

# Math Strategies for Grades 7-12

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## Instructional Strategies

### Notice and Wonder

Notice and Wonder is a routine in which students are provided the opportunity to critique, question, and explore a given mathematical stimulus. In this routine, the teacher provides the stimulus, followed by ample think time for students to consider, “What do you notice? What do you wonder?”

### Making Interdisciplinary Connections

Mathematics is not a field that exists in isolation. Students learn best when they connect mathematics to other disciplines, including art, architecture, science, health, and literature. Such connections help students develop an understanding of the academic vocabulary required to “do mathematics” and connect the language of mathematical ideas with numerical representations.

## Assessment Strategies

### Conferences

A conference is a prescribed conversation with a student or students on a topic you'd like to assess. Holding one-on-one and small-group conferences is a good way to build relationships, and it provides an opportunity for immediate correction of errors or reteaching of material if students need it. To make conferencing work, you need to have a goal in mind. What skills are most critical at this moment? What skills are your students struggling with the most? Having a purpose that is clear to you and the students will make your conferences truly effective.

### 3-2-1

Students consider what they have learned by responding to the following prompt at the end of the lesson: 3) things they learned from your lesson; 2) things they want to know more about; and 1) questions they have. The prompt stimulates student reflection on the lesson and helps to process the learning.



## Standards of Mathematical Practices

### Make sense of problems and persevere in solving them

Solve problems involving ratios and rates and discuss how they solved them. Solve real world problems through the application of algebraic and geometric concepts. Seek the meaning of a problem and look for efficient ways to represent and solve it. Check their thinking by asking themselves, “What is the most efficient way to solve the problem?”, “Does this make sense?”, and “Can I solve the problem in a different way?”

## Classroom / Time Management Strategies

### Proximity

Proximity is an effective classroom management tool for a middle/high school, and one that teachers should consider using before deploying a strategy that draws more attention to undesired behavior. By simply moving or standing next to a student, the teacher can convey the fact that they are paying attention to the student's current behavior and giving them the opportunity to correct the behavior without direct intervention. Proximity enables you to have a conversation with a student without speaking or using direct signals. It is subtle and usually works with minor disturbances.