

Math Strategies for Grades 7-12

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Instructional Strategies

Conceptual Understanding

Students can build their fluency in mathematics once they have a deeper conceptual understanding. Taking time to intentionally build conceptual understanding through activities on [Desmos](#) or subbing in a warm-up of "[which one doesn't belong](#)" helps students to think about the bigger picture. Working on conceptual understanding is one of the most effective strategies for teaching struggling students.

Assessment Strategies

What are rubrics?

A rubric is an assessment tool that lists specific expectations for the solution to a problem, group/partner work, self-assessment, or success with a specific task. The rubric should be clear, student-friendly and concise. It's even better when you create a rubric with your students so they have buy-in to the whole process. The feedback with the use of the rubric should be timely (within a concept) so students can learn from their misconceptions and adjust to show growth. Rubrics are also a great tool to use with goal-setting and conferencing with students.



Standards of Mathematical Practices

Model with Mathematics

- Apply the mathematics students know to solve problems arising in everyday life, society, and the workplace.
- Use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another.
- Make assumptions and approximations to simplify a complicated situation, realizing that these may need revision later.
- Identify important quantities in a practical situation and map their relationships using such tools as diagrams, two way tables, graphs, flowcharts and formulas.
- Analyze relationships mathematically to draw conclusions.
- Routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

[Standards for Mathematical Practice Grade Level Emphasis*](#)

Classroom / Time Management Strategies

Determine Your Reinforcements

Be sure to have concrete plans to positively reinforce appropriate behavior and ways to hold students accountable when they do not meet expectations. Positive reinforcements can vary from class to class. Think about reinforcements that might motivate positive student behavior, e.g., stickers, extra privileges, and opportunities to lead. As a response to misbehavior, align the constructive response to the action. If a student is not showing respect to others, reiterate the classroom norm and have the student identify why this is an important rule. Consistent reinforcements are important for students to learn from their behavior.