Down Syndrome Ireland

Supporting students

with Down syndrome in Special Schools

Supporting students with Down syndrome in Special Schools

"Special schools support students with more severe and/or complex special educational needs in cases where a full time mainstream placement would not be in the student's best interest. These students may find the demands of mainstream schools very difficult, or may have complex learning or other difficulties which require smaller class sizes. In order to be placed in a special school a child must have a professional report stating that s/he has a special educational need. Special schools tend to have fewer students and support students in small class sizes. A special school for students with moderate general learning disabilities for example, has one teacher for every eight students. SENOs can sanction additional teacher and care supports for special schools to meet the range of needs in the school, in line with DES criteria. SENOs will be able to advise parents about the location and services available in the nearest special school."

(From: Choosing a School A Guide For Parents and Guardians of Children and Young People with Special Educational Needs - NCSE 2013).

Special Classes

Special classes offer a supportive learning environment for students with more complex needs where mainstream classes would not, or have not been able to, meet their needs. In order to be placed in a special class a child must have a professional report stating that s/he has a special educational need. Special classes have lower pupil teacher ratios than mainstream classes. Placement in a special class is a flexible arrangement that may change as a student's learning develops. Students in special classes should also be given opportunities to be included in mainstream classes for some activities or subjects, in as far as possible.

The NCSE sanctions the establishment of special classes where there is evidence that there are a number of children with special educational needs, within an area, who require such a setting. Currently about 12 per cent of mainstream schools have special classes. SENOs can advise parents on where these are or may be located.

Supports in special settings

(Special schools and special classes attached to mainstream schools)

- A supportive learning environment for children with more severe and/or complex special educational needs.
- Smaller class sizes than a mainstream class.
- Care supports for students with significant care needs arising from a disability.
- Assistive technology.

(From: Choosing a School A Guide For Parents and Guardians of Children and Young People with Special Educational Needs - NCSE 2013.)

Down Syndrome Ireland believes that there are advantages and disadvantages to all educational settings for children who have special educational needs and that families should be supported to consider what setting would be best for their child, bearing in mind social, educational and communication needs.

Some children with Down syndrome may thrive in the smaller classes within the special educational system, others will do better in an inclusive mainstream setting, where they are educated within their local community with siblings and peers.

This decision is an individual one, and not one which should be assumed based on a standard test score.

Students in special classes should also be given opportunities to be included in mainstream classes for some activities or subjects, in as far as possible.

There are advantages and disadvantages to all educational settings for children who have special educational needs. Families should be supported to consider what setting would be best for their child, bearing in mind social, educational and communication needs.

Background

In recent years, increasing numbers of children with Down syndrome are being educated in their local mainstream school. However, for a relatively small number of children and young people with Down syndrome, placement in a special school or unit is thought to be in their best interests and the better choice for their education journey. There are a number of reasons as to why this might be the case:

- They have profound and multiple disabilities that would make it difficult to include them meaningfully in a mainstream setting.
- They may demonstrate particularly challenging behaviours.
- They may have significant medical needs or require a high level of therapy not available in the mainstream school.
- They may have already failed in a mainstream school where they were subject to negative attitudes and low levels of support.

Regardless of a child's level of need, their education - in whatever setting is chosen by their parents - must be informed by an understanding of those needs. Therefore, in the context of this booklet, it is important for all parents, special school staff and other professionals to be aware of the particular needs of pupils with Down syndrome, as distinct from those of other pupils with learning difficulties.

The characteristic learning profile of children & teenagers with Down syndrome

Referring to students with Down syndrome as simply 'developmentally delayed' is misleading - they have a different learning style. An awareness of the characteristic strengths and weaknesses of this learning profile, regardless of the school setting, will encourage progress and help the teachers devise appropriate, meaningful and relevant activities for their pupils.

"Regardless of a child's level of need, their education - in whatever setting is chosen by their parents - must be informed by an understanding of those needs.

Characteristics of a typical learning profile

- Overall, exceptional visual learners (see specific information on vision).
- Learning difficulties vary from mild, moderate to severe.
- Visual processing and visual memory stronger than auditory.
- 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 instructions.
- 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.

These factors are typical of many, but not all, students with Down syndrome. Each has implications for their education and learning. These factors within the characteristic learning profile, together with individual needs and variations within that profile, must be considered by teachers and matched to the subject matter as they plan and differentiate programmes of work for their pupil with Down syndrome.

These factors within the characteristic learning profile, together with individual needs and variations within that profile, must be considered by teachers and matched to the subject matter as they plan and differentiate programmes of work for their pupil with Down syndrome.

Planning for teaching & learning Individual Education Plan (IEP)

An Individual Education Plan (IEP) is a written document for individual students specifying the learning goals for the student over a given period of time and the teaching strategies, resources and supports necessary to achieve those goals.

What must be Included in an IEP

- The student's strengths – their abilities, skills and talents.
- The student's special educational needs and the effect of those needs on his or her educational progress.
- The present level of the student's progress.

What must be done?

To develop an appropriate programme for the student with Down syndrome, teachers need to:

- Utilize the information they receive from parents, colleagues and other professionals.
- Utilize observation of the student in the classroom.
- Observe the student's response to the education programme in place for them.
- Note the results of any formal assessment procedures.

Areas to consider

- Personal and social skills
- Cognitive ability
- Gross & fine motor skills
- Speech, language and communication skills
- Literacy & numeracy skills
- Student's attitude
- Student' motivation
- Access to the curriculum
- Student's individual learning style
- Student's level of independent functioning
- Student's social skills
- Student's ability to form friendships / relationships
- Student's level of inclusion in school life

Strengths & needs

Documenting the child's strengths, abilities and talents gives an insight into what the child can do in particular area and identifies how the teacher can capitalise on and incorporate those skills into their teaching approaches and strategies. Documentation of **specific needs** is the basis for the establishment of priority learning needs and targets.

Documenting the child's strengths, abilities and talents gives an insight into what the child can do in particular areas and identifies how the teacher can capitalise on and incorporate those skills into their teaching approaches and strategies.

Targets

Targets are best developed in the context of the child's needs and the term 'priority learning needs' is used. This term refers to areas for intervention.

Priority learning needs

'Priority Learning Needs' are those needs that have been prioritised for intervention based on the student's current performance at school.

Priority learning needs form the basis for the development of learning. Priority learning needs are identified only for those areas where the student is experiencing difficulty.

'Priority Learning Needs' are those needs that have been prioritised for intervention based on the student's current performance at school.

When determining priority learning needs for the student consideration must be given to:

- The student's current level of progress.
- The student's specific strengths and needs.
- The student's needs in specific areas of learning.
- The relevance of the learning needs prioritised.
- The student's motivation and interest.

Writing learning targets for each priority learning need

Targets should relate to identified priority learning needs and should also build on the student's strengths. Targets should be Specific, Measurable, Agreed, Realistic and Timebound (using the SMART acronymn). It is essential that targets are written in such a way that they can be effectively evaluated.

Targets must identify:

- What the student will do
- How the student will do it
- The materials and supports required to achieve the target
- The proposed time frame in which the target will be met

Targets should relate to identified priority learning needs and should also build on the student's strengths.

Special Needs Assistant (SNA)

The Special Needs Assistant (SNA) scheme is designed to provide schools with additional adult support staff to assist children with additional/ significant care needs. This scheme has been a key factor in providing care support to pupils who are enrolled in special schools and special classes.

Primary care needs

- Assistance with feeding.
- Administration of medicine.
- Assistance with toileting and general hygiene.
- Assistance with mobility and orientation.
- Assisting teachers to provide supervision in the class, playground and school grounds.
- Non-nursing care needs associated with specific medical conditions.
- Assistance with moving and lifting of children, operation of hoists and equipment.
- Assistance with severe communication difficulties.

Secondary care needs

- Preparation and tidying of workspaces and classrooms or assisting a child who is not physically able to perform such tasks –
  - To prepare and tidy a workspace.
  - To present materials, to display work.
  - To transition from one lesson activity to another.
  - To assist with cleaning of materials.
- Assistance with the development of Personal Pupil Plans for children with special educational needs, with a particular focus on developing a care plan to meet the care needs of the pupil concerned and the review of such plans.
- Assist teachers and/or Principal in maintaining a journal or care monitoring system for pupils including details of attendance and care needs.
- Assist in preparation of school files and materials relating to care and assistance required in class by students with special needs.

- Planning for activities and classes where there may be additional care requirements associated with particular activities, liaising with class teachers and other teachers such as the resource teacher and school principal, attending meetings with parents, SENO, NEPS Psychologists, or school staff meetings with the agreement and guidance of class teacher/principal.

The care role of the SNA, in instances where SNA support is sanctioned to assist with behavioural related care needs, is concerned with assisting the teacher to meet the care needs of the child by:

- Preserving the safety of the pupil and others.
- Assisting with the prevention of self injurious or destructive behaviour.
- Reinforcing good behaviour on the child's part.
- Assisting with recording data in relation to pupil behaviour and behavioural development.

(Adapted from Circular 0030/2014)

While support from an SNA may be vital, it should not become a limiting factor, restricting inclusion and the development of independence. Many students who have access to an SNA become habituated to looking to an adult to solve any problem, large or small, and do not have the opportunity to learn from experience, and develop problem solving abilities.

While support from an SNA may be vital, it should not become a limiting factor, restricting inclusion and the development of independence.

An issue with SNAs in special classes is that freeing them to support an individual student to integrate into a mainstream setting for a particular class may leave the teacher with insufficient support for the care needs of the remaining students. Special classes within mainstream school have the possibility of being a good balance between mainstream and special education systems, but they can also become pockets of isolation.

Differentiating learning experiences

The need for differentiated support for students with Down syndrome has been identified by parents, teachers and other educators. An integral part of effective teaching practice for all pupils, enabling them to work at their own level and pace, make progress and achieve, it requires an understanding and awareness of individual differences between pupils and the implications of these differences in terms of access to the curriculum. Differentiation calls for the modification of curriculum objectives and learning outcomes, of activities, resources and forms of assessment. Each needs to be matched to the pupil's individual abilities and needs, strengths and weaknesses, learning styles, aptitudes and developmental stage.

Differentiation encompasses the concept 'different but equal'. It is synonymous with good teaching and students can often display hidden strengths when given the opportunity to respond.

Differentiation calls for the modification of curriculum objectives and learning outcomes, of activities, resources and forms of assessment

Appropriate procedures for adapting curriculum and instruction

- Select the topic to be taught.
- Identify the specific content to be included.
- Decide on the goals and learning objectives for the majority of students in the class.
- Decide on the way the lesson will be organised and conducted for most students.
- Identify any students who will need modification to the general lesson format.
- Modify the goals and learning objectives for those students, if necessary.
- Prepare any adaptations for those students.
- Teach the lesson and make any additional changes while teaching.
- Provide extra assistance for certain students while the lesson is in progress.
- Plan appropriate methods for assessing students learning based on the goals and objectives.

Specific Example of Differentiation

A useful mnemonic **'CARPET PATCH'** has been suggested by Westwood (2003), as a means for teachers to identify the main areas in their teaching approaches which could serve to establish inclusion in their classrooms for pupils with special needs.

C = Curriculum Content
The curriculum to be studied may be increased or decreased as appropriate.

A = Activities
Varying levels of difficulty may be used in activities selected.

R = Resource Materials
A variety of resources and teaching materials may be used.

P = Products from Lessons
Students output from lessons should be varied according to the student's abilities.

E = Environment
Classrooms should be conducive to both individualised and group teaching and learning.

T = Teaching Strategies
Teachers utilise different ways of teaching to accommodate different individuals or groups of students in their classes.

P = Pace
Teachers vary their rate of teaching or the rate at which they expect their children to work.

A = Amount of Assistance
Varying amounts of assistance to be given to students.

T = Testing and Grading
Teachers utilise various methods of assessing pupil performance and modify grading accordingly.

C = Classroom Groups
Various ways of grouping students are utilised to cater for different abilities in different activities.

H = Homework Assignments
Students are given homework in keeping with the level of work and activities undertaken in class.

Preparation of worksheets

- Use material within the pupil's experience
- Introduce new concepts in a familiar context
- Provide plenty of visual clues - words, symbols, pictures, diagrams
- Ensure illustrations tie in closely with text and task
- Give plenty of opportunities for success
- If possible try out several different versions of the same worksheet to discover what works best for the individual pupil
- Differentiate clearly between text and illustrations
- Leave a wide border around the edge of the page
- Highlight and explain key words and any that are new to the pupil
- Illustrate key words if possible.

- Use type or print, not handwriting, and consider a large, bold, sans serif font.
- Use a simple uncluttered layout - too busy a page causes confusion.
- Break up continuous text.
- Use simple and familiar language.
- Keep sentences short and concise.
- Avoid ambiguous words.
- Use active rather than passive verbs.

Because of the specific difficulty with language in students with Down syndrome, one of the most effective ways to support access to the curriculum is explicit teaching of key vocabulary ahead of any topic. Vocabulary needs to be taught visually if possible, and needs to be integrated into the child's existing language by making links with known words and concepts.

Because of the specific difficulty with language in students with Down syndrome, one of the most effective ways to support access to the curriculum is explicit teaching of key vocabulary ahead of any topic.

Motor Skills

The development of motor skills in most children with Down syndrome is delayed mainly due to low muscle tone (hypotonia). Hypotonia affects all the muscles in the body. However, the development of motor skills, both fine and gross, can improve with age. Children with Down syndrome have a number of physical characteristics, which can affect the development of dexterity, manipulation and co-ordination in turn causing delay in the development of both fine and gross motor skills. They have:

- smaller hands and shorter fingers than their typically developing peers.
- their thumbs are often set lower down the side of their hands.
- their arms and legs tend to be shorter relative to the length of their trunk or torso

Delayed milestones in motor development will limit the child's experiences which in turn will have consequences for the development of cognitive skills. The development of both fine and motor skills often have a direct influence on each other. For example, the development of writing skills (fine motor) is directly affected by the child's ability to sit correctly (gross motor). Therefore, ensuring that the child is seated

comfortably in a stable position with their feet resting on the floor and their arm comfortably positioned on the desktop is essential before addressing concerns about a correct pencil grip. All motor activities, both fine and gross, need to be taught explicitly and most children will need additional practice and 'overlearning'.

Ensuring that the child is seated comfortably in a stable position with their feet resting on the floor and their arm comfortably positioned on the desktop is essential before addressing concerns about a correct pencil grip.

Gross-motor activities involve the ability to move various parts of the body. The purpose of these activities is to develop smoother, more effective body movements and to increase the child's sense of spatial orientation and body consciousness. There are six areas considered crucial in the area of gross motor development:

- Body awareness
- Spatial awareness
- Balance
- Rhythm & movement control
- Co-ordination
- Basic skills (crawling, walking, running, jumping, swinging, climbing, ball skills)

Any programme of gross motor skill development will have to address difficulties in each of these areas to enable the child to achieve gross motor competency.

Fine motor skills are achieved when children learn to use their smaller muscles, like those in the hands, fingers and wrists. Children use their fine motor skills when writing, holding small items, buttoning clothes, turning pages, eating, cutting with scissors and using computer keyboards. Activities giving young children experiences with fine motor skill uses include:

- tracing
- water control
- using a scissors
- stencils or templates
- pen & paper activities
- lacing
- clipping clothes pegs
- copying

Handwriting is usually difficult for children with Down syndrome because of their poor muscle tone and issues with fine motor development. The use of different types and thickness of writing implement, pencil grips or writing slopes can make the process easier. In addition, the use of a wide range of multisensory activities and materials as alternatives to pencil and paper can be very beneficial. Practice letter shapes using shaving foam, sand, finger paint, playdough or chalk. Teach correct letter formation from the beginning using plastic letters.

Handwriting is usually difficult for children with Down syndrome because of their poor muscle tone and issues with fine motor development.

Alternatively, use letters cut out of sandpaper. Provide squared paper to encourage consistency in size of letters. Reduce the size of the squares over time. Let the child use lined paper with wide spacing until they can write confidently.

Practice letter shapes using shaving foam, sand, finger paint, playdough or chalk.

In teaching independent writing skills, encourage the child to progress in the following order:

- Write on top of the word using a different coloured pencil or crayon.
- Trace over the word using tracing paper.
- Complete a dot to dot version of the word.
- Copy the word directly underneath.
- Copy the word from a separate card.
- Copy the word from the board or a wall display.
- Write familiar words from dictation.

For some children with extreme finger and hand weakness, advice from an occupational therapist or specialist teacher for pupils with physical difficulties will be helpful. Children with continuing difficulties with handwriting skill development should be taught to type. The ability to touch type, once it is properly taught, will be of enormous benefit to any child or young person with Down syndrome as they grow and develop into adulthood.

The ability to touch type, once it is properly taught, will be of enormous benefit to any child or young person with Down syndrome as they grow and develop into adulthood.

Speech and Language

As Down syndrome selectively impairs speech and language, all children with Down syndrome will have speech and language disorders over and above what would be expected for their intellectual ability. Read that sentence again, and try to imagine how frustrating it must be to be continually underestimated because of poor speech and language!

It can be difficult for a child with Down syndrome to process language.

It can be difficult for a child with Down syndrome to process language. Difficult to distinguish between words. Difficult to recognise and remember the words for long enough to understand the message. It can be difficult to think of words, and then organise them into a phrase or sentence in order to respond. It can be difficult to absorb new vocabulary just by exposure, which is how most other children learn.

Most children try to communicate using speech. It is not the only way, though. We all also use sign, gesture, writing, facial expression and behaviour to convey messages.

Allow processing time: count to 10 before you say anything else!

People who have Down syndrome often have unclear speech for various reasons. There can be difficulties in remembering the pattern, or order of sounds and syllables in a word. It can be difficult to coordinate muscles to make those sounds, and to make them in the right order consistently so that someone can understand. The ability to speak clearly may vary according to the complexity of the message, the time of day, tiredness, etc. It is unfair to assume that the child is being lazy if they don't speak as clearly today as they did yesterday. Many children will supplement their speech with signing, at least in the early school years.

"It is unfair to assume that the child is being lazy if they don't speak as clearly today as they did yesterday. Many children will supplement their speech with signing, at least in the early school years.

Speech and language impairments affect access to all areas of the curriculum, not just language tasks. Language impairment is probably the most significant disability for the majority of children with Down syndrome in schools.

How can parents and teachers help?

- Accept that language is a significant difficulty, and adjust your own language to compensate.
- Use short, simple sentences.
- Allow processing time: count to 10 before you say anything else!
- Use positive sentences. It's much easier to understand "we walk in the corridor" than "don't run in the corridor". In the first sentence, the key word is WALK. In the second, the key word may be RUN.
- Think about word order. "We'll go the the yard after you've finished your snack" may be understood as "yard, then snack" by a child who has difficulty processing language, leading to frustration all round!

"Language impairment is probably the most significant disability for the majority of children with Down syndrome in schools.

- Don't give multiple instructions in one sentence. The child with Down syndrome is likely to pick up on either the first or the last, and be oblivious to the others. (You may think you don't do this, but: "ok everyone, time to finish your work, put your books in your bag then get into line ready to go to the hall" is four instructions.)
- Use visual supports, visual timetables, lists, pictures, etc. to support understanding.
- If the child uses signs, ensure that everyone knows those signs. This includes the other children in the class, and any other adults that the child comes into contact with.
- Identify the key vocabulary and concepts for each classroom topic, remembering to differentiate both the complexity and the amount as needed.
- Pre-teach vocabulary ahead of new topics. Families can support, by remembering to reinforce the target words in the home environment. Taking time for preparation of vocabulary for new topics is one of the most important ways of supporting a child with Down syndrome to succeed.
- Over time, developing good literacy skills is one of the best ways we know to overcome some of these difficulties. Language and literacy tend to develop in tandem. Being able to see the words increases awareness of sounds and of word order. Having things written down means you can process language at your own pace. Most students with Down syndrome are motivated to learn to read. Technology can be a good motivator - learning to read the names of songs so that you can find and play them, looking up pictures of favourite people or places, etc.
- Remember that literacy skills were almost unheard of in children with Down syndrome 40 years ago, whereas now the vast majority acquire at least functional literacy. This is probably due to higher expectations and

better teaching. Parents and teachers working together to support literacy will benefit the child with Down syndrome.

Remember that literacy skills were almost unheard of in children with Down syndrome 40 years ago, whereas now the vast majority acquire at least functional literacy. This is probably due to higher expectations and better teaching.

Staff in special schools are likely to be excellent at interpreting unclear speech and signs. However, over time, this can mean that the child does not see the need to improve the accuracy of signs or clarity of speech. It is important that people are not stepping in too quickly to interpret and clarify, though obviously there is a fine balance here, as it's not in anyone's interest for the student to become very frustrated. Teaching the child to use repair strategies, such as trying again, adding in signs, using gestures, or showing people a picture or an object to help identify the topic can be useful. It is never a good idea to pretend to understand when you really don't, as this leads to frustration and confusion all round.

Parents and teachers working together to support literacy will benefit the child with Down syndrome.

Communication books

At least in the early years, children who have Down syndrome are likely to struggle to communicate outside of the 'here and now'.

It is good practice for a communication book system to be established. This serves several purposes. It allows the parent to have an idea about what has happened in school and the teacher to know what happened at home. It promotes successful communication, since people can ask relevant questions, and have a good chance of understanding the answers.

It allows parents to help consolidate new vocabulary and concepts in real life situations.

The communication book should be the responsibility of the parent and class teacher initially, though in later classes the child could take ownership, and choose what information to share.

At least in the early years, children who have Down syndrome are likely to struggle to communicate outside of the 'here and now'. It is good practice for a communication book system to be established.

Communication book essentials:

- Be positive! Try to include at least four positive points for each negative one. (This will help in lots of ways - if you're looking out for positive things to write, you are more likely to notice positive behaviour and provide timely reinforcement).
- Keep it short. A few relevant points is better than a long essay.
- Be proactive. Let the parent know what topics or events are lined up for next week, so that they can talk about things at home. Let the teacher know what happened last night, so they can ask the right questions.
- If there are persistent negative issues arising, arrange a meeting and communicate face to face (even then, make sure that the positives are also highlighted).

Literacy

Be positive! Try to include at least four positive points for each negative one.

Reading

Reading is one area of the curriculum where many children with Down syndrome make excellent progress. Structured teaching of reading should begin with matching, selecting and naming pictures. For this activity, photos of familiar everyday objects or family members are a particularly useful resource. This should then proceed to word matching, selection and reading. Because children with Down syndrome are visual learners, they should learn whole words rather than letter sounds or syllables. First reading books should have simple sentences and accompanying pictures. Homemade books using photos of the child's day or weekend activities are also useful. Scrapbooks can also be used to teach words in categories e.g. furniture, animals or transport. Always try to use the child's interests as a guide.

Because children with Down syndrome are visual learners, they should learn whole words rather than letter sounds or syllables.

New vocabulary should be introduced using flashcards, teaching the words from a reading scheme or words the child already uses or understands. Well-structured reading schemes such as Oxford Reading Tree have proved particularly successful for children with Down syndrome. Make sentences with words the child already knows, using Velcro or sentence holders. Match flashcard words to sentence strips. Teach the small connecting words eg. and, in, am, on.

Using symbols to aid reading is not necessary for most young children with Down syndrome. However, for children who find whole word learning difficult, symbols may be necessary. Only symbol the key words as too many symbols make it complicated. Symbols always appear with the written word.

Once children have a grasp of the initial stage of reading (recognition of words by their visual pattern) they should be ready to move on to the second stage where letter/sound correspondence is developed and used to build words. Most children will maintain their progress in reading by relying on their visual memory. However, unless they acquire phonic skills, their progress will eventually slow down. While children with Down syndrome can develop letter/sound strategies for reading, they are unlikely to do so before they achieve a reading age of at least seven.

While children with Down syndrome can develop letter/sound strategies for reading, they are unlikely to do so before they achieve a reading age of at least seven.

However, children with Down syndrome should always be included in class phonics. Schemes that use a visual approach such as Jolly Phonics are better than programmes just based around auditory approaches.

To develop phonic skills:

- Use words the child can read as a whole
- Teach simple word families with similar beginnings and endings
- Teach initial sounds, graduating to CVC words and simple blends

Reading is also a powerful tool for developing speech and language skills. Both reading and writing can help improve communication, enabling pupils to achieve greater independence and enhance their progress and development across all areas of the curriculum.

Teaching handwriting

Handwriting is often difficult for children with Down syndrome because of their poor muscle tone and fine motor problems. Children need to take part in emergent writing activities with the rest of the class. Let the child make a mark or a scribble on the top of their pictures to represent their name.

Use different types and thickness of writing implement, pencil grips or writing slopes as well as a range of multisensory activities instead of pencils & paper. Letter shapes can be practiced in a fun way using for example, shaving foam, sand, finger paint, playdough or chalk.

Teach correct letter formation from the beginning, use letters cut from sandpaper or with arrows drawn on to indicate which way to move the pencil. Aids to encourage correct pencil grip are also helpful. Squared paper can encourage consistency in size of letters, with the size of the squares reducing over time. Use clearly visible lined paper with wide spacing.

Aids to encourage correct pencil grip are also helpful. Squared paper can encourage consistency in size of letters, with the size of the squares reducing over time.

For some children with extreme finger and hand weakness, advice from an occupational therapist or specialist teacher for pupils with physical difficulties may be helpful. It would be useful for younger children to have a collection of items chosen to improve strength in wrists and hands, and improve finger dexterity. These can be used at times when the child has finished their activity or simply needs a change of activity.

Strengthening activities could include:

- A small squashy ball.
- Bull-dog clips and pegs.
- A stress ball.
- Pop-together beads and threading beads.
- Lego and other multi-link blocks.
- Plasticine.
- Squeaky squeeze toys.
- Cutting practice - special spring-loaded scissors can be used.
- Play dough.

Developing writing skills

Difficulties in short term auditory memory, speech and language development and the organisation and sequencing of information can have a considerable impact on the development of writing skills for many children with Down syndrome. Ensure pupils are only asked to write about topics which build upon their experiences and understanding. Allow pupils who find it hard to copy from the board to copy from a version of the text placed next to them. The use of cursive script can aid with fluency with upper and lower case letters being taught simultaneously to develop the child's generalization skills. A conversation diary can be used to provide a link between reading and writing in addition to lists of keywords, word banks and word/picture dictionaries.

At all times, we must avoid the child becoming totally dependent on their SNA acting as their 'secretary'.

Where a child continues to have difficulty developing writing skills, alternative methods of recording their work include:

- Worksheets where the pupil underlines or rings the correct answer.
- Worksheets with blanks for the correct words (cloze procedure).
- Sentence or picture cards for the child to put in order.
- Pictures or flashcards for the child to select and paste in.
- Stickers with words written on them.
- A tape recorder or Dictaphone.
- A word processor with specialist software such as Clicker.

At all times, we must avoid the child becoming totally dependent on their SNA acting as their 'secretary'.

Strategies for spelling

Spelling is a particular area which must to be addressed independently from that of writing. The use of phonics as an aid to developing reading and spelling skills can pose problems for children with Down syndrome as it requires good hearing, fine discrimination of sounds and well-developed problem solving skills. Many children will learn to spell words purely by relying on their visual memory and learning the shape of the word. Others will have a basic knowledge of letter/sound correspondence and may recite the letter names when writing out a word.

Many children will learn to spell words purely by relying on their visual memory and learning the shape of the word.

The development of spelling skills will be made easier by:

- using words the child can already read.
- teaching spellings visually by using the look - say - cover - write - check method.
- using multi-sensory methods e.g. finger tracing over sandpaper letters.

As children's ability to spell improves, dictionaries can be made using words they know how to spell. Check educational suppliers for good visual teaching materials e.g word snap/bingo, spelling games etc. Build a word bank using index cards in a box with words grouped under headings e.g. people, animals, school, home. Lists of keywords required for different subject areas can also be colour-coded e.g. green for geography, red for science. Use the same colours for text books, exercise books and worksheets to aid recall.

Numeracy

Mathematical learning

Most children with Down syndrome encounter difficulties with mathematics. However, if good teaching methods are applied, the child will make satisfactory progress in all areas of numeracy. Before undertaking any mathematical operations, all pupils must have reached general developmental readiness.

They need to be competent in areas such as:

- Classification.
- one-to-one correspondence.
- the cardinal and ordinal aspects of number.
- conservation.
- flexibility and reversibility.

Children with Down syndrome are likely to be slow in developing these concepts and some children will exhibit particular problems with the language of mathematics e.g. same/different, more/less. The initial informal stages of mathematical learning are vital to the development of skills in matching, comparing, sorting, labelling, mapping and ordering. It is particularly important for children at this stage to fully understand the concepts 'same' and 'different'. These can be

practiced through language and conversational skills, through interaction with others and in day to day activities.

Concrete materials can be held, moved, grouped and separated, allowing pupils to visualise mathematical processes.

Moving from informal to more formal maths is very gradual. Connections are likely to be made slowly and a combination of experiences and careful teaching will be important for the child with Down syndrome. Using concrete materials is important, not only in the early years but also during concept development stages in higher level mathematics. Concrete materials can be held, moved, grouped and separated, allowing pupils to visualise mathematical processes. This makes them much more real than pictorial representations alone. Gradually the pupil will develop the concepts of number for example, realising that five objects, regardless of size, shape, colour or arrangement, still count as five.

Commercially produced materials may be helpful at this stage but should always be used alongside real objects.

Commercially produced materials may be helpful at this stage but should always be used alongside real objects. It is important to note that commercial materials may inhibit learning as pupils may see them as toys and prefer to play with them rather than using them for learning. The 'Numicon' materials may be of value to children with Down syndrome since it emphasises the value of using structured visual representations to teach the relationships between numbers. This works because of the ability of pupils with Down syndrome to learn by using their visual memory. 'Numicon' materials make use of patterns and aim to develop pupils' number concepts by providing information on position, action, colour and shape. Again, Numicon should always be used alongside real objects and related to numerals and counting of everyday items. It is vital, therefore, to create real situations with everyday objects to count e.g. giving out pencils or exercise books, setting the table for lunch or putting spoons with cups.

The language of maths

For children with Down syndrome, competence in numbers is linked to their level of knowledge and understanding. Difficulties in processing language, together with remembering what to do and in which order, can impact the ability of children with Down syndrome to complete mathematical tasks. Calculations and word problems all require language.

Difficulties arise because of:

- the abstract language of maths.
- the use of symbols to represent numbers.
- the use of concepts which cannot be decoded using contextual cues as in reading.
- the need to recall and use many steps, rules and number facts which require language.
- limited comprehension impacts on the child's ability to solve word problems.

As mathematical levels increase, so do the demands placed on reading and language skills. Learning to read maths words at the same time as developing their understanding will help the child to remember the key vocabulary. Children should also be taught to recognise and understand associated maths terms and symbols.

We must ensure that the child can match, select, name and understand all associated words. The language of maths must be taught very specifically. Personal word lists and keyword flash cards, as with reading activities, will help the child.

Difficulties associated with learning maths

Difficulties that arise from visual impairment in some pupils may mean that they will encounter difficulty when differentiating between numbers, e.g. 6 and 9, 2 and 5, 17 and 71, and between symbols e.g. + and x, - and =, < and >.

Pupils with Down syndrome often have good rote memorising capabilities. Rote learning enables retention of facts, reduces stress on short term memory and enables the development and use of mathematical processes and strategies.

Using a number line, vertical addition, left-right regrouping and alignment of numbers or writing across the paper in a straight line can also cause problems. Some children may have problems in handling small objects. Opportunities need to be created in a structured and progressive way, encouraging pupils to manipulate, investigate and use concrete materials, with assistance from adults when necessary. This should then be followed by sufficient practice to consolidate their learning. When counting, ensure the child touches each item and says the number as they count.

Pupils need to be given opportunities to undertake problem solving and other maths 'thinking' activities even before they have mastered computation.

Pupils with Down syndrome often have good rote memorising capabilities. Rote learning enables retention of facts, reduces stress on short term memory and enables the development and use of mathematical processes and strategies. However, it is important to teach understanding prior to memorising basic facts.

Lack of significant thinking skills compounds problem solving difficulties. Pupils need to be given opportunities to undertake problem solving and other maths 'thinking' activities even before they have mastered computation.

Provide adequate experiences with real life materials, time for exploration and situations where the 'right' answer is irrelevant.

Encourage the pupil to

- read and understand the problem.
- look for the key questions and recognise important words.
- select the correct action.
- write the number sentence (the equation) and solve it.
- check their answers.
- correct any errors.

Always verbalise the key words associated with each step and encourage the pupil to complete each step while saying the key words out loud. Provide adequate experiences with real life materials, time for exploration and situations where the 'right' answer is irrelevant.

Behaviour & social skills

Causes of inappropriate behaviour

Over the years, children with Down syndrome have been described as both affectionate and stubborn. They have commonly been seen as 'task avoiders' and are considered to be reliant on familiar routines. While all of these characteristics are undoubtedly found in some young people with Down syndrome, they are 'learned behaviours' and not an inevitable part of their syndrome.

Some children with experience high levels of anxiety and they may need to cling to routines. Others are affected by autism or attention deficit disorder which will influence their social development and make them more difficult to manage than other children with Down syndrome alone. However, many of the characteristics of these conditions are also found in children with particularly delayed language and cognitive skills.

Some children may appear to misbehave when they are just confused or uncertain about what they are supposed to do.

The most common form of inappropriate behaviour in all children, including those with Down syndrome, is behaviour designed to gain attention. They may be particularly attention seeking because:

- They enjoy being the centre of attention and dislike being ignored or having to wait their turn.
- They see others getting what they want by being difficult.
- They have been successful in using attention seeking behaviour in the past to get their own way or avoid work.

Sometimes children will misbehave because they are angry or frustrated. They may find that the work they are being given is too difficult, too easy or just boring. They may get annoyed when other people don't take the time to understand what they are trying to say. They may want to do the same work as everyone else, but an adult insists they do something different or special, often outside the classroom.

Some children may appear to misbehave when they are just confused or uncertain about what they are supposed to do. They may not understand instructions they have been given; they may have forgotten what they have been told and they may be confused by different adults giving conflicting messages.

Children in a special school are often subjected to a high level of structure and supervision. As a result, a child may feel the need to exert some control over his or her life. They may refuse to cooperate with their teacher or assistant as a 'matter of principle'. They may be difficult if they feel they are given no opportunities to choose their own activities or they may simply feel under pressure and need a break.

Children in a special school are often subjected to a high level of structure and supervision. As a result, a child may feel the need to exert some control over his or her life.

It is also important to remember that they may be imitating the behaviour of peers. It is possible that they may have had very few opportunities to observe age-appropriate behaviours. As a result, they may be copying peers with immature play and social skills. Immature or inappropriate behaviours may have been ignored or accepted in the past.

Strategies for dealing with behavioural challenges

Before trying to change a child's behaviour, it is important to observe them in different settings and at different times, to determine when the undesirable behaviour occurs and what triggers it off. Try to work out why the child is doing it and what rewards they are getting from the behaviour. There is always a reason for behaviours. They may just be copying others, they may find that other children laugh at them; they may get out of activities they dislike.

Then change something in the situation so that the behaviour is no longer triggered and see whether it makes a difference. Remember that the best way in the long term to minimise a problem behaviour is to replace it by teaching a more desirable alternative.

Never take good behaviour for granted. Always be ready to praise and encourage the child even if they are doing something that is very ordinary.

Before trying to change a child's behaviour, it is important to observe them in different settings and at different times, to determine when the undesirable behaviour occurs and what triggers it off.

To reduce attention seeking behaviours:

- Give the child attention when they are behaving well.
- Try to ignore attention seeking behaviour and encourage peers to do the same.
- Work closely with the parents to ensure that they support the school.

To reduce frustration:

- Ensure tasks are appropriately matched to the child's ability.
- Use teaching strategies that build on the child's strengths.
- Keep withdrawal sessions to a minimum while encouraging the child to work co-operatively with peers.

- Take time to listen to what the child is trying to tell you. Use a simple home/school diary to share information with parents.

To avoid confusion:

- Make sure instructions are clear and language is simple enough to ensure understanding.
- Teach the basic rules of behaviour and reinforce them with pictures or lists on the wall.
- Remind the child of the rules at regular intervals.
- Compare notes with your colleagues and with the parents, to make sure you are all giving the same message.

To give the child more control over their life:

- Make sure they have opportunities to choose an actvity, refuse an activity or do it later.
- Keep the child in the classroom for special work whenever possible.
- If withdrawal is really necessary, allow them to bring a friend.
- Give the child the opportunity to interact with their peers without continual adult supervision.

To reduce the effects of inappropriate models:

- Keep your expectations as high as possible.
- Expect the child to behave age-appropriately.
- Try to give them regular opportunities to mix with children displaying age-appropriate behaviours.
- Encourage parents to give them age-appropriate experiences.

Promoting social inclusion

To promote social inclusion, make sure the child has learned how to behave appropriately in social situations. They need to understand about rules and routines and be able to work with their peers. In group work, they must be able to participate and respond appropriately. They need to learn how to share and take turns. Outside, they need to understand the rules of playground games and what is involved in being a team member.

In the classroom, successful participation is promoted by ensuring that the child:

- Knows the major routines of the day. A visual timetable can help here.
- Has learned the class rules.
- Can participate appropriately in a small group.
- Will respond to requests and instructions from the class teacher.
- Can tidy their work and line up appropriately.
- Can sit still at a table during class or group sessions.
- Cares for others in the group and is aware of their feelings.

To promote social inclusion, make sure the child has learned how to behave appropriately in social situations. They need to understand about rules and routines and be able to work with their peers.

Learning appropriate social and self-help skills is a high priority for most young children with Down syndrome. However, many will need extra help and support. Key skills should be identified and then taught in small steps:

- Structured approaches, such as backward chaining - where the child is taught initially to do just the last part of the task and then works backwards one step at a time - can be particularly useful.
- Picture or photo prompt cards can be helpful, as they show the child what it looks like to complete the task. Peers can be used as role models to demonstrate successful task completion.

Learning appropriate social and self-help skills is a high priority for most young children with Down syndrome.

Before starting on a toilet training programme, make sure the child is developmentally ready. Can they retain urine for at least an hour? Do they tell people when they are wet or soiled? If not, they may not be ready. When teaching dressing skills, make sure they are taught at the appropriate point in the day e.g. coming in from play or changing for PE. Give the child extra time so they don't feel rushed. If they are really slow, use a timer and give smiley faces for finishing before the bell rings.

Encourage lunchtime staff to help the child eat independently but not to cut everything up or feed them unnecessarily. If they take a packed lunch, talk to the parents about making sure that it is easy to unwrap.

Post school options/ career advice

Post school options can vary nationwide, however in each county you will find a Disability Manager and/or and Occupational Guidance Officer. These professionals work within the HSE, and are in charge of post school funding for school leavers with Down syndrome. Because your son/daughter is attending a Special School, they are automatically on their list (whereas if a student is attending a mainstream school, they may not be). It still would be useful for you to make contact with your local Disability Manager to ensure your son/daughter is on their list (the school should have contact details for the specific person). We would recommend that this contact is made in fifth year or the second last year of school. The Disability Manager fills out a "profiling tool" to establish the level of needs an individual may have post school, the support he/she needs and therefore the funding that is available to that student (this funding will go straight to the HSE Day Service the person will attend).

Post school options can vary nationwide, however in each county you will find a Disability Manager and/or and Occupational Guidance Officer. These professionals work within the HSE, and are in charge of post school funding for school leavers with Down syndrome.

Services differ in each county so it is best to contact your local Disability Manager for details of local services available. For school leavers there is what's called a Rehabilitation Training (RT) programme (up to 4 years), and once this programme ends the individual with Down syndrome can stay within the same service, but under the Day Service model. Nationwide, some adults with Down syndrome attend their service on a full-time basis, while others attend part time while at the same time working, or studying. Adult Education programmes differ nationwide. Some colleges offer QQI Level 2/3 courses, some ETBs also offer training. Because these differ

nationwide it would be worthwhile enquiring locally as to what's on offer but also enquiring for career guidance within the school your son/daughter is attending, as this is not normally on offer to students in Special School.

Down Syndrome Ireland offers adult education and training courses for students leaving school as part of our Ability Programme, which breaks down barriers and provides people with Down syndrome access to meaningful employment opportunities.

Please visit our website for more information: www.downsyndrome.ie

Extracurricular activities

How can we make activities and events accessible to all children with Down syndrome, including those children with who have complex needs?

Many activities and events are unpredictable. They can be in unfamiliar environments, with people you don't see often. They might involve learning new skills. They might involve following instructions. There can be lots of sensory challenges, not just noise, but also visual and tactile, taste and smell.

While the majority of children who have Down syndrome will have mild or moderate intellectual disabilities (usually along with significant speech, language and hearing difficulties), some will have more complex or severe disabilities, including sensory issues, behaviour challenges and additional diagnoses such as ADHD or ASD.

It can be very isolating for families who feel that their children not only don't manage to join in with their mainstream peers, but also don't fit in with their peers who have Down syndrome.

> **Often, small accommodations can make a big difference.**

Often, small accommodations can make a big difference. Some things to consider when planning events or activities are:

Does the activity rely on following verbal instructions?

This can be difficult for most children who have Down syndrome, but those with severe hearing loss or severe auditory memory problems can find verbal instructions an insurmountable barrier.

What can you do to help?

- Add in visual supports such as pictures, visual schedules and sequences.
- Make sure the instructor knows the relevant Lámh signs (there are posters available with some of the signs needed for sporting activities, for example, which could make a real difference to a child who relies on Lámh).
- Prepare visuals ahead of time if possible and have them available on request for families. Many children will cope better if they are aware beforehand what is likely to happen, and social stories can be used to make the expectations clear and specific.

> **Many children will cope better if they are aware beforehand what is likely to happen, and social stories can be used to make the expectations clear and specific.**

Is the activity in an unfamiliar place?

Some children may become so distracted by a new environment that they are unable to focus on the activity.

What can you do to help?

- Giving families the opportunity to visit the new environment, ideally more than once, can allow the child the chance to explore and become comfortable in the space. This is an opportunity for the family to introduce the child to the environment, show them the boundaries, take pictures, and talk about the activity ahead of time.

Does the activity assume certain skills?

Music based activities can be accessible to children with significant hearing problems, but families may be unaware of this.

What can you do to help?

- Raise awareness of the social aspect of the activity and of the ability of people with hearing loss to tune into the vibrational aspect of music (the Scottish percussionist, Evelyn Glennie, is a high profile example of this!).
- Ask families how best to help who children who find loud music a sensory challenge. Some children may enjoy participating, but need to wear noise cancelling headphones. Others may need to come in early and be part of the setting up so that the sound increases gradually, rather than entering a noisy room.

Small changes don't have to be a big deal, but they can make a big difference to families with a child who has complex needs. Let's make sure that nobody is left behind.

As a parent, sometimes the fear that your child may not cope means it's easier to opt out rather than putting yourself or your child in a difficult situation, but learning to manage new situations is important for all of us. (That said, there probably isn't a parent in the world who hasn't decided it's just easier to stay at home today!)

If you're feeling that everything is too difficult all the time, it might be time to reach out and ask for adaptations to make it easier for you to join in. Small changes don't have to be a big deal, but they can make a big difference to families with a child who has complex needs.

Let's make sure that nobody is left behind.

Dual Diagnosis

Downs syndrome & Autistic Spectrum Disorder (ASD)

Given the social strengths often associated with Down syndrome, it was considered improbable for many years, by professionals and parents alike, that a condition impacting on social-communication (e.g. ASD) would be evident in a child with Down syndrome. However, concerns expressed by more and more parents in relation to the development of their child with Down syndrome has led researchers to address the possibility that some children with Down syndrome could also present with an additional behavioural diagnosis – an autism spectrum disorder (ASD).

How is an ASD likely to present in a child with Down syndrome?

Researchers in this field consider that, while children with both Down syndrome and ASD have many things in common, there are very particular aspects to the condition when the child has both. Clinical experience has shown that these children present in a unique way which is considered different from what is evident in children with Down syndrome alone or ASD alone - a different experience for both the child and the family unit.

Implications for intervention

One of the most important reasons for considering whether a child with Down syndrome is also presenting with an ASD is that a different approach to intervention is needed to promote the development of the child. Researchers continue to study the effectiveness and value of specific interventions for children with both Down syndrome and ASD. While such research is ongoing, an approach to teaching based on the use of developmentally appropriate targets and best practice in special education is recommended

One of the most important reasons for considering whether a child with Down syndrome is also presenting with an ASD is that a different approach to intervention is needed to promote the development of the child.

Suggestions for interventions for children with both Down syndrome & ASD

Social functioning

- Directly teach social skills such as sharing
- Encourage social interactions with one peer at a time
- Follow the child's lead and focus on social responses and interactions
- Utilise activities with peers that minimize expressive language demands
- Educate peers about the child's strengths and challenges
- Provide opportunities for the child to make choices

Communication

- Implement a combination of parent training and child therapy
- Focus on developing non-verbal communication skills
- Practice requesting e.g. to get help; to play; to get attention
- Teach different ways to make a request
- Teach waiting for a request to be fulfilled
- Consider using basic sign language
- Teach to the receptive level of the child
- Consider the importance of communication intervention and positive behaviour

Positive behaviour supports

- Conduct behavioural assessments
- Create a daily checklist for behavioural risk factors in the child's home communication book
- Teach communication skills as an alternative to problem behaviours
- Have a back- up plan for days when behaviour becomes problematic

Learning style

- Minimise distractions when teaching new skills
- Ensure frequent opportunities to practice new skills
- Use visual supports
- Have predictable routines
- Make use of ICT
- Reduce demands on the child's memory
- Teach in natural situations

This section has been adapted from:

When Down Syndrome and Autism Intersect – A Guide to DS-ASD for Parents and Professionals

(See resources section for further details)

Resources

Supporting children with Down syndrome in primary school

The vast majority of the booklet contains information that will be useful for teachers regardless of whether the child attends a local mainstream school or a special school. Included, there is information about Down syndrome as well as suggestions of practical, manageable ways to help children learn. It provides advice and suggestions to ensure children thrive at school. There is a list of helpful classroom accommodations. Also included is a sample template for a mini Individual Educational Plan (IEP).

Available as a free download from:

www.downsyndrome.ie

Differentiation in Action

The need for support in differentiating materials for students with Down syndrome has been identified by parents, teachers and other educators as the syllabus for second level subjects – as presented in current text books and materials – is beyond the level of comprehension and reading ability of many students with Down syndrome.

Booklets which show differentiated segments for a number of subjects: Home Economics, English, Science, History, Geography and Civil, Social and Political Education (CSPE) have been developed. Each booklet offers a number of 'sample lessons' and some subjects also have additional lessons in the form of PowerPoint presentations.

Available as a free download from:

www.downsyndrome.ie

Online training courses

The following courses are available:

- Supporting early development for children with Down syndrome from birth to 5 years.
- Effective education for children with Down syndrome in school.
- Implementing the Reading and Language Intervention for children with Down syndrome (RLI).
- Managing behaviour difficulties for children with Down syndrome.
- Improving speech and language development for children and young people with Down syndrome.
- Supporting the Reading and Language Intervention for Children with Down syndrome (RLI) - Accredited trainer training.

Available from:

https://www.down-syndrome.org/en-us/services/training/courses/

STRANDS - *Strategies for Teachers to Respond Actively to the Needs of children with Down syndrome*

Available from:

Mary Immaculate College,
South Circular Road,
Limerick,
Ireland

T. +353.61.204366
E. cdu@mic.ul.ie
W. www.cdu.mic.ul.ie

Practical resources

Oelwein, P (1995) ***Teaching reading to children with Down syndrome: a guide for parents and teachers***. Woodbine House (CD rom of resources)

Broun, L & Oelwein P. (2007) ***Literacy skill development for students with special needs: a strength based approach***.
Dude Publishing

Horstmeier, D. (2012) ***Try reading again: how to motivate and teach older beginners age 10 and up***. Woodbine House (CD rom of resources)

Interactive reading books by Joan Green

http://www.greenhousepub.com/

See and Learn programme

See and Learn is an evidence based, structured teaching programme which teaches speech, language and reading skills in small steps for children with Down syndrome up to 6 years of age. The programme is designed to help educators and parents provide young children with the additional support and practice they need to learn language.

- Language and Reading: https://www.seeandlearn.org/language-andreading/
- See and Learn Language and Reading First Phrases 1,2,3
- See and Learn Language and Reading Sentences and Grammar 1,2,3

The kits and apps provide all the guidance and materials needed to begin to teach children with Down syndrome to read using matching, selecting and naming techniques as discussed in the module and activities to assess single word and phrase/sentence comprehension when reading.

The materials ensure the child is reading at a language level that is simple and supports comprehension. The materials will give educators a model for developing more teaching materials and books for the student they are working with. They can also be used for the beginning stage of RLI.

RLI Reading and language intervention programme (5-11 year olds)

RLI is a structured programme to teach reading and language in school. It was evaluated in a research study in the UK and has been piloted in the USA. You can read the full details of the project and its publications at

https://www.dseinternational.org/resources/teaching/rli/.

Software ideas

Clicker 6 software – UK and USA
http://www.cricksoft.com/uk/products/tools/clicker/home.aspx

Widget software and apps – using symbols
(Don Johnston US)
http://www.widgit.com/products/index.htm

Inclusive technology – UK and USA
http://www.inclusive.co.uk/

Special Stories from Special iApps:
https://www.specialiapps.org/en-us/special-stories.html

See and Learn numbers

See and Learn Numbers is designed to teach young children to count, to link numbers to quantity, to understand important concepts about the number system and to calculate with numbers up to 10. It also teaches early mathematical concepts important for understanding space, time and measurement - including colour, size, shape, ordering, sorting and patterns.

See and Learn numbers follows recommended, evidence-based practice in number and maths teaching for all children, with some adaptations to meet the learning needs of children with Down syndrome. It teaches number skills in small steps, and provides many opportunities for practice to consolidate learning. Number concepts are presented with clear, visual representations. Teaching activities are designed to minimise distraction and reduce working memory and language demands to make it easier to focus on the learning tasks.

- First Counting – teaches number words, numerals, counting, cardinality and equivalence 1-10 – in small steps.
- First Concepts – teaches colours, size, shape, categories, ordering, sequences 1- 10.
- First Sums – teaches ordinality, inversion, relative sizes of numbers, addition, subtraction, multiplication 1-10.
  http://www.seeandlearn.org/numbers/

Numicon

Numicon is a multi-sensory maths teaching programme using Numicon maths shapes in a series of practical teaching activities. The Maths Shapes give learners insight into number values and relationships in a way not provided by written numerals. Learners develop their own mental imagery as they combine and compare the shapes to do arithmetic in a series of practical activities.

Numicon teaching kits:

1st Steps with Numicon at Home is a starter kit for parents

- ***Numicon Firm Foundations Kits: One-to-one and Class Kits***
  See whole Numicon range at
  https://global.oup.com/education/content/primary/series/numicon/
- Nye, J. Buckley, S, Bird,G. (2005) ***Evaluating Numicon as a tool for teaching number skills Down Syndrome News and Update*** at http://www.downsyndrome.org/updates/352/

The Down syndrome issues and information education & development series

A series of 34 books and checklists that cover developmental and educational issues from birth to 16 years

- Early Years {0-5 years}
- Primary & Junior {5-11 years}
- Secondary {11-16 years}

Available from:

The Down Syndrome Educational Trust
The Sarah Duffin Centre
Belmont Street
Southsea
Hampshire
England PO5 1NA

Telephone: + 44 (0) 23 9285 5330
Fax: + 44 (0) 23 9285 5320
E-mail: enquiries@downsed.org
Website: http://www.downsed.org/

Education support pack (Primary & Secondary)

A pack giving information and practical advice and strategies for the inclusion of a child with Down Syndrome in mainstream educational settings.

Available from:

Down's Syndrome Association
155 Mitchum Road
London SW17 9PG
Telephone: 020 8682 4001
Fax: 020 8682 4012
Email: info@downs-sydrome.org.uk

Available as a free download from:
www.downs-syndrome.org.uk

Classroom Language Skills for Children with Down Syndrome ~ A Guide for Parents and Teachers
Libby Kumin
ISBN: 978-1-890627-11-9

Teaching Reading to Children with Down Syndrome ~ A Guide for Parents and Teachers
Patricia Logan Oelwein
ISBN: 0-933149-55-7

Gross Motor Skills in Children with Down Syndrome ~ A Guide for Parents and Professionals
Patricia C. Winders
ISBN:0-933149-81-6

Fine Motor Skills in Children with Down Syndrome ~ A Guide for Parents and Professionals
Margaret Bruni
ISBN:1-890627-03-8

Teaching Maths to People with Down Syndrome
DeAnnna Horstmeier
ISBN: 978-1-890627-42-3

Teaching Children with Down Syndrome about their Bodies, Boundaries and Sexuality – A Guide for Parents and Professionals

Terri Couwenhoven M.S.
ISBN: 978 - 1-890627-33-1

(Available from any good bookshop by order with ISBN Number)

Children with Special Educational Needs Information Booklet for Parents

NCSE 2014

Choosing a School A Guide For Parents and Guardians of Children and Young People with Special Educational Needs

NCSE 2013

Starting School Guidelines for Parents/ Guardians of Children with Special Educational Needs

NCSE 2016

Information for Parents/Guardians of Children and Young People with General Learning Disabilities (GLD) (including borderline mild, mild, moderate and severe/ profound general learning disabilities)

NCSE

Supporting Students with Special Educational Needs to make Successful Transitions Guidelines for Schools
NCSE 2016

Delivery for Students with Special Educational Needs A guide for parents/guardians and students - An NCSE Working Group Report
NCSE 2014

CHANGING SCHOOLS Moving from Primary to Post-Primary School Guidelines for Parents/ Guardians of Students with Special Educational Needs
NCSE 2016

(All documents available to download at www.ncse.ie)

Important links and websites

www.downsyndrome.ie
www.downs-syndrome.org.uk
www.downsed.org/
www.dsscotland.org.uk
www.ncse.ie
www.sess.ie
www.education.ie

Dual Diagnosis – Down syndrome and autism

Autism and Down syndrome
Sue Buckley - The Down Syndrome Educational Trust, Portsmouth, UK

Down Syndrome News and Update 4(4), 114-120
© 2005 The Down Syndrome Educational Trust. All Rights Reserved. ISSN: 1463-6212 http://www.down-syndrome.info/library/periodicals/dsnu/04/03/ Autism and Down syndrome

AsIAm
AsIAm is Ireland's national Autism charity and advocacy organization, working to deliver real inclusion and understanding for all.
https://asiam.ie

Autism Society of America
www.autism-society.org
Improving the lives of all affected by autism.

Autism Speaks
www.autismspeaks.org
An organisation with the goal to change the future for all who struggle with autism spectrum disorders.

Down Syndrome-Autism Connection
www.ds-asd-connection.org
An organisation committed to providing education and support to individuals facing the unique challenges caused by co-occurring Down syndrome and autism.

National Association for Dual Diagnosis

thenadd.org
An association for persons with developmental disabilities and mental health needs.

Articles

Down Syndrome and Autism Spectrum Disorder: A Look at What We Know.
Capone, G. (1999). Can be found at www.kennedykrieger.org/patient-care/outpatient-programs/down_syndrome_autism_spectrum_disorders

More than Down Syndrome: A Parents View.
Gurthie Medlen, J. (1999). Can be found at www.kennedykrieger.org/patient-care/outpatient-programs/parents_views_down_syndrome

Dual Diagnoses: The Importance of Diagnosis and Treatment.
Patterson, B. (1999).

When Down Syndrome and Autism Intersect.
Froehike, R.N., Zaborek, Robin. Bethesda, MD: Woodbine House. (2013)

Acknowledgement

We acknowledge the work of Professor Sue Buckley, Down Syndrome Educational Trust UK, which continues to provide inspiration in paving the way towards an inclusive educational experience for teenagers with Down syndrome.

This publication was produced by
Down Syndrome Ireland
thanks to funds raised through our
HB Fundays campaign.

Down Syndrome Ireland

Tel: 01 426 6500 | Website:www.downsyndrome.ie | Email: info@downsyndrome.ie

#ShareTheJourney