

Raising the engagement and attainment of disengaged pupils through Bar Modelling.

Impact on staff practice:

Staff have recognised that low attaining pupils do not need an additional adult to work with them and instead benefit from the provision of strategies to support themselves in the learning process

Teachers note more independent use of manipulatives and pictorial representations in lessons to overcome obstacles

Staff actively plan for bar modelling opportunities to reinforce the children's conceptual understanding of number

CPD opportunity - TAs, SLT and Teachers alike have fed back that bar modelling training has improved their own teaching and planning of lessons

External LA led Annual Review highlighted to staff that we the NTG was 'a strong systematic project that is having a good impact on the progress in mathematics on the identified children and on the teaching and learning of mathematics for all children'

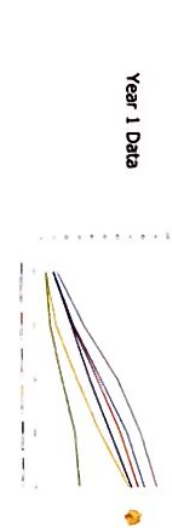
Impact on pupil learning and outcomes:

- Broadly, the focus children for the project have made an increased rate of progress in comparison to their peers in mathematics. Data highlights that the gap has narrowed in most instances.

- Confidence in independent learning activities in mathematics has had an unplanned impact on learning in other subject areas of the curriculum with focus children making higher than expected progress between CP3 - CP5

- Staff have commented that children listen more attentively during whole class teaching and are beginning to inform additional adults about their learning and make the choice about whether support is needed.

Year 1 Data



Year 2 Data



Abstract:

This research project investigated the characteristics of the low attaining pupils in each year group, the factors which determine the composition of these sets and effective approaches to the teaching methodology of this group of pupils in mathematics. Central to the aim of the study was the identification of the conditions where less engaged pupils begin to take charge of the learning process and spend more of the lesson engaging with their own learning independently. The intended outcome is that less engaged pupils will develop confidence in their own mathematical ability through the provision of tactile and visual manipulatives (the Bar Modelling concept) and engage more in the learning process; therefore providing them with the tools to bridge the gap between themselves and their peers. It was conducted by the University College London on behalf of the London Borough of Enfield. While the main focus was on narrowing the gap of low attaining children in Key Stage 1, the project was also introduced across Key Stage 2 to ensure consistency of the Bar Modelling teaching methodology across the school.



Context of the project:

Hadley Wood is currently an 'Outstanding' graded (Ofsted 1998) single form entry community primary school on the Enfield/Barnet borough borders. Analysis of last year's end of Key Stage data highlighted that the children who not making significant progress - the low attainers - were not always from one of the widely recognised at risk groups e.g. FSM, PP, EAL etc. However, all of the children had been identified by class teachers as being less engaged than their counterparts using the 'Ferre Laevers Emotional Wellbeing and Involvement Scale (the Leuven

How was the baseline gathered?

- Staff were allocated time to observe their children using the Leuven Calculator, a tool provided by UCL
- Senior leaders taught mathematics lesson to the year group, while the class teacher and TA observed the children minute by minute.
- Feedback from teaching staff highlighted that the lower attaining children achieved a higher Leuven Scale score when visual cues were displayed on the IWB or when they were provided with physical manipulatives to engage with. It was at this time the pupils appeared happy and confident in their learning.

The study sought to answer four key research questions:

1. What are the population characteristics of low attaining pupils in each school setting?
2. What practices and processes do teachers within the school use to identify and organise low attaining children?
3. How do teachers motivate and inspire low attaining pupils to learn?
4. What are the possible factors which inhibit learning contributing to the gap and how can we overcome these?

How do our findings link with the wider research base?

- The Leuven Scale is a 5-point scale used to measure both well-being and involvement. It is believed that if there is a consistent low level of well-being and/or involvement, then it is likely a child's development will be threatened. The higher the levels of well-being and involvement we can achieve for the child, the more we can add to the child's development.
- Research highlighted that Bar Modelling is an essential maths mastery strategy. A Singapore-style of maths model, bar modelling allows pupils to draw and visualize mathematical concepts to solve problems.

Monitoring of the project:

- Maths Lead/Deputy Head monitored planning and carried out regular book looks to ensure implementation
- Further CPD training was offered where necessary
- Assessment Lead/Headteacher monitored the five focus children's attainment/progress closely

Next steps:

- Second wave of staff training to take place in the next academic year to further develop understanding of the bar modelling concept
- Continue to model implementation of project across KS1 and KS2
- Continue to track progress of Leuven children to ensure the gap continues to narrow
- Share good practice with maths leads and leaders from other schools across the borough