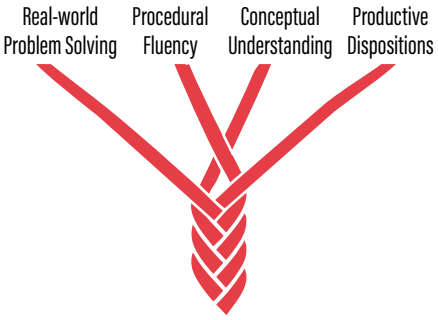
Math Knowledge and Skills

Model Policy | Frequently Asked Questions | 2024



Why do students need to build both knowledge and skills in math?

To become proficient in math, students need to develop **mathematical proficiency**, which is a combination of: real-world problem-solving skills (connecting math to student's lives), procedural fluency (the ability to perform math procedures with speed, accuracy, efficiency and flexibility), conceptual understanding (knowing how and why math "works") and productive dispositions (seeing math as sensible, useful and worthwhile). High quality instructional materials (HQIM) should develop all of these things.

What math knowledge should students learn in kindergarten through grade-8?

Starting in kindergarten and extending through grade 8, students should learn the following math knowledge:

	Elementary Mathematics K-5		Middle School Mathematics 6-8
Number and Operation Sense	Number and Operations in Base Ten	building to...	Ratios & Proportional Relationships
Algebra	Counting & Cardinality and Number & Operations in Fractions	building to...	The Number System
	Operations and Algebraic Thinking	building to...	Expressions, Equations, & Functions
Geometry	Geometric Thinking	building to...	Geometry
Statistics & Data	Measurement & Data	building to...	Statistics, Probability, & Data

What math skills should students build in kindergarten through grade 8?

In kindergarten through grade 8, students should learn to:

- Construct and ask mathematical questions and engage in mathematical discussions with peers,
- Use mathematical reasoning and make sense of real-world problems using appropriate tools, such as base-ten blocks, pattern blocks, rulers, algebra tiles, technology-based tools when appropriate, etc.,
- Know when to be precise and when to estimate,
- Recognize mathematical patterns and draw mathematical connections, and
- Persevere to gain mathematical understanding—even when the content is challenging.

Learn More

ExcelinEd **Comprehensive K-8 Mathematics Policy**

Contact

Lindsey Henderson
Policy Director, Mathematics
Lindsey@excelined.org