Early Years & Primary Education Training
Website: downs-syndrome.org.uk
Email: info@downs-syndrome.org.uk
Gillian Bird
This webinar explores education for learners who have Down’s syndrome aged from 4 to 11 years. The presentation is divided into four areas:

1. Understanding a ‘learning profile’ of associated characteristics including memory, cognition and health, speech, language and communication, literacy and numeracy

2. Social inclusion and belonging

3. Examples of adaptations for inclusive teaching and learning

4. Behaviour support
Abilities and progression vary widely
- Always socially include for chronological age, think this way from nursery onwards
- As for any child, don’t try to predict the future

A pattern of associated characteristics, or ‘learning profile’
Some health conditions are more common

Like everyone, people who have Down’s syndrome have:
- own personalities
- things they like and dislike
- own ambitions, interests and talents

About Down’s Syndrome videos https://www.downs-syndrome.org.uk/about-downs-syndrome

Genetic condition with an extra chromosome 21 in all or some cells
1. ‘Learning Profile’ and implications

Publications
Down Syndrome International (DSi) Education Guidelines published July 2020
https://www.ds-int.org/education
(Key considerations; guidelines for leading, teaching, learning).
Recommendations for Leading

• Time for teachers to plan

• Shared vision of inclusion

• Work in partnership with families

• Teachers responsible for learning of all students in class

• Teachers must guide the work of teaching assistants
Recommendations for Teaching

• Teacher training & professional development

• Teach curriculum for the year group, adjusted to enable engagement with learning outcomes

• Where an individual education plan is used: teachers, one family member/advocate & student included in process

• Understand and support behaviour
• In mainstream classes for age

• Withdrawn as infrequently as possible

• Equal right to the curriculum (not based on what someone thinks a child needs for adulthood)

• Academic achievement should be expected

• Teachers aware of likely characteristics and need for adjustments
Associated characteristics or ‘learning profile’

• Vision

• Hearing

• Speech, language and communication

• Memory and cognition

• Fine and gross motor skills

• Health
Recommendations

- Vision and hearing management
- Speech and language therapy & promotion of speech clarity and fluency
- Adjustments as required for additional needs (e.g. ASC/ social communication)
- Take into account verbal working memory and manipulation of information in working memory
- Use visual supports including written words
- Encourage active movement and participation
Individual needs

• Unique – different needs
• High expectation
• Skilled teachers
• Next steps
• Engaging activities
• Welcome and socially included, whole school
• Additional support
• Communication – the team and parents
Use the framework for ALL children’s learning and development

Some ways to support success:
- set up for **learning by imitation**
- **daily practice** of targeted skills
- **plan activities** that become routine
- support **positive behaviour** and **friendships**
- use **strengths/interests**, support **relative difficulties**
- **share expertise** – what works well?
Learning profile: advance information
The Emerging Down Syndrome Behavioural phenotype in Early Childhood: Implications for practice. D J Fidler, 2005, Infants and young children, 18,2, 86-103

Relative strengths in some aspects of:
• visual processing
• receptive language (vocabulary)
• nonverbal social functioning

Relative weaknesses in:
• gross motor skills
• expressive language skills
Relative strengths

• Social skills/social understanding
• Self help and daily living skills
• Visual spatial memory
  – Remember things more easily when presented visually
  – Learning by imitation
  – Strength in reading and many other visual-spatial activities
Relative challenges

- Speech and Language Development
  Significant delays with expressive language
- Hearing and Vision
- Verbal short-term & working memory
  – learning from listening (alone)
- Motor skills
Specific visual-spatial learning strengths
  • learning by imitation
  • often strengths in ICT, reading or visual arts
Specifically poor verbal short-term memory
Capacity for manipulating information in working memory
  • attention and learning in listening situations (visual supports)
  • some children have ADHD, improves over time
  • Mental arithmetic
    • overcome barriers with visual tools and calculator
  • Visual and visual-spatial supports, copy a model
Supports for attention (staying on task, fatigue)

- Provide range of shorter activities
- Change of level of activity
- Provide physical breaks – get up, move around
- Additional activities ready if student finishes planned activities early
- Keep visual / use ICT
- Rewards built into timetable to keep motivated
- Space from adult support
Visual acuity

Use bigger size font
Darker font
Bigger contrast
Include in EHCP
Go over faint lines in black
Black felt pens
BIG and BOLD
DSA Eye conditions in children

DSA Children – vision, eye tests and glasses

DSA Writing Half page lined paper, storyboard, visual motor foundation skills for drawing and writing

Personal Child Health Record (PCHR) 2020 DSMIG UK & Ir

Cardiff centre for vision research, Dr Margaret Woodhouse OBE

https://www.cardiff.ac.uk/downs-syndrome-vision-research-unit

Gastrointestinal Problems in Children; Diabetes
Sleep
Oral Health Care for Children
Epilepsy
The Heart
Children – Vision, eye tests and glasses;
Hearing
Respiratory infections
Thyroid Disorder
Leukaemia
Orthopaedic issues
Inflammatory Arthritis in Children
Neck Instability
Infections and immunisations
Co-written with Down Syndrome Medical Interest Group UK & Ireland.
DSA parent referrals
• Majority of children have glue ear (conductive hearing loss)
• Some have sensory-neural loss, auditory nerves
• May only hear /store parts of words
• Address hearing difficulties – get relevant checks and address needs
Management - hearing aids, grommets ....
Attention skills – verbal and visual
  Environment - easy to listen in & easy to see in
  Listening resources – instruments, songs, sounds, activities
  Get visual attention before starting to speak

Reduce background noise
  Soundfield system in classrooms

Speak clearly but naturally
• Autism in children who have Down’s syndrome substantially higher
• More behaviour concerns than children who have Down’s syndrome only
• Early detection essential for provision of appropriate interventions
• The ‘atypical’ profile may delay recognition and implementation of appropriate autism interventions
• A ‘buffer of social competence’
Motor skills

- Specific delay in gross motor skills
- Similar pattern of development but more flexible ligaments
- Improves during childhood
- Active movement and participation
- All read ‘Neck instability’ document.
Speech, language, communication overview
Contributing factors - hearing loss, delayed development
Plus verbal processing difficulties – phonological (units of sound), morpho-syntactic (small words and parts -s, -ed, -ing)
Receptive vocabulary strength - high expectations (*curriculum access)
Understanding > expressive abilities – big difference for some, can be underestimated
Expressing thoughts and feelings
Need time to process information and respond
Communication: asking for help/information
Speech clarity and fluency - difference, be proactive
Some children have social communication impairment > dual diagnosis ASC
NEED FOR COMPREHENSIVE ASSESSMENT
Communication, responsive, joint attention........
- Developing understanding
- Using visual supports (resource links)
- Developing first words
- Personal books
- Symbolic sounds & early vocabulary
- Early vocabulary, pictures and words
- Listening cards
- Nursery rhymes
- DSA services
- Visit website for resources
Supports for communication

- Signs
- Pictures, symbols, words, ICT
- Interactive timetables
- Personal books, Conversation diary
- Sorting tasks with pictures/words (‘Listen To Me’ communication)
- Acting/role play/drama – puppets
<table>
<thead>
<tr>
<th>I like...</th>
<th>O.K.</th>
<th>I don't like...</th>
</tr>
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<tr>
<td>/thumb/</td>
<td>/hand/</td>
<td>/thumb/</td>
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</tbody>
</table>
Symbolic Sounds and Early Vocabulary list

- Understanding comes before expression

- Nouns – animals, dressing, everyday items, family and people, home, food, body, transport, play, outside words

- Verbs – action words experienced everyday
- Adjectives – describing words, quantity, size, personal qualities

- Prepositions – in, on, under, up, down...

- Social words – hello, bye-bye....
First words: resources for listening for sounds and vocabulary practice
First words: toys

bubbles
balloon
teddy
ball

Toys and games
Toys and games
Song cards for choosing

Baa baa black sheep

Hickory dickory dock

The grand old Duke of York
Number songs

5 little monkeys

5 currant buns

5 little ducks

10 in the bed
Food vocabulary

apple  banana  carrot
Food and drink

sausage  tomato  orange
Food and drink

cake  strawberry  cheese
Food and drink

drink  peas  sandwich
Food and drink
Transport vocabulary

- Car
- Bus
- Fire-engine
- Motorbike
- Bike
- Train
- Aeroplane
- Lorry
Receptive skills

First words understood
50 – 100 words: word combinations **
250+ words: understanding grammar

Expressive skills

Single word expression
50+ words - word combinations **
250 + words – word order, grammar

** Visual supports
Visuals can support practice e.g. written words, signs, pictures....
Personal vocabulary books with matching pictures and words (homemade)
Two-word personal book

- Word match board, single words on card to match
- Picture and phrase book e.g. pages for Eva clapping, Papi clapping, Mummy clapping, Pablo clapping, with photos.
- Make personal books for early verbs e.g. sleeping, eating, drinking etc
Personal books with three and more words, for sharing

Playing

I played on the beach

Mummy is playing.
Supporting language and grammar with sentence and picture books

• Make personal books that support and challenge the learner’s language level

• Make focused personal books to practice a particular target – e.g. plurals, negatives, pronouns
• Model 2- and 3-word phrases (word order e.g. boy eating banana)
• Imitate what the child says and expand on it
• Use visual cues such as pictures and props/objects/toys, signs
• To model/teach
• And for the learner to use to act out/recall
• Use open-ended questions – e.g. tell me more, wow, that’s interesting….. (rather than closed questions for ‘yes’ ‘no’ answers)
Consider language teaching resources such as Colourful Semantics and Shape Coding (Susan Ebbels)
Moving language forward

• Expand vocabulary
• Comparatives – bigger than
• Prepositions – in between, next to, beside
• Pronouns – he/she, him/her, his/hers,
• Why/because
• Connectives
• Sentence structures; complex sentences
• (You can still use personal books)
• Look at story books together, describe what you see – tell a story
• Refer back to information in a story/film ‘What part did you like best?’
• Recall/sequence the steps of an activity – first, next, last
• Use props (paper characters from book on lolly sticks)
Skills for understanding and telling stories and describing events

- Need wide vocabulary
- ‘Time’ vocabulary, such as yesterday, the other day, before, next
- Past tense constructions in sentences
Speech skills practice

- Listening, Discrimination, Production
- Sound level, word level, phrase/sentence level
- Word structures - e.g. syllables
- Don’t correct speech – model back
- Allow extra time for responses

- Sounds in isolation: vowels, consonants, clusters
- Combining sounds together....
- Graded practice: Ask speech and language therapist
- Many suitable resources
- Oral motor skills blowing, sucking, chewing ....
Teaching reading – whole words and phonics

- Learn from whole word sight recognition
- Also teach phonics
- Make reading fun
- Make meaningful – use for communication
- ‘Conversation diary’
- Requires teaching and practice
Follow steps in a comprehensive programme for teaching reading

• E.g. Letters and sounds/phonic programme
• Graded reading books
• Whole word learning/cards

• Phonic programme: letter sound knowledge, blending, segmenting...
• Precision teaching
• Reading interventions
• Homework
• Daily practice
• Model, support success
Reading and language comprehension

• Listening comprehension
• Point to pictures
• Match sentence (on a strip) to a picture
• Act out (find/make props to help)
• Vocabulary understanding – check, revise
• Question asking and answering
• Modelling and scaffolding
• Retelling, acting, picture and sentence sequencing
• Repetition
• Writing, Cloze
• Graphic organisers – e.g. concept maps, mind maps, story boards
Number

- Subitising
- Relative strength in the use of symbols for the development of number concepts
- De-emphasis on verbal count as a prerequisite
- Findings not unique to learners who have Down’s syndrome
Number concepts

• Number awareness: songs, games; displays;
  (DSA nursery rhymes in the communication series)

• 1:1 correspondence

• Stable order
  (reduced sequence, more errors)
Number

• Cardinality

• Quantity games – play and other learning activities

• Numicon

• Number lines – order, place value, calculation
  • Is the line /ruler clear and big enough?

• Equipment
Tips:

• Find page numbers
• Finding out things .... quizzes
• In measurements
• ‘How many.....?’ games
• Competitions, the winner (counting rewards)
• Teen words lotto/games (errors)
• Counting in 10’s, 2’s, 5’s
• Practice worksheets – some learners enjoy and has benefits
• Accurate number recognition/naming – digital displays
• Calculator skills
• Can learn procedures e.g. column addition
• Teach money and time
‘Learning profile’ considerations summary

• Vocabulary, schedules/routines, practical daily living skills, social interest, role models

• Visual-spatial strengths
  • learning by imitation
  • often strengths/enjoyment in I.T., reading, visual arts...
  • use visual / visual-spatial supports, copy a model

• Verbal learning; speech, language & communication

• Hearing, vision, motor skills, autism....
2. Social inclusion and belonging

- Friendships
- Transitions – prepare and support
- Our Voice, Inclusive participation
- Gains now and for the future, work, well-being
- Intellectual disability & individual needs
• Create conditions for all learners (For some learners: personalised sensory experiences e.g. poetry, stories, songs, games, musical experiences, art)
• Social interaction with peers
  • sensitive support
  • adult help can be a barrier
• Work with parents
  • Staff training (terminology)
  • Maintain communication & supports e.g. Home school link, Conversation diary
• Know health needs (e.g. vision, hearing, sleep)
Social inclusion

- A welcome member of class and school
- Needs met within the curriculum, with adjustments
- Seating position

- Vital for social development & behaviour
  - Friendships
  - Independence
About Down’s syndrome resources: Primary

Every child is unique which means they are not exactly the same as another child

How can you include your friends who have Down’s syndrome?

- Invite them into your games and activities
- Learn some signs that they use
- Listen well to what they say
- Give them time to say what they want to
- Don’t say the words for them

It’s OK to ask your friend if they want your help

PP presentation, booklet, guidance notes
See the link on the resources list

DSA
No one likes to feel left out

- What do you think being ‘left out’ means?
- What do think it feels like to be left out?
- How would you know if someone is feeling left out?
- What can you do to include everyone?

We all have things that we are good at doing and things we are still learning to do.

- Listening
- Looking after my pet
- Helping at home
- Sharing my things
- Riding a bike
- Being a good friend
- Drawing
- Singing
- Numbers
- Dancing
- Reading a book
- What do you enjoy doing?
- What are you good at doing?
- What are you learning to do?
- What would you like to learn to do?
About Down’s syndrome resources: year 6 + Secondary

Chromosomes decide things like your hair colour, eye colour, height, skin colour and lots of other things about a person.

People who have Down’s syndrome have an extra chromosome.

Inside those cells are chromosomes.
3. Examples of adaptations for inclusive teaching and learning

e.g. manipulatives, signs, aids, IT/iPad/printer, chair, sloping desk, clean glasses, black writing pens, big & bold resources
Support for whole class presentations

- Adult draws/writes on child’s whiteboard
- Picture/word cards
- Books/print from class presentation
- Listening support book
- e.g. Titanic (9 yrs)
Engagement and independence
Dear baby Monkey

Sorry for eating your teeny weeny banana.

Can I visit you soon?

Love,
Freddy

P.S. I will bring a bunch of bananas.
Vocabulary

manipulatives
Word cards for writing

Esther's Story Board

- sharks
- have
- big
- teeth
- they
- swim
- in
- the
- sea

- looks
- Mum
- favourite

The little big

Iron iron ore furnace warriors hot

spears armour shield sword chain link

wood clay stone craft wooden metal

craftsmen

smelt were men

Celtic people farmed the land

Celts farmers made iron tools

very strong fire inside was
DOWN’S SYNDROME ASSOCIATION

jug
cup
measure
empty
full
half
good measuring
25p

cube
cuboid
cylinder
cone

good ordering!
Photosynthesis

Plants can make food with Water, Carbon Dioxide and sunlight.

Plants get energy from sunlight
Plants get water from rain
Plants give us oxygen and food

$\text{Food} \rightarrow \text{O}_2 \rightarrow \text{H}_2\text{O} \rightarrow \text{CO}_2$
Own resources

- Numeral cards – 2 sets
- Dot cards
- Number lines – e.g. 10, 20, 100
- 100 square
- Ruler
- Other number equipment
- Calculator
- Coins folder
Norris always wears a tie. Write the missing numbers.

Number Ties

13 18 5
23 28 15
33 39 25
43 58 55
53 63 85
63 78 85
73 83 10
83 98 15

Thank you for fixing my ties😊. Now they are all correct.
Adapt assessment

Demonstrate understanding by:

• Pointing to pictures or words

• Matching words to pictures

• Acting out – role play
Writing

• Are topics within pupils’ experience/understanding?
• Provide visual help & alternatives – record of sight vocabulary, picture cues, flash cards, post-it notes, keyword lists, writing frames
• Scribe (assistant)
• Underline or ring correct answer
• ‘Cloze’ procedure (fill in the gap)
• Sentence card sequences
• Cutting and sticking activities
• Computer programmes/apps
Progression

• Supported copying activity

• Independent writing

• Supported computer activity

Independent writing, two years later
Curriculum advice

• Following a regular programme – any adaptations?
• Measure success, not failure
• Encourage problem solving
• Encourage persistence
• Consider motor skills
• Cross curricular practice
• Preparation
• Working together
4. Supporting behaviour positively

Resources available on website
Training available on website
Helpline, call or email

- ABC observation record
- Functional analysis
- ABC strategies for change
- Create behaviour plans
- Review behaviour plans

https://www.downs-syndrome.org.uk/about-downs-syndrome/lifes-journey/understanding-behaviour/
## Working out the Function of Behaviour

Some of the basic functions of behaviours that challenge include:

<table>
<thead>
<tr>
<th>SOCIAL ATTENTION</th>
<th><img src="image" alt="Social Attention" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>SENSORY</td>
<td><img src="image" alt="Sensory" /></td>
</tr>
<tr>
<td>GETTING THINGS</td>
<td><img src="image" alt="Getting Things" /></td>
</tr>
<tr>
<td>ESCAPE/AVOIDANCE</td>
<td><img src="image" alt="Escape/Avoidance" /></td>
</tr>
<tr>
<td>EXPRESS EMOTION</td>
<td><img src="image" alt="Express Emotion" /></td>
</tr>
</tbody>
</table>

### Table

<table>
<thead>
<tr>
<th>Date</th>
<th>Time of day</th>
<th>Antecedents</th>
<th>Behaviour</th>
<th>Consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• What happened just before?</td>
<td>Accurate description of the behaviour</td>
<td>• What did you or others do? (ignore, discuss?)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Contributory factors?</td>
<td></td>
<td>• How did you react?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Who?</td>
<td></td>
<td>• How did the person react?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Where?</td>
<td></td>
<td>• What happened after?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• What situation?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Strategies for change

Communicate with everyone to make appropriate adjustments

- Antecedent strategies
- New behaviour strategies
- Consequent strategies
  Reward
  No longer reinforce unwanted behaviours

Visual and failure free – e.g. model, pictures and photos, film, social stories/visual guides, support
From before birth to old age
With you every step of the way
downs-syndrome.org.uk
The resources that follow are to accompany the DSA Early Years and Primary Education training webinar.

The webinar can be accessed as a recording or as a live webinar with Q and A. Both the recordings and live event have a charge of £10. You can find out more about DSA training and support meetings, and book onto an event on our website.

**Free information and resources**

DSA Education project webpage

About Down’s syndrome - Terminology guide and ‘We Are ..’ DSA YouTube video

DSA Our Voice

DSA ‘What is Down’s syndrome?’ resources (primary age children)

- ‘What is Down’s syndrome?’ Resource for children
- ‘What is Down’s syndrome?’ Presentation for teachers
- Guidance notes to accompany the children’s resource

Also available: a set of ‘What is Down’s syndrome?’ resources for children and young people in year 6 and above.
Down’s Syndrome Medical Interest Group UK & Ireland (DSMIG) (2020). PCHR insert for Babies who have Down’s syndrome. This contains health surveillance recommendations for children and young people.

DSMIG website

DSA vision resources

Maggie Woodhouse video - Visual Acuity - what is it and why does it matter to people who have Down’s syndrome?

Cardiff University Down’s Syndrome Vision Research Unit (Dr Maggie Woodhouse and team)

DSA hearing information

DSA and Down’s Syndrome Medical Interest Group UK & Ireland (2020) ‘Neck instability in people who have Down’s syndrome’

DSA The Role of the Speech and Language Therapist for primary school aged children who have Down’s syndrome (2021)

DSA Speech, Language and Communication Resources

DSA Listen to Me Childhood Communication Resource

DSA Listen to Me Childhood Communication Guide


DSA ‘Supporting Children to learn’ written for SEN Magazine

DSA Complex Needs and Autism area of DSA website; many resources including for ADHD

DSA Using Positive Behavioural Support as a model of change with people who have Down’s syndrome 2022. Supporting Behaviour Positively series and other resources

DSA Education resources

DSA ‘Transition from Reception to Year 1’ written for SEN Magazine

DSA Visual Motor Skills foundations for writing and drawing
Other publications


Lancashire and South Cumbria NHS Foundation Trust (2022) ‘Down Syndrome Toolkit for Paediatric Speech and Language Therapists’


The Emerging Down Syndrome Behavioural phenotype in Early Childhood: Implications for practice. D J Fidler, 2005, Infants and young children, 18,2, 86-103

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