



Supporting Multilingual Learners in the Math Classroom

Reading in the Math Classroom

What is it?

Reading in the math classroom refers to comprehending vocabulary, accessing curricular materials such as word problems, contextual problems, directions, and understanding logical sequencing, comparisons, and cause-effect relationships. It is not just about decoding text, it is about accessing meaning, engaging in reasoning, and participating fully in mathematical learning.

Why is it important?

Math is not just about numbers. It is a language-rich subject filled with vocabulary, syntax, and reasoning. Reading in the math classroom is important because it helps students develop the skills needed to understand and interpret mathematical language, symbols, and word problems. It supports problem-solving, critical thinking, and the ability to make sense of real-world contexts. Supporting MLLs in reading math text empowers them to become confident problem-solvers and critical thinkers.



How to get Started

- **Pay Attention to Syntax and Semantics:** Draw students' attention to syntax such as word order, symbols, and phrases. For example, math text includes passive voice ("is divided by"), dense nouns ("the quantity of x plus 3"), and logical connectors (if, then, therefore). Support students to translate them into everyday language.
- **Activate prior knowledge:** Use graphic organizers such as [KWL charts](#) to help students organize their thinking as they read.
- **Use Think-Alouds:** Model your thought process when reading math text. Paraphrase and restate problems, showing how to simplify complex structures. These [Think-Aloud](#) videos show several examples.
- **Provide Reading Supports:** Helpful supports include providing a purpose for reading, using collaborative reading strategies, and providing visuals to help with comprehension.
 - Use [Math Language Routines](#) (MLR) such as MLR6: Three Reads ([For Teachers](#), [For Students](#), [Graphic Organizer](#)).
 - Use partner reading, choral reading, or Think-Pair-Share to give students opportunities to process the text together.
 - Encourage discussion in home language as a bridge to English understanding.
 - Use diagrams, charts, graphs, number lines, and models to support comprehension of mathematical concepts.
 - Provide access to tools such as [Google Translate](#) that can translate math terms.



Creating an Environment for Student Discourse

We ALL speak math

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Ideas to Ponder

- **Vocabulary supports:** Introduce vocabulary in the context of solving problems or discussing mathematical concepts organically rather than pre-teaching vocabulary. Use [word walls](#), [Frayer Models](#), and word banks.
- **Avoid problem solving strategies that focus on keywords:** Strategies that include things like circling numbers and underlining keywords (e.g. the “[CUBES](#)” strategy) often result in mathematical errors due to missing key contextual features. Instead consider using strategies like the Three Reads.
- **Use Technology:** Translation tools can be used to translate word problems and math tasks into various languages. Video and audio can be used alongside texts to support students’ reading.
- **Use a structured approach to problem solving:** Use the [Polya problem solving](#) process questions to help students systematically solve problems.
- **Pose questions to support reading:** Ask questions such as “What is this part telling me?”, “What am I being asked to find?”, “Can you restate the problem in your own words?”, and “Did I find what I needed?”.



Questions to Consider with Colleagues

- 1 What types of reading (e.g., word problems, instructions, explanations, data displays) do students encounter in our math classrooms?
- 2 How can we simplify the language of math tasks **without** lowering cognitive demand?
- 3 How are visuals, models, or annotations used to support reading comprehension in math?
- 4 How can we collaborate with literacy specialists or ESL teachers to strengthen reading in math instruction?
- 5 What kinds of strategies support both reading and writing in the math classroom?



Solving the problems of the world means understanding them with a mathematical mind.



Note: This resource is being co-designed by the NC math education community. We welcome feedback to inform its refinement at <https://forms.gle/8PBWGsvqJQzcdtCF8> Check the website (nc2ml.org/high-school-teachers) for the most up to date resources.