

Interim Report

Sumdog

MARCH 2025



Contents

1. Introduction	3
2. Methodology	4
3. How has Sumdog been used by teachers so far?	6
5. What are the early findings on Sumdog's impact on pupils?	9
6. Did any subgroups of pupils benefit more from playing Sumdog?.....	12
7. According to teachers, were there any strengths and weaknesses in using Sumdog?	14
8. Summary & Next Steps	17

Executive Summary

Sumdog is a maths practice platform through which children learn by answering curriculum-aligned questions integrated into fun games. At the same time, pupils' teachers can identify gaps and plan next steps.

This interim report is part of a wider evaluation in 2024-25 and it focuses on Sumdog's implementation and early findings on its impact on a small number of schools participating in the evaluation. The report is based on interviews and focus groups with 4 teachers from 4 different schools out of the 6 that were interviewed, as the remaining two had not engaged sufficiently with the platform.

The main findings from the report can be found below:

- ▶ Overall, teachers explained that after the initial induction and setting up, they and their pupils didn't need further help.
- ▶ Teachers used Sumdog as a complementary activity for pupils learning maths in class and for identifying pupils' gaps.
- ▶ Teachers raised concerns that pupils prioritised speed over accuracy but emphasising the benefits of knowing the correct answers appears to increase meaningful engagement.
- ▶ Teachers said it was too early in the implementation of Sumdog to be able to accurately describe Sumdog's impact. However, most teachers mentioned the positive impact Sumdog already had on pupils' engagement with learning maths, their enjoyment of the exercises and their growing confidence.
- ▶ Pupils with SEND (Special Educational Needs and Disabilities), lower-attaining pupils and pupils with lower self-esteem were the ones mostly benefiting from the use of Sumdog.

1. Introduction

Sumdog is an adaptive learning platform for children aged 5 to 14 years old with a range of tasks aiming to help them learn and practise maths. On Sumdog, pupils are entertained while they learn through answering curriculum-aligned questions integrated into over 35 fun games.

Sumdog helps teachers to identify gaps and plan next steps. Teachers can set practice to be completed during gameplay or use low-stakes tests to assess children through Sumdog. Teachers can view results in real-time with an easy-to-interpret class overview.

This academic year 2024-25, Sumdog has partnered with ImpactEd Evaluation to a) understand the impact of Sumdog on pupils' maths attainment and attitude towards maths and b) investigate how Sumdog has been used by teachers and find opportunities to further improve the platform.

This interim report is part of this wider evaluation and it focuses on Sumdog's implementation and early findings on its impact in a small number of schools participating in the evaluation. It is based on interviews and focus groups conducted with 6 teachers from 5 different schools in January 2025. The primary qualitative analysis was conducted based on focus groups with 4 teachers from 4 different schools, as the remaining two had not engaged sufficiently with the platform.

2. Methodology

2.1 Research questions

Below are the research questions this interim impact report aims to answer.

- ▶ How has Sumdog been used by teachers so far?
- ▶ What are the early findings on Sumdog's impact on pupils?
- ▶ Did any subgroups of pupils benefit more from playing Sumdog?
- ▶ According to teachers, were there any pros and cons to using Sumdog?

Each of the aforementioned research questions will be addressed in a separate section below.

2.2 Design, sample and analysis

Fourteen (14) schools constitute the sample participating in Sumdog's wider evaluation for this academic year (2024-25). These schools have agreed to collect surveys and attainment data for pupils in Year 5, as well as participating in focus groups in January or May 2025. To recognise teachers' time and effort, the schools have been offered a two-year subscription to Sumdog for free in return. Teachers from 5 different schools participated in this first round of focus groups.

Two one-to-one interviews and two focus groups¹ (with two participants each) were conducted with teachers to share their experience of using Sumdog. The interviews' length varied depending on the number of participants and the length of their experience of using Sumdog. As a result, interviews were conducted with 6 teachers:

- 1) Teacher 1, School A
- 2) Teacher 2, School A
- 3) Teacher 3, School B
- 4) Teacher 4, School C
- 5) Teacher 5, School D
- 6) Teacher 6, School E

The interviews and focus groups were semi-structured. A semi-structured format means that the interview guide includes questions or issues to be asked about, but the moderator does not necessarily need to stick with the exact wording. It also includes a variety of 'probe' questions. While the moderator is expected to steer the conversation in the intended direction, the participants are largely free to explore different topics.

The qualitative data was analysed using a deductive thematic approach, meaning that we systematically 'coded' the data based on the research questions to find common themes and then presented these, drawing on examples where appropriate.

Teachers 1 and 2 from School A raised during their interview that their school was having technical issues using Sumdog. A summary of their experience is reported below, but **the school was excluded from further qualitative analysis** as they hadn't had a chance to engage sufficiently with the platform.

The two teachers mentioned that while some of Sumdog's features such as being able to quickly identify pupils' performance were useful for them, they hadn't used Sumdog as much because of technical issues they had been facing. Every time they logged on Sumdog, it brought up the same game, and it was quite difficult to move past that.

"The reporting features that come back of being able to quickly identify and see who's done it and how well they've done it are great. But for us at the moment the biggest frustration of trying to use it in school is just getting beyond that hurdle of actually getting past that initial game."

- Teacher 1, School A

Sumdog has been in contact with the affected school to provide support. Children are shown the 'warm-up' game in order for 3D games to load where children are accessing Sumdog through a web browser. However, Sumdog advise schools to download the app where possible for the best experience.

The remainder of the report explores the other teachers' experience of using Sumdog and its impact on their Year 5 pupils.

¹ For the remainder of the report, the interviews and focus groups will be referred to as 'interviews'.

3. How has Sumdog been used by teachers so far?

During the interviews, teachers referred to a variety of ways in which they used Sumdog to enhance pupils' learning. The main three use cases were:

1. a way for pupils to practise what they had been taught in class,
2. a way of engaging the less interested pupils with learning maths and
3. a way for teachers to identify pupils' gaps.

3.1 Sumdog as a complementary activity for practising what pupils learn in class.

A number of teachers mentioned that, while they didn't typically use Sumdog to teach maths, they used it for **encouraging pupils to practise what they had learned and revise in school and at home**. For example, one of the teachers explained how after their pupils had finished with their work in class they would go on Sumdog in order to consolidate their knowledge;

“We found it very useful...for children to extend their learning in class after they've done their main inputs, but also as a revision activity at the end of the week to show what they've done, what they've learnt and to practise it independently at a level that's appropriate to those children.”

- Teacher 5, School D

Another teacher talked about setting Sumdog exercises for homework so pupils can work independently at home. Interestingly, this teacher was not only setting exercises on topics that pupils had just been taught about, but also some that pupils hadn't yet learned in the form of flipped activities, preparing pupils for what's to come;

“So we often use it as an extension...and we also set it as homework, weekly homework so children can practise what they've learned at home. So we set the tasks that are relating to the subjects that either they've done or are going to come up as well. So they can get like a pre-teach of what's going on in their math lesson coming up.”

- Teacher 3, School B

Overall, teachers described Sumdog as a great tool for pupils to practise what they learned in class.

3.2 Sumdog as a way to engage pupils with learning maths.

Additionally, teachers **unanimously talked about using Sumdog as a 'foot in the door' in engaging pupils with maths**. They described that they used it as an addition of 'fun' to the traditional maths lessons. For example, a teacher talked about asking pupils to go on Sumdog towards the end of each maths lesson;

“In my class, once the children have finished the lesson, I do the [Sumdog] task for that lesson on the same day. So they're able to answer...the questions and they have a little bit of fun.”

- Teacher 3, School B

Key Finding: School D

Teacher 5 commented that for many of their least interested pupils in maths, Sumdog was a good way of getting them engaged through gamified exercises where there was less pressure on answering the questions correctly.

“What we have seen is that some of the children who find accessing maths within a classroom most challenging, they've been the ones who've actually taken it on board and run with it at home more than a lot of the other children...they're...happy to try it, even if they're not successful at the questions. It's a no pressure environment for them, but they're willing to have a go, which is a massive leap from where they were.”

Similarly, another teacher explained that they used Sumdog as a tool for pupils who found it hard to complete the core work. Using Sumdog was a way to continue learning within the lesson instead of giving up on trying;

“If the children have finished their work...we know that some children will find it hard just to get through to do it. So if they've done it, I'm like...you go on to Sumdog now and try and consolidate your knowledge more that way because I know that then that excites them to actually be doing something else other than work in their books or anything like that...”

- Teacher 6, School E

3.3 Sumdog as a way of investigating pupils' learning gaps and needs

Teachers from smaller and from larger schools mentioned that through Sumdog they were able to efficiently spot pupils' learning gaps and inform their teaching based on them. One teacher mentioned how, because they were teaching in a small school, they taught maths to all of the pupils from Year 1-6 in the school and were **able to adjust the difficulty of the exercises for pupils based on their scores on Sumdog;**

“I guess in my case I'm very lucky to have so few pupils here...it enables me to do that [identify pupils' needs] very quickly myself, and to set it [Sumdog exercises] appropriately for the children.”

- Teacher 5, School D

Contrarily, another teacher who was Subject Lead for maths in their school, but was not teaching Year 5 (which is the pupil sample targeted in this evaluation) described a different

reality. In their school, it was challenging to look into each individual pupil's gaps due to the large number of students, but as a Subject Lead they were able **to identify the pupils' gaps at a year group level**;

“ I'm doing all the management of it. I would foresee in the future as we roll it out, greater attention from the class teachers to the feedback it provides about individual users and their areas for development. But at the moment we're looking at it as a whole year group”.

- Teacher 4, School C

It is worth noting that the teacher expressed their expectation of class teachers eventually looking at individual pupils' areas for development. The same teacher also explained that despite not intentionally looking at pupils' scores at an individual level, it was easy to distinguish the pupils that understood from those that didn't based on the information shown on the Sumdog platform;

“ It definitely is clear where I've set something that they should have been doing in class and those that have understood and those that haven't.

- Teacher 4, School C

Another teacher described how Sumdog's diagnostic testing enabled identifying and filling in pupils' gaps without teachers needing to adjust the exercises manually;

“ And it actually helps because when they've done their diagnostic testing, what comes up on there is the aspects that they need help with so they can go on and do the tasks on there that it sets for them based on what their diagnostic testing said about that individual child.

- Teacher 6, School E

Overall, teachers found a variety of uses for the Sumdog platform. They used it as a **complementary activity for learning maths** in class but also at home. Due to its element of gamified maths exercises, many teachers were also **able to engage those pupils that would usually be the least likely to engage**. Finally, they were able to identify pupils' gaps at a year group level, but also at an individual-level for classroom teachers engaging with the platform.

5. What are the early findings on Sumdog's impact on pupils?

Most teachers mentioned that it was too early in the implementation of Sumdog to be able to accurately describe Sumdog's impact. However, most teachers mentioned the positive impact Sumdog already had on pupils' engagement with learning maths, their enjoyment of the exercises and their growing confidence.

5.1 Pupils' engagement with learning maths

Higher pupil engagement with learning maths through playing Sumdog was mentioned unanimously by teachers. They described that pupils often preferred playing with Sumdog compared to traditional learning in classrooms. A teacher talked about pupils expressing the desire to play Sumdog first thing in the morning;

“So as a morning task especially, they're like as soon as they enter the classroom, Miss, can we do Sumdog? I'm like, go for it.”

- Teacher 3, School B

Similarly, other teachers mentioned **pupils' engagement with completing their homework** and the ways in which their engagement increased after starting to use Sumdog. For example, Teacher 5 explained their overall observation of an increase in the percentage of pupils completing their homework in their school;

“Previously maths homework was done by maybe one child or two children...Whereas now what I'm seeing is that there's the engagement from the children and we're getting about 50% to 60% of the children actually doing the homework.”

- Teacher 5, School D

Teacher 6 gave more specific examples of pupils who would previously not engage with learning maths, and after trying out Sumdog they do. An example of these pupils can be found below;

“So I have one child in particular who would not engage. If I asked them to go and do something to do with maths, he'd be like, I really don't want to do that. I just don't want to do that at all...Since doing this [using Sumdog], they've actually come in and been like, oh, I've downloaded the app now...I'm actually doing it now. And actually, I can see...they're actually accessing the work as well.”

- Teacher 6, School E

5.2 Pupils' enjoyment of maths

Another positive pupil outcome mentioned by teachers was their enjoyment of maths. For instance, Teacher 4 who was Subject Lead for maths in their school explained how pupils would **go out of their way to speak to them about their experience** of learning maths.

Key Finding: School C

Teacher 4 explained that pupils who wouldn't typically talk to them about their experience of maths had shared they enjoyed using Sumdog.

“Some children who I would normally not hear talk to me about maths, knowing that I'm the Subject leader [for maths] have actually gone out of their way to say that they have enjoyed it.”

In line with Teacher 4's experience, another teacher described pupils' excitement during the classroom. They explained the positive anticipation of Sumdog activities;

“The children are loving it every time that I say, all right, we've got to go into Sumdog now to do something, the children are like 'Oh yeah, we've got to go into Sumdog!' and they get really excited about it...”

- Teacher 6, School E

It is important to further explore pupils' excitement for playing Sumdog in the next round of interviews in May in order **to investigate whether pupils' excitement remains high or whether it decreases over time with familiarity.**

5.3 Pupils' confidence in maths

In addition to the aforementioned outcomes, there are early indications that pupils are becoming **more confident in maths as a result of playing Sumdog**. For example, Teacher 5 expressed certainty about seeing an increase in pupils' confidence despite not being sure about the extent of this increase;

“The children are definitely becoming more confident with maths. I wouldn't like to say how much. That's down to Sumdog though.”

- Teacher 5, School D

Similarly, Teacher 3 reflected on their pupils' self-esteem growing after playing Sumdog;

“Before...they might have been slightly worried or the self-esteem, especially in maths, might have been a little bit low. But once they've continued to play the games, especially at school and at home, it [pupils' self-esteem]'s gone really high”

- Teacher 3, School B

Other teachers commented on various external motivators improving pupils' attitudes towards maths, such as seeing their profile improving on the platform and 'Sumdog' moving across the screen when they answered correctly.

Early findings, therefore, suggest high pupil engagement and an improvement in pupils' excitement for and confidence in learning maths through Sumdog. ImpactEd Evaluation will further explore the changes in these outcomes during the rest of the academic year to **investigate whether there is longer-term impact.**

6. Did any subgroups of pupils benefit more from playing Sumdog?

Focus group discussions revealed that pupils with SEND, lower-attaining pupils and pupils with lower self-esteem were the ones mostly benefiting from the use of Sumdog. Often pupils had all three (SEND, lower grades and lower self-esteem). One feature of Sumdog was highlighted by teachers in helping improve pupil outcomes in maths: Sumdog matching the questions' difficulty to the ability of pupils. This way, the **lower-attaining pupils are able to participate and engage at the same level as the rest of the class without feeling inferior.**

A teacher explained that because of Sumdog they were able to look at where the learning of pupils with SEND was and step it back if necessary. They described that pupils who had been struggling in class would feel like they were not succeeding in lessons. Using Sumdog, the teacher was able to **set the sessions at a level that would enable pupils to succeed** and get rewarded as a result, improving their self-esteem. They gave an example of one of their pupils;

“One of the children who I'm thinking of particularly...is a year 4 girl who's probably operating at year one level. So we're having to significantly differentiate the work which she's doing within her sort of group...even then it feels to her that she just doesn't understand, doesn't get it. But when we can then put work in front of her with Sumdog to let her know that yes, she can succeed, her face lights up because she knows she can do it at that point.”

- Teacher 4, School C

In addition to the confidence of getting rewarded for getting maths answers right, Teacher 3 explained the benefit of being able to **participate in the class's activities without feeling like their classmates' exercises were different;**

“So they're able to join in as a whole class while doing the questions. And obviously the children [not performing at expected standard] don't know that is different based on their ability. But because they see everybody playing on Sumdog together, they just assume that...they're doing the questions together. And it's quite, really nice.”

- Teacher 3, School B

Teacher 6 also mentioned that pupils with SEND engaged more with Sumdog. They had been more excited for it because they see it as a game rather than a traditional lesson;

“They all [six children with SEND] have the same attitude as in I don't like maths...I don't ever want to do it. But then once I say, Oh no, we're getting Sumdog, they're like, oh, OK, then we'll do it then...it's helped [them]...more than any of my other children in the class”

Teacher 6, School E

Teacher 5 mentioned that, in their experience, specifically boys with low self-esteem benefited most from using Sumdog. They explained that this subgroup of pupils who had

external examination for the first time at the end of Year 4 and had had a low grade, entered Year 5 with lower self-esteem. Sumdog was a way of getting them engaged again with maths;

“Because they [low self-esteem boys] will know that they didn't pass their Year 4 timetable check... I think coming into Year 5...that can have given them quite a blow...So this 'we get to play games to do our maths' has been our step forward with them. So it's nice to see them keen and talking about maths again.”

- Teacher 5, School D

Despite pupils with SEND, lower-attaining pupils and those with lower self-esteem being those that seemed to benefit most from using Sumdog, Teacher 3 mentioned their concern about those pupils struggling to understand some of the questions because of the way in which they were worded and finding the existence of a timer during the exercise too stressful. **It is important for Sumdog to remain mindful of the individual differences of pupils in these subgroups** in order to keep serving them appropriately.

It is noteworthy that Sumdog is already working to support children who find the timed nature of the games stressful by providing 21 games without this feature within the questions.

Pupils with SEND, lower-attaining pupils and those with lower self-esteem (often co-existent characteristics within the same pupils) seemed to benefit most from using Sumdog.

7. According to teachers, were there any pros and cons to using Sumdog?

7.1 Easy platform to learn and use

Teachers mentioned that the platform was easy to learn and use. Teachers explained that after the initial induction and setting up they didn't need further help. They also appreciated that the exercises on Sumdog were aligned with the national curriculum for maths and the White Rose schemes of learning which made matching the Sumdog exercises with the lessons easier. Interestingly, teachers noted that pupils also understood how to use the platform with ease.

Teachers gave a variety of examples describing features that made the learning and the use of the platform easy. Overall, they mentioned that **post-training, they didn't need further support and that it was easy to set up** homework for the entire class but also to differentiate it for some pupils. They also found it easy to interrogate pupils' level of understanding through the data on the platform. The comments can be summarised in the following statement:

“...But the setup and the usage has been, it's been so straightforward from my experience, I haven't really needed that much communication.”

- Teacher 5, School D

Three different teachers mentioned the **convenience of Sumdog exercises mapping onto the national curriculum and White Rose schemes of learning**. This enabled them to quickly and efficiently assign exercises to pupils based on the curriculum they are using in school, but also ensure that these exercises are in line with what the pupils had learned in class. The teacher below explains their experience of the two marrying up;

“So...we use the White Rose scheme, so it [Sumdog] actually marries up then to what the questions are that White Rose uses. So [the pupils] can understand what is being said and what terminology is being used as well, which really helps.”

- Teacher 6, School E

Teachers also described the set-up of Sumdog as intuitive and the relief they have felt since other teachers within the school haven't raised any issues about using Sumdog. They explained the **importance of a new software not creating more issues for teachers**. For example;

“At this point I'm more excited that the staff have not come back to me saying it's caused them any headache or any workload because that was the deal.”

Teacher 4, School C

Finally, teachers felt very positive about **pupils learning quickly how to use Sumdog**. They mentioned that once pupils had been shown how to do something on the platform, they

wouldn't need further support with it. Teachers' thoughts can be summarised through the quote below;

“So when I first started doing the homework, they're like, miss, I can't, I don't know where the homework is. And I was like, no, if I just show you...I went onto one of their accounts and then showing them all then...now...none of them asked me. They're all just like, Oh, we know where it is now...So I think it's a very easy program for the children to use in the sense of it's very child-friendly so that they can use it by themselves instead of always having someone with them trying to re-explain how to use something.”

- Teacher 6, School E

7.2 A risk of pupils being more focused on winning against their classmates than learning.

The teachers talked about how the **gamification of learning maths through Sumdog led to pupils' higher engagement**. They mentioned that through competitions among pupils from the same class or different classes, pupils would get motivated to complete the exercises and finish their homework.

“...So it's quite nice to see that actually, because there's some element of competition there that the children are like, Oh...I'm going to make sure that I'm better than what you're doing.”

- Teacher 6

A couple of teachers expressed a **concern about pupils not always using their mathematical knowledge to get the answers right**. They explained that pupils at times were trying to be as fast as they could as part of the game in order to try and beat their friends. For that reason, a teacher explained that at the moment their school was going through a process of getting pupils to settle with the change, and realise the importance of getting the answers right as a result of their mathematical knowledge and fluency. Teacher 6 explained their experience;

“They're just like, oh, but I need to beat them. I need to be as fast as I can...So I'm actually having to...put stuff in place and be like, if I see that you get 80% and above on your maths, then I will use like the school system of like, I'll be like, oh, there's a tracking point and stuff like that.”

- Teacher 6, School E

Teacher 4 alluded to the fact that a reason for pupils being prone to focusing more on getting answers right and quickly rather than learning is the multiple-choice format of answers. They explained that their pupils wouldn't always give enough thought to the options and would select the answers again and again until they got to the right one;


“The multiple-choice option is not helpful because some of the children just keep going and you can click and re-click until you get the one that's right. So therefore those children that would have been more accurate and thoughtful maybe are not being as accurate as they

would be because they see other people who they know are maybe not as able at that skill frantically banging on buttons and moving forward with the task."

- Teacher 4, School C

To help children avoid rushing through to get to the gaming part, Sumdog provides 'Don't rush' prompts along with collectible rewards and feedback on pupil accuracy. Sumdog is also working on giving teachers the ability to turn off the multiplayer games and for children to be diverted to a non-game part of Sumdog if they continue to rush through answering questions.

On a positive and hopeful note, Teacher 6 found that **after explaining** to pupils that they might perform better if they actually know the answers to the questions, **they engaged more meaningfully with the exercises;**

 *Once I properly explain to them and I'm like, you will get more points if you actually scored the answer right first time. And like I do say it that way. And they're like, oh really? And I'm like, yes, really...they have started to actually sit in there and actually be like, no, I actually do need to work it out."*

- Teacher 6, School E

Overall, teachers mentioned **the ease of learning and use of the platform as one of the biggest strengths of Sumdog**. While gamifying maths increased pupil engagement, it is important for Sumdog to be aware of the concerns raised by teachers that pupils sometimes prioritise speed over accuracy. **Emphasising the benefits of knowing correct answers appears to increase meaningful engagement.**

8. Summary & Next Steps

Sumdog is an adaptive learning platform for pupils aged 5 to 14 years old with a range of exercises aiming to help them practise maths. On Sumdog, children learn through answering curriculum-aligned questions integrated into fun games. At the same time, pupils' teachers can identify gaps and demonstrate pupil progress.

This interim report is part of a wider evaluation in 2024-25 and it focuses on Sumdog's implementation and early findings on its impact in a small number of schools participating in the evaluation. The report is primarily based on **interviews and focus groups with 4 teachers from 4 different schools conducted in January 2025.**

Overall, teachers found a variety of uses for the Sumdog platform. They used it as a **complementary activity for learning maths** in class but also at home. Due to its element of gamified maths exercises, many teachers were also able to engage those pupils that would usually be less likely to engage. Finally, they were able to **identify pupils' gaps** at a year group level, but also at an individual-level for classroom teachers engaging with the platform.

Teachers said it was too early in the implementation of Sumdog to be able to accurately describe Sumdog's impact. However, most teachers mentioned **the positive impact Sumdog already had on pupils' engagement with learning maths, their enjoyment of the exercises and their growing confidence.** ImpactEd Evaluation will further explore the changes in the aforementioned outcomes during the rest of the academic year to **investigate whether there is long-term impact.**

Pupils with SEND, lower-attaining pupils and pupils with lower self-esteem were the ones mostly benefiting from the use of Sumdog. A teacher mentioned their concern about those pupils struggling to understand some of the questions because of the way they are worded and finding the existence of a timer during the exercise too stressful. **It is, therefore, important for Sumdog to remain mindful of pupils' individual differences in these subgroups** to keep serving them appropriately.

Teachers explained that **after the initial induction and setting up they and their pupils didn't need further help.** They also appreciated that the exercises on Sumdog were aligned with the National Curriculum for primary mathematics and the White Rose Maths schemes of learning.

Overall, while gamifying maths increased pupil engagement, it is important for Sumdog to be aware of the concerns raised by teachers that pupils prioritised speed over accuracy, often guessing answers. **Emphasising the benefits of knowing the correct answers appears to increase meaningful engagement.**

Findings from this report will be incorporated into the annual impact report produced in September 2025, which will include quantitative research in pupils' attainment and their attitudes towards maths.



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quality evidence.**



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