

INFORMATION FOR PARENTS

Grade 3 Math Facts Philosophy

The goal of the math facts strand in *Math Trailblazers* is for students to learn the basic facts efficiently, gain fluency with their use, and retain that fluency over time.

A large body of research supports an approach in which students develop strategies for figuring out the facts rather than relying on rote memorization. This not only leads to more effective learning and better retention, but also to the development of mental math skills. In fact, too much drill before conceptual understanding may interfere with a child's ability to understand concepts at a later date. Therefore, the teaching of the basic facts in *Math Trailblazers* is characterized by the following elements:

Use of Strategies. In all grades we encourage the use of strategies to find facts, so students become confident that they can find answers to facts problems that they do not immediately recall. In this way, students learn that math is more than memorizing facts and rules which “you either get or you don't.”

Distributed Facts Practice. Students study small groups of facts that can be found using similar strategies. In Units 1–10 of third grade, they review the subtraction facts and develop strategies for the multiplication facts. Students focus on developing fluency with the multiplication facts in Units 11–20. They use flash cards to study each group of facts at home.

Practice in Context. Students continue to practice all of the facts as they use them to solve problems in the labs, activities, and games.

Appropriate Assessment. Students are regularly assessed to see if they can find answers to facts problems quickly and accurately and if they can retain this skill over time. They take a short quiz on each group of facts. Students record their progress on *Facts I Know* charts and determine which facts they need to study. They take an inventory test of all the subtraction facts at the end of Unit 10 and all the multiplication facts at the end of the year.

A Multiyear Approach. In Grades 1 and 2, the curriculum emphasizes the use of strategies that enable students to develop fluency with the addition and subtraction facts by the end of second grade. In Grade 3, students review the subtraction facts and develop fluency with the multiplication facts. In Grade 4, the addition and subtraction facts are checked, the multiplication facts are reviewed, and students develop fluency with the division facts. In Grade 5, students review the multiplication and division facts.

Facts Will Not Act as Gatekeepers. Use of strategies and calculators allows students to continue to work on interesting problems and experiments while they are learning the facts. Students are not prevented from learning more complex mathematics because they do not have quick recall of the facts.