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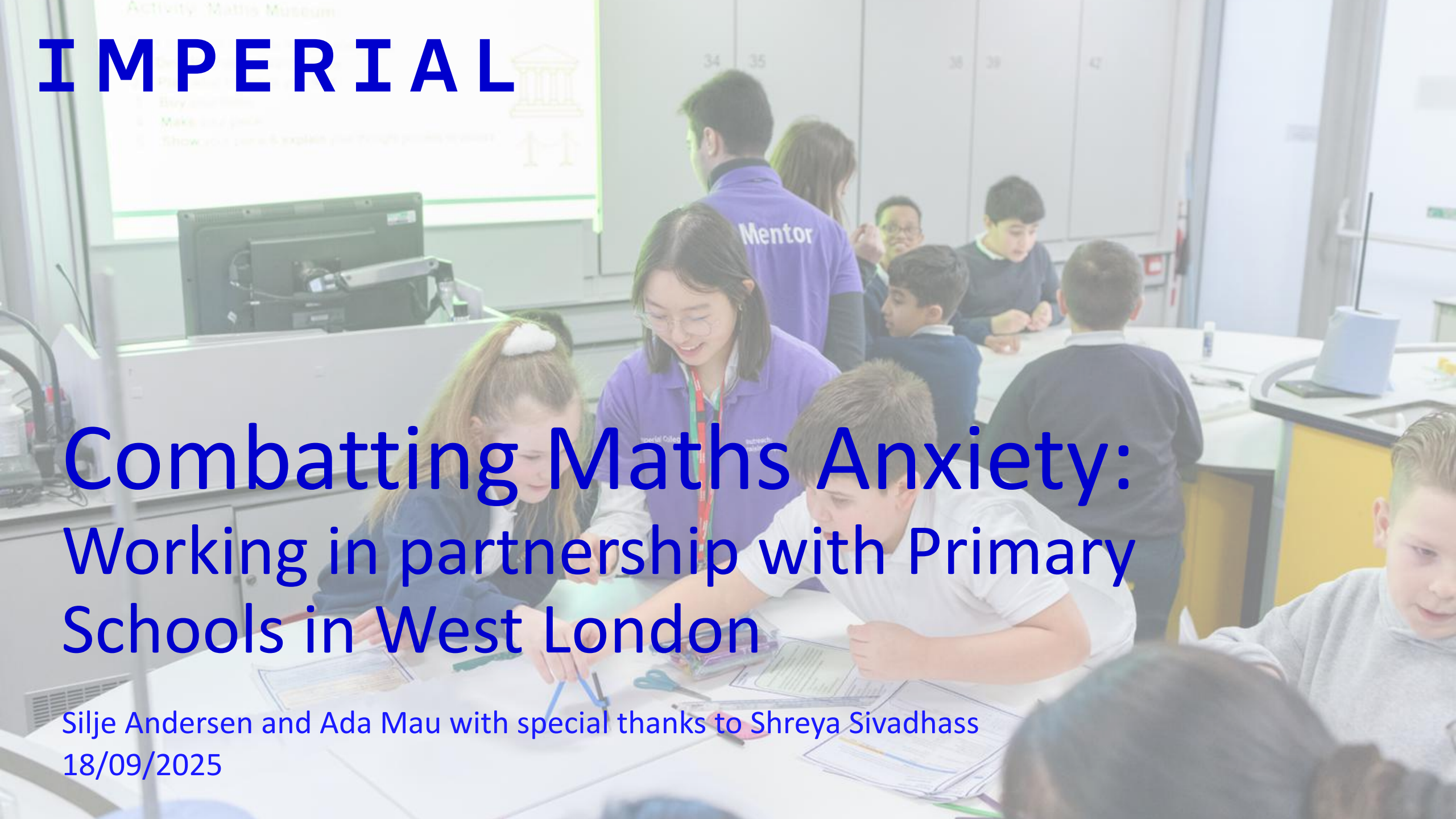


Combatting Maths Anxiety:
Working in partnership with Primary Schools in West London

Silje Andersen and Ada Mau with special thanks to Shreya Sivadhass

18/09/2025

Imperial Outreach - Our mission

What we do

Connect with **underrepresented** and **disadvantaged** students

Develop sustained **school partnerships**

Build **enthusiasm and engagement** in STEM from an early age

Our aims

Support our participants to **build the knowledge, skills and confidence** that will set them up to **thrive in their next steps**

Empower our participants to make **informed decisions,** and to **navigate available support** if they encounter challenges

Our vision

Contribute to the **diversity of Imperial's student cohort**

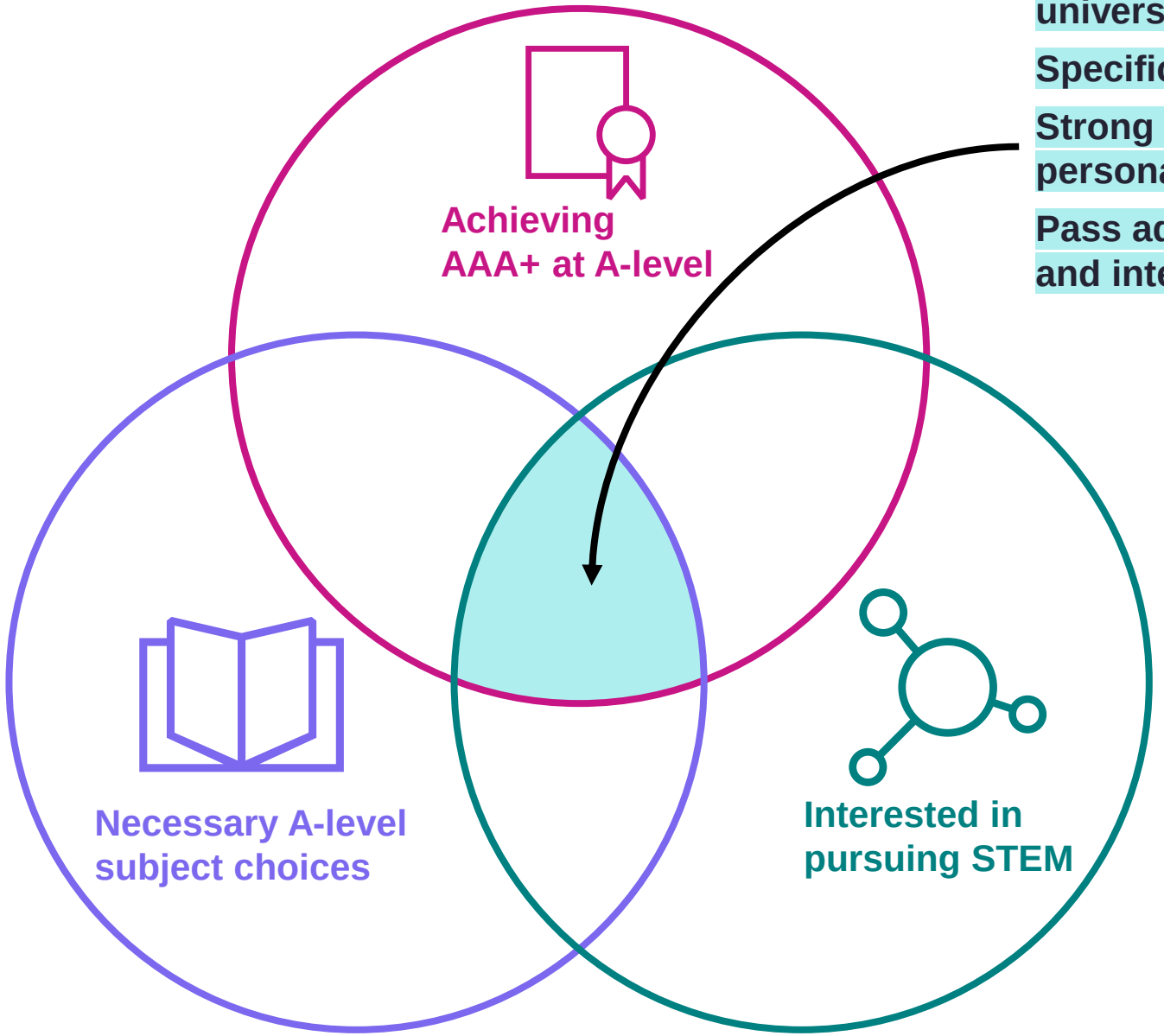
Support the diversity of the **STEM excellence pipeline** more widely

Increasing Access to Imperial

How many under-resourced students are **potential Imperial applicants**?

How do we **grow** this number?

Our programmes are focused on **widening the pool of potential applicants** from disadvantaged backgrounds



Ambition to go to university

Specific subject offered

Strong application and personal statement

Pass admissions tests and interviews

Outreach Portfolio

and our typical participants each year

	PRIMARY	KS3	KS4	KS5
Attainment and Skills	Primary Maths Transition School partnership programme 60	Proto-Maker Challenge School partnership programme 170	Maker Challenge Multi-touchpoint programme and summer intensive 130	
		Reach Out Lab Partnership School partnership programme 300-700		
		LSE x Imperial Maths Tutoring School partnership programme	Pimlico (Y10 and 11) Virtual tutoring programme 80	mA*ths/Further mA*ths Online Hybrid tutoring programme 500
		Homework Club (Y9-11) Drop-in tutoring programme		Accelerate (Y12 Physics/Chem) Hybrid tutoring programme 80
			Imperial Maths School School partnership	
Navigating Pathways		Y9 Girls Engineering Non-residential summer school 60	Y10 Insights Non-residential summer school 50	Y11 Challenge Non-residential summer school 40
				Y12 Work Experience Non-residential summer school 100
				Y12 Sutton Trust Residential summer school 200
			STEM Potential Multi-touchpoint programme 360	
			Pathways to Medicine Multi-touchpoint programme 120	
Supporting Black Heritage Students			STEM Futures Multi-touchpoint programme 120	

What is the Primary Maths Transitions Programme?

Aim to support primary school students with the transition in Maths from upper KS2 to KS3

New Outreach programme, launched in 2023 for primary schools local to West London

Theory of Change created to evaluate the programme

Philanthropically funded for three years by the Mohn Westlake Foundation

Purpose of the Programme

Learning Focus

- Positive improvements in attitudes to learning
- Increased academic self-confidence in Maths
- Increased sense of belonging
- Reduced Maths anxiety for pupils
- Increased motivation and engagement to learn Maths on the programme and in the classroom

Attainment

- Increased percentage of disadvantaged pupils meeting expected standards in Maths at the end of KS2 compared to pupils who have not participated.
- Increased attainment in non-statutory assessments in KS3 Maths for disadvantaged pupils compared to pupils who have not participated.
- Increased percentage of disadvantaged pupils achieving a Grade 5 or higher in Maths at GCSE compared to pupils who have not participated.

School Partnerships

Format:

- Work with all Year 5 pupils within the school.
- Continue working with those same pupils when they enter Year 6
- Onboard new Year 5 pupils each year
- Build a sense of community
- Engage with secondary schools/feeder secondary schools in the local area to continue working with a proportion of the cohort when they enter Y7
- Opportunities for whole cohort via parents

Programme Overview

Year 5:
SIX INTERACTION POINTS:

- One on-campus visit
- Four in-school sessions
- One visit to the V&A Museum

Year 6:
SIX INTERACTION POINTS:

- One welcome session on campus
- Five maths support lessons
- Ambassadors will support maths lessons during school time to provide extra supervision in the class
- Optional independent summer maths essay competition

Year 7:

- Two on campus visits
- Maths homework support (Number of interaction points TBC)
- Optional independent summer project

Session Delivery

- Content and activity themes created by programme coordinator
- Developed by academic leader or programme coordinator
- Sessions delivered by casual staff
  - Academic Leaders (Lead)
  - Ambassadors (Support)

"One of the most memorable parts of the programme was when a child came to me and expressed that they found the 'games so fun, even though they're maths'. Moments like that are precisely why this programme is so important; they show that **with the right approach, we can influence how children perceive maths and make it enjoyable**. I loved working on this programme".
- Academic Leader, Mathematics Postgraduate Researcher

Evaluation and Impact

How do we measure success?

Year 5

End of session post-it notes
Ask the pupils to write one sentence on how they found the session

End of delivery block survey for pupils and teachers
Questionnaire with Likert style questions and a space for free text too. Free text allows an authentic response!

Observations via casual staff and programme coordinator
Casual staff who frequently work on the events can see how the pupils respond to the intervention

Year 6

End of session post-it notes
On campus welcome session: Ask the pupils to write one sentence on how they found the session

End of delivery block survey for teachers
Questionnaire for teachers only as the supported lessons will hold more value for them

Observations via casual staff and programme coordinator
Casual staff who frequently work on the events can see how the pupils respond to the intervention

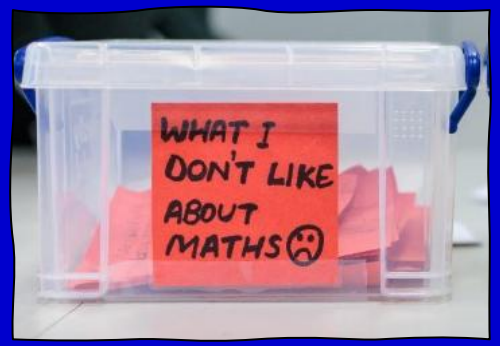
Evaluation and Impact

At the start of the programme, we used a truth pot to ask the students what they like and don't like about maths to gauge what the current perceptions are. The responses were anonymous.

"I like that maths teaches you a lot of things and makes you smarter"

"It's a great skill to learn"

"I love maths because it teaches you more than one thing at a time"



"When I do a lot of working and still get the answer wrong"

"When I do a hard maths problem it really hurts my brain"

"I don't like maths because of the tests"

Evaluation Snapshot

PUPILS

Year 5:

The pupils really seemed to value the outside engagement in Maths, and overall, we saw some positive improvements in attitudes to learning.

79% enjoyed this series of workshops

73% said they find maths more interesting now than they did before

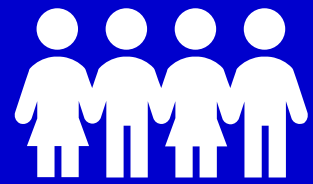
71% are now more confident asking for help in lessons when they need

63% can now think of important ways they can use maths outside of school

48% reported that maths no longer makes them nervous when it comes up in school

"The activities were **amazing**! It was **challenging and got people thinking**."

"The **best day at school ever**! It was fun and we were learning at the same time."



"I loved how **creative** this session was, when we made the lanterns and it was amazing how even that could relate to maths. **I've learnt a lot**!"

Evaluation Snapshot

TEACHERS

Year 5 teachers:

All teachers we worked with said the students enjoyed this series of maths workshops, that it gave the students an opportunity to explore maths in a different way from their normal lessons, and agreed that the sessions got the students interested in maths.

Most common feedback:

- Opportunity to visit a university campus was valuable
- V&A trip helped broaden horizons
- Meeting older students who study maths at university exposed them to role models
- Appreciated links to the curriculum

"The class will really benefit from continuing this project next year, it is a brilliant initiative."

"The opportunity to…engage with older students who are using Maths in their further studies. The students were so excited to have fun with maths and experience their learning in new ways"

Evaluation Snapshot

PUPILS

Year 6:

Post-it note responses for 'Welcome Session' on campus.

"It was so fun to do something new".

"It was amazing how they made learning exciting".

"I enjoyed both experiments we did in the morning. I now know the exact temperature of liquid nitrogen".

"[I enjoyed] learning new things in the experiment and you can show off all the knowledge, and seeing the balloon deflate and inflate".

TEACHERS

Year 6 teachers:

Supported Maths Lessons survey responses.

"We used the ambassadors in our Maths groups, they helped to support our less able students and also helped challenge and support our working at and greater depth students."

"The support was helpful - it allowed us time to focus on other children in our lessons for more focused support."

"It was helpful as it meant all children had more time with adult support and meant we could spend more time with focus groups."

"I will be [teaching] Year 6 next year and would want the support again next year."

Programme Challenges

School Engagement

- Getting in touch and staying in touch
- Teacher workload/admin overload
- Getting the right information to run our events smoothly
- Adequate time for in depth conversations to help shape the programme

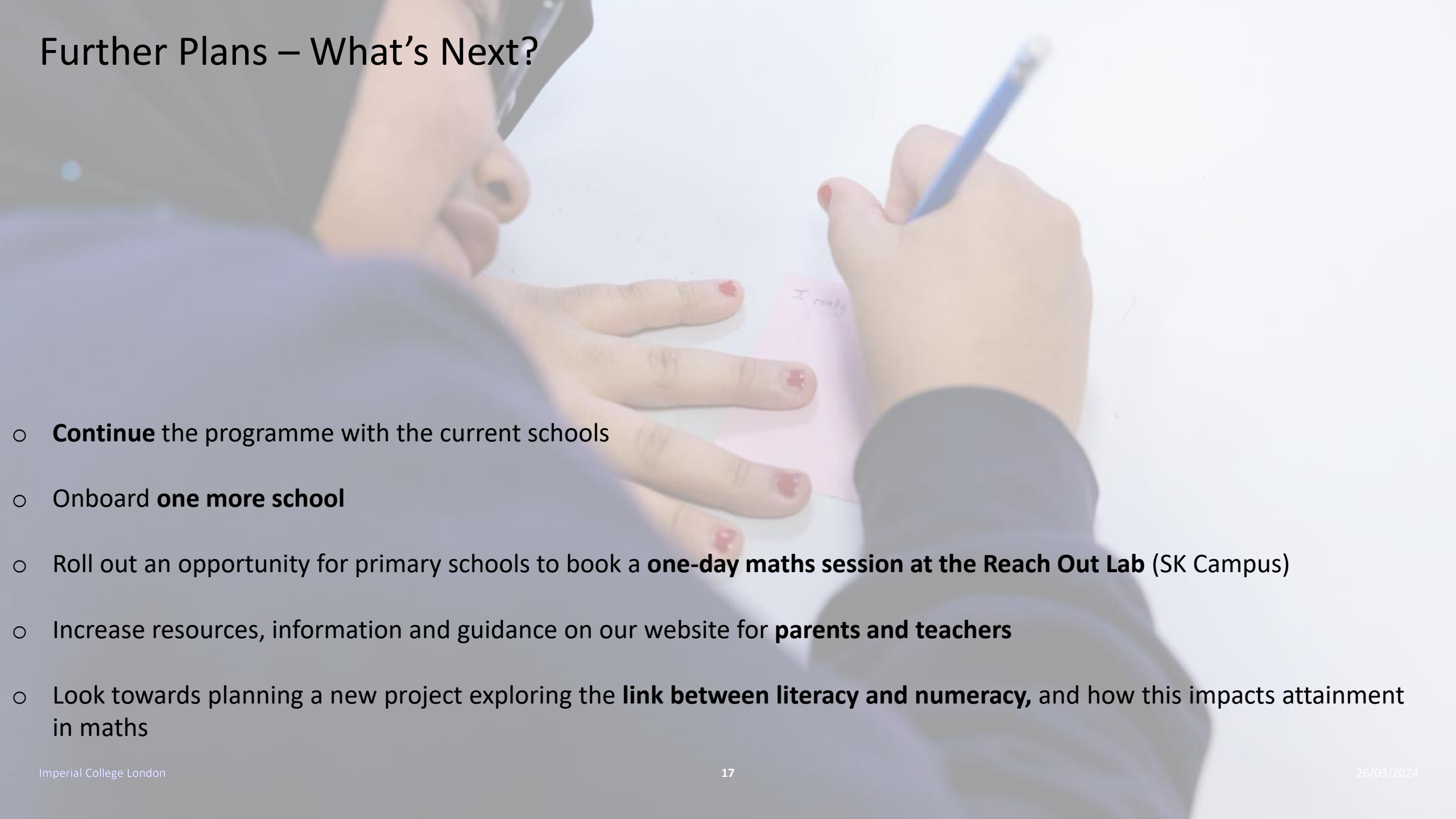
Parental Engagement

- Creating and maintaining a relationship with cohort of parents/guardians
- Finding the best way of consistent communications
- Incomplete contact details
- Difficulty tracking students – needs to be done via parents

Areas for Improvement

Useful Findings	Our Comments	Actions
A small area of the **activities were slightly too challenging** for the pupils and therefore caused a slight shift in engagement	Content was based on the expected standard for Year 5 students. Further evidence that there is a gap in the level of core maths knowledge at KS2.	We welcome a challenge for the pupils to prepare them for secondary school learning. However, we don't want to increase maths anxiety in the process. Break content into smaller steps, whilst still leaving space for a challenge.
One of the teachers expressed it would be helpful to **directly link sessions to the learning happening in class** as part of the curriculum.	We agree with this as the pupils will get the best out of our activities if they have already covered the topics in class.	At our initial meeting with the teachers, we will continue to provide them with full flexibility on when we run our sessions with their class.
One of the teachers said having the **same ambassadors return** where possible would be helpful, as they could get to know the children better over the time	We would like to do this as it helps the ambassadors gain more experience with the role. However, we also need to be mindful of training a larger pool of ambassadors and giving them the opportunity as well.	We will work out the best way to manage opportunities whilst endeavouring to recruit as many of the same ambassadors for each session.

Further Plans – What's Next?



- **Continue** the programme with the current schools
- Onboard **one more school**
- Roll out an opportunity for primary schools to book a **one-day maths session at the Reach Out Lab** (SK Campus)
- Increase resources, information and guidance on our website for **parents and teachers**
- Look towards planning a new project exploring the **link between literacy and numeracy,** and how this impacts attainment in maths

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Useful Links:

Primary Maths Transitions Programme Launch Story
Imperial launches new programme to support successful foundations in maths | Imperial News | Imperial College London

Mohn Westlake Foundation – Primary Maths Transitions
Building Strong Maths Foundations in Primary Schools

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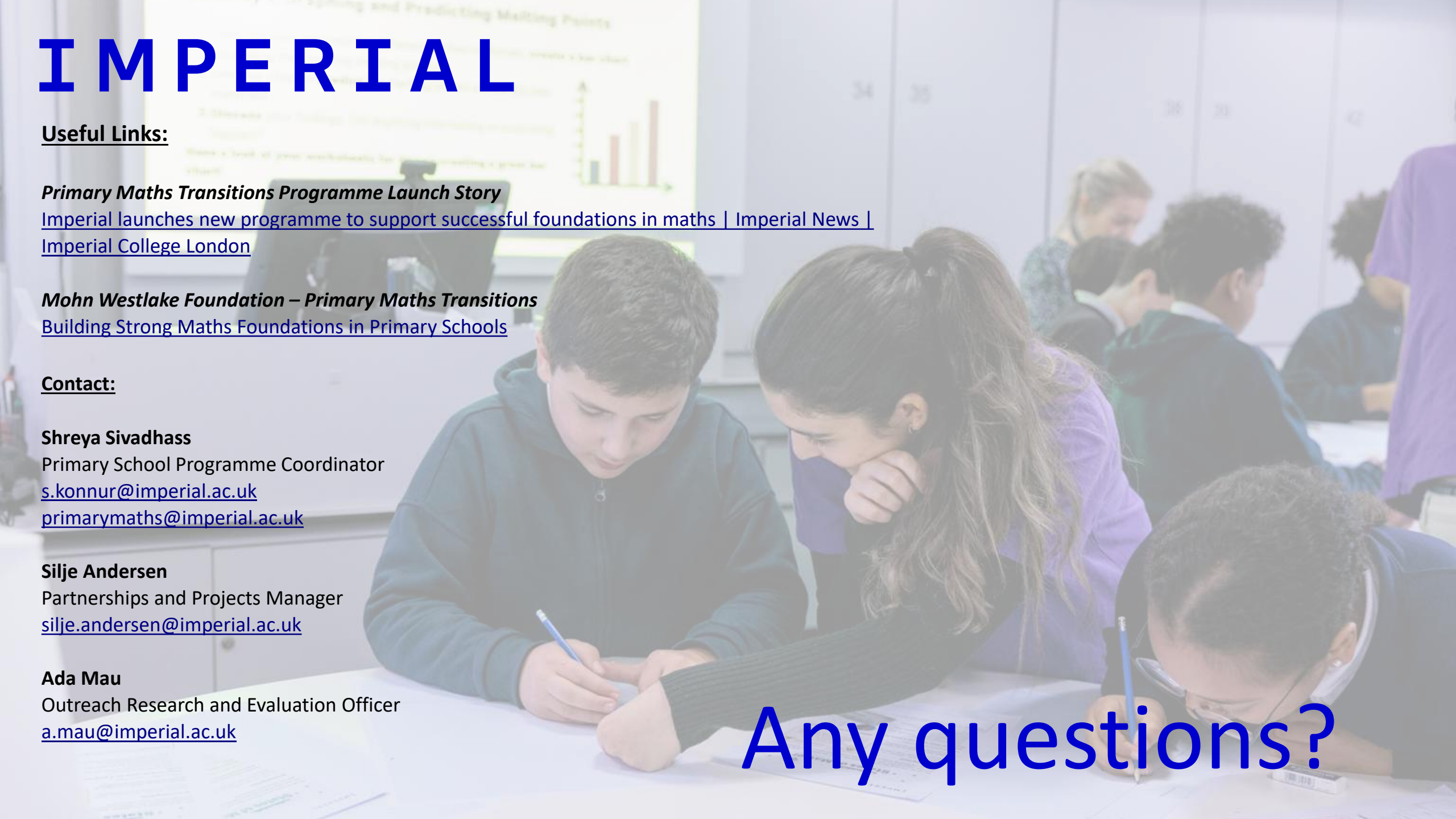

Any questions?