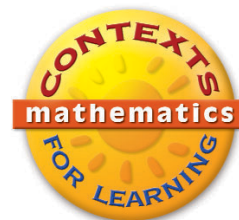


Investigating Fractions, Decimals, and Percents

POSTER OVERVIEW



“The heart of the math workshop consists of ongoing investigations developed within contexts and situations that enable children to mathematize their lives”

Catherine Twomey Fosnot

Building learning around rich, instructionally-sound contexts was an overarching goal during the development of the *Contexts for Learning Mathematics* series. Throughout the series context is used to set the stage for learning. It establishes a terrain that will intrigue children and ignite their imaginations. The contexts are situations children can imagine—either realistic or fictional—that enable them to reflect on what they are doing and apply mathematical thinking to their own world.

Contexts for investigations are typically developed with stories and pictures. These are carefully crafted to involve students in meaningful investigations of the big ideas, strategies, and models that shape mathematical thinking.

- ☀ The images and texts are engaging and include age-appropriate children using mathematics to solve real-world problems.
- ☀ The numbers referenced represent landmark numbers or number relationships that are significant and telling.
- ☀ The models and metaphors within a context make relationships and strategies more tangible and explicit.

The contexts for the five units in *Investigating Fractions, Decimals, and Percents* (Grades 4–6) are established through 16 vibrant posters (15” x 24”) that meld humor, intrigue, and good math sense.

Field Trips and Fund-Raisers: Introducing Fractions



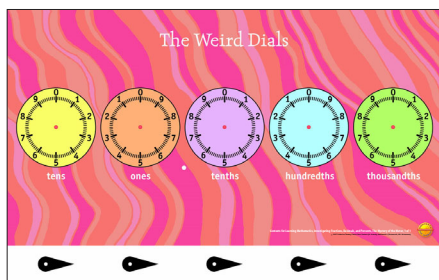
The fair-sharing of submarine sandwiches on a school field trip provides the context for exploring big ideas related to fractions in *Field Trips and Fund-Raisers*. In attempting to settle arguments about the fair distribution of sandwiches, students explore the connection between division and fractions as well as ways to compare fractional amounts. As the unit progresses, students use the double number line as a model and explore equivalent fractions.

The California Frog-Jumping Contest: Algebra

The *California Frog-Jumping Contest* uses the context of the famous short story by Mark Twain—*The Celebrated Jumping Frog of Calaveras County*—to develop equivalence and its use in solving algebraic problems. This context leads to using the number line as a tool for solving problems with an unknown: the length of a frog jump. As the unit progresses, students investigate equivalent lengths of different-sized jumps and work with these equivalences flexibly to solve problems.



The Mystery of the Meter: Decimals



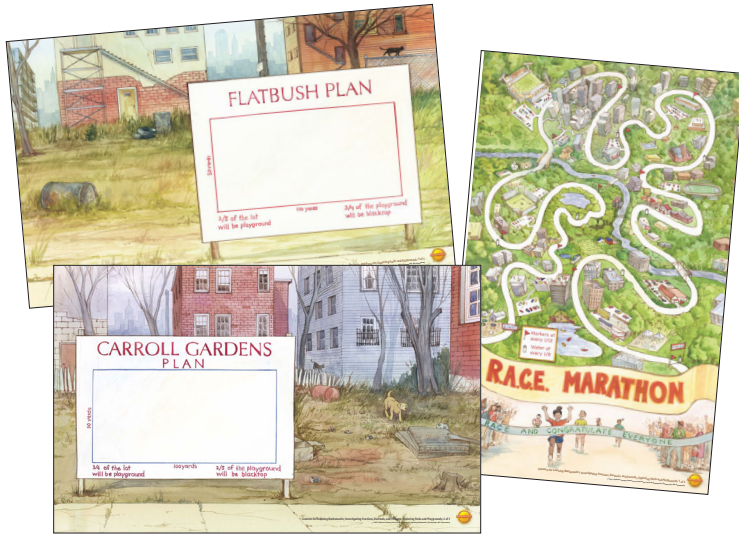
In *The Mystery of the Meter*, five meter dials on the side of a house initiate a series of investigations that focus on decimals. Periodic reading and data collection eventually reveal that these are electric meters. Because students can see how the numbers expressed as decimals increase with time, the meter is a powerful tool for students to use to determine equivalents and to examine how decimals increase and are ordered.

Best Buys, Ratios, and Rates: Addition and Subtraction of Fractions

Best Buys, Ratios, and Rates uses the context of comparison shopping to explore equivalence of fractions, proportional reasoning, and rates. Ratio tables are used to help students determine the cost of different amounts of bird seed sold by weight. The double number line is used for computation as students investigate the readings on a truck's gas tank over the course of various trips.



Exploring Parks and Playgrounds: Multiplication and Division of Fractions



Road race results and training data create a context in *Exploring Parks and Playgrounds* for investigating big ideas and strategies related to multiplication and division with fractions as well as the relationship between these operations. As the unit progresses, students multiply fractions by other fractions and equivalent forms of fractions—percentages and decimals—in the context of designing a playground. In this unit, double number line and array models are used as helpful tools.