Zeroing in on Number and Operations, Pre-K–K: Key Ideas and Common Misconceptions
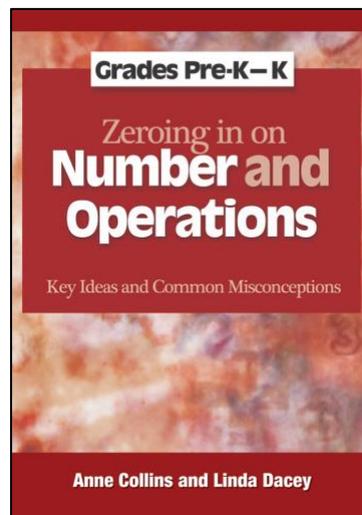
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Summary

When you talk with students about their number sense and computational skills, you're bound to uncover some surprising gaps in their understanding. Knowing how to identify and bridge those gaps is essential for helping students at all levels advance as mathematical thinking.

The Zeroing in on Number and Operations series, which aligns with the Common Core State Standards and the NCTM Standards on Focal Points, features easy-to-use tools for teaching key concepts in number and operations and for addressing common misconceptions. Sharing the insights they've gained through decades of mathematics teaching and research, Linda Dacey and Anne Collins help you focus on what students really need to know and understand at each year level.

The modules for grades preschool and Foundation Year are organised into three sections: "Numbers", "Relationships" and "Addition and Subtraction". Each module begins with the identification of its mathematical focus and the potential challenges and misconceptions associated with those ideas. "In the Classroom" then suggests instructional strategies and specific activities to implement with students. "Meeting Individual Needs" offers ideas for adjusting the activities to reach a broader range of learners. Most activities are supported by a reproducible (located in the appendix), and the "References/Further Reading" provides resources for enriching your knowledge of the topic and gathering more ideas. At the preschool and Foundation Year level, the authors focus on the key ideas that are essential for success:

- Counting by rote, that is, saying the sequence of counting numbers in order
- Counting rationally (with one-to-one correspondence and cardinality)
- Subitising, or recognising sets
- Counting by tens and ones
- Making connections among representations of number
- Comparing and ordering sets and numbers
- Modelling addition as the joining of sets
- Modelling subtractions as the separating of a set.

Other Resources

- *The Xs and Whys of Algebra: Key Ideas and Common Misconceptions* (SHP2755)