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# *Including Children with Down Syndrome In Your School*



*Practical information and strategies  
for primary schools*

*Down Syndrome Ireland*

## *Including Children with Down Syndrome In Your School*

*" This information is intended for all school staff  
as a guide to learning about children with  
Down Syndrome and the far-reaching benefits  
of including these children in your  
school community "*

### *Down Syndrome Ireland*

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# Acknowledgements

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## Foreword

*The active involvement of people with Down syndrome (DS) in our communities will benefit everyone - as long as this encouraging trend is fostered. As both a parent of a child with Down syndrome and a primary teacher, I have firsthand experience of how meaningful this connection is, both inside and out of the classroom.*

*Throughout my work as Education Officer at Down Syndrome Ireland, I have been heartened to witness the positive response towards the inclusion of children with DS in Irish schools – regardless of the often glaring lack of in-service training and occasionally inadequate availability of support.*

*Teachers and staff have had to rely for too long on disparate bits of information for guidelines on how to educate and include children with DS in their schools. Now, Down Syndrome Ireland are delighted to introduce the first Irish-based handbook on inclusion.*

*Inevitably, many teachers may find the inclusion of a child with DS in the classroom a daunting prospect. Most teachers will realise, however, that they are already armed with the necessary skills to teach these pupils effectively, given the appropriate information.*

*Including Children with Down Syndrome in Your School is a good start for an even better day at your school.*



**Maree O'Connor,  
Education Officer**

# List of Resources

## Down Syndrome Ireland

(Numicon materials and "Including Pupils with Down Syndrome in Primary Schools – A Practical Approach" video available)

1st Floor, 30 Mary Street, Dublin 1.  
Ph. 01 873 0999 or 1890 374 374  
www.downsyndrome.ie

## Down Syndrome Educational Trust

(catalogue of resources available)

Ph. 00 44 23 92855330  
Email: enquiries@downsend.org  
www.downsend.org

## Down's Syndrome Association London

(education support pack available)

Ph. 00 44 2086824001  
Email: info@downs-syndrome.org.uk  
www.downs-syndrome.org.uk

## Down's Syndrome Scotland

(differentiating the curriculum support pack available online)

Ph. 00 44 1313134225  
Email: info@dsscotland.org.uk  
www.dsscotland.org.uk

## RESOURCES FOR DIFFERENTIATION, COMPREHENSION AND MEMORY SKILLS

### Learning Materials Limited

Wolverhampton  
WV2 2BX. UK  
For catalogue, phone: 01 4966688

## RESOURCES FOR PHONICS AND SPELLING

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

## SUGGESTIONS FOR SUITABLE SUPPLEMENTARY READERS

- Oxford Reading Tree
- Lady Bird Books
- Supplementary Readers with Folen's "Magic Emerald" Scheme
- Sunny Street Reading Scheme (includes excellent workbooks)

## RESOURCES FOR READING, SPELLING AND PHONICS SOFTWARE

- Sound Stories – initial phonics (0-8 years)
- Tizzy's Toybox
- Naughty Stories
- Jemima
- First Keys
- Inclusive Writer
- Word Shark (3-16 years)
- Oxford Reading Tree stage 1-5  
**(Down Syndrome Educational Trust)**
- Sheila Rae The Brave
- Granma and Me
- Harry and the Haunted House
- The Hare and The Tortoise  
**(Down Syndrome Educational Trust)**
- Clicker 4 (invaluable – suitable for all ages)
- Number Plane
- Number Train
- Number Shark



# Goals for Special Needs Assistants and Teachers

## Special Needs Assistants

- Involve the child in all aspects of school life and school routines
- Support social independence in school and the development of friendships with peers
- Support the development of play skills and inclusion with peers during breaks and lunchtimes
- Encourage model and expect age-appropriate behaviour, socially acceptable behaviour at all times



## Teachers

- Work closely with the SNA, whose support is vital to achieving these goals
- Recognise the importance of teaching reading and writing daily – this develops speech, language, working memory and literacy skills
- Recognise the importance of teaching numbers and maths skills
- Provide access to all areas of the curriculum at a level appropriate to the child, offer differentiated material to pupils, with support from the SNA
- Be flexible with your teaching methods to encourage the child to become an independent worker and part of the group
- Familiarise yourself with the specific learning profile of pupils with Down syndrome
- Familiarise yourself with resources available for pupils with Down syndrome



# What You Should Know About 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 is 47 instead of the usual 46.



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 child 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. Children with Down syndrome vary in their learning and physical abilities as much as typically developing students do. These children do, in fact, have learning strengths you will want to capitalise on during lessons.

However, children 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 child's ability to process, understand and assimilate spoken language long enough to respond to it. Generally speaking, children 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 child is also more susceptible to certain medical conditions, which affect the thyroid, heart, sight, hearing and overall health.

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



# Strategies for Inclusion

## BENEFITS OF INCLUSION

The first day of school for a child with Down syndrome is a significant event. Not just for that child, but for the teacher, the class – and the whole school. Mainstream schooling is really about giving students of all abilities the right to a balanced education, and that means including every student in the community.

Schoolchildren learn a lot from their peers 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 children with Down syndrome as it is to any other child.

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

So much of a child's learning process happens outside the classroom and in the company of his/her peers. Given daily opportunities to interact with typically developing students – during breaks, lunch time or even class trips – the child with Down syndrome is provided with invaluable models for normal and age-appropriate behaviour.



Conversely, the other students benefit from this kind of interaction. Suddenly, having a child 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.



## PROMOTING WHOLE SCHOOL INCLUSION

Starting out in a new school, the child with Down syndrome should be met with an overall positive feeling of being part of the school, whether in the classroom or out. Encouraging the inclusion of children with special needs should be reflected in the ethos of the school and backed by a consistent policy of inclusion.

The entire school – teachers, secretaries and caretakers alike – is responsible for ensuring that the consistency of the school's inclusion policy is maintained during their daily interaction with the child with Down syndrome. The child can become very confused if they receive mixed messages about social propriety from one staff member to the next. Children with Down syndrome are particularly sensitive to the way other people behave. Consequently, providing a solid definition of appropriate social boundaries is vital to the child's learning and development.

## Strategies to encourage good behaviour

- All skills will need to be taught explicitly
- Be specific about positive reinforcement, e.g. "good talking", "good listening"
- Use other pupils as a resource for good behaviour - students with Down syndrome will often respond quicker when told by their classmates that their behaviour is inappropriate, as opposed to constant reprimand by the teacher
- The student will need to rehearse a skill/behaviour a number of times in relevant situations before the skill/behaviour becomes automatic. This can be done with the help of the SNA
- It can often be more effective to redirect the pupil's attention away from a confrontational situation and focus on the positive instead
- If the child displays persistent inappropriate behaviour, a behaviour modification programme should be implemented



No single teaching technique will work on the child's behaviour every day because behaviour varies on a daily basis. Using a combination of techniques will be most beneficial, including:

- Behaviour
- Modelling behaviour
- Individual instruction
- Time out
- Self-help techniques
- Task analysis
- Backwards chaining
- Positive consequences
- Peer tutoring
- Token systems
- Picture teaching cards

## Boundary Training

A child with Down syndrome may experience difficulties understanding the concept of staying within the classroom boundaries. It is common for new students in Junior Infants to wander off in their new surroundings. The child should initially be taken around the boundaries of the classroom two to four times every day, which should continue for a minimum of three weeks. Repetition will help the student internalise this behaviour, which will soon turn into an automatic response. Involve peers in this structured training to model appropriate behaviour.

**Behaviour change requires time and consistent repetition.**

**Behavioural management programmes can fail if they are not followed through properly.**

# Behaviour

- Six out of ten pupils with Down syndrome have no behavioural difficulties
- Significant behavioural difficulties affect one to two out of every ten pupils with Down syndrome
- Pupils with Down syndrome have more behavioural difficulties than typically developing students of similar age
- Children with Down syndrome are aware of their own capabilities and can often display so-called failure avoidance, which presents itself in stubborn behaviour. The child won't like to do something if s/he expects to fail.
- Difficulties with behaviour often decline significantly with age



## Causes of inappropriate behaviour

Acting out can sometimes be a child's only means of communication, given his/her limitations in speech and language. Occasionally, a child with Down syndrome will misbehave due to anger or frustration.

- They may want to do the same work as everyone else, but are forced to do something different
- They may attempt to do the same activities as the rest of the class, but find that they can't cope without help
- They may think the assigned work is too difficult or uninteresting
- They may get annoyed when other people don't take time to understand what they are saying
- They may misunderstand instructions given to the whole class or may have forgotten what they have been told

## Interacting with a child with Down syndrome

- Always face the child
- Make eye contact with the child
- Try to speak to the child 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 - many students do not read subtle body language

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

While the teacher has primary responsibility for the child's well-being, all staff should be aware of the child'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.

### COMMUNICATING WITH PARENTS/FAMILY

Having a child with Down syndrome in your classroom is an experience that can fuel apprehension not just on your end, but with the parents of the child as well. Open and honest two-way communication will ease the transition for all during this exciting and challenging time.

Even before the child arrives in the classroom, it's important to arrange an initial meeting with the parents of the child with Down syndrome. You will quickly learn that your new student is an individual who has very distinct likes and dislikes, hobbies and interests.

The teacher should decide whether the presence of the Special Needs Assistant (SNA) would be appropriate or helpful during these one-to-one meetings with the child's parents.

Learning about the child's history and preferences will actually be an enormous help in adopting relevant teaching material for the child.

Talk to the parents about the child's background and daily routines. How many brothers and sisters

does s/he have? What are their names? Where does s/he play? What is his/her favourite food? Including photographs of these people and familiar places or activities in the curriculum will be extremely helpful to the child, who will likely respond well to visual cues. The child will be highly motivated by seeing him/herself in the photos, which will optimise his/her acquired reading and writing skills.

Collaborate with the child's parents to start a homework journal, a diary of daily events. This will be a good starting point for any written or language activity in the classroom, such as news time.



Spending a good part of the day with the child, the teacher and/or SNA is in a prime position to report any changes in the child's behaviour or condition. The parents should advise you of possible symptoms and any existing medical conditions. Being sensitive to the overall medical needs of people with Down syndrome, especially those particular to your student, will be beneficial to you, the parents – and the child.

## THE SPECIAL NEEDS ASSISTANT

The special needs assistant (SNA) is an invaluable resource for the teacher and for the child in need of a little extra help to get through the school day. The SNA has a responsibility to assist the student, while the teacher has to take full responsibility for the student's learning.

The child's positive experience of inclusion is incumbent upon meaningful relations between the class teacher 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 child's needs in the classroom and playground. Collaboration between these two pivotal roles is needed to constantly monitor and review the needs of the child.

The SNA, in turn, should work a careful balance between providing support for the child and



encouraging meaningful play experiences in school. The child does not need an assistant glued to them – in fact, sitting close to the child at all times will create barriers between the child with Down syndrome and his/her peers. After all, the goal is to foster a level of independence the child can carry on to his/her adult life.

## ENCOURAGING A POSITIVE ENVIRONMENT

A positive classroom environment is a great indication of the teacher and/or SNA's contribution – your input is invaluable in fostering the kind of accepting and helpful atmosphere a student with Down syndrome will prosper in. Having a positive attitude solves problems even before they surface.

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

An informed class will be less likely to make snap judgments about the child with Down syndrome.

# Motor Skills and Physical Education

Research studies have shown that motor skill development in children with Down syndrome is essentially delayed rather than merely different to that of typically developing children. The poor muscle tone and loose joints typical to many children with Down syndrome affect their motor development. Active participation in PE class is therefore vital, as long as no medical reason would suggest otherwise. Motor skills will improve with continual practice.



## Strategies to encourage participation in PE

- Most children with Down syndrome enjoy all kinds of games – participating in team games is enjoyable, even if they aren't 'scoring goals' all the time
- During the course of the game or activity, one-on-one support from peers/teacher/SNA will help the child feel like s/he is succeeding
- Where a student is reluctant to participate in a class PE lesson, offer a small group activity in addition to the class activity
- Advise classmates to be patient and to encourage the pupil with Down syndrome at all times
- Visually demonstrate or model the actions/skills during the PE lesson, which can be reinforced by the SNA
- Practice improves performance
- Reaction times improve with practice
- Some children with Down syndrome focus on accuracy rather than speed



# Consolidation

The ability of pupils with Down syndrome to learn and retain information can vary day to day. Pupils with Down syndrome often take longer to learn and consolidate new skills.

## Strategies for consolidating new skills

- Give the child extra time and opportunities to rehearse a given skill/behaviour several times – this will help the child internalise the skill/behaviour
- 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 those previously acquired have not been overrun by new input



# The Learning Profile of a Child with Down Syndrome

Calling a child with Down syndrome developmentally delayed is misleading – they simply have a different learning style. Being aware of the characteristic strengths and weaknesses of this learning profile will encourage progression and will help you, the teacher, to devise appropriate, meaningful and relevant activities for your student/s.

## Characteristics of a typical learning profile

- Individual differences vary from mild, moderate to severe learning difficulties
- Exceptional strength in visual processing and visual memory
- Strength in the use of gesture and motor responses
- Sensitive to failure and emotional cues
- Speech and language delayed relative to non-verbal mental abilities
- Delay in the development of working memory
- Frequent display of a 'learning helplessness', where the child is used to being oversupported
- Most children will welcome the opportunity to work independently and in cooperation with their peers



Success is the ultimate motivation for the child to learn. Using the errorless learning method as much as possible will help the child enjoy the school experience and reach his/her potential.

Remembering that every child is unique in his or her own way, this learning profile is intended as a general guideline.



# Reading

Reading is vital for the development of speech and language – it enables the child to visualise language and to overcome learning difficulties associated with listening.

The child has more time to process the text during reading, which will help him/her to understand the meaning of the text and store it in the memory. Speech processing, on the other hand, is a short-term stimulus which can be lost if the child's verbal short-term memory is not very effective.

Reading also helps the child to understand syntactical rules, word morphology and grammar. Improved articulation and word production skills are enhanced during the reading process, enabling the child to practice sentences s/he may not yet be able to articulate. Learning to read also has a profound effect on the child's self esteem, independence and quality of life.



## Strategies to enhance reading ability in children with Down syndrome

- Ensure that the child understands what she/he is reading and why. Teach 'sight words' first, using the 'look and say' method
- Select words which are suitable for the child's language comprehension level and interests, beginning with words the child already understands
- Use complete short, simple sentences
- Start a homework diary, using pictures of the child's familiar surroundings and interests to illustrate the written words
- Play matching and selecting games with vocabulary, not using pictures, to ensure the child can recognise visual vocabulary
- Read the words and sentences with the child
- Introduce new vocabulary into the reading once the child is comfortable with the reading activities and vocabulary
- Encourage the child to repeat words and sentences with you
- Practice writing alongside reading from the start, this will draw attention to letters and help handwriting
- When the child has a sight vocabulary of 30-40 words, start teaching phonics - learning to write and spell rhyming sets of words improves phonic skills
- Students often enjoy the supplementary readers that accompany the reading schemes. Providing a choice of reading material empowers the student and can make reading fun.

# Differentiation

Differentiating the curriculum to suit the needs of a pupil with Down syndrome is the best way of ensuring a successful learning environment. Effective differentiation uses the child's strengths and learning styles, while his/her particular developmental stage and weaknesses are also considered. The key to this is flexibility.

In as far as possible, allow the child to participate in all class lessons. The teacher needs to decide which or how much of the content of the class lesson the child will focus on in follow-up activities. The SNA is an invaluable resource, who, under the guidance of the teacher, can provide the pupil with modified activities in order to access the curriculum. Please see the List of Resources for valuable ideas for accessing a differentiated curriculum.



## Strategies for differentiating the curriculum

- Determine the main focus, content and vocabulary you wish the child to 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 child's developmental stage
- Provide the child with opportunities to work independently once s/he is familiar with the content. THE TEACHER AND SPECIAL NEEDS ASSISTANT MONITOR WORK FROM A DISTANCE

# Numbers

Pupils with Down syndrome progress through the stages of understanding numbers in the same way as other children. With support, they can join in all classroom activities and be taught in the same way as the rest of the class. Teachers should take account of the child's learning strengths in visual processing and visual memory, offering concrete materials to the pupil when teaching numbers.

Numicon materials are an invaluable resource when it comes to teaching maths to pupils with Down syndrome. Numicon teaches numbers through the recognition of patterns and through play with the number plates. The pupil is consequently able to process a visual image of each number by developing mental images of numbers 1 to 10. At a later stage, Numicon will function as a visual cue/support when teaching tens and unity, place value, counting in 5's, 10's etc. It is important to use any other visual or concrete materials to encourage generalisation of learning and transfer of number skills, e.g. Cuisenaire rods, unifex cubes, number lines, hundred squares etc.

However, teachers do need to be aware of difficulties that children with Down syndrome will encounter due to weaknesses in auditory processing and working memory. Teachers often underestimate the child's level of understanding due to delays in speech and language, which may hinder progress in numbers/mathematics.

Difficulties in processing language, together with remembering what to do and in which order, restrict the ability of children with Down syndrome to complete mathematical tasks, hence the need for visual materials. However, pupils with Down syndrome often have good memorising capabilities.



Role learning enhances the retention of facts, reduces the stress on short term memory and enables the development and use of mathematical processes and strategies. It is also important to teach understanding prior to memorising basic facts.

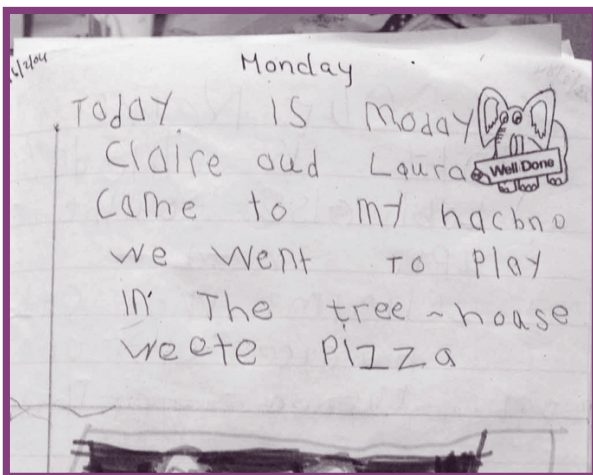
## Strategies to improve number/mathematics skills

- Be aware of previously learned skills the pupil has in numbers. If unsure, revise and consolidate previously learned material on a regular basis.
- Use concrete, visual materials to support learning in maths, e.g. Numicon, Cuisenaire rods
- Teach the vocabulary of maths alongside maths activities - learning to read the vocabulary used in maths will help the pupil to memorise the key vocabulary. Teach maths symbols and numbers with the written word in the initial stages.
- Offer activities where the child will succeed regularly in order to encourage motivation in maths learning
- Use and encourage role learning
- Create real situations in which to use maths, e.g., giving out pencils, copies, setting tables, baking, playing shopping etc.
- Remember – small steps, much practice and revision and visual supports for each step!

# Writing

The writing ability of children with Down syndrome is typically defined by the following:

- Ability to organise thoughts and transfer relevant information on to paper can prove challenging
- Difficulty sequencing words to form a sentence
- Difficulty sequencing events/information into the correct order



## Strategies to enhance the writing ability of children with Down syndrome

- Additional resources to make writing an enjoyable and interesting physical process
  - Different types of writing implements, e.g. markers, gel pens
  - Pencil grips
  - Larger lines
  - Boxes on page to encourage size of letters
  - Lined paper/squared paper
  - Writing board, e.g. Magna Doodle
  - Computer aids

- Alternative methods of recording
  - Scribe
  - Underline or ring correct answer
  - Close procedure
  - Sentence card sequences
  - Picture card sequences
  - Specialist software
- Visual support
  - Flash cards
  - Keywords
  - Picture cues and sequences
  - Sentence cues
- When copying from the blackboard, select and highlight a shorter version for the child to copy, focusing on what is important for that pupil or use a close method on a previously made worksheet
- Gross motor skills affect fine motor skills; participation in PE improves handwriting
- PRACTICE - all motor skills improve with practice



# Phonics and Spelling

Many children 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 next to reading in order to encourage word attack skills and an alphabetic strategy for reading.

Readers who use an alphabetic strategy make faster progress, but this requires the ability to hear the individual sounds in the words as they are spoken (phonological awareness) and to link these sounds to the written word.

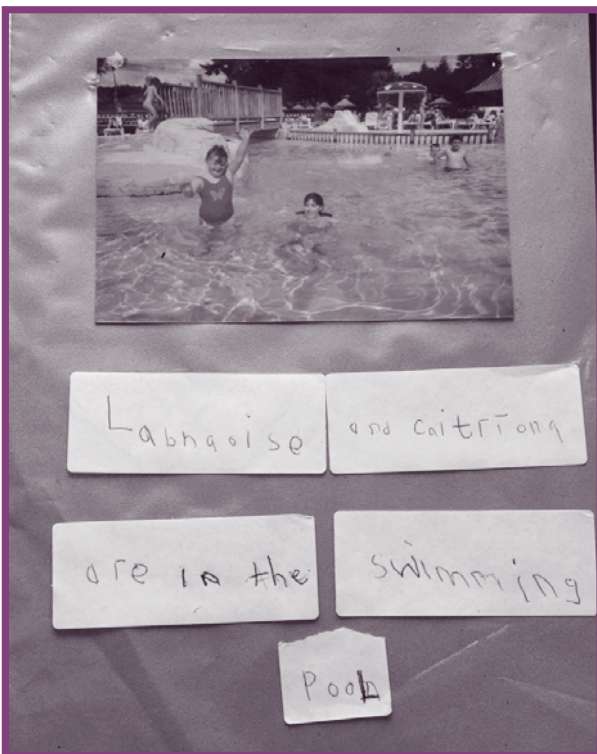
The alphabetic reader is able to decode an unfamiliar word by sounding out the letters and then 'blending' them to guess the word. The alphabetic reader has to be able to say the word, break it into sounds (segmenting) and then work out the probable letters needed for spelling. It takes a typical child two

years to progress from knowing letter sounds (basic phonics teaching) to be able to use phonics and to decode and spell. Due to problems with auditory processing and the working memory, children with Down syndrome will find this more difficult.

Remember - it can be done. You can use the same resources for teaching the child with Down syndrome as you do with any other pupils who have difficulties with spelling and phonics. Phonological Awareness Training, the P.A.T. Programme, is extremely effective in improving the phonics and spelling of children with Down syndrome. Sound story programmes, such as Starspell, are also valuable materials.

## Strategies for teaching phonics

- Incorporate lessons that teach phonics, e.g., Letterland, nursery rhymes, etc.
- Make a personal workbook to teach initial letter sounds, using material relevant to child - photos of family or familiar objects
- Use P.A.T. as sight vocabulary increases, for example, for phonics lessons. P.A.T. is also good for spelling instruction
- Make personal phonics notebooks with lists of words, families, rhyming words
- Using suitable computer software can make learning phonics fun - Sound stories, Starspell, Clicker 4.
- Pupils developing their writing skills should be encouraged to write letters and/or words when participating in phonic teaching activities. Use magnetic letters, sponge letters alternatively.



## Strategies for spelling

- Use words the child can already read when developing spelling skills. Teach spellings as visually as possible in early years (look - say - copy - cover - write) use flash cards, the multi-sensory approach, finger tracing
- Use the PAT Programme in phonics lesson - a child will begin to associate sounds with letters and word families as his/her reading improves
- Build up a word bank using index cards or an empty telephone directory, arranging frequently used words alphabetically
- Explore spelling games and activities on the computer - Wordshark, Starspell, First Keys, Clicker 4
- Use magnetic letters, foam letters, magnadoodle/ sketchmaster if the child is in the pre-writing stage
- Play spelling games, e.g. I Spy, Word snap, etc.

