Mathematical Background

Here is an overview of the content your students will learn in this unit.

From Hundredths to One Billion

Tenths and hundredths.

TEKS 4.2.E, 4.2.G, 4.2.H

- Fractions with denominators of tenths and hundredths can be written as **decimals**.
  - » **Tenths** and **hundredths** are place value units representing a value less than 1 whole.
- Any fraction with a denominator of 10 or 100 can be rewritten as a decimal in tenths or hundredths.

$\frac{3}{10} = 0.3$ $\frac{3}{100} = 0.03$ $\frac{30}{10} = 3.0$

Compare and order decimals to hundredths.

TEKS 4.2.A, 4.2.B

- Interpret the value of each place value position as 10 times the position to the right and $\frac{1}{10}$ the position to the left.
  - » Whole numbers and decimals can be written in expanded form and expanded notation to show the value of each digit.

Represent the decimal 0.83 in expanded form and expanded notation.

expanded form: 0.8 + 0.03

expanded notation: $\left(8 \times \frac{1}{10}\right) + \left(3 \times \frac{1}{100}\right)$

Comparing and ordering whole numbers and decimals.

TEKS 4.2.C, 4.2.F

- Place value can be used to write, compare and round multi-digit numbers.
  - » A digit in one place represents 10 times what the same digit represents in the place to the right.
  - » When comparing multi-digit numbers, consider the place values of the digits and the value of the digits.

43,805 > 34,834 > 23,150

43,805

34,834

32,150

43.80 > 34.83 > 23.15

43.80

34.83

32.15

Add and subtract whole numbers and decimals using the standard algorithm.

TEKS 4.4.A

- The standard algorithm can be used to add and subtract decimals, just like whole numbers.
  - » Align the decimals by place.
  - » Add and subtract using the same steps for whole numbers, including regrouping.
  - » Bring the decimal point down into your sum or difference.

$$\begin{array}{r} {\scriptstyle 1} \\ 1.58 \\ +\ 3.6 \\ \hline 5.18 \end{array}$$

$$\begin{array}{r} {\scriptstyle 4\,10} \\ 9.\cancel{5}\cancel{0} \\ -\ 2.42 \\ \hline 7.08 \end{array}$$

Unit Investigation

Lesson 1 is the Unit Investigation. Students determine the value of base-ten blocks when the value of one of the blocks is changed and notice patterns to build curiosity and apply their own knowledge in a variety of ways. Use the **Caregiver Connection** to help students continue to explore the math they will see in the unit.

Caregiver Connection

Students may enjoy looking for numerical patterns in their home or community. Encourage them to discuss how the numbers in the patterns relate to one another.