

# Me, You and Science Too: Final Evaluation Report

January 2022

NUSTEM partnered with Battle Hill Primary School to co-design and deliver the Me, You and Science Too (MYST) STEM family story time project. The project was awarded £60,761 by the Shine Trust under their Ready for School funding initiative. The MYST project ran from October 2019 – December 2021. The project design and evaluation design required adaption from March 2020 to respond to the challenges of the Covid pandemic, and therefore each section makes reference to the situation in pre and post covid contexts.

## Executive Summary

- Overall, the MYST project can be considered a success. It has made good progress against target deliverables and measures of success.
- The MYST project developed an initial Theory of Change, which was actively refined during the course of the project and adapted to include delivery in remote contexts.
- The MYST project used of the East model as best practice guidance for supporting engagement. The Covid pandemic provided the opportunity to test this in two circumstances: face-to-face delivery and remote delivery. It was found to be valuable in both circumstances.
- The project found evidence to support an increase access to STEM literacy at home, increase enjoyment with regards family reading of early years texts, improve home-school relations in education, increase skill and knowledge of techniques to engage harder to reach families.
- Evidence did not show an increase in frequency of shared reading among families but did support a diversification of reading materials used within family homes.
- While parents have added the MYST books into their books at home and use them regularly, we found that the STEM activities were not repeated as often.
- The SHINE Trust selected the MYST project as an exemplary project to be included in the IPPR State of the Nation Report for 2020.

*“They have loved receiving a new book every half term and for some children these are the only books they own. The project has given us the opportunity to engage with some of those hard-to-reach parents, allowing us to build some positive relationships and giving them the chance to work with their child in school. It has been an extremely successful project and hugely beneficial to our children and families.”*

EYFS Lead Teacher, Battle Hill Primary School

*“Somebody Swallowed Stanley, she loved that one. She told everyone about it and then we went to the beach and things and suddenly she’s ‘you’ve got to take your rubbish home because it ends up in the sea’. She really notices what the book says”.*

Parent attending MYST project

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## Introduction to the MYST Project

The first section of this report introduces the MYST project, including aims, measures of success and the evaluation methods employed.

### *Project Overview*

MYST is a STEM and literacy engagement project involving NUSTEM and Battle Hill Primary School, working with children in nursery and reception and their families. The project ran between October 2019 and October 2021. Over two years, we've brought families together, sharing a variety of young children's fiction in eight tailored story-reading and STEM activity sessions. Sessions were held each half term at the school or online, where parents practiced strategies to support them to read aloud to their children at home. All families with children in nursery and reception classes, including those previously thought to be 'hard to reach', were invited to attend each of the sessions.

Following each session, the STEM story books used were kept by families, alongside materials for activities, and continued online support for parents who wanted to do further reading and science exploration at home ([nustem.uk/myst](https://nustem.uk/myst)). We hoped that regular interactions, carefully curated literature, and engaging, replicable STEM activities would improve outcomes in reading and science for the children involved. Additionally, the project aimed to strengthen relationships between home and school, while giving parents/carers the skills and confidence to talk about science and technology with their young children.

MYST was also a research project, exploring effective ways of securing family involvement using an action research methodology. We have investigated models and methods for effective practice in parental engagement in schools, seeking to apply ideas from the field of behavioural insights, and collecting data on the effectiveness of our communication and engagement approaches.

### *Aims of the MYST Project*

The MYST project developed an initial working Theory of Change (included as Appendix 1) for engaging parents and carers in home school relations and learning around STEM, which was tested and refined over the course of the project. The overall aim of the project is for 'parents and children to be more confident to talk about STEM'. This was then broken down into several intended outcomes for each audience of the intervention. We were not able to measure all the outcomes we intended due to the adaptations in delivery and evaluation models required to respond to the Covid pandemic. Those in italics became outside the scope of the evaluation and are therefore not included within the report.

Children	Parents and Carers	Teachers
<ul style="list-style-type: none"><li>• Increased frequency of shared reading with their families</li><li>• Increased access to STEM literacy in their home</li><li>• Increased enjoyment with regards family reading of early years texts</li><li>• <i>Increased reading and literacy ability (when compared to peers from a similar demographic)</i></li><li>• <i>Increase in elements of science capital (science attitudes, confidence with science, science-linked behaviours and aspirations)</i></li></ul>	<ul style="list-style-type: none"><li>• Increased frequency of reading with their children</li><li>• Increased access to STEM literacy in their home</li><li>• Improved home-school relations in education, specifically literacy and science</li></ul>	<ul style="list-style-type: none"><li>• Improved home-school relations in education, specifically literacy and science</li><li>• Increased skill and knowledge of techniques to engage harder-to reach-families</li></ul>

## Evaluation Methods

The MYST project employed a mixed methods approach to evaluation, combining collection of process data, feedback postcards, responsive surveys, and follow-up interviews with participating families. The initial plan was to carry out light-touch evaluation in the first year of delivery while the focus was on maximising participation in the project, and that the sessions met families' needs. Evaluation in this phase relied heavily on monitoring data completed by the delivery team, with short accessible postcards completed by the participants before the first session, during sessions, and at the last session to gauge project feedback. It was planned to complete pre and post surveys to measure outcomes and track the engagement of individuals across the intervention period.

Look up! What did you think?

Did you read the book again?

☐ yes  
☐ no  
☐ not sure

Did you do the activity again?

☐ yes  
☐ no  
☐ not sure

How many stars would you give the book?

☆ ☆ ☆ ☆ ☆

nustem

Look up! What did you think?

Did you spot any science in this book? Tell us below.

Child's name:  
Your name:

nustem

The plan for the second year of delivery was to step up evaluation to cover additional outcomes and look more specifically at evaluating long-term impacts: *Increased reading and literacy ability (when compared to peers from a similar demographic, increase in elements of science capital (science attitudes, confidence with science, science-linked behaviours and aspirations).*

However, evaluation plans needed to be revised due to the COVID pandemic, school closure and switch to online deliveries. These adaptations meant that phase 2 of the evaluation could not be undertaken and instead the evaluation strategy was re-designed to accommodate the new online delivery models. Unfortunately, this and delays in the delivery of the project has meant that tracking of individual's engagement across the whole scope of the project, or comparison of pre data with post data, was not possible as was originally intended.

Following the move to online MYST sessions, rather than complete a feedback postcard, participants were invited to submit a post evaluation survey online. Due to lower attendance at the sessions, we achieved a lower rate of engagement with the session feedback surveys. Technology was found therefore to be a barrier to both attendance and data collection. To mitigate against the ability to consider pre and post data, we undertook evaluation interviews with parents who had attended a number of the sessions after completion of the sessions. Two parents took part in follow up interviews at the end of the project.

## How well were delivery and engagement targets achieved?

This section of the report considers the target outputs and engagement targets. The Covid pandemic presented challenges for both delivery and engagement. As a result, not all deliverables were implemented in full, but showed excellent progress despite the challenges. Engagement among families was initially very strong. Online engagement was still high, although lower than in-person.

### Delivery of Outputs

The project target was to deliver 10 tailored story-reading and STEM activity sessions over 2 years with 5 sessions due to be delivered in the first year and 5 in the second year. The table below outlines the book sessions delivered, indicating whether the delivery model was in school or online, and includes the numbers of children engaged.

Delivery Target	Status
Deliver 10 story-time sessions and activities around a STEM book	<b>Partially met</b> 8 story-time sessions delivered in 2019 – 2021 2 sessions to be delivered in 2022
Set up a related MYST project website	<b>Target achieved</b>

Due to the challenges posed by the Covid pandemic the MYST project paused in March 2020 while the team assessed whether it would be possible to continue. It was therefore only possible to deliver 3 book sessions in the first year instead of the intended 5. Between March 2020 and October 2020, we explored ways to adapt the delivery of the MYST project within the government guidance and the school preferred practices. In November 2020 a new delivery model was introduced which allowed continuation of delivery via zoom and a further 5 book sessions were delivered in this model. It was intended that face-to-face sessions resume for the final sessions in the winter of 2021, however a Covid outbreak in the area prevented this. This break and further interruptions in delivery period meant that the target of 10 story-time sessions in the 2 years was not achieved. However, the remaining 2 sessions are scheduled to be delivered in early 2022. The table below describes the sessions delivered in the reporting period, where the sessions took place and the numbers of children that attended. A full list of books, authors and accompanying activity materials can be found in [Appendix 2](#).

1. Violet the Pilot	2. Look Up	3. Little Cloud	4. The Black Rabbit	5. Moon
				
In school	In school	In school	Online	Online
65 children	52 children	71 children	32 children	26 children
6. Robots, Robots Everywhere	7. Somebody Swallowed Stanley	8. Hey Water	9. Bird Builds a Nest	10. TBC
				
Online	Online	Online	To be delivered 2022	To be delivered 2022
22 children	21 children	14 children		

The [MYST project website](#) was set up. To the right is an example of the supporting webpage for the book session.

Analysis of the web statistics reveal 51 unique page views. It is estimated that these come from other practitioners rather than families and children themselves.

## Little Cloud

20 July, 2021 / 0 Comments / In Me, You and Science Too / by Melanie Horan



Meet little cloud, the wisp of a cloud that gets bigger, darker and heavier until it begins to rain!

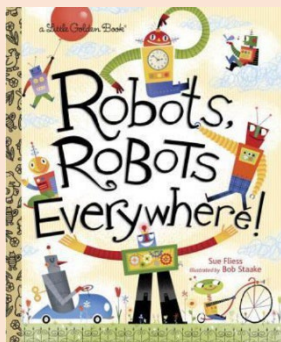
We welcomed back many of our families for the third Me, You and Science Too story: Little Cloud.

The story is about being accepted for who you are, no matter what and is a great introduction to the water cycle!

After the session we planted seeds to remind us that we need rain for plants to grow. Cress and grass seeds are quick and easy to grow at home and can be grown on wet cotton wool or kitchen towel.

For more detailed instructions and more activities, visit our [Growing Seeds STEM](#) at home page.

### *Case Study: Adapting the Book Sessions for Remote Delivery*



**Robots, Robots Everywhere!** was the 6th book in the MYST series and was delivered in the new online format to adhere to school policy on family engagements. NUSTEM developed a paper-based coding activity to compliment the book. All the resources needed to complete the activity at home were handed out along with the book to all the children in Reception and Nursery.

All families were then invited to join a MYST Storytime session hosted on Zoom. Invitations and joining instructions were sent out via Seesaw (the schools parental communications app). In line with the in-person delivery, parents were offered 6 possible sessions to attend. In total, 22 children and 22 parents from across nursery and reception attended one of the storytime sessions. All the children in nursery and reception received a copy of the book and the accompanying activity.

The sessions then ran as expected with families joining from their homes during the after-school sessions. Our staff told the story using the technology to support, and asked questions of the children and families along the way. After the story, we demonstrated the activity to the families and supported them as they completed them at home.

In the post-session survey, parents reported having enjoyed the session, with 100% of respondents reporting that the 'Enjoyed the session very much' and their intention to read the book again.

## Audience Engagement

**This section addresses the 1st in the NPC 5 types of data framework.**

The project target for engagement was to work with 60 children from nursery and reception classes at Battle Hill Primary School in the first year, and 60 children from these same groups in the second year.

Delivery Target	Status
Engage 180 children from target group over 2 years	Target achieved
Engage 180 parents from target group over 2 years	Target achieved

While we were unable to track cohorts across the lifetime of the MYST project as initially planned, we are confident that this target has been met. During the first year of the project the intervention was showing success in engaging a large proportion of the possible parental population, including those previously considered 'hard-to-reach'. There was above target engagement with children in the first year, despite delivery of only three of the five intended sessions. For these first three face-to-face sessions 64/88 children attended all the sessions after they first began attending, with only 11% not returning after their first session. From children attending the first session 63% (40/64) attended all three of the sessions, and 83% (53/64) attended 2 or more.

During year 2, it was more challenging to monitor attendance and track individuals through remote delivery sessions. Across the 5 book sessions delivered in year 2, 145 children were engaged, and we know that some of those children attended a number of the sessions. In the feedback survey for our 6<sup>th</sup> book *Robots, Robots Everywhere!* we asked how many previous sessions participants had attended, out of 8 responses 5 people reported that they had attended sessions in the 1<sup>st</sup> year (and 4 people attended all of the sessions), while 3 participants began attending sessions in the second year. This indicates high repeat-engagement.

The MYST project also engaged similar numbers of parents and carers because children were unable to attend without a parent or carer. Using data from the first year, we found that in 69% (38/57) of cases the same parent/carer who attended the first session continued to attend 2 out of 3 of the later sessions. In 29% of cases children were accompanied by different parents and carers to the sessions extending the reach of the project to wider family circles.

During Years 1 and 2 of the project, all children in Reception and Nursery received copies of each of the books. With a total of approximately 1000 books distributed.

## How well did the Engagement Model work?

This section introduces the EAST model, describes how it was applied in the MYST project, reviews levels of engagement with the project and reflects on the success of the model within this project. This section references point 2 in the NPC 5 types of data framework.

### *Adopting the East Model*

The MYST Project applied the EAST Guidance (developed by the Behavioural Insights Team) as a best practice model for engaging parents in the project. The guidance describes four key prompts that should be incorporated into the design and delivery of an activity intended to influence behaviour. In the case of the MYST project these were specifically used to advertise the sessions to families.

The principles from the EAST Guidance are as follows:

- Make it Easy
  - Harness the power of defaults
  - Reduce hassle
  - Simplify messages
- Make it Attractive
  - Attract attentions
  - Design rewards for maximum effect
- Make it social
  - Show that most people do the desired behaviour
  - Use the power of networks
  - Encourage people to make a commitment to others
- Make it timely
  - Prompt people when they are most likely to be receptive
  - Consider the costs and benefits
  - Help people plan their responses

Adapted from East Guidance (Behavioural Insights Team, 2014)<sup>1</sup>

When designing the project, we took into consideration the sections of the guidance relevant to the MYST project, the school context, and the families who would be invited to attend the activities. As such, not all EAST guidance was incorporated into the delivery. The table below outlines the elements of EAST guidance utilised within the MYST project, and how these were applied. A distinction is made between how we approached this in the initial set up (pre-covid planning) and how this was adapted to respond to the Covid pandemic (post-covid planning).

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<sup>1</sup> Behavioural Insights Team. (2014). EAST Four simple ways to apply behavioural insights. The Behavioural Insights Team. <https://www.behaviouralinsights.co.uk/publications/east-four-simple-ways-to-apply-behavioural-insights/>

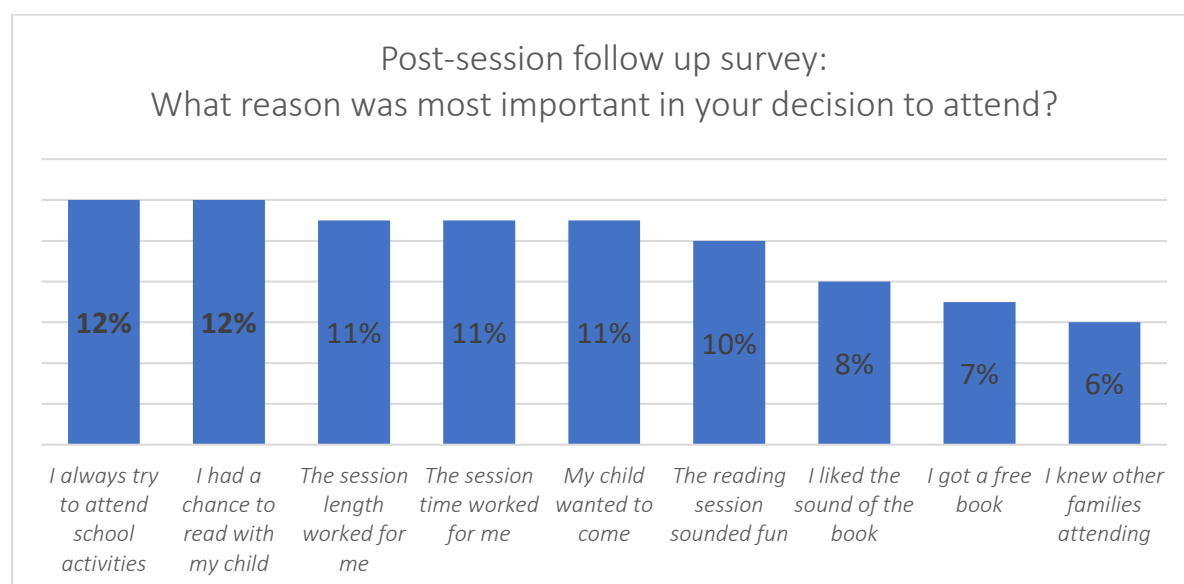
	<b>EAST Guidance</b>	<b>Pre-Covid Planning</b>	<b>Post-Covid Planning</b>
<b>Clear, and Easy</b>	<ul style="list-style-type: none"> <li>• Harness the Power of Defaults</li> <li>• Reduce 'hassle' of taking up a service</li> <li>• Simplifying messages</li> </ul>	<p>Invitations sent home in school bags. Invitations assume parent's attendance, and state only reply if you can't make the session.</p> <p>Language in invitations was carefully chosen to make sure the purpose of the session and the times were clear and obvious.</p>	<p>Links sent out via Seesaw, the schools existing communication channel with parents.</p> <p>The session link was sent out in advance rather than requiring sign up.</p> <p>Guidance created for families on how to access Zoom.</p>
<b>Attractive</b>	<ul style="list-style-type: none"> <li>• Attract attention</li> <li>• Design rewards and sanctions for maximum effect</li> </ul>	<p>Invitations to children aimed directly at them "you are invited to..."</p> <p>Invitations invited children to a story-time rather than a science session.</p> <p>High quality, visually appealing books chosen.</p> <p>A free copy of the book was given to each family attending a session</p>	No change.
<b>Social</b>	<ul style="list-style-type: none"> <li>• Show that most people perform the desired behaviour</li> <li>• Use the power of networks</li> <li>• Encourage people to make a commitment to others</li> </ul>	<p>Delivery team read the book during assembly to introduce children to the idea. Repeated invitations and repeated interactions.</p> <p>Classroom teachers to encourage parents to come along at school drop-off and collection times.</p> <p>Activity area was set up in a social way around a table with no obvious lead or expert.</p> <p>The school's Seesaw app was used to advertise and share pictures from the activities.</p>	<p>Repeated invitations and repeated interactions.</p> <p>The school's Seesaw app was used to advertise and share pictures from the activities.</p> <p>Participants were encouraged to keep their cameras on so that families could see each other.</p>
<b>Timely</b>	<ul style="list-style-type: none"> <li>• Prompt people when they are more likely to be most receptive</li> <li>• Consider immediate costs and benefits</li> <li>• Help people plan their response to events</li> </ul>	<p>Range of time slots available for families to attend (e.g. before and after school on multiple days)</p> <p>Survey to attending and non-attending parents to ascertain the best delivery times.</p> <p>Reminders sent out via the schools Seesaw app</p> <p>Clarity of expectations embedded into the advertising materials.</p>	<p>Range of time slots available for families to attend.</p> <p>Seesaw app messages sent in advance of, and just prior, to the sessions as reminders.</p>

## Assessment and Analysis of Engagements

Overall levels of engagement with the project were good. Engagement was higher with face-to-face sessions than online and reasons for this are discussed below.

### Pre-covid

As an action-research project exploring the most effective ways of securing family involvement, we wanted to better understand parents/carers decisions to attend. In a survey of families who had attended the first session, there was a strong commitment among parents to support their child and their learning. The most common responses to 'what reason was most important in your decision to attend' were 'I always try to attend school activities' (12%) and 'I had a chance to read with my child' (12%), but other common answers were 'the session length worked for me' (11%), 'The session time worked for me' (11%), 'My child wanted to come' (11%), and 'The reading session sounded fun' (10%). Less popular responses were 'I got a free book' (7%), 'I liked the sound of the book' (8%) and 'I knew that other families were attending' (6%).



As engaging 'harder-to-reach' parents was a key focus for this project, we additionally surveyed parents to find out more about potential barriers/challenges in attending this programme so that we could aim to find solutions to these. 'Needing to work' was found to be a significant barrier to attending in some cases, and we found that putting on a range of sessions on different days, and times of day (before school, lunchtime, and after school) enabled more parents to attend the sessions. Reflecting on the reasons for 11% not returning after the first session they attended, we think that in some cases this was due to the young age of children "*Thought it was good and fun for children but my child was too young to really engage*", and parents/carers not feeling their child was engaging the right way with the session or because of comparisons of their child with others in the rest of the room. It is also likely that other family commitments, work schedules and time commitments played a part in this.

### Post-covid

The move to online sessions saw a drop in engagements. We have reflected on possible reasons for this, including digital literacy, data poverty and zoom fatigue. Additionally, parents and carers did not receive the same re-invitation, welcome and encouragement to attend from teachers at school gates

as would have happened with the initial sessions. In a telephone interview one parent explained how attending on zoom presented additional work for parent to attend, *"There was a couple of chats I did with one hand while juggling the baby and I'm like thingyng the screen for her, so you get the multi-screen on and I couldn't, I couldn't remember how to do it and I'm like your just going to have to watch it like that for now. And obviously, like the person that was trying to read the book and I'm trying to do it one handed and the baby is screaming and I'm like right you just sit and read the story and I will come back in a second."* The same parent reflected that she had only known how to do this because she uses zoom at work as she had been working from home.

Although invitations to the sessions included written guidance on using zoom, another person reported on a session feedback survey that their experience would be improved by *"a short introduction to zoom"*, and another that they had encountered technical difficulties, *"Joined in easily but kept freezing and got kicked out"*. Online sessions will always have an additional barrier of the technology. It is possible that families who engaged within the face to face sessions did not continue to engage when presented with these additional barriers, thus accounting for the lower numbers.

However, we were again impressed by the commitment of some parents to attend the sessions despite barriers. Parents in the telephone interviews often prepared in advance for the sessions to fit everything in around busy lives, *"For us we had a new baby at the time and I was thinking well I'm not going to be able to cut round it with her, so we were maybe a little bit more prepared, but for that one I think everyone was pretty much the same, and everyone basically just held their bottle up and she was like 'oh ok then' "*. While preparing in advance supported parents to attend the sessions, it did lead to some confusion of what families should do at the 'activity' stage of the online sessions.

In workshop feedback of online sessions 82% of parents reported to have enjoyed the sessions, with 65% of parents reporting to have enjoyed it a lot. The feedback also indicated that parents felt the presenters had done well to maintain engagements in an online setting and how interactive the sessions were: *"... the story reader involves every child that is on zoom at that time"* and *"The reader was engaging and had time for each child who was participating"*.

Conversations with parents indicated a preference for face-to-face over online models but when this was not possible, that delivery over zoom had worked well.

## Did the MYST Project achieve its intended outcomes?

This report covers the feedback, outcomes and impacts of the project. The MYST Project Theory of Change was used to develop a number of short-term and medium-term outcomes for the project. Some of these became the measures of success in the longer-term impact evaluation of the project. The five measures of success tracked throughout the whole project are reported below. For each, the casual pathway through the Theory of Change is firstly drawn out, then evidence and feedback is presented and reviewed to discuss long-term impacts. Distinctions are made to how we explored these measures within pre and post covid contexts. This section is applicable to points 3, 4 & 5 of the NPC 5 Types of Data framework.

### *Increased access to STEM literacy in their home*

As described by the MYST Theory of Change, gifting the storybooks to families for use at home was intended to improve access to appropriate STEM literature at home, lead to increased frequency of positive reading, and increase enjoyment of reading for people who had attended the sessions.

Initial discussions with the Lead Teacher within Battle Hill Primary school indicated poor access to story books within some homes in the target audience. The optimal situation was for children to receive a book and attend a session at the same time, and so we kept re-inviting children and families to sessions if they had not yet attended. However, we did not want children to be disadvantaged if their families were not able to bring them to a session. Therefore, if a child did not attend one of the sessions, they were also given a copy of the book to take and keep at home. 120 copies of each of the 8 MYST books were bought, and all were either given out in sessions, were sent home to children and families in school bags where children hadn't attended a session, or were added to the school library. For this reason, we can say that all children in the target group had increased access to STEM literacy in their home.

While only 7% of families described how the gifting of the book was an important factor in their decision to attend the first session, some parents described how being gifted a book was an important part of the experience for their children. Feedback from one parent on the Seesaw app reads, "*She loved it and even more so when she got to bring the book home.*" One parent in the post project survey made reference to how seeing the STEM books in different contexts can help validate them in the eyes of children, "*When the Look Up Story was the bedtime story on Cbeebies, [my child] ran to the screen and said that's my book*". We believe that seeing STEM story books in across different contexts (home/school/TV) is beneficial in validating STEM in the eyes of children.

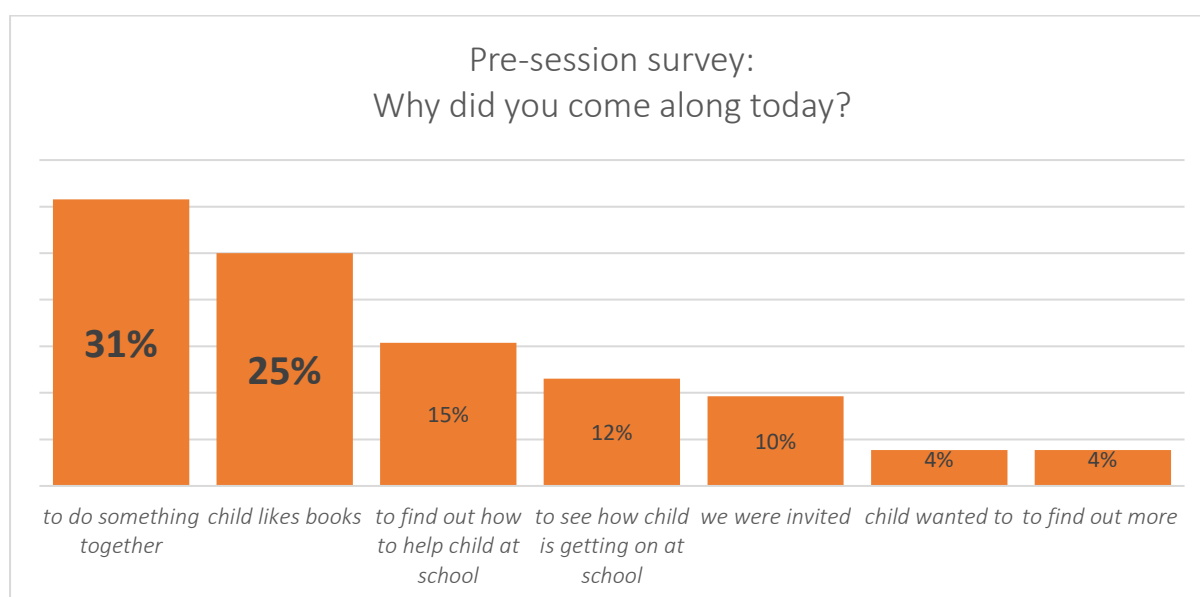
### *Increased frequency of shared reading with their families*

As described in the MYST Theory of Change, it was intended that by modelling good reading practice within the sessions, parent's confidence with reading at home would be increased leading to an increase in the frequency of positive family reading at home.

#### **Pre- covid evaluation**

Responses to the 'before we start' postcard found that many parents already reported high levels of shared reading with their children, with 38% of participants reporting to read with their children 'always', 54% to read with their children 'often' and only 8% of attending reporting to read with their children 'sometimes'. When asked 'Why did you come along today?' many parents reported that their child loves reading/books (25%) and they wanted to support this interest. Additionally, 31% of parents reported to want to do something together. Some parents reported that they do lots of shared reading and wanted to continue this direction, "*we love discovering new stories*", but others reported

an intention to develop further in this area,” *“to embrace reading with my child”* and also to learn new skills to help engagement, *“to try and encourage [child] to concentrate on stories.”*



Data from year one shows that at 93% of participants who returned feedback postcards for sessions 1 & 2 reported that they had re-read the book from the session.

### Post covid evaluation

Similarly, the post-workshop evaluation for the online sessions shows that children were reading the books again and again. Feedback from all online sessions shows that all parents said they had read the book again after the session, with 70% reporting to have read the book ‘many times’, and 30% reporting to have read the book again ‘once or twice’. While parents have added the MYST books into their books at home and use them regularly, we found that the STEM activities were not repeated so often. A parent in the follow up interview explained the intention was there to redo one of the activity session again but it hadn’t quite worked out, *“I said I was going to probably try and do that again when I had just him and bit more time, but we haven’t.”*

### *Increased enjoyment with regards family reading of early years texts*

The Theory of Change shows that increased frequency of positive family reading at home was intended to lead to increased enjoyment of reading more generally.

### Pre-covid evaluation

Responses to the ‘before we start’ postcards showed higher levels of enjoyment with reading than was expected, with many parents reporting to read with their children often and the responses indicated in the ‘why have you come along today?’ one parent wrote *“to read with my son and spend time with just him and me”* and another *“to help daughter develop reading and understanding of books and pictures”*. This indicates that while enjoyment of reading was already high among many parents, parents also looked to the MYST project to support them in these aims. Unfortunately, due to the changes in evaluation methods, it has not been possible to track levels of enjoyment of reading across pre and post project feedback as originally intended.

Comments from parents on the schools Seesaw app showed that combining activities with stories served to make reading more fun, *“Me and [child] read Look Up at home at bedtime and he loved*

*using his telescope with the torch."* Children liked reading books in a session and then having the opportunity to take these home, *"She loved it and even more so when she got to bring the book home."*

### **Post-covid evaluation**

Workshop feedback surveys of the online sessions 82% of parents reported to have enjoyed the sessions, with 65% of parents reporting to have enjoyed it a lot. Another parents feedback indicated how well the sessions supported learning *"The story itself and the illustrations to go with it, are great conversation starters. My daughter spent time talking about each page."* Post project interviews with parents again reveal how having the zoom sessions encouraged enjoyment and enthusiasm with reading, *"She was always dead happy when she got the book, but once she had done the zoom meeting all she wanted to do was log back on and do the next one. She wanted to do it again and again. It was hard for her to wait for the next one."*

When asked whether there had been any change in their reading practices at home following the sessions, both parents said they read roughly the same amount as they always did. One parent however said their choice of book had been influenced, *"Right from being tiny we have always done bedtime stories and we do it every night anyway. It did influence us in the sense that we have looked at different books, we had sort of started buying more educational books to be honest because she wants to ask questions all the time, so we have been buying the ones where they ask the question and we lift the flap and have the answer underneath. Your range of books were a bit more educational than say the Julia Donaldson ones, and things like that that we would read. And I think she got the messages from behind the stories as well, so I think from that point of view that has changed a little bit what we do. She loves to read, but we are now broadening it a bit if that makes sense."*

### *Improved home-school relations in education, specifically literacy and science*

Staff in EYFS at Battle Hill Primary School identified home school relations as an area they would like to develop through the MYST project, and this became a significant focus for the project. As described by the Theory of Change, it was intended that applying NUSTEM's experience of parental engagement and behaviour change in the MYST project would inform the school's contextual knowledge of parental engagement and their parental engagement strategies moving forward.

### **Pre-covid**

We surveyed parents who attended the first session to try and find out more about their reasons for attending. 12% of parents reported "I always try to attend school activities". Parental interest in finding out more about school and their child's education is affirmed by some of the responses on the post workshop feedback postcards. In response to 'why did you decide to come along today?' 15% of parents indicated an interest 'to find out how to help my child at school' and 12% to see 'how my child is getting on at school'. One parent reported an interest in knowing what is happening at school more generally, *"to be involved in our child's learning and be involved in school"* and others reported wanting to support their child with specific areas of learning, *"to help daughter develop reading and understanding of books and pictures"* and *"to support and learn about my children's learning re STEM"*.

After sessions staff reported children talking enthusiastically about the sessions and parents posting on the schools Seesaw app to give feedback and share photographs of the children taking part in the activities and re-reading the books. The MYST sessions supported communication with parents and teachers over Seesaw. At the end of Year 1 the EYFS Lead Teacher reflected on how the MYST project

supported her target to develop home-school relations, *"I do feel like this has improved as parents have been a lot more open and confident about sharing the activities they have been doing with their children at home. After each session the children are encouraged to go home and complete follow up activities and re-read the book. Communication on Seesaw has increased as parents are keen to show us what their children have been doing linked to the session."*

### **Post-covid**

Post project interviews with parents identified the challenges of maintaining home-school relations during the covid pandemic. It must be noted that parents we interviewed reported to be very active in supporting their children's learning and cannot be described as 'hard-to-reach'. Parents we interviewed were still keen to visit schools and find out about their child's learning or see how they engage socially but found the opportunities to do were not available due during the Covid pandemic. One parent reported how valuable the face-to-face MYST sessions had been because *"It gave us the chance to actually come in, if that make sense and be in the class"* but some parents we interviewed reported not to have been invited into school at all.

Parents felt like they were missing out on important interactions with school because of Covid, *"There is so many things we are missing out on. We missed out on parents evening and everything. And so we've never really been able to get in and see what work she is doing, and how she is interacting with her friends and so it was good to do that."* Another reported, *"you know how they go on at home, but you just, I would like to be a fly on the wall."*

Parents spoke of the variety of ways the school was communicating with them during the pandemic, in terms of reports and messages home, and phone calls for parent's evening, however it was felt that these did not replace face-to-face interactions and the opportunity to see how their child was doing in school themselves.

### *Increased skill and knowledge of techniques to engage harder-to reach-families*

The MYST Theory of Change includes strategies for engaging hard-to-read groups: if families did not attend after the first invitation to a book session, they were identified and new strategies for engagement were applied. These included an invitation to repeated sessions, using a survey to ascertain possible reasons for non-attendance, invitations to future sessions, and analysis of demographics to identify patterns.

In our initial survey of non-attending families, 'Needing to work' was identified as a significant barrier to attending. Throughout the project we trialled putting sessions on different days, and times of day (before school, lunchtime, and after school and evening). Finding a suitable time that appealed to parents continued to be a challenge throughout the project. In feedback surveys and in post project interviews we found disparity in the parents' responses to the times of the sessions, *"The times are not suitable for working parents"* and *"The different times and days were great so would like that to continue for future sessions."* What worked for one family group does not necessarily work for another.

We found that to engage a high percentage of parents, we needed to offer a range of possible options to accommodate them all. Trying to engage many parents with one activity is therefore time

consuming and costly as sessions were repeated up to 9 times, sometimes with very small numbers to try and include everyone.

The EYFS Lead Teacher reported the success of the engagement models applied within MYST project, and how this had the effect of reaching families previously thought of as hard to reach. *“It’s been wonderful how many parents have come in and taken part in reading the stories. We have a lot of parents who we’ve struggled to reach previously”.*

The project’s success with engaging with those previously considered hard-to-reach parents was affirmed by the school’s Head Teacher, *“This highly successful project has had an extremely positive impact on parental engagement, which can be seen through follow up activities shared with us from parents, some of whom are normally hard to reach parents. It has allowed our children to not only learn, but learn while spending quality time with their parents in a fun and interactive way in school. This has definitely broken-down barriers for some of those families, who in the past have not interacted with us at all.”*

This measure of success was initially intended to capture the development of learning of school staff in the engagement models. However, we also found that there was learning of engagement models from school to NUSTEM team as well. Notably the potential of the school’s communication apps such as Seesaw to engage parent groups, collect feedback and also for evaluating engagements. Parental engagement with the app about MYST was strong, with children posting pictures of them with their books or doing their activities. The EYFS Lead writes, *“The children have enthusiastically talked about the sessions and it has been lovely to see the parents uploading photos on Seesaw, showing us they are following up the activities at home and re reading the books.”*

## Lessons Learnt and Future Steps

In this final section of the report, we draw out our lessons learnt from our experiences of delivering the MYST project. We review the original Theory of Change and describe it has been adapted, and present how our learning has informed future planning of parental engagement activities.

### *How overt should the science be?*

To make the MYST project attractive (EAST framework), in our initial invitations to the book sessions we avoided directly referencing that this was a STEM story-time project. The intention was the draw out the science subtly through the course of the sessions, and for the science to become more overt as the MYST series progressed. From Year 2 the feedback surveys asked, 'Did you spot science in the story?'. Parents who had read a book about environmental pollution 'Somebody Swallowed Stanley' were able to draw out that the science was about "*Animals, environment*", "*environmental issues*", "*Not to pollute the sea with rubbish*". With reference to the same book in the telephone interview one parent reported that her child had also picked up the science learning within the book, "*She told everyone about it and then we went to the beach and things and suddenly she's 'you've got to take your rubbish home because it ends up in the sea'. She really notices what the book says*".

### Early Years Storytime



Come and join us online with your grown-up for Storytime at Battle Hill Primary School.

We're running online Storytime sessions on Zoom. You can join in with a grown-up to any of the sessions. Any grown-up person in your family can come along with you.

We'll read 'The Black Rabbit', a brilliant story about a rabbit and their shadow. With your grown-up, you'll make shadow puppets and perform a puppet show! You'll also get to keep your own copy of the book. Each session is half an hour long.

We hope that you can join us - see you soon!

Storytime Sessions:

Tuesday 24 November - 4pm, 5pm and 6pm

Thursday 26 November - 4pm, 5pm, 6pm

Joining details will be sent via SeeSaw.



**nustem**

However, while parents and children were able to draw out the science learning from individual books, we found they did not easily recognise science as a broad running theme through the sessions. In the telephone interviews when asked what they thought the theme of the sessions may be, one parent suggested it could be around following instructions, but admitted that the choice of books in the sessions had appeared a bit like a 'random selection'. Another reported that the books choices felt more environmental, "*I would have say it's more seasonal and more nature... I know you have just said science but I would have thought it was more to do with the clouds and the sky and water. But it does make sense now you have said it.*"

When asked about whether knowing about the science theme would have influenced engagement with the project, parents in the telephone interviews said no. One parent said, "*We would have attended the first session and seen how that went and then kind of took it from there. We probably would have still stuck with it even if we had known it was the science*".

We therefore feel that we could have drawn out the science more obviously in the stories from the outset and used science/STEM within the marketing and invitations to the session without negatively impacting on engagement.

### *How well did the Theory of Change fit and respond in different contexts?*

With the support of bespoke workshops delivered by the Shine Trust, a Theory of Change (Appendix 1) was developed to help the project meet its desired aims. The Theory of Change articulated how the project would achieve its desired aims. There are three key sections within the diagram:

- **Workshop Development Strategy** – this section details how the workshops were put together combining the experience of NUSTEM and partner school.
- **Engagement Strategy** – this section details how families would be encouraged to engage with the workshop.
- **Delivery** – this section details how different aspects of the sessions combine to achieve the aims of the MYST project.

Throughout the lifetime of the project various aspects of the original Theory of Change were adjusted and refined to reflect practice more accurately, and further reviewed after adaptations made to respond to the Covid pandemic. The figures below show how the Theory of Change was adapted within the three sections: development strategy (Fig 1), engagement strategy (Fig 2) and delivery (Fig 3). Where adjustments have been made, these are identified through the green shaded boxes. The adaptations to the Theory of Change fall into two categories:

**COVID-related adjustments** – the move from in-person to online delivery meant changes were necessary to facilitate the same high-quality interactions when delivering remotely (Figures 1 and 3).

**Deficiencies of the original model** – the original model significantly underestimated the key role of the Lead Teacher. They were instrumental in convincing families to attend sessions, and in exploring reasons for non-attendance and ongoing providing support and encouragement for those families to encourage them to attend (Figure 2).

Figure 1: Adaptations to the Development Strategy Section of the MYST Theory of Change

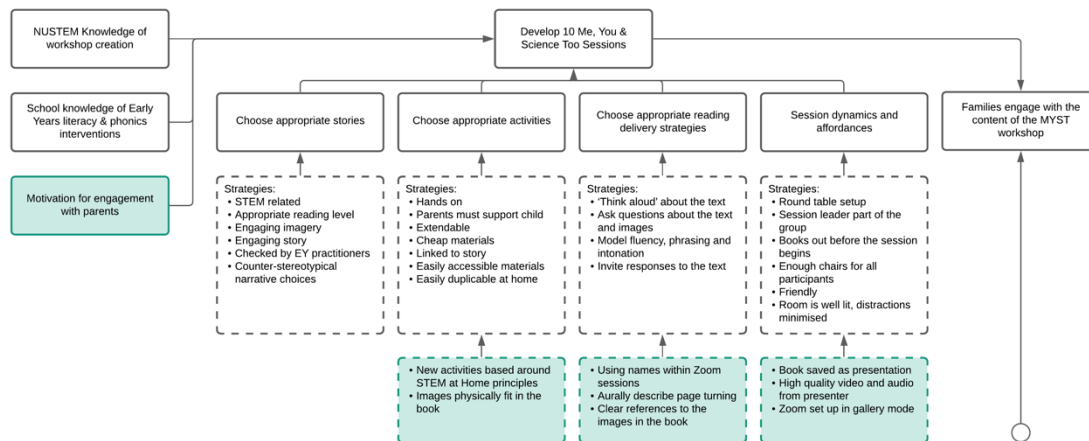


Figure 2: Adaptations to the Engagement Strategy Section of the MYST Theory of Change

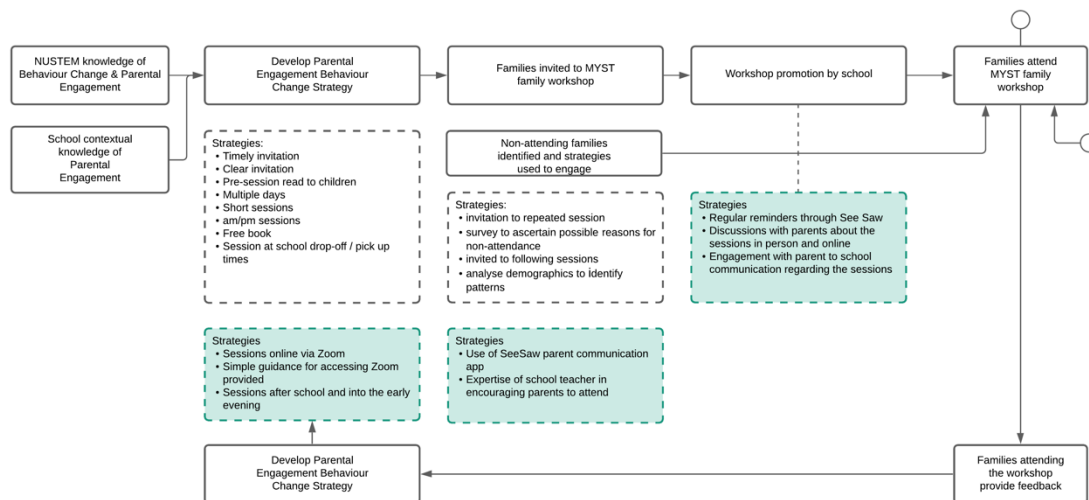
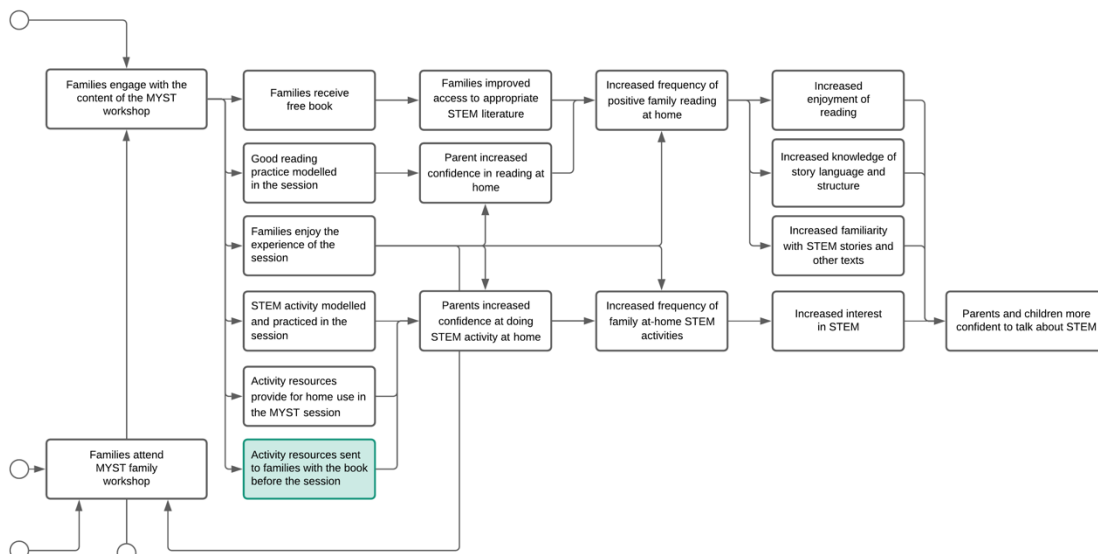


Figure 3: Adaptations to the Delivery Section of the MYST Theory of Change



## *Feedback for SHINE*

The SHINE Trust provided training on developing project Theories of Change, and ongoing expert support and guidance of Kirsten Kerr at the University of Manchester, which we found very valuable. Kirsten also supported us in thinking about how to incorporate the Theory of Change within the evaluation strategies. Moving forward we think it would be beneficial to see some of the Theory of Change based approaches included within the reporting templates of the SHINE Trust.

## *Future Planning and Legacy*

The final two book sessions for the MYST project will be delivered in the first quarter of 2022. Feedback from parents and staff has been helpful in considering the direction and context for these. For the remaining two sessions we plan to:

- Return to face-to-face deliveries if it is safe to do so.
- Continue to offer a range of different times and days to try and accommodate as many families as possible.
- Consider adding additional paper-based follow-up activities, or recording the sessions to extend the learning past the delivery.

Working on the MYST project we have gained experience and understanding of building engagement with family groups, and how to support home-school relations. This has, in turn, informed our thinking and direction for future family engagement and learning projects.

- The EAST model was trialled successfully under two different circumstances. We will continue to use this model to plan future family engagement projects.
- The Seesaw app was invaluable to the MYST project in terms of providing two-way communications between home and school, and we saw good communications through it. NUSTEM will explore the use of apps or online resources to support communications with family groups moving forward.
- Models for remote delivery of family sessions have been trialled with success. These models may be preferable over face-to-face in certain circumstances, such as family sessions aimed at people in a large geographical area.

## *Acknowledgements*

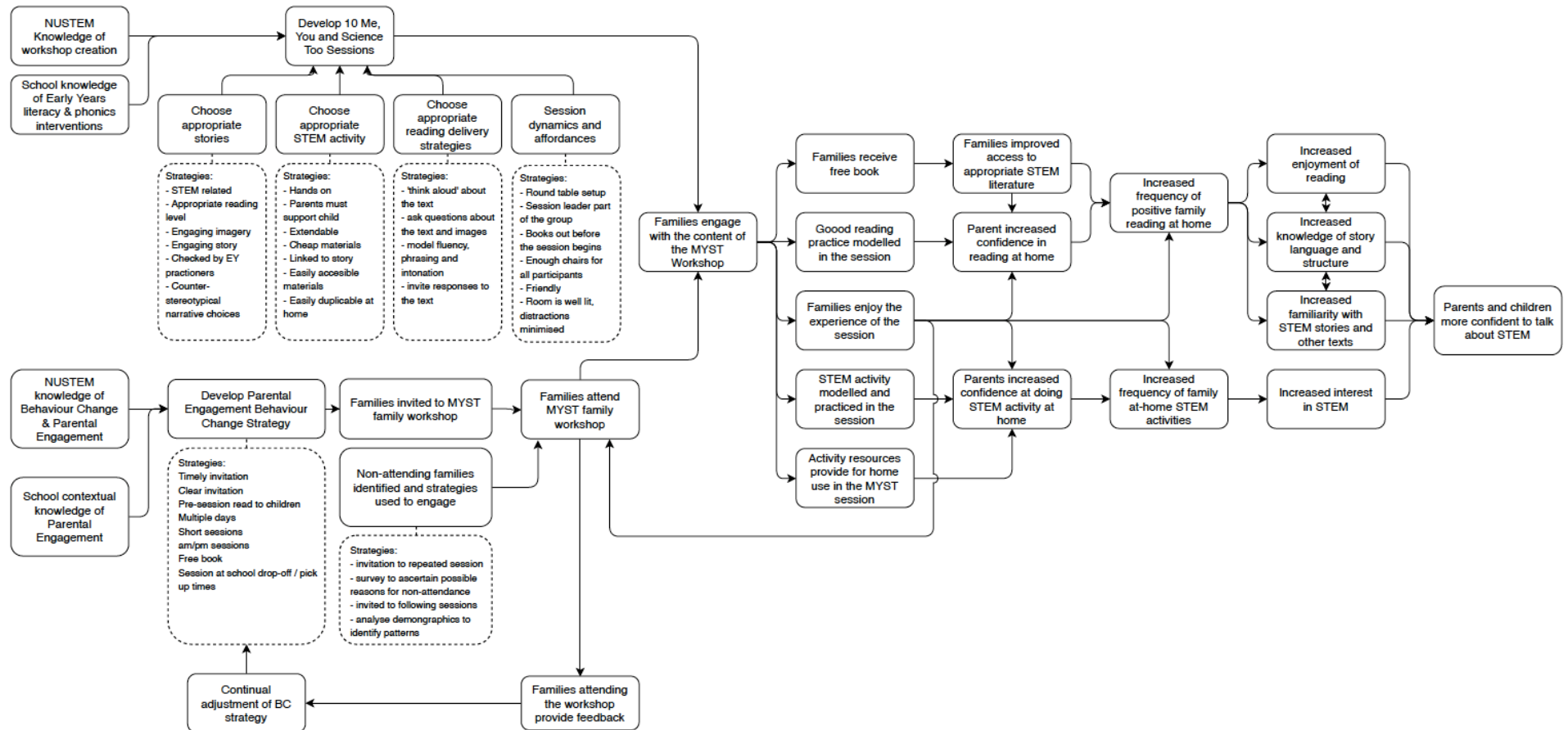
We would like to thank the SHINE Trust for making this project possible, and Kirsten Kerr for her valuable advice and guidance.

We would like to thank children, families and staff at Battle Hill Primary School for their enthusiasm and continued engagement with the MYST project during the difficult circumstances provided by the pandemic.

Finally, our deepest thanks goes to Joanne Smith Early Years Practitioner and Parental Engagement lead at Battle Hill Primary School. Joanne's hard work, patience and dedication to the project and families at Battle Hill were integral to its success.

## Appendix 1. The Original MYST Theory of Change

### Me, You and Science Too Theory of Change



## Appendix 2. The MYST Resources

Book	Author	Activity	MYST Website Link
Violet the Pilot	Steve Breen	Paper aeroplanes	<a href="https://nustem.uk/blog/myst/1-violet-the-pilot/">https://nustem.uk/blog/myst/1-violet-the-pilot/</a>
Look Up	Nathan Bryon	Constellation Tubes	<a href="https://nustem.uk/blog/myst/2-look-up/">https://nustem.uk/blog/myst/2-look-up/</a>
Little Cloud	Anne Boothe	Growing seed bags	<a href="https://nustem.uk/blog/myst/3-little-cloud/">https://nustem.uk/blog/myst/3-little-cloud/</a>
The Black Rabbit	Philippa Leathers	Shadow puppets	<a href="https://nustem.uk/blog/myst/4-the-black-rabbit/">https://nustem.uk/blog/myst/4-the-black-rabbit/</a>
Moon	Britta Tekentrup	Lunar flick book	<a href="https://nustem.uk/blog/myst/5-moon-night-time-around-the-world/">https://nustem.uk/blog/myst/5-moon-night-time-around-the-world/</a>
Robots, Robots Everywhere	Sue Fliess	Robot coding game	<a href="https://nustem.uk/blog/myst/6-robots-robots-everywhere/">https://nustem.uk/blog/myst/6-robots-robots-everywhere/</a>
Somebody Swallowed Stanley	Sarah Roberts	Plastic bag storer	<a href="https://nustem.uk/blog/myst/7-somebody-swallowed-stanley/">https://nustem.uk/blog/myst/7-somebody-swallowed-stanley/</a>
Hey, Water!	Antoinette Portis	Water filtration	<a href="https://nustem.uk/blog/myst/hey-water/">https://nustem.uk/blog/myst/hey-water/</a>

For further details about NUSTEM or to discuss the content of this report, please get in touch at the details below.

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