

Instilling Confidence and Resilience in Children who Struggle in Maths

Huntingtower CP Academy

*Independent Case Study by Dawn Bradshaw - SENCo at Huntingtower Community
Primary Academy in Grantham*

I have been using Dynamo Maths in conjunction with Dynamo Profiler for several years in my capacity as a specialist teacher. The latter assesses pupils' number sense and proficiency and identifies where they have difficulties. So when staff at Huntingtower Community Primary Academy, where I am SENCo, identified 15 children with SEND in years 4 to 6 who were not making the progress expected in maths, it made sense to do a full evaluation using Dynamo Profiler.

Project Description:

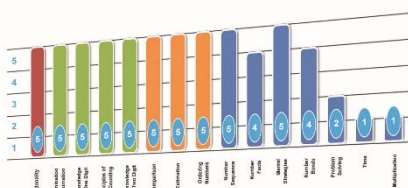
To secure future funding from the senior leadership team, we set up a formal evaluation of Dynamo Maths itself to test its effectiveness in our setting. Of the 15 pupils identified, 12 were put on Dynamo Maths and three were part of the control group.

Assessment:

One of the great things about Dynamo Profiler is that it indicates whether pupils simply have gaps in their knowledge, whether they have a developmental delay where maths and number sense are

concerned, or whether they have underlying dyscalculic tendencies – normally getting this kind of insight is very difficult to obtain unless you bring in a dyscalculia specialist. The program produces a user-friendly graph which highlights symptoms that suggest dyscalculia and developmental delays in maths so that I can put suitable interventions in place.

As it happens, we only identified one child who potentially has dyscalculia, although it could be that he has global delay, and we are now taking advice from an educational psychologist.



NumberSenseMMR Profiler

Intervention:

The lovely thing about Dynamo Profiler is that it takes away the guesswork of what level on Dynamo Maths we should start a pupil at. We simply plug the data from Dynamo Profiler straight into Dynamo Maths. When you profile a child (which you can redo as many times as you like in a year), Dynamo Maths produces a set of personalised lesson plans, which I print out together with all related worksheets, as well as make available online. This means that the TAs, who run the intervention, have everything they need for each child in one folder, along with an overview of the following sessions so they understand what they are working towards.

Results:

After running the evaluation for three months, we reassessed the pupils. All 12 children improved significantly and over half the group doubled their scores. We have not specified their levels at this stage deliberately because we don't want to limit pupils who are making small step progress.

Almost more importantly, we've found that pupils' resilience has improved. Where they were not even attempting a question in the past, they will now spend up to 20 minutes tussling with something because, as they now say: "I know I can do this question."

Partly this is because Dynamo Maths is so child-oriented.

Pupils of all ages love using it – especially pupils in Year 6 who are preparing for transition to secondary school. Pupils are always asking: 'Are we doing Dynamo today?'



They like being able to get on with it by themselves, giving them an increased sense of independence, whether this is working on the computer or using printed worksheets. Although most of them prefer using the computer, we find that they are also motivated to tackle the program's printed worksheets because these, like the program, progress children incrementally through a skill in tiny, highly achievable steps, giving them a huge boost to their confidence.

More about the Program:

Dynamo Maths is highly flexible. It allows us to be very specific about supporting children in the way they need to be supported. So if a child learns best using the computer, then more content will focus on that. Some children may just need to work on the intervention for a few weeks to address a gap. Others may require months. A few children may just use it for multiplication, or time, say, because they are good in other aspects of maths. No matter how long a child needs to be on it or what their initial difficulty, the outcome is a pupil who can cope better back in class.

Two TAs, Mrs Gudgeon and Mrs Newton, run the intervention for me, and we meet fortnightly to assess progress. Mrs Gudgeon says: 'All 12 children in the evaluation have made progress, and, crucially, their attitude to maths has changed in class. One child, who wouldn't do maths before, boasted: "I'm an expert at this" – which is lovely. One of the things pupils particularly like is instantly being able to see where they've made progress.'

Mrs Newton agrees and adds: **'It is such a non-threatening way for a child to feel success, which builds confidence and resilience. These children struggled with maths previously and yet now they'll spend 10 or 20 minutes working effectively. They have plenty of opportunities to overlearn material because they can go back to activities on the computer as many times as they want.'**



From the children, commonplace phrases now include: 'I can do this', 'I'm getting good at this', 'Oh, I remember how to do this' and 'Can I do some more?'

Some of this positive attitude is down to Mrs Newton and Mrs Gudgeon's Dynamo Maths League, a visual aid they have created where pupils record their successes with little stars. We want them to understand that it's not about getting 10/10 first time, but about mastering a new skill, so they receive a star every time they attempt something. This works wonders at keeping the children coming back for more.

Evaluation Outcomes:



Following the successful evaluation of Dynamo Profiler and Dynamo Maths, I presented my evidence to the senior leadership team. It immediately authorised me to roll out the program across the school in upper Key Stage 2 as an additional support mechanism in class as well as an intervention. Next year, we plan to target 30 children – it is important that we proceed slowly in the early stages to ensure that we have enough personnel to continue evaluating the outcomes.

Dynamo Maths is both teacher- and child-friendly and has worked well in our school. I cannot recommend it highly enough.

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