

## Mathematics Instructional Goals (Advanced Literacies)

[Culturally Responsive Teaching & the Brain \(Click Here\)](#)

[Hallmark Briefs \(Click Here\)](#)

MP stands for [Mathematical Practices Standards \(Click Here\)](#)

Math Instructional Goals (Aligned to Hallmarks)	Instructional Strategies to Lift Each Goal
<p><b>1. Grade-Level, Standards-Aligned, Rigorous Instruction:</b></p> <p>1.1 - Students engage in appropriate learning activities that address all aspects of Rigor (conceptual understanding, procedural skill/fluency, or application) to build and access big ideas and rich content aligned to grade-level Next Generation/NYS Learning Standards.</p> <p>1.2 - Students make sense of tasks and persevere through them (MP.1)</p>	<p><i>The teacher engages students in grade-level rigorous instruction and uses instructional techniques that scaffold student learning</i></p> <ul style="list-style-type: none"> <li>Flexibly use strategies to support sense-making of text/problems</li> </ul> <p><b>Strategies/Thinking Routines:</b> Annotate, Paraphrase, Question, Determine importance, <a href="#">Read- Draw-Write</a>, <a href="#">3-Reads</a></p> <ul style="list-style-type: none"> <li>Learning activities allow for multiple problem-solving strategies where problem-based learning is encouraged. Teacher engages students in the inquiry process (e.g., students model with mathematics)</li> </ul> <p><b>Thinking Routines:</b> <a href="#">Read- Draw-Write</a>, <a href="#">3-Reads</a>, <a href="#">Number talk</a>, <a href="#">Numberless Problems</a> (<a href="#">NYS Scaffolds</a>)</p> <ul style="list-style-type: none"> <li>Students ask, discuss, and write in response to complex tasks using:</li> </ul> <p><b>Strategy:</b> Graphic Organizers</p>
<p><b>2. Rich Discussion: Explain thinking and reasoning</b> through rich discussions (<b>Talk to Learn</b>)</p> <p>2.1- Students participate in academic discussion protocols to explain and justify their thinking, and strategies for problem-solving during all parts of the lesson (MP.2,3,4)</p> <p>2.2- Students use mathematical precise language when discussing mathematics and sharing their thinking aligned to the learning goals and expected outcomes for the unit of study (MP.2,3,4,6)</p>	<p><i>The teacher promotes active student engagement and equitable participation through discourse practices</i></p> <p>Use academic discussion protocols that anchor discussion during all parts of the lesson and help students apply academic language through partner work and or small groups (i.e., a procedure for how to engage in discussion)</p> <ul style="list-style-type: none"> <li>Use sentence frames/language frames, which embed academic vocabulary and academic language, to support student-centered discussion and writing.</li> <li>Students ask <a href="#">questions</a>, <a href="#">discuss</a>, and/or critique the thinking and solutions of others (<a href="#">Math Discourse Cards</a>)</li> <li>Use Equitable participation techniques to give students the opportunity to participate in discussions.</li> </ul> <p><b>Thinking/Language Protocols:</b> Independent Think Time, <a href="#">Stronger and Clearer Each Time</a>, <a href="#">Turn and talk</a>, <a href="#">Think-Pair-Share</a>, <a href="#">Ink-Pair-Share</a>, <a href="#">Take a Stand</a>, <a href="#">Socratic Seminar</a>, <a href="#">Equity Sticks</a></p> <ul style="list-style-type: none"> <li>In addition to a daily learning target for content and process, including a daily language target to set a goal for how students will use language to communicate understanding, including academic vocabulary (words) and academic language (syntax- sentence structure)</li> </ul>

**3. Frequent Writing:** Write to build language and knowledge. (**Write to Learn**)

3.1- Students write daily using academic language to justify and explain their reasoning in multiple ways and across all subject areas.

3.2 - Students use mathematically precise language when discussing mathematics and sharing their thinking aligned to the learning goals and expected outcomes for the unit of study (MP.2,3,6)

*The teacher focuses on developing students' academic language while building knowledge*

- Implement routines for students to write daily (writing to explain what is being learned).

**Strategies:** [Stronger and Clearer Each Time](#) Do Now, Warm-ups, Exit Tickets, Checks for Understanding, [3-2-1](#) reflection prompts, [Go-Go-More](#), [Gallery Walk](#)

- Model the use of academic language on constructive response questions using partially worked-out examples and models

**Strategies:** [Worked Out Problems](#), [You Be the Teacher](#)

- Use sentence frames and sentence starters ([resource 1](#), [resource 2](#)) to provide structures for students to use in written communication of mathematical thinking.

**4. Academic Vocabulary and Language:** Study a small set of high-utility vocabulary words and academic language structures to build breadth and depth of knowledge.

4.1 - Students use a variety of vocabulary and concept-building strategies to strengthen their knowledge of the language (speaking, listening, reading, writing), including academic vocabulary and high utility words.

4.2- Students use mathematically precise language when discussing mathematics and sharing their thinking aligned to the learning goals and expected outcomes for the unit of study (MP.2,3,6)

*The teacher focuses on developing students' academic language while building knowledge*

- Utilize a Word Wall (with words that are explained, including visuals, synonyms, antonyms, etc) for academic vocabulary and academic language, and prompt students to reference word wall resources when writing and discussing ([Vocabulary Cards](#)).
- Use a variety of vocabulary-building strategies to strengthen conceptual knowledge

**Strategies:** Word/picture sorts, vocabulary drawings/cartoons, word splash, [Frayer Model](#), [Marzano's 6 steps for teaching vocabulary](#)

**Embedded Within All Hallmarks:**

- All students refer to daily learning targets (content, process, and language) aligned to the New York State Next Generation Learning Standards and expected outcomes for the unit of study. [Learning Targets](#)