GSD Parents' Guide for 3rd Grade
Utah Core State Standards for Mathematics

The Utah Core State Standards for Mathematics addresses *Standards for Mathematical Practice* and *Standards for Mathematical Content*. The standards stress not only procedural skill but also conceptual understanding, to make sure students are learning the critical information they need to succeed at higher levels.

By using the *Standards for Mathematical Practice*, students make sense of problems, persevere in solving them, and attend to precision. They look for and make use of structure and express regularity in repeated reasoning. They reason abstractly and quantitatively, and they construct viable arguments and critique the reasoning of others. Students model with mathematics and use appropriate tools strategically.

The following *Standards for Mathematical Content* define what students should understand and be able to do in their study of third grade mathematics:

Operations and Algebraic Thinking
- Interpret products of whole numbers. *For example, describe a context in which a total number of objects can be expressed as 5 x 7.*
- Interpret whole-number quotients of whole numbers. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.*
- Use multiplication and division within 100 to solve word problems.
- Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
- Apply properties of operations as strategies to multiply and divide. *For example, if 6 x 4 = 24 is known, then 4 x 6 = 24 is also known. (Commutative Property of Multiplication)*
- Understand division as an unknown factor problem. *For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.*
- Fluently multiply and divide within 100. Know from memory all products of two one-digit numbers.
- Solve two-step word problems using the four operations. Represent the problems using equations with a letter standing for the unknown quantity. Decide if answers are reasonable using mental computation and estimation strategies including rounding.
- Identify arithmetic patterns and explain them using properties of operations.

Number and Operations in Base Ten
- Use place value understanding to round whole numbers to the nearest 10 or 100.
- Fluently add and subtract within 1,000.
- Multiply one-digit whole numbers by multiples of 10 in the range of 10-90. *For example, 9 x 80.*

Number and Operations – Fractions
- Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts. Understand a fraction *a/b* as the quantity formed by *a* parts of size 1/*b*.

- Represent a fraction 1/*b* on a number line. Define the interval from 0 to 1 as the whole and partition it into *b* equal parts.
- Represent a fraction *a*/*b* on a number line by marking off *a* lengths of 1/*b* from 0.
- Understand that two fractions are equivalent if they are the same size or the same point on a number line.
- Recognize and make simple equivalent fractions. *For example, ½ = 2/4.* Explain why the fractions are equivalent.
- Express whole numbers as fractions, and recognize fractions that are equal to whole numbers. *For example, 3 = 3/1; 4/4 = 1.*
- Compare two fractions with the same numerator or the same denominator by reasoning about their size. Record the results of comparisons with the symbols <, >, or =.

Measurement and Data
- Tell and write time to the nearest minute. Measure elapsed time in minutes. Solve elapsed time word problems using addition and subtraction.
- Measure and estimate liquid volumes and masses of objects using grams, kilograms, and liters. Add, subtract, multiply, or divide to solve one-step word problems using masses and volumes.
- Draw scaled picture and bar graphs. Solve one- and two-step "how many more" and "how many less" problems using information in scaled bar graphs.
- Generate measurement data by measuring lengths in halves and fourths of an inch. Show the data in a line plot with the horizontal scale marked in whole numbers, halves, and fourths.
- Recognize area as an attribute of plane figures. "Unit squares" are used to measure area in "square units." A plane figure which can be covered by *n* unit squares is said to have an area of *n* square units.
- Measure area by counting unit squares.
- Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
- Solve real world and mathematical problems by multiplying whole-number side lengths to find areas of rectangles.
- Use tiling to model that the area of a rectangle with whole-number side lengths *a* and *b* + *c* is the sum of *a* x *b* and *a* x *c*. Use area models to represent the Distributive Property.
- Recognize area as additive by decomposing rectilinear figures into non-overlapping rectangles and adding the areas of the non-overlapping parts. Apply this strategy to solve real world problems.
- Solve real world and mathematical problems involving perimeters of polygons. Find the perimeter with given side lengths and find an unknown side length. Show rectangles with the same perimeter and different areas or with the same area and different perimeters.

Geometry
- Understand that shapes in different categories (e.g., rhombuses and rectangles) may share attributes (e.g., four sides) and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
- Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into four parts with equal area, and describe each part as ¼ of the area of the shape.*