

## The Research Behind Spectrum® Math

When studying mathematics, children develop the reasoning skills they need to become effective problem solvers. Among other skills, students develop the ability to generate hypotheses, use abstract and logical reasoning, and select and evaluate strategies—important for critical thinking. Research shows that a firm grasp of foundational skills acquired in elementary and middle school helps students not only become better prepared for the more rigorous content they will encounter in higher math courses, but also supports the critical thinking skills needed for success in 21<sup>st</sup> century technical and science careers and throughout life.

<https://www.WalkerBookstore.com/SummerReading>

**Spectrum® Math leverages 5 key research domains that are proven to help children acquire and retain knowledge:**

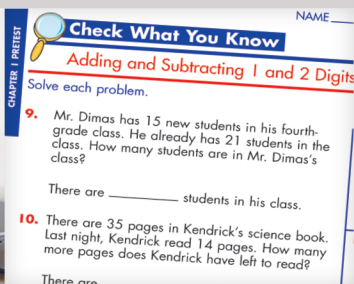
- 1 Frequent Assessment Opportunities
- 2 Worked Examples and Solved Problems
- 3 Visual Representations and Modeling
- 4 Link Mathematical Concepts and Vocabulary to Notation
- 5 Real-World Examples

# 5 Key Research Domains

Research has demonstrated\*

Spectrum Math offers

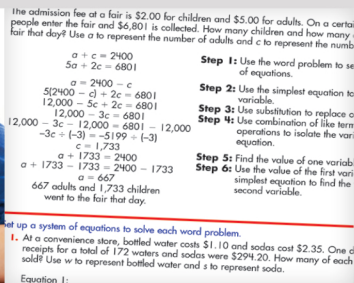
## 1 Frequent Assessment Opportunities



By assessing what students already know and what they've learned, periodic assessment helps identify gaps in student learning to better guide instruction.

Chapter pretests, posttests, grade-level mid-tests, and final tests to help identify what students are learning. Answer keys and a detailed performance record facilitate tracking of student data.

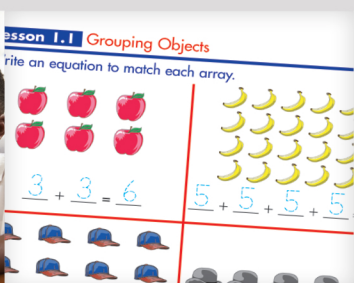
## 2 Worked Examples and Solved Problems



Worked examples allow students to see the sequential steps needed to solve complex problems. When given repeated examples, students build a schema that allows them to solve different problems that contain similar structures.

Worked examples provide students with step-by-step instructions needed to solve problems.

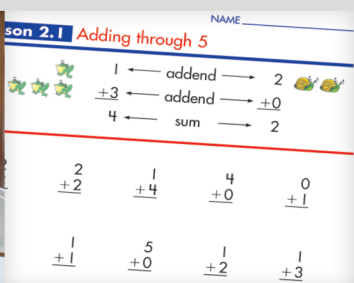
## 3 Visual Representations and Modeling



Students who are shown visual representations of mathematical concepts demonstrate improved achievement. When students understand visual representations, it becomes easier to translate the information into mathematical equations. Incorporating visual representations and models is especially important for students who are struggling in math.

Developmentally appropriate and eye-catching visual representations of concepts across all grade levels.

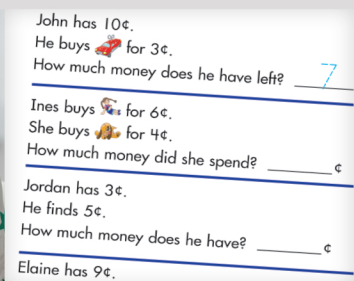
## 4 Link Mathematical Concepts and Vocabulary to Notation



When students better understand mathematical concepts, vocabulary, and notation, they display stronger problem-solving skills.

Developmentally appropriate strategies to build on students' intuitive understanding about math to help them apply concepts and notation when solving math problems.

## 5 Real-World Examples



Using real-world scenarios helps students see value in mathematics and fosters engagement and interest.

Applied math problems that require mathematical thinking in authentic contexts.

