

Despite these limitations, many children and young people with Down syndrome are capable individuals who are eager and enthusiastic to learn. Many have strong visual awareness and visual learning skills and a desire to want to learn from their peers.

As most people born with Down syndrome can now expect to lead relatively longer and healthier lives, access to effective education is vital. It is essential, however, to be realistic about what can be achieved. Individuals with Down syndrome will have to work hard to reach even close to the same educational milestones as others and many reach adulthood without achieving the basic levels of literacy and numeracy found in the general population.

## ► Strategies for Supporting Children and Young People with Down Syndrome

### Here is Hope's story:

Hope Adams is 11 years old. She was born with Down syndrome. She is a quiet, confident girl, well-liked by everyone but, in common with most other 11 year olds, prone to tantrums. When she goes *off on one*, she has to be told off and loses some of her classroom privileges. When this happens, she crunches the 2nd, 3rd and 4th fingers of her left hand into a fist and by raising the thumb and little finger makes an imaginary phone. She then 'punches' a few numbers into the 'phone' and tells her dad that her teacher, Mrs Smith, is being nasty to her. She then gives Mrs Smith a defiant look and warns her that her dad is going to 'sort her out'. In Hope's mind, this act gives legitimacy to her behaviour.

One day, after a particularly bad bout of tantrums and subsequent telling off by her teacher, Hope went to pick up her imaginary phone. As she did this her teacher motioned to take it off her and, making her own 'phone', she told Hope's dad that Hope had been naughty and that he had to take the phone off her till her behaviour improved. Imagine Hope's look of amazement as this happened.

Mrs Smith could easily have used a real phone and told Mr Adams that Hope was behaving inappropriately. By entering Hope's world, however, she was able to have a much greater impact on her behaviour, as compared with the consequences of a telling-off from her parents.

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**D**yscalculia is derived from the Greek words *dys* (meaning difficult) and *calculia* (meaning calculation). Someone suffering from dyscalculia therefore has difficulty recognising numbers and other mathematical representations and remembering the right sequence of steps when calculating a mathematical problem. It is distinguished from other conditions that affect someone's ability to learn mathematics (see Entry No. 55) by the fact that it is a neurological or brain-based condition. The exact

Strategies for supporting a child or young person with Down syndrome include:

- Make sure that you have a positive attitude towards them. People who appear different to others are vulnerable to being mocked. Reassure them that this is a problem in the people mocking them, and not a problem in them.
- Ensure there is close liaison between you and the individual's parent. The practice that many special schools have of using home/school diaries to report progress on a regular basis should be encouraged across the educational spectrum.
- Be aware that their most common form of misbehaviour arises because they need to gain attention. Ensure that you only give the individual attention when their behaviour warrants it.
- Have high expectations for what they can achieve. This of course applies to all children and young people but there may be a lack of social maturity in someone with Down syndrome that can be addressed by reinforcing basic rules, giving them plenty of opportunity to interact with others and to take turns. Do this early in their lives when habits are beginning to form.

Here are three important steps for working with children and young people with Down syndrome in the classroom:

- Seat them near to the front of the classroom and whenever possible speak directly to them in clear concise language accompanied by visual reinforcement (such as Makaton) where possible.
- Use classroom assistants to act as the bridge both between them and the curriculum and between you and the individual.
- For effective learning, introduce new material slowly and in a step-by-step manner.

### Recommended Reading

Wishart, J. (2005) Children with Down Syndrome, in A. Lewis and B. Norwich (eds) *Special Teaching for Special Children?* Berkshire, England: Open University Press.

For more information and support for children or young people with Down syndrome, visit [www.downs-syndrome.org.uk](http://www.downs-syndrome.org.uk)

## DYSCALCULIA

cause of dyscalculia is unknown but it is estimated that one in every 20 people have some form of dyscalculia and people of all intellectual abilities can be affected by it.

Typical challenges facing children and young people with dyscalculia include:

- Having a poor sense of numbers, size and distance.
- Appearing slow when making even the simplest of calculations.

- Panicking when asked to do calculations.
- Experiencing difficulty in remembering even the most basic arithmetical calculations.
- Struggling to remember their times tables.
- Being unable to visualise numbers. For example being confused over numbers with similar shapes such as 6 and 9.
- Not being able to tell the time using a dial clock.
- Experiencing difficulties in managing finances.

There is no known cure for dyscalculia but there are a number of learning aids and programmes that have proven effective in improving reading and writing skills (see Recommended Reading below). Although most children and young people with dyscalculia will always struggle with their maths, most, with early recognition and the right intervention measures, go on to lead full and productive lives.

Being able to identify the signs of dyscalculia early on in the child or young person's life is crucial for them and their parents and teachers. This should be done through a professional body as the wrong diagnosis can lead to treatment and support that is totally inappropriate. Screening for dyscalculia can be conducted online at little or no cost. The screening report will often indicate the degree of the condition and the functional strengths and weaknesses of the individual.

## ▲ Strategies for Supporting Children and Young People with Dyscalculia

### Here is Joanne's story:

Joanne had well above average intelligence and studied Social Science at university. Her difficulties with numbers were dismissed as her being idle and disruptive. She always seemed to get on the wrong side of her maths teachers, who took her lack of progress as a personal insult. She knew that her love of subjects such as sociology and psychology would require her to interpret statistical data. Homework was okay because her coping strategy was to cheat and use other pupils' work. Exams were problematic and her marks on questions where data analysis was required always suffered. Her coping strategy was to avoid these questions. Here is what she had to say:

'For as long as I can remember, numbers have not been my friend. Words are easy as there can only be so many permutations of letters that make sense. You can't divide words or multiply them. They don't turn from fractions into decimals or have remainders and what's an irrational number all about? I know they have sequences and patterns but it's like looking at a page of Chinese or Arabic script. Numbers are cruel things; they keep trying to trick you'.

Thankfully, Joanne's condition was diagnosed early enough at university and, with measures introduced to cater for her dyscalculia, Joanne gained a first class honours degree. She now works as a psychologist for an organisation specialising in the treatment of children with dyslexia and dyscalculia. She still has difficulty with even the most basic calculations and hasn't changed her mobile phone for the past four years for fear of forgetting the number.

Strategies for supporting a child or young person with dyscalculia include:

- Understand more about what the condition means and the problems they may be having.
- Get them to do the online test to identify if it is dyscalculia, the extent of the condition and ideas to help them deal with the condition.
- Break complex mathematical concepts into smaller bite-sized chunks.
- Use cue cards to help them relate the arithmetical representation to something they are familiar with.
- Give meaning to mathematical concepts by relating them to real life situations and experiences they may have had.
- Use music and rhyme to help them remember things like their times tables.

Having a child with dyscalculia doesn't mean they are of below average intelligence; it just means they need more help with interpreting numbers.

Here are three important steps for working with children and young people with dyscalculia in the classroom:

- Accept that you need to be patient and go into detail to explain the relevance of calculations.
- Check out what additional resources are available to help them to do calculations.
- Teach them at their pace, not yours.

### Recommended Reading

Bird, R. (2103) *The Dyscalculia Toolkit* (2nd edition). London: Sage. There is a great range of activities and games in this book designed to help teachers support learners with dyscalculia.

Chinn, S. (2015) *The Routledge International Handbook of Dyscalculia and Mathematical Learning Difficulties*. London: Routledge.

For more information and support for people with dyscalculia, visit [www.dyscalculia.co.uk](http://www.dyscalculia.co.uk)