

## What is Dyscalculia?

The British Dyslexia Association Dyscalculia and Maths Difficulties Committee definition of dyscalculia states:

*Developmental dyscalculia is a specific and persistent difficulty in understanding numbers, which can lead to a diverse range of difficulties with mathematics. It will be unexpected in relation to age, level of education and experience, and occurs across all ages and abilities.*

Mathematics difficulties are best thought of as a continuum not a distant category, and they have causal factors. Dyscalculia falls at the extreme end of the spectrum and will be distinguishable from other maths issues due to the severity of difficulties with number sense, including subitising, symbolic and non-symbolic magnitude comparison, and ordering.

Developmental dyscalculia can occur singly but often co-occurs with other specific learning difficulties, mathematics anxiety and medical conditions.

## What might it look like?

- Very poor intuitive number sense: they have no natural 'feel' for quantities and numbers.
- A 'ones-based' concept of number. They see small numbers as small indistinct groups or 'clumps' of ones and large numbers as even hazier, large clumps of ones.
- A number concept which remains static and extremely poorly developed over time. They become muddled very easily.
- Inability to see numbers as entities which contain many patterns, such as doubles patterns.
- Difficulties in seeing structures within numbers e.g. 24 represents 24 ones, but it also represents 2 tens and 4 ones.
- Difficulties in picturing the base ten structure of the number system or even the decade structure to 100 e.g. can count in ones to 39, but not see that it is also 9 more than 30 and 1 less than 40.

## Top Tips

1. Analyse exactly what the pupil finds difficult.
2. Use concrete materials and visual representations to help link mathematical symbols to quantity.
3. Use multisensory teaching methods,
4. Start at a level which the pupil is comfortable, plan for them to experience success, and slowly increase the challenge.
5. Provide a lot of practice for any new skills/ concepts (overlearning).
6. Set up open-ended problem-solving activities and encourage discussion and experimentation.
7. Use scaffolded approaches such allowing pupils to 'phone a friend' or 'go 50/50'.
8. Make sure all instructions are clear. Check understanding. Ask several pupils how they would do the first question.
9. Give worked example to show how a problem might be solved.
10. Allow pupils extra time – even when given work at their level, dyscalculic children often work slowly. Provide extra time for assessments.
11. Teach test taking skills, give practice tests and provide study guides.
12. Use written rather than verbal instructions and questions to reduce memory overload.
13. Focus on understanding rather than rote memory. Try to use fun methods for retention of number facts such as computer or card games. Provide aids such as calculators or number fact grids.

## Further Advice

### Useful Websites:

#### Maths Continuum

[Continuum of Provision for Mathematical Difficulties | Leeds for Learning](#)