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What is a learning disability?



# What is a learning disability?

Oral Language Reading	Listening     Speaking     Understanding     Decoding     Decoding     Phonetic knowledge     Word recognition     Comprehension
Written Language	Spelling     Written expression
Mathematics	Computation     Problem solving
Social skills	Social perception     Social interaction     Perspective taking
Organizational abilities	
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## What is a learning disability?



# Specific Learning Disability

With impairment in reading	• Dyslexia	
With impairment in writing	• Dysgraphia	
With impairment in math	• Dyscalculia	



Implications
Self-concept as a learner
Motivation, Discouraged
Development
Academic achievement
Self-esteem, shame, inadequacy
Depression, anxiety, helplessness
Drop-out, unemployment



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# Signs

#### Internalizing Behaviours

- Quiet
  Withdrawn
  Embarrassed by attention
- Boredom
- Carelessness
- Disinterest or reluctance to go to school
- Inattention

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- Disorganization
- Slow to respond
- Headaches, stomach aches

#### Externalizing Behaviours

- Attention seeking
- Annoy others
  Impulsive blurting out
  Breaking rules
- Behaviour problems/delinquency
- Aggression
- Clowning around
  Drawn to other underachievers
- Defiance, hostility, or excessive emotional reactions to academics

Pre	eschool	Elementary Middle/Junior High	High School	
Pri	school Developing speaking skills at normal age Pronouncing simple words Recognizing letters and words Learning numbers, rhymes or songs Concentrating on tasks	Connecting letters and sounds     Sounding out words     Differentiating rhyming words     Meading, spelling, or writing accurately     Distinguishing right from left, reversing     letters or numbers     Recognizing letters     Handwriting	<ul> <li>Spelling words accurately</li> <li>Summarizing, paraphrasing, answering application problems or questions in tests</li> <li>Poor memory</li> <li>Adjusting to new surroundings</li> </ul>	
•	Following rules and directions	Using correct math symbols     Remembering # or facts     facts	<ul> <li>Understanding abstract concepts</li> </ul>	
•	Using fine/gross motor skills to do physical tasks Learning numbers or the	Learning new skills     Understanding body     Memorizing poems or answers     language and facial     expressions	<ul> <li>Focusing consistently</li> <li>Reading fluency and comprehension</li> </ul>	
	alphabet Rhyming words Remembering colours	Understanding the concept of time     Hand-to-eye coordination, being unable to     gauge the distance or speed, thus leading     to accidents     Showing appropriate     emotional reactions in a     learning environment	<ul> <li>Organizing and expanding ideas in written expression</li> <li>Remembering and retrieving detailed</li> </ul>	
•	Learning nursery songs Chronic ear infections	Fine motor skills like tying shoes     Keeping track of belongings	Information     Comprehending more     complex information	

# Reading LD

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## Subtypes

- Dysphonetic trouble sounding out words phonologically
- Surface trouble visualizing words
- Mixed phonological and visual/spatial difficulties
- Deep affects reading comprehension



# Writing LD

- Slow and labour-intensive handwriting
- . Handwriting that's hard to read Difficulty putting thoughts into writing
- Written text that's poorly organized or hard to understand
- Trouble with spelling, grammar and punctuation



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## Dysgraphia

- · Verbally fluent
  - . Impaired handwriting Avoidance
- . Emotional distress · Orthographic coding in
- working memory impaired
- · Letter reversals,
- inversions,& transpositions



#### Signs of dysgraphia

- Awkward pencil grip Poor fine-motor coordination Unusual position of the wrist or paper Tires quickly when writing, hand hurts Poorly formed or inconsistently formed letters Poor spatial planning on paper Spells well on spelling tests but not in actual

- Spells well on spelling tests but not in actual usage Lack of punctuation and capitalization Mixture of lower case and capital letters in Fails to finish words Omits words Difficulty following spelling and grammar rules Poor sequence/organization of words in sentence Minimal productivity despite oral ability to effort and action of the sentence Avoids writing

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## Subtypes



#### Math LD

- · Understanding how numbers work and relate to each other Calculating math problems
- Memorizing basic calculations Using math symbols
- Understanding word problems Organizing and recording information while solving a math problem



# Dyscalculia

#### Subtypes

#### Verbal Dyscalculia

- Difficulties automatically retrieving math facts
   Language development & verbal retrieval abilities
- Procedural Dyscalculia
   Trouble processing and encoding numeric information and executing arithmetic procedures
- Anxiety and working memory Semantic
- - Trouble with symbolic representations of numbers, as well as non-symbolic representations of math
  - Executive functions and visual-spatial skills



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# Understanding Cognitive Processes

Morphology

TechMatrix

Power Up! apps

Programs:

#### Fluid Reasoning Difficulties

- Categorizing and drawing conclusions
- Guided practice
- Concrete and specific feedback
- Cooperative learning opportunities
- Graphic organizers
- Programs:

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Inspiration





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# Supporting Reading Development

- Opportunities and repetition
- Positive attitudes
- Spice it up
- Build vocabulary
- Confidence as a reader · Important for all areas of life







Multisensory



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Surface Dyslexia







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Assistive Technology for Reading E-reading software • Blio • Kurzweii 3000 • Read & Write Gold E-reading ipad apps • Voice Dream Reader • Read2Go • i readWrite Virlens























#### Math

Travel games

- How far you are going and how long it will take.
- Number search
- License plate scramble
- Have kids navigate your trips





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# Graphic representations



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# Accommodations & Interventions

- Working memory difficulties
   Number line
  - Calculator
  - No mental math
  - Mnemonics
  - No timed tests

- No pop quizzes
- Number sense games







- Patterns
- Multiple approaches
  Build math sentences
  Identify right vs.
- wrong answers
   Make math relevant!





Strengths



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- How will you know if your plan is not working?
- What will you do if your plan is not working?



# Get Meta

- What was your goal?
- Where did you start?
- How did you get started?
- How did you do that?
  Have them talk through how they do it as they do
- What strategies did you use?
  How did they help?
- · How long did it take?
- What did you notice?
- What was helpful? Unhelpful?
- How do you know it was helpful? What strategies will you use next time?





# Difficulty scale



What is easy that makes it 9 (and not 10)? What can I already do?

What can I do to bring this down to 7 or 8?

#### Want to scale



What do you like that makes it 3 (and not 1)?

What can I do to bring this up to 4? 7 or 8?



Before	What does this remlind you of that you have done before?
	What experiences do you have that will help you here?
	What part do you think will be the hardest? What can you do when you get there to keep going?
During	What part is going good?
During	What parts are helping you learn?
	What makes this part hard for you? What do you need to help? More information? Practice? Other ideas?
	What did you do before that you can do again to help you now?
After	How did you grow as a learner?
Allei	Did you learn something new?
	Did you learn something new about how you learn?
	How can you use this experience in the future when things get hard?

