

# Math Strategies for Grades K-3

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## Instructional Strategies

### Schema-based Instruction

Schema instruction explicitly teaches students how to identify patterns as a way to connect it to the correct strategy to solve that type of word problem. There are two main types of schema: additive and multiplicative. Additive includes addition and subtraction problems. Multiplicative includes multiplication and division problems. After students identify the schema, they can represent the information using a diagram or an equation before solving.

Students who struggle in math can have difficulty recognizing patterns and relationships in new situations. Students who learn and think differently, especially those who have challenges with executive functioning skills, may also have difficulty with working memory and multi-step directions. Research shows that students who were taught using schema-based instruction were better able to solve both familiar and new multi-step problems.

[Schema Instruction](#)

## Assessment Strategies

### Hand Signals

Hand signals can be used to rate or indicate students' understanding of content. Students can show anywhere from five fingers to signal maximum understanding to one finger to signal minimal understanding. This strategy requires engagement by all students and allows the teacher to check for understanding within a large group.

### Four Corners

A quick and easy snapshot of student understanding, Four Corners, provides an opportunity for student movement while permitting the teacher to monitor and assess understanding.

The teacher poses a question or makes a statement. Students then move to the appropriate corner of the classroom to indicate their response to the prompt. For example, the corner choices might include "I strongly agree," "I strongly disagree," "I agree somewhat," and "I'm not sure."



## Standards of Mathematical Practices

### Reason Abstractly & Quantitatively

- Recognize that a number represents a specific quantity.
- Connect the quantity to written symbols.
- Create a representation of a problem while attending to the meanings of the quantities (quantitative reasoning).
- Begin to know and use different properties of operations and objects.

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

## Classroom / Time Management Strategies

### Identify & Apply Appropriate Ways to Resolve Conflict

- Provide opportunities for student reflection and discussion of conflict resolution strategies.
- Model, teach, and discuss possible strategies for resolving conflict (e.g., use of role-playing & stories, cool-down strategies).
- Be open and available to help students resolve conflicts (e.g., "I" messages).
- Design an area in the room that encourages students to solve conflicts.

[Pennsylvania Early Childhood Education Standards for Second Grade](#)

The resources listed are provided as options and examples.

Pennsylvania does not require, recommend, or endorse any specific program or product. All curricular and instructional decisions are made at the local level.