

Pilot Evaluation Plan: Early Number with Numicon

IFF Research
Evaluator



Education
Endowment
Foundation

PROJECT TITLE	Early Number with Numicon
DEVELOPER (INSTITUTION)	Oxford University Press (OUP)
EVALUATOR (INSTITUTION)	IFF Research
PRINCIPAL INVESTIGATOR(S)	Sashka Dimova
EVALUATION PLAN AUTHOR(S)	Sashka Dimova, Jenny Hull, Maya Agur, Daisy Woods
PUPIL AGE RANGE AND KEY STAGE	Nursery aged children (aged 3 and 4 years).
NUMBER OF SCHOOLS/ SETTINGS	30 nursery settings (15 Private Voluntary and Independent, and 15 Childminders)
NUMBER OF PUPILS	Around 165 (exact number to be confirmed post recruitment) ¹

Evaluation plan version history

VERSION	DATE	REASON FOR REVISION
1.1		
1.0 [original]		[leave blank for the original version]

¹ This has been calculated on the assumption that 15 childminders will be recruited, with each having 1 children of the target age and 15 PVI settings will be recruited, each having 10 children of the target age.

Intervention

BACKGROUND

Studies have shown that high quality mathematics education in the early years can make an enormous difference to the later mathematical performance of children². Therefore, early numeracy practices are of particular interest as they are one of the most impactful approaches in improving children's numeracy development as identified in the [EEF Improving Mathematics in the Early Years Toolkit](#)³. However, the evidence on which approaches are most effective is limited. As part of the commitment to improve the evidence base for early numeracy professional development targeted at private, voluntary and independent (PVI) settings and childminders, and following a pre-pilot period, the Education Endowment Foundation (EEF) commissioned the pilot evaluation of Early Number with Numicon.

Early Number with Numicon is based on three approaches that a recent review undertaken by the EEF judged to be effective in improving early numeracy development⁴:

- 1) Professional Development (PD) programmes for practitioners in early year settings;
- 2) Approaches where practitioners create opportunities for discussion of mathematical ideas with children;
- 3) Approaches that use physical manipulatives to increase children's ability to understand and engage with mathematical ideas⁵.

With a focus on PVIs and childminders where there is a high variability in qualifications among staff and higher proportion of children eligible for Early Years Pupil Premium (EYPP)⁶, this pilot evaluation offers a unique opportunity to add to the evidence base on effective PD and practically support practitioners in PVIs and childminders to improve their knowledge and confidence in delivering numeracy sessions⁷. This is important as evidence suggests that there is inconsistent training across the early years workforce in different setting types due to limited available funding. For example, less than half of PVIs employ a qualified early years teacher or equivalent, while all maintained nursery schools must employ a qualified teacher^{8,9}. This was further compounded by Covid-19 as the pandemic put "increased financial pressure" on the sector and exacerbated recruiting and retaining highly qualified staff¹⁰.

This pilot is an extension to the pre-pilot work undertaken with Ryders Hayes Stronger Practice Hub ('Thrive Together') Early Years over the Spring and Summer terms in 2023, with 12 settings, (4 childminders, and 8 private and school-based nurseries). The pre-pilot work was undertaken by the Oxford University Press (OUP) delivery team, with support from the early-stage pipeline development (ESPD) team at the EEF.

This pilot is the first independent evaluation of the Early Number with Numicon programme. Compared to the pre-pilot, the pilot will be delivered to a wider number of setting. The final sample of 30 settings

² Raghuram KP, Barnes MA. Early numeracy skills in preschool-aged children: a review of neurocognitive findings and implications for assessment and intervention. *Clin Neuropsychol*. 2017 Feb;31(2):329-351. doi: 10.1080/13854046.2016.1259387. Epub 2016 Nov 23. PMID: 27875931; PMCID: PMC6208324.

³ EEF (2021a). Improving mathematics in the Early Years and Key Stage 1. Available at: <https://educationendowmentfoundation.org.uk/education-evidence/guidance-reports/early-maths>

⁴ Clark, A., Henderson, P. and Gifford, S., 2020. Improving Mathematics in the Early Years and Key Stage 1. Guidance Report. *Education Endowment Foundation*.

⁵ Hodgen, Jeremy, et al. "Early Years and Key Stage 1 Mathematics Teaching: Evidence Review." *Education Endowment Foundation* (2020).

⁶ For more information on childminders see <https://explore-education-statistics.service.gov.uk/methodology/childcare-and-early-years-provider-survey>

⁷ Paull, G, and Popov, D. The role and contribution of maintained nursery schools in the early years sector in England. London: Department for Education, 2019.

⁸ Cattoretti, G., Paull, G. & Marshall, L. (2019). Providers' finances: Evidence from the Survey of Childcare and Early Years Providers 2018 Research report. d

⁹ Bonetti, S., and Ilanden, J., 2020. Early years workforce qualifications and children's outcomes: An analysis using administrative data. Education Policy Institute.

¹⁰ Parliamentary Office for Science and Technology, 'Impact of Covid-19 on early childhood education and care. 27 October 2021.

was based on the OUP's capacity to deliver. It was also agreed that an equal split across PVI and childminders would be appropriate given that they are likely to differ.

The pre-pilot highlighted that children acquire numeracy skills at different rates and that some settings needed more time to consolidate children's understanding before moving to the next activity in the programme. As a result of this, the length of the programme has been extended from 8 to 14 weeks. The additional time will allow more flexibility in delivery and will offer additional support to children who need to work at a slower pace or lack understanding of underlying maths concepts.

DETAILED DESCRIPTION OF NUMICON

WHAT (EARLY NUMBER WITH NUMICON)

Early Number with Numicon is a PD programme that aims to improve practitioners' knowledge and confidence in developing early numeracy skills in 3- and 4-year-olds. It provides training for practitioners to deliver short weekly small group sessions and enhance their continuous math provision based on the Numicon resources. It will run over 14 weeks between September 2024 and January 2025. Practitioners are trained to introduce children (3 and 4 years old) to the fundamentals of numbers and patterns through 11 structured activities. The goal of the programme is to give children the best possible foundation for their maths journey before entering school.

WHO (RECIPIENTS)

The programme developed for the pilot study is targeted specifically at practitioners in PVI nursery settings and childminders, to develop their knowledge and confidence in delivering numeracy sessions with children. The types of practitioners who will take part include childminders, room leaders or teachers within settings that work with children aged 3 to 4. From PVIs, a senior practitioner, nursery manager or member of the senior leadership team (SLT) will also be invited to attend the first training session. No prior knowledge of maths teaching is required, and settings will be provided with all the resources they will need to implement the programme, including a set of Numicon shapes. Each practitioner will be paid £7.50/hr to attend training.

WHAT (MATERIALS)

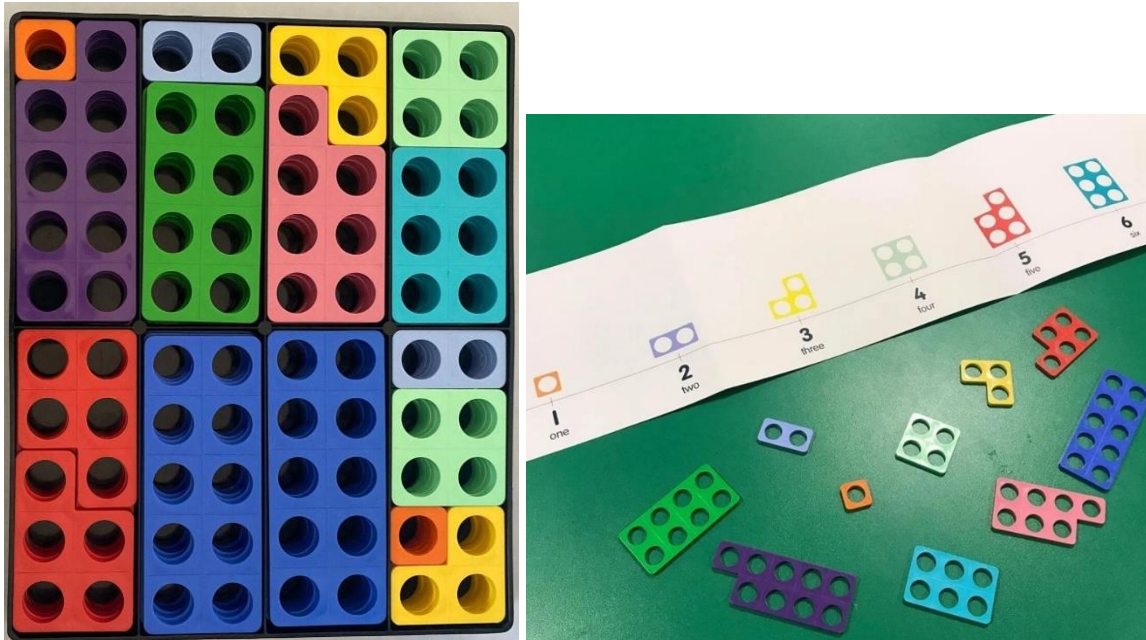
The practitioners will be provided with all resources needed to deliver the programme, which includes:

- Box of Numicon shapes
- Baseboard
- Number Overlays
- Picture Overlays
- Pegs (80)
- Zig-Zag book
- Cuisenaire (small box)
- Big Foam Shapes
- Counters
- Pan balance
- Making Numbers book

All teaching materials and training session handouts will also be provided.

Numicon is an approach to teaching maths that uses Numicon pieces. Utilising the concrete- pictorial- abstract approach, Numicon uses structured imagery and apparatus to help children explore and understand mathematical concepts.

Figure 1 Numicon manipulatives



WHAT (PROCEDURES AND ACTIVITIES USED)

Training and support to practitioners:

- **Four training sessions for practitioners** will be delivered over the 14 weeks of the programme, by The Head of Professional Development from OUP and a Lead Numicon Consultant or trainer. Each session introduces the required maths subject knowledge, the mathematical concept that is being taught, and activities to be taught to children. The sessions take practitioners through the process of planning and delivering the activities, and cover topics such as recognising and continuing patterns, labelling and counting objects, same/different comparison, and numbers within and beyond five. The training sessions will also support and encourage practitioners to enhance the math opportunities available to children, through their continuous provision.
- There is **continued support** during delivery via individual **check-ins** by the OUP delivery team which occurs once during implementation, and a **professional learning community** that is encouraged between practitioners. Each practitioner is encouraged to have a buddy from another setting (who is attending the training) who can support them if they miss one or more of the training sessions. Support from OUP will also be available if someone missed a session. Practitioners are also asked to complete tasks between training sessions, for example, to conduct the new activities they have learnt, or to meet with their learning buddy to share experiences. This also includes practitioners making notes of reflections of the programme, and notes on how the activities were received by the children and what they might do differently next time. There is a page for notes and reflections in the activity pack, and each training session starts with a discussion around reflections. Surgeries and drop ins will also be available for questions and queries between the training days.

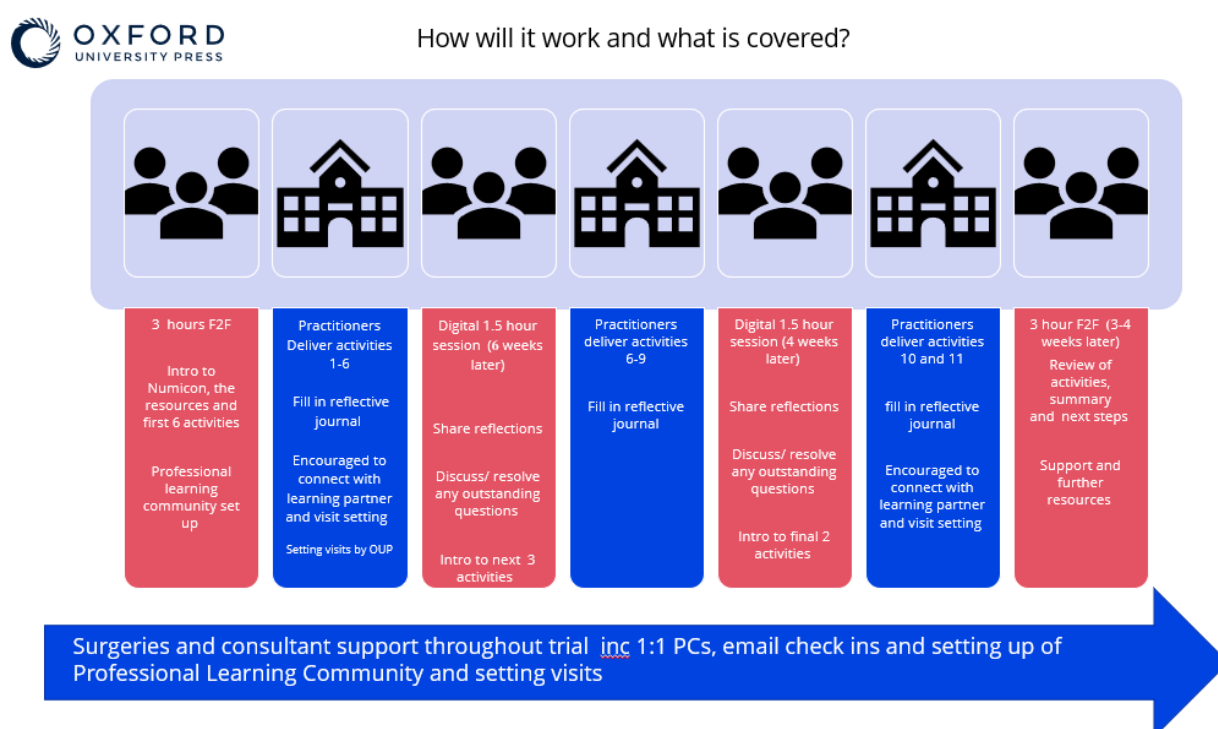
Activities delivered to children:

- After being trained, practitioners will deliver up to **11 adult led activities** to children aged 3-4, over the 14-week programme delivery period, using Numicon, an approach to teaching maths that helps children see connections between numbers. It is a multi-sensory approach, which means children learn by seeing and feeling, for example by exploring the manipulatives (where relevant), or mimicking language used in the session. Each activity lasts approximately 10-15

minutes and is delivered to groups of up to four children, such that all children aged 3-4 in a setting are included each week. Some children may need to access the activities at a slower pace and might need additional practice to grasp the concept being taught, for example with counting. Practitioners have the option of repeating content and as a result some children may not reach the end of all 11 sessions, during the programme delivery period.

- Running alongside the adult led activities, **practitioners will also enhance their continuous math provision** with linked activities set up for the children in a nursery setting or with a childminder. These wider activities will provide additional opportunities to practice and consolidate new learning through play.
- The sessions will cover the following topics: familiarisation and engagement; recognising; copying and continuing patterns; making Numicon patterns; counting; comparison and composition. Some of the session may be adapted to align with wider topics focuses, e.g. counting activities themed around the Hungry Caterpillar.

Figure 2 – Delivery overview



Source: Oxford University Press

HOW (MODE OF DELIVERY)

The training includes a blend of face-to-face and online sessions. The training will be delivered in groups, but there will be catch-ups available with a trainer or recorded sessions for practitioners who miss the live session. However, it is preferred that the sessions are accessed 'live'. The sessions are designed in this blended way to be flexible and accessible, mindful of the time pressures and other demands of practitioners' lives.

After completing a training session, practitioners will return to their setting and deliver the activities they have been trained in to the children. Each of the activities is delivered to groups of up to four children. All pre-reception-aged children (aged 3 and 4) in a setting are included each week. Practitioners have the option of repeating content if children have not grasped the concept being taught and enhancing the continuous math provision with linked activities. The OUP delivery team will cover how to do this during PD and in surgeries and drop ins with practitioners, as well as ad-hoc via email/visits to settings.

It is important to note that continuous math provision in the childminder settings may look different as they may be the only child of that age, which means that interactions may be adult facilitated as the child has no other peers.

WHEN AND HOW MUCH (DOSAGE)

Delivery of the training and activities is spread across a span of 14 weeks. The first training session (attended by leads and practitioners) is 3 hours long and is face-to-face, while the middle sessions are online twilight sessions that are 1.5 hours long, and the final session is face-to-face and 3 hours long. There are 11 weekly activities for children, with each activity lasting 15 minutes.

WHO (DELIVERY PROVIDERS, IMPLEMENTERS)

The Early Number with Numicon programme is developed by Oxford University Press (OUP), who own the wider Numicon brand and associated programmes.

The training will be delivered by the Head of Professional Development at the OUP and a Lead Numicon Consultant. All the trainers have a number of years' experience working with Numicon and are highly experienced in delivering professional development to educators.

Practitioners who participate in the training provided by OUP will deliver the intervention in settings.

WHERE (LOCATION)

The first and final training sessions will take place in a location central to all of those taking part in the training. The location selected for this pilot is Bradford, therefore the face-to-face training will be somewhere which is easily accessible in the city. The middle training session will take place online.

The programme will be delivered by the practitioners in their own settings.

TAILORING (ADAPTATIONS)

The programme is designed in a way that means practitioners can deliver the sessions that have been trained in but have freedom to tailor the sessions based on the needs of the children they are working with. The training sessions will help the practitioners learn how to do this. Adaptations will be mainly made to link the activities to topics (e.g. mini beasts, weather) and to the wider additional opportunities that the setting offers to practice new learning. The way some of these adaptations are delivered will depend on the resources and environment the setting has.

Theory of Change

Figure 3 displays a theory of change (ToC) for Early Number with Numicon. It sets out the main inputs/activities and outputs that need to be in place to lead to the short-term and long-term outcomes. The pilot evaluation will investigate the validity of the ToC and identify aspects that are ratified or may require updates. The causal assumption log (see Table 1) outlines what is driving the changes detailed in the ToC.

Figure 3 Early Number with Numicon Theory of Change

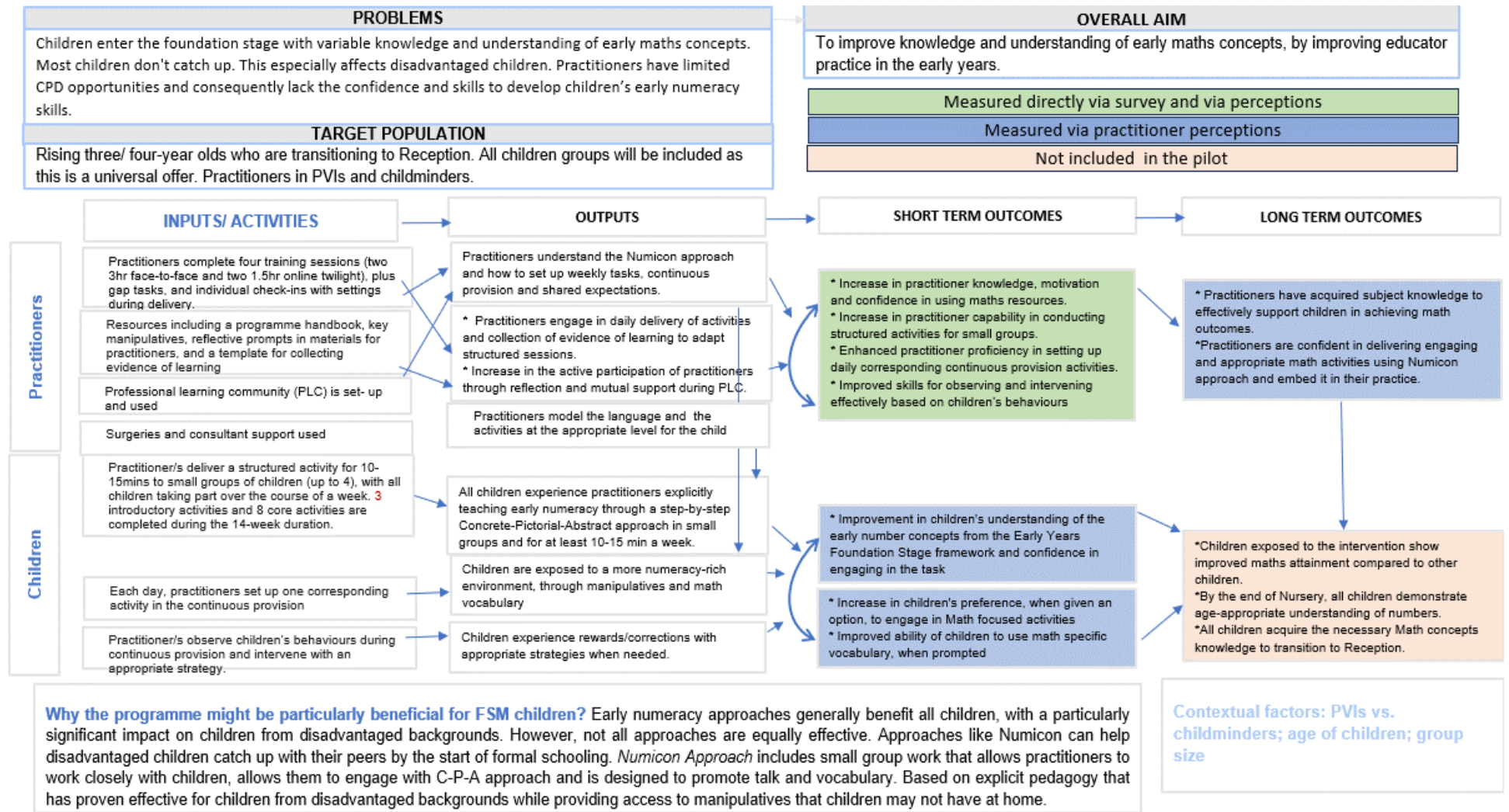


Table 1 Early Number with Numicon causal assumptions log

Causal assumption	Where in the ToC does this assumption occur?	Why is this assumption key for your programme?	What is the underlying evidence behind this assumption?	How strong is the underlying evidence for this assumption?*
Training in early maths leads to increased practitioner confidence because they will have a clear model for teaching. Increased confidence leads to more regular teaching. Regular teaching over time following a simple structured approach will lead to better maths teaching.	Input, short-term outcomes and output	Confident practitioners will be encouraged to deliver the resources regularly. They are more likely to be engaged and motivated and so will deliver the programme better, leading to increased impact. Outputs are likely to be more sustained in the short/ long term.	Previous pre-pilot trial. Giving practitioners PD empowered them to feel like they could engage in structured maths teaching.	
Breaking down mathematical concepts into small steps makes these concepts easier to teach. Practitioners can identify and respond to misconceptions more easily and this leads to improved pupil understanding of early number concepts.	Input and long-term outcomes	The programme is broken down into small steps and sequenced progressively to build knowledge in manageable chunks. If this approach is wrong, then pupil impact will be undermined.	Evidence from cognitive science research and evidence from other programmes where maths content has been broken down into 'small steps'	
Increased practitioner confidence and knowledge will lead to an increased awareness of how to develop a positive maths learning environment.	Input and long-term outcomes	If practitioner confidence does not lead to better learning environments then a key element of good early years practice will not be achieved and impact on pupil outcomes will be undermined.	Previous pre-pilot trial EEF early numeracy approaches - https://educationendowmentfoundation.org.uk/education-evidence/early-years-toolkit/early-numeracy-approaches Ofsted Early Years reports	
Regular maths teaching that is structured and responsive to learner needs will lead to better pupil outcomes. Pupils who experience success will feel to greater enjoyment of maths and preference to engage with maths activities.	Input and long-term outcomes	Pupil enjoyment of maths is linked to engagement and this is a key programme output. Early enjoyment and engagement in maths is important for long term engagement and interest in the subject.	Morris et al. (2021) linking early attainment to later motivation and success.	

<p>A routine-based approach to teaching maths (regular sessions every week with a common structure) will lead to improved ability of children to engage with maths focused activities in sessions and in continuous provision.</p>	<p>Input and long-term outcomes</p>	<p>It is the regularity and structure of the programme that will lead to improved practitioner competence and pupil engagement. If this is not the case it is unlikely that the programme will be sustained and have longer term impact.</p>	<p>EEF summary findings of EYFS/ KS1 research shows link between structured taught maths sessions and developing metacognitive and self-regulation skills Improving Mathematics in the Early Years and Key Stage 1</p>	
<p>*Amber/Red indicates the evidence is based on a similar programme, and is informal feedback; Amber/Green indicates the evidence is robust but not specific to Early Number with Numicon; and Green indicates the evidence is specific to the programme</p>				

Research questions

Following the Implementation, Delivery and Evaluation Analysis (IDEA) Workshop and Set-up Meetings with the EEF and OUP, the following research questions were agreed in accordance with the three aims of this evaluation:

1. Evidence of promise - is there evidence of promise that the programme may lead to the changes expected in the ToC?

RQ 1.1: Is there a change in practitioners' knowledge and confidence in delivering numeracy sessions after participating in the programme?

- Are the four PD sessions perceived to be relevant in influencing the practitioners' knowledge and confidence?
- Is the professional learning community perceived to be useful?
- Is the buddy system perceived to be useful?
- What new knowledge and practices do practitioners report learning?
- Does this vary by setting type or practitioner's prior knowledge and experience?

RQ1.2: What, if any impact do practitioners feel the programme has had on increasing children's engagement and knowledge in early numbers?

- What is the contribution of the small group activities?
- What is the contribution of the additional four introductory activities?
- What is the contribution of the continuous provision activities?
- What impact do practitioners feel the programme is having on children from disadvantaged backgrounds especially for children with EYPP, EAL and SEND?

RQ1.3: How different is the approach to other math resources and programmes used?

- What is the usual setting practice of early numeracy approaches?

RQ1.4: Did practitioners' early numeracy approach change (and if so, how) as a result of the programme?

- Did practitioners use the resources?
- Did this vary by setting type?

2. Feasibility of implementation - is Early Number with Numicon feasible and acceptable to PVI and childminders?

RQ2.1: What is the engagement with the training sessions?

- What are the completion rates for the training?
- What are practitioners' views on the number of PD sessions, duration and hybrid training model?

RQ2.2: What is the engagement with the programme activities (i.e. small group activities and continuous provision for children)?

- Did practitioners deliver the required activities?
- What are practitioners' views on the programme's dosage and content?
- What adaptations if any, were made?

RQ2.3: What contextual factors act as barriers and facilitators for practitioners in terms of:

- Attending the PD sessions
- Delivering the small group activities and continuous provision
- Do these vary for PVI and childminders?

RQ2.4: What are the barriers and enablers for children from disadvantaged backgrounds accessing the programme especially for children with EYPP, EAL and SEND?

RQ2.5: How acceptable is Early Number with Numicon to PVI and childminders?

- Is the training accessible to practitioners in all settings?
- How is the programme received in different settings?

3. Readiness for trial - How feasible is to scale delivery (and undertake evaluation using a randomised controlled trial design) with this population (i.e. PVI's and childminders)?

RQ3.1: To what extent does the recruitment strategy recruit and retain the settings and practitioners?

- What are the different challenges depending on the type of setting?

RQ3.2: What does the pilot tell us about the feasibility of data collection?

RQ3.3: How feasible is it to conduct an evaluation using a randomised controlled trial design with PVI's and childminders?

- What are the benefits and disadvantages of estimating one treatment effect for PVI's and childminders combined, compared to estimating separate effects? What are the implications for sample size?

RQ 3.4: What costs/resources are required by settings implementing Early Number with Numicon and is this feasible and acceptable, at a larger scale?

Table 2 provides an overview of the research questions and the corresponding success indicators using the EEF's pilot criteria and describes how these will be addressed by each of the evaluation methods.

Table 2 Success indicators

Pilot criteria	Research question	Success Indicator	How to assess this?
Evidence of promise	1.1	Improvement in practitioners' knowledge and confidence in supporting children's early numeracy development across the majority of the PVI's and childminders	Practitioner survey; Practitioners interviews; Trainer interviews; Practitioners emails; Observations
	1.2	Practitioners (who take part in the training) in the majority of the PVI's and childminders perceive Early Number with Numicon to have a positive impact on children's early numeracy development	Practitioner survey; Practitioners interviews; Observations
	1.3; 1.4	Practitioners in the majority of PVI's and childminders make changes to their practice as a result of taking part in Early Number with Numicon	Surveys with practitioners/leads; Case studies; Observations
Feasibility of implementation	2.1	Practitioners in the majority of PVI's and childminders attend all training sessions	Surveys with practitioners; Observation of training; Case studies
	2.2	Practitioners (who take part in the training) in the majority of PVI's and childminders complete the programme activities (i.e. small group activities and continuous provision for children)	Surveys with practitioners; Case studies
	2.1; 2.2; 2.3	Early Number with Numicon is delivered with medium to high fidelity in all setting types as assessed with the fidelity measure	Fidelity measure Surveys with practitioners; Case studies
	2.3; 2.4	Absence of any major barriers ¹¹ to delivery for majority of PVI's and childminders and for children from disadvantaged backgrounds	Discussions with OUP delivery team; surveys with practitioners, case studies; email exchanges
	2.5	Practitioners in the majority of PVI's and childminders consider the intervention practical to implement (with minor amendments)	Surveys with practitioners; surveys with leaders; email exchange; Case studies
Readiness for trial	3.1	High level engagement with the pilot in terms of recruitment and low attrition	Survey with leaders; Survey with practitioners; and case studies; Observation of training
	3.2	There are viable strategies in place to collect sufficient data to monitor delivery	OUP delivery team and evaluator own assessment
	3.3	Early Number with Numicon can be scaled for an efficacy trial (with no or minor amendments)	Case studies, OUP delivery team and IFF evaluation team own assessment.
	3.4	The resource commitment ¹² required to deliver Early Number with Numicon is acceptable to majority of PVI's and childminders	Surveys with leaders/practitioners; Case studies; OUP delivery team interviews

¹¹ Some major barriers include high drop out among practitioners or children from disadvantaged backgrounds.

¹² It includes staff time required to take part in the training and time required to deliver the programme

Methods

Recruitment

Recruitment will be conducted by the OUP delivery team with support from their contacts in the Bradford area, including but not limited to The Bradford Research School, a Multi-Academy Trust and the regional Early Years Stronger Practice Hub (Yorkshire and the Humber). Target areas are geographically close to the centre of the Bradford borough e.g. Allerton, Girdlington, Manningham (i.e. in and around the BD8 postcode area). As recruitment for the pilot study has begun, there has been interest in taking part from settings outside of Bradford. The OUP delivery team have therefore widened their recruitment areas for the pilot to cover West Yorkshire and certain areas of Greater Manchester (e.g. Oldham).

The target is to recruit 30 early years settings. It will be optimal for half of the recruited settings to be PVI's, and the remaining half to be childminders. This target number was deemed feasible because there are a sufficient number of eligible childminders and PVI's (i.e., there are 73 registered childminders and 109 PVI's in Bradford). An equal split was preferred to enable exploration of acceptability across PVI's and childminders that could inform roll-out at larger scale.

Childminders and PVI's will be considered eligible and recruited if they:

- do not participate in another EEF-funded or a Stronger Practice Hub funded programme delivered in the 2024/25 academic year;
- have at least one child 3-4 years old in the 2024/25 academic year (childminders);
- commit to releasing at least one early years practitioner to attend two face-to-face training sessions and two online sessions. Other staff members may attend, but at least one practitioner must attend all the sessions;
- commit to one senior member of staff or setting manager to attend the first session;
- provide time for the practitioner to deliver the weekly sessions with all suitable groups of children (3- and 4-year-olds);
- provide time for the practitioner to record their reflections through accessing Professional Development (PD) sessions;
- support the pilot evaluation by taking part in the research activities detailed in the evaluation's Memorandum of Understanding (MoU) (Appendix 1).

Participants will be all practitioners working with children 3-4 years old in the recruited settings. Children will not be directly recruited to the study.

Measures

This section describes the measures that will be used to measure implementation fidelity or relate to assessing change in the outcomes of interest as specified in the ToC.

FIDELITY MEASURE

The fidelity measure will assess the extent to which practitioners implemented the core elements of Early Number with Numicon. Jointly with OUP, it was agreed that the following programme elements are core for a setting to deliver the intervention with medium to high fidelity:

1. Practitioner(s) in the setting attend all four training sessions;

Threshold: 100% of practitioners attend all training session either during scheduled delivery or afterwards.

2. Practitioner(s) deliver 1 taught session (10-15 minutes) to all 3-4-year-olds in the setting per week;

Threshold: Practitioners deliver 1 taught session to all 3-4-year-olds each week.

3. Practitioner(s) ensure there are 1 or 2 additional opportunities in the wider environment linked to the taught activities each week;

Threshold: Practitioners ensure there is at least one additional opportunity in 9 or more out of the 11 weeks;

4. The teaching sequence is progressive and children reach activity 7 or beyond.

Threshold: Practitioners follow the teaching sequence with the exception of the familiarisation activities when the children are already familiar or they are not necessary.

At a minimum it is expected that a child will reach and complete activity 7. This does not need to hold true for children with SEND or EAL.

The surveys and interviews will be used to assess the extent to which PVI and childminders deliver Early Number with Numicon as intended. The thresholds are indicative, and the evaluation team will triangulate the evidence from the surveys and interviews to assess whether fidelity was medium to high.

PRACTITIONERS' OUTCOMES

One of the key practitioner outputs embedded in the ToC is 'increase in subject knowledge to support children in achieving math outcomes' and 'confidence in delivering engaging and appropriate math activities' because of engagement with Early Number with Numicon. Therefore, as part of the first and post-delivery surveys from practitioners (see Data collection for more information) the evaluation will measure practitioners' confidence about teaching early math. We will use an adapted version of Chen et al.'s (2014) 'Early Maths Beliefs and Confidence Survey'¹³.

CHILDREN'S OUTCOMES

The research will collect qualitative data on practitioner's perceived changes in children's engagement with numeracy and children's numeracy skills.

Data collection

The evaluation will bring together data from a range of research methods to answer the evaluation questions, and to assess the success indicators. The methods were selected to collect views from all stakeholders and to evidence any difference in delivery across PVIs and childminders. The evaluation includes multiple rounds of data collection to ensure valuable information is received in a timely manner and captures change over time. The range of research methods against the pilot criteria are illustrated in Table 3, and each research method is discussed in more detail below.

¹³ Chen, J. Q., McCray, J., Adams, M., & Leow, C. 2014. A survey study of early childhood teachers' beliefs and confidence about teaching early math. *Early Childhood Education Journal*, 42, 367-377.

Table 3 Summary of data collection and analysis

Pilot criteria	RQs addressed	Research methods	Data collection methods	Sample size and sampling	Data analysis
Evidence of promise	1.1-1.4	ToC updates	IDEA workshop	N/A	ToC
		Survey with practitioners (3 rounds)	Online questionnaire	All practitioners in recruited PVI's/childminders	Descriptive Statistics; Inductive of open text responses, framework/thematic analysis
		Survey with leads (2 rounds)	Online questionnaire	All leads in PVI's	Descriptive Statistics; Inductive of open text responses, framework/ thematic analysis
		Case studies with PVI's and childminders (3 rounds)	Structured interviews	Practitioners in 4 PVI's and 4 childminders	Inductive coding, thematic analysis
			Semi-structured observations	4 PVI's and 4 childminders	Observation framework
Discussions with the OUP delivery team (3 rounds)	Semi-structured interviews	2/3 members of the OUP delivery team (programme developers and trainers)	Framework/ thematic analysis		
Feasibility of implementation	1.1-1.4	Observation of training	Semi-structured observation		Observation framework
		Survey with practitioners (3 rounds)	Online questionnaire	All practitioners in recruited PVI's/childminders	Descriptive Statistics; Inductive codings of open text responses, framework/thematic analysis
		Survey with leads (2 rounds)	Online questionnaire	All leads in PVI's	Descriptive Statistics; Inductive coding of open text responses, thematic analysis
		Case studies with PVI's and childminders (3 rounds)	Structured interviews	Practitioners in 4 PVI's and 4 childminders	Inductive coding, thematic analysis
			Semi-structured observations	4 PVI's and 4 childminders	Observation framework

		Discussions with the OUP delivery team (3 rounds)	Semi-structured interviews	2/3 member of the OUP delivery team (programme developers and trainers)	Framework/ thematic analysis
		Email exchanges with practitioners (monthly)	Online, emails	All practitioners in recruited PVI's/childminders	Framework/ thematic analysis
Readiness for trial	1.1-1.4	ToC updates	IDEA workshop	N/A	ToC
		Survey with practitioners (3 rounds)	Online questionnaire	All practitioners in recruited PVI's/childminders	Descriptive Statistics; Inductive of open text responses, framework/ thematic analysis
		Survey with leads (2 rounds)	Online questionnaire	All leads in PVI's	Descriptive Statistics; Inductive of open text responses, framework/ thematic analysis
		Case studies with PVI's and childminders (3 rounds)	Structured interviews	Practitioners in 4 PVI's and 4 childminders	Inductive coding, framework/ thematic analysis
			Semi-structured observations	4 PVI's and 4 childminders	Observation framework
		Discussions with the OUP delivery team (3 rounds)	Semi-structured interviews	2/3 member of the OUP delivery team (programme developers and trainers)	Framework. thematic analysis
		Email exchanges with practitioners (monthly)	Online, emails	All practitioners in recruited PVI's/childminders	Framework/ thematic analysis

1. PROGRESS UPDATES AND SEMI STRUCTURED INTERVIEWS WITH THE OUP DELIVERY TEAM

We will capture the views of the delivery team regularly through monthly progress updates. The aim is to capture their views on programme delivery across the project, any challenges they faced, any changes they made to the programme during delivery and how actual delivery compares to their expectations. We will also speak with the OUP delivery team during and after delivery of the training to obtain a more detailed understanding of their overall experiences of providing training and support, as well as any barriers or enablers.

2. ONLINE SURVEY WITH SETTING LEADERS (TWO ROUNDS), AND PRACTITIONERS IN ALL PARTICIPATING SETTINGS (THREE ROUNDS)

Survey data from all practitioners will be collected at three different time points to capture how the settings proceed across the project i.e. from recruitment to post-delivery. The surveys will be administered:

- Before training commences in September 2024;
- After training and delivery commence around October/November 2024; and
- Post-delivery in March/April 2025.

The main objective of the first survey is to gain insights into previous knowledge and confidence in delivering similar approaches and usual practices. The second survey will probe practitioners about their training insights and their use of the materials, the professional learning community and the buddy system in order to gauge take up and how useful these resources have been. The last survey will provide further insight on delivery, the use of the on-going support and perceived effects of the programme on practitioners' and children's outcomes.

The survey with **setting leaders**¹⁴ at the start of the academic year (September/October 2024) will examine the setting's motivation for joining the programme, and their understanding of the requirements so that potential barriers to recruitment and engagement can be better understood. The second survey with setting leaders will be administered post-delivery in March 2025. It will cover the following topics: acceptability, affordability of the approach and other aspects of the practicalities of delivery including how fidelity to the programme was facilitated and/or hindered by various factors. Surveys will consist primarily of Likert-type questions¹⁵, with minimal open questions to reduce burden. A small incentive will be provided for completion of each survey (£10 voucher).

3. OBSERVATION OF TRAINING

To understand the engagement with the training as well as any differences across the face-to-face and remote training, members of the IFF evaluation team will attend all training sessions. An observation guide will be used by the evaluation to ensure targeted focus on the key programme and training elements.

4. CASE STUDIES

Eight settings will be purposively sampled for more in-depth case studies to capture the experience of delivering the intervention across PVI and childminders, gathering a more holistic view of the programme. Four PVI and four childminders will be selected according to specific characteristics in

¹⁴ If the leader and the practitioner are same (i.e. very likely in childminder settings) they won't be asked to fill in the setting leader survey, instead the practitioner survey will be longer and will cover some of the topics from the lead survey.

¹⁵ Joshi, Ankur, et al. "Likert scale: Explored and explained." *British journal of applied science & technology* 7.4 (2015): 396-403.

September 2024 before training commences, so that the IFF evaluation team can observe the entire journey of the setting including the initial training sessions. The sampling strategy will be defined after recruitment is completed, but it will be designed to ensure variation in key setting characteristics e.g., setting type (PVI, childminders), level of disadvantage based on proportion of EYPP/SEND/EAL children, practitioner qualifications. The case studies will include i) in-depth interviews with the practitioner and wider setting staff for PVIs including buddies, setting managers, and/or other relevant practitioners; ii) observation of training; and iii) observation of practice. In-depth interviews and observations of practice will be conducted at three time points: in November 2024; February and April 2025.

The interviews will cover a range of topics, including setting engagement with training, support, and practicalities of delivery, including how fidelity to the programme was facilitated and/or hindered by various factors. The IFF evaluation team will develop a tailored topic guide for each setting, drawing directly on the respondent's responses to the survey or previous interviews.

Observations will be guided by a semi-structured protocol examining teaching practices and children's engagement. The observations will also allow us to understand implementation fidelity, noting divergencies from the approach.

To compensate PVIs and childminders for the additional burden of these elements, we have budgeted for additional incentive of a £300 per case study setting.

5. EMAIL EXCHANGE WITH PRACTITIONERS

During the delivery period we will email practitioners at monthly intervals to provide information on the evaluation focusing on upcoming data collection activities. The emails will also provide an opportunity for practitioners to feed back in 'real-time' on the programme activities e.g. training, delivery. This will enable continuous communication and will ensure all practitioners have a chance to flag relevant issues as they arise, which may lead to more useful lessons learnt. Practitioners will be reassured that any insight shared in the email exchanges will be kept anonymous.

Data analysis

Responses from the surveys will be aggregated, and tabulated and they will be broken down according to different setting type (for example, presented for PVIs and childminders, or based on qualifications of practitioners). Any open-text responses in the survey will be analysed using a general inductive approach¹⁶. The purpose for using an inductive approach is to condense open responses with the aim of deriving emerging themes. We will apply general inductive approach when assessing responses to the interviews.

Our approach to integrating mixed method data is rooted in the multi-phase/dynamic method¹⁷. It blends data of all strands of data collection to generate insights that cover both the breadth of all participating settings and the depth of experiences and impacts for different types of settings. An important point to make about our approach to analysis is that it will be ongoing and iterative and feed into all stages and strands of the methodology, informing the design of the topic guides for the next round of data collection. To answer the research questions, we will triangulate across the different data sources. We will design an analysis framework to incorporate the information from all strands of data collection. The framework will be structured around the research questions and success indicators for each pilot area. It will be set up to allow us to identify differences across settings and stakeholder groups. We will organise an internal analysis workshop to triangulate the evidence gathered into a coherent set of findings; to explore possible convergence and divergence of trends and themes and anticipate their plausible outcomes; and draft recommendations for the programme.

¹⁶Thomas, D.R., 2006. A general inductive approach for analyzing qualitative evaluation data. *American journal of evaluation*, 27(2), pp.237-246

¹⁷ Humphrey, N., Lendrum, A., Ashworth, E., Frearson, K., Buck, R. and Kerr, K., 2016. Implementation and process evaluation (IPE) for interventions in education settings: An introductory handbook. *Education Endowment Foundation*, 1.

Ethics and registration

The evaluation of Early Number with Numicon is considered low risk as the evaluation will not collect personal data on children, only on adults, on a small scale, and will not include personal or sensitive data. Thus, a full ethical review has been deemed not necessary. Instead, the IFF evaluation team developed an ethics and safeguarding statement that sets out how we will ensure the evaluation activities will be accessible to participants and will not add any undue stress or burden.

The work meets or exceeds the requirement of GSR's [Ethical Assurance for Social and Behavioural Research](#) as well as the ethical guidance of the Market Research Society [Code of Conduct](#) and Social Research Association [Research Ethics Guidance](#), and our team are actively involved in both organisations. Key ethical considerations we consider include:

- Informed consent: We ensure respondents give explicit and informed consent;
- Ensuring accessibility of participation: We adopt the social model of accessibility and firmly believe there are no hard-to-reach participants;
- Avoiding personal and social harm: We take the widest definition of harm;
- Protecting confidentiality: We describe our data protection protocols below.
- Upholding public sector equality duty: We believe that equality, diversity and inclusion is a vital part of a successful organisation

The pilot will be registered with the ISRCTN registry in August 2024.

Data protection

IFF takes the issue of data security extremely seriously and takes all reasonable steps to ensure the safety and confidentiality of respondents' data, and of management and administrative data provided by our clients. IFF is registered with the Information Commissioner's Office under registration number Z5571698. IFF is accredited to ISO27001:2013, the international standard for information security, and certified under CyberEssentials Plus. Our server is located in a secure location in the UK, and we will create a secure folder exclusively for the use of this project. Data sharing agreement will be put in place between the evaluation and OUP delivery team before any data is shared. Secure systems will be used for the transfer of personal data.

We will develop data protection procedures for this project in collaboration with EEF. We will produce privacy notices for those elements of the research involving personal data and ensure the wording (and derivatives such as consent questions for recontact) and the implication of that wording is discussed with EEF. In line with the General Data Protection Regulation (GDPR), personal information will be securely stored, and will only be used for the purpose for which it has been collected, before being destroyed when no longer required. We will agree timings for data deletion and anonymisation at the start of the research and include this in consent materials.

We abide by the data protection principles set out in GDPR. Our legal bases for processing personal data (GDPR Art.6) are legitimate interest. The processing of data collected in the pilot is expected to have clear social benefits for understanding how to undertake this type of research, with a limited privacy impact on the individual.

Personnel

Delivery team: Oxford University Press

- **Will Power** (Head of Maths) will lead the delivery, and is responsible for contracts, budget, recruitment, advice and liaison for the delivery team.
- **Louise Pennington** (Professional Development Lead), recruitment, delivery lead, responsible for resourcing and PD, visit and support to setting.
- **Dr Penelope Woolf** (Director of Impact and Learning Design), peer review, will feed into research design from an OUP perspective.
- **Janine Wilson** (Project Manager) supports the team with the day-to-day running of the project including admin and documentation, timelines, budgets, and tracking for recruitment and delivery.

Evaluation team: IFF Research

- **Dr Sashka Dimova** will lead the evaluation, with overall responsibility, covering design, analysis, and reporting deliverables.
- **Claire Johnson** (Director) and **Lorna Adams** (Director) will provide internal peer review of the design.
- **Maya Agur** (Director) will be the Lead Project Manager ensuring a seamless communication with OUP and the EEF. Maya will have specific responsibility for project timelines, processes and budget, as well as being hands-on in fieldwork, analysis and reporting.
- **Jenny Hull** (Research Manager) will support Maya in managing the evaluation in all elements of the pilot, with a particular focus on the qualitative fieldwork, analysis and reporting.
- **Daisy Woods** (Research Executive) will support the team with the day-to-day running of the project.

Risks

Risk	Level	Impact	Mitigation
Delays to recruitment or late drop-out	Medium	High	Long lead in time to recruit settings; An oversampling strategy to allow for substitutions or late drop-outs; Settings receive communication from the IFF evaluation team as soon as they sign up.
High level of attrition particularly among childminders or case study settings	Medium	High	Tailored communication in email exchanges accounting for the different physical environments and other differences between childminders and PVIs; Incentives for case study settings; Regular email exchange to capture issues as they are arising; Recruiting more than 30 settings
Practitioners particularly childminders do not want to participate in surveys, case studies	Medium	High	The roles and responsibilities to be clearly set out in a Memorandum of Understanding; Briefing for practitioners on the requirements and timings for the evaluation; Use of short surveys with engaging invites, and reminders; Surveys to be kept open long enough and ensure they do not overlap with holidays; and an option to complete survey via phone if preferred; Childminders can only take part in interviews later in the evening or weekend so we can schedule them at any time convenient for them (outside our working hours); Use of compelling and reassuring communications. Incentives for surveys and case studies to encourage response.
Data collection tools and measures are not optimal for the pilot evaluation	Low	Medium	Consultations with OUP and EEF to allow us the evaluation to develop the most appropriate data tools and measures; Multiple rounds of data collection will enable the evaluation team to test the suitability of the data collection tool and to make amends if needed; Sufficient time for review and amends
Challenges with delivery due to high staff turnover, particularly in PVIs	Medium	Medium	The surveys will be used to assess and understand how often staff change and what happened when practitioners change during the delivery period. Email exchanges can probe any issues.
Not meeting the project timescales e.g., due to staff absence	Low	Medium	Having a large team (including two Directors) will help ensure timetables are met. We also have a wider team of 70 social researchers who could be drawn on if needed including several others with experience of research among early years settings.

Timeline

Dates	Activity	Team responsible/ leading
April – August 2024	Recruitment of settings	OUP
August 2024	Selection of case study settings	IFF
September 2024	Practitioners survey – Round 1	IFF
September 2024	Observations at case study settings – Round 1	IFF
October 2024	Setting leads survey – Round 1	IFF
October 2024	Early Number with Numicon training delivered	OUP
October 2024	Early Number with Numicon activities delivery period	Settings
TBC	Observations at training sessions	IFF
TBC	Interviews with OUP delivery team	IFF
November 2024	Interviews with trainers – Round 1	IFF
November – December 2024	Practitioners survey – Round 2	IFF
November 2024	Observations at case study settings – Round 2	IFF
February 2024	Observations at case study settings – Round 3	IFF
March 2025	Interviews with trainers – Round 2	IFF
March – April 2025	Practitioners survey – Round 3	IFF
April 2025	Setting leads survey – Round 2	IFF
May 2025	Data analysis	IFF
June 2025	Learning workshop	IFF
June 2025	Report blueprint sign-off	OUP
June – July 2025	Draft report	IFF
August 2025	Final report delivered	IFF

Early Number with Numicon Pilot

Memorandum of Understanding for participating settings

The Education Endowment Foundation (EEF) is funding Oxford University Press (OUP) to pilot (try out) the Early Number with Numicon programme with 30 Early Years settings between September 2024 and February 2025.

The EEF have asked IFF Research to independently evaluate the pilot. The evaluation team at IFF Research, led by Sashka Dimova, will carry out research to understand whether Early Number with Numicon might support childminders and practitioners in the private, voluntary, and independent sector to deliver high quality maths sessions to pre-reception-aged children. These findings will inform the EEF's future decisions about whether the programme can be delivered more widely and tested for wider impact.

This Memorandum of Understanding (MOU) sets out the plans for the pilot, and the responsibilities relating to the pilot for OUP (the delivery team), IFF Research (the researchers) and participating settings. Please read this MOU carefully before signing.

If you have any questions about the pilot, please contact Sashka Dimova and the IFF Research evaluation team at Numicon_Pilot_Study@iffresearch.com.

If you have any questions about the Early Number with Numicon programme, please contact the delivery team from Oxford University Press at numicon.trial@oup.com.

Aims of the programme

Early Number with Numicon is a targeted programme for childminders and practitioners in the private, voluntary, and independent sector to deliver high quality maths sessions to pre-reception-aged children. The programme provides training for practitioners to equip them with improved knowledge of how children learn numbers and operations. It also provides them with the knowledge and skills required to deliver small group activities using Numicon resources (manipulatives and mathematical representations). The practitioners then deliver a targeted series of small-group sessions with the aim of:

- helping children to develop a secure understanding of numbers and operations
- increasing children's enjoyment of and motivation towards maths.

Aims of the pilot

The pilot aims to investigate whether Early Number with Numicon:

- provides promising indicative evidence that the programme can deliver on its expected outcomes

- demonstrates that the programme can be delivered using an approach that is feasible and acceptable for settings, staff, and children
- suggests that the programme is ready to be delivered at scale to test for wider impact.

Evidence in these three domains will inform EEF's decisions about whether the potential impact of Early Number with Numicon should be evaluated in a large-scale trial. The pilot will also inform the design of any such trial by providing a deeper understanding of the theory underpinning the programme and potential outcome measures that could be used to evaluate impact.

Delivery of the programme

Early Number with Numicon is a 14-week targeted programme. No prior knowledge of maths teaching is required, and all sessions are designed to be flexible and accessible, mindful of the time pressures and other demands of working in the early years sector.

Practitioners will be introduced to Numicon resources (manipulatives and mathematical representations¹⁸) and pedagogy and given specific guidance to deliver weekly numeracy activities designed for small groups of children. Eight core small-group activities and three introductory activities are expected to be delivered by practitioners to 3-4 year-olds during the programme. The majority of the children in a setting will reach activity 7. Each core activity lasts approximately 15 minutes. Practitioners are expected to deliver one activity a week to groups of around 4 children, such that all children in the setting aged between 3 and 4 years old are included each week. Practitioners also have the option of repeating content if children have not grasped the concept being taught. The training contains advice and suggestions on how to follow up the 15-minute taught session with activities to be used in the wider environment in continuous provision, on follow-up independent tasks and how to make the environment numeracy-rich, which settings are encouraged to do each week. Settings will receive all resources needed to deliver the activities plus a handbook.

Four training sessions take place over the 14 weeks of the programme. The first and last sessions are 3 hours long and are face-to-face, while the two middle sessions are online twilight sessions that are 1.5 hours long. Each session introduces the required maths subject knowledge, the mathematical concept that is being taught, and activities to be taught to children. The sessions take practitioners through the process of planning and delivering the activities, and cover topics such as recognising and continuing patterns, labelling, and counting objects, same/different comparison, and numbers within and beyond five. All sessions are delivered by trained, experienced professional development experts.

There is continued support during delivery via individual check-ins by the OUP delivery team which occurs once during implementation, and a professional learning

¹⁸ These will include: a box of Numicon shapes, a baseboard, number overlays, picture overlays, pegs, Cuisenaire, big foam shapes, counters, pan balance, and a feely bag. These will be used in conjunction with resources ordinarily found in settings, and suggestions will be provided for each activity.

community that is encouraged between practitioners. Each practitioner is encouraged to have a buddy who they can share ideas with and try to give peer support during training and practice. Practitioners are also asked to complete gap tasks between training sessions, for example, to conduct the new activities they have learnt, or to meet with their learning buddy to share experiences.

Can my setting take part?

Your setting is eligible to take part as long as you are willing to fulfil the responsibilities set out in this MoU and your setting is not taking part in any other EEF-funded projects in the 2024-25 academic year.

What will taking part involve for my setting?

Your setting will need to:

- nominate at least one practitioner to attend the training and deliver the Early Number with Numicon sessions at your setting
- provide contact details for the staff taking part in the programme to the OUP delivery team (who will also pass them to the IFF evaluation team)
- release the practitioners to attend the training sessions
- provide time for the practitioners to deliver the Early Number with Numicon activities to children
- allow time and space for the Early Number with Numicon programme sessions to be delivered once a week, for 14 weeks from September 2024 to February 2025
- provide time for practitioners to plan for the programme and to complete weekly activity logs and reflection sheets
- ensure shared understanding and support of all setting staff for the programme.

The participating practitioner will need to:

- attend four training sessions across the course of the 14-week programme. The first and last sessions are 3 hours long and are face-to-face, while the two middle sessions are online twilight sessions that are 1.5 hours long
- deliver a structured activity for 10-15 minutes to small groups of children aged 3-4 years old so that they cover all children of this age group in the setting in a week
- set up one corresponding activity to the structured activity in free play time or continuous provision, and observe children's behaviours during this activity and intervene with an appropriate strategy if needed.

Practitioners will be encouraged to link their learning with another practitioner throughout the 14-week programme period, although this will not be enforced. They will be encouraged to consider how to integrate the planning of the programme into their individual setting. Practitioners will also be invited to complete weekly reflection sheets as a personal reflection on the programme, but these will be optional and filled in privately.

All settings that take part in the pilot of the programme must attend and engage with the professional development sessions, deliver the 1x week taught session to all children in the setting aged 3-4 years old and provide wider opportunities for the children to explore and practice the maths in continuous provision and free play.

Your setting will need to:

- allow practitioners and setting leads¹⁹ to take part in the pilot activities including interviews, online surveys and potentially observations (all detailed below)
- support with logistical arrangements and allow the IFF evaluation team to attend the setting for pilot activities (interviews and observations)
- send out Family Information Sheets and privacy notices to children's parents/carers
- ensure shared understanding and support of all setting staff for the pilot and encourage participation in pilot activities.

The practitioner in your setting will need to complete a short online form providing background information about themselves. While all participating staff need to complete the form, they can choose to skip any personal questions that they don't want to answer, and no participating staff will be filtered out of the programme on this basis.

The practitioner in your setting will also be invited to:

- complete a pre-programme online survey (up to 25 minutes) in September 2024
- complete an online survey (up to 25 minutes) during the programme in November 2024
- complete a post-programme online survey (up to 25 minutes) in March 2025.

A £10 voucher will be administered for every survey answered.

The setting lead in your setting will also be invited to:

- complete a pre-programme online survey (up to 25 minutes) in September 2024
- complete a post-programme online survey (up to 25 minutes) in March 2025.

A small number of settings will be selected as case studies for some additional detailed pilot activities. This will involve visits to the setting by a researcher from the IFF evaluation team, who will conduct observations during the delivery of the structured and corresponding activities and carry out interviews with practitioners and senior leadership team (SLT), as relevant, in the setting. During the setting visit the researcher might speak to children about their experience of the programme activities and their thoughts about numbers and maths. During the 14-week period of the programme the researcher will conduct three visits at the case study settings. **All**

¹⁹ Setting leads will be allowed to attend the training session and will be actively encouraged to attend the first face-to-face session

settings that complete all case study activities will receive £300 in recognition of the setting's time and commitment to the programme.

What support will my setting receive?

To support your setting to deliver the Early Number with Numicon programme, the OUP delivery team will provide:

- the training for the nominated practitioner, described above under the requirements for your setting
- additional, optional drop-in support for practitioners within the first 4-5 weeks of the programme, when they will be delivering activities 1-3.
- ad hoc support for practitioners and SLT members throughout the project via dedicated email and during training sessions
- access to resources to support delivery including the Numicon manipulatives, mathematical representations, a programme handbook, reflective journals, handouts from training sessions, and a template for collecting evidence of learning. Settings will be able to keep these materials once the pilot is completed.

To support your setting's participation in the pilot, the IFF evaluation team will:

- inform all participants about plans for the pilot and how findings will be used
- carry out the evaluation activities of the pilot in a way that causes minimum disruption and additional workload for all participants including setting staff and children
- organise all data collection activities including interviews, observations, and surveys
- brief a team of IFF researchers to conduct observations at each setting.

The IFF evaluation team also commit to:

- ensuring that all participation in the pilot is based on voluntary and informed consent (see information on participant consent below)
- carrying out and report on the pilot findings in a robust and independent manner
- handling all data relating to the pilot in accordance with the UK's General Data Protection Regulation (UK GDPR) and only for research purposes (see information on data protection below).

Safeguarding

Responsibilities of the OUP delivery team:

- Ensure that all members of the delivery team visiting the setting are familiar with the setting's safeguarding policy and procedures and have received appropriate training on safeguarding protocols.
- Ensure that all members of the delivery team have valid DBS checks, and present their valid DBS check certificate with a photographic ID when entering the setting.

- Submit an anonymised safeguarding incident report to EEF covering any safeguarding concerns that have come up during the course of programme delivery, alongside following any on site procedures for reporting safeguarding concerns.

Responsibilities of the independent IFF evaluation team:

- Ensure that all members of the IFF evaluation team visiting the settings have valid DBS checks. Researchers who visit a setting should present their valid DBS check certificate with a photographic ID when entering the setting.
- Ensure that all members of the evaluation team visiting the setting are familiar with the setting's safeguarding policies and procedures and have received appropriate training on safeguarding protocols.
- Submit an anonymised safeguarding incident report to EEF covering any safeguarding concerns that have come up during the course of the evaluation, alongside following any on site procedures for reporting safeguarding concerns.

Responsibilities of all settings recruited to the trial:

- Inform any members of the OUP delivery team and IFF evaluation team who are visiting the setting about the setting's safeguarding policy and procedures and provide details of the setting staff member whom they should contact should a safeguarding disclosure need to be made.
- Ensure that members of the OUP delivery team and IFF evaluation team are never left unsupervised with children. A member of setting staff should always be present to supervise activities.

Participant consent

The participating practitioner will be given the chance to read the MOU and attached Setting Information Sheet and Privacy Notice, and to have agreed to participate in the pilot before the MOU is signed and submitted.

Practitioners and Senior Leadership members will be provided with more information at the point of being invited to take part in interviews, observations and/or surveys and will have the right to choose not to take part in these activities, though we hope they will. They will also be able to change their mind about taking part in the activities, or to withdraw from their data being used for the pilot (see the Privacy Notice for more information).

The IFF evaluation team understands settings to be in loco parentis. If your setting is selected to participate as a case study, you are able to consent to observations and conversations with children. Your setting will need to provide the parents/carers of children with the Family Information Sheet and Privacy Notice and ensure that where parents opt their children out from the research, that these children do not take part in sessions that are being observed.

Data protection

OUP and IFF Research will collect personal data to meet the objectives of the programme and the pilot.

All personal data will be collected, processed, and stored in line with the UK General Data Protection Regulation (UK GDPR). Full details of how data will be collected, processed and stored, data processing roles and the legal bases for processing personal data can be found in the attached privacy notices, which can also be found online:

- OUP privacy notice: <https://global.oup.com/privacy?cc=gb>
- IFF Research privacy notice: www.iffresearch.com/ic/docz/12897/pn.pdf

For this pilot, IFF Research is a data controller who also processes data. Our legal basis for processing data for the pilot is “legitimate interest”.

All data will be treated with strictest confidence and no participant will be identified in any report arising from the pilot. All personal data will be stored securely and will be securely deleted once the pilot is complete by February 2026.

In line with UK GDPR and data protection regulations, all setting staff have a duty to keep all personal information secure and confidential and notify their setting of any breaches as soon as possible.

If you have any concerns about data protection and the Early Number with Numicon programme, please contact OUP’s Data Protection Officer at jayesh.patel@oup.com. If you have any concerns about data protection and the pilot, please contact IFF Research’s Data Protection Officer at john.ricketts@iffresearch.com.

Key dates

Dates	Programme activities	Pilot activities
Summer 2024	<ul style="list-style-type: none"> • OUP delivery team recruit settings and collect MOUs 	<ul style="list-style-type: none"> • IFF evaluation team collect background information about participating practitioners • Parents given opportunity to opt their child out of the pilot
September – November 2024	<ul style="list-style-type: none"> • Participating practitioners attend half-day in-person training on delivering the Early Number with Numicon programme with OUP delivery team • One setting visit from OUP delivery team 	<ul style="list-style-type: none"> • Practitioners and setting leads complete pre-programme online survey

	<ul style="list-style-type: none"> Practitioners attend twilight online training session 1 	
November 2024	<ul style="list-style-type: none"> Practitioners attend twilight online training session 2 	<ul style="list-style-type: none"> Practitioners complete online survey Observations and interviews at case study settings – Round 1
January - February 2025	<ul style="list-style-type: none"> Practitioners attend the second half-day face-to-face session with the OUP delivery team 	<ul style="list-style-type: none"> Observations and interviews at case study settings – Round 2
March – May 2025		<ul style="list-style-type: none"> Practitioners and setting leads complete post-programme survey Observations and interviews at case study settings – Round 3
Spring 2025		<ul style="list-style-type: none"> Publication of the evaluation report

Signature page

By signing below, you are indicating that you commit to the responsibilities outlined in this MOU on behalf of your setting.

Please make sure the participating practitioner and Setting Head sign this MOU and return it to the OUP delivery team at numicon.trial@oup.com by 24 July 2024 at the latest.

If you have any questions about the Early Number with Numicon programme or the pilot, please contact the following people:

<p>Questions about the Early Number with Numicon Programme? Please contact the Oxford University Press (OUP) delivery team:</p> <p>Louise Pennington</p> <p>numicon.trial@oup.com</p>	<p>Questions about the pilot? Please contact the IFF Research evaluation team:</p> <p>Daisy Woods</p> <p>Numicon_Pilot_Study@iffresearch.com</p>
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We commit to the Early Number with Numicon pilot as detailed above.

Setting details

Setting name: Postcode:

Phone number: Setting ID (URN):

Participating practitioner

Signed: Print name: Date:

Phone number: Email:

Setting Head

Signed: Print name: Date:

Phone number: Email:

This information will be shared with IFF Research and used to organise Early Number with Numicon and pilot activities.