

Everyday Mathematics®

Common Core Instructional Planning and Pacing Guide

Grade **4**

Introduction

The *Everyday Mathematics*® Common Core *Instructional Planning and Pacing Guide* provides in-depth information supporting the lesson objectives, the Common Core State Standards (CCSS)—both content and practices—and the need to review and maintain skills and concepts. This guide also provides instruction necessary to develop prerequisite skills that will impact future instruction. This guide may be used as a complement to the pacing recommended in your *Teacher’s Lesson Guide* Unit Organizers and on the grade-level specific Content by Strand Poster. The needs of your students will dictate the pace of your lessons as will the amount of time for mathematics instruction allocated by your school or district. The information provided also reflects the depth to which the CCSS are covered, while maintaining the integrity of the instructional focus of *Everyday Mathematics*.

When utilizing this guide, note that only specific portions of a lesson are labeled with the CCSS Content Standards. While all portions of the three-part lesson are important, the intent is to provide you, the teacher, with important information on:

- 1) the alignment of various portions of the lesson to specific content standards
- 2) the Math Box problems and Games where important review opportunities are presented, as described by the label **Maintain**
- 3) the Math Box problems and Games where essential prerequisite skills are presented that will impact instruction both within your grade and in subsequent grade levels, as described by the label **Foundation**

The detailed information provided in this guide is yet another step in communicating with *Everyday Mathematics* educators and supporting instruction, planning and delivery of the Common Core State Standards within *Everyday Mathematics* curriculum. We hope you will find this chart to be a relevant tool in the planning and pacing of your lessons as well as a valuable tool in delivering all that you need to meet and exceed the Common Core State Standards.

Copyright © 2012 by The McGraw-Hill Companies, Inc.

All rights reserved. The contents, or parts thereof, may be reproduced for use with *Everyday Mathematics*, provided such reproductions bear copyright notice, but may not be reproduced in any form for any other purpose without the prior written consent of The McGraw-Hill Companies, Inc., including, but not limited to network storage or transmission, or broadcast for distance learning.

Send all inquiries to:
McGraw-Hill Education
STEM Learning Solutions Center
P.O. Box 812960
Chicago, IL 60681

Grade 4 Contents

Unit 1	1
Unit 2	3
Unit 3	6
Unit 4	9
Unit 5	12
Unit 6	16
Unit 7	19
Unit 8	23
Unit 9	26
Unit 10	29
Unit 11	31
Unit 12	33
Common Core Content Standards for Grade 4	35
Standards for Mathematical Practice	39

Pacing

The pacing can help you monitor your progress and serve as a reference as you develop weekly lesson plans. It is based on 3–5 lessons per week.

Lesson	Title/Objective	Focus	Common Core State Standards*
12•1	Introducing Rates	<ul style="list-style-type: none"> Part 1: Focuses on expressing data collected as rates and comparing median rates. Part 2: <ul style="list-style-type: none"> Identifying Fractions and Decimals on Number Lines: [4.NF.6] Math Boxes: [12-1→12-3]; 1 [4.G.1]; 2, 4, 6 [Foundation]; 3 [Maintain]; 5 [4.OA.4] 	SMP2, 4, 6, 7; 4.NF.6
12•2	Activities from Getting Started, Part 2, and/or Part 3 of the lesson are included when they correlate to grade-level specific CCSS content standards for the lesson.	<ul style="list-style-type: none"> Getting Started: Mental Math and Reflexes [4.MD.1] Part 1: Practices rates using a "What's My Rule?" table to solve rate problems. [4.OA.3, 4.MD.1, 4.MD.2] Part 2: <ul style="list-style-type: none"> Game: Credits/Debits Game (Advanced Version) [Foundation] Math Boxes: [12-2→12-4→12-6]; 1 [4.OA.5]; 2 [4.MD.1, 3, 4, 5, 6 [Foundation] Study Link: [4.OA.3, 4.MD.2] 	
12•3	Mental Math and Reflexes activities provide quick, daily problem-solving opportunities. Problems are posed without an example to provide the students an opportunity to demonstrate understanding as they progress to being mathematically proficient. Many Mental Math and Reflexes either correlate to grade-level specific CCSS content standards for the lesson or maintain skills or topics that were part of previously taught content.	<ul style="list-style-type: none"> Getting Started: Study Link Follow-Up [4.OA.3, 4.MD.2] Part 1: Focuses on converting rates from a large scale such as a lifetime to smaller, more manageable units. [4.OA.3, 4.NF.6, 4.MD.1, 4.MD.2] Part 2: <ul style="list-style-type: none"> Math Boxes: [12-3→12-1]; 1 [4.G.1]; 2, 4, 6 [Foundation]; 3 [Maintain]; 5 [4.OA.4] Writing/Reasoning: [4.OA.4] Study Link: [4.MD.1, 4.MD.2] Part 3: Enrichment [4.MD.2] 	

Focus
The Focus column includes a Part 1 summary, the Part 2 Math Boxes, and *Everyday Mathematics*® Games for each lesson.

Activities from Getting Started, Part 2, and/or Part 3 of the lesson are included when they correlate to grade-level specific CCSS content standards for the lesson.

Mental Math and Reflexes activities provide quick, daily problem-solving opportunities. Problems are posed without an example to provide the students an opportunity to demonstrate understanding as they progress to being mathematically proficient. Many Mental Math and Reflexes either correlate to grade-level specific CCSS content standards for the lesson or maintain skills or topics that were part of previously taught content.

Common Core State Standards

The Standards for Mathematical Practice (SMP) and the Content Standards for the lesson are listed in this column.

In addition to grade-level specific CCSS content standards, information related to maintaining skills (labeled *Maintain*) and building foundation for future skills (labeled *Foundation*) is included for Games and Math Box problems, at point-of-use, for each lesson.

Maintain indicates that the Game or Math Box problem practices skills or topics that are part of previously taught content.

Foundation indicates that the Game or Math Box problem prepares students for skills or topics that will be taught in the future.

<p>6•8</p>	<p>Rectangular Coordinate Grids for Maps</p> <p>To guide students in the use of letter-number pairs and ordered pairs of numbers to locate points on a grid; and to provide practice using a map scale.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.OA.3] • Part 1: Focuses on using maps to develop skills with rectangular coordinates and distance estimation using a scale. [4.OA.3] • Part 2: <ul style="list-style-type: none"> • <i>Game:</i> <i>Angle Tangle</i> [4.MD.6, 4.MD.7] • <i>Finding Real-Life Angle Measures:</i> [4.MD.5a, 4.MD.5b, 4.MD.7] • <i>Math Boxes:</i> [6-8→6-10]; 1, 2, 4 [Foundation]; 3 [4.G.1]; 5 [4.NBT.3]; 6 [4.NF.2] 	<p>SMP1, 2, 4–6, 8; 4.OA.3, 4.MD.5a, 4.MD.5b, 4.MD.6, 4.MD.7</p>
<p>6</p>	<p>Global Coordinate Grid System</p> <p>Games</p> <p><i>Everyday Mathematics®</i> Games, which serve as important practice opportunities, are labeled with Maintain, Foundation, or grade-level specific CCSS content standard(s).</p>	<ul style="list-style-type: none"> • Part 1: Practices locating places on regional and world maps and globes using a coordinate grid. • Part 2: <ul style="list-style-type: none"> • <i>Game:</i> <i>Over and Up Squares</i> [Foundation] • <i>Math Boxes:</i> [6-9→6-6]; 1, 5 [Foundation]; 2 [4.OA.3]; 3 [4.NBT.6]; 4 [4.NBT.2] 	<p>Math Boxes</p> <p>Each Math Box problem is paired with another Math Box problem in one or more lessons. Each is labeled with Maintain, Foundation, or grade-level specific CCSS content standard(s).</p>
<p>6•10</p>	<p>To provide practice with a "low-stress" division algorithm for 2-digit divisors.</p>	<ul style="list-style-type: none"> • Part 1: Reviews the algorithm learned in Lesson 6-3 and applies it to problems with 2-digit divisors. [4.OA.3, 4.NBT.6] • Part 2: <ul style="list-style-type: none"> • <i>Math Boxes:</i> [6-10→6-8]; 1, 2, 4 [Foundation]; 3 [4.G.1]; 5 [4.NBT.3]; 6 [4.NF.2] • <i>Study Link:</i> [4.OA.3, 4.NBT.6] • Part 3: Readiness: <i>Division Dash</i> [4.NBT.4, 4.NBT.6] 	
<p>6•11</p>	<p>Progress Check 6</p> <p>To assess students' progress on mathematical content through the end of Unit 6.</p>	<ul style="list-style-type: none"> • Part 1: Check the progress of students at the end of Unit 6. • Part 2: <ul style="list-style-type: none"> • <i>Math Boxes:</i> [6--11→Unit 7]; 1, 2, 4 [Maintain]; 3, 5 [Foundation] 	

* Visit www.everydaymath.com for Guiding Questions that support Standards for Mathematical Practice (SMPs).

Guiding Questions and SMPs


To access the Guiding Questions, visit www.everydaymath.com. Under "Resources," select "EM and the Standards of Mathematical Practice."

The Guiding Questions are designed to help teachers raise the level of mathematical discourse in EM classrooms. Questions in regular type are specific to instruction in Part 1. Questions in boldface type are overarching questions that can be generalized to many different mathematical activities and situations.

Unit 1		Naming and Constructing Geometric Figures		Weeks 1–3 (Lessons 1•1–1•9)	
Lesson	Title/Objective	Focus		<div style="background-color: yellow; border: 1px solid black; padding: 2px; display: inline-block;">CCSS</div> Common Core State Standards*	
1•1	Introduction to the <i>Student Reference Book</i> To acquaint students with the content and organization of the <i>Student Reference Book</i> .	<ul style="list-style-type: none"> Part 1: Introduces students to the structure of and material covered in their <i>Student Reference Book</i>. Part 2: Math Boxes: [1-1↔1-3]; 1, 5 [4.NBT.4]; 2 [4.OA.5]; 3 [4.MD.1]; 4 [4.NBT.6] Part 3: Readiness [4.NBT.2] 		SMP3, 5–7; 4.NBT.2	
1•2	Points, Line Segments, Lines, and Rays To introduce tools for geometry; and to review points, line segments, lines, and rays.	<ul style="list-style-type: none"> Part 1: Reviews basic geometric terms while teaching students the care and use of geometric tools. [4.G.1] Part 2: Game: <i>Addition Top-It</i> (Extended-Facts Version) [4.NBT.4] Math Boxes: [1-2↔1-4]; 1, 5 [4.NBT.4]; 2 [4.G.1]; 3, 4 [Maintain] Study Link: [4.G.1] Part 3: Readiness and Enrichment: <i>Sprouts</i> [4.G.1] 		SMP1, 2, 4–7; 4.G.1	
1•3	Angles, Triangles, and Quadrangles To guide students in the construction of angles, triangles, and quadrangles and in the classification of quadrangles.	<ul style="list-style-type: none"> Part 1: Focuses on the characteristics and construction of angles, triangles, and quadrangles and how to use lines and angles to classify quadrangles. [4.G.1, 4.G.2] Part 2: Adding and Subtracting Whole Numbers: [4.NBT.4] Math Boxes: [1-3↔1-1]; 1, 5 [4.NBT.4]; 2 [4.OA.5]; 3 [4.MD.1]; 4 [4.NBT.6] Study Link: [4.G.1] Part 3: Readiness, Enrichment, and ELL Support [4.G.2] 		SMP2, 3, 5–7; 4.NBT.4, 4.G.1, 4.G.2	
1•4	Parallelograms To model the classification of quadrangles based on their properties.	<ul style="list-style-type: none"> Part 1: Reviews the meanings of parallel lines, line segments, and rays and compare various parallelograms and quadrangles. [4.G.1, 4.G.2] Part 2: Game: <i>Subtraction Top-It</i> (Extended-Facts Version) [4.NBT.4] Math Boxes: [1-4↔1-2]; 1, 5 [4.NBT.4]; 2 [4.G.1]; 3, 4 [Maintain] Study Link: [4.G.2] 		SMP2–8; 4.G.1, 4.G.2	

<p>1•5</p>	<p>Polygons To provide opportunities to identify properties of polygons and distinguish between convex and nonconvex (concave) polygons; and to explore geometric definitions and classification.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on the construction of convex and nonconvex polygons and the definitions of polygon types. [4.G.2] • Part 2: Math Boxes: [1-5↔1-7]; 1 [4.NBT.4]; 2, 3, 4 [4.G.1]; 5 [4.G.2]; 6 [4.NBT.2] Study Link: [4.G.2] • Part 3: Enrichment [4.G.2] 	<p>SMP1–3, 5–8; 4.G.2</p>
<p>1•6</p>	<p>Drawing Circles with a Compass To provide practice using a compass.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on constructing circles both with and without a compass and constructing a square inscribed in a circle. [4.G.1] • Part 2: Game: <i>Polygon Pair-Up</i> [4.G.1, 4.G.2] Math Boxes: [1-6↔1-8]; 1 [4.NBT.4]; 2, 3, 4 [4.G.2]; 5 [4.G.1]; 6 [4.NBT.1] Study Link: [4.G.2] 	<p>SMP1, 2, 5–7; 4.G.1, 4.G.2</p>
<p>1•7</p>	<p>Circle Constructions To guide students in defining a circle; and to provide opportunities to explore designs with circles.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on the definition, design, and naming of circles. [4.G.1] • Part 2: Game: <i>Polygon Pair-Up</i> [4.G.1, 4.G.2] Math Boxes: [1-7↔1-5]; 1 [4.NBT.4]; 2, 3, 4 [4.G.1]; 5 [4.G.2]; 6 [4.NBT.2] • Part 3: Enrichment: Using Diameters, Chords, and Radii [4.G.1] 	<p>SMP1–7; 4.G.1, 4.G.2</p>
<p>1•8</p>	<p>Hexagon and Triangle Constructions To guide students in the construction of figures with a compass and straightedge.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on the combined implementation of both the compass and straightedge in the construction of more difficult geometric figures. [4.G.1] • Part 2: Defining Geometric Figures: [4.G.2] Math Boxes: [1-8↔1-6]; 1 [4.NBT.4]; 2, 3, 4 [4.G.2]; 5 [4.G.1]; 6 [4.NBT.1] Study Link: [4.G.2] • Part 3: Readiness [4.G.2] 	<p>SMP2, 5–7; 4.G.1, 4.G.2</p>
<p>1•9</p>	<p>Progress Check 1 To assess students' progress on mathematical content through the end of Unit 1.</p>	<ul style="list-style-type: none"> • Part 1: Checks the progress of students at the end of Unit 1. • Part 2: Math Boxes: [1-9↔Unit 2]; 1, 2, 3 [4.NBT.2]; 4 [4.NBT.1]; 5 [Maintain] 	

* Visit www.everydaymath.com for Guiding Questions that support Standards for Mathematical Practice (SMPs).

Unit 2		Using Numbers and Organizing Data	Weeks 3–5 (Lessons 2•1–2•10)
Lesson	Title/Objective	Focus	 Common Core State Standards*
2•1	A Visit to Washington, D.C. To review examples of the various ways in which numbers are used; and to introduce the World Tour Project.	<ul style="list-style-type: none"> • Part 1: Introduces the World Tour Project and focuses on the various ways to use numbers. [4.MD.2] • Part 2: Game: <i>Polygon Pair-Up</i> [4.G.1, 4.G.2] Math Boxes: [2-1↔2-3]; 1 [4.NBT.4]; 2 [4.NBT.1]; 3, 4 [4.G.2]; 5 [4.MD.2]; 6 [4.NBT.5] • Part 3: Readiness and Extra Practice [4.OA.5] 	SMP2, 4–6; 4.OA.5, 4.MD.2, 4.G.1, 4.G.2
2•2	Many Names for Numbers To review equivalent names for whole numbers and name-collection boxes.	<ul style="list-style-type: none"> • Part 1: Uses a name-collection box to practice representing numbers in different ways. • Part 2: Game: <i>Name that Number</i> [Foundation] Math Boxes: [2-2↔2-4]; 1 [4.NBT.2]; 2 [4.NBT.4]; 3 [4.G.2]; 4 [Maintain]; 5 [4.MD.1]; 6 [4.NBT.6] 	SMP1–3
2•3	Place Value in Whole Numbers To provide practice identifying values of digits in numbers up to one billion; and to provide practice reading and writing numbers up to one billion.	<ul style="list-style-type: none"> • Part 1: Focuses on understanding place value and reading/writing large numbers. [4.NBT.1, 4.NBT.2] • Part 2: Identifying Polygon Properties [4.G.1, 4.G.2] Math Boxes: [2-3↔2-1]; 1 [4.NBT.4]; 2 [4.NBT.1]; 3, 4 [4.G.2]; 5 [4.MD.2]; 6 [4.NBT.5] Study Link: [4.NBT.2] • Part 3: Enrichment [4.OA.5]; Extra Practice [4.NBT.1, 4.NBT.2] 	SMP2, 6–8; 4.OA.5, 4.NBT.1, 4.NBT.2, 4.G.1, 4.G.2
2•4	Place Value with a Calculator To provide practice with place-value skills using a calculator routine; and to review reading and writing large numbers.	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NBT.2] • Part 1: Focuses on understanding place value by changing one or more digits in a number. [4.NBT.1, 4.NBT.2] • Part 2: Game: <i>Fishing for Digits</i> [4.NBT.1, 4.NBT.2] Math Boxes: [2-4↔2-2]; 1 [4.NBT.2]; 2 [4.NBT.4]; 3 [4.G.2]; 4 [Maintain]; 5 [4.MD.1]; 6 [4.NBT.6] Study Link: [4.NBT.2] • Part 3: Readiness and Enrichment [4.NBT.2] 	SMP 2, 5, 8; 4.NBT.1, 4.NBT.2

<p>2•5</p>	<p>Organizing and Displaying Data To provide practice organizing and displaying data with a tally chart and determining the maximum, minimum, range, and mode of a set of data.</p>	<ul style="list-style-type: none"> • Part 1: Provides practice gathering, organizing, and displaying data. Data landmarks used include maximum, minimum, range, and mode. • Part 2: Game: <i>Addition Top-It</i> (Extended-Facts Version) [4.NBT.4] Math Boxes: [2-5↔2-7↔2-9]; 1 [4.NBT.2]; 2 [Foundation]; 3 [4.NBT.2]; 4 [4.G.2]; 5, 6 [Maintain] 	<p>SMP1, 2, 4, 6–8</p>
<p>2•6</p>	<p>The Median To review how to display a set of data with a line plot; and to review how to find the median of a set of data.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on review of how to display data with a line plot and how to find the median of a set of data. • Part 2: Game: <i>Subtraction Top-It</i> (Extended-Facts Version) [4.NBT.4] Math Boxes: [2-6↔2-8]; 1, 3 [4.OA.4]; 2, 6 [Foundation]; 4 [4.NBT.2]; 5 [Maintain] Writing/Reasoning: [4.MD.1, 4.MD.2] 	<p>SMP2, 4, 7, 8; 4.MD.1, 4.MD.2</p>
<p>2•7</p>	<p>Addition of Multidigit Numbers To review the partial-sums algorithm used to solve multidigit addition problems; and to introduce a column-addition method similar to the traditional addition algorithm.</p>	<ul style="list-style-type: none"> • Part 1: Provides review of the partial-sums algorithm and introduces the column addition method used to solve multidigit addition problems. [4.NBT.2] • Part 2: Game: <i>High-Number Toss</i> [4.NBT.1, 4.NBT.2] Math Boxes: [2-7↔2-5↔2-9]; 1, 3 [4.NBT.2]; 2 [Foundation]; 4 [4.G.2]; 5, 6 [Maintain] Writing/Reasoning [4.G.2] • Part 3: Readiness and Enrichment [4.OA.3, 4.MD.2] 	<p>SMP1–3, 5–8; 4.OA.3, 4.NBT.2, 4.MD.2, 4.G.2</p>
<p>2•8</p>	<p>Displaying Data with Graphs To provide practice measuring length to the nearest half-centimeter; and to guide the construction and use of graphs for a set of collected data.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on how to display data, including fractions of a unit, using various graphs—including line plots. [4.MD.4] • Part 2: Math Boxes: [2-8↔2-6]; 1, 3 [4.OA.4]; 2 [Foundation]; 4, 6 [4.NBT.2]; 5 [4.MD.2] 	<p>SMP1, 2, 4–7; 4.MD.4</p>

<p>2•9</p>	<p>Subtraction of Multidigit Numbers</p> <p>To review the trade-first and counting-up methods, and to introduce the partial-differences method of solving multidigit subtraction problems; and to provide practice estimating differences for multidigit subtraction problems.</p>	<ul style="list-style-type: none"> • Part 1: Provides review of the trade-first and counting-up methods and introduces the partial-differences method used to solve multidigit subtraction problems. [4.NBT.4] • Part 2: Game: Subtraction Target Practice [4.NBT.2, 4.NBT.4] Math Boxes: [2-9↔2-5↔2-7]; 1, 3 [4.NBT.2]; 2 [Foundation]; 4 [4.G.2]; 5, 6 [Maintain] Writing/Reasoning [4.OA.1] • Part 3: Enrichment: Writing Subtraction Number Stories [4.OA.3, 4.MD.2] 	<p>SMP1–3, 5–8; 4.OA.1, 4.OA.3, 4.NBT.4, 4.MD.2</p>
<p>2•10</p>	<p>Progress Check 2</p> <p>To assess students' progress on mathematical content through the end of Unit 2.</p>	<ul style="list-style-type: none"> • Part 1: Checks students' progress at the end of Unit 2. • Part 2: Math Boxes: [2-10↔Unit 3]; 1, 2, 3 [Maintain]; 4 [4.NBT.2]; 5 [4.MD.2]; 6 [4.NBT.4] 	
<p>* Visit www.everydaymath.com for Guiding Questions that support Standards for Mathematical Practice (SMPs).</p>			

Unit 3 Multiplication and Division; Number Sentences and Algebra Weeks 5–8 (Lessons 3•1–3•12)			
Lesson	Title/Objective	Focus	CCSS Common Core State Standards*
3•1	<p>“What’s My Rule?”</p> <p>To review “What’s My Rule?” problems.</p>	<ul style="list-style-type: none"> • Part 1: Illustrates relationships between numbers using a function machine and “What’s My Rule?” table. [4.OA.5] • Part 2: Math Boxes: [3-1↔3-3↔3-5]; 1 [4.NBT.2]; 2, 6 [Foundation]; 3 [4.NBT.3]; 4 [4.MD.1]; 5 [4.OA.5] Study Link: [4.OA.5] • Part 3: Readiness, Enrichment, and Extra Practice [4.OA.5] 	SMP3, 5–8; 4.OA.5
3•2	<p>Multiplication Facts</p> <p>To review strategies for solving multiplication facts; to help students maintain automaticity with multiplication facts; and to introduce prime and composite numbers.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.OA.5] • Part 1: Focuses on familiarity with factors and multiples as well as the concept of prime and composite numbers. [4.OA.1, 4.OA.4, 4.OA.5] • Part 2: Game: <i>Name That Number</i> [Foundation] Math Boxes: [3-2↔3-4]; 1 [4.OA.4]; 2, 3 [Foundation]; 4 [4.G.1]; 5 [4.NF.7] Study Link: [4.OA.4] • Part 3: Extra Practice: <i>Buzz and Bizz-Buzz</i> [4.OA.4] 	SMP1, 2, 5–8; 4.OA.1, 4.OA.4, 4.OA.5
3•3	<p>Multiplication Facts Practice</p> <p>To introduce the 50-facts test; and to provide practice with multiplication facts.</p>	<ul style="list-style-type: none"> • Getting Started: Study Link Follow-Up [4.OA.4] • Part 1: Focuses on looking for patterns in multiplication facts to aid in mastery. [4.OA.1, 4.OA.5] • Part 2: Game: <i>Baseball Multiplication</i> [4.NBT.5] Math Boxes: [3-3↔3-1↔3-5]; 1 [4.NBT.2]; 2, 6 [Foundation]; 3 [4.NBT.3]; 4 [4.MD.1]; 5 [4.OA.5] Writing/Reasoning: [4.MD.1, 4.MD.2] Study Link: [4.OA.1, 4.OA.4] • Part 3: Readiness [4.OA.5]; Extra Practice: <i>Exploring Prime and Composite Numbers</i> [4.OA.4]; Extra Practice: <i>Multiplication Top-It</i> [4.NBT.2, 4.NBT.5] 	SMP1, 2, 4–7; 4.OA.1, 4.OA.4, 4.OA.5, 4.MD.1, 4.MD.2

<p>3•4</p>	<p>More Multiplication Facts Practice To give a 50-facts test and record the results; and to provide practice with multiplication facts.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on mastery of multiplication facts and analyzing data. • Part 2: Math Boxes: [3-4↔3-2]; 1 [4.OA.4]; 2, 3 [Foundation]; 4 [4.G.1]; 5 [4.NF.7] Study Link: [4.OA.1] 	<p>SMP1, 2, 4, 6; 4.OA.1</p>
<p>3•5</p>	<p>Multiplication and Division To guide exploration of the relationship between multiplication and division; and to provide practice with division facts.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on the relationship of multiplication and division through the use of Multiplication/Division Facts Tables and fact families generated with Fact Triangles. [4.OA.1, 4.NBT.6, 4.MD.2] • Part 2: Game: <i>Beat the Calculator</i> [4.NBT.5] Math Boxes: [3-5↔3-1↔3-3]; 1 [4.NBT.2]; 2, 6 [Foundation]; 3 [4.NBT.3]; 4 [4.MD.1]; 5 [4.OA.5] • Part 3: Readiness: <i>Division Arrays</i> [4.NBT.6] 	<p>SMP1–7; 4.OA.1, 4.NBT.6, 4.MD.2</p>
<p>3•6</p>	<p>World Tour: Flying to Africa To provide practice interpreting data through the World Tour Project.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NBT.2] • Part 1: Focuses on using mathematical operation to solve problems using real world data such as distance and currency. [4.NBT.3] • Part 2: Game: <i>Multiplication Top It</i> [4.NBT.2, 4.NBT.5] Solving Elapsed-Time Problems: [4.MD.2] Math Boxes: [3-6↔3-8]; 1 [Foundation]; 2 [4.NBT.2]; 3 [Maintain]; 4 [4.NBT.4]; 5 [4.MD.1] Writing/Reasoning: [4.MD.1] Study Link: [4.MD.2] 	<p>SMP1–4, 6; 4.NBT.2, 4.NBT.3, 4.MD.1, 4.MD.2</p>
<p>3•7</p>	<p>Finding Air Distances To provide practice measuring length and using a map scale.</p>	<ul style="list-style-type: none"> • Part 1: Applies principles of converting measurements from a small one to a large one using the concept of map scales. [4.MD.2] • Part 2: Game: <i>Polygon Pair-Up</i> [4.G.1, 4.G.2] Math Boxes: [3-7↔3-9]; 1 [4.MD.2]; 2, 6 [4.OA.5]; 3 [Maintain]; 4 [4.G.2]; 5 [Foundation] Writing/Reasoning: [4.G.2] Study Link: [4.MD.2] 	<p>SMP1–7; 4.MD.2, 4.G.1, 4.G.2</p>

<p>3•8</p>	<p>A Guide for Solving Number Stories To introduce a simplified approach to solving number stories; and to provide practice solving number stories.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.MD.2] • Part 1: Focuses on solving multi-step word problems by creating number models. [4.OA.3, 4.MD.2] • Part 2: <ul style="list-style-type: none"> • Game: <i>High-Number Toss</i> [4.NBT.2] • Math Boxes: [3-8↔3-6]; 1 [Foundation]; 2 [4.NBT.2]; 3 [Maintain]; 4 [4.NBT.4]; 5 [4.MD.1] • Study Link: [4.MD.2] 	<p>SMP1–4, 6; 4.OA.3, 4.NBT.2, 4.MD.2</p>
<p>3•9</p>	<p>True or False Number Sentences To review the meanings of number sentences; and to provide practice determining whether number sentences are true or false.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NBT.2] • Part 1: Draws upon knowledge of number comparisons to determine the validity of a number sentence. [4.NBT.2] • Part 2: <ul style="list-style-type: none"> • Math Boxes: [3-9↔3-7]; 1 [4.MD.2]; 2, 6 [4.OA.5]; 3 [Maintain]; 4 [4.G.2]; 5 [Foundation] • Study Link: [4.NBT.2] 	<p>SMP2, 3, 6; 4.NBT.2</p>
<p>3•10</p>	<p>Parentheses in Number Sentences To review the use of parentheses in number sentences.</p>	<ul style="list-style-type: none"> • Part 1: Review the use of parentheses in number sentences and use parentheses to evaluate if a number sentence is true or false. • Part 2: <ul style="list-style-type: none"> • Game: <i>Name That Number</i> [Foundation] • Math Boxes: [3-10↔3-11]; 1 [4.OA.4]; 2 [4.OA.3]; 3, 5 [Maintain]; 4 [4.G.1] 	<p>SMP1–3, 6, 8</p>
<p>3•11</p>	<p>Open Sentences To introduce vocabulary and notation for open sentences; and to provide practice solving open sentences.</p>	<ul style="list-style-type: none"> • Part 1: Establishes a foundation for algebraic thinking by solving number sentences with missing information. • Part 2: <ul style="list-style-type: none"> • Using a Map Scale: [4.MD.2] • Math Boxes: [3-11↔3-10]; 1 [4.OA.4]; 2 [4.MD.4]; 3, 5 [Maintain]; 4 [4.G.1] • Writing/Reasoning: [4.OA.4] • Part 3: Readiness [4.OA.1] 	<p>SMP1–3, 5, 6; 4.OA.1, 4.OA.4, 4.MD.2</p>
<p>3•12</p>	<p>Progress Check 3 To assess students' progress on mathematical content through the end of Unit 3.</p>	<ul style="list-style-type: none"> • Part 1: Check the progress of students at the end of Unit 3. • Part 2: <ul style="list-style-type: none"> • Math Boxes: [3-12↔Unit 4]; 1 [4.NF.7]; 2 [4.OA.5]; 3 [Foundation]; 4 [4.MD.1]; 5 [Maintain] 	

* Visit www.everydaymath.com for Guiding Questions that support Standards for Mathematical Practice (SMPs).

Unit 4 Decimals and Their Uses		Weeks 8–11 (Lessons 4•1–4•11)	
Lesson	Title/Objective	Focus	CCSS Common Core State Standards*
4•1	Decimal Place Value To extend the base-ten place-value system to decimals.	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NBT.1] • Part 1: Practices identifying places in whole numbers and decimals and values of digits using number lines and place-value charts. [4.NBT.1] • Part 2: <ul style="list-style-type: none"> Game: <i>Polygon Pair-Up</i> [4.G.1, 4.G.2] Math Boxes: [4-1↔4-3]; 1, 5 [Maintain]; 2 [Foundation]; 3 [4.NBT.1]; 4 [4.G.1]; 6 [4.NBT.3] • Part 3: Enrichment [4.NBT.1] 	SMP2, 5–8; 4.NBT.1, 4.G.1, 4.G.2
4•2	Review of Basic Decimal Concepts To review basic concepts and notation for decimals through hundredths.	<ul style="list-style-type: none"> • Part 1: Focuses on the relationship between fractions and decimals to the hundredth place. [4.NF.6] • Part 2: <ul style="list-style-type: none"> Game: <i>Baseball Multiplication</i> [4.NBT.5] Math Boxes: [4-2↔4-4]; 1 [4.MD.4]; 2 [Foundation]; 3 [4.MD.2]; 4, 5 [Maintain] • Part 3: Readiness: <i>Base-10 Exchange</i> [4.NF.6] 	SMP1, 2, 5, 6; 4.NF.6
4•3	Comparing and Ordering Decimals To guide students as they compare and order decimals in tenths and hundredths.	<ul style="list-style-type: none"> • Part 1: Focuses on the comparison of decimal values. [4.NF.7] • Part 2: <ul style="list-style-type: none"> Game: <i>Product Pile-Up</i> [4.NBT.5] Math Boxes: [4-3↔4-1]; 1, 5 [Maintain]; 2 [Foundation]; 3 [4.NBT.1]; 4 [4.G.1]; 6 [4.NBT.3] Study Link: [4.NF.7] • Part 3: Readiness: <i>Coin Top-It</i> [4.NF.7] 	SMP2, 3, 5, 6; 4.NF.7
4•4	Estimating with Decimals To explain why decimals are useful; and to guide estimation of sums and differences of decimals.	<ul style="list-style-type: none"> • Part 1: Focuses on the uses of decimals in real-world situations through listing, sorting, and problem solving. [4.MD.2] • Part 2: <ul style="list-style-type: none"> Game: <i>Number Top-It (Decimals)</i> [4.NF.7] Math Boxes: [4-4↔4-2]; 1 [Foundation]; 2 [4.NBT.4]; 3 [4.MD.2]; 4, 5 [Maintain] Study Link: [4.MD.2] • Part 3: Readiness [4.MD.2]; Enrichment: <i>Solving Gasoline Mileage Problems</i> [4.MD.2] 	SMP1–6; 4.NF.7, 4.MD.2

<p>4•5</p>	<p>Decimal Addition and Subtraction To extend methods for whole-number addition and subtraction to decimals.</p>	<ul style="list-style-type: none"> • Getting Started: Study Link Follow-Up [4.OA.2] • Part 1: Focuses on different methods for decimal addition and subtraction. • Part 2: Math Boxes: [4-5↔4-7]; 1 [4.NF.7]; 2, 4 [Maintain]; 3 [4.OA.5]; 5 [Foundation]; 6 [4.NBT.4] • Part 3: Enrichment [4.MD.2] 	<p>SMP1–3, 5–7; 4.OA.2, 4.MD.2</p>
<p>4•6</p>	<p>Decimals in Money To provide practice adding and subtracting decimals to compute balances in a savings account.</p>	<ul style="list-style-type: none"> • Part 1: Uses estimation, mental arithmetic, and paper-and-pencil algorithms to balance a bank account. [4.MD.2] • Part 2: Game: <i>Name That Number</i> [Foundation] Math Boxes: [4-6↔4-9]; 1, 4 [Foundation]; 2 [4.NF.7]; 3 [4.MD.2]; 5 [4.NBT.2] Writing/Reasoning: [4.MD.1] Study Link: [4.MD.2] • Part 3: Readiness and Enrichment [4.MD.2] 	<p>SMP1–6; 4.MD.1, 4.MD.2</p>
<p>4•7</p>	<p>Thousandths To extend basic concepts and notation for decimals through thousandths.</p>	<ul style="list-style-type: none"> • Part 1: Expands decimal understanding to the thousandths place using base-10 blocks and number naming exercises. [4.NBT.1, 4.NF.6, 4.NF.7] • Part 2: Math Boxes: [4-7↔4-5]; 1 [4.NF.7]; 2 [Maintain]; 3 [4.OA.5]; 4, 5 [Foundation]; 6 [4.NBT.4] • Part 3: Extra Practice: <i>Base-10 Exchange</i> [4.NF.6] 	<p>SMP1, 2, 4, 6; 4.NBT.1, 4.NF.6, 4.NF.7</p>
<p>4•8</p>	<p>Metric Units of Length To review the relationships among metric units of length; and to guide students as they work with metric measurements.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on the relationship between metric units and practices converting measurements. [4.MD.1] • Part 2: Game: <i>Fishing for Digits</i> [4.NBT.1, 4.NBT.2] Math Boxes: [4-8↔4-10]; 1 [4.NBT.4]; 2, 5 [4.MD.1]; 3 [Foundation]; 4 [4.G.2]; 6 [4.NBT.3] Study Link: [4.MD.1] • Part 3: Readiness, Enrichment, and ELL Support [4.MD.1] 	<p>SMP2, 4–6; 4.NBT.1, 4.MD.1</p>

<p>4•9</p>	<p>Personal References for Metric Length To assist students as they establish personal references for metric units of length.</p>	<ul style="list-style-type: none"> • Part 1: Establishes personal references for lengths using the metric system so that length estimations can be made. [4.MD.1] • Part 2: Game: <i>Name That Number</i> [Foundation] Math Boxes: [4-9↔4-6]; 1, 4 [Foundation]; 2 [4.NF.7]; 3 [4.MD.2]; 5 [4.NBT.2] Writing/Reasoning: [4.NF.7] Study Link: [4.MD.1] • Part 3: Readiness [4.MD.1] 	<p>SMP2–6; 4.NF.7, 4.MD.1</p>
<p>4•10</p>	<p>Measuring in Millimeters To guide students as they measure lengths to the nearest millimeter; and to provide practice converting measurements between millimeters and centimeters.</p>	<ul style="list-style-type: none"> • Part 1: Reinforces understanding of the metric system with measurements in millimeters and conversions to centimeters. [4.OA.2, 4.MD.1] • Part 2: Math Boxes: [4-10↔4-8]; 1 [4.NBT.4]; 2, 5 [4.MD.1]; 3 [Foundation]; 4 [4.G.2]; 6 [4.NBT.3]; Study Link: [4.MD.1] 	<p>SMP1, 4–6; 4.OA.2, 4.MD.1</p>
<p>4•11</p>	<p>Progress Check 4 To assess students' progress on mathematical content through the end of Unit 4.</p>	<ul style="list-style-type: none"> • Part 1: Check the progress of students at the end of Unit 4. • Part 2: Math Boxes: [4-11↔Unit 5]; 1, 3, 4 [4.NBT.3]; 2 [Maintain]; 5 [4.NBT.4] 	
<p>* Visit www.everydaymath.com for Guiding Questions that support Standards for Mathematical Practice (SMPs).</p>			

Unit 5		Big Numbers, Estimation, and Computation	Weeks 11–14 (Lessons 5•1–5•12)
Lesson	Title/Objective	Focus	CCSS Common Core State Standards*
5•1	<p>Extended Multiplication Facts</p> <p>To extend basic multiplication facts to products of ones and tens and products of tens and tens.</p>	<ul style="list-style-type: none"> • Getting Started: Math Message [4.MD.2] • Part 1: Focuses on developing abilities with basic multidigit multiplication using the game <i>Beat the Calculator</i>. [4.OA.1, 4.OA.2, 4.NBT.1, 4.NBT.5] • Part 2: Finding Personal References for Customary Units of Length: [4.MD.1] Math Boxes: [5-1↔5-3]; 1 [4.NBT.2]; 2 [4.NBT.5]; 3 [4.NBT.4]; 4 [4.OA.4]; 5 [4.MD.1]; 6 [4.OA.3] Writing/Reasoning: [4.OA.1] Study Link: [4.NBT.5] • Part 3: Readiness: <i>Multiplication Top-It</i> [4.NBT.2, 4.NBT.5] 	SMP1–8; 4.OA.1, 4.OA.2, 4.NBT.1, 4.NBT.5, 4.MD.1, 4.MD.2
5•2	<p>Multiplication Wrestling</p> <p>To provide practice with extended multiplication facts; and to introduce the basic principles of multiplication with multidigit numbers.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on practicing multiplication with basic facts and multidigit numbers with a game, <i>Multiplication Wrestling</i>. [4.NBT.2, 4.NBT.5] • Part 2: Interpreting a Data Table: [4.MD.2] Math Boxes: [5-2↔5-4]; 1 [4.NF.7]; 2 [4.MD.1]; 3 [Foundation]; 4 [4.NBT.2]; 5 [4.NBT.6] Study Link: [4.NBT.5] 	SMP1–4, 6–8; 4.NBT.2, 4.NBT.5, 4.MD.2
5•3	<p>Estimating Sums</p> <p>To provide practice deciding whether estimation is appropriate in a given situation; and to provide practice estimating sums.</p>	<ul style="list-style-type: none"> • Part 1: Reinforces skills with estimation of sums through practice with maps and distances. [4.OA.3, 4.NBT.3, 4.MD.2] • Part 2: Game: <i>Product Pile-Up</i> [4.NBT.5] Math Boxes: [5-3↔5-1]; 1 [4.NBT.2]; 2 [Maintain]; 3 [4.NBT.4]; 4 [4.OA.4]; 5 [4.MD.2]; 6 [4.OA.3] Writing/Reasoning: [4.MD.2] Study Link: [4.NBT.3] • Part 3: Readiness [4.NBT.3]; Enrichment and Extra Practice [4.MD.2] 	SMP1, 3, 4–6; 4.OA.3, 4.NBT.3, 4.MD.2

<p>5•4</p>	<p>Estimating Products To provide practice estimating whether a product is in the tens, hundreds, thousands, or more.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on development of estimation abilities by making magnitude estimates on a magnitude bar. [4.NBT.3, 4.NBT.5, 4.MD.2] • Part 2: <ul style="list-style-type: none"> Game: <i>Multiplication Wrestling</i> [4.NBT.2, 4.NBT.6] Math Boxes: [5-4↔5-2]; 1 [4.NF.7]; 2 [4.MD.1]; 3 [Foundation]; 4 [4.NBT.2]; 5 [4.NBT.6] Study Link: [4.NBT.3, 4.NBT.5, 4.MD.2] • Part 3: Readiness [4.NBT.3] 	<p>SMP1, 3–6, 8; 4.NBT.3, 4.NBT.5, 4.MD.2</p>
<p>5•5</p>	<p>Partial-Products Multiplication (Part 1) To review and provide practice with the partial-products algorithm for 1-digit multipliers.</p>	<ul style="list-style-type: none"> • Getting Started: Math Message [4.MD.2] • Part 1: Practices the partial-products algorithm for 1-digit multipliers. [4.NBT.5] • Part 2: <ul style="list-style-type: none"> Math Boxes: [5-5↔5-7]; 1, 5 [Foundation]; 2 [4.NBT.3]; 3 [Maintain]; 4 [4.NBT.2] Study Link: [4.NBT.5] • Part 3: Enrichment [4.OA.3] 	<p>SMP1–6, 8; 4.OA.3, 4.NBT.5, 4.MD.2</p>
<p>5•6</p>	<p>Partial-Products Multiplication (Part 2) To introduce and provide practice with the partial-products algorithm for 2-digit multipliers.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NBT.5] • Part 1: Extends student understanding of the partial products algorithm from 1-digit multipliers to 2-digit multipliers. [4.NBT.3, 4.NBT.5, 4.MD.2] • Part 2: <ul style="list-style-type: none"> Game: <i>Name That Number</i> [Foundation] Math Boxes: [5-6↔5-8↔5-10]; 1 [Maintain]; 2 [4.NBT.3]; 3 [4.NBT.5]; 4 [4.NF.6]; 5 [4.MD.2] Study Link: [4.NBT.5] • Part 3: Readiness [4.NBT.5]; Enrichment: <i>Scoring a Dart Game</i>; <i>Writing Multiplication Stories</i> [4.OA.3] 	<p>SMP1, 2, 4–8; 4.OA.3, 4.NBT.3, 4.NBT.5, 4.MD.2</p>
<p>5•7</p>	<p>Lattice Multiplication To review and provide practice with the lattice method for multiplication.</p>	<ul style="list-style-type: none"> • Part 1: Reviews and practices the lattice method of multiplication with both 1- and 2-digit multipliers. [4.NBT.5] • Part 2: <ul style="list-style-type: none"> Game: <i>Multiplication Top-It</i> [4.NBT.2, 4.NBT.5] Math Boxes: [5-7↔5-5]; 1, 5 [Foundation]; 2 [4.NBT.3]; 3 [Maintain]; 4 [4.NBT.2] Writing/Reasoning: [4.MD.2] Study Link: [4.NBT.5] • Part 3: Readiness [4.NBT.5] 	<p>SMP2, 5–8; 4.NBT.5, 4.MD.2</p>

<p>5•8</p>	<p>Big Numbers</p> <p>To provide practice reading, writing, and comparing large numbers using patterns in the base-ten place-value system.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NBT.2] • Part 1: Explores large digit numbers and their relationships using place-value charts and dot paper activities. [4.NBT.1, 4.NBT.2] • Part 2: Analyzing a Data Table: [4.OA.2] Math Boxes: [5-8↔5-6↔5-10]; 1 [Maintain]; 2 [4.NBT.3]; 3 [4.NBT.5]; 4 [4.NF.6]; 5 [4.OA.2] Writing/Reasoning: [4.OA.3] Study Link: [4.NBT.2] • Part 3: Readiness: <i>High-Number Toss</i> [4.NBT.1, 4.NBT.2]; Enrichment: <i>Estimating the Number of Dots and the Weight of Paper Needed to Fill the Classroom; Exploring Big Number in How Much is a Million?</i> [4.OA.3, 4.NBT.1, 4.NBT.2] 	<p>SMP1–7; 4.OA.2, 4.OA.3, 4.NBT.1, 4.NBT.2</p>
<p>5•9</p>	<p>Powers of 10</p> <p>To introduce exponential notation for powers of 10 as a way of naming the values of places in our base-ten system.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NBT.2] • Part 1: Practices base-10 powers using exponential notation and place-value charts. [4.NBT.1, 4.NBT.2] • Part 2: Game: <i>Polygon Pair-Up</i> [4.G.1, 4.G.2] Math Boxes: [5-9↔5-11]; 1 [4.NBT.3]; 2 [4.NBT.2]; 3 [4.G.1]; 4 [Foundation]; 5 [4.NBT.5]; 6 [4.MD.5, 4.MD.6] Writing/Reasoning: [4.G.1] Study Link: [4.NBT.1] 	<p>SMP2–4, 6–8; 4.NBT.1, 4.NBT.2, 4.G.1, 4.G.2</p>
<p>5•10</p>	<p>Rounding and Reporting Large Numbers</p> <p>To discuss sensible ways of reporting a count when a large number of items has been counted; and to practice rounding numbers.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on rounding large numbers and their reliability in real life-scenarios such as baseball stadium attendance. [4.NBT.3] • Part 2: Math Boxes: [5-10↔5-6↔5-8]; 1 [Maintain]; 2 [4.NBT.3]; 3 [4.NBT.5]; 4 [4.NF.6]; 5 [4.OA.2] Study Link: [4.NBT.3] 	<p>SMP1, 3–6; 4.NBT.3</p>

<p>5•11</p>	<p>Comparing Data To guide students as they look up and compare numerical data, including geographical measurements.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on data comparisons for real world data including identifying minimums and maximums. [4.NBT.2] • Part 2: Solving Addition and Subtraction Number Stories: [4.OA.3, 4.MD.2] Math Boxes: [5-11↔5-9]; 1 [4.NBT.3]; 2 [4.NBT.2]; 3 [4.G.1]; 4 [Foundation]; 5 [4.NBT.5]; 6 [4.MD.5, 4.MD.6] Study Link: [4.NBT.2] • Part 3: Readiness: <i>Number Top-It</i> [4.NBT.2]; Extra Practice: <i>High-Number Toss</i> [4.NBT.1, 4.NBT.2] 	<p>SMP2–6; 4.OA.3, 4.NBT.2, 4.MD.2</p>
<p>5•12</p>	<p>Progress Check 5 To assess students' progress on mathematical content through the end of Unit 5.</p>	<ul style="list-style-type: none"> • Part 1: Check the progress of students at the end of Unit 5. • Part 2: Math Boxes: [5-12↔Unit 6]; 1 [4.OA.3]; 2 [4.MD.2]; 3 [Foundation]; 4 [4.G.1]; 5 [4.NBT.6] 	
<p>* Visit www.everydaymath.com for Guiding Questions that support Standards for Mathematical Practice (SMPs).</p>			

Unit 6		Division; Map Reference Frames; Measures of Angles	Weeks 14–17 (Lessons 6•1–6•11)
Lesson	Title/Objective	Focus	<div style="background-color: yellow; border: 1px solid black; padding: 2px; display: inline-block;">CCSS</div> Common Core State Standards*
6•1	Multiplication and Division Number Stories To provide practice solving multiplication and division number stories by using diagrams to organize information.	<ul style="list-style-type: none"> • Part 1: Implements Multiplication/Division Diagrams to organize information and create number models. [4.OA.2, 4.OA.3, 4.NBT.6] • Part 2: Math Boxes: [6-1↔6-3]; 1, 5 [Maintain]; 2 [4.NBT.3]; 3 [4.NBT.5]; 4 [Foundation] Writing/Reasoning: [4.NBT.3] Study Link: [4.OA.3] • Part 3: Readiness: <i>Division Arrays</i> [4.NBT.6]; Enrichment [4.OA.3, 4.MD.2] 	SMP1–6; 4.OA.2, 4.OA.3, 4.NBT.3, 4.NBT.6, 4.MD.2
6•2	Strategies for Division To guide the exploration of a variety of strategies to solve equal-grouping division number stories.	<ul style="list-style-type: none"> • Part 1: Focuses on using a multiples-of-10 strategy to solve equal-grouping division number stories. [4.OA.3, 4.NBT.6] • Part 2: Game: <i>High-Number Toss</i> [4.NBT.1, 4.NBT.2] Math Boxes: [6-2↔6-4]; 1 [4.OA.3]; 2, 3 [Foundation]; 4 [4.MD.1]; 5 [4.NF.1] Study Link: [4.OA.3] • Part 3: Readiness and Extra Practice: <i>Buzz</i> and <i>Bizz-Buzz</i> [4.OA.4] 	SMP1–8; 4.OA.3, 4.OA.4, 4.NBT.2, 4.NBT.6
6•3	The Partial-Quotients Division Algorithm, Part 1 To introduce and provide practice with a “low-stress” division algorithm for 1-digit divisors.	<ul style="list-style-type: none"> • Getting Started: Math Message [4.MD.2] • Part 1: Focuses on an algorithm for division that allows students to build up the quotient by working with “easy” numbers. [4.OA.3, 4.NBT.6] • Part 2: Math Boxes: [6-3↔6-1]; 1, 5 [Maintain]; 2 [4.NBT.3]; 3 [4.NBT.5]; 4 [Foundation] Study Link: [4.OA.3, 4.NBT.6] • Part 3: Enrichment [4.MD.2]; Extra Practice: <i>Division Dash</i> [4.NBT.4, 4.NBT.6] 	SMP1–8; 4.OA.3, 4.NBT.6, 4.MD.2

<p>6•4</p>	<p>Expressing and Interpreting Remainders</p> <p>To introduce the expression of remainders as fractions or decimals; and to provide practice interpreting remainders in division problems.</p>	<ul style="list-style-type: none"> • Part 1: Practices methods for dealing with remainders such as writing them as fractions, rounding, or ignoring them. [4.OA.3, 4.NBT.6, 4.MD.2] • Part 2: Game: <i>Division Dash</i> [4.NBT.4, 4.NBT.6] Math Boxes: [6-4↔6-2]; 1 [4.OA.3]; 2, 3 [Foundation]; 4 [4.MD.1]; 5 [4.NF.1] Study Link: [4.OA.3, 4.NBT.6] • Part 3: Enrichment [4.OA.3, 4.OA.4] 	<p>SMP1–4, 6; 4.OA.3, 4.OA.4, 4.NBT.6, 4.MD.2</p>
<p>6•5</p>	<p>Rotations and Angles</p> <p>To review rotations; and to guide students as they make and use a full-circle protractor.</p>	<ul style="list-style-type: none"> • Part 1: Practices rotations by creating full-circle protractors and measuring angles and elapsed time in degrees. [4.MD.2, 4.MD.5a, 4.MD.5b] • Part 2: Solving Elapsed-Time Problems: [4.MD.2] Math Boxes: [6-5↔6-7]; 1 [Foundation]; 2, 6 [Maintain]; 3 [4.OA.3]; 4 [4.NBT.5]; 5 [4.MD.1] • Part 3: Enrichment and Extra Practice: <i>Robot</i> [4.MD.5a, 4.MD.5b] 	<p>SMP1–6; 4.MD.2, 4.MD.5a, 4.MD.5b</p>
<p>6•6</p>	<p>Using a Full-Circle Protractor</p> <p>To provide practice using a full-circle protractor to measure and draw angles less than 360.</p>	<ul style="list-style-type: none"> • Part 1: Practices measuring and drawing angles using a full-circle protractor. [4.MD.5a, 4.MD.5b, 4.MD.6] • Part 2: Game: <i>Division Dash</i> [4.NBT.4, 4.NBT.6] Math Boxes: [6-6↔6-9]; 1, 5 [Foundation]; 2 [4.MD.2]; 3 [4.NBT.6]; 4 [4.NBT.2] Writing/Reasoning: [4.MD.2] Study Link: [4.MD.6] • Part 3: Readiness [4.MD.5a, 4.MD.5b]; Enrichment: <i>Angle Add-Up</i> [4.MD.7]; Extra Practice: <i>Angle Tangle</i> [4.MD.6] 	<p>SMP2, 3, 5–8; 4.NBT.6, 4.MD.2, 4.MD.5a, 4.MD.5b, 4.MD.6, 4.MD.7</p>
<p>6•7</p>	<p>The Half-Circle Protractor</p> <p>To guide students as they classify angles as acute, right, obtuse, straight, and reflex; and to provide practice using a half-circle protractor to measure and draw angles.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on the identification and calculation of angles using addition, subtraction, and a half-circle protractor. [4.MD.5a, 4.MD.5b, 4.MD.6, 4.MD.7] • Part 2: Math Boxes: [6-7↔6-5]; 1 [Foundation]; 2, 6 [Maintain]; 3 [4.OA.3]; 4 [4.NBT.5]; 5 [4.MD.1] Study Link: [4.MD.6] 	<p>SMP1–6; 4.MD.5a, 4.MD.5b, 4.MD.6, 4.MD.7</p>

<p>6•8</p>	<p>Rectangular Coordinate Grids for Maps</p> <p>To guide students in the use of letter-number pairs and ordered pairs of numbers to locate points on a grid; and to provide practice using a map scale.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.OA.3] • Part 1: Focuses on using maps to develop skills with rectangular coordinates and distance estimation using a scale. [4.OA.3] • Part 2: Game: <i>Angle Tangle</i> [4.MD.6, 4.MD.7] Finding Real-Life Angle Measures: [4.MD.5a, 4.MD.5b, 4.MD.7] Math Boxes: [6-8↔6-10]; 1, 2, 4 [Foundation]; 3 [4.G.1]; 5 [4.NBT.3]; 6 [4.NF.2] 	<p>SMP1, 2, 4–6, 8; 4.OA.3, 4.MD.5a, 4.MD.5b, 4.MD.6, 4.MD.7</p>
<p>6•9</p>	<p>Global Coordinate Grid System</p> <p>To introduce latitude and longitude; to provide practice finding the latitude and longitude of places on a globe and a map; and to identify places given the latitude and longitude.</p>	<ul style="list-style-type: none"> • Part 1: Practices locating places on regional and world maps and globes using a coordinate grid. • Part 2: Game: <i>Over and Up Squares</i> [Foundation] Math Boxes: [6-9↔6-6]; 1, 5 [Foundation]; 2 [4.OA.3]; 3 [4.NBT.6]; 4 [4.NBT.2] 	<p>SMP1–4, 6</p>
<p>6•10</p>	<p>The Partial-Quotients Division Algorithm, Part 2</p> <p>To provide practice with a “low-stress” division algorithm for 2-digit divisors.</p>	<ul style="list-style-type: none"> • Part 1: Reviews the algorithm learned in Lesson 6-3 and applies it to problems with 2-digit divisors. [4.OA.3, 4.NBT.6] • Part 2: Math Boxes: [6-10↔6-8]; 1, 2, 4 [Foundation]; 3 [4.G.1]; 5 [4.NBT.3]; 6 [4.NF.2] Study Link: [4.OA.3, 4.NBT.6] • Part 3: Readiness: <i>Division Dash</i> [4.NBT.4, 4.NBT.6] 	<p>SMP1, 2, 4–8; 4.OA.3, 4.NBT.6</p>
<p>6•11</p>	<p>Progress Check 6</p> <p>To assess students’ progress on mathematical content through the end of Unit 6.</p>	<ul style="list-style-type: none"> • Part 1: Check the progress of students at the end of Unit 6. • Part 2: Math Boxes: [6--11↔Unit 7]; 1, 2, 4 [Maintain]; 3, 5 [Foundation] 	

* Visit www.everydaymath.com for Guiding Questions that support Standards for Mathematical Practice (SMPs).

Unit 7		Fractions and Their Uses; Chance and Probability	Weeks 17–20 (Lessons 7•1–7•13)
Lesson	Title/Objective	Focus	CCSS Common Core State Standards*
7•1	<p>Review of Basic Fraction Concepts</p> <p>To review fractions as parts of a whole (ONE), fractions on number lines, and uses of fractions.</p>	<ul style="list-style-type: none"> • Part 1: Reviews the meaning and uses of fractions by drawing and coloring fractional parts of pattern-block shapes. [4.NF.3b] • Part 2: Game: <i>Product Pile-Up</i> [4.NBT.5] Math Boxes: [7-1↔7-3]; 1, 6 [Maintain]; 2 [4.MD.6, 4.G.1]; 3 [4.NBT.5]; 4, 5 [Foundation] 	SMP2–6; 4.NF.3b
7•2	<p>Fractions of Sets</p> <p>To provide practice finding fractional parts of sets.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on finding fractions of a collection of objects. [4.NF.4c] • Part 2: Math Boxes: [7-2↔7-4]; 1, 6 [Maintain]; 2 [4.MD.6, 4.G.1]; 3 [Foundation]; 4 [4.NBT.6]; 5 [4.OA.3] Writing/Reasoning: [4.MD.2] Study Link: [4.NF.4c] • Part 3: Enrichment [4.NF.4c, 4.MD.2]; Extra Practice: <i>Fraction Of</i> [4.NF.4c] 	SMP2–6; 4.NF.4c, 4.MD.2
7•3	<p>Probabilities When Outcomes Are Equally Likely</p> <p>To review basic vocabulary and concepts of probability; and to introduce finding probabilities for events when all the possible outcomes are equally likely.</p>	<ul style="list-style-type: none"> • Part 1: Reviews probability terminology and practices calculating probabilities for a playing card experiment. • Part 2: Game: <i>Fraction Of</i> [4.NF.4c] Math Boxes: [7-3↔7-1]; 1, 6 [Maintain]; 2 [4.MD.6, 4.G.1]; 3 [4.NBT.5]; 4, 5 [Foundation] 	SMP1, 2, 4, 6, 8; 4.NF.4c
7•4	<p>Pattern-Block Fractions</p> <p>To guide students as they find fractional parts of polygonal regions.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on identifying fractional part of 2-dimensional shapes. [4.NF.3a, 4.NF.3b] • Part 2: Math Boxes: [7-4↔7-2]; 1, 6 [Maintain]; 2 [4.MD.6, 4.G.1]; 3 [4.MD.2]; 4 [4.NBT.6]; 5 [4.OA.3] Writing/Reasoning: [4.MD.2] Study Link: [4.MD.2] • Part 3: Enrichment: <i>Writing Fraction and Mixed-Number Addition Number Stories</i> [4.NF.3b] 	SMP1–6; 4.NF.3a, 4.NF.3b, 4.MD.2

<p>7•5</p>	<p>Fraction and Mixed-Number Addition and Subtraction</p> <p>To guide students in the use of pattern blocks to add and subtract fractions and mixed numbers.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NF.3b] • Part 1: Focuses on creating mathematical models for the addition and subtraction of fractions using pattern blocks. [4.NF.3a, 4.NF.3b, 4.NF.3c, 4.NF.3d] • Part 2: Game: <i>Angle Tangle</i> [4.MD.6, 4.MD.7] Math Boxes: [7-5↔7-7]; 1 [Maintain]; 2, 3, 5 [Foundation]; 4 [4.MD.6, 4.G.1]; 6 [4.MD.2] Study Link: [4.NF.3b, 4.NF.3c, 4.NF.3d] 	<p>SMP1, 2, 5–7; 4.NF.3a, 4.NF.3b, 4.NF.3c, 4.NF.3d, 4.MD.6</p>
<p>7•6</p>	<p>Many Names for Fractions</p> <p>To provide practice identifying equivalent fractions.</p>	<ul style="list-style-type: none"> • Part 1: Practices identifying equivalent fractions using Fraction Cards. [4.NF.1, 4.NF.2] • Part 2: Game: <i>Grab Bag</i> [Foundation] Adding and Subtracting Fractions and Mixed Numbers: [4.NF.3a, 4.NF.3c, 4.NF.3d] Math Boxes: [7-6↔7-8]; 1 [4.NF.1]; 2 [Foundation]; 3 [4.NF.3d]; 4 [4.MD.6, 4.G.1]; 5 [4.OA.2]; 6 [4.MD.1] Study Link: [4.NF.1] • Part 3: Readiness [4.NF.1]; Enrichment [4.NF.1]; Extra Practice <i>Fraction Match</i> [4.NF.1] 	<p>SMP2, 5–7; 4.NF.1, 4.NF.2, 4.NF.3a, 4.NF.3c, 4.NF.3d</p>
<p>7•7</p>	<p>Equivalent Fractions</p> <p>To guide the development and use of a rule for generating equivalent fractions.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.OA.4] • Part 1: Uses examples of equivalent fractions to develop a rule for identifying equivalent fractions. [4.OA.4, 4.NF.1, 4.NF.2] • Part 2: Game: <i>Fraction Match</i> [4.NF.1] Fraction and Mixed-Number Addition and Subtraction: [4.NF.3a, 4.NF.3c, 4.NF.3d] Math Boxes: [7-7↔7-5]; 1 [Maintain]; 2, 3, 5 [Foundation]; 4 [4.MD.6, 4.G.1]; 6 [4.MD.2] Writing/Reasoning: [4.NF.3a] Study Link: [4.NF.1] • Part 2: Readiness [4.NF.1] 	<p>SMP2, 3, 5–8; 4.OA.4, 4.NF.1, 4.NF.2, 4.NF.3a, 4.NF.3c, 4.NF.3d</p>

<p>7•8</p>	<p>Fractions and Decimals</p> <p>To provide experience renaming fractions as decimals and decimals as fractions; and to develop an understanding of the relationship between fractions and division.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NF.1] • Part 1: Focuses on the conversion between fractions and decimals and how fractions and division are related. [4.NF.5, 4.NF.6] • Part 2: Math Boxes: [7-8↔7-6]; 1 [4.NF.1]; 2 [Foundation]; 3 [4.NF.3d]; 4 [4.MD.6, 4.G.1]; 5 [4.OA.2]; 6 [4.MD.1] Study Link: [4.NF.5, 4.NF.6] • Part 3: Enrichment: <i>Designing a Baseball Cap Rack</i> [4.NF.5] 	<p>SMP1–6; 4.NF.1, 4.NF.5, 4.NF.6</p>
<p>7•9</p>	<p>Comparing Fractions</p> <p>To provide practice ordering sets of fractions.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NF.5] • Part 1: Focuses on the comparison of fractions using Fraction Cards and benchmarks. [4.NF.1, 4.NF.2, 4.NF.7] • Part 2: Game: <i>Over and Up Squares</i> [Foundation] Game: <i>Angle Add-Up</i> [4.MD.6, 4.MD.7] Math Boxes: [7-9↔7-11↔7-12a]; 1 [4.NF.3a]; 2 [4.NBT.5]; 3 [4.MD.2]; 4 [4.NF.5]; 5 [Foundation]; 6 [4.MD.1] Study Link: [4.NF.2] • Part 3: Readiness [4.NF.2]; Extra Practice: <i>Fraction Top-It</i> [4.NF.1] 	<p>SMP1–7; 4.NF.1, 4.NF.2, 4.NF.5, 4.NF.7</p>
<p>7•10</p>	<p>The ONE for Fractions</p> <p>To guide students as they find the whole, or the ONE, for given fractions.</p>	<ul style="list-style-type: none"> • Getting Started: Study Link Follow-Up [4.NF.1] • Part 1: Finds the whole, or the ONE, for a given fraction using pattern blocks. [4.NF.3a] • Part 2: Game: <i>Fraction Top-It</i> [4.NF.2] Plotting Insect Data: [4.NF.3c, 4.NF.3d, 4.MD.4] Math Boxes: [7-10↔12]; 1 [4.NF.6]; 2 [4.NF.2]; 3 [4.NF.1]; 4 [4.NBT.6]; 5 [4.NBT.5]; 6 [4.MD.1] Study Link: [4.NF.3a] • Part 3: Enrichment: <i>Getting to One</i> [Foundation]; Enrichment: <i>Finding the ONE</i> [4.NF.3a] 	<p>SMP1, 2, 4–6; 4.NF.1, 4.NF.2, 4.NF.3a, 4.NF.3c, 4.NF.3d, 4.MD.4</p>
<p>7•11</p>	<p>Probability, Fractions, and Spinners</p> <p>To review basic ideas of probability, including fairness and expected results; and to guide the application of fractions to spinners.</p>	<ul style="list-style-type: none"> • Part 1: Reviews the basic concepts and vocabulary used with probabilities, reinforcing the concepts of Lesson 7-9 in preparation for fraction multiplication in Lesson 7-12a. • Part 2: Game: <i>Chances Are</i> [Foundation] Math Boxes: [7-11↔7-9↔7-12a]; 1 [4.NF.3a]; 2 [4.NBT.5]; 3 [4.MD.2]; 4 [4.NF.5]; 5 [Foundation]; 6 [4.MD.1] 	<p>SMP2–6, 8</p>

<p>7•12</p>	<p>A Cube-Drop Experiment</p> <p>To guide students in comparing predicted and actual results from an experiment with equally likely outcomes.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NF.6] • Part 1: Focuses on event probability by experimenting with dropping a cube onto a colored grid. • Part 2: Reviewing Place Value in Whole Numbers: [4.NBT.2] Decomposing Fractions: [4.NF.3b] Math Boxes: [7-12↔7-10]; 1 [4.NF.6]; 2 [4.NF.2]; 3 [4.NF.1]; 4 [4.NBT.6]; 5 [4.NBT.5]; 6 [4.MD.1] 	<p>SMP1–6, 8; 4.NBT.2, 4.NF.3b, 4.NF.6</p>
<p>7•12a</p>	<p>Multiplying Fractions by Whole Numbers</p> <p>To apply and extend previous understandings of multiplication to multiply a fraction by a whole number.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.OA.4] • Part 1: Reinforces understanding of fractions by multiplying fractions by whole numbers using visual fraction models. [4.NF.4a, 4.NF.4b, 4.NF.4c] • Part 2: Math Boxes: [7-12a↔7-9↔7-11]; 1 [4.NF.3a]; 2 [4.NBT.5]; 3 [4.MD.2]; 4 [4.NF.5]; 5 [Foundation]; 6 [4.MD.1] Study Link: [4.NF.4a, 4.NF.4b, 4.NF.4c] • Part 3: Readiness and Enrichment [4.NF.4a, 4.NF.4b] 	<p>SMP1–8; 4.OA.4, 4.NF.4a, 4.NF.4b, 4.NF.4c</p>
<p>7•13</p>	<p>Progress Check 7</p> <p>To assess students' progress on mathematical content through the end of Unit 7.</p>	<ul style="list-style-type: none"> • Part 1: Check the progress of students at the end of Unit 7. • Part 2: Math Boxes: [7-12↔Unit 8]; 1, 2 [Maintain]; 3 [4.MD.2]; 4, 5, 6 [4.MD.1] 	
<p>* Visit www.everydaymath.com for Guiding Questions that support Standards for Mathematical Practice (SMPs).</p>			

Unit 8 Perimeter and Area		Weeks 20–22 (Lessons 8•1–8•9)	
Lesson	Title/Objective	Focus	CCSS Common Core State Standards*
8•1	<p>Kitchen Layouts and Perimeter</p> <p>To provide experience measuring and adding distances; finding the median and other landmarks of a set of measurements; and finding the perimeters of triangles.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NF.6] • Part 1: Focuses on calculating perimeters by having students sketch their kitchen layouts and the resulting work triangle. [4.MD.2] • Part 2: <i>Game: Fraction Match</i> [4.NF.1] <i>Math Boxes:</i> [8-1↔8-3]; 1, 4, 5 [Foundation]; 2 [4.NF.2]; 3 [4.G.2]; 6 [4.MD.2] <i>Study Link:</i> [4.MD.2] 	SMP1–8; 4.NF.1, 4.NF.6, 4.MD.2
8•2	<p>Scale Drawings</p> <p>To provide practice measuring distance to the nearest foot; and to provide experience creating a scale drawing on a grid using measurements and a given scale.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on the concept of drawing scales by having students create a scale drawing of the classroom. • Part 2: <i>Multiplying a Fraction by a Whole Number:</i> [4.NF.4a, 4.NF.4b, 4.NF.4c] <i>Math Boxes:</i> [8-2↔8-4]; 1, 6 [Maintain]; 2, 5 [Foundation]; 3 [4.NF.5]; 4 [4.NBT.3] 	SMP1, 2, 4–6, 8; 4.NF.4a, 4.NF.4b, 4.NF.4c
8•3	<p>Area</p> <p>To review basic area concepts; to provide practice estimating the area of a polygon by counting unit squares and using a scale drawing to find area.</p>	<ul style="list-style-type: none"> • Part 1: Reinforces the concept of area as a measure of surface in square units by calculating the area of the classroom. [4.MD.3] • Part 2: <i>Game: Fraction Top-It</i> [4.NF.2] <i>Math Boxes:</i> [8-3↔8-1]; 1, 4, 5 [Foundation]; 2 [4.NF.2]; 3 [4.G.2]; 6 [4.MD.2] <i>Writing/Reasoning:</i> [4.NF.2] 	SMP1, 3, 4, 6, 7; 4.NF.2, 4.MD.3
8•4	<p>What Is the Area of My Skin?</p> <p>To demonstrate how to estimate the area of a surface having a curved boundary; and to provide practice converting from one square unit to another.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on area estimation by using a square grid to trace and find the area of students' hands and using a rule of thumb to estimate their total skin area. [4.MD.1, 4.MD.2] • Part 2: <i>Math Boxes:</i> [8-4↔8-2]; 1, 6 [Maintain]; 2, 5 [Foundation]; 3 [4.NF.5]; 4 [4.NBT.3] 	SMP1, 2, 4, 6, 8; 4.MD.1, 4.MD.2

<p>8•5</p>	<p>Formula for the Area of a Rectangle To guide the development and use of a formula for the area of a rectangle.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on the development of the formula for the area of a rectangle and its use with non-whole number sides. [4.MD.2, 4.MD.3] • Part 2: Math Boxes: [8-5↔8-7]; 1 [4.NF.1]; 2 [4.MD.3]; 3, 4 [Foundation]; 5 [4.OA.1]; 6 [4.NBT.6] Study Link: [4.MD.3] • Part 3: Readiness and Enrichment: Finding the Area of a Tennis Court [4.MD.3] 	<p>SMP2, 4–8; 4.MD.2, 4.MD.3</p>
<p>8•6</p>	<p>Formula for the Area of a Parallelogram To review the properties of parallelograms; and to guide the development and use of a formula for the area of a parallelogram.</p>	<ul style="list-style-type: none"> • Part 1: Reviews parallelograms and their properties and cuts them apart to develop a formula to calculate their area. [4.G.1, 4.MD.3] • Part 2: Game: <i>Fraction Of</i> [4.NF.4c] Game: <i>Angle Add-Up</i> [4.MD.6, 4.MD.7] Math Boxes: [8-6↔8-8]; 1, 3 [Foundation]; 2 [4.MD.3]; 4 [4.NF.3d, 4.NF.5]; 5 [4.NBT.5] • Part 3: Enrichment: Solving Area and Perimeter Problems [4.MD.3] 	<p>SMP1–3, 5–8; 4.NF.4c, 4.MD.3, 4.MD.7, 4.G.1</p>
<p>8•7</p>	<p>Formula for the Area of a Triangle To guide the development and use of a formula for the area of a triangle.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NBT.2] • Part 1: Focuses on the development of a formula for the area of a triangle by arranging triangles to form parallelograms. [4.MD.3, 4.G.1, 4.G.2] • Part 2: Solving Fraction Problems: [4.NF.4c] Math Boxes: [8-7↔8-5]; 1 [4.NF.1]; 2 [4.MD.3]; 3, 4 [Foundation]; 5 [4.OA.1]; 6 [4.NBT.6] • Part 3: Extra Practice: Rugs and Fences [4.MD.3] 	<p>SMP2, 4–8; 4.NBT.2, 4.NF.4c, 4.MD.3, 4.G.1, 4.G.2</p>

<p>8•8</p>	<p>Geographical Area Measurements To discuss how geographical areas are measured; and to provide practice using division to compare two quantities with like units.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on the difficulty of calculating geographical areas and uses estimations to find and compare area ratios for different countries. [4.OA.2, 4.OA.3, 4.NBT.3, 4.MD.2] • Part 2: <ul style="list-style-type: none"> Game: <i>Grab Bag</i> [Foundation] Math Boxes: [8-8↔8-6]; 1, 3 [Foundation]; 2 [4.MD.3]; 4 [4.NF.3d, 4.NF.5]; 5 [4.NBT.5] Study Link: [4.MD.2] • Part 3: Enrichment: <i>Calculating Gravitational Pull</i> [4.MD.2] 	<p>SMP2–7; 4.OA.2, 4.OA.3, 4.NBT.3, 4.MD.2</p>
<p>8•9</p>	<p>Progress Check 8 To assess students' progress on mathematical content through the end of Unit 8.</p>	<ul style="list-style-type: none"> • Part 1: Check the progress of students at the end of Unit 8. • Part 2: <ul style="list-style-type: none"> Math Boxes: [8-9↔Unit 9]; 1 [4.MD.2]; 2 [Maintain]; 3 [4.NBT.5]; 4 [4.NBT.6] 	
<p>* Visit www.everydaymath.com for Guiding Questions that support Standards for Mathematical Practice (SMPs).</p>			

Unit 9 Fractions, Decimals, and Percents		Weeks 23–25 (Lessons 9•1–9•10)	
Lesson	Title/Objective	Focus	CCSS Common Core State Standards*
9•1	<p>Fractions, Decimals, and Percents</p> <p>To guide the use of percents in describing real-life situations; and to reinforce naming equivalencies among fractions, decimals, and percents.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NF.6] • Part 1: Reinforces decimal, fraction and percentage conversions by shading grids to represent percentages. [4.NF.6] • Part 2: <i>Game: Fraction Match</i> [4.NF.1] <i>Math Boxes:</i> [9-1↔9-3]; 1 [Maintain]; 2, 4 [Foundation]; 3 [4.NBT.5]; 5 [4.MD.6, 4.G.1]; 6 [4.G.3] <i>Study Link:</i> [4.NF.6] 	SMP1–4, 6; 4.NF.1, 4.NF.6
9•2	<p>Converting “Easy” Fractions to Decimals and Percents</p> <p>To reinforce renaming fourths, fifths, and tenths as decimals and percents; and to introduce solving percent problems by using equivalent fractions.</p>	<ul style="list-style-type: none"> • Part 1: Reinforces decimal, fraction and percentage conversions by substituting simple fractions for percents. [4.NF.1, 4.NF.5, 4.NF.6] • Part 2: <i>Game: Rugs and Fences</i> [4.MD.3] <i>Math Boxes:</i> [9-2↔9-4]; 1, 2 [Foundation]; 3 [4.MD.1]; 4 [4.OA.3]; 5 [4.MD.3]; 6 [Maintain] <i>Writing/Reasoning:</i> [4.MD.3] <i>Study Link:</i> [4.NF.6] • Part 3: Extra Practice: <i>Adding Tenths and Hundredths</i> [4.NF.5] 	SMP1, 2, 4, 6, 7; 4.NF.1, 4.NF.5, 4.NF.6, 4.MD.3
9•3	<p>Using a Calculator to Convert Fractions to Decimals</p> <p>To introduce renaming any fraction as a decimal by using a calculator; and to reinforce fraction/percent equivalencies for fourths, fifths, and tenths.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NF.6] • Part 1: Uses a calculator to rename fractions as decimals observing if the decimal is a terminating or repeating decimal. • Part 2: <i>Game: Fraction/Percent Concentration</i> [Foundation] <i>Math Boxes:</i> [9-3↔9-1]; 1 [Maintain]; 2, 4 [Foundation]; 3 [4.NBT.5]; 5 [4.MD.6, 4.G.1]; 6 [4.G.3] 	SMP1, 2, 5–8; 4.NF.6
9•4	<p>Using a Calculator to Rename Fractions as Percents</p> <p>To reinforce renaming fractions as percents using a calculator; and to introduce solving number stories involving discounts expressed as percents.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on the decimal-percent relationship and solving number stories with a percent answer. [4.MD.2] • Part 2: <i>Math Boxes:</i> [9-4↔9-2]; 1, 2 [Foundation]; 3 [4.MD.1]; 4 [4.OA.3]; 5 [4.MD.3]; 6 [Maintain] <i>Writing/Reasoning:</i> [4.MD.1] • Part 3: Enrichment [4.MD.2] 	SMP1–8; 4.MD.1, 4.MD.2

<p>9•5</p>	<p>Conversions among Fractions, Decimals, and Percents</p> <p>To reinforce the use of a data table; and to reinforce renaming fractions as percents using a calculator and renaming decimals as percents.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NF.6] • Part 1: Reinforces percentages by calculating the percent of different countries world populations and areas. • Part 2: Angle Addition and Subtraction: [4.MD.7] Math Boxes: [9-5↔9-7↔9-9]; 1, 2, 3 [Foundation]; 4 [4.NBT.6]; 5 [4.MD.3]; 6 [4.G.3] 	<p>SMP2–8; 4.NF.6, 4.MD.7</p>
<p>9•6</p>	<p>Comparing the Results of a Survey</p> <p>To guide the organization and tabulation of survey data; and to introduce the use of percents to compare quantities expressed as fractions with unlike denominators.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NF.5] • Part 1: Focuses on tabulating the results of a survey from Lesson 9-1 and converting the results from fraction to percent. • Part 2: Solving Number Stories with Multiplication and Division: [4.OA.3, 4.MD.2] Math Boxes: [9-6↔9-8]; 1, 2, 5 [Foundation]; 3, 4 [4.MD.2]; 6 [4.MD.1] 	<p>SMP1–4, 6, 7; 4.OA.3, 4.NF.5, 4.MD.2</p>
<p>9•7</p>	<p>Comparing Population Data</p> <p>To provide practice ranking and comparing data that are reported as percents and displaying ranked data by coloring maps.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NF.2] • Part 1: Reinforces the calculation and comparison of demographic percentages with respect to the whole using a map. • Part 2: Math Boxes: [9-7↔9-5↔9-9]; 1, 2, 3 [Foundation]; 4 [4.NBT.6]; 5 [4.MD.3]; 6 [4.G.3] 	<p>SMP1–7; 4.NF.2</p>
<p>9•8</p>	<p>Multiplication of Decimals</p> <p>To introduce multiplication of decimals by whole numbers; and to reinforce the partial-products and lattice methods for multiplication.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on decimal multiplication using estimation, partial-products, and the lattice method. • Part 2: Game: Over and Up Squares [Foundation] Math Boxes: [9-8↔9-6]; 1, 2, 5 [Foundation]; 3, 4 [4.MD.2]; 6 [4.MD.1] • Part 3: Readiness: Multiplying Whole Numbers and Estimating Products [4.NBT.5]; Readiness: Solving Number Stories [4.MD.2] 	<p>SMP1, 2, 4–7; 4.NBT.5, 4.MD.2</p>

<p>9•9</p>	<p>Division of Decimals To introduce division of decimals by whole numbers; and to reinforce the partial-quotients division algorithm.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on decimal division using estimation and partial-quotients. • Part 2: Game: <i>Polygon Pair-Up</i> [4.G.1, 4.G.2] Math Boxes: [9-9↔9-5↔9-7]; 1, 2, 3 [Foundation]; 4 [4.NBT.6]; 5 [4.MD.3]; 6 [4.G.3] • Part 3: Readiness: <i>Dividing Whole Numbers and Estimating Quotients</i> [4.NBT.6]; Readiness: <i>Solving Division Number Stories Involving Money</i> [4.OA.3, 4.MD.2] 	<p>SMP1–4, 6–8; 4.OA.3, 4.NBT.6, 4.MD.2, 4.G.1, 4.G.2</p>
<p>9•10</p>	<p>Progress Check 9 To assess students' progress on mathematical content through the end of Unit 9.</p>	<ul style="list-style-type: none"> • Part 1: Check the progress of students at the end of Unit 9. • Part 2: Math Boxes: [9-10↔Unit 10]; 1, 3 [4.G.3]; 2, 4 [4.MD.1]; 5 [4.NF.7]; 6 [Foundation] 	

* Visit www.everydaymath.com for Guiding Questions that support Standards for Mathematical Practice (SMPs).

Unit 10 Reflections and Symmetry		Weeks 25–27 (Lessons 10•1–10•7)	
Lesson	Title/Objective	Focus	<div style="background-color: yellow; border: 1px solid black; padding: 2px; display: inline-block;">CCSS</div> Common Core State Standards*
10•1	Explorations with a Transparent Mirror To guide the exploration of reflections of 2-dimensional figures.	<ul style="list-style-type: none"> • Part 1: Focuses on reflections by using a transparent mirror to move and draw reflected images. [4.G.3] • Part 2: <i>Game: Over and Up Squares</i> [Foundation] <i>Using Coin Values to Add Hundredths:</i> [4.NF.5] <i>Math Boxes:</i> [10-1↔10-4]; 1 [4.G.3]; 2, 4, 5 [Foundation]; 3 [4.NF.2]; 6 [4.MD.3] • Part 3: Readiness [4.G.3] 	SMP2, 5, 6; 4.NF.5, 4.G.3
10•2	Finding Lines of Reflection To guide the exploration of reflections; and to provide practice identifying lines of reflection.	<ul style="list-style-type: none"> • Part 1: Focuses on reflections using the <i>Dart</i> and <i>Pocket-Billiards</i> games. • Part 2: <i>Game: Angle Tangle</i> [4.MD.6, 4.MD.7] <i>Math Boxes:</i> [10-2↔10-5]; 1, 2, 4, 5 [Foundation]; 3 [Maintain] • Part 3: Readiness and Enrichment: <i>Solving Paper-Folding Puzzles; Exploring Reflections and Lines of Reflections</i> [4.G.3] 	SMP3–6; 4.MD.6, 4.G.3
10•3	Properties of Reflections To guide the discovery of basic properties of reflections.	<ul style="list-style-type: none"> • Part 1: Focuses on the properties of reflections by using a transparent mirror to draw reflected images. [4.G.3] • Part 2: <i>Growing Patterns:</i> [4.OA.5] <i>Math Boxes:</i> [10-3↔10-6]; 1, 2, 3 [Foundation]; 4 [4.MD.6, 4.G.1]; 5 [4.MD.1] <i>Writing/Reasoning:</i> [4.MD.1] • Part 3: Readiness [4.G.3] 	SMP2–8; 4.OA.5, 4.MD.1, 4.G.3

<p>10•4</p>	<p>Line Symmetry To guide exploration of the connection between reflections and line symmetry.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NF.5] • Part 1: Introduces and explores lines of symmetry by using transparent mirrors and folding polygons. [4.G.3] • Part 2: <ul style="list-style-type: none"> • Multiplying a Fraction by a Whole Number: [4.NF.4a, 4.NF.4b, 4.NF.4c] • Math Boxes: [10-4↔10-1]; 1 [4.G.3]; 2, 4, 5 [Foundation]; 3 [4.NF.2]; 6 [4.MD.3] • Study Link: [4.G.3] • Part 3: Extra Practice [4.G.3] 	<p>SMP2, 4–7; 4.NF.4a, 4.NF.4b 4.NF.4c, 4.NF.5, 4.G.3</p>
<p>10•5</p>	<p>Frieze Patterns To guide the application of reflections, rotations, and translations.</p>	<ul style="list-style-type: none"> • Getting Started: Study Link Follow-Up [4.G.3] • Part 1: Reinforces the concept of reflections through the design and creation of frieze patterns. [4.OA.5] • Part 2: <ul style="list-style-type: none"> • Game: Polygon Pair-Up [4.G.1, 4.G.2] • Math Boxes: [10-5↔10-2]; 1, 2, 4, 5 [Foundation]; 3 [Maintain] 	<p>SMP2–8; 4.OA.5, 4.G.1, 4.G.2, 4.G.3</p>
<p>10•6</p>	<p>Positive and Negative Numbers To introduce addition involving negative integers.</p>	<ul style="list-style-type: none"> • Part 1: Reviews positive and negative numbers and practices their addition with the <i>Credits/Debits Game</i>. • Part 2: <ul style="list-style-type: none"> • Solving Fraction, Decimal, and Percent Problems: [4.NF.6] • Math Boxes: [10-6↔10-3]; 1, 2, 3 [Foundation]; 4 [4.MD.6, 4.G.1]; 5 [4.MD.1] • Writing/Reasoning: [4.MD.1] 	<p>SMP2, 4–7; 4.NF.6, 4.MD.1</p>
<p>10•7</p>	<p>Progress Check 10 To assess students' progress on mathematical content through the end of Unit 10.</p>	<ul style="list-style-type: none"> • Part 1: Check the progress of students at the end of Unit 10. • Part 2: <ul style="list-style-type: none"> • Math Boxes: [10-7↔Unit 11]; 1, 4 [4.MD.3]; 2 [Foundation]; 3 [4.MD.1] 	

* Visit www.everydaymath.com for Guiding Questions that support Standards for Mathematical Practice (SMPs).

Unit 11		3-D Shapes, Weight, Volume, and Capacity	Weeks 27–29 (Lessons 11•1–11•8)
Lesson	Title/Objective	Focus	<div style="background-color: yellow; border: 1px solid black; padding: 2px; display: inline-block;">CCSS</div> Common Core State Standards*
11•1	<p>Weight</p> <p>To review grams and ounces as units of mass and weight; and to guide the estimation and measurement of weight in grams and ounces.</p>	<ul style="list-style-type: none"> • Part 1: Reviews measuring in ounces and grams and practices the estimation of and converting between the two measures. [4.MD.1, 4.MD.2] • Part 2: Math Boxes: [11-1↔11-3]; 1, 2, 4 [Foundation]; 3 [4.OA.4]; 5 [4.MD.2] Study Link: [4.MD.1, 4.MD.2] 	SMP2, 4–7; 4.MD.1, 4.MD.2
11•2	<p>Geometric Solids</p> <p>To review the properties of common geometric solids.</p>	<ul style="list-style-type: none"> • Part 1: Reviews geometric solids and investigate their properties. Students construct a rectangular prism with straws in preparation of Lessons 11-4. • Part 2: Math Boxes: [11-2↔11-4↔11-6]; 1, 2, 3, 4, 5 [Foundation]; 6 [4.OA.2] 	SMP2–7
11•3	<p>Constructing Geometric Solids</p> <p>To provide practice identifying geometric solids given their properties; and to guide the construction of polyhedrons.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NF.4a, 4.NF.4b] • Part 1: Reviews geometric solids through riddles about their properties, polyhedron construction, and drawing cubes. • Part 2: Plotting Book Heights: [4.NF.3c, 4.NF.3d, 4.MD.4] Math Boxes: [11-3↔11-1]; 1, 2, 4 [Foundation]; 3 [4.OA.4]; 5 [4.MD.2] 	SMP1, 2, 4–8; 4.NF.3c, 4.NF.3d, 4.NF.4a, 4.NF.4b, 4.MD.4
11•4	<p>A Volume Exploration</p> <p>To review concepts and units of volume.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on the concept of finding metric volume using base-10 blocks, meter sticks, and centimeter cubes. [4.MD.1] • Part 2: Game: <i>Credits/Debits Game</i> [Foundation] Math Boxes: [11-4↔11-2↔11-6]; 1, 2, 3, 4, 5 [Foundation]; 6 [4.MD.2] Writing/Reasoning: [4.NBT.3] 	SMP2–7; 4.NBT.3, 4.MD.1

<p>11•5</p>	<p>A Formula for the Volume of Rectangular Prisms To guide the development and use of a formula for finding the volume of a rectangular prism.</p>	<ul style="list-style-type: none"> • Part 1: Focuses on using cube-stacking problems to derive the formula for the volume of a rectangular prism. [4.MD.3] • Part 2: Game: <i>Chances Are</i> [Foundation] Math Boxes: [11-5↔11-7]; 1, 2, 3, 5 [Foundation]; 4 [4.MD.1]; 6 [4.MD.2] 	<p>SMP2, 6–8; 4.MD.3</p>
<p>11•6</p>	<p>Subtraction of Positive and Negative Numbers To review addition of positive and negative integers; and to introduce subtraction of positive and negative integers.</p>	<ul style="list-style-type: none"> • Part 1: Reviews addition of positive and negative integers and introduces their subtraction. • Part 2: Math Boxes: [11-6↔11-2↔11-4]; 1, 2, 3, 4, 5 [Foundation]; 6 [4.OA.2] 	<p>SMP2–6, 8</p>
<p>11•7</p>	<p>Capacity To review units of capacity.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.NF.4a, 4.NF.4b] • Part 1: Reviews units of capacity with a classroom Liter and Millimeter Museum and compares capacities by measuring. [4.OA.3, 4.MD.1, 4.MD.2] • Part 2: Math Boxes: [11-7↔11-5]; 1, 2, 3, 5 [Foundation]; 4 [4.MD.1]; 6 [4.MD.2] Study Link: [4.MD.1] 	<p>SMP2, 4–7; 4.OA.3, 4.NF.4a, 4.NF.4b, 4.MD.1, 4.MD.2</p>
<p>11•8</p>	<p>Progress Check 11 To assess students' progress on mathematical content through the end of Unit 11.</p>	<ul style="list-style-type: none"> • Part 1: Check the progress of students at the end of Unit 11. • Part 2: Math Boxes: [11-8↔Unit 12]; 1, 3, 4, 5 [4.MD.2]; 2 [4.OA.3]; 6 [Foundation] 	

* Visit www.everydaymath.com for Guiding Questions that support Standards for Mathematical Practice (SMPs).

Unit 12 Rates		Weeks 29–30 (Lessons 12•1–12•7)	
Lesson	Title/Objective	Focus	<div style="background-color: #ffff00; display: inline-block; padding: 2px;">CCSS</div> Common Core State Standards*
12•1	Introducing Rates To introduce rates; and to provide practice collecting and comparing rate data.	<ul style="list-style-type: none"> • Part 1: Focuses on expressing data collected as rates and comparing median rates. • Part 2: Identifying Fractions and Decimals on Number Lines: [4.NF.6] Math Boxes: [12-1↔12-3]; 1 [4.G.1]; 2, 4, 6 [Foundation]; 3 [Maintain]; 5 [4.OA.4] 	SMP2, 4, 6, 7; 4.NF.6
12•2	Solving Rate Problems To provide practice using a rate table to record rate information; and to provide practice solving rate problems.	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.MD.1] • Part 1: Practices rates using a “What’s My Rule?” table to solve rate problems. [4.OA.3, 4.MD.1, 4.MD.2] • Part 2: Game: <i>Credits/Debits Game</i> (Advanced Version) [Foundation] Math Boxes: [12-2↔12-4↔12-6]; 1 [4.OA.5]; 2 [4.MD.1]; 3, 4, 5, 6 [Foundation] Study Link: [4.OA.3, 4.MD.2] 	SMP1–4, 6–8; 4.OA.3, 4.MD.1, 4.MD.2
12•3	Converting between Rates To provide practice checking the validity of data by converting the data to more accessible rates.	<ul style="list-style-type: none"> • Getting Started: Study Link Follow-Up [4.OA.3, 4.MD.2] • Part 1: Focuses on converting rates from a large scale such as a lifetime to smaller, more manageable units. [4.OA.3, 4.NBT.3, 4.MD.1, 4.MD.2] • Part 2: Math Boxes: [12-3↔12-1]; 1 [4.G.1]; 2, 4, 6 [Foundation]; 3 [Maintain]; 5 [4.OA.4] Writing/Reasoning: [4.OA.4] Study Link: [4.MD.1, 4.MD.2] • Part 3: Enrichment [4.MD.2] 	SMP1–4, 6, 8; 4.OA.3, 4.OA.4, 4.NBT.3, 4.MD.1, 4.MD.2

<p>12•4</p>	<p>Comparison Shopping: Part 1 To introduce calculating the unit price for a product; and to provide practice comparing unit prices and identifying information needed for comparison shopping.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.MD.1] • Part 1: Focuses on calculating unit prices and comparing the unit prices of products to determine which the better deal is. [4.MD.1, 4.MD.2] • Part 2: <ul style="list-style-type: none"> • Game: Name That Number [Foundation] • Converting Units of Measure: [4.MD.1] • Math Boxes: [12-4↔12-2↔12-6]; 1 [4.OA.5]; 2 [4.MD.1]; 3, 4, 5, 6 [Foundation] • Study Link: [4.MD.2] 	<p>SMP1–4, 6–8; 4.MD.1, 4.MD.2</p>
<p>12•5</p>	<p>Comparison Shopping: Part 2 To provide practice calculating and comparing unit prices that involve fractions of cents.</p>	<ul style="list-style-type: none"> • Getting Started: Mental Math and Reflexes [4.MD.2] • Part 1: Practices calculating unit prices, including those involving fractions of cents, using student collected data. [4.MD.2] • Part 2: <ul style="list-style-type: none"> • Game: Fraction Top-It [4.NF.2] • Investigating Liters and Milliliters: [4.MD.2] • Math Boxes: [12-5↔12-7]; 1 [4.NBT.5]; 2 [4.OA.5]; 3, 6 [4.MD.2]; 4, 5 [Foundation] • Writing/Reasoning: [4.MD.2] • Study Link: [4.MD.2] • Part 3: Readiness [4.MD.2] 	<p>SMP1, 2, 4–8; 4.NF.2, 4.MD.2</p>
<p>12•6</p>	<p>World Tour Wrap-Up To reflect on this year’s World Tour experiences.</p>	<ul style="list-style-type: none"> • Part 1: Reviews the knowledge and experiences students gained participating in the World Tour activities. • Part 2: <ul style="list-style-type: none"> • Summarizing the Liter & Milliliter Museum: [4.MD.1] • Math Boxes: [12-6↔12-2↔12-4]; 1 [4.OA.5]; 2 [4.MD.1]; 3, 4, 5, 6 [Foundation] 	<p>SMP2–4, 6; 4.MD.1</p>
<p>12•7</p>	<p>Progress Check 12 To assess students’ progress on mathematical content through the end of Unit 12.</p>	<ul style="list-style-type: none"> • Part 1: Check the progress of students at the end of Unit 12. • Part 2: <ul style="list-style-type: none"> • Math Boxes: [12-7↔12-5]; 1 [4.NBT.5]; 2 [4.OA.5]; 3, 6 [4.MD.2]; 4, 5 [Foundation] 	
<p>* Visit www.everydaymath.com for Guiding Questions that support Standards for Mathematical Practice (SMPs).</p>			

Common Core State Standards for Grade 4**

OPERATIONS AND ALGEBRAIC THINKING 4.OA

Use the four operations with whole numbers to solve problems.

4.OA.1. Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.

4.OA.2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

4.OA.3. Solve multistep word problems posed with whole numbers and having whole number answers using the four operations, including problems in which remainders must be interpreted. 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.

Gain familiarity with factors and multiples.

4.OA.4. Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.

Generate and analyze patterns.

4.OA.5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. *For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.*

NUMBER AND OPERATIONS IN BASE TEN 4.NBT

Generalize place value understanding for multi-digit whole numbers.

4.NBT.1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. *For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.*

4.NBT.2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.

4.NBT.3. Use place value understanding to round multi-digit whole numbers to any place.

4.NBT.4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.

4.NBT.5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

4.NBT.6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

NUMBER AND OPERATIONS—FRACTIONS 4.NF

Extend understanding of fraction equivalence and ordering.

4.NF.1. Explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $(n \times a) / (n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

4.NF.2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

4.NF.3. Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$.

4.NF.3a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

4.NF.3b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples:* $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$; $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$; $2 \frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$.

4.NF.3c. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.

4.NF.3d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.

4.NF.4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

4.NF.4a. Understand a fraction a/b as a multiple of $1/b$. For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.

4.NF.4b. Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as $6/5$. (In general, $n \times (a/b) = (n \times a)/b$.)

4.NF.4c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat $3/8$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?

Understand decimal notation for fractions.

4.NF.5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express $3/10$ as $30/100$, and add $3/10 + 4/100 = 34/100$.

4.NF.6. Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $62/100$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

4.NF.7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model.

MEASUREMENT AND DATA 4.MD

Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

4.MD.1. Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...

4.MD.2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

4.MD.3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.

4.MD.4. Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.*

Geometric measurement: understand concepts of angle and measure angles.

4.MD.5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:

4.MD.5a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure angles.

4.MD.5b. An angle that turns through n one-degree angles is said to have an angle measure of n degrees.

4.MD.6. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

4.MD.7. Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.

GEOMETRY 4.G

Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

4.G.1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

4.G.2. Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.

4.G.3. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

Standards for Mathematical Practice**

1 Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

2 Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to *contextualize*, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

3 Construct viable arguments and critique the reasoning of others.

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

4 Model with mathematics.

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

5 Use appropriate tools strategically.

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

6 Attend to precision.

Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

7 Look for and make use of structure.

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well-remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y .

8 Look for and express regularity in repeated reasoning.

Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

**© Copyright 2010. National Governors Association Center for Best Practices and Council of Chief State School Officers. All rights reserved.