
Accessible Mathematics: 10 Instructional Shifts That Raise Student Achievement

Leinwand, Steven

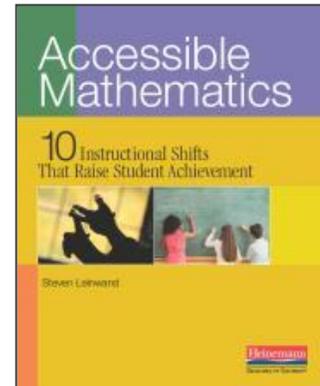
2009 ♦ Heinemann

ISBN: 978-0325026565

Pedagogical Knowledge: Books

DESCRIPTION

Accessible Mathematics: 10 Instructional Shifts That Raise Student Achievement, by Steven Leinwand, describes small shifts in teaching practices that can make a big difference in student learning. The book focuses on the crucial issue of classroom instruction. The ten practices that deepen student learning in mathematics are offered and listed below:



1. Incorporate ongoing cumulative review into every day's lesson.
2. Adapt what we know works in our reading programs and apply it to mathematics instruction.
3. Use multiple representations of mathematical entities.
4. Create language-rich classroom routines.
5. Take every available opportunity to support the development of number sense.
6. Build from graphs, charts, and tables.
7. Tie the mathematics to such questions as How big? How much? How far? increasing the natural use of measurement throughout the curriculum.
8. Minimize what is no longer important and teach what is important when it is appropriate to do so.
9. Embed the mathematics in realistic problems and real-world contexts.
10. Make "Why?" "How do you know?" and "Can you explain?" classroom mantras.

STAGE 1 LEADERSHIP DEVELOPMENT

Accessible Mathematics: 10 Instructional Shifts That Raise Student Achievement, by Steven Leinwand, supports stage 1 development of self-knowledge, awareness, development, and modeling of effective teaching skills. This book begins where the author's previous work, *Sensible Mathematics*, ended by focusing on classroom instruction. The ten shifts described by the author represent a road map for enhancing the quality of the way we plan, implement, and assess our mathematics instruction. Readers might work to incorporate each strategy into their classroom practice by

reading a chapter each month of school and working to plan a lesson explicitly using the strategy at least once a week. Each chapter states and describes a shift in instructional practice and provides classroom examples to illustrate the shift. Chapters also end with a list of indicators in response to the question: “So What Should We See in an Effective Mathematics Classroom?” The checklists of indicators might be used to stimulate reflection on classroom practice. The ten shifts broadly represent four groups of related strategies. Readers might incorporate the strategies in any order.

Strategies 1, 2, and 10 focus broadly on review, discourse, and stimulating a depth of understanding. Strategies 3, 4, and 5 address the use of representations, communication, and number sense — three critical domains for accessing and demonstrating mathematical understanding. Strategies 6, 7, and 9 ground the mathematics in the world in which we live. Strategy 8 reminds us we cannot do it all and must focus on essential skills and understandings.

STAGE 2 LEADERSHIP DEVELOPMENT

Accessible Mathematics: 10 Instructional Shifts That Raise Student Achievement, by Steven Leinwand, supports stage 2 development of leaders working to collaborate and implement strategies that raise student achievement. Leaders might work with coaches in an effort to explore and implement the ten strategies described in the book.

Leaders might facilitate the work in chapters 2 through 11, chapters that describe the 10 instructional shifts, by having specialists in the role of coaching read the chapters in expert groups and chart ideas for implementing the strategies in classrooms where they work. Specialists might plan modeling and co-teaching opportunities for trying out the strategies together.

Chapter 13, “We All Have a Role to Play and Teachers Can’t Do It Alone,” provides an opportunity to discuss the interdependent work of raising student achievement. The author’s statement that “*We are all in this improvement business together*” might be used to focus a discussion of the responsibilities and roles of various stakeholders. The chapter describes what students, teachers, principals, and supervisors should be and do in an effort to raise student achievement. Leaders might facilitate a discussion of the role of specialists in school settings working to raise student achievement. The chapter concludes with lists of activities that one might expect to be in place and regularly implemented in schools that are working best and serving students mathematically. These lists might be used by specialists to reflect on the progress of implementation in their school in the areas of curriculum, teaching and learning, and professional growth.