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# Dyscalculia

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**Dyscalculia is a condition that affects the ability to acquire arithmetical skills.** Dyscalculic learners may have difficulty understanding simple number concepts, lack an intuitive grasp of numbers, and have problems learning number facts and procedures. Even if they produce a correct answer or use a correct method, they may do so mechanically and without confidence.

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(Department for Education and Science, 2001)

Dyscalculia is not caused by poor teaching or by intellectual impairments. It may occur alone, or co-occur with other SpLDs such as **Dyslexia**, **Dyspraxia** and **Autism Spectrum Disorder**.

Many people may struggle with maths, but dyscalculia is a specific difficulty. Dyscalculics have a poor sense of number so would struggle to understand that the number 4 is related to a group of 4 separate units / things / objects.

Additional difficulties may include poor spatial awareness, which can affect the ability to do fractions, coordinates, graphs, decimals, geometry and so on, and poor working memory, which can affect their ability to hold onto and manipulate information in their mind, something required to do mental maths and equations.



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## Typical strengths *may* include:

- > Intuitive thinking
- > Creativity
- > Strategic thinking
- > Practical / kinesthetic ability

## Typical difficulties *may* include:

- > Lack of general number sense (which is bigger, 3 or 5?)
- > Counting forwards (particularly into the next set of ten, so they may say 58, 59, 61...)
- > Counting backwards
- > Inability to subitise (for example not being able to see immediately that there are 4 items in front of them without explicitly counting them)
- > Not noticing patterns easily
- > Problems counting money and telling the time
- > Not able to estimate if an answer is reasonable
- > Difficulty in linking written or spoken numbers to the idea of quantity

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## Tips for supporting Dyscalculic learners:

### **Consolidate and 'over-learn' basic maths principles**

Maths is cumulative and if vital concepts have been missed, they need to be revisited to build a firm foundation of knowledge.

### **Use multi-sensory teaching**



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Allow for a hands-on experience using concrete examples where possible. For some great examples of multi-sensory teaching ideas visit [Understood](#).

Use of Cuisenaire rods for a variety of arithmetic concepts. More information and a library of short videos showing children using Cuisenaire rods can be found at [Cuisenaire](#).

### **If poor working memory is a key factor, work on memory techniques**

Rhymes and rhythm for learning timetables, for example.

### **Be encouraging and patient in your approach**

Often students can find themselves lacking confidence and self-esteem due to focusing on all the things that they feel they don't do as well as other people. Confidence can be built through a mastery of skills, a sense of achievement and patient support.

Keep activities fun and interactive and as stress-free as possible.

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*Supporting a student with dyscalculia usually involves teaching with a multisensory approach and at first trying to provide concrete everyday examples to illustrate the maths being taught. This can include using counters, cards or cubes.*

*I have found that some of the more basic maths knowledge may need to be taught again and continually revisited from a range of angles to help gain a better sense of numbers and of the topic. This can further help build stronger conceptual understanding of maths.*

*Being patient, supportive, encouraging and creative in the lessons always helps. Confidence and enjoyment of maths is often an issue with students with dyscalculia so it's also important to work on this and keep lessons engaging and confidence building.*

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**Elysia, maths and science tutor**



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## Useful websites:

Through our website you are able to link to other websites which are not under the control of Osborne Cawkwell Tuition. We have no control over the nature, content and availability of those sites. The inclusion of any links does not necessarily imply a recommendation or endorse the views expressed within them.

[British Dyslexia Association](#)  
[Understood](#)  
[Cuisenaire](#)

## Further reading for parents / teachers:

- > *The Parents' Guide to Specific Learning Difficulties: Information, Advice and Practical Tips*, by Veronica Bidwell
- > *The Dyscalculia Toolkit: Supporting Learning Difficulties in Maths (Book & CD-Rom)*, by Ronit Bird
- > *Overcoming Difficulties with Number: Supporting Dyscalculia and Students who Struggle with Maths (Book & CD)*, by Ronit Bird
- > *The Dyscalculia Solution*, by Jane Emerson and Patricia Babbie

## Further reading for students with Dyscalculia:

- > *It Just Doesn't Add Up: Explaining Dyscalculia and Overcoming Number Problems for Children and Adults*, by Paul Moorcraft