



# 3<sup>rd</sup> Grade Curriculum Guide

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# Common Core Grade 3 Descriptors

## Common Core Instructional Focus

In Grade 3, instructional time should focus on four critical areas:

**Number:** developing understanding of multiplication and division and strategies for multiplication and division within 100.

**Fractions:** developing understanding of fractions, especially unit fractions (fractions with numerator 1).

**Measurement:** developing understanding of the structure of rectangular arrays and of area.

**Geometry:** describing and analyzing two-dimensional shapes.

### Number and Algebraic Thinking

Students develop an understanding of the meanings of multiplication and division of whole numbers through activities and problems involving equal-sized groups, arrays, and area models; multiplication is finding an unknown product, and division is finding an unknown factor in these situations. For equal-sized group situations, division can require finding the unknown number of groups or the unknown group size. Students use properties of operations to calculate products of whole numbers, using increasingly sophisticated strategies based on these properties to solve multiplication and division problems involving single-digit factors. By comparing a variety of solution strategies, students learn the relationship between multiplication and division.

### Fractions

Students develop an understanding of fractions, beginning with unit fractions. Students view fractions in general as being built out of unit fractions, and they use fractions along with visual fraction models to represent parts of a whole. Students understand that the size of a fractional part is relative to the size of the whole. For example,  $\frac{1}{2}$  of the paint in a small bucket could be less paint than  $\frac{1}{3}$  of the paint in a larger bucket, but  $\frac{1}{3}$  of a ribbon is longer than  $\frac{1}{5}$  of the same ribbon because when the ribbon is divided into 3 equal parts, the parts are longer than when the ribbon is divided into 5 equal parts. Students are able to use fractions to represent numbers equal to, less than, and greater than one. They solve problems that involve comparing fractions by using visual fraction models and strategies based on noticing equal numerators or denominators.

### Measurement

Students recognize area as an attribute of two-dimensional regions. They measure the area of a shape by finding the total number of same size units of area required to cover the shape without gaps or overlaps, a square with sides of unit length being the standard unit for measuring area. Students understand that rectangular arrays can be decomposed into identical rows or into identical columns. By decomposing rectangles into rectangular arrays of squares, students connect area to multiplication, and justify using multiplication to determine the area of a rectangle.

### Shape and Space

Students describe, analyze, and compare properties of two dimensional shapes. They compare and classify shapes by their sides and angles, and connect these with definitions of shapes. Students also relate their fraction work to geometry by expressing the area of part of a shape as a unit fraction of the whole.

# Grade 3 Overview

Place Value	Addition & Subtraction	Multiplication & Division
<p>Use place value understanding and properties of operations to perform multi-digit arithmetic.</p> <p>(3.NBT.A.1)</p>	<p>Use place value understanding and properties of operations to perform multi-digit arithmetic.</p> <p>Solve problems involving the four operations, and identify and explain patterns in arithmetic.</p> <p>(3.NBT.A.2) (3.OA.D.9) (3.OA.D.8)</p>	<p>Multiplication and division</p> <p>Represent and solve problems involving multiplication and division.</p> <p>Understand properties of multiplication and the relationship between multiplication and division.</p> <p>Multiply and divide within 100.</p> <p>Solve problems involving the four operations, and identify and explain patterns in arithmetic</p> <p>(3.OA.A.1)                      (3.OA.C.7) (3.OA.A.3)                      (3.NBT.A.3) (3.OA.A.4)                      (3.OA.D.9) (3.OA.B.5)                      (3.OA.D.8)</p>

Fractions	Measurement	Shape and Space	Data Handling
<p>Develop understanding of fractions as numbers.</p> <p>(3.NF.A.1) (3.NF.A.2) (3.NF.A.3)</p>	<p>Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.</p> <p>Understand concepts of area and relate area to multiplication and to addition.</p> <p>Recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.</p> <p>(3.MD.C.5) (3.MD.C.6) (3.MD.C.7) (3.MD.D.8) (3.MD.A.2)</p>	<p>Reason with shapes and their attributes.</p> <p>(3.G.A.1) (3.G.A.2)</p>	<p>Represent and interpret data.</p> <p>(3.MD.B.3) (3.MD.B.4)</p>

Common Core Learning Standards	Awesomenicity Lessons
<p>Use place value understanding to round whole numbers to the nearest 10 or 100. (3.NBT.A.1)</p>	<p><u>Lesson 1: Let's explore place value</u>  <u>Lesson 2: Let's show the value of each digit</u>  <u>Lesson 3: Let's compare numbers</u>  <u>Lesson 4: Let's order numbers</u>  <u>Lesson 7: Let's round numbers to 10</u>  <u>Lesson 8: Let's round numbers to the nearest hundred</u>  <u>Lesson 9: Let's round to the nearest 1,000</u></p>
<p><i>We recommend at Grade 3, students have a strong understanding of these lesson concepts. However, they are not explicitly outlined in the curriculum.</i></p>	<p><u>Lesson 5: Let's read and write numbers</u>  <u>Lesson 6: Let's write numbers</u>  <u>Lesson 10: Let's write and draw decimal numbers</u>  <u>Lesson 11: Let's compare decimal numbers</u>  <u>Lesson 12: Let's regroup amounts</u>  <u>Lesson 13: Let's apply our regrouping skills</u>  <u>Lesson 14: Let's apply place value skills</u></p>
<p>Consolidation and assessment.</p>	<p><u>Lesson 15: Let's show what we know! (Assessment)</u></p>

Common Core Learning Standards	Awesomenicity Lessons
<p>Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. (3.NBT.A.2)</p> <p>Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. (3.OA.D.9)</p>	<p><u>Lesson 1: Let's explore near doubles and number flexibility</u></p> <p><u>Lesson 2: Let's apply number bond skills to add mentally</u></p> <p><u>Lesson 3: Let's bridge through to the next ten</u></p> <p><u>Lesson 4: Let's count on and find number complements to 100</u></p> <p><u>Lesson 5: Let's explore jump and split strategy</u></p> <p><u>Lesson 6: Let's bridge down to the next ten to subtract</u></p> <p><u>Lesson 7: Let's use jump/split strategy to subtract mentally</u></p> <p><u>Lesson 8: Let's apply mental strategies to subtract</u></p> <p><u>Lesson 9: Let's explore column method with regrouping</u></p> <p><u>Lesson 10: Let's use rounding to problem-solve</u></p> <p><u>Lesson 11: Let's apply addition to add 3 multi-digit numbers</u></p> <p><u>Lesson 12: Let's use column method to subtract</u></p> <p><u>Lesson 13: Let's use subtraction to make change</u></p> <p><u>Lesson 14: Let's apply subtraction strategies</u></p> <p><u>Lesson 15: Let's add and subtract money</u></p>
<p>Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. (3.OA.D.8)</p>	<p><u>Lesson 16: Let's solve addition and subtraction word problems</u></p> <p><u>Lesson 17: Let's apply problem-solving skills</u></p>
<p>Consolidation and assessment.</p>	<p><u>Lesson 18: Let's show what we know! (Assessment)</u></p>

Common Core Learning Standards	Awesomenicity Lessons
<p>Interpret products of whole numbers, e.g., interpret <math>5 \times 7</math> as the total number of objects in 5 groups of 7 objects each. (3.OA.A.1)</p> <p>Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. (3.OA.A.3)</p> <p>Determine the unknown whole number in a multiplication or division equation relating three whole numbers. (3.OA.A.4)</p> <p>Apply properties of operations as strategies to multiply and divide. (3.OA.B.5)</p> <p>Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that <math>8 \times 5 = 40</math>, one knows <math>40 \div 5 = 8</math>) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. (3.OA.C.7)</p> <p>Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., <math>9 \times 80</math>, <math>5 \times 60</math>) using strategies based on place value and properties of operations. (3.NBT.A.3)</p> <p>Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. (3.OA.D.9)</p>	<p><u>Lesson 1: Introduction to equal groups</u></p> <p><u>Lesson 2: Using skip counting to identifying multiples</u></p> <p><u>Lesson 3: Multiplying by 2 and 4</u></p> <p><u>Lesson 4: Multiplying by 3 and 6</u></p> <p><u>Lesson 5: Multiplying by 4 and 8</u></p> <p><u>Lesson 6: Multiplying by 7</u></p> <p><u>Lesson 7: Multiplying by 9</u></p> <p><u>Lesson 8: Multiplying larger numbers by 10</u></p> <p><u>Lesson 9: Multiplying numbers by 10, 100 and 1,000</u></p> <p><u>Lesson 10: Exploring multiples</u></p> <p><u>Lesson 11: Investigating factors</u></p> <p><u>Lesson 12: Identifying factor friends</u></p> <p><u>Lesson 13: Identifying factors</u></p> <p><u>Lesson 14: Multiplying multiples of 10</u></p> <p><u>Lesson 15: Using place value dots to multiply</u></p> <p><u>Lesson 16: Introduction to grid method</u></p> <p><u>Lesson 17: Applying grid method</u></p> <p><u>Lesson 18: Introduction to compensation strategy</u></p> <p><u>Lesson 19: Exploring creative ways to multiply</u></p> <p><u>Lesson 20: Introduction to partial product strategy</u></p>
<p>Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. (3.OA.D.8)</p>	<p><u>Lesson 21: Solve multiplication word problems</u></p>
<p>Consolidation and assessment.</p>	<p><u>Lesson 22: Multiplication assessment</u></p>

Common Core Learning Standards	Awesomenicity Lessons
<p>Interpret products of whole numbers, e.g., interpret <math>5 \times 7</math> as the total number of objects in 5 groups of 7 objects each. (3.OA.A.1)</p> <p>Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. (3.OA.A.3)</p> <p>Determine the unknown whole number in a multiplication or division equation relating three whole numbers. (3.OA.A.4)</p> <p>Apply properties of operations as strategies to multiply and divide. (3.OA.B.5)</p> <p>Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that <math>8 \times 5 = 40</math>, one knows <math>40 \div 5 = 8</math>) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. (3.OA.C.7)</p> <p>Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., <math>9 \times 80</math>, <math>5 \times 60</math>) using strategies based on place value and properties of operations. (3.NBT.A.3)</p> <p>Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. (3.OA.D.9)</p>	<p><a href="#"><u>Lesson 1: Sharing in equal groups</u></a></p> <p><a href="#"><u>Lesson 2: Applying doubling a halving skills</u></a></p> <p><a href="#"><u>Lesson 3: Division vocabulary and skip counting</u></a></p> <p><a href="#"><u>Lesson 4: Identifying remainders</u></a></p> <p><a href="#"><u>Lesson 5: Exploring remainders</u></a></p> <p><a href="#"><u>Lesson 6: Introduction to inverse operations</u></a></p> <p><a href="#"><u>Lesson 7: Applying inverse operations</u></a></p> <p><a href="#"><u>Lesson 8: Dividing by 10 and 100</u></a></p> <p><a href="#"><u>Lesson 9: Applying dividing by 10 and 100</u></a></p> <p><a href="#"><u>Lesson 10: Intro to place value dot division</u></a></p> <p><a href="#"><u>Lesson 11: Dividing 2-digit and 3-digit numbers using jump strategy</u></a></p> <p><a href="#"><u>Lesson 12: Exploring divisibility</u></a></p> <p><a href="#"><u>Lesson 13: Use chunking strategy to divide</u></a></p> <p><a href="#"><u>Lesson 14: Applying chunking strategy to divide</u></a></p> <p><a href="#"><u>Lesson 15: Applying problem-solving skills</u></a></p>
<p>Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. (3.OA.D.8)</p>	<p><a href="#"><u>Lesson 16: Creating word problems</u></a></p>
<p>Consolidation and assessment.</p>	<p><a href="#"><u>Lesson 17: Using questions to problem-solve</u></a></p> <p><a href="#"><u>Lesson 18: Division Assessment</u></a></p>

Common Core Learning Standards	Awesomenicity Lessons
<p>Understand a fraction <math>\frac{1}{b}</math> as the quantity formed by 1 part when a whole is partitioned into <math>b</math> equal parts; understand a fraction <math>\frac{a}{b}</math> as the quantity formed by <math>a</math> parts of size <math>\frac{1}{b}</math>. (3.NF.A.1)</p> <p>Understand a fraction as a number on the number line; represent fractions on a number line diagram. (3.NF.A.2)</p> <p>Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. (3.NF.A.3)</p>	<p><u>Lesson 1: Identifying fractions</u></p> <p><u>Lesson 2: Creating fractions</u></p> <p><u>Lesson 3: Locating fractions on a number line</u></p> <p><u>Lesson 4: Identifying equivalent fractions</u></p> <p><u>Lesson 5: Finding and identifying equivalent fractions</u></p> <p><u>Lesson 6: Locating equivalent fractions</u></p> <p><u>Lesson 7: Adding and subtracting fractions with like denominators</u></p> <p><u>Lesson 8: Calculating fractions of amounts</u></p> <p><u>Lesson 9: Applying fractions of amounts</u></p> <p><u>Lesson 10: Ordering fractions &amp; intro to mixed numbers</u></p> <p><u>Lesson 11: Connecting mixed numbers to improper fractions</u></p> <p><u>Lesson 12: Connecting fractions to decimals (tenths)</u></p> <p><u>Lesson 13: Connecting fractions to decimals (hundredths)</u></p>
<p>Consolidation and assessment.</p>	<p><u>Lesson 14: Fractions Assessment</u></p>

Common Core Learning Standards	Awesomenicity Lessons
<p>Recognize area as an attribute of plane figures and understand concepts of area measurement. (3.MD.C.5)</p> <p>Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units). (3.MD.C.6)</p> <p>Relate area to the operations of multiplication and addition. (3.MD.C.7)</p> <p>Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. (3.MD.D.8)</p>	<p><a href="#"><u>Lesson 1: Exploring US standard units of measurement and metric measurement</u></a></p> <p><a href="#"><u>Lesson 2: Measuring length with accuracy</u></a></p> <p><a href="#"><u>Lesson 3: Introduction to calculating perimeter</u></a></p> <p><a href="#"><u>Lesson 4: Creating specific perimeters</u></a></p> <p><a href="#"><u>Lesson 5: Calculating the area of rectangles</u></a></p> <p><a href="#"><u>Lesson 6: Using area to create rectangles</u></a></p> <p><a href="#"><u>Lesson 7: Applying area and perimeter</u></a></p>
<p>Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. (3.MD.A.2)</p>	<p><a href="#"><u>Lesson 8: Introduction to mass</u></a></p> <p><a href="#"><u>Lesson 9: Adding mass</u></a></p> <p><a href="#"><u>Lesson 10: Introduction to capacity/volume</u></a></p> <p><a href="#"><u>Lesson 11: Measuring capacity/volume</u></a></p> <p><a href="#"><u>Lesson 12: Metric measurement problem-solving</u></a></p> <p><a href="#"><u>Lesson 13: Measurement Olympics!</u></a></p>
<p>Consolidation and assessment.</p>	<p><a href="#"><u>Lesson 14: Measurement Assessment</u></a></p>

*\* Lesson 4 can be skipped in the US Common Core*

Common Core Learning Standards	Awesomenicity Lessons
<p>Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having 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. (3.G.A.1)</p> <p>Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. (3.G.A.2)</p>	<p><a href="#"><u>Lesson 1: Introduction to angles</u></a></p> <p><a href="#"><u>Lesson 2: Introduction to position and turns</u></a></p> <p><a href="#"><u>Lesson 3: Ordering and identifying angles</u></a></p> <p><a href="#"><u>Lesson 4: Introduction to lines</u></a></p> <p><a href="#"><u>Lesson 5: Identifying 2D shapes</u></a></p> <p><a href="#"><u>Lesson 6: Classifying triangles</u></a></p> <p><a href="#"><u>Lesson 7: Classifying quadrilaterals</u></a></p> <p><a href="#"><u>Lesson 8: Identifying lines of symmetry</u></a></p> <p><a href="#"><u>Lesson 9: Creating 2D shapes</u></a></p> <p><a href="#"><u>Lesson 10: Locating coordinates</u></a></p> <p><a href="#"><u>Lesson 11: Plotting coordinates</u></a></p> <p><a href="#"><u>Lesson 12: Translating shapes</u></a></p> <p><a href="#"><u>Lesson 13: Making and describing translations</u></a></p>
<p>Consolidation and assessment.</p>	<p><a href="#"><u>Lesson 14: Shape and Space Assessment</u></a></p>

Common Core Learning Standards	Awesomenicity Lessons
<p>Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one-step and two-step "how many more" and "how many less" problems using the information presented in scaled bar graphs. (3.MD.B.3)</p> <p>Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters. (3.MD.B.4)</p>	<p><a href="#"><u>Lesson 1: Interpreting pictograms and bar graphs</u></a>  <a href="#"><u>Lesson 2: Creating bar graphs</u></a>  <a href="#"><u>Lesson 3: Gathering and presenting data</u></a>  <a href="#"><u>Lesson 4: Interpreting line graphs</u></a>  <a href="#"><u>Lesson 5: Creating line graphs</u></a></p>
<p>Describe possible everyday events and order their chances of occurring.  <i>*Note, these outcomes are not explicitly stated in the curriculum. Feel free to disregard these lessons if necessary. If these lessons are not taught, avoid printing questions 11 and 12 on page 7 of the assessment printables as it pertains to these objectives.</i></p>	<p><a href="#"><u>Lesson 6: Introduction to chance and probability</u></a>  <a href="#"><u>Lesson 7: Using probability to make predictions</u></a></p>
<p>Consolidation and assessment.</p>	<p><a href="#"><u>Lesson 8: Statistics, Probability and Data Assessment</u></a></p>

Common Core Learning Standards	Awesomenicity Lessons
<p>Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. (3.MD.A.1)</p>	<p><u>Lesson 1: Converting between days, weeks, months and years</u>  <u>Lesson 2: Converting between seconds, minutes and hours</u>  <u>Lesson 3: Reading time to the nearest minute</u>  <u>Lesson 4: Converting 24 hour time</u>  <u>Lesson 5: Calculating elapsed time</u></p>
<p>Consolidation and assessment.</p>	<p><u>Lesson 6: Time Assessment</u></p>

## Operations and Algebraic Thinking

Objective	<input checked="" type="checkbox"/>
Represent and solve problems involving multiplication and division.	
Understand properties of multiplication and the relationship between multiplication and division.	
Multiply and divide within 100.	
Solve problems involving the four operations, and identify and explain patterns in arithmetic.	

## Number and Operations in Base Ten

Objective	<input checked="" type="checkbox"/>
Use place value understanding and properties of operations to perform multi-digit arithmetic.	

## Number and Operations - Fractions

Objective	<input checked="" type="checkbox"/>
Develop understanding of fractions as numbers.	

## Measurement and Data

Objective	<input checked="" type="checkbox"/>
Solve problems involving measurement and estimation of intervals of time, liquid volumes and masses of objects.	
Represent and interpret data.	
Understand concepts of area and relate area to multiplication and to addition.	
Recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.	

## Geometry

Objective	<input checked="" type="checkbox"/>
Reason with shapes and their attributes.	





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