Including Teenagers with Down Syndrome in Your School

Practical information and strategies for secondary schools

Down Syndrome Ireland
Including Teenagers with Down Syndrome in Your School

“This handbook is intended for all secondary school staff as a guide to learning about teenagers with Down syndrome and the far-reaching benefits of including these students in your school community.”

Down Syndrome Ireland
Acknowledgements

A special thanks to Professor Sue Buckley of the Down Syndrome Educational Trust, UK for her support and to the English and Scottish Down Syndrome Associations. Thank you to all the parents, teachers and students working together to pave the way towards inclusion, and most of all, to teenagers with Down syndrome – who are the inspiration for this handbook.


Down’s Syndrome Association, UK and Scottish Down’s Syndrome Association. Including Pupils with Down Syndrome.


Foreword

The active involvement of people with Down syndrome in our communities is beneficial to everyone – as long as this encouraging trend is fostered. Where secondary schools are involved, the inclusion of students with Down syndrome is only just beginning. As a community, we really need to nurture this new development; given what these students have achieved in primary school, their secondary education is full of promise.

As both a parent of a child with Down syndrome and a primary teacher, I have firsthand experience of how meaningful this inclusion can be – both inside and outside of the classroom.

Throughout my work as Education Officer for Down Syndrome Ireland, I have been heartened to witness the continued positive response in Irish schools towards the inclusion of children and teenagers with Down syndrome, regardless of the often glaring lack of in-service training and sometimes inadequate availability of support.

Teachers and school staff have been forced to rely for too long on fragmented information for guidelines on educating and including students with Down syndrome in their schools. Down Syndrome Ireland are now delighted to introduce the first Irish-based handbook on secondary school inclusion as way of bridging this caveat.

While many teachers may find the prospect of including a teenager with Down syndrome in their classroom daunting, they will soon realise that they are already armed with the necessary skills to teach these students effectively.

Including Teenagers with Down Syndrome in Your School will help you in this journey.

Maree O’Connor,
Education Officer
List of Resources

Down Syndrome Ireland
1st Floor, 30 Mary Street, Dublin 1.
Ph. 01 873 0999 or 1890 374 374
Email: info@downsyndrome.ie
www.downsyndrome.ie
Numicon materials available.
Education support materials online.

Down Syndrome Educational Trust
Ph. 00 44 23 92855330
Email: enquiries@downsend.org
www.downsed.org
Catalogue of resources available.

Down’s Syndrome Association London
Ph. 00 44 2086824001
Email: info@downs-syndrome.org.uk
www.downs-syndrome.org.uk
Education support pack available.

Down’s Syndrome Scotland
Ph. 00 44 1313134225
Email: info@dsscotland.org.uk
www.dsscotland.org.uk
Differentiating the curriculum support pack available online.

RESOURCES FOR DIFFERENTIATION, COMPREHENSION AND MEMORY SKILLS
Learning Materials Limited
Wolverhampton
WV2 2BX. UK
For catalogue, phone: 01 4966688
Workbooks available on simplifying topics in history, science, geography, etc.

RESOURCES FOR PHONICS AND SPELLING
- Phonological Awareness Training (P.A.T.)
  Available from ETC Consult
  Leeson Street, Dublin 2. Ph: 01 497 2067

SUGGESTIONS FOR SUITABLE SUPPLEMENTARY READERS
Educational catalogues provide highly interesting and age-appropriate reading material for students with reading difficulties.
Lists of high-interest readers for students who are reluctant readers are available from:

STA Ltd.
Surgisales Teaching Aids Ltd.
Ph. 01 496 6688
- Oxford Reading Tree
- Lady Bird Books
- Ginn Reading Scheme
- Sunny Street Reading Scheme, ELCO
  (includes excellent workbooks)

RESOURCES FOR READING, SPELLING AND PHONICS SOFTWARE
Available from the Down Syndrome Educational Trust:
- Sound Stories, initial phonics (0-8 years)
- First Keys
- Inclusive Writer (5-18 years)
- Word Shark (3-16 years)
- Oxford Reading Tree, stage 1-5
- Sheila Rae the Brave
- Granma and Me
- Harry and the Haunted House
- The Hare and the Tortoise
- Word Shark (from STA Ltd.)
- Clicker 4 (invaluable – and suitable for all ages)
- Number Plane
- Number Train
- Number Shark
Goals for Special Needs Assistants and Teachers

Special Needs Assistants

• Involve the student in all aspects of school life and school routines
• Support social independence and the development of friendships with peers in school
• Support the development of social skills and inclusion with peers during breaks and lunchtimes
• Encourage modelling behaviour and expect age-appropriate and socially acceptable behaviour at all times
• Be aware of encouraging independence and friendships both in and out of class by knowing when to withdraw from the student

Teachers

• Work closely with the SNA and other staff involved with the pupil; everyone’s support is vital to achieving successful inclusion
• Allow for flexibility with subject choices – the student does not have to undertake every subject
• Recognise the importance of teaching reading and writing every day; this will develop speech, language, literacy and working memory skills
• Recognise the importance of teaching maths skills
• Provide access to all areas of the curriculum which are appropriate to the particular student, offering differentiated materials, with support from the SNA
• Be flexible with your teaching methods to encourage the student to become an independent worker and part of the group
• Familiarise yourself with the specific learning profile of students with Down syndrome
• Familiarise yourself with resources available for students with Down syndrome
Down syndrome is the most common cause of a learning disability. A genetic condition, Down syndrome is a chromosomal disorder affecting one in every 546 births in Ireland. People with Down syndrome have an additional number 21 chromosome, so their chromosomal count amounts to 47 instead of the usual 46.

However, teenagers with Down syndrome generally develop slower than their peers, and they may stay at a certain developmental stage longer.

For instance, a limited verbal short-term memory affects the student’s ability to process, understand and assimilate spoken language long enough to respond to it. Generally speaking, people with Down syndrome will be better able to understand language than communicate it themselves. Consequently, their cognitive skills are often underestimated. Be sure to take time to listen to your student and be patient when waiting for a response.

The student will also be more susceptible to certain medical conditions, which affect the thyroid, heart, sight, hearing and overall health.

Regardless of differences in the learning profiles of students with Down syndrome, participation in mainstream education is a major stepping stone for the successful transition of all youths into adulthood. As adults, nine out of ten people with Down syndrome can lead fulfilling and independent lives with a minimal level of support.

While children with Down syndrome will share certain physical traits, each child is an individual, defined by his/her particular family heritage and characteristics.

Down syndrome is not a disease and it cannot be cured. It is nobody’s fault.

Having feelings of apprehension about the arrival of a student with Down syndrome in your classroom is normal. Even the parents of a child with Down syndrome feel this way before they learn about their little baby.

Down syndrome is not a label. Teenagers with Down syndrome vary in their learning and physical abilities as much as typically developing teens do. These students do, in fact, have learning strengths you will want to capitalise on during lessons.
Benefits of Inclusion

Mainstream schooling is essentially about giving students of all abilities the right to a balanced education, and that means including every student in the community.

When a student with Down syndrome starts secondary school from a regular mainstream environment in primary school, the social and learning needs of the student would be best served by enrolment in a regular, mainstream class in the secondary school. The support of a Special Needs Assistant (SNA) is crucial for the success of such a transition.

The other option, placing the student in a special class structure within the secondary school, is not, in some cases, in the best interests of the student. Being in a ‘special’ class can further isolate the student from his/her peers, preventing the formation of meaningful friendships. Furthermore, a special class environment can expose students with Down syndrome to inappropriate behaviour, which they might easily imitate from their peers in the special class.

Students learn a lot from others during their young, impressionable years; the talents and sensibilities of one student are often an education to another. Feeling part of the group is as important to students with Down syndrome as it is to any other teenager.

On an individual level, inclusion promotes the academic and social well being of the student, whether or not s/he has Down syndrome – or any other learning disability for that matter.

So much of a student’s learning process takes place outside the classroom and in the company of other students. Daily opportunities to interact with typically developing teenagers – during breaks, lunch time or even class trips – provide the student with Down syndrome with invaluable models for normal and age-appropriate behaviour.

Conversely, the other students benefit from this kind of interaction. Suddenly, having someone in their class with Down syndrome is seen as an enriching experience, one that will hopefully fuel dinner table conversations at home about tolerance and diversity.
What you should know about Down syndrome and behaviour

- Most teenagers with Down syndrome are generally well-behaved students
- One to two out of every ten students with Down syndrome may have considerable behavioural difficulties
- Difficulties with behaviour often decline significantly with age
- Students with Down syndrome are aware of their own capabilities and can often display so-called failure avoidance, which presents itself in stubborn behaviour – if failure is the expected outcome, the student won’t want to participate in the activity

Causes of inappropriate behaviour

- A teenager with Down syndrome might misbehave due to anger or frustration – acting out can sometimes be the only recourse when speech and language pose particular difficulties
- Forcing the student with Down student to do separate work from the rest of the class – s/he may simply want to do the same assignments as everyone else
- The realisation that s/he cannot cope without help when doing the same activities as everyone else
- Assigned work is too difficult or uninteresting
- Annoyance with people who don’t take time to understand what s/he is trying to communicate
- Misunderstanding instructions or forgetting what s/he has already been told

Interacting with a teenager with Down syndrome

- Always face him/her - make eye contact
- Try to speak to him/her at the same level – your lip patterns will be perceived better when you are face to face
- It is not necessary to raise your voice or slow down your speech
- Supplement verbal instruction with visual prompts
- Give one instruction at a time
- Use three- to five-word sentences
- Emphasise key words, using sign or gesture
- Pause after each instruction
- Praise each attempt at following instruction
- Use body language

Strategies to encourage good behaviour

- Teach all skills explicitly
- Specify positive reinforcement, e.g., “good talking”, “good listening”
- Use other students as examples of good behaviour
- Teenagers with Down syndrome will often respond quicker if their classmates tell them their behaviour is inappropriate, versus constant reprimand by the teacher
- The student will need to rehearse a skill/behaviour several times in relevant situations before a skill/behaviour is learned – the SNA can help with this
- Redirect his/her attention away from confrontation and focus on the positive
- Implement a behaviour modification programme if s/he has behaviour difficulties
Motor skill development in young people with Down syndrome is essentially delayed rather than merely different to that of typically developing students. This delay is the result of poor muscle tone and loose joints, typical traits of people with Down syndrome, which affect their motor development.

Active participation in physical education class will encourage motor development in these students. Make sure the teenager with Down syndrome is not left on the sidelines, as long as no medical reason would suggest s/he do so. With continual practice, their motor skills will improve.

**Strategies to encourage participation in PE**

- Include students with Down syndrome in class games – most will enjoy all kinds of games, even if they are not ‘scoring’ goals all the time
- Help the student feel like s/he is succeeding in the game, aided by one-on-one support from peers, the teacher or SNA
- Offer a small group activity in addition to the class activity, if the student is reluctant to participate in a PE lesson
- Encourage classmates to be patient and helpful to their peer with Down syndrome at all times
- Provide visual demonstrations of actions/skills during the PE lesson – these can be reinforced by the SNA
- Practice improves performance and reaction times
- Some students with Down syndrome will focus on accuracy rather than speed
The move from primary to secondary school can often be difficult, if not traumatic, for any student. The school atmosphere is suddenly quite different than before – the single teacher classroom has been replaced by a host of classes with as many different teachers. Then, on top of the challenge of managing their own timetable, homework and study, students have to cope with varied subject contents and new teaching methods within the framework of a longer school day.

For a student with Down syndrome, that bit of extra thought, planning and preparation will ease this transition - to the benefit of both the new arrival and the school.

Essential to a smooth transition are mutual visits between the student’s primary school resource teacher/class teacher and the child’s new educators in secondary school. Complementary visits in both school environments will, in particular, provide the secondary educators with a firsthand understanding of their new student’s daily routine.

Previous experience has shown that a smooth transition to secondary school is greatly encouraged by simple initiatives, such as the student making a few visits to the new secondary school with a resource teacher and/or classmates.

**Strategies for successful transition**

- Appoint a contact person in the school as a primary support for the new student, his/her parents and other school staff, e.g. Resource Teacher, Career Guidance Teacher, Year Head
- Regular contact between teachers and SNAs from both schools to discuss the student’s progress, including his/her learning profile, learning style and Individual Education Plan (IEP)
- The student should visit the new secondary school with friends, parents and individually, practising different routes to, from and around the school
- Introduce the student to all teaching and non-teaching staff members s/he will have regular contact with, but not all at once
- Compile a visual map of the school, containing pictures of the student’s visits to the school with friends – this will help make the new surroundings less daunting on the first day
- Compile visual timetables, using pictures and diagrams
- Allow the student plenty of opportunity to discuss fears and expectations with the primary school resource teacher and the allocated special contact teacher in secondary school
Every student wants to fit in and be an accepted member of the school community – teenagers with Down syndrome are no different. School is the perfect place to explore and develop interpersonal relationships outside the family, with friends.

During the teenage years, conformity is often the unwritten rule to belonging to the group. For those with Down syndrome, ‘the rule’ can often make forming and sustaining friendships difficult and painful, which will ultimately affect how that young person feels about him/herself too.

Given that teenagers are particularly sensitive to difference, separating the student with Down syndrome from his/her peer group can be the precursor to isolation. Consequently, the full learning experience in school has to focus not just on academics, but on teaching all students to respect and learn from one another. Such an active learning strategy inside and outside the classroom will encourage more supportive and inclusive behaviour from everyone, including school staff.

Strategies to encourage socialisation

• **Staff Training**
  Educating all staff members about Down syndrome will discourage stereotypical views of students with disabilities. While traditional teacher training emphasises academic skills, encouraging staff to support and sustain students’ friendships is helpful too.

• **Model Appropriate Behaviour**
  Expect all students and staff to treat each other with respect - model respectful behaviour at all times

• **Dispel Myths**
  If the class has questions about Down syndrome, being informative and positive in your response is an effective way of dispelling myths about the disability – which in turn will encourage positive behaviour

• **Teach Social Skills**
  Provide opportunities for students with and without Down syndrome to learn social skills together. Divided into groups, students can be taught to practice skills like greeting one another, listening, taking turns, initiating and engaging in conversations, brainstorming ideas, expressing opinions and solving problems together. Teaching skills to encourage problem-solving, anger management and anti-bullying are particularly relevant for the positive inclusion of students with disabilities in mainstream schooling.
Consolidation

The ability of students with Down syndrome to learn and retain information can vary on a daily basis. Consequently, they can take longer than typically developing peers to learn and consolidate new skills.

**Strategies for consolidating new skills**

- Provide the student with extra time and opportunities to rehearse a given skill or behaviour several times, which will help him/her internalise the task
- Present new skills and concepts in a variety of ways, using concrete, practical and visual materials where possible
- Teach the child to apply a specific skill to a variety of situations – a skill learned on the playground may not automatically transfer to the classroom
- Continue to teach new skills, ensuring that previously acquired skills have not been overrun by new input
Homework

Homework is a significant part of the secondary school curriculum – it supports and reinforces the main content of the lesson. Homework helps all students develop good working habits and attitudes, while encouraging self-discipline and responsibility. Beyond the controlled conditions of the classroom, doing homework provides the student with a chance to apply learned concepts on their own.

Students with Down syndrome can benefit from homework activity as much as their peers. At the same time, they will need extra support to complete assigned homework, as possible problems associated with language and working memory can make remembering and understanding homework more difficult for the teenager.

Strategies for assigning homework

- Match the homework to the skills, interests and needs of the student – ensure the tasks are neither too difficult or too easy
- Assign an appropriate amount of homework; consider how long it will take the student to complete his/her homework. Further instruction may be needed if s/he cannot complete assigned work successfully.
- Liaise with other teachers to coordinate homework so the student is not inundated with assignments for the same date
- Make assignments clear and focused. Link in the lesson with short, concise additional explanations.
- Make sure students understand the purpose of the assignment
- Write homework down in full in a homework journal or book and include a date for completion for all assignments – the SNA can help with this if needed
- Provide constructive feedback. Consistent and constructive feedback motivates the student to complete assignments and progress in learning.
- Give help as needed. Students who do not understand an assignment need to know that help is available from the teacher or SNA.
- Talk to the parents – they can be an enormous help in supporting the student to successfully complete homework
• **Social Groups**

Allocate specific class time to discuss attitudes towards difference, prejudice, fears and intolerance, involving the teacher and/or the guidance counsellor. Providing time for all students to have a say will ensure that the experience is not a negative one for any particular student. Limiting group numbers to five or six students is a good way of both combining the students' individual skill levels and allowing each group member the opportunity for modelling appropriate behaviour.

• **Including Friends**

Students tend to make friends with other students in their class. If friends who shared a class together one year are not assigned to the same class the following year, they will have fewer opportunities to spend time together - and their friendship might not continue. **Where possible, be aware of friendships between students with and without disabilities and make arrangements for those students to be in the same classroom from year to year,** supporting the friendship by organising time for students to socialise and work together regularly.

• **The Individualised Education Plan (IEP)**

An IEP tailored to their specific needs of the student with Down syndrome can be reviewed at regular intervals. Including goals for social interactions on an IEP will ensure that the skills related to these goals will be taught, monitored and evaluated regularly – the IEP is always a working document.

• **Communicate with Parents**

Parents rarely have the chance to observe their children during the school day and may consequently not have an idea about how their child is developing socially in the school. Let parents know about budding friendships in school, which could encourage them to actively support their child's relationships outside the school perimeters.

• **One-to-One Matching Programmes**

Implementing a clear approach, like a buddy system, to match peers with one another may be necessary. Teach students to work together as peer tutors or to collaborate on projects – fulfilling an academic requirement can fuel lasting friendships. Include various learning styles and expectations.

• **Circle of Friends**

Encourage the class to involve students with Down syndrome in an extracurricular 'Friendship Club', a group which gathers regularly at a pre-arranged time and location, e.g. lunchtime in the school hall on Thursdays. Cooperative activities like singing, acting, dancing and special interest clubs are great for building relationships. Participating students need to make a commitment to stay with the group for a certain amount of time. Allocate an adult facilitator to be responsible for getting the group together and helping its members define their group objectives.
Starting out in a new school, the child with Down syndrome needs to feel part of the school, whether in the classroom or not. Backed by a consistent policy on inclusion, the whole school ethos ideally reflects the active inclusion of students with special needs.

The entire school - teachers, secretaries and caretakers alike – is responsible for ensuring that the school’s inclusion policy is maintained during daily interaction with the student with Down syndrome. The student can become very confused if s/he receives mixed messages about social propriety from one staff member to the next. Young people with Down syndrome are particularly sensitive to the way others behave. Consequently, providing a unified definition of appropriate social boundaries is vital to the teenager’s learning and development.

At the same time, the student may require a certain degree of flexibility in school, especially regarding overall teaching and time management. Treat the student with Down syndrome as you would any other teenager, but allow more time for daily interactions, such as changing classes.

While the teacher has primary responsibility for the student’s well-being, other school staff can be made aware of the student’s needs. At the same time, the board of management and principal are responsible for the development, implementation and regular review of the school policy on inclusion.
Differentiation

The best way of ensuring a successful learning environment is through differentiating the curriculum to suit the needs of the student with Down syndrome. The key to effective differentiation is being as flexible as possible and combining the student’s individual learning styles, strengths and weaknesses with his/her particular developmental stage.

Where possible, allow the student to participate in class lessons. The teacher needs to decide which or how much of the lesson content the student will focus on during follow-up activities. Under the guidance of the teacher, the SNA can provide modified activities for the student to access the curriculum. The SNA may also need to simplify question/answer sheets as a follow-up activity to class lessons.

Please refer to the List of Resources for ideas on accessing a differentiated curriculum.

Factors to be considered when planning lessons or differentiating the curriculum for teenagers with Down syndrome

- Age
- Hearing loss
- Language comprehension
- Speech skills
- Phonological awareness
- Reading skills
- Writing skills
- Spelling skills
- Memory skills
- Conversation and communication skills
- Support for learning at home
- Interests, hobbies, extra curricular activities
- Use of computer
- Use of media
- Social and academic confidence

Strategies for differentiating the curriculum

- Determine the main focus, content and vocabulary the student should learn
- Provide the child with learning support – Class Teacher, Resource Teacher, Special Needs Assistant, Peer Tutor
- Choose an appropriate context for learning the chosen material – whole class, group work, working with a partner, etc.
- Use familiar and meaningful material relevant to the student
- Ensure language and comprehension material is appropriate to the teenager’s developmental stage
- Provide the student with opportunities to work independently once s/he is familiar with the content
- The teacher and SNA monitor work from a distance

Please refer to the List of Resources for ideas on accessing a differentiated curriculum.
Strategies to improve numbers and mathematical skills

- Be aware of skills the student has previously learned
- Use concrete, visual materials to support learning in maths, e.g., Numicon, Cuisenaire rods, coins
- Teach the vocabulary of maths with math activities – learning to read the vocabulary used in maths will aid the retention of key vocabulary
- Teach maths symbols and numbers with the written word in the early stages, e.g. 3/three and +/plus
- Offer activities where the student will succeed regularly to encourage motivation in maths learning
- Use and encourage rote learning
- Use and encourage rehearsal memory training techniques, especially for numbers and time sequential information, e.g. 11-20, counting in twos, fives, tens, hundreds, days of the week, months of the year
- Try to make maths activities relevant to daily life experiences – this will fuel the student’s motivation and independence
- Collaborate with parents to encourage the use of daily experiences to enhance maths learning
The Special Needs Assistant (SNA) is an invaluable resource for both the teachers and the student who needs a little extra help to get through the school day. The SNA is responsible for assisting the student, while the teachers take full responsibility for the direction and content of the teenager’s learning.

Experiencing positive inclusion really depends on meaningful relations between the subject teachers and the SNA. The teacher should be sensitive to the fact that the SNA's role is often not clearly defined; it is up to the teacher to encourage and develop this relationship in the interests of meeting the student's needs in the classroom and during break times.

The role of the SNA can also be valuable for initiating relationships and other social structures between students with Down syndrome and their peers. However, the SNA is no substitute for peer interaction - situations where the student spends most of his/her break time solely with the SNA should be avoided because this can create barriers between the other classmates.

Developing meaningful social relations for the student with Down syndrome can be instigated by starting a 'buddy system' or enlisting the help of older students, i.e. Transition Year students.

Open collaboration between the teachers and SNA is required to ensure that the student with Down syndrome gets appropriate attention and that his/her needs are reviewed on a regular basis. After all, the goal is to foster a level of independence the teenager can carry on to his/her adult life.
A positive classroom environment is a great indication of how invaluable the teacher and/or SNA’s contribution can be, which fosters the kind of accepting and helpful atmosphere a student with Down syndrome will prosper in. Effectively, having a positive attitude solves problems even before they arise.

Laying the groundwork for including a student with Down syndrome is as important as what happens once the student arrives. Some schools have found it beneficial to talk to the parents of the class, including the parents of the student with Down syndrome, before the school term begins. An open communication network between the parents will, in turn, filter down to the students and the classroom.

An informed class will be less likely to make snap judgments about the student with Down syndrome. Having a lesson on disability issues as a way of highlighting the strengths of the new student is another helpful way of preparing for successful inclusion.
Students with Down syndrome progress through the same steps of learning numbers as their peers. Given an adequate level of support, some can join in classroom activities and be taught in the same way as the rest of the class. The learning process will be much easier for the teenager with Down syndrome if the teachers consider the student’s learning strengths in visual processing and visual memory and offer concrete learning materials where possible.

The ability of students with Down syndrome to learn maths varies a great deal. For instance, on entry to secondary school, some students can be quite adept in dealing with numbers 1 – 100, money, telling time, etc., while others may only have a very basic knowledge of numbers 1 – 10. It is important to remember that these students are able to continue to master and develop their basic number skills throughout secondary school. In fact, their number ability may improve considerably during the teenage years, as they become more focused in learning and are better able to concentrate during lessons.

Support materials like Numicon are invaluable when it comes to teaching maths to students with Down syndrome. Numicon teaches numbers through the recognition of patterns and through play with the number plates, which allows the students to process a visual image of each number by developing mental images of numbers 1 – 10. At a later stage, Numicon works as a visual cue/support to teaching tens and unit place value, counting in 5’s, 10’s, etc. Using any other visual or concrete teaching materials can be a great help too, such as Cuisenaire rods, unifex cubes, number lines and hundred squares.

However, teachers need to be aware that students with Down syndrome still face difficulties in learning numbers due to their weaknesses in auditory processing and working memory. Furthermore, it is common for the teacher to underestimate the student’s level of understanding because of delays in speech and language skills. If the student is not allowed adequate time to respond, progress in numbers and maths could be additionally hindered.

Difficulty in processing language, together with remembering what to do and in which order, restrict the ability of students with Down syndrome to complete mathematical tasks, yet the use of additional visual materials will help the student to reach his/her potential in this subject area. Remember that these students often have good memorising capabilities.

Other teaching strategies can help your student progress through lessons. Rote learning, or constant repetition, enhances the retention of facts, reduces short-term memory stress and fuels the development and use of mathematical processes and strategies.

It’s also important to teach understanding before basic facts are memorised.

In secondary school, the student should be taught both basic numbers skills, such as 1-100, addition, division, multiplication, and practical skills for independence, such as use of money, time, weighing, etc.
Many students with Down syndrome learn how to spell words purely by relying on their visual memory and sight vocabulary. It is vital that they are taught phonics and spelling with reading in order to encourage word attack skills and the development of an alphabetic strategy for reading.

While using an alphabetic strategy encourages faster progress, doing so will require the reader to hear individual sounds in the words as they are spoken (phonological awareness) and an ability to link these sounds to the written word.

An alphabetic reader decodes an unfamiliar word by sounding out the letters and subsequently ‘blending’ them to guess the word. S/he has to be able to say the word, break it into sounds (segmenting) and then work out the probable letters needed for spelling. Typically, a student will take two years to progress from knowing letter sounds (basic phonics teaching) to being able to use phonics and decode and spell. This process is that bit more difficult for students with Down syndrome, due to problems with auditory processing and the working memory.

Remember, it can be done. You can use the same resources for teaching the student with Down syndrome as you do with any other students who might have difficulties learning spelling and phonics. There are many teaching materials which have proven to be extremely effective for improving the phonics and spelling of students with Down syndrome, such as PAT and spelling programmes like Starspell.

Students who have learned phonics skills alongside their reading programme will eventually be able to draw on their visual and phonological skills to decode new vocabulary.

**Strategies for teaching phonics**

- Follow a phonics programme appropriate to the student’s developmental stage
- Differentiate letter sounds
- Differentiate beginning and ending of words
- Fill in missing letters, e.g. cvc words; initial, middle and final consonants
- Work on blending sounds and letters
- Sound out words when spelling and reading
- Make personal phonics notebooks, incorporating word families, word endings, rhyming words, etc.
- Use teaching resources like P.A.T., Starspell, Clicker 4, etc.
Having a student with Down syndrome in the classroom is an experience that can fuel apprehension not just at your end, but with the parents of the student as well. However, engaging in open and honest two-way communication will ease the transition for all during this exciting and challenging time.

Initial meetings with the parents of the student with Down syndrome would ideally take place before the student begins the new school year. Meeting with the parents, you will quickly learn that your new student is an individual who has distinct likes and dislikes, hobbies and interests.

The teacher should decide whether the SNA should be present during the one-to-one meetings with the parents of the child with Down syndrome.

These discussions with the parents can potentially provide very helpful information about the student’s preferences and family background – all of which can be used in adapting relevant teaching material for the student. The SNA will also find this information helpful for forming and engaging a meaningful working relationship with the student.

During 1st Year, it may not be necessary for the student to participate in all subjects. The specific subject choices will have to be discussed with parents and the student with Down syndrome. Careful selection of subject choices will fuel the student’s self-esteem and academic progress.

Talk to the parents about the teenager’s background and daily routines. How many brothers and sisters does s/he have? What are their names? What are his/her hobbies, favourite pop stars, football players, etc.? A productive starting point for any written or language activity in the classroom is the homework journal, a diary of daily events which the parents and teacher can initially work on together to get started.

Spending a good part of the day with the student, the teachers and SNA are in an ideal position to report any changes in the student’s behaviour or condition to the parents. Make sure that the parents inform the teacher of any pre-existing medical conditions or symptoms. Being informed of the medical needs particular to the student is an important way of supporting the teenager, the parents – and reinforcing an overall positive inclusion experience.
Calling students with Down syndrome developmentally delayed is misleading - they simply have a different learning style. Awareness of the characteristic strengths and weaknesses of this learning profile will encourage progress and help the teachers devise appropriate, meaningful and relevant activities for the student/s.

While teenagers with Down syndrome do have a particular learning profile, their social and emotional needs are the same as those of their peers. Where possible, it is best to address these needs in a manner appropriate to the teenager's age. They should be expected to act in an age-appropriate and socially acceptable way. However, some teenagers with Down syndrome may need support to do so.

As people with Down syndrome approach their teenage years, an emerging awareness of their disabilities may lead to low self-esteem and active avoidance of failure. To counteract this, teachers should use strategies like errorless learning in the classroom. Encouraging success is the best motivator for the student's learning. The more the errorless method is used, the likelihood of the teenager enjoying the school experience and reaching his/her potential increases.

Keeping in mind that all students are unique in their own way, this learning profile is intended as a general guideline. Students with Down syndrome vary widely in development, personality and behaviour and as such, they should have access to a varied curriculum suited to their learning/social needs.

Characteristics of a typical learning profile

- Overall, exceptional visual learners
- Learning difficulties vary from mild, moderate to severe
- Strong ability in visual processing and visual memory
- Strong use of gesture and motor responses
- Sensitive to failure and emotional cues
- Speech and language delayed relative to nonverbal mental abilities
- Difficulties with verbal short-term memory, i.e., recalling facts and remembering verbal information and instruments
- Developmental delay in working memory
- Possible display of a 'learned helplessness' when students are too used to being over-supported
- Most students will welcome the opportunity to work independently and in cooperation with their peers
Teaching reading has proven to be a great way of improving the development of language and working memory skills. Not only do students with Down syndrome learn to read in the same way as their peers, they follow similar patterns to typically developing students in acquiring reading skills, i.e., sight vocabulary and the use of phonics to spell and decode words.

Students with Down syndrome tend to rely on their sight vocabulary skills longer than their peers. Consequently, they may require help with word attack and decoding skills. Any teaching programme used in reading lessons should include both sight vocabulary and phonics/spelling skills, e.g., Phonological Awareness Training (PAT).

Teaching reading also develops the comprehension of syntactical rules, word morphology, grammar, articulation and word production skills. In secondary school, learning to read or continued progress in reading profoundly affects the student’s self-esteem, independence and quality of life.

The reading ability of students with Down syndrome can vary widely in secondary school. Some might have a similar reading ability to their classmates, yet they may be lagging behind in reading comprehension. Improved comprehension skills are best achieved with the appropriate teaching materials - there are many workbooks and resources specifically for improving comprehension ability.

Whenever possible, allow the student to follow and read the class text. Such a basic activity can actually work as a reinforcement of positive self-image. If this is not possible, offer suitable reading material to the student, perhaps based on his/her life experiences and usual daily activities.

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### Strategies to improve reading and writing

- Teach reading every day
- Use words and reading material suitable for the student’s language comprehension level and interests
- For new vocabulary – teach the whole word first, then the letter sounds and syllables
- Teach meaning and vocabulary together
- Make reading and writing both fun and meaningful, e.g., start a newspaper, magazine or diary project. Use a conversation diary to record daily events, both in and out of school.
- For students with delayed speech development, create and use sentences that are useful in everyday conversation
- Encourage paired reading, group reading, informal reading with peers and discuss text
- Practice writing activities with reading to encourage comprehension and memory skills
- Help the teenager to construct sentences using a personal dictionary, word bank, word cards or computer
- Encourage re-telling of a story or reading material, using visual material, to lead on to a writing synopsis of a story
- Use a tape recorder to document ideas for a text
- It may be necessary to rewrite the reading material in simpler text
- Provide multiple choice written answers until the student can learn to answer questions without visual cues
- Teach the student to read the text two or three times to encourage reading comprehension