

Curriculum Parent Overview (Grade 5)

MATHEMATICS

UNIT #6 BETWEEN 0 AND 1 (Rational Numbers 2: Addition and Subtraction)

CONTENT FOCUS:

Rectangular grids and number lines are used as representations to examine the place value of the digits in decimals, understand the size of numbers that include decimals, and to identify equivalent decimals and fractions. Students compare and order decimals.

Students use grids to help them visualize and identify the place value of decimals as they begin adding and subtracting them. Using a variety of contexts, students add and subtract numbers that include decimals. They consider how the addition and subtraction strategies they use for whole numbers apply to adding and subtracting decimals.

UNIT FOCUS:

- Understanding the meaning of decimals: Students use representations of fractions that they already know and apply them to understanding the meaning of decimals. By representing tenths, hundreds, and thousands on rectangular grids, students learn about the relationship among these decimals. For example, 1 tenth is equivalent to 10 hundredths and 1 hundredth is equivalent to 10 thousandths.

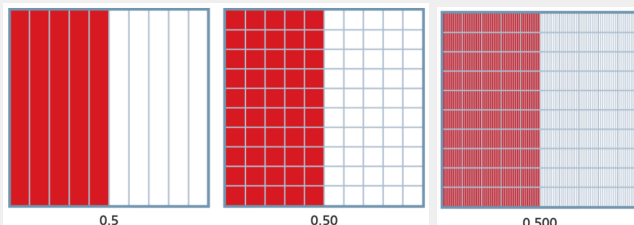
This unit also focuses on understanding how the way these numbers are said and written is related to the meaning of the numbers. One of the difficult aspects of learning about decimal notation is that a decimal is named by the smallest place.

- For example, 0.2 is read as “two tenths,” but 0.23 is read as “twenty three hundredths.”

Understanding the meaning of zeros in decimal notation is also important.

- For example, the zeroes in 0.2, 0.02, and 0.20, are in different places, and each represents something different. Some affect the value of the number, and some do not. It’s important that students are able to think critically about the meaning of decimal digits and numbers.

- Comparing decimals: Students build on work in previous grades with comparing and ordering fractions. They use this information as the building blocks for comparing and ordering decimals, which focuses on both equivalent representations of numbers and ways to compare unequal numbers. When they represent decimals on rectangular grids divided into different numbers of equal parts, students learn about decimal notation that represents the same quantity.
 - For example, by shading in 0.5 on a tenths grid, a hundredths grid, and a thousandths grid, students learn about the equivalence of 5 tenths, 50 hundredths, and 500 thousandths: $0.5 = 0.50 = 0.500$.



- Adding and Subtracting decimals: Solving addition and subtraction problems that involves decimals requires students to think hard about the place value of each digit in a number.

- For example, in order to subtract 0.14 from 0.4, students must know that the 4 in 0.4 and the 1 in 0.14 both represent tenths.

Students may apply their understanding of decimal equivalencies in order to subtract. Students use the area model to visualize addition and subtraction of decimals and to support them in identifying the place value of the digits of each number. Students will use rectangular grids to represent addition and subtraction of decimals as they learn to think through the place value of the numbers. As they become more comfortable with adding and subtracting decimals, they'll move to using written methods based on the strategies they used with whole numbers.

MATHEMATICAL PRACTICES:

MP6: Attend to precision.

MP7: Look for and make use of structure.

CONNECTIONS TO PREVIOUS CONTENT:

In Grades 3 and 4 and in the first Rational Number unit in Grade 5, students built an understanding of the meaning of fractions and mixed numbers and found equivalent fractions. They used equivalencies to solve problems about comparing, adding, and subtracting fractions and mixed numbers. Students worked with tenths and hundredths in decimal form in Grade 4, related them to familiar fractions (e.g., $\frac{1}{4} = 0.25$), and represented them as parts of rectangles. They also found sums of tenths and hundredths. Students are expected to have basic understandings of tenths and hundredths and the relationship between fractions and decimals. They are also expected to know that strategies for adding and subtracting whole numbers can be applied to rational numbers.

CONNECTIONS TO FUTURE CONTENT:

Students continue computation with fractions and decimals in Unit 7, where they work on multiplying and dividing fractions and decimals. This work extends students' understanding about rational numbers and the operations of multiplication and division.

MATH AT HOME:

- Play any of the following **games** (after being introduced this unit) on the Savvas Site: *Decimals in Between (after 1.5)*, *Smaller to Larger (after 1.7)*, *Fill Two (after 2.1)*, *Decimal Double Compare (after 2.5)*, *Close to 1 (after 2.6)*, *Decimal Subtraction Compare (after 2.7)*
- **Everyday Decimals and You** can build on your child's understanding of decimals by looking for everyday examples of decimals and talking about what they mean. Discuss problem situations that involve decimals as they arise. Look in the newspaper or online at the weather statistics for your area. Ask: "What is the average amount of precipitation for the month? How much rain or snow has there been so far this month? How close are we to the average?"
- Review the Math Words and Ideas videos for this unit on Savvas Site