

Math Strategies for Grades 7-12

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Instructional Strategies

Evaluate and Compare Different Strategies for Solving Problems.

Encourage students to compare problem structures and solution strategies to discover the relationships among similar and different problems, strategies, and solutions. Begin comparison activities after students understand one strategy so that they can identify similarities and differences between the strategy. Use solved problems showing two strategies side by side to enable students to see the solution steps. This will allow them to compare solution strategies and consider the accuracy, efficiency, and applicability of various combinations of solution steps. When presenting pairs of solved problems to communicate a particular instructional goal to students, use solved problems that are moderately similar. [Reference](#)

Assessment Strategies

Making Assessment Achievable

Assessments that students score poorly in can be demotivating, resulting in negative associations with the subject, as well as embedding fixed mindsets—we have all heard students say things like “I just can’t do it” and “There isn’t any point in trying” after doing poorly in a test. Research shows that a success rate of **80 percent is optimal for learning**. It gives them confidence and shows them that there is still room for progress. Designing assessments with this 80 percent benchmark may require an increase the accessibility or reducing the challenge until they’re ready to tackle more complex questions and tasks.



Standards of Mathematical Practices

Look for and Make Use of Structure

Recognize the significance of an existing line in a geometric figure and use the strategy of drawing an auxiliary line for solving problems. Apply properties to generate equivalent expressions and solve equations. Examine patterns in tables and graphs to generate equations and describe relationships. Experimentally verify the effects of transformations and describe them in terms of congruence and similarity. See complicated things, such as some algebraic expressions, as single objects, or as being composed of several objects.

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

Classroom / Time Management Strategies

Focus on Positivity

When teachers focus on what is right, students feel more comfortable taking risks. Instead of taking the time to point out what’s wrong or less than ideal, educators can continuously praise what is going right. Corrections can be made gently, with the opportunity for the students to self-correct. No one likes to be wrong, and when there is a focus on errors, it can be difficult for learners to find the confidence to participate in classroom activities. Rather than go out of your way to point out errors and mistakes, focus on maintaining a positive environment that fosters learning.