



Using Self-Regulated Strategy Development (SRSD) to Teach Math

What is the evidence base?

This is a research-based practice for **students with disabilities** based on two methodologically sound single-case studies across 10 participants.

This is a promising practice for **students with hearing impairment** based on one methodologically sound single-case studies across one participant.

This is a promising practice for **students with specific learning disabilities** based on one methodologically sound single-case studies across four participants.

This is a promising practice for **students with speech-language impairments** based on one methodologically sound single-case studies across three participants.

This is a promising practice for **students at risk for disabilities** based on one methodologically sound single-case studies across two participants.

Where is the best place to find out how to do this practice?

The best place to find out how to implement SRSD is through the following research to practice lesson plan starters:

- [Using Self-Regulated Strategy Instruction to Solve Multiple Step Equations \(Cuenca-Carlino, Freeman-Green, Stephenson, & Hauth, 2016\)](#)

With who was it implemented?

- Students with
 - Hearing Impairment (1 study, n=1)
 - Learning Disabilities (1 study, n=4)
 - Speech-Language Impairment (1 study, n=3)
 - At-Risk for Disabilities (1 study, n=2)
- Grades ranged from 5th and 6th, or students were age 13
- Males (n=3), females (n=7)

- Ethnicity
 - Caucasian (n=6)
 - Not reported (n=4)

What is the practice?

SRSD “is an instructional strategy that has been shown to help students develop self-regulation skills, thus helping students succeed in content area classes [and] involved six basic stages of instruction that include (a) developing and activating background knowledge, (b) discussing the strategy including benefits and expectations, (c) cognitive modeling of the strategy, (d) memorization of the strategy, (e) collaborative support of the strategy, and (f) independent practice” (Cuenca-Carlino, Freeman-Green, Stephenson, & Hauth, 2016, p. 76).

In the studies used to establish the evidence base for using self-regulated strategy development to teach math, targeted skills included:

- Self-Regulated Strategy Development instruction to teach students to solve simple addition and subtraction word problems (Case, Harris, & Graham, 1992).
- Self-Regulated Strategy Development (i.e., the mnemonic **Don't Catch My Cat Whiskers**) to remember the steps needed to solve multiple step equations (i.e., discuss it, model it, memorize it, guided practice, independent practice, post-instruction, and maintenance; Cuenca-Carlina, Freeman-Green, Stephenson, & Hauth, 2015).

Where has it been implemented?

- General education classrooms (n=1)
- Self-contained classrooms (n=1)

How does this practice relate to Common Core Standards?

- Grade 7: Solve real-life and mathematical problems using numerical and algebraic expressions and equations.
 - Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar 9 ¾ inches long in the center of a door that is 27 ½ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.*
- [CCSS.MATH.CONTENT.7.EE.B.3](#)

- Grade 7: Apply and extend previous understandings of operations with fractions.
 - Solve real-world and mathematical problems involving the four operations with rational numbers.
- [CCSS.MATH.CONTENT.7.NS.A.3](https://www.illustrativemathematics.org/HS/index.html)

How does this practice relate to the Common Career Technical Core?

- Career Ready Practices
 2. Apply appropriate academic and technical skills.
 7. Employ valid and reliable research strategies.
 8. Utilize critical thinking to make sense of problems and persevere in solving them.

References used to establish this evidence base:

- Case, L. P., Harris, K. R., & Graham, S. (1992). Improving the mathematical problem-solving of students with learning disabilities: Self-Regulated Strategy Development. *The Journal of Special Education, 26*, 1-19. doi: 10.1177/002246699202600101
- Cuence-Carlino, Y., Freeman-Green, S., Stephenson, G. W., & Hauth, C. (2016). Self-Regulated Strategy Development instruction for teaching multiple step equations to middle school students struggling in math. *The Journal of Special Education, 50*, 75-85. doi: 10.1177/0022466915622021

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