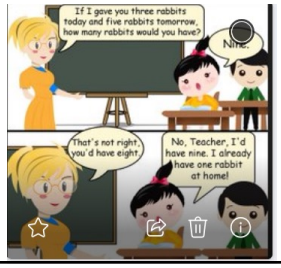
Navigating Word Problems Developmentally



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Special Education Consultant
IDA Webinar: May 15, 2025

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Short Survey to Help Me Plan

- Please click on this link to answer 3 short questions by 4:00 pm (Pacific Time) Wednesday, May 14.
- https://forms.gle/pB5WatF5heATGTzg9

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Today's Agenda

- Background information
- Relevant word problem research
  - Similarity between reading and math
  - Fluency and Efficiency
- What is meant by:
  - Learning developmentally
  - Teaching and Solving math word problems developmentally
- Vocabulary vs. math vocabulary
- Learning strengths and difficulties vs. word problem comprehension
- Let's Look At Some Examples
- Selected websites

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Relevant Word Problem Research

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Relevant Word Problem Research

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Teaching and Learning Developmentally

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Teaching and Learning Developmentally

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General Vocabulary and Math Vocabulary

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General Vocabulary and Math Vocabulary

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Learning Strengths and Difficulties vs. Word Problem Comprehension

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Learning Strengths and Difficulties vs. Word Problem Comprehension

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Some Specific Examples

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Resources: Information

- What's The Main Idea?
  - https://blog.mathmedic.com/post/what-s-the-main-idea
    - Focus on one take-away/lesson
    - Provides lesson planning structure for teacher
- Language Predictors of Word-Problem Performance Among Third-Grade Students With Mathematics Difficulty
  - https://journals.sagepub.com/doi/10.1177/00222194241311979?ai=3iqpq&ui=1lh70&af=T
- Math Problem Writer and Dyslexia: Helping Students Overcome Challenges in Math
  - https://www.kiwiwrite.com/post/math-problem-writer-and-dyslexia

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Resources: Information

- Comprehending Math: What Literacy Instruction Can Show Us About Math
  - https://medium.com/@heinemann/comprehending-math-e45e88f66372
- Word Problem Solving in Contemporary Math Education: A Plea for Reading Comprehension Skills Training
  - https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2016.00191/full
- Do We Need Language to Think:
  - How Our Brain Produces Language and Thought, According to Neuroscientists - The New York Times

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Resources: Information

- Finding the Main Idea in Math
  - https://structureofequality.com/2024/10/16/math-main-idea/
- Difficult Language in Math Word Problems (John Woodward)
  - https://forefront.education/math-word-problems/
- Mathematics in the Brain
  - https://www.ldatschool.ca/document/brain-areas-and-math-skills/
- The Brain Makes Sense of Math and Language in Different Ways

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Resources: Tools

- Magic School: https://www.magicschool.ai/
  - Worksheet generator
    - Sean got m marks for his math test. Emma got 15 more marks
    - than Sean. Emma's score is 94. (from K5learning.com)
      - https://app.magicschool.ai/tools/worksheet?slug=worksheet&thread=85873933
- KiwiWrite: https://www.kiwiwrite.com/
- Helping With Math: https://helpingwithmath.com/worksheets/word-problems/

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Resources: Tools

- Mymathsolver: http://www.mymathsolver.com
- Whitecream: http://app.writecream.com
- Customizable Worksheets: https://worksheets.theteacherscorner.net/

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