

Building strong foundations through algebraic thinking

Susan Jo Russell • Deborah Schifter • Virginia Bastable

Connecting Arithmetic to Algebra

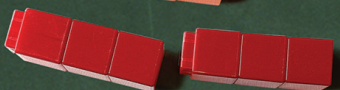
$$5 + 1 = 6$$

$$4 + 2 = 6$$

$$3 + 3 = 6$$

$$2 + 4 = 6$$

$$1 + 5 = 6$$



Strategies for Building Algebraic Thinking
in the Elementary Grades



Grades 1–6 / 978-0-325-04191-9 / 2011 / 176pp est. / \$23.00est.



Algebra readiness:

it's a topic of concern that seems to pervade every school district. How can we better prepare elementary students for algebra? More importantly, how can we help all children, not just those who excel in math, become ready for later instruction? The answer lies not in additional content, but in developing a way of thinking about the mathematics that underlies both arithmetic and algebra.



“One often hears that algebra is generalized arithmetic. But little guidance is provided to teachers of mathematics on how to make these critical connections beginning as early as first grade and continuing throughout the elementary grades. This wonderfully accessible book, written in ways that place the reader in the center of a thinking, questioning, and reasoning classroom, provides this guidance with practical strategies and explicit techniques.”

—Steve Leinwand, author of *Accessible Mathematics*

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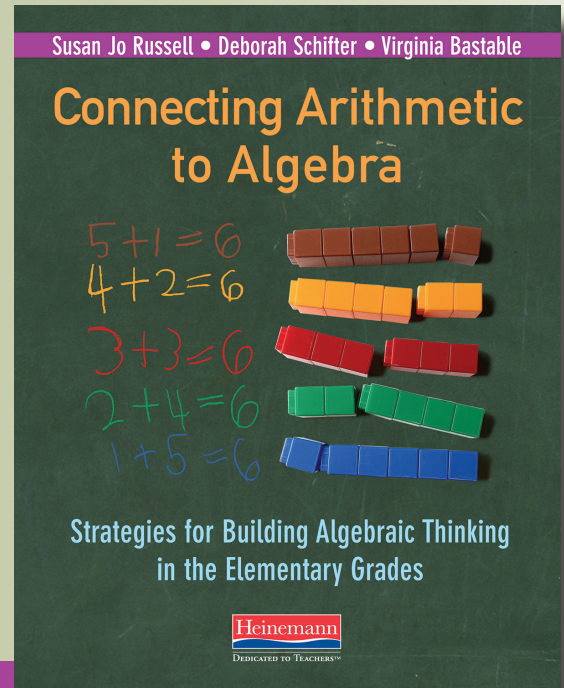


Connecting Arithmetic to Algebra

invites readers to learn about a crucial component of algebraic thinking: investigating the behavior of the operations. Nationally-known math educators **Susan Jo Russell, Deborah Schifter, and Virginia Bastable** and a group of collaborating teachers describe how elementary teachers can shape their instruction so that students learn to:

- notice and describe consistencies across problems
- articulate generalizations about the behavior of the operations
- develop mathematical arguments based on representations to explain why such generalizations are or are not true.

Through such work, students become familiar with properties and general rules that underlie computational strategies—including those that form the basis of strategies used in algebra—strengthening their understanding of grade-level content and at the same time preparing them for future studies.



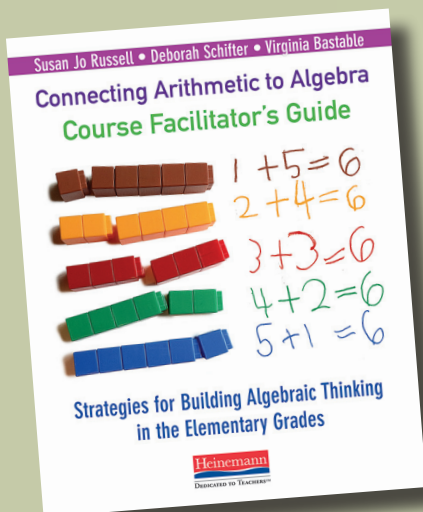
“To truly engage in mathematics is to become curious and intrigued about regularities and patterns, then describe and explain them. A focus on the behavior of the operations allows students starting in the familiar territory of number and computation to progress to true engagement in the discipline of mathematics.”

—Susan Jo Russell, Deborah Schifter,
and Virginia Bastable

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