Special Educational Needs and **Maths — No Problem!**

Pupils with a wide variety of different special educational needs can struggle in maths and for the teacher this means taking into account each individual's specific requirements when lesson planning. Many children with SEN will just need some extra support in maths, whereas with others there are some learning targets that are not realistic.

Here we will discuss how the **Maths — No Problem!** Programme can help teach children with specific learning difficulties and some useful tips when lesson planning.

A lot of the elements discussed here will not only benefit children with a specific learning difficulty but will help any child struggling with maths.

What does SEN mean within a school?

Whole-class teaching rather than setting by ability can benefit all types of learners, especially children with SEN, because in group work they are exposed to multiple methods and different ways of thinking. Learners can explain the concepts to each other using their own natural language. Also, if all pupils are encouraged to collaborate, it can build confidence as there is less pressure than when working in isolation.

Overall, the classroom needs to be seen as a safe place to explore the topics and feel confident to take risks. Pupils can discover new concepts using trial and error if we remove the taboos around struggle.

How can the Maths — No Problem! Programme support SEN?

Each stage of a **Maths — No Problem!** lesson: exploration, structured discussion, practice, journaling and reading can be used to support children struggling with maths and in particular children with a specific learning difficulty.

During exploration, children are learning to work together while investigating the anchor problem. Pupils with SEN will benefit from this social environment and the opportunity to learn from their peers. All pupils are learning to be independent of an adult and it gives the teacher time to formatively assess all pupils so they are able to quickly and clearly address any misconceptions, potentially during structured discussion.

Journaling is a great tool to allow pupils to articulate their thinking in whatever format they find to do so, they are able to present multiple methods and evaluate them. This helps teachers to move pupils from less sophisticated strategies to more advanced ones.

During reading, the textbook can be seen as another pupil's journal and it can be used as a scaffold for how to set out calculations. It can also be used to model methods and mathematical language.

The programme has been designed with visualisation, creativity and pattern spotting in mind, which all play to a child's strengths.

Everything in the **Maths — No Problem!** resources, from language, numbers, fonts, colours and page layout have all been chosen to not only maximise clarity, but to also minimise clutter, confusion, and distraction.

They have all been selected to give every pupil the opportunity for a deep conceptual understanding of maths.

Our bespoke font, Castledown, imitates how children learn to print, which connects their own writing with the text in the book. This improves their ability to understand and communicate the ideas they are learning. Additionally, our colour scheme was designed very deliberately with colour blindness in mind, so they are accessible to all pupils.

The textbooks also follow Bruner's CPA approach for all topics rather than just KS1 or simpler concepts. It is an excellent theory that can be used to support inclusive high-quality teaching and promote a deep understanding of mathematical concepts.

Some useful tips

If pupils struggle with dexterity, focus on concrete resources to reinforce the mathematical ideas, giving them time to be hands-on and practise manipulating the resources themselves.

All children should be encouraged to move through Bruner's CPA approach, from the concrete resources to pictorial representations and finally to the abstract. Struggling learners will need more encouragement to move through these stages and it is important for them to do so. However the manipulatives should always be available to them and they should feel confident to go and collect them if they need to.

Replicate the pictorial representations on the board as a class or group, as they reveal the underlying patterns and structures of the problem.

Pupils might struggle to work from the board as they could easily get distracted, so ensure that every child has a textbook to study from.

Time to explore is so important for all learners, especially in a topic like number sense. Encourage pupils to play with numbers (use lots of games) so they are able to understand the connections between numbers and how to easily manipulate them to their advantage.

To encourage all pupils to have a strong sense of number, start by using ten frames to help children develop instant recognition of numbers up to ten. Then progress on to looking at number bonds of lots of different numbers rather than just number bonds of ten.

Emphasise the need for estimation as a stage in problem-solving and question children from a young age on the 'reasonableness' of their answer.

Promote generalisation in class by asking children what they know already and how this can help them solve new problems.

Some learners may only struggle with particular topics. Whilst it is important to strengthen the conceptual understanding in key content domains, it is also important for learners to be exposed to all areas of mathematics and to experience success as well as struggle.

Where can I find more information?

How to identify specific learning difficulties in maths: a guide for teachers and parents:

https://mathsnoproblem.com/struggle-sign-specific-learning-difficulty-maths-guidance-teachers-parents/?utm_source=blog&utm_medium=bloglink&utm_campaign=sendinclusionjigsawjune2019

SEND inclusion jigsaw: a teaching strategy for all learners:

https://mathsnoproblem.com/send-inclusion-jigsaw-teaching-strategy/

Overcoming obstacles and supporting maths learners with Dyslexia:

https://mathsnoproblem.com/overcoming-obstacles-maths-learners-dyslexia/

https://mathsnoproblem.com/supporting-dyslexia-maths-classroom/

Overcoming obstacles for maths learners with Dyscalculia:

https://mathsnoproblem.com/overcoming-obstacles-dyscalculia/

Supporting learners with Speech, Language and Communication Needs:

https://mathsnoproblem.com/supporting-learners-slcn-classroom/

How to deliver effective maths interventions:

https://mathsnoproblem.com/deliver-effective-maths-interventions/