



# Algebra to the Core

## Getting Started

**Congratulations** for purchasing the Algebra to the Core CD. The Algebra to the Core program is designed to help all students who study algebra, at all levels, to experience success in algebra. Through this program, participating students will increase their understanding, interest, confidence, and achievement in math.

The strength of the Algebra to the Core program comes from the implementation of the RVD Model (Harvey Silver, SSA). The acronym RVD stands for Repetition, Variation, and Depth.

The design of Algebra to the Core began with 10 core algebra topics.

- **numeric expressions**
- **algebraic expressions**
- **polynomials (part 1)**
- **solving equations**
- **understanding functions**
- **graphing functions**
- **graphing linear equations**
- **polynomials (part 2)**
- **solving and graphing inequalities**
- **irrational expressions.**

Next, 8 powerful learning experiences were developed for each of the 10 algebra topics.

- **Hands-On Learning Activity**
- **Proceduralization Strategy**
- **Graduated Difficulty Challenge**
- **Convergence Mastery Challenge**
- **Practice Makes Perfect Activity**
- **Task Rotation Activity**
- **Pick-One Get-One Vocab, Challenge**
- **Proof of Understanding**

The quantity and nature of the learning experiences, applied to each topic provide the repetition, variation, and depth students need to succeed in algebra.

**The contents on the Algebra to the Core CD are as follows:**

- **A Welcome Video from Dr. Ed Thomas**
- **An Information and Training Guide** (A 1 or 2-day training is available by request.)
- **13 instructional slide shows** (pdf files that can be projected in the classroom)
- **Practice Makes Perfect Student Activity Set** (problems for students to practice as they work towards mastery) The student activity set provides traditional practice and Task Rotation activities for each lesson. The Task Rotation activities consist of learning experiences that connect with the four learning styles of students.
- **10 Algebra to the Core Assessments and Keys** (each assessment features 10 questions categorized as follows: 2 knowledge questions, 2 understanding questions, 4 math procedure questions, and 2 application questions.)
- **A Student Progress Chart** (Teachers can print these for their students.) The Algebra to the Core Student Progress Chart is a great way to help students document and manage their own learning. The Progress Chart is a great parent tool as well.
- **Hands-On Activities Guide** (These activities connect with the 10 algebra topics.)
- **Survey of Algebra Activity** (End-of-year review and make-up activity for students)
- **Graph Paper** (Reproducible for students.)



# Algebra to the Core

## Implementing Algebra to the Core

There are many ways to effectively implement Algebra to the Core.

- **In a traditional Algebra I class**

Presume that a teacher in a traditional Algebra I class has an upcoming unit on *Evaluating Algebraic Expressions*. The Algebra to the Core hands-on activity and slide show, associated with the same topic, would be a great resource for introducing students to the fundamental concepts and skills, and for building strong foundations for that topic. Typically, the Algebra to the Core hands-on activity takes .5-1 day, and the full implementation of the slide show learning experiences may take 2-3 days. The Practice Makes Perfect worksheets and the Task Rotation activity may take an additional 1-2 days. The teacher may want to add one or more learning experiences from the regular adopted text to extend students' learning experiences. The ten-question Algebra to the Core assessment can be applied at the end of the unit.

- **In a traditional Algebra II class**

Presume that a teacher in a traditional Algebra II class discovers that the students enrolled in the class have very weak Algebra I foundations. The Algebra II teacher may choose to integrate the Algebra to the Core lessons and materials into the Algebra II course.

One implementation strategy might be to conduct an Algebra Foundations *Boot Camp* during the first three weeks of the school year. The Algebra to the Core hands-on activities and slide shows could serve as great resources for helping students to repair, and in some cases, rebuild eroding algebra foundations. The three week time commitment at the start of the school year will likely save time later in the year, as students use their new understandings and skills to tackle Algebra II topics in a more efficient and timely manner.

A second implementation strategy might be to tap into the Algebra to the Core hands-on activities, lesson slide shows, and Practice Makes Perfect activities throughout the Algebra II course as connections occur. For example, prior to studying quadratic, piecewise, and exponential functions, the teacher might choose to implement the Algebra to the Core materials and lessons associated with the introduction of functions. The same implementation strategy could easily be applied to any Algebra II topic that has a corresponding Algebra to the Core set of learning experiences.

- **In a Summer School Setting**

In most summer school settings, time is short and of the essence. The Algebra to the Core lesson materials are ideal for helping summer school students to capture the algebra concepts and skills that got away. Students who participate in the Algebra to the Core program will receive the repetitions, varied learning experiences, and understanding they need to succeed.