amount of science taught (Figure 10).

Figure 10: Extent of agreement from science leaders about the impact of Explorify on other teachers in the school who use Explorify.




Key:
Don't know / too early to say
Disagree
Agree
Strongly disagree
Neither agree nor disagree
Strongly agree
Explorify has led to teachers teaching more science
2023 survey (base = 269)
20%
16%
39%
23%
2024 survey (base = 361)
13%
10%
43%
26%

Impact of Explorify on pupils

The respondents perceive that Explorify has a positive impact on the children they teach, with nearly all reporting that the resource has a “high” or “moderate” positive impact on pupils (2023 survey: 93%, 2024 survey: 96%). Only 3% of the respondents perceive that Explorify has a “low” impact. Further analysis indicates that those who use Explorify at least once per week are more likely to report a “high” positive impact on pupils (2023 survey: 72%, 2024 survey: 64%) than those who engage with it less than once a fortnight (2023 survey: 34%, 2024 survey: 31%).

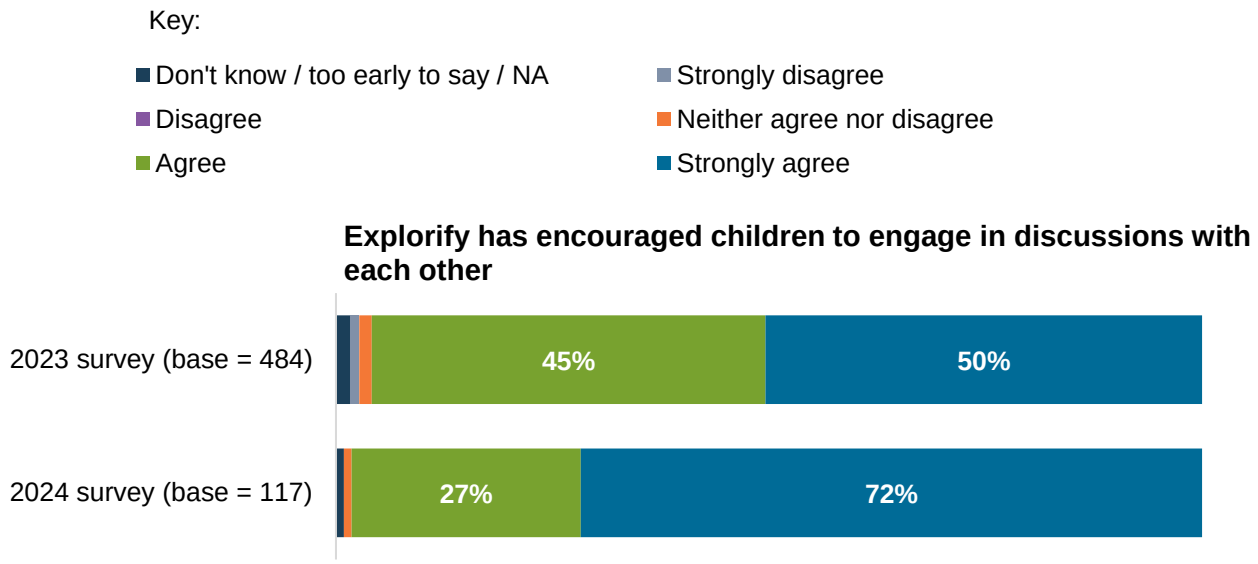
Engagement in science lessons

Respondents who report that Explorify has positively impacted their pupils were asked to rate their level of agreement with a series of statements:

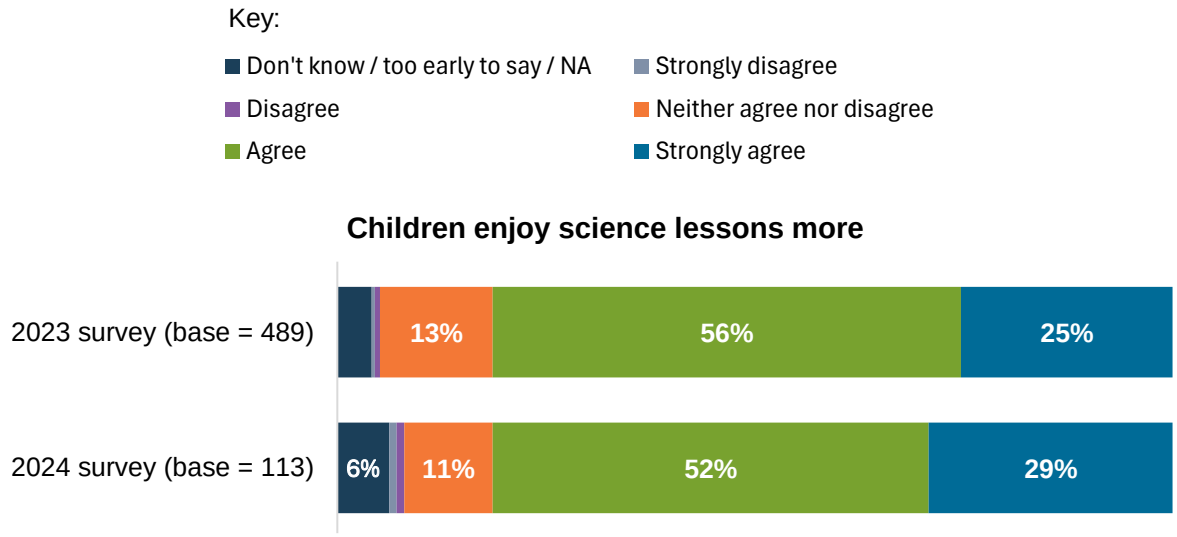
– 99% strongly agree or agree that Explorify encourages children to engage in discussions with each other.

– 81% strongly agree or agree that Explorify increases children’s enjoyment of science lessons (Figure 11).[21]

Figure 11: Extent of agreement about the impact of Explorify on children’s engagement in science lessons among those who report “moderate” to “high” positive impact.



[21] 95% of the respondents to the science leadership and teacher survey evaluation of Explorify on behalf of the Wellcome Trust strongly agreed or agreed that Explorify had “encouraged the whole class to engage in discussions when using the resource,” and 76% strongly agreed or agreed that pupils “enjoy science lessons more when using Explorify.” - Wellcome Trust report (2020).



The reported impact of Explorify on pupils by educators also varies depending on their frequency of use.

- 83% are more likely to strongly agree that Explorify has a positive impact on children's engagement in discussions with each other than those who use it less frequently (62%)[22].
- 37% of frequent users strongly agree that Explorify enhances pupils' enjoyment of science lessons compared with infrequent users (22%).
- 30% of frequent users were also more likely to strongly agree that Explorify positively impacts children's enjoyment of science lessons than infrequent users (18%).

The interviewees describe how pupils are more excited about science and are more likely to engage in discussions when they participate in Explorify activities. The "Have you ever?" "Zoom In, Zoom Out," and "Odd One Out" activities encourage children to "have a go" in classroom discussions and to be more actively involved in lessons. According to teachers, children particularly like the suspense of the "slow reveal" in "Zoom In, Zoom Out," which adds to their excitement and creates a general buzz about science. "Odd One Out" encourages children to discuss ideas with each other and to justify their answer, supporting the development of their reasoning skills.

The "Odd One Out" activity is good because there's no right or wrong answer, it's just how the child explains it. …… Everyone can have different answers, but that doesn't mean you're wrong. ….it just sparks that conversation between them.

Teacher

[22] Respondents who use Explorify less than once a fortnight

It is that inquisitive element that Explorify encourages. It's OK to change your mind because even some of the less able pupils know "it's Explorify 'I've got to guess what this is, but it doesn't matter if I get it wrong.' And how many subjects offer that?"

Science Leader

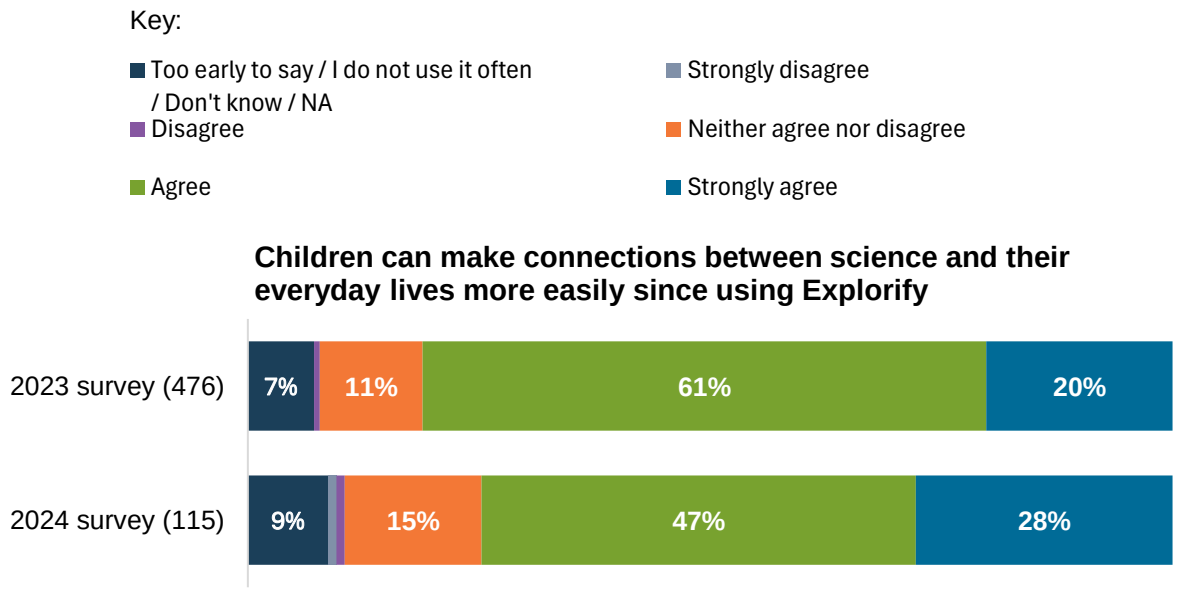
Pupils' science skills

Most of the respondents strongly agree or agree that Explorify has a positive impact on children's science skills and knowledge:

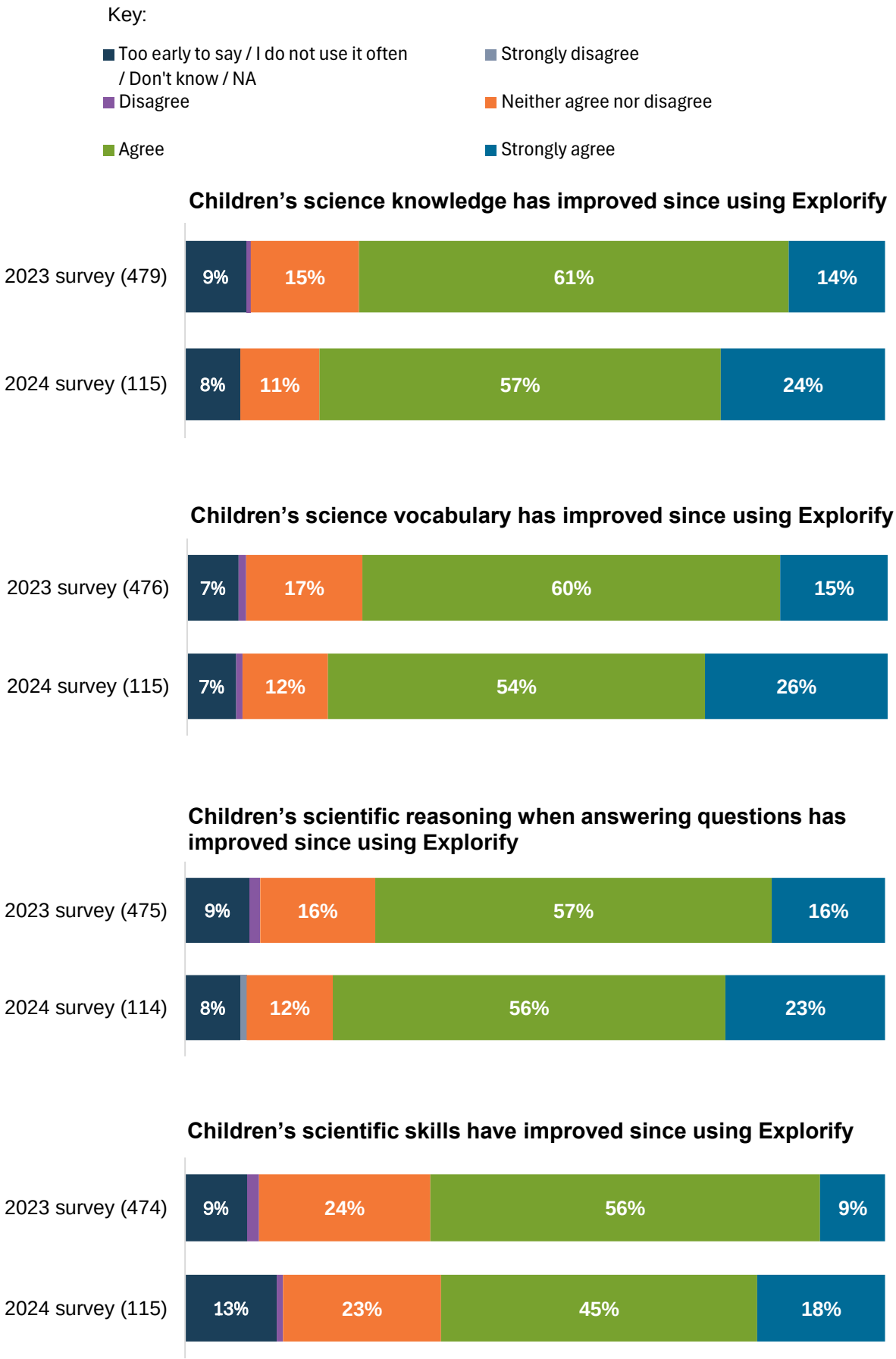
- 81% strongly agree or agree that Explorify improves pupils' science knowledge.
- 80% strongly agree or agree that Explorify improves pupils' science vocabulary.
- 79% strongly agree or agree that Explorify improves pupils' scientific reasoning.
- 75% strongly agree or agree that Explorify has a positive impact on children's ability to make connections between science and their everyday lives.
- 63% [23] strongly agree or agree that that the resource increases pupils' scientific skills.

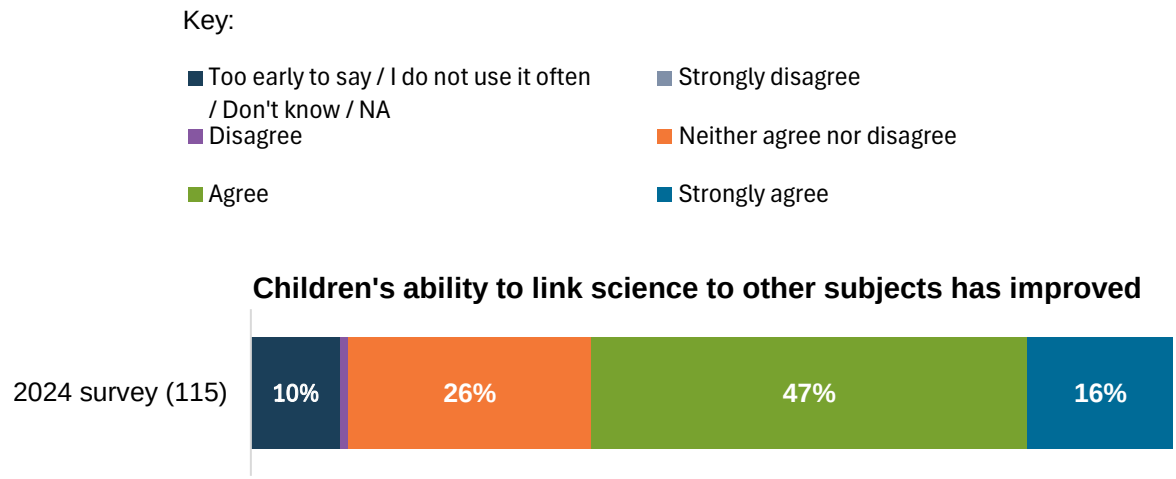
The 2024 survey explores the perceptions of the impact of Explorify on children's ability to build connections between different scientific concepts and to link science to other subjects. Most respondents agree or strongly agree that Explorify enhances these skills (78% and 63%, respectively) (Figure 12).

Figure 12: Extent of agreement about the impact of Explorify on children's science skills among those who report a "moderate" to "high" positive impact.



[23] 75% of the respondents to the science leadership and teacher surveys as part of CFE's evaluation of Explorify on behalf of the Wellcome Trust strongly agreed or agreed that Explorify had increased pupils' "science vocabulary" and 80% strongly agreed or agreed that Explorify increased pupils' "science knowledge." - Wellcome Trust report (2020)


Key:
Too early to say / I do not use it often / Don't know / NA
Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree
Children's science knowledge has improved since using Explorify
2023 survey (479)
9%
15%
61%
14%
2024 survey (115)
8%
11%
57%
24%
Children's science vocabulary has improved since using Explorify
2023 survey (476)
7%
17%
60%
15%
2024 survey (115)
7%
12%
54%
26%
Children's scientific reasoning when answering questions has improved since using Explorify
2023 survey (475)
9%
16%
57%
16%
2024 survey (114)
8%
12%
56%
23%
Children's scientific skills have improved since using Explorify
2023 survey (474)
9%
24%
56%
9%
2024 survey (115)
13%
23%
45%
18%



In the 2024 survey, almost twice as many frequent users as infrequent users strongly agree that Explorify improves children's ability to build connections between different scientific concepts (30%) which was a higher percentage than the 2023 survey.[24] In addition, a higher proportion of frequent users (37%) strongly agree that, since using Explorify, children find it easier to link science with their everyday lives than less frequent users (20%).

The interviewees describe how pupils use appropriate scientific vocabulary more often as they are involved in more scientific discussions. Teachers model the vocabulary and correct misconceptions while they listen to children talking. Explorify also promote deeper thinking in pupils, with science leaders reporting that this is particularly evident when they are taking part in the "Zoom In, Zoom Out" and "Odd One Out" activities. This, in turn, increases the pupils' ability to make connections between science and the real world.

> All Year group teachers have been finding Explorify useful when trying to show pupils that everything they do in the classroom has a solution in life. So, looking at, light and reflection, the discussion started with an Odd One Out activity. It ended up with the class talking about cat's eyes.
>
> **Science Leader**

[24] 2023 survey: Children could make connections between science and their everyday lives more easily since using Explorify: frequent user: 24%, non-frequent user: 14%; Children's scientific reasoning when answering questions had improved since using Explorify: frequent user: 20%, non-frequent user: 11%; Children's science knowledge had improved since using Explorify: frequent user: 19%, non-frequent user: 6%; children's science vocabulary had improved since using Explorify: frequent user: 19%, non-frequent user: 9%.

Pupils' wider skills

There is a high level of agreement among respondents about pupils' wider skills.

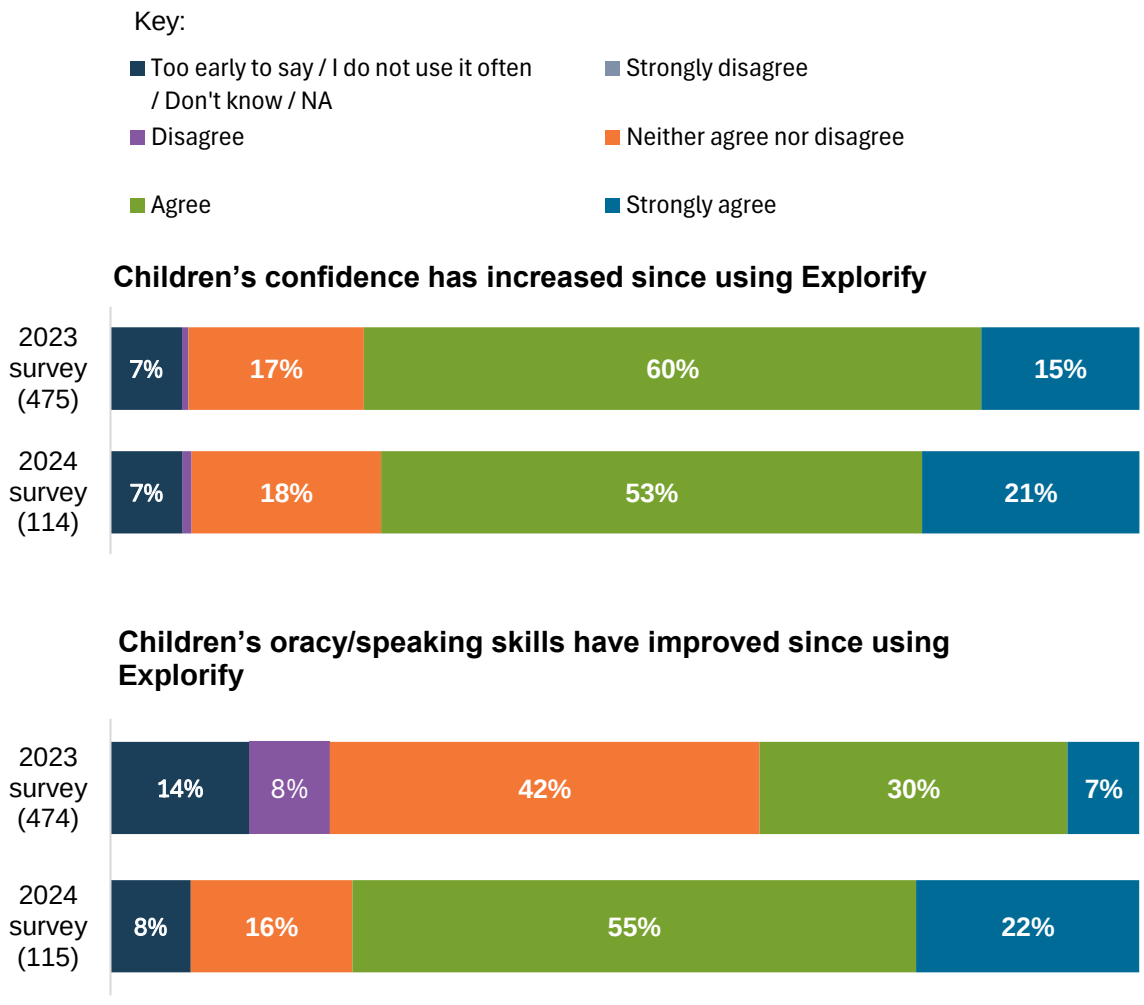
– 77% strongly agree or agree that pupils' oracy/speaking skills has improved.

– 74% strongly agree or agree that children's overall confidence has increased since using Explorify. [25]

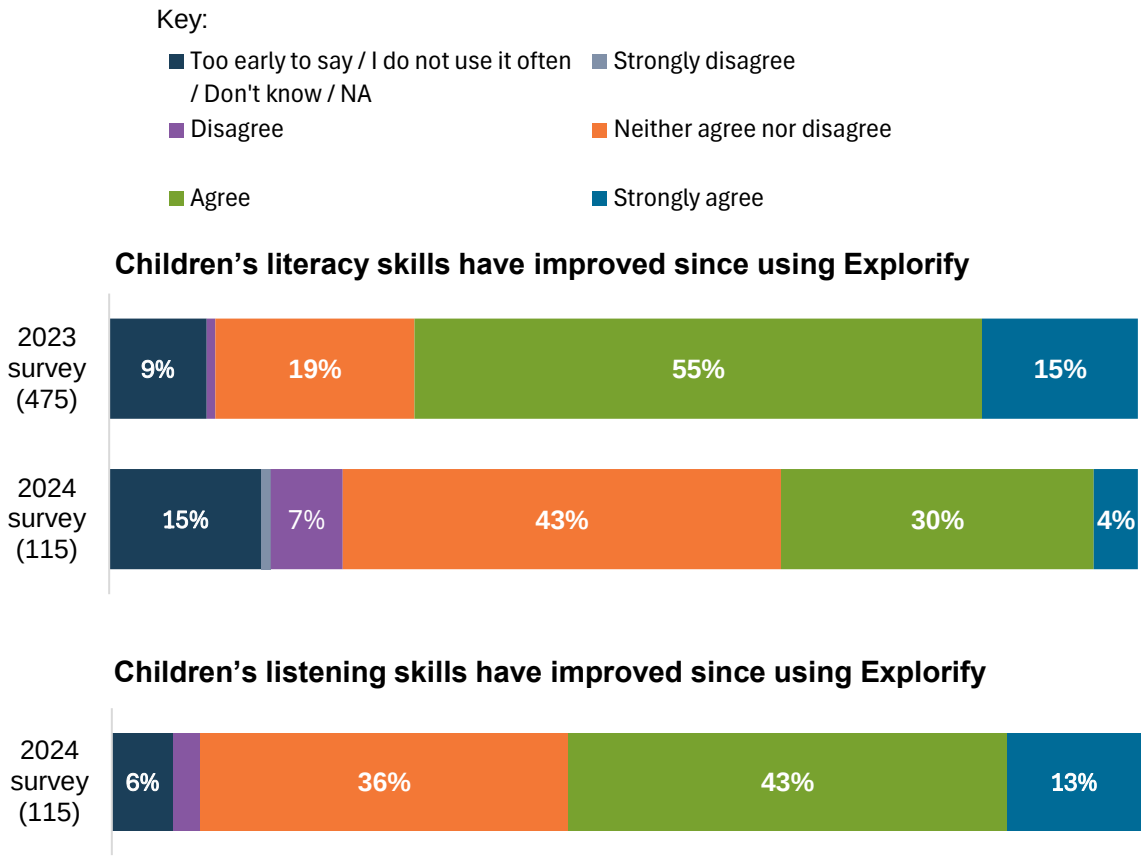
– 56% strongly agree or agree that Explorify has improved children's listening skills.

– 34% strongly agree or agree that there has been a positive impact on children's literacy skills (Figure 13).

Figure 13: Extent of agreement about the impact of Explorify on children's wider skills among those who report a "moderate" to "high" positive impact.



[25] 66% of the respondents to the science leadership and teacher surveys as part of CFE's evaluation of Explorify on behalf of the Wellcome Trust strongly agreed or agreed that Explorify had "increased the confidence of pupils" and 30% strongly agreed or agreed that the "literacy skills of pupils had improved since using Explorify." - Wellcome Trust report (2020)



2023 survey frequent users[26] were more likely to strongly agree that children's wider skills had improved since using Explorify than less frequent users.[27] In the 2024 survey, fewer differences emerge; however, a larger proportion of frequent users strongly agree that listening skills have improved (54%) and children's confidence has increased (31%) since using the resource than non-frequent users (33% and 12%, respectively).

The interviewees describe how children's speaking skills have improved because of their increased engagement in scientific discussions during lessons, facilitated by Explorify activities. Pupils are inspired by the activities, which bring science to life in a relatable way for them; this, in turn, gives them the confidence to contribute their ideas in class discussions.

Explorify gives children the confidence to say, "Actually, I'm going to say what I'm going to say but, if it's wrong, it doesn't matter."

Teacher

[26] Respondents who used Explorify at least once a fortnight

[27] 2023 survey: Children's oracy skills improved since using Explorify, frequent user: 21%, non-frequent user: 7%; Children's confidence increased since using Explorify: frequent user: 20%, non-frequent user: 9%; Children's literacy skills improved since using Explorify: frequent user: 10%, non-frequent user: 3%.

According to science leaders, Explorify helps to improve children's listening skills by encouraging them to listen to each other's ideas and respect other's opinions during class discussion. Science leaders describe how the "Listen, what can you hear?" activity challenges children to listen carefully, so they can try and work out what the sound is.

For children to listen to something that doesn't necessarily make sense to them at the beginning and then for them to try to work out what that sound is. I think that's an important skill to develop.

Science Leader

Differential impacts on pupils

The survey explores educators' perceptions about the impact of Explorify on different pupil groups. The 2023 survey respondents were more likely to report that Explorify had the same impact on pupils, irrespective of their characteristics and abilities than respondents in 2024 where a slightly different pattern emerges for some pupil groups.

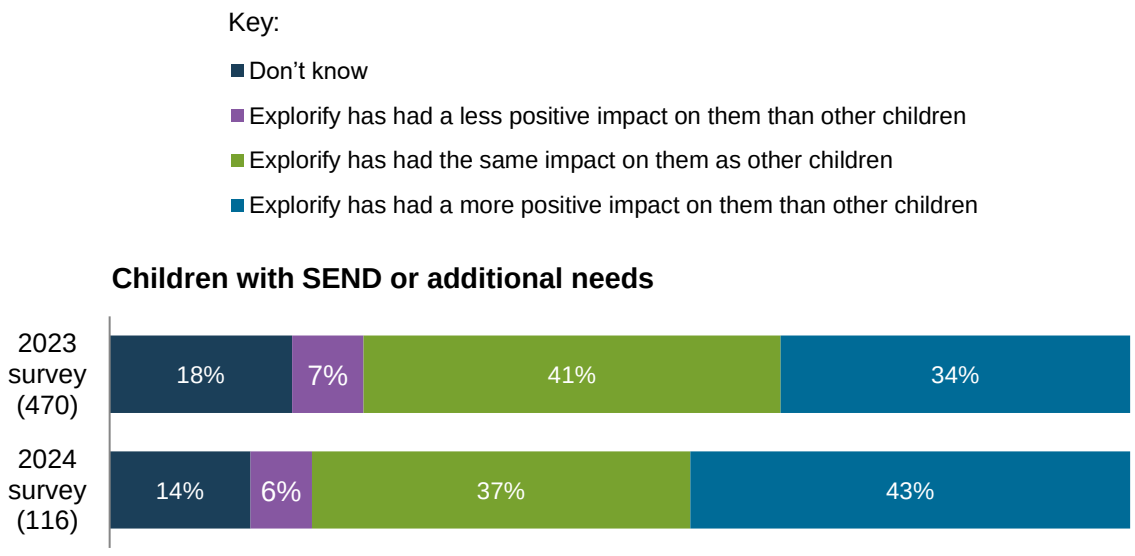
For example, the 2024 cohort most commonly perceives that Explorify has a more positive impact on children with:

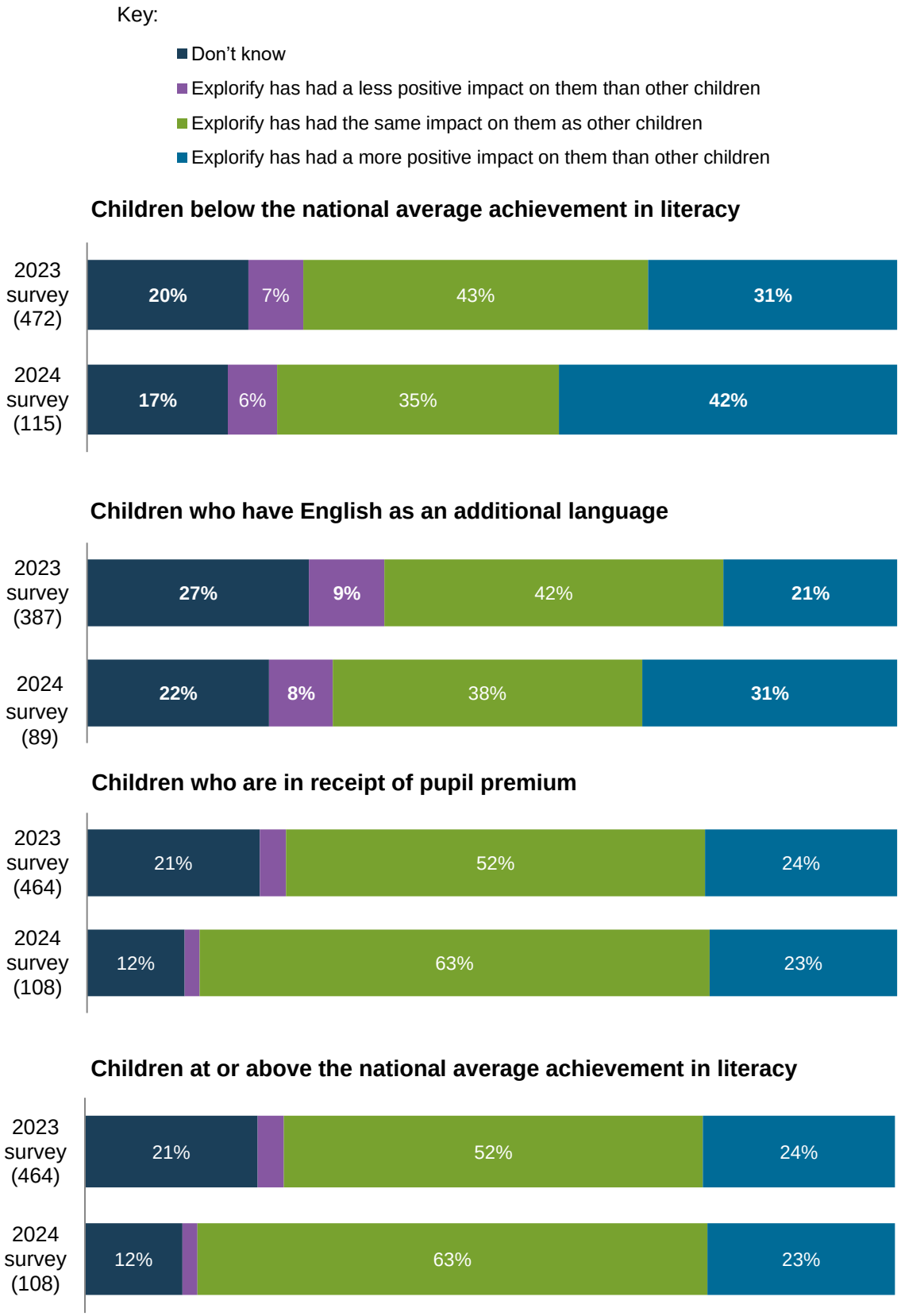
– special educational needs or disability (SEND) (43%)

– below average attainment in literacy than on other children (42%)

Like the 2023 survey most respondents in the 2024 survey perceive that Explorify has the same impact on children: eligible for Pupil Premium (63%), with achievement at or above the national average in literacy (63%), and children for whom English is an Additional Language (EAL) (38%). However, the percentage of respondents who perceive that Explorify has a greater positive impact on EAL children has increased from 21% in 2023 to 31% in 2024 (Figure 14).

Figure 14: Impact of Explorify on different pupil groups.




Key:
Don't know
Explorify has had a less positive impact on them than other children
Explorify has had the same impact on them as other children
Explorify has had a more positive impact on them than other children
Children below the national average achievement in literacy
2023 survey (472)
20%
7%
43%
31%
2024 survey (115)
17%
6%
35%
42%
Children who have English as an additional language
2023 survey (387)
27%
9%
42%
21%
2024 survey (89)
22%
8%
38%
31%
Children who are in receipt of pupil premium
2023 survey (464)
21%
52%
24%
2024 survey (108)
12%
63%
23%
Children at or above the national average achievement in literacy
2023 survey (464)
21%
52%
24%
2024 survey (108)
12%
63%
23%

The interviews with science leaders provide some insights into the reasons why Explorify is perceived to have a more positive impact on children with lower attainment in literacy and with SEND. As noted previously, Explorify activities, such as “Odd One Out” provide a safe space for children to discuss topics and explore potential answers to scientific questions, without the need to write things down and secure in the knowledge that there are often no “right” or “wrong” answers. Teachers report that in this context, children who otherwise might be reluctant or find it difficult to contribute are prepared to “have a go.” Teachers report how, through this greater engagement, these children grow in confidence.

I’m able to choose more and more children who will be unafraid to share their responses and their response can be quite profound at times.

Teacher

Some science leaders also describe how Explorify activities create an environment in which children, particularly those with SEND or EAL, can learn from each other. They cite examples of children modelling vocabulary and scientific explanations for others to learn from.

If you’re having discussions as a class in pairs and you have some higher ability children who use better vocabulary to explain what’s happening, well they’re modelling that to the rest of the class and so some of those lower ability children learn from that.

Science Leader

One science leader describes how they encourage teaching assistants to use Explorify when working with children with SEND on a one-to-one basis. Teaching assistants read the background information and then pitch the discussion at the right level to the pupil. This provides children with the opportunity to talk about their ideas and answer scientific questions in a safe space. Their verbal responses are recorded to assess progress and identify any gaps in understanding.

Conclusions

STEM Learning and PSTT have maintained the strong Explorify brand since assuming responsibility for its management and development in 2021. Since then, both uptake and reach have increased significantly - 73% of the primary schools in the UK now have at least one registered user. The suite of high-quality resources with demonstrable positive impacts on educators and pupils has been expanded to enable those working in a range of settings, such as Early Years, to:

- improve their own skills.
- plan effectively and efficiently.
- deliver more inspiring and engaging lessons that bring science to life.
- support pupils to develop their scientific knowledge, skills, and confidence.

Educators' experience of Explorify

Explorify is a highly regarded resource that educators regularly engage with and widely recommend. Uptake of the resources among other teachers within respondents' schools has also increased over the course of the evaluation.

Educators' initial motivations for using Explorify remain unchanged — it is free, accessible and easy to use and saves them time. The high-quality images and videos, together with informative background information aligned to the national primary curriculum of all four UK nations are further important reasons why many educators choose to use Explorify rather than other similar resources.

Explorify is most frequently used during science lessons. However, educators are increasingly using the resource in other contexts, such as during registration or tutorial times, school assemblies, or lunch or break times and in extracurricular clubs. Explorify is also used to support the teaching of other subjects, such as literacy, numeracy and wider skills such as oracy.

Science leaders recognise the value of Explorify as a CPD/CDPL tool and there has been an uplift in the number of teachers reading the Explorify teacher support pages and engaging with the topic-based planning support videos. New insights from the 2024 survey suggest that the support area has a positive impact on teachers' understanding of science and subject knowledge, as well as on their confidence to teach science.

Numerous strengths of Explorify have been identified across the two surveys of data collection for the evaluation. The web platform is easy to navigate by topic and year group and ECTs particularly value the accessibility of the activities. New content is added regularly, and the existing content is continually updated to ensure that it remains aligned to the primary curriculum. The addition of Early Years activities designed specifically for use with children aged 3 to 5 years has been particularly welcomed. The fun and engaging content encourages Explorify's use with all primary aged pupils, helping to stimulate classroom discussion and debate, which, in turn, supports pupil assessment.

Impact of Explorify on educators

Explorify delivers a range of benefits for educators and is perceived to have a positive impact on their knowledge, skills, and confidence. The background information and activities support and encourage teachers to facilitate class discussions about science by equipping them with the knowledge as well as the reassurance they need that they do not always need to know the answer to questions that pupils might raise. Explorify helps to save time and reduce workload by enabling teachers to plan their lessons quickly and efficiently. It also enables some educators to work more independently and encourages them to increase the amount of time that they spend teaching science.

The most frequent users of Explorify report the strongest positive impacts on their confidence and teaching practice. Many report that they are more knowledgeable about science and are more confident to teach pupils the skills to work scientifically. Engaging with the resource also helps educators to feel more confident to conduct both formative and summative assessments of children's science knowledge and skills. The resource can be particularly effective in supporting ECTs and those who are less experienced in teaching science.

Explorify also has a positive impact on other teachers who use Explorify less frequently in a school setting. They report increased confidence and enjoyment of science since engaging with Explorify and are more likely to encourage children to participate in class discussions about science more frequently.

Impact of Explorify on pupils

By equipping educators with the knowledge, skills and tools, they need to engage children and bring science to life, Explorify is perceived to have a positive effect on pupil outcomes. The fun, interactive activities help children make connections between science and their everyday lives and increase their engagement in and enjoyment of the lessons. By encouraging children to share their thoughts and ideas in open classroom discussions, children can grow in confidence, increase their scientific vocabulary and subject knowledge and develop their listening, reasoning and oracy skills. The "Zoom In, Zoom Out" and "Odd One Out" activities in particular spark children's curiosity and encourage them to ask questions, which further enhances their knowledge and understanding.

Alongside the fun and engaging features of Explorify, a key strength of this resource is its inclusivity. Activities are appropriate for all children, irrespective of their age and abilities. Most users perceive that Explorify has a positive impact on all pupils equally; however, some perceive that the use of the resources with pupils with SEND or lower literacy levels can be particularly impactful by supporting their engagement with the curriculum.

Issues for consideration

To inform the continued use and ongoing development of Explorify, STEM Learning and PSTT may wish to consider the following:

- **Exploring ways to further expand the reach of Explorify, particularly in Scotland and Northern Ireland and among groups who experience barriers to science delivery.** Although monitoring data indicates progress in Explorify uptake in SWANI nations, there is still room for improvement. Regional barriers to using Explorify should be explored. The target groups to focus on include ECTs and those who may be less confident teaching science. Mobilising science leaders who frequently engage with and recommend the use of Explorify could help to further extend the reach. Promoting a "little and often" message would help to increase engagement with the resource by not overburdening time-poor educators. Increasing the pool of Explorify Champions would help to further promote the Explorify brand.
- **Building on cross-curricular links to diversify how educators engage with Explorify.** Encouraging educators to use Explorify to make connections between science and other subjects would further increase children's exposure to science and help to promote the use of the resource to support the development of children's literacy, oracy, and listening skills.
- **Further develop the user experience of the Science Leader Toolkit.** STEM Learning will be moving Explorify to a new platform in 2025. When this is complete there are plans to develop the teacher support area and science leader toolkit further. Once the user experience is improved, further promotion of this support area is recommended as a way for science leaders to enhance science CPD/CDPL and science teaching.
- **Ensure Explorify can respond to national curriculum changes**. Monitoring and responding to curriculum changes across all four UK nations so that Explorify remains current and can support schools to deliver the statutory science curriculum should continue to be a priority for STEM Learning and PSTT.

Appendix 1: Sample characteristics

Respondent characteristics

Table 2: Educational setting

	2023 survey		2024 survey	
	No.	%	No.	%
Work in a primary school	585	98%	1,400	98.5%
Another primary setting	7 (1%)	1%	6	0.5%
Home educator	6 (1%)	1%	15	1%

Table 3: Role in school

	2023 survey		2024 survey	
	No.	%	No.	%
Headteacher/Executive Headteacher/Principal	5	1%	143	10%
Deputy Headteacher/Assistant Headteacher/Vice Principal	40	7%		
Other senior leadership position	28	5%		
Middle leadership position	78	13%		
Classroom teacher (including those with additional responsibilities)	416	71%	1149	82%
Teaching assistant	11	2%	26	2%
Trainee teacher	-	-	78	6%
Another role	6	1%	4	0.3%

Table 4: Science leader in school

	2023 survey		2024 survey	
	No.	%	No.	%
Yes, I am the science leader	323	55%	485	35%
Yes, but I am not the science leader	222	38%	764	55%
No	38	6%	137	10%
Don’t know	2	0.3%	14	1%

Table 5: 2023 survey: Do you teach science to children aged between 4 years and 11 years in your school?

	No.	%
Yes	596	99.7%
No	2	0.3%

Table 6: 2024 survey: Do you teach science to children aged between 3 years and 11 years in your school?

	No.	%[28]
Yes – I teach children aged between and 3 years and 5 years (early years)	433	31%
Yes – I teach children aged between 6 years and 11 years	1196	84%
No	4	0.3%

Table 7: Country

	2023 survey		2024 survey	
	No.	%	No.	%
England	557	93%	1310	92%
Scotland	18	3%	51	4%
Wales	15	3%	41	3%
Northern Ireland	8	1%	19	1%

[28] Note: Total percentage is higher than 100% as this was a multi-response question.

Table 8: English region

	2023 survey		2024 survey	
	No.	%	No.	%
Southeast	98	18%	207	18%
Northwest	78	14%	152	13%
London	68	12%	130	11%
West Midlands	67	12%	109	9%
Yorkshire and Humber	62	11%	110	10%
East of England	59	11%	130	11%
Southwest	44	8%	154	13%
East Midlands	43	7%	105	9%
Northeast	26	5%	66	6%
Not answered	12	2%	-	-

Table 9: Gender

	2023 survey		2024 survey	
	No.	%	No.	%
Female	521	87%	1170	90%
Male	71	12%	112	9%
Different gender identity	3	1%	6	0.5%
Prefer not to say	2	0.3%	17	1.3%

Table 10: Full- or part-time worker

	2023 survey		2024 survey	
	No.	%	No.	%
Full time	449	77%	1017	79%
Part time	133	23%	249	19%
Prefer not to say	-	-	19	2%

Table 11: Qualifications in science or STEM subjects

	2023 survey		2024 survey	
	No.	%	No.	%
Do not have a BSc or higher-level degree in a STEM subject	442	76%	1107	86%
Biology	52	9%	69	5%
Mathematics	14	2%	27	2%
Chemistry	13	2%	23	2%
ICT/Computing	8	1%	16	1%
Physics	8	1%	8	0.6%
Engineering	6	1%	9	0.7%
Design and Technology	3	1%	11	0.9%
Another STEM Subject	55	9%	45	4%

Table 12: Years in the teaching profession

	2023 survey		2024 survey	
	No.	%	No.	%
5 years or less	110	20%	303	26%
6–10 years	136	24%	231	20%
11–15 years	93	16%	200	17%
16–20 years	87	15%	166	14%
More than 20 years	138	24%	266	23%

School-level characteristics

Table 13: Type of school

	2023 survey		2024 survey	
	No.	%	No.	%
Local authority-maintained school	343	59%	704	56%
Academy	193	33%	399	32%
Independent school	25	4%	45	4%
Special school	5	1%	28	2%
Free school	3	1%	16	1%
Other	12	2%	31	3%
Don't know	-	-	31	3%

Table 14: Size of school (number of pupils)

	2023 survey		2024 survey	
	No.	%	No.	%
Less than 100	59	10%	105	8%
100–250	231	40%	511	40%
251–500	232	40%	493	39%
More than 500	60	10%	137	11%
Don't know	-	-	29	2%

Table 15: Proportion of pupils from deprived backgrounds (2023 survey)/children who receive Pupil Premium (2024 survey)

	2023 survey		2024 survey	
	No.	%	No.	%
Up to 10%	116	20%	185	15%
11%–15%	89	15%	167	13%
16%–20%	65	11%	154	12%
21%–25%	48	8%	110	9%
26%–40%	74	13%	157	12%
More than 41%	105	18%	142	11%
Don't know	87	15%	359	28%

Table 16: Proportion of pupils with English as an additional language

	2023 survey		2024 survey	
	No.	%	No.	%
Up to 10%	255	45%	492	41%
11%–15%	55	10%	123	10%
16%–20%	43	8%	74	6%
21%–25%	35	6%	61	5%
26%–40%	53	9%	89	7%
More than 41%	60	11%	126	10%
Don’t know	68	12%	251	21%

Table 17: Primary Science Quality Mark

	2023 survey		2024 survey	
	No.	%	No.	%
Yes, school currently holds it	129	22%	233	18%
No, but school is working towards it	54	9%	109	9%
No	312	54%	601	47%
Don’t know	88	15%	336	26%