Down Syndrome Specific Curriculum Supports

Capitalizing on Learning Strengths

Sarah Wren
Top Five Take Aways

• Set the bar high
• Presume competence
• Expect compliance
• Avoid learned helplessness
• Think like an employer
Profile of the Learner

Typical profile associated with Down syndrome (see, Hodapp, Fidler, Buckley in DSRP 9 (3) on website)

- Hearing and Vision
- Speech and Language
- Verbal short-term memory
- Learning from listening difficult
- Number

- Motor Skills
- Information processing
- Non-Verbal Mental Age

- Social understanding, empathy & social skills
- Self help and daily living skills
- Visual short-term memory
- Visual learning a strength
- Reading Strengths
How Does Your Student Learn?

Group Exercise:
Discuss ways your student learns best.
Do You Use GPS or an Atlas?

**GPS**
- Yes or No answer
- You *set* the route
  - Highways
  - Avoid toll roads
  - Detour
  - Etc...
- Linear

**ATLAS**
- Guides you
- Multiple routes
- Same destination
Is Learning Static or Dynamic?

- **Adj.** (of a process or system) characterized by constant change, activity, or progress.
- **Adj.** (of a process or system) showing little or no change, action, or progress.
3 Things Involved in Learning

What: Curriculum/Content/Information/Materials

How: Instruction

Who: Learner
Memory Issues

• Students with DS have poor working memory (visual and auditory)
  o Working memory capacity of 3
  o Short term = storage
  o Working = storage and manipulation

• Used for
  o organization
  o concentration/attention
  o problem solving
  o remembering tasks
Memory Issues

• How it affects the learner
  o Processing and retaining spoken words
  o Understanding/responding to spoken language
  o Following verbal instructions
  o Learning abstract or unfamiliar vocabulary
  o Remembering rules or routines
  o Reading comprehension
  o Generalizing skills across settings
  o Describing events accurately
  o Developing organizational skills
  o Remember sequences or lists
Memory Issues

• Pre-School Age
  o Learning the alphabet
  o Learning to talk
  o Focusing on short instructions like “come brush your teeth”
  o Remaining seated to complete independent activities (puzzle)
  o Listening to and following directions

• Elementary Age
  o Reading and understanding the content (comprehension)
  o Mental arithmetic
  o Writing while formulating next part of sentence
  o Interacting and responding appropriately in peer activities (group projects/recess)

• Middle School
  o Doing homework independently
  o Planning and packing for an activity
  o Solving multi-step math problems
  o Playing team sports

© 2011 Down Syndrome Foundation of Orange County
Memory Issues

- Working memory capacity increases with age to about 15 years old
- Large variations between individuals
- Ability to pay attention and shut out distractions is important to WM
- Also important is ability to shift attention between activities
Memory Strategies

• General Literacy Instruction
  o Practice sentences
  o Read aloud
  o Increase vocabulary
  o Language rich & demanding setting

• Targeted Tasks
  o Sound discrimination
  o Activities to increase attention
  o Activities to increase recall – rehearsal training
  o Memory Games
  o Digit span tasks (you show, child says/signs/shows)
Classroom Interventions

• Reduce amount of information to process (simpler sentences, simpler work product)

• Use visual notes (words and/or pictures) and actions (pointing and/or using hands) to help student understand lesson and lecture

• Break tasks into sequence of independent steps (child can track progress and mark off completed steps)

• Repeat information where necessary or have a classmate serve as “memory guide”

• Use memory aids (proximity to student and practice at use important)

© 2011 Down Syndrome Foundation of Orange County
# How WM Needs May Look In the School Setting

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Is easily distracted when working on</td>
<td>Struggles with reading comprehension</td>
<td>Struggles with problem solving that</td>
<td>Is inconsistent in remembering math</td>
</tr>
<tr>
<td>or doing something that is not</td>
<td>and has to read through texts</td>
<td>require holding information in mind,</td>
<td>facts</td>
</tr>
<tr>
<td>highly interesting.</td>
<td>repeatedly to understand.</td>
<td>for example mental math calculations.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Struggles with completing tasks,</td>
<td>Has difficulty remembering long</td>
<td>Struggles to understand the context</td>
<td>Has difficulties when planning and</td>
</tr>
<tr>
<td>especially multiple step tasks.</td>
<td>instruction given in several steps</td>
<td>in a story or a conversation.</td>
<td>organizing something that needs to</td>
</tr>
<tr>
<td></td>
<td>(i.e., directions for school/work</td>
<td></td>
<td>be done in separate steps.</td>
</tr>
<tr>
<td></td>
<td>assignments.).</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has difficulty staying focused</td>
<td>Has difficulty integrating new</td>
<td>When called on, forgets what he/she</td>
<td>Has difficulty taking notes and</td>
</tr>
<tr>
<td>during cognitively demanding tasks</td>
<td>information with prior knowledge.</td>
<td>was planning to say.</td>
<td>listening at the same time.</td>
</tr>
<tr>
<td>but attends well when cognitive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>demands are minimal.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

© 2011 Down Syndrome Foundation of Orange County

© 2013 Down Syndrome Guild of Kansas City. All rights reserved. This document contains Down Syndrome Guild confidential and/or proprietary information which may not be reproduced or transmitted without the express written consent of DSG.
How Down Syndrome Affects Learning

- Clumsiness
- Gross motor difficulties
- Fine motor problems
- Language delay
- Problems in being understood
- Word finding
- Difficulties in following instructions
- Dressing problems
- Handwriting difficulties
- Directed problems
- Limited understanding
- Weak auditory memory
- Visual problems
- Hearing problems
- Confusion over school rules
- Problems with maths
- Immature social skills
- Difficulties with phonics
- Problems in accessing school resources
- Short attention span
- Down Syndrome Guild of Greater Kansas City

© 2013 Down Syndrome Guild of Kansas City. All rights reserved. This document contains Down Syndrome Guild confidential and/or proprietary information which may not be reproduced or transmitted without the express written consent of DSG.

Down’s Syndrome Association
Education Support Packet
Preferred Teaching Methods

- Hands on activities
- Structured, sequenced activities
- Routine oriented
- 15-20 repetitions to acquire skill
- Visual learning
- The fewer the cues, the better!
Curriculum Adaptations

- Modifications/accommodations to the curriculum call for creative thinking and imagination on the part of the IEP team.
- Use common sense, be flexible and locate necessary resources.
- Differentiating materials provides access to curriculum for ALL students.
- Paras should not be responsible for adapting curriculum.
- Play to the students strengths.
- Create a central repository for all staff.
Modifications OR Accommodations

**ACCOMMODATION:**
Can be made for any student, and does not alter what the student is expected to learn. An accommodation makes learning accessible to the student and allows the student to demonstrate what they know.

**MODIFICATION:**
Modifications are generally made for students with significant cognitive or physical disabilities. A modification does alter content knowledge expectations as well as assessment administration practices.
What Works for Students with DS?

- Rely heavily on visual aides rather than auditory instructions.
- Modify worksheets
  - Fewer items and/or more visuals
  - More border around edge of page
  - Highlighted text that is important
  - Large print
  - Meaningful context to learner
- Use of manipulatives
- Multiple choice tests vs. spontaneous answers
- Writing utensils
- Books on tape
What Works for Students with DS?

- Use meaningful material within or close to the pupil’s experience.
- Introduce new concepts in a familiar context.
- Show samples of completed work.
- Provide plenty of visual cues—pictures, diagrams and print.
- Ensure illustrations tie in closely with text and task.
- Give plenty of opportunities for success.
- Use technology! Ipads, computers, cell phones, Nintendo DS
What Works for Students with DS?

• Student feedback to know if you met educational aims and objectives.

• Tape instructions so student can play back

• Several versions of same worksheet

• Differentiate clearly between text and illustrations.

• Wide border around edge of the page.

• Provide opportunities for collateral success.  
  –fractions  
  –writing  
  –spelling

• Sample of finished product/steps to get there
Adaptations That Work

Size
Adapt the number of items that the learner is expected to learn or complete.
For example: Reduce the number of social studies terms a learner must learn at any one time. Worksheet is two sided with big print and five questions on each side instead of one sided with all ten items in small print.

Time
Adapt the time allotted and allowed for learning, task completion, or testing.
For example: Individualize a timeline for completing a task; pace learning differently (increase or decrease) for some learners.

Level of Support
Increase the amount of personal assistance with a specific learner.
For example: Assign peer buddies, teaching assistants, peer tutors, or cross-age tutors.
Adaptations That Work

**Input**

Adapt the way instruction is delivered to the learner.

*For example:* Use different visual aids; plan more concrete examples; provide hands-on activities; place students in cooperative groups.

**Difficulty**

Adapt the skill level, problem type, or the rules on how the learner may approach the work.

*For example:* Allow the use of a calculator to figure math problems; simplify task directions; change rules to accommodate learner needs.

**Output**

Adapt how the learner can respond to instruction.

*For example:* Instead of answering questions in writing, allow a verbal response; use a communication book for some students; allow students to show knowledge with hands-on material. Multiple choice spelling tests. Shaving cream spelling.
Adaptations That Work

Participation
Adapt the extent to which a learner is actively involved in the task.

For example: In geography, have a student hold the globe, while others point out locations.

Alternate Goals
Adapt the goals or outcome expectations while using the same materials.

For example: In social studies, expect one student to be able to locate just the states while others learn to locate capitals as well.

Substitute Curriculum
Provide different instruction and materials to meet a learner’s individual goals.

For example: During a language test one student is learning computer skills in the computer lab.
Reading

Sight words, repetitive, predictable, short work sessions, highly motivating
Reading Resources

See and Learn
http://www.seeandlearn.org

Learning Program
http://dsfoc.org/learning-program

Reading About Me
http://readingaboutme.org

E-Reading Pro
http://www.ereadingpro.com/

Reading Milestones
MeVille to WEville

Special Reads for Special Needs
See and Learn

- First picture words $55.00
- First written words $90.00
- More word pictures
- First sentences $60.00
See and Learn

Includes:
• Guidebook
• Record sheets for recording progress and planning,
• Materials (e.g. picture cards)

Pros:
• Research based, evidence backed
• Visual
• How to adapt teaching techniques
• iPad App (Special Words App)

Cons:
• Outdated images
• Varying motivation
Ava – Age 2
Learning Program

- 20 books (and more)
- Math number lines & flashcards
- Printable or Purchase
- Word or Sentence Books
Learning Program

- Reading, Math and Writing components
- Parent Focused
- Research Based
- Ages 18mos-11 years
Reading About Me

• One year - $119.95 (USD)
• One year - $89.95 (USD) per license (2 or more licenses, 1 instructor)
• One year - $69.95 (USD) per license (25 or more licenses only)

Includes:
• 15 customizable reading lessons
• Create-your-own personalized word cards, picture cards, games & books
• Interactive practice games
• Data tracking and progress reports
Reading About Me

- 14 Core lessons
- Adaptable & personalized
- Serves the lifespan
- Progress Monitoring
- Research based
- Collaborative
Below you will find a brief description of all lessons offered. We recommend you begin with lesson 1. You will choose one lesson at a time. That lesson becomes the “current lesson”. When all included and personal current lesson words are learned you can move on to lesson 2 or another lesson of your choosing. It is not necessary to teach the lessons in order. We suggest you follow the interest of the learner. The lessons are loosely arranged with 1-5 being the simplest, 6-10 a little more challenging, and 11-15 introducing word patterns, additional vocabulary and a create your own lesson from scratch.

Click on star next to lesson to set as current. Click on checkmark next to lesson to set as completed.

### User Created Lessons

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Current</th>
<th>Completed</th>
<th>Copy</th>
<th>Edit</th>
<th>Active</th>
<th>Email</th>
<th>Images</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson 1 (modified) 🌟</td>
<td><img src="#" alt="Star" /></td>
<td><img src="#" alt="Check" /></td>
<td><img src="#" alt="Copy" /></td>
<td><img src="#" alt="Edit" /></td>
<td><img src="#" alt="Active" /></td>
<td><img src="#" alt="Email" /></td>
<td><img src="#" alt="Images" /></td>
<td><img src="#" alt="Delete" /></td>
</tr>
<tr>
<td>Words: I, see, book, mom, dad, the, end</td>
<td><img src="#" alt="Star" /></td>
<td><img src="#" alt="Check" /></td>
<td><img src="#" alt="Copy" /></td>
<td><img src="#" alt="Edit" /></td>
<td><img src="#" alt="Active" /></td>
<td><img src="#" alt="Email" /></td>
<td><img src="#" alt="Images" /></td>
<td><img src="#" alt="Delete" /></td>
</tr>
<tr>
<td>Letters: b, e</td>
<td><img src="#" alt="Star" /></td>
<td><img src="#" alt="Check" /></td>
<td><img src="#" alt="Copy" /></td>
<td><img src="#" alt="Edit" /></td>
<td><img src="#" alt="Active" /></td>
<td><img src="#" alt="Email" /></td>
<td><img src="#" alt="Images" /></td>
<td><img src="#" alt="Delete" /></td>
</tr>
</tbody>
</table>

#### The Summer 🌞

Words: the, ball, beach, sunshine, flowers, swimsuit, rain, summer, garden
Letters: b, f, r, g

#### I Can Move 🏃

Words: climb, jump, run, ride, dance, hug
Letters: r, i, c, h

#### How Many 1 - 5 🎈

Words: one, two, three, four, five, count
Letters: o, f, c
**Learner Name:** Learning Program Level 1

**Current Lesson:** Lesson 1 (modified)

**Lesson Words**
- I
- see
- mom
- dad
- the
- end
- be

**Active Lesson Words**

**Acquired Lesson Words**
- book

© 2013 Reading About Me. All Rights Reserved
Version 1.1 - Learner probe
Report a bug here

© 2013 Down Syndrome Guild of Kansas City. All rights reserved. This document contains Down Syndrome Guild confidential and/or proprietary information which may not be reproduced or transmitted without the express written consent of DSG.
E-Reading Pro

- Formerly “Out of the Box” reading
- Addresses reasons a reader struggles
- Age 6mos – teenager
- Systematic program of 14 months
- Research based
The green dinosaur arms are open and short.
Reading & Language Intervention

• Ages 5 – 11
• Down syndrome specific
• Structured 40 min work sessions
• 1:1 work sessions
MEville to WEville

- Reproducible
- Assistive Technology Guide
- Data Collection
- Research based
- Multiple content areas
- Videos

- $454.54 - $1639.00
Special Reads for Special Needs

- All ages
- Dolch lists (pre-primer, primer, 1st)
- High interest
- CD-Rom of printables and games

$133.00, $55.00, $210.00
Reasons Readers Struggle

- Dolch list of words
- Phonics vs. Whole Word approach
- Pictures and words on the same flashcard
- Word Families & Similar looking words
- Labelling items (wall paper)
- Visual
- Auditory
- Tactile/Kinaesthetic
Phonics Resources

• Jolly Phonics
  http://secure.aidcvt.com/jollyusa/default.asp

• See and Learn –
  – Playing with Sounds
  – Putting Sounds Together

• Visual Phonics http://seethesound.org/
  – Video
Explore Reading Resources
Mathematics
Math Resources

Numicon  
www.numicon.com

Touch Math  
www.touchmath.com

Equals  
www.ablenetinc.com/Curriculum/Equals-Mathematics-Program

Math-U-See  
http://mathusee.com
Numicon

• Ages 3+
• Multisensory Approach
• Highly Visual
• Place Value
• Develops Problem Solving Skills
• Proven Case Studies
• Free Resources/Printables
Numicon

• Develops Fluency
• Helps children reason mathematically
• Uses concrete objects AND Spoken language
• Develops confidence in problem solving

$72.00 – $475.00
Touch Math & Touch Money

- Kinesthetic approach
- Visual
- Step-by-step process
- Non-readers
  - Counting
  - Addition
  - Subtraction
  - Place Value
  - Multiplication
  - Division
- Time
- Money
- Fractions
- Story Problems
- Shapes
- Sizes
- Pre-algebra
Equals

• Developed by AbleNet, Inc.
• 5 Content standards
  • Numbers * operations
  • Algebra
  • Geometry
  • Measurement
  • Data Analysis & Probability
Equals

- 5 Content standards in math
- K-12 curriculum
- Research based
- Aligned to Gen.Ed math standards
- 3 levels of differentiation per lesson
- Scope and sequence
- Concrete, semi-concrete, abstract sequence
Equals

Pros:

- Worksheets on CD
- Action Dictionary with Low → High differentiation options
- Aligned to 6 common Core standards
- Letters home to parents for each chapter
- Video
Cons:

- Assessments are VERY time consuming
- Too much worksheet work
- All worksheets on a CD, Time consuming to locate, print and prepare
- Materials aren’t laminated when received
- Supplemental items are time consuming to prepare (print in color, laminate and organize)
- Lots of materials
  - Lesson lists materials, but don’t identify which items are included and not included in the kits
  - Must use time to organize materials prior to instruction
  - Can’t integrate all materials into general education
Math-U-See

• Sequence of instruction
• Multi-sensory
• Common Core Correlation
• K-12

$30 - $90
Time 4 Learning

- Multi sensory approach
- Curriculum overview (pre-K-12th)
- Demos
- 1,000+ Student-Paced multimedia activities
- Multiple content areas
- Project Based Activities
- Lesson Plans & Teaching Tools for Parents
- Lessons correlated to state standards

$19.95-$30.00/month
### Lesson Plans by Grade and Subject

<table>
<thead>
<tr>
<th>Grades</th>
<th>Language Arts</th>
<th>LA Extensions</th>
<th>Math</th>
<th>Science</th>
<th>Social Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool</td>
<td></td>
<td>Pre-K 1 Lesson Plans, Pre-K 2 Lesson Plans created by Time4Learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kindergarten</td>
<td></td>
<td></td>
<td>217 activities</td>
<td>See below</td>
<td></td>
</tr>
<tr>
<td>First</td>
<td>217 activities</td>
<td>See below</td>
<td>166 activities</td>
<td>See below</td>
<td>See below</td>
</tr>
<tr>
<td>Second</td>
<td></td>
<td>392 activities</td>
<td>334 activities</td>
<td>211 activities</td>
<td>13 activities</td>
</tr>
<tr>
<td>Third</td>
<td></td>
<td>210 activities</td>
<td>315 activities</td>
<td>215 activities</td>
<td>21 activities</td>
</tr>
<tr>
<td>Fourth</td>
<td></td>
<td>197 activities</td>
<td>157 activities</td>
<td>254 activities</td>
<td>200 activities</td>
</tr>
<tr>
<td>Fifth</td>
<td></td>
<td>161 activities</td>
<td>168 activities</td>
<td>317 activities</td>
<td>167 activities</td>
</tr>
<tr>
<td>Sixth</td>
<td></td>
<td>159 activities</td>
<td>210 activities</td>
<td>360 activities</td>
<td>210 activities</td>
</tr>
<tr>
<td>Seventh</td>
<td></td>
<td>133 activities</td>
<td>205 activities</td>
<td>496 activities</td>
<td>Courses</td>
</tr>
<tr>
<td>Eighth</td>
<td></td>
<td>122 activities</td>
<td>74 activities</td>
<td>419 activities</td>
<td>Courses</td>
</tr>
<tr>
<td>High School</td>
<td></td>
<td>134 activities</td>
<td>82 activities</td>
<td>404 activities</td>
<td>Courses</td>
</tr>
<tr>
<td>Pre-Algebra</td>
<td></td>
<td>4 Courses</td>
<td>Not Available</td>
<td>5 Courses</td>
<td>5 Courses</td>
</tr>
</tbody>
</table>

Subjects marked with an asterisk are not currently available at this grade level. PreK to 8th grade students will have access to the highest grade level available in this subject, unless otherwise requested by the parent.

*Algebra (313 activities) is available upon request for students in 6th, 7th and 8th grades.*
Explore Math Resources
Handwriting
Writing Resources

TV Teacher
www.tvteachervideos.com
Handwriting without Tears
www.hwtears.com/hwt
Basic Writing Series
www.pcieducation.com/basic-writing-series-all-3-binders.aspx
Thinks – Draw – Write
TV Teacher

- Currently participating in a research study
- Ages 2-8 years old
- All levels of development
- Multiple content levels
- Free Downloads
- Research
- There’s an App for that!
Handwriting Without Tears

- Research based
- Grades K-4
- Math component
- Multisensory
- Supports all learners
- Print & Cursive
- There’s an App for that!
- FREE Online Tools
- Video

© 2013 Down Syndrome Guild of Kansas City. All rights reserved. This document contains Down Syndrome Guild confidential and/or proprietary information which may not be reproduced or transmitted without the express written consent of DSG.
Basic Writing Series

- Visual supports for memory and motor planning
- Sequential
- Assessments
- Inclusive
- Ages 7 – 13
Social Skills & Behaviors
Social Skills & Behaviors

Social Skills Builder & Video Modeling
www.socialskillsbuilder.com/socialskills

Play & Learn
http://www.ablenetinc.com/Curriculum/Play-Learn-Preschool
Social Skills Builder

- Research based
- Ages 3 years – teenager
- App for that!
- Teach behavior AND skills
- Multiple disability categories
Why Does Video Modeling Work?

- Over selective attention (prone to distraction)
- Restricted field of focus
- Preference for visual stimuli and visually cued instruction
- Avoidance
- Ability to process visual information more readily than verbal
- Replay capabilities
Play and Learn

- Research based
- 4 components
- Structured and repetitive
- Integrates reading, writing and communication
- Universal design
- Differentiation suggestions
- All abilities
Explore!
Where to Find Materials?

• DSE USA Store
http://store.dseusa.org/collections/teaching-materials

• Ablenet www.ablenetinc.com

• PCI www.pcieducation.com

• Attainment Company www.attainmentcompany.com

• DSG!
There’s an App for That!

- Special iApps
- E-Reading To-Go
- Touch Math
- TV Teacher
- Apps for Children with Special Needs
- Handwriting without Tears
- Social Skills Builder
- Grasshopper Apps
Questions?

Sarah Wren
Program Director
Down Syndrome Guild of Greater Kansas City
5960 Dearborn Street Ste. 100
Mission, KS 66202
www.kcdsg.org
913-384-4848
sarah@kcdsg.org