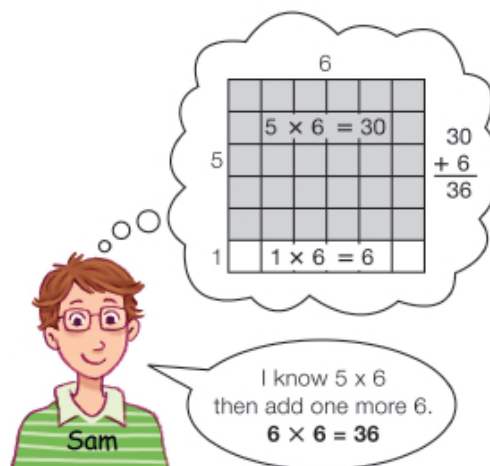


Grade 3 Unit Overviews



Unit 1: Sampling and Classifying

9–10 Days

Students will gather data to make predictions and generalizations about a population. Similar to investigations in earlier grades, students will represent variables in a drawing, collect data, and represent that data (TIMS Laboratory Method). Students will describe and make predictions and generalizations about the population by reading data represented in tables and scaled graphs.

Focus on Major Work ⁱ	
3.OA.D	Solve problems involving the four operations, and identify and explain patterns in arithmetic.
Supporting Work	
3.MD.B	Represent and interpret data.
Additional Work	
3.NBT.A	Use place value understanding and properties of operations to perform multi-digit arithmetic.
Mathematical Practices	
MP1, 2, 3, 4, 5, 6, 7, 8	

Unit 2: Strategies

14–16 Days

Students collect and represent data to identify patterns in sums and differences. They revisit addition and subtraction strategies while exploring these properties and solve an ancient Chinese puzzle. This unit begins a systematic review of the subtraction facts in small groups.

Focus on Major Work	
3.OA.D	Solve problems involving the four operations, and identify and explain patterns in arithmetic.
Additional Work	
3.NBT.A	Use place value understanding and properties of operations to perform multi-digit arithmetic.
Mathematical Practices	
MP1, 2, 3, 4, 5, 6, 8	

Unit 3: Exploring Multiplication

9 Days

Students build on what they know about addition and subtraction to solve and represent multiplication and division stories. Students use drawings and number sentences to represent solution strategies and reasoning.

Focus on Major Work	
3.OA.A	Represent and solve problems involving multiplication and division.
3.OA.C	Multiply and divide within 100.
3.OA.D	Solve problems involving the four operations, and identify and explain patterns in arithmetic.
Mathematical Practices	
MP1, 2, 3, 4, 6, 8	

Unit 4: Place Value Concepts

10–14 Days

Students revisit composing and decomposing numbers and extend the models developed in Grade 2 for partitioning numbers into ones, tens, and hundreds to the thousands place. Students will make connections among a variety of representations: base-ten pieces, base-ten hopper on number lines, and number sentences. As similarly developed in Grade 2, students in Grade 3 will use their understanding and these representations of place value to develop models for adding, subtracting, multiplying, dividing, and comparing larger numbers. Students continue to develop math fact strategies for subtraction and multiplication.

Focus on Major Work	
3.OA.D	Solve problems involving the four operations, and identify and explain patterns in arithmetic.
3.MD.A	Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
Additional Work	
3.NBT.A	Use place value understanding and properties of operations to perform multi-digit arithmetic.
Mathematical Practices	
MP1, 2, 3, 5, 6, 7	

Unit 5: Area of Different Shapes

11–14 Days

Students find the area of shapes with straight and curvy sides. Many of these shapes involve putting pieces of units together as well as counting whole units. Students then apply this measurement skill as they analyze and create different shapes with the same area. Students also find the area of curvy shapes to determine which paper towel brand would hold the most water. They further extend this concept to solve a ghost mystery by comparing characteristics of footprints. Students also review how to measure and write time to the nearest five minutes, and solve problems involving elapsed time.

Focus on Major Work	
3.OA.A	Represent and solve problems involving multiplication and division.
3.OA.B	Understand properties of multiplication and the relationship between multiplication and division.
3.OA.D	Solve problems involving the four operations, and identify and explain patterns in arithmetic.
3.NF.A	Develop understanding of fractions as numbers.
3.MD.C	Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
Supporting Work	
3.MD.B	Represent and interpret data.
Mathematical Practices	
MP1, 2, 3, 4, 5, 6	

Unit 6: Adding Larger Numbers

16–18 Days

Building on previous experiences, students deepen their understanding of place value and expand their ability to add multidigit numbers. Students make connections between base-ten representations and paper-and-pencil methods. They also further develop their mental math strategies. Students collect these varied strategies into a menu to help them compare and start choosing appropriate methods to solve problems efficiently and accurately.

Focus on Major Work	
3.OA.D	Solve problems involving the four operations, and identify and explain patterns in arithmetic.
Additional Work	
3.NBT.A	Use place value understanding and properties of operations to perform multi-digit arithmetic.
Mathematical Practices	
MP1, 2, 3, 4, 5, 6, 7, 8	

Unit 7: Subtracting Larger Numbers

13–14 Days

Building on previous experiences, students deepen their understanding of place value and expand their ability to subtract multidigit numbers. Students make connections between base-ten representations and paper-and-pencil methods. They also further develop their mental math strategies. Students collect these varied strategies into a menu to help them compare and start to choose appropriate methods to solve problems efficiently and accurately. They also solve problems involving time measurements to the nearest minute.

Focus on Major Work	
3.OA.D	Solve problems involving the four operations, and identify and explain patterns in arithmetic.
3.MD.A	Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
Additional Work	
3.NBT.A	Use place value understanding and properties of operations to perform multi-digit arithmetic.
Mathematical Practices	
MP1, 2, 3, 4, 5, 6	

Unit 8: Multiplication Patterns

19–23 Days

In this unit, students focus on identifying patterns and developing strategies for solving the multiplication facts and the related division facts. Students revisit and extend strategies such as repeated addition and skip counting. The rectangular array model is introduced to support students' reasoning from known facts to find a product (break-apart products). This model is used to explore the relationship between multiplication and division and turn-around facts. Students learn how to identify and use the multiplication properties of zero and one.

Focus on Major Work	
3.OA.A	Represent and solve problems involving multiplication and division.
3.OA.B	Understand properties of multiplication and the relationship between multiplication and division.
3.OA.C	Multiply and divide within 100.
3.OA.D	Solve problems involving the four operations, and identify and explain patterns in arithmetic.
3.MD.A	Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
3.MD.C	Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
Supporting Work	
3.MD.B	Represent and interpret data.
Additional Work	
3.NBT.A	Use place value understanding and properties of operations to perform multi-digit arithmetic.
Mathematical Practices	
MP1, 2, 3, 4, 5, 6, 7, 8	

Unit 9: Parts and Wholes

13–14 Days

Students use multiple representations and real-world contexts to support their development of the concepts related to fractions. Students start by representing fractions as part of a set with circle pieces, then fraction strips, drawings, and as points on a number line. Tasks focus on fractions that are easily represented with these models to develop number sense and the ability to visualize fractional parts. Students then make connections and translate between these representations to compare, order, and find equivalent fractions.

Focus on Major Work	
3.NF.A	Develop understanding of fractions as numbers.
Supporting Work	
3.G.A	Reason with shapes and their attributes.
Mathematical Practices	
MP1, 2, 3, 4, 5, 6, 7	

Unit 10: Exploring Multiplication and Division

12–13 Days

This unit continues the study of multiplication and division. Students encounter many types of problems and learn to use a graph and a data table as models. Students also learn how to use these models to solve problems and reason quantitatively. These concepts serve as a foundation for development of whole number computation with multiplication and division as well as fractions, and proportional reasoning.

Focus on Major Work	
3.OA.A	Represent and solve problems involving multiplication and division.
3.OA.B	Understand properties of multiplication and the relationship between multiplication and division.
3.OA.C	Multiply and divide within 100.
3.OA.D	Solve problems involving the four operations, and identify and explain patterns in arithmetic.
3.NF.A	Develop understanding of fractions as numbers.
Mathematical Practices	
MP1, 2, 3, 4, 5, 6, 7, 8	

Unit 11: Analyzing Shapes

17–20 Days

This unit focuses on analyzing two-dimensional and three-dimensional shapes. In the first part of the unit, students explore the properties of the tangram pieces by composing and decomposing shapes with the pieces. Students also measure and analyze the area and perimeter of shapes made with the tans. During the second part of the unit, students describe, construct, and classify three-dimensional shapes using their properties: edges, vertices, faces. They also solve elapsed-time problems involving time measurements to the nearest minute.

Focus on Major Work	
3.MD.A	Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
3.MD.C	Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
Supporting Work	
3.G.A	Reason with shapes and their attributes.
Additional Work	
3.MD.D	Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.
Mathematical Practices	
MP1, 2, 3, 4, 5, 6, 7	

Unit 12: Measurement and Patterns

11–14 Days

In this unit students expand their experiences with multiplication and division by representing the relationship between quantitative variables as a best-fit line on a point graph and in a data table. Students first review the use of the coordinate plane to locate points on a map and look for linear patterns. Treasure maps, scale maps and a story about lost ships create the context for these experiences. Students then use the best-fit line, tables, and reasoning strategies to measure and solve problems about the mass of objects.

Focus on Major Work	
3.OA.A	Represent and solve problems involving multiplication and division.
3.OA.B	Understand properties of multiplication and the relationship between multiplication and division.
3.OA.D	Solve problems involving the four operations, and identify and explain patterns in arithmetic.
3.MD.A	Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
Supporting Work	
3.MD.B	Represent and interpret data.
Mathematical Practices	
MP1, 2, 3, 4, 5, 6, 7	

Unit 13: Multiplication, Division, and Volume

18–21 Days

Students solve problems involving multiplication of two-digit by one-digit numbers and division problems that cannot be solved just by using fact families. They solve multiplication problems by breaking products into the sums of simpler products and write stories that represent their arithmetical processes in a meaningful way. This work leads to the conceptual development of a paper-and-pencil algorithm for multiplication of two-digit by one-digit numbers. Students solve division problems that deal with remainders in various ways and multistep problems that involve both multiplication and division. Students then apply and extend their knowledge of operations using volume as a context. Students solve problems involving volume and measure the volume of containers and objects by counting cubic centimeters, using a graduated cylinder, and by using displacement.

Focus on Major Work	
3.OA.A	Represent and solve problems involving multiplication and division.
3.OA.B	Understand properties of multiplication and the relationship between multiplication and division.
3.OA.C	Multiply and divide within 100.
3.OA.D	Solve problems involving the four operations, and identify and explain patterns in arithmetic.
3.MD.A	Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
Additional Work	
3.NBT.A	Use place value understanding and properties of operations to perform multi-digit arithmetic.
Mathematical Practices	
MP1, 2, 3, 4, 5, 6, 7, 8	

ⁱ The *K–8 Publisher’s Criteria for the Common Core State Standards for Mathematics* identifies every cluster of standards as being either major work, supporting work, or additional work for its respective grade level. It calls for at least 65% of time to be devoted to the major work of the grade with supporting work and additional work engaging students in the major work of the grade where appropriate. See <http://achievethecore.org/shifts-mathematics> for more information.