

# HAYUTIN

## Executive Function in the Context of Math

### Did you know...



- 9.8% of learners have been diagnosed with ADHD (CDC)
  - Boys (13%) and girls (6%)
- 25 percent of students with ADHD have a math LD
- 5-7% of learners have dyscalculia ([Child Mind Institute](#))

A review of neuropsychological research in math skills reveals that many low achievers in mathematics demonstrate weaknesses in skills that fall under the umbrella term executive function.

- Lisa Carey and Taylor Koriakin

Low working memory is comorbid with ADHD. Working memory is the mental workspace that we can use to store important information while we do mental activities.

## The Impact of Working Memory

### Math Understanding

Poor understanding of number concepts inhibits the use of advanced strategies and may affect ability to detect procedural errors (David C. Geary, 2003)

Memory problems are a major factor in poor mathematical performance

- More errors in math fact retrieval than peers
- Problems storing basic facts in long-term memory and accessing them
- May omit steps or perform steps in the incorrect sequence
- Word problem challenges
- Difficulty representing problems, identifying salient info, choosing correct operation

*Strategy Instruction for Students with Learning Disabilities*

### Math Problem Solving

- Forgetting steps in procedures
- Losing track of information
- Difficulty with mental math
- Misunderstanding concepts
- Difficulty remembering formulas and definitions

# HAYUTIN

## Strategies to Support Working Memory & Decrease Cognitive Load

Math Recipe Card  
\*article & video available

A math recipe card includes the vocabulary, formulas, steps to solve a particular problem type and worked problems.

STAR method for problem solving

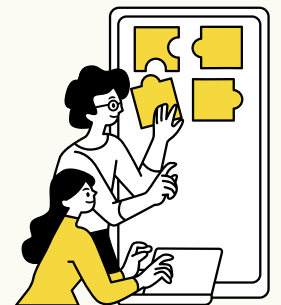
Mnemonic cues to guide students in the thinking process to solve mathematical problems.

Anchor Charts

Record of teacher and student thinking and learning.

Explicit Strategy instruction

- Name and explain the strategy
- Model the steps
- Provide opportunities for practice
- Give feedback



Effective Instructional Strategies

- Activate prior knowledge and make connections to the new learning
- Have students repeat the information
- Name each step or procedure
- Use signal phrases
- Frequent checks for understanding

Want more ideas? [Click here](#) to view common Executive Function barriers that students face in math and solutions to try!