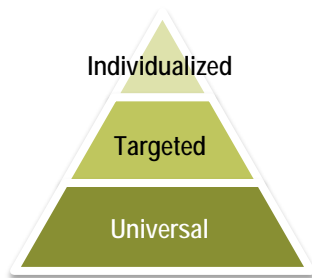


# Math Journals



Math journals are a way for students to reflect upon and communicate what they are learning in math class. Math journals can be used at any grade level to help students examine, express, and keep track of their thinking and are a tool for teachers to gauge comprehension of a concept on an individual, group, or class basis.



A teacher's understanding of their students' learning needs helps determine when to provide universal, targeted, or individualized instructional strategies. For some students, universal instructional strategies may be enough to meet their learning needs. For others, more targeted instructional strategies are the starting point for implementing the curriculum. The strategy described is a guideline that teachers can use depending on the learning context.

## Why use this strategy in an inclusive learning environment

- Helps teachers gain insight into students' mathematical thinking and keep track of student progress.
- Helps teachers to identify when students have mastered a concept and when they need more support or instruction.
- Encourages students to reflect on underlying mathematical processes and develop a deeper understanding of math concepts.
- Helps students to retain math concepts learned and supports future understanding.

## How this strategy could be used in an inclusive learning environment

1. Model how to write a math journal entry after completing a math exercise, discussing how a journal entry includes both content and reflection.
2. Model how entries capture tentative ideas using procedure prompts, symbols, and visual organizers in addition to written descriptions. Explain that the focus, however, is on mathematical concepts.
3. Students can keep writing and drawing as the class discusses the concept. They can then circle the most important words, ideas, or drawings and use these to revise the journal entry.
4. As students move on to work on group or individual entries, encourage them to communicate mathematical thinking in a variety of ways, including pictures, graphs, charts, symbols, and words.



5. Informally assess student understanding using a journal entry before and after a new concept is introduced.
6. Respond to student journal entries with teacher prompts and questions, personalizing feedback to enhance understanding of math concepts.

## Examples

Use journal prompts before, during, or after the math lesson. For example:

Mathematical Concept Prompts	Procedure Prompts	Affective/Attitudinal Prompts
<ul style="list-style-type: none"> <li>• Did you notice any patterns in... (e.g., fractions, geometry, etc.)?</li> <li>• List objects or figures in the room that have symmetry. How can you tell?</li> <li>• Write all you know about... (e.g., exponents, the Cartesian plane, triangles, etc.).</li> <li>• How many squares are there on a chess board?</li> </ul>	<ul style="list-style-type: none"> <li>• One way to... (e.g., solve an equation, factor a quadratic, etc.) is...</li> <li>• When I see a word problem, the first thing I do is... then I...</li> <li>• Describe how you solved this problem.</li> <li>• Could you have found the answer by doing something different? What?</li> <li>• Write 4 steps for somebody else who will be solving this problem.</li> </ul>	<ul style="list-style-type: none"> <li>• I am successful at math when...</li> <li>• My best experience with math was...</li> <li>• When it comes to math, I...</li> <li>• My three personal goals in math this term are...</li> <li>• I think that the most important part of solving a problem is...</li> <li>• I wish I knew more about...</li> <li>• Was this easy or hard? Explain why.</li> </ul>

**Real Life Problem-solving Journal:** Ask students to journal about a time when they used math to solve a problem outside of school. Encourage students to include drawings or other prompts to help them remember the details. Alternatively, encourage students to ask their parents about how they use math to solve a problem at work or at home.

**Double Journal Entry:** Have students record what they learned (e.g., write or draw as many ideas that they can think of) and what they would like to know more about.



## Tips for individualized supports

- Review a list of key vocabulary words accompanied by visual supports to include on a class math word wall or in student-created math glossaries or dictionaries.
- Create opportunities for students to use technology to create journals with photos, videos, and interactive elements and to play back their responses.
- Use word prediction or speech recognition to express ideas.
- Provide students with partially completed phrases or journals.
- Provide academic language for journaling in an English language learner's first language using peer translation or a bilingual dictionary.

