

A Correlation of

INVESTIGATIONS

IN NUMBER, DATA, AND SPACE®

©2017



To the

**Minnesota Academic Standards
Mathematics 2007
Kindergarten – Grade 5**

**A Correlation of Investigations 3 in Number, Data, and Space ©2017
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Introduction

This document demonstrates how *Investigations 3* in Number, Data, and Space, ©2017, aligns to the Minnesota Academic Standards Mathematics, 2007, Grades K-5. Correlation references are to the Sessions of Investigations 3.

Investigations in Number, Data, and Space® 3rd Edition, known as Investigations 3, maintains the standard of excellence as a focused and coherent program that supports students to make sense of mathematical ideas and supports their teachers to make sense of both mathematics content and student thinking.

The guiding principles from *Investigations 2nd* Edition are maintained in *Investigations 3*. These guiding principles follow:

- 1) Students have mathematical ideas and are given the opportunity to learn in an environment that focuses on making sense of mathematics. Students build on the ideas they already have and learn about new mathematics they have never encountered.
- 2) Teachers are engaged in ongoing learning about mathematics content, pedagogy, and student learning.
- 3) Teachers collaborate with the students and use the curriculum to maintain a clear, focused, and coherent agenda for mathematics teaching.

Investigations 3 ensures that its instructional approach works in a wide variety of classrooms. It maintains full availability for classrooms that use print materials and provides access to digital enhancements for both teachers and students in classrooms with regular or periodic access to those technologies.

Investigations 3 offers digital tools and technologies to enhance its research-based, field tested, and proven instructional model. These tools provide teachers with easy access to the professional development materials that are a hallmark of the program, support classroom management tasks, and help students capture and share their work.

Core program resources for teaching and learning will be made available on Savvas' latest learning management system, Savvas Realize™.

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Kindergarten Units

Unit 1 - Counting People, Sorting Buttons

Unit 2 - Counting Quantities, Comparing Lengths

Unit 3 - Make a Shape, Fill a Hexagon

Unit 4 - Collect, Count and Measure

Unit 5 - Build a Block, Build a Wall

Unit 6 - How Many Now?

Unit 7 - How Many Noses? How Many Eyes?

Unit 8 - Ten Frames and Teen Numbers

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Minnesota Academic Standards Mathematics - 2007 Kindergarten	Investigations 3 in Number, Data, and Space ©2017 Kindergarten
Number & Operation	
Understand the relationship between quantities and whole numbers up to 31.	
K.1.1.1 Recognize that a number can be used to represent how many objects are in a set or to represent the position of an object in a sequence.	Unit 1: 1.1, 1.3, 1.4, 2.2, 2.3, 2.4, 2.5, 3.1, 3.2, 3.3, 3.5 Unit 2: 1.1, 1.2, 1.3, 1.4, 1.5, 1.7, 2.2, 2.4, 2.6, 2.7, 2.12 Unit 3: 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 2.7 Unit 4: 1.1, 1.3, 1.6, 1.8, 2.1, 2.4, 2.6, 2.7, 3.2, 3.5, 3.6 Unit 5: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10 Unit 6: 1.3, 1.4, 1.6, 2.1, 2.4, 2.6, 2.8, 3.1, 3.4, 3.5, 3.6 Unit 7: 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.8 Unit 8: 1.2, 1.3, 1.5, 1.7, 2.1, 2.4, 2.7, 2.10, 3.3, 3.4, 3.5
K.1.1.2 Read, write, and represent whole numbers from 0 to at least 31. Representations may include numerals, pictures, real objects and picture graphs, spoken words, and manipulatives such as connecting cubes.	Unit 1: 3.2, 3.3, 3.4, 3.5, 3.6 Unit 2: 1.2, 1.3, 1.5, 1.6, 1.10, 2.1, 2.2, 2.3, 2.4, 2.7, 2.9 Unit 3: 1.4, 1.5, 2.2, 2.4, 2.5, 2.6 Unit 4: 1.2, 1.3, 1.5, 1.9, 1.10, 2.2, 2.4, 2.6, 3.1, 3.3, 3.6 Unit 5: 1.2, 1.3, 1.4, 1.5, 1.7, 1.8, 1.9, 1.10 Unit 6: 1.1, 1.3, 1.5, 1.6, 2.1, 2.2, 2.3, 2.5, 2.6, 2.8, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 Unit 7: 1.2, 1.3, 2.2, 2.3, 3.1, 3.2, 3.4, 3.5, 3.6, 3.8 Unit 8: 1.1, 1.3, 1.5, 1.7, 2.1, 2.3, 2.5, 2.8, 2.10, 3.1, 3.5
K.1.1.3 Count, with and without objects, forward and backward to at least 20.	Unit 1: 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.4, 2.5, 3.1, 3.3, 3.5 Unit 2: 1.1, 1.2, 1.5, 1.8, 1.10, 2.2, 2.5, 2.8, 2.9, 2.11, 2.12 Unit 3: 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 2.7 Unit 4: 1.1, 1.3, 1.4, 1.6, 1.10, 2.3, 2.5, 2.7, 3.2, 3.3, 3.4 Unit 5: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10 Unit 6: 1.1, 1.2, 1.3, 1.4, 2.1, 2.3, 2.5, 2.7, 3.2, 3.4, 3.5, 3.6

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(Continued) K.1.1.3 Count, with and without objects, forward and backward to at least 20.	Unit 7: 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 Unit 8: 1.2, 1.3, 1.4, 1.6, 2.1, 2.4, 2.6, 2.8, 2.10, 3.1, 3.2, 3.3, 3.4, 3.5
K.1.1.4 Find a number that is 1 more or 1 less than a given number.	Unit 4: 2.3, 2.4, 2.5, 2.7 Unit 6: 2.7
K.1.1.5 Compare and order whole numbers, with and without objects, from 0 to 20.	Unit 1: 2.1, 2.2, 2.3, 2.4, 2.5, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 Unit 2: 1.2, 1.4, 1.5, 1.7, 1.8, 1.9, 2.1, 2.2, 2.5, 2.7, 2.12 Unit 3: 2.2, 2.3, 2.4, 2.5, 2.6, 2.7 Unit 4: 1.2, 1.4, 1.6, 1.10, 2.1, 2.3, 2.5, 2.7, 3.1, 3.2, 3.3 Unit 5: 1.1, 1.2, 1.3, 1.4, 1.5, 1.7, 1.8, 1.9, 1.10 Unit 6: 1.1, 1.2, 1.4, 1.5, 1.6, 2.1, 2.4, 2.7, 3.2, 3.4, 3.5 Unit 7: 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.8 Unit 8: 1.4, 1.5, 1.6, 1.7, 2.2, 2.3, 2.4, 2.5, 2.6, 2.8, 2.10, 3.1, 3.3, 3.4, 3.5
Use objects and pictures to represent situations involving combining and separating.	
K.1.2.1 Use objects and draw pictures to find the sums and differences of numbers between 0 and 10.	Unit 3: 2.4, 2.5 Unit 4: 1.6, 1.7, 1.8, 1.9, 1.10, 2.2, 2.5, 2.7, 3.1, 3.4, 3.6 Unit 5: 1.2, 1.3, 1.4, 1.7, 1.8, 1.9 Unit 6: 1.1, 1.2, 1.3, 1.5, 1.6, 2.1, 2.3, 2.5, 2.6, 2.8, 3.1, 3.2, 3.4, 3.5, 3.6 Unit 7: 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 Unit 8: 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 2.1, 2.3, 2.4, 2.5, 2.7, 2.8, 3.1, 3.2, 3.3, 3.4, 3.5
K.1.2.2 Compose and decompose numbers up to 10 with objects and pictures.	Unit 4: 2.1, 2.2, 2.3, 2.4, 2.5, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 Unit 6: 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 Unit 8: 2.1, 2.2, 2.3, 2.4

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Algebra	
Recognize, create, complete, and extend patterns	
K.2.1.1 Identify, create, complete, and extend simple patterns using shape, color, size, number, sounds and movements. Patterns may be repeating, growing or shrinking such as ABB, ABB, ABB or x, xx, xxx.	Unit 3: 1.2, 1.4, 1.5, 2.1, 2.2, 2.4, 2.5, 2.6, 2.7 Unit 7: 1.2, 1.3, 2.2, 3.2, 3.3, 3.4, 3.4, 3.5, 3.7
Geometry & Measurement	
Recognize and sort basic two- and three-dimensional shapes; use them to model real-world objects.	
K.3.1.1 Recognize basic two- and three-dimensional shapes such as squares, circles, triangles, rectangles, trapezoids, hexagons, cubes, cones, cylinders and spheres.	Unit 3: 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7 Unit 5: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10 Unit 7: 1.1, 1.2, 1.3, 2.2, 2.3, 3.2
K.3.1.2 Sort objects using characteristics such as shape, size, color and thickness.	Unit 1: 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 3.3, 3.5 Unit 2: 2.1, 2.2, 2.3, 2.4, 2.5, 2.8, 2.12 Unit 3: 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.6, 2.7 Unit 4: 2.3, 2.6, 3.2, 3.6 Unit 5: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10 Unit 6: 1.1, 1.5, 1.6, 2.1, 2.6, 3.2 Unit 7: 1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.2, 3.3, 3.4, 3.5, 3.6, 3.8 Unit 8: 1.6, 1.7, 2.6
K.3.1.3 Use basic shapes and spatial reasoning to model objects in the real-world.	Unit 1: 1.1, 1.2, 1.4, 1.5, 2.1, 2.2, 2.4, 2.5, 3.2, 3.5, 3.6 Unit 2: 2.4 Unit 3: 2.1, 2.2, 2.4, 2.5, 2.6, 2.7 Unit 4: 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 Unit 5: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10
Compare and order objects according to location and measurable attributes	
K.3.2.1 Use words to compare objects according to length, size, weight and position.	Unit 2: 2.1, 2.2, 2.3, 2.4, 2.6, 2.7, 2.8, 2.9, 2.10, 2.11, 2.12 Unit 6: 1.1, 1.2, 1.3 Unit 8: 2.3, 2.4, 2.6, 3.1, 3.2, 3.3, 3.5

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K.3.2.2 Order 2 or 3 objects using measurable attributes, such as length and weight.	Unit 2: 2.2, 2.6, 2.9, 2.10, 2.11, 2.12 Unit 4: 1.2, 1.4, 1.5 Unit 8: 3.1, 3.2, 3.3, 3.4, 3.5

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Grade 1 Units

Unit 1 - Building Numbers and Solving Story Problems

Unit 2 - Comparing and Combining Shapes

Unit 3 - How Many of Each? How Many in All

Unit 4 - Fish Lengths and Fraction Rugs

Unit 5 - Number Games and Crayon Problems

Unit 6 - Would You Rather Be an Eagle or a Whale?

Unit 7 - How Many Tens? How Many Ones?

Unit 8 - Blocks and Buildings

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Number & Operation	
Count, compare and represent whole numbers up to 120, with an emphasis on groups of tens and ones.	
1.1.1.1 Use place value to describe whole numbers between 10 and 100 in terms of tens and ones.	Unit 1: 1.3, 1.4, 1.5, 2.1, 2.6, 3.6 Unit 2: 1.3, 1.6 Unit 3: 1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4, 2.8, 3.5, 4.1, 4.2, 4.4, 4.6 Unit 4: 1.2, 1.4, 1.6, 2.3 Unit 5: 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 3.3, 3.4, 3.5 Unit 6: 1.1, 1.2, 1.4, 1.6, 1.7, 1.9 Unit 7: 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1, 2.3, 2.5, 2.7, 3.2, 3.3, 3.4, 3.6, 3.7, 3.8
1.1.1.2 Read, write and represent whole numbers up to 120. Representations may include numerals, addition and subtraction, pictures, tally marks, number lines and manipulatives, such as bundles of sticks and base 10 blocks.	Unit 1: 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.4, 2.8, 3.6, 3.7 Unit 2: 1.1, 1.2, 1.5, 1.7, 2.2, 2.3 Unit 3: 1.2, 2.2, 2.6, 3.3, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8 Unit 7: 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8
1.1.1.3 Count, with and without objects, forward and backward from any given number up to 120.	Unit 1: 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.4, 2.8, 3.6, 3.7 Unit 2: 1.1, 1.2, 1.5, 1.7, 2.2, 2.3 Unit 3: 1.2, 2.2, 2.6, 3.3, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8 Unit 7: 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8
1.1.1.4 Find a number that is 10 more or 10 less than a given number.	Unit 7: 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.5, 2.6, 2.7, 2.8, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8
1.1.1.5 Compare and order whole numbers up to 100.	Unit 1: 2.5, 3.6, 3.7 Unit 2: 1.1, 1.2, 1.5, 1.7, 2.2 Unit 3: 1.2, 1.3, 2.1, 2.2, 2.4, 2.6, 2.8, 3.3, 3.4, 3.5, 4.1, 4.2, 4.4, 4.5, 4.6, 4.7, 4.8 Unit 4: 2.3 Unit 7: 2.2, 2.4, 2.5, 2.6, 2.7, 2.8

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1.1.1.6 Use words to describe the relative size of numbers.	Unit 1: 1.2, 1.3 Unit 3: 1.2, 2.1, 2.2, 2.3, 2.4, 2.6, 2.7, 3.2, 3.4, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8 Unit 7: 1.3, 1.4, 1.5, 1.6, 1.7, 2.1, 2.2, 2.3, 2.4, 3.2, 3.4, 3.5, 3.6, 3.7
1.1.1.7 Use counting and comparison skills to create and analyze bar graphs and tally charts.	Unit 1: 1.5 Unit 2: 2.1, 2.2, 2.3, 2.4 Unit 3: 4.1 Unit 6: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2.1, 2.2, 2.3
Use a variety of models and strategies to solve addition and subtraction problems in real-world and mathematical contexts.	
1.1.2.1 Use words, pictures, objects, length-based models (connecting cubes), numerals and number lines to model and solve addition and subtraction problems in part-part-total, adding to, taking away from and comparing situations.	Unit 7: 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 Unit 8: 1.6
1.1.2.2 Compose and decompose numbers up to 12 with an emphasis on making ten.	Unit 1: 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 Unit 2: 1.1, 1.2, 1.3, 1.4, 1.7 Unit 3: 1.1, 1.2, 1.3, 1.4, 2.1, 2.4, 2.6, 3.1, 3.4, 3.5, 3.6, 4.1, 4.2, 4.6, 4.8 Unit 4: 1.1, 1.5, 1.6, 1.7, 1.8, 2.4, 2.6 Unit 5: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1, 2.4, 2.6, 2.8, 3.1, 3.2, 3.5, 3.6, 3.7 Unit 6: 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.8, 1.9, 2.2, 2.3 Unit 7: 1.1, 1.2, 1.3, 2.1, 2.2, 2.4, 2.5, 3.2, 3.4, 3.6
1.1.2.3 Recognize the relationship between counting and addition and subtraction. Skip count by 2s, 5s, and 10s.	Unit 1: 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 Unit 2: 1.3, 1.6, 2.5 Unit 3: 1.1, 1.3, 1.4, 3.1, 3.2 Unit 5: 2.4, 2.6 Unit 7: 1.1, 1.2, 1.3

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Algebra	
Recognize and create patterns; use rules to describe patterns.	
1.2.1.1 Create simple patterns using objects, pictures, numbers and rules. Identify possible rules to complete or extend patterns. Patterns may be repeating, growing or shrinking. Calculators can be used to create and explore patterns.	Unit 2: 1.1, 1.2, 1.3, 1.4, 1.5 Unit 3: 4.3, 4.4, 4.5, 4.6, 4.7, 4.8
Use number sentences involving addition and subtraction basic facts to represent and solve real-world and mathematical problems; create real-world situations corresponding to number sentences.	
1.2.2.1 Represent real-world situations involving addition and subtraction basic facts, using objects and number sentences.	Unit 1: 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 Unit 2: 1.1, 1.4 Unit 3: 2.1, 2.4, 2.5, 2.6, 2.7, 2.8, 3.1, 3.2, 3.4, 3.6, 4.8 Unit 4: 1.5, 1.6, 1.7, 1.8, 2.4, 2.6 Unit 5: 1.1, 1.5, 1.6, 1.7, 1.8, 2.3, 2.4, 2.6, 2.7, 2.8, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 Unit 6: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2.2, 2.3 Unit 7: 1.1, 1.2, 1.3, 3.2, 3.4, 3.6
1.2.2.2 Determine if equations involving addition and subtraction are true.	Unit 1: 2.2, 2.4, 2.5, 2.6, 3.2, 3.4 Unit 3: 1.2, 2.5, 2.6, 2.7, 2.8, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.1, 4.2, 4.6, 4.8 Unit 4: 1.1, 1.6 Unit 5: 2.1, 2.3, 2.5, 2.7, 2.8, 3.1, 3.4, 3.6
1.2.2.3 Use number sense and models of addition and subtraction, such as objects and number lines, to identify the missing number in an equation such as: $2 + 4 = \underline{\quad}$; $3 + \underline{\quad} = 7$; $5 = \underline{\quad} - 3$.	Unit 1: 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 Unit 2: 1.3, 1.7 Unit 3: 1.1, 1.3, 1.4, 2.1 Unit 4: 1.2, 1.4, 1.6, 2.3 Unit 5: 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1, 2.4, 2.5, 3.2, 3.5, 3.7 Unit 6: 1.3, 1.5, 2.2, 2.3 Unit 7: 1.6, 1.7, 1.8

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1.2.2.4 Use addition or subtraction basic facts to represent a given problem situation using a number sentence.	Unit 1: 2.4, 2.6, 2.7, 3.2, 3.3, 3.4, 3.5, 3.7 Unit 3: 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 Unit 5: 2.6, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
Geometry & Measurement	
Describe characteristics of basic shapes. Use basic shapes to compose and decompose other objects in various contexts.	
1.3.1.1 Describe characteristics of two- and three-dimensional objects, such as triangles, squares, rectangles, circles, rectangular prisms, cylinders, cones and spheres.	Unit 1: 1.1, 1.2, 1.3, 1.4, 1.5 Unit 2: 1.1, 1.2, 1.3, 1.4, 1.6, 1.7, 2.1, 2.2, 2.3, 2.4, 2.5 Unit 4: 1.8, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6 Unit 8: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6
1.3.1.2 Compose (combine) and decompose (take apart) two- and three-dimensional figures such as triangles, squares, rectangles, circles, rectangular prisms and cylinders.	Unit 1: 1.1, 1.2, 1.3, 1.4, 1.5 Unit 2: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7 Unit 4: 1.8, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6 Unit 8: 1.3, 1.5, 1.6, 1.7, 1.8, 1.9
Use basic concepts of measurement in real-world and mathematical situations involving length, time and money.	
1.3.2.1 Measure the length of an object in terms of multiple copies of another object.	Unit 4: 1.3, 1.4, 1.5, 1.6, 1.7
1.3.2.2 Tell time to the hour and half-hour.	Unit 1: 1.4, 2.3 Unit 3: 1.4, 2.7, 4.3 Unit 4: 1.1, 1.2, 1.3, 1.5, 1.7, 2.1, 2.5, 2.6 Unit 5: 1.1, 1.2, 1.7, 2.4, 2.5, 2.8, 3.2 Unit 6: 1.6, 2.1 Unit 7: 2.1, 2.3, 3.3, 3.7 Unit 8: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6
1.3.2.3 Identify pennies, nickels and dimes and find the value of a group of these coins, up to one dollar.	For related content, please see: Unit 1: 1.2, 1.3, 1.5, 2.1, 2.6, 3.5, 3.6 Unit 5: 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 Unit 6: 1.3, 1.5, 2.2, 2.3 Unit 7: 1.1, 1.2, 1.3, 3.4

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Grade 2 Units

Unit 1 – Coins, Numbers Strings, and Story Problem

Unit 2 – Attributes of Shapes and Parts of a Whole

Unit 3 – How Many Stickers? How Many Cents?

Unit 4 – Pockets, Teeth, and Guess My Rule

Unit 5 – How Many Tens? How Many Hundreds?

Unit 6 - How Far Can You Jump?

Unit 7 – Partners, Teams, and Other Groups

Unit 8 – Enough for the Class? Enough for the Grade?

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Number & Operation	
Compare and represent whole numbers up to 1000 with an emphasis on place value and equality.	
2.1.1.1 Read, write and represent whole numbers up to 1000. Representations may include numerals, addition, subtraction, multiplication, words, pictures, tally marks, number lines and manipulatives, such as bundles of sticks and base 10 blocks.	Unit 1: 1.4, 1.5, 1.6 Unit 2: 2.3 Unit 3: 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.8, 2.1, 3.3, 3.5 Unit 5: 1.2, 2.2, 2.3, 2.4, 2.5, 2.6, 3.2, 3.5, 3.6 Unit 6: 1.1, 1.2, 1.4, 1.5, 2.2 Unit 7: 1.1, 1.2 Unit 8: 2.1, 2.2, 2.3, 2.4, 2.5, 2.9
2.1.1.2 Use place value to describe whole numbers between 10 and 1000 in terms of hundreds, tens and ones. Know that 100 is 10 tens, and 1000 is 10 hundreds.	Unit 3: 1.4, 1.5, 1.6, 1.7, 1.8, 3.2, 3.3, 3.5, 3.6 Unit 5: 2.2, 2.3, 2.4, 2.5, 2.6, 3.2, 3.6, 3.7 Unit 6: 1.1, 1.2, 1.4, 1.5, 2.2 Unit 7: 1.1, 2.1, 2.3 Unit 8: 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9
2.1.1.3 Find 10 more or 10 less than a given three-digit number. Find 100 more or 100 less than a given three-digit number.	Unit 3: 3.5, 3.6 Unit 4: 1.5 Unit 5: 1.2, 1.6, 2.3, 2.4, 2.5, 2.6, 3.5, 3.6
2.1.1.4 Round numbers up to the nearest 10 and 100 and round numbers down to the nearest 10 and 100.	Unit 5: 2.1, 2.5, 2.6 Unit 8: 2.2, 2.4, 2.5, 2.6, 2.7, 2.8
2.1.1.5 Compare and order whole numbers up to 1000.	Unit 3: 3.3, 3.5 Unit 5: 1.3, 1.4, 1.5, 1.6, 2.2, 2.3, 2.4, 2.5, 2.6, 3.5, 3.8 Unit 6: 1.1, 1.4 Unit 7: 1.1, 2.1 Unit 8: 2.1
Demonstrate mastery of addition and subtraction basic facts; add and subtract one- and two-digit numbers in real-world and mathematical problems.	
2.1.2.1 Use strategies to generate addition and subtraction facts including making tens, fact families, doubles plus or minus one, counting on, counting back, and the commutative and associative properties. Use the relationship between addition and subtraction to generate basic facts.	Unit 1: 2.2, 2.3, 2.5, 2.8, 3.1, 3.2, 3.6, 4.1, 4.2, 4.3, 4.4, 4.5 Unit 3: 1.4, 1.5, 1.6, 1.7, 1.8, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 3.4, 3.7 Unit 5: 1.3, 1.4, 1.5, 1.6, 2.2, 2.4, 3.1, 3.2, 3.4, 3.5, 3.6, 3.7, 3.8 Unit 8: 1.1, 1.2, 1.3, 1.6, 1.7, 1.8, 1.9, 1.10, 1.11, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9

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2.1.2.2 Demonstrate fluency with basic addition facts and related subtraction facts.	Unit 1: 2.4, 2.7, 3.6 Unit 3: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 Unit 4: 1.1, 2.5 Unit 5: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 Unit 6: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6 Unit 7: 1.1, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6 Unit 8: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 1.11, 2.6
2.1.2.3 Estimate sums and differences up to 100.	Unit 3: 1.3, 1.4, 1.5, 1.6, 3.5, 3.8 Unit 8: 1.4, 1.5, 1.6, 1.9, 1.10, 1.11, 2.2, 2.4
2.1.2.4 Use mental strategies and algorithms based on knowledge of place value to add and subtract two-digit numbers. Strategies may include decomposition, expanded notation, and partial sums and differences.	Unit 8: 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9
2.1.2.5 Solve real-world and mathematical addition and subtraction problems involving whole numbers with up to 2 digits.	Unit 1: 4.1, 4.2, 4.3, 4.4, 4.5 Unit 3: 1.7, 1.8, 2.1, 2.2, 2.3, 2.4, 2.6, 2.7, 2.8, 2.9, 3.4, 3.6, 3.7 Unit 5: 2.1, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 Unit 8: 1.1, 1.2, 1.3, 1.4, 1.7, 1.8, 1.9, 1.10, 1.11
2.1.2.6 Use addition and subtraction to create and obtain information from tables, bar graphs and tally charts.	Unit 4: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.4
Algebra	
Recognize, create, describe, and use patterns and rules to solve real-world and mathematical problems.	
2.2.1.1 Identify, create and describe simple number patterns involving repeated addition or subtraction, skip counting and arrays of objects such as counters or tiles. Use patterns to solve problems in various contexts.	Unit 7: 1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6

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Use number sentences involving addition, subtraction and unknowns to represent and solve real-world and mathematical problems; create real-world situations corresponding to number sentences.	
2.2.2.1 Understand how to interpret number sentences involving addition, subtraction and unknowns represented by letters. Use objects and number lines and create real-world situations to represent number sentences.	Unit 1: 2.3, 2.4, 3.1, 3.3, 3.4, 3.6, 4.1, 4.2, 4.3, 4.4, 4.5 Unit 2: 1.3, 1.4, 2.1, 3.1 Unit 3: 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.2, 2.3, 2.4, 2.6, 2.7, 2.8, 2.9, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 Unit 4: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.6 Unit 5: 1.3, 1.5, 1.6, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 Unit 6: 1.2, 1.3, 1.5, 1.6, 2.2, 2.2, 2.3, 2.4, 2.5, 2.6 Unit 7: 1.1, 1.3, 1.4, 2.3, 2.5 Unit 8: 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 1.11, 2.1, 2.3, 2.5, 2.6, 2.7
2.2.2.2 Use number sentences involving addition, subtraction, and unknowns to represent given problem situations. Use number sense and properties of addition and subtraction to find values for the unknowns that make the number sentences true.	Unit 1: 2.3, 2.4, 3.1, 3.3, 3.4, 3.6, 4.1, 4.2, 4.3, 4.4, 4.5 Unit 2: 1.3, 1.4, 2.1, 3.1 Unit 3: 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.2, 2.3, 2.4, 2.6, 2.7, 2.8, 2.9, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 Unit 4: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.6 Unit 5: 1.3, 1.5, 1.6, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 Unit 6: 1.2, 1.3, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6 Unit 7: 1.1, 1.3, 1.4, 2.3, 2.5 Unit 8: 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 1.11, 2.1, 2.3, 2.5, 2.6, 2.7
Geometry & Measurement	
Identify, describe and compare basic shapes according to their geometric attributes.	
2.3.1.1 Describe, compare, and classify two- and three-dimensional figures according to number and shape of faces, and the number of sides, edges and vertices (corners).	Unit 1: 1.2, 1.3, 1.4, 1.5 Unit 2: 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1

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2.3.1.2 Identify and name basic two- and three-dimensional shapes, such as squares, circles, triangles, rectangles, trapezoids, hexagons, cubes, rectangular prisms, cones, cylinders and spheres.	Unit 1: 1.2, 1.3, 1.4, 1.5 Unit 2: 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1
Understand length as a measurable attribute; use tools to measure length.	
2.3.2.1 Understand the relationship between the size of the unit of measurement and the number of units needed to measure the length of an object.	Unit 6: 2.3, 2.4, 2.5, 2.6
2.3.2.2 Demonstrate an understanding of the relationship between length and the numbers on a ruler by using a ruler to measure lengths to the nearest centimeter or inch.	Unit 6: 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6
Use time and money in real-world and mathematical situations.	
2.3.3.1 Tell time to the quarter-hour and distinguish between a.m. and p.m.	Unit 1: 2.5, 2.7, 3.1, 4.1, 4.3, Unit 2: 2.2, 3.7, 3.8 Unit 3: 2.4, 3.4, 3.6 Unit 4: 1.3, 1.6, 2.3 Unit 5: 1.1, 1.6, 3.1 Unit 6: 1.1, 1.3, 2.5 Unit 7: 1.2, 1.4, 2.3, 2.4 Unit 8: 1.1, 1.4, 1.7, 1.8, 1.9
2.3.3.2 Identify pennies, nickels, dimes and quarters. Find the value of a group of coins and determine combinations of coins that equal a given amount.	Unit 1: 1.3, 1.4, 1.5, 3.3, 3.4, 3.5, 3.6, 3.7 Unit 2: 1.1 Unit 3: 1.3, 1.4, 1.5, 2.5, 2.7, 2.8, 3.1, 3.2 Unit 4: 2.6 Unit 5: 1.4, 1.5, 1.6, 2.2 Unit 8: 1.4, 1.5, 1.6, 1.7, 1.9, 1.10, 1.11, 2.6, 2.9

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Grade 3 Units

Unit 1 - Understanding Equal Groups

Unit 2 Graphs and Line Plots

Unit 3 - Travel Stories and Collections

Unit 4 - Perimeter, Area, and Polygons

Unit 5 - Cube Patterns, Arrays, and Multiples of 10

Unit 6 - Fair Shares and Fractions on Number Lines

Unit 7 - How Many Miles?

Unit 8 Larger Numbers and Multi-Step Problems

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Number & Operation	
Compare and represent whole numbers up to 100,000 with an emphasis on place value and equality.	
3.1.1.1 Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.	For related content, please see: Unit 3: 2.1, 2.2, 2.3, 2.4, 3.3 Unit 7: 1.3, 1.4
3.1.1.2 Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.	For related content, please see: Unit 3: 2.1, 2.2, 2.3, 2.4, 3.3 Unit 7: 1.3, 1.4
3.1.1.3 Find 10,000 more or 10,000 less than a given five-digit number. Find 1000 more or 1000 less than a given four- or five-digit. Find 100 more or 100 less than a given four- or five-digit number.	For related content, please see: Unit 1: 1.1, 1.2 Unit 3: 2.1, 2.2, 2.3, 2.4 Unit 7: 2.1, 2.2, 2.3, 3.2, 3.3, 3.4
3.1.1.4 Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.	Unit 3: 2.1, 2.4, 3.2, 3.3, 3.4, 3.5 Unit 4: 1.1, 1.2, 1.3, 1.4, 1.5, 2.4, 2.5, 2.6, 3.2, 3.5 Unit 5: 1.3, 1.4, 1.5, 2.1, 2.2, 3.5, 3.6 Unit 7: 2.1, 2.2, 2.3, 2.4, 2.5, 3.4, 3.5, 3.6 Unit 8: 2.1, 2.2, 2.3, 2.4, 2.5, 3.1, 3.2, 3.3
3.1.1.5 Compare and order whole numbers up to 100,000.	Unit 3: 2.1, 2.2, 2.3, 2.4, 5.1, 5.2
Add and subtract multi-digit whole numbers; represent multiplication and division in various ways; solve real-world and mathematical problems using arithmetic.	
3.1.2.1 Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.	Unit 1: 2.4, 2.5, 3.1, 3.2, 3.3, 3.4, 3.7, 4.2, 4.3, 4.4, 4.5, 4.6 Unit 2: 1.2, 1.4, 1.6, 1.7, 1.9, 2.1, 2.4 Unit 3: 1.1, 1.3, 1.5, 2.1, 2.2, 2.3, 2.4, 3.1, 3.3, 3.4, 4.1, 4.3, 4.4, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6 Unit 4: 1.1, 1.2, 1.5, 2.1, 2.2, 2.4, 2.6, 3.1, 3.2, 3.5 Unit 5: 1.1, 1.3, 1.4, 1.5, 2.1, 2.2, 2.5, 3.5, 3.6 Unit 6: 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3 Unit 7: 1.1, 1.3, 1.5, 1.7, 2.2, 2.3, 2.5, 3.1, 3.3, 3.6 Unit 8: 2.2, 2.3, 2.4, 2.5, 3.1

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3.1.2.2 Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.	Unit 3: 2.1, 2.2, 2.3, 2.4, 5.1, 5.2 Unit 7: 1.5, 1.6, 1.7, 2.1, 2.2, 2.3, 2.4, 2.5, 3.1, 3.3, 3.5, 3.6
3.1.2.3 Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.	Unit 1: 1.1, 1.2, 1.3, 1.4, 2.3, 2.4, 2.5, 2.6, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3, 4.5, 4.6 Unit 4: 1.1 Unit 5: 1.2, 1.3, 1.4, 1.5 Unit 8: 1.2, 1.3
3.1.2.4 Solve real-world and mathematical problems involving multiplication and division, including both "how many in each group" and "how many groups" division problems.	Unit 1: 1.2, 1.3, 1.4, 2.3, 2.4, 2.5, 2.6, 3.4, 3.7, 4.1, 4.3, 4.5, 4.6 Unit 4: 2.5, 2.6, 2.7, 3.5 Unit 5: 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1, 3.2, 3.4, 3.5, 3.6 Unit 8: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.3, 2.4, 2.5, 3.1, 3.2, 3.3, 3.4, 3.5
3.1.2.5 Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two- or three-digit number by a one-digit number. Strategies may include mental strategies, partial products, the standard algorithm, and the commutative, associative, and distributive properties.	Unit 1: 3.1, 3.2, 3.4, 4.1, 4.2, 4.5, 4.6 Unit 5: 1.4, 1.5, 2.5, 2.6, 3.1, 3.2, 3.4, 3.5, 3.6 Unit 8: 2.1, 2.2, 2.4, 2.5, 3.1, 3.2, 3.3, 3.4, 3.5
Understand meanings and uses of fractions in real-world and mathematical situations.	
3.1.3.1 Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.	Unit 6: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1, 2.2, 2.3, 2.4, 2.5

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3.1.3.2 Understand that the size of a fractional part is relative to the size of the whole.	Unit 6: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1, 2.2, 2.3, 2.4, 2.5
3.1.3.3 Order and compare unit fractions and fractions with like denominators by using models and an understanding of the concept of numerator and denominator.	Unit 6: 1.2, 2.2, 2.3, 2.4, 2.5 Unit 7: 1.4, 2.4, 3.5 Unit 8: 3.4
Algebra	
Use single-operation input-output rules to represent patterns and relationships and to solve real-world and mathematical problems.	
3.2.1.1 Create, describe, and apply single-operation input-output rules involving addition, subtraction and multiplication to solve problems in various contexts.	Unit 1: 1.3, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.5, 3.6, 3.7 Unit 3: 1.4, 2.1 Unit 4: 1.1 Unit 5: 1.2, 1.3, 3.1, 3.2 Unit 6: 2.5 Unit 7: 1.1, 1.3, 1.4, 1.5, 1.6, 1.7, 3.1, 3.2, 3.3, 3.4, 3.5 Unit 8: 1.2, 3.1, 3.2, 3.3
Use number sentences involving multiplication and division basic facts and unknowns to represent and solve real-world and mathematical problems; create real-world situations corresponding to number sentences.	
3.2.2.1 Understand how to interpret number sentences involving multiplication and division basic facts and unknowns. Create real-world situations to represent number sentences.	Unit 1: 4.1, 4.2, 4.3, 4.5, 4.6 Unit 5: 1.4, 1.5, 2.4 Unit 7: 3.1, 3.2, 3.3 Unit 8: 1.2, 1.6, 2.3
3.2.2.2 Use multiplication and division basic facts to represent a given problem situation using a number sentence. Use number sense and multiplication and division basic facts to find values for the unknowns that make the number sentences true.	Unit 1: 4.5 Unit 2: 1.5 Unit 3: 2.4, 4.4, 5.6 Unit 4: 1.3, 1.4, 1.5 Unit 5: 3.3, 3.4, 3.5, 3.6 Unit 6: 1.1, 2.1, 2.4 Unit 7: 1.3, 1.4, 1.5, 1.6, 1.7, 2.5, 3.4, 3.5, 3.6 Unit 8: 2.4, 2.5, 3.1, 3.2, 3.3, 3.4, 3.5

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Geometry & Measurement	
Use geometric attributes to describe and create shapes in various contexts.	
3.3.1.1 Identify parallel and perpendicular lines in various contexts, and use them to describe and create geometric shapes, such as right triangles, rectangles, parallelograms and trapezoids.	For related content, please see: Unit 4: 3.1, 3.2, 3.3, 3.4, 3.5
3.3.1.2 Sketch polygons with a given number of sides or vertices (corners), such as pentagons, hexagons and octagons.	Unit 4: 3.1, 3.2, 3.3, 3.4, 3.5
Understand perimeter as a measurable attribute of real-world and mathematical objects. Use various tools to measure distances.	
3.3.2.1 Use half units when measuring distances.	Unit 2: 2.1, 2.2, 2.3, 2.4, 2.5, 2.6 Unit 6: 1.6
3.3.2.2 Find the perimeter of a polygon by adding the lengths of the sides.	Unit 4: 1.1, 1.2, 1.3, 1.4, 1.5, 2.4, 3.4, 3.5
3.3.2.3 Measure distances around objects.	Unit 4: 1.1, 1.2, 1.3, 1.4, 1.5, 2.4
Use time, money and temperature to solve real-world and mathematical problems.	
3.3.3.1 Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.	Unit 3: 4.1, 4.4, 4.5, 5.1, 5.2, 5.5, 5.6 Unit 6: 1.6, 1.7, 1.8, 2.4, 2.5 Unit 8: 1.1, 1.3, 1.4, 1.5, 1.6, 3.4, 3.5
3.3.3.2 Know relationships among units of time.	Unit 3: 4.1, 4.4, 4.5, 5.1, 5.2, 5.5, 5.6 Unit 6: 1.6, 1.7, 1.8, 2.4, 2.5 Unit 8: 1.1, 1.3, 1.4, 1.5, 1.6, 3.4, 3.5
3.3.3.3 Make change up to one dollar in several different ways, including with as few coins as possible.	For related content, please see: Unit 3: 1.3, 3.1 Unit 7: 1.5, 2.1, 3.3, 3.5, 3.6
3.3.3.4 Use an analog thermometer to determine temperature to the nearest degree in Fahrenheit and Celsius.	Topic not covered in Grade 3. For related content, please see Grade 5: Unit 5: 1.1, 1.2

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Data Analysis	
Collect, organize, display, and interpret data. Use labels and a variety of scales and units in displays.	
3.4.1.1 Collect, display and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels and units.	Unit 2: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2.5, 2.6 Unit 3: 1.1 Unit 8: 3.2

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Grade 4 Units

Unit 1 - Arrays, Factors, and Multiplicative Comparison

Unit 2 - Generating and Representing Measurement Data

Unit 3 - Multiple Towers and Cluster Problems

Unit 4 - Measuring and Classifying Shapes

Unit 5 - Large Numbers and Landmarks

Unit 6 - Fraction Cards and Decimal Grids

Unit 7 - How Many Packages and Groups?

Unit 8 - Penny Jars and Towers

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Number & Operation	
Demonstrate mastery of multiplication and division basic facts; multiply multi-digit numbers; solve real-world and mathematical problems using arithmetic.	
4.1.1.1 Demonstrate fluency with multiplication and division facts.	Unit 1: 1.4, 2.1, 2.2, 2.3, 2.4 Unit 3: 1.1, 1.4, 2.1, 2.2, 2.3, 2.4, 2.5, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 Unit 7: 2.1
4.1.1.2 Use an understanding of place value to multiply a number by 10, 100 and 1000.	Unit 3: 3.2, 3.3
4.1.1.3 Multiply multi-digit numbers, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms.	Unit 1: 1.1, 1.3, 1.4, 1.6, 1.7, 1.8, 2.1, 2.4 Unit 3: 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.3, 2.4, 2.5, 2.6, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, Unit 7: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 2.1, 2.2, 2.3, 2.4, 2.5, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6
4.1.1.4 Estimate products and quotients of multi-digit whole numbers by using rounding, benchmarks and place value to assess the reasonableness of results.	Unit 7: 1.3, 1.4, 1.5, 2.2, 2.3, 3.4, 3.5, 3.6
4.1.1.5 Solve multi-step real-world and mathematical problems requiring the use of addition, subtraction and multiplication of multi-digit whole numbers. Use various strategies, including the relationship between operations, the use of technology, and the context of the problem to assess the reasonableness of results.	Unit 3: 2.5, 3.5, 3.6, 3.7 Unit 4: 4.4, 4.5, 4.6 Unit 5: 1.2, 1.4, 1.5, 1.6, 2.4, 2.5, 2.6, 2.7, 3.4, 3.5, 3.6 Unit 7: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 2.1, 2.2, 2.3, 2.4, 2.5, 3.5, 3.6
4.1.1.6 Use strategies and algorithms based on knowledge of place value, equality and properties of operations to divide multi-digit whole numbers by one- or two-digit numbers. Strategies may include mental strategies, partial quotients, the commutative, associative, and distributive properties and repeated subtraction.	Unit 3: 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.7 Unit 7: 3.1, 3.2, 3.3, 3.4, 3.5, 3.6

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Represent and compare fractions and decimals in real-world and mathematical situations; use place value to understand how decimals represent quantities.	
4.1.2.1 Represent equivalent fractions using fraction models such as parts of a set, fraction circles, fraction strips, number lines and other manipulatives. Use the models to determine equivalent fractions.	Unit 6: 1.1, 1.2, 1.3, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.8
4.1.2.2 Locate fractions on a number line. Use models to order and compare whole numbers and fractions, including mixed numbers and improper fractions.	Unit 6: 2.5, 2.6, 2.8
4.1.2.3 Use fraction models to add and subtract fractions with like denominators in real-world and mathematical situations. Develop a rule for addition and subtraction of fractions with like denominators.	Unit 6: 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.4
4.1.2.4 Read and write decimals with words and symbols; use place value to describe decimals in terms of thousands, hundreds, tens, ones, tenths, hundredths and thousandths.	Unit 6: 1.4, 1.5, 1.6, 2.7, 2.8, 3.5, 3.6
4.1.2.5 Compare and order decimals and whole numbers using place value, a number line and models such as grids and base 10 blocks.	Unit 6: 2.7, 2.8
4.1.2.6 Read and write tenths and hundredths in decimal and fraction notations using words and symbols; know the fraction and decimal equivalents for halves and fourths.	Unit 6: 1.4, 1.5, 1.6, 2.7, 2.8, 3.6
4.1.2.7 Round decimals to the nearest tenth.	For related content, please see: Unit 5: 1.1, 1.2, 1.3, 1.5, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3 Unit 6: 2.7, 2.8

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Algebra	
Use input-output rules, tables and charts to represent patterns and relationships and to solve real-world and mathematical problems.	
4.2.1.1 Create and use input-output rules involving addition, subtraction, multiplication and division to solve problems in various contexts. Record the inputs and outputs in a chart or table.	Unit 2: 1.4 Unit 8: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 18, 1.9, 1.10
Use number sentences involving multiplication, division and unknowns to represent and solve real-world and mathematical problems; create real-world situations corresponding to number sentences.	
4.2.2.1 Understand how to interpret number sentences involving multiplication, division and unknowns. Use real-world situations involving multiplication or division to represent number sentences.	Unit 3: 2.3, 2.4, 2.5, 2.6, 3.1, 3.3, 3.5, 3.6, 3.7 Unit 4: 4.4, 4.5, 4.6 Unit 7: 1.2, 1.6, 1.7, 2.5, 3.1, 3.2, 3.4, 3.5, 3.6
4.2.2.2 Use multiplication, division and unknowns to represent a given problem situation using a number sentence. Use number sense, properties of multiplication, and the relationship between multiplication and division to find values for the unknowns that make the number sentences true.	Unit 3: 2.3, 2.4, 2.5, 2.6, 3.1, 3.3, 3.5, 3.6, 3.7 Unit 4: 4.4, 4.5, 4.6 Unit 7: 1.2, 1.6, 1.7, 2.5, 3.1, 3.2, 3.4, 3.5, 3.6
Geometry & Measurement	
Name, describe, classify and sketch polygons.	
4.3.1.1 Describe, classify and sketch triangles, including equilateral, right, obtuse and acute triangles. Recognize triangles in various contexts.	Unit 4: 2.1, 2.2, 2.3, 2.4, 2.5
4.3.1.2 Describe, classify and draw quadrilaterals, including squares, rectangles, trapezoids, rhombuses, parallelograms and kites. Recognize quadrilaterals in various contexts.	Unit 4: 2.3, 2.4, 2.5
Understand angle and area as measurable attributes of real-world and mathematical objects. Use various tools to measure angles and areas.	
4.3.2.1 Measure angles in geometric figures and real-world objects with a protractor or angle ruler.	Unit 4: 3.2, 3.3, 3.4
4.3.2.2 Compare angles according to size. Classify angles as acute, right and obtuse.	Unit 4: 3.1, 3.2, 3.3, 3.4

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4.3.2.3 Understand that the area of a two-dimensional figure can be found by counting the total number of same size square units that cover a shape without gaps or overlaps. Justify why length and width are multiplied to find the area of a rectangle by breaking the rectangle into one unit by one unit squares and viewing these as grouped into rows and columns.	Unit 4: 4.4, 4.5
4.3.2.4 Find the areas of geometric figures and real-world objects that can be divided into rectangular shapes. Use square units to label area measurements.	Unit 4: 4.4, 4.5
Use translations, reflections and rotations to establish congruency and understand symmetries.	
4.3.3.1 Apply translations (slides) to figures.	For related content, please see: Unit 4: 4.1, 4.2
4.3.3.2 Apply reflections (flips) to figures by reflecting over vertical or horizontal lines and relate reflections to lines of symmetry.	For related content, please see: Unit 4: 4.1, 4.2
4.3.3.3 Apply rotations (turns) of 90° clockwise or counterclockwise.	For related content, please see: Unit 4: 4.1, 4.2
4.3.3.4 Recognize that translations, reflections and rotations preserve congruency and use them to show that two figures are congruent.	For related content, please see: Unit 4: 4.1, 4.2
Data Analysis	
Collect, organize, display and interpret data, including data collected over a period of time and data represented by fractions and decimals.	
4.4.1.1 Use tables, bar graphs, timelines and Venn diagrams to display data sets. The data may include fractions or decimals. Understand that spreadsheet tables and graphs can be used to display data.	Unit 2: 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6

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Grade 5 Units

Unit 1 – Puzzles, Clusters, and Towers

Unit 2 – Prisms and Solids

Unit 3 – Rectangles, Clocks, and Tracks

Unit 4 – How Many People and Teams?

Unit 5 – Temperature, Height, and Growth

Unit 6 – Between 0 and 1

Unit 7 – Races, Arrays, and Grids

Unit 8 – Properties of Polygons

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Number & Operation	
Divide multi-digit numbers; solve real-world and mathematical problems using arithmetic.	
5.1.1.1 Divide multi-digit numbers, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms. Recognize that quotients can be represented in a variety of ways, including a whole number with a remainder, a fraction or mixed number, or a decimal.	Unit 1: 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 Unit 4: 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 3.5
5.1.1.2 Consider the context in which a problem is situated to select the most useful form of the quotient for the solution and use the context to interpret the quotient appropriately.	Unit 1: 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 Unit 4: 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 3.5 Unit 7: 1.9, 1.10, 1.11, 2.1, 2.2, 2.3, 3.6, 3.7, 3.8, 3.10, 3.11
5.1.1.3 Estimate solutions to arithmetic problems in order to assess the reasonableness of results.	Unit 1: 2.3, 3.2 Unit 3: 2.3, 2.7, 3.3, 3.4, 3.5 Unit 4: 1.1, 1.2, 1.3, 1.4, 2.3, 2.4, 3.2, 3.3, 3.4, 3.5 Unit 6: 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9 Unit 7: 3.2, 3.5, 3.7, 3.8, 3.9, 3.10, 3.11
5.1.1.4 Solve real-world and mathematical problems requiring addition, subtraction, multiplication and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results.	Unit 1: 2.1, 2.7, 3.1, 3.3, 3.4, 3.5, 3.6, 3.7 Unit 4: 1.3, 1.4, 1.5, 2.4, 2.5, 2.6, 2.7, 3.1, 3.2, 3.3, 3.4, 3.5
Read, write, represent and compare fractions and decimals; recognize and write equivalent fractions; convert between fractions and decimals; use fractions and decimals in real-world and mathematical situations.	
5.1.2.1 Read and write decimals using place value to describe decimals in terms of groups from millionths to millions.	Unit 6: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9 Unit 7: 2.3, 2.4, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11
5.1.2.2 Find 0.1 more than a number and 0.1 less than a number. Find 0.01 more than a number and 0.01 less than a number. Find 0.001 more than a number and 0.001 less than a number.	Unit 6: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8

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5.1.2.3 Order fractions and decimals, including mixed numbers and improper fractions, and locate on a number line.	Unit 3: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6 Unit 6: 1.3, 1.4, 1.5, 1.8
5.1.2.4 Recognize and generate equivalent decimals, fractions, mixed numbers and improper fractions in various contexts.	Unit 3: 1.2, 1.3, 1.4, 1.5, 1.6 Unit 6: 1.1, 1.2 Unit 7: 1.1, 1.3, 1.10, 1.11, 2.1, 2.2, 2.3, 2.4
5.1.2.5 Round numbers to the nearest 0.1, 0.01 and 0.001.	Unit 6: 1.6, 1.7, 1.8, 2.3
Add and subtract fractions, mixed numbers and decimals to solve real-world and mathematical problems.	
5.1.3.1 Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms.	Unit 3: 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 Unit 6: 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9
5.1.3.2 Model addition and subtraction of fractions and decimals using a variety of representations.	Unit 3: 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 Unit 6: 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9
5.1.3.3 Estimate sums and differences of decimals and fractions to assess the reasonableness of results.	Unit 3: 2.3, 2.7, 3.3, 3.4, 3.5 Unit 6: 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9
5.1.3.4 Solve real-world and mathematical problems requiring addition and subtraction of decimals, fractions and mixed numbers, including those involving measurement, geometry and data.	Unit 2: 1.5, 1.6, 1.7, 1.8 Unit 3: 2.1, 2.2, 2.3, 2.4, 2.5, 2.7, 3.1, 3.2, 3.3, 3.4, 3.6 Unit 6: 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9 Unit 8: 2.1, 2.2, 2.3, 2.4, 2.5
Algebra	
Recognize and represent patterns of change; use patterns, tables, graphs and rules to solve real-world and mathematical problems.	
5.2.1.1 Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems.	Unit 5: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7
5.2.1.2 Use a rule or table to represent ordered pairs of positive integers and graph these ordered pairs on a coordinate system.	Unit 5: 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 2.3, 2.4, 2.5, 2.6, 2.7

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Use properties of arithmetic to generate equivalent numerical expressions and evaluate expressions involving whole numbers.	
5.2.2.1 Apply the commutative, associative and distributive properties and order of operations to generate equivalent numerical expressions and to solve problems involving whole numbers.	Unit 1: 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 3.4, 3.5, 3.6, 3.7 Unit 3: 2.3, 2.4, 2.5, 3.1, 3.2 Unit 4: 2.1 Unit 5: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7 Unit 8: 2.1, 2.2, 2.3, 2.4, 2.5
Understand and interpret equations and inequalities involving variables and whole numbers, and use them to represent and solve real-world and mathematical problems.	
5.2.3.1 Determine whether an equation or inequality involving a variable is true or false for a given value of the variable.	For related content, please see: Unit 1: 1.1, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 3.4, 3.5, 3.6, 3.7 Unit 3: 2.3, 2.4, 2.5, 3.1, 3.2 Unit 4: 2.1 Unit 5: 1.5, 1.6, 1.7, 2.4, 2.5, 2.6, 2.7 Unit 8: 2.1, 2.2, 2.3, 2.4, 2.5
5.2.3.2 Represent real-world situations using equations and inequalities involving variables. Create real-world situations corresponding to equations and inequalities.	Unit 1: 1.1, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 3.4, 3.5, 3.6, 3.7 Unit 3: 2.3, 2.4, 2.5, 3.1, 3.2 Unit 4: 2.1 Unit 5: 1.5, 1.6, 1.7, 2.4, 2.5, 2.6, 2.7 Unit 8: 2.1, 2.2, 2.3, 2.4, 2.5
5.2.3.3 Evaluate expressions and solve equations involving variables when values for the variables are given.	Unit 1: 1.1, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 3.4, 3.5, 3.6, 3.7 Unit 3: 2.3, 2.4, 2.5, 3.1, 3.2 Unit 4: 2.1 Unit 5: 1.5, 1.6, 1.7, 2.4, 2.5, 2.6, 2.7 Unit 8: 2.1, 2.2, 2.3, 2.4, 2.5
Geometry & Measurement	
Describe, classify, and draw representations of three-dimensional figures.	
5.3.1.1 Describe and classify three-dimensional figures including cubes, prisms and pyramids by the number of edges, faces or vertices as well as the types of faces.	For related content, please see: Unit 2: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1, 2.2, 2.3, 2.4
5.3.1.2 Recognize and draw a net for a three-dimensional figure.	Unit 2: 1.1, 1.2, 1.4, 1.6, 2.1, 2.4

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Determine the area of triangles and quadrilaterals; determine the surface area and volume of rectangular prisms in various contexts.	
5.3.2.1 Develop and use formulas to determine the area of triangles, parallelograms and figures that can be decomposed into triangles.	Unit 8: 2.1, 2.2, 2.3, 2.4, 2.5
5.3.2.2 Use various tools and strategies to measure the volume and surface area of objects that are shaped like rectangular prisms.	Unit 2: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1, 2.2, 2.3, 2.4
5.3.2.3 Understand that the volume of a three-dimensional figure can be found by counting the total number of same-size cubic units that fill a shape without gaps or overlaps. Use cubic units to label volume measurements.	Unit 2: 1.1, 1.2, 1.3, 1.4
5.3.2.4 Develop and use the formulas $V = lwh$ and $V = Bh$ to determine the volume of rectangular prisms. Justify why base area B and height h are multiplied to find the volume of a rectangular prism by breaking the prism into layers of unit cubes.	Unit 2: 1.3, 1.5, 2.1, 2.3, 2.4
Data Analysis	
Display and interpret data; determine mean, median and range.	
5.4.1.1 Know and use the definitions of the mean, median and range of a set of data. Know how to use a spreadsheet to find the mean, median and range of a data set. Understand that the mean is a "leveling out" of data.	For related content, please see: Unit 5: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7
5.4.1.2 Create and analyze double-bar graphs and line graphs by applying understanding of whole numbers, fractions and decimals. Know how to create spreadsheet tables and graphs to display data.	Unit 5: 1.1, 1.2, 1.4, 1.5, 1.6, 1.7, 2.3, 2.4, 2.5, 2.6, 2.7