

# COMMON CORE Standards Plus<sup>®</sup>



# Mathematics

## GRADE 7

### Teacher Edition



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# Common Core Standards Plus® - Mathematics Grade 7

## *Table of Contents*

<b>Resources:</b>	<b>Page(s)</b>
<b>What is Common Core Standards Plus?</b> .....	<b>5</b>
<b>Delivering the Lessons</b> .....	<b>6-7</b>
<b>Pacing the Materials</b> .....	<b>8-11</b>
Suggested Pacing.....	<b>8-9</b>
Project-Based Learning Pacing.....	<b>10-11</b>
<b>Lesson Index</b> .....	<b>12-19</b>
<i>The Lesson Index lists the specific standard(s) addressed, the focus, and the page numbers for every Common Core Standards Plus Lesson, Assessment (Evaluation), Performance Lesson, and Integrated Project.</i>	

<b>Common Core Standards Plus Domains/Topics:</b>	<b>Page(s)</b>
<b>Ratios and Proportional Relationships</b> (Standards: 7.RP.1-7.RP.3).....	<b>23-116</b>
Academic Vocabulary.....	<b>27</b>
Skills Trace.....	<b>28-30</b>
Ratios and Proportional Relationships Lessons 1-4 & Assessment (Evaluation) 1.....	<b>32-41</b>
<b>Performance Lesson 1</b> .....	<b>42-44</b>
Ratios and Proportional Relationships Lessons 5-28 & Assessments (Evaluations) 2-7.....	<b>46-111</b>
<b>Performance Lesson 2</b> .....	<b>112-116</b>
<b>The Number System</b> (Standards: 7.NS.1a-c, 7.NS.2b-d, 7.NS.3).....	<b>117-221</b>
Academic Vocabulary.....	<b>121</b>
Skills Trace.....	<b>122-128</b>
The Number System Lessons 1-16 & Assessments (Evaluations) 1-4.....	<b>130-173</b>
<b>Performance Lesson 3</b> .....	<b>174-176</b>
The Number System Lessons 17-28 & Assessments (Evaluations) 5-7.....	<b>178-207</b>
<b>Performance Lesson 4</b> .....	<b>208-211</b>
The Number System Lessons 29-32 & Assessment (Evaluation) 8.....	<b>212-221</b>

# Common Core Standards Plus® - Mathematics Grade 7

## Table of Contents

Common Core Standards Plus Domains/Topics (continued):	Page(s)
<b>Integrated Project #1 – <i>Launching Your Business</i></b> .....223-234 <i>(Prerequisite Domains/Topics: Ratios and Proportional Relationships and The Number System)</i>	
<b>Expressions and Equations</b> <i>(Standards: 7.EE.1-3, 7.EE.4a-b)</i> .....237-324	
Academic Vocabulary.....241	
Skills Trace.....242-243	
Expressions and Equations Lessons 1-8 & Assessments (Evaluations) 1-2.....244-263	
<b>Performance Lesson 5</b> .....264-266	
Expressions and Equations Lessons 9-20 & Assessments (Evaluations) 3-5.....268-297	
<b>Performance Lesson 6</b> .....298-300	
Expressions and Equations Lessons 21-28 & Assessments (Evaluations) 6-7.....302-321	
<b>Performance Lesson 7</b> .....322-324	
<b>Integrated Project #2 – <i>In the Real World</i></b> ... ..325-333 <i>(Prerequisite Domains/Topics: Expressions and Equations)</i>	
<b>Statistics and Probability</b> <i>(Standards: 7.SP.1-6, 7.SP.7a-b, 7.SP.8a-c)</i> .....337-415	
Academic Vocabulary.....340-341	
Skills Trace.....341-343	
Statistics and Probability Lessons 1-12 & Assessments (Evaluations) 1-3.....344-379	
<b>Performance Lesson 8</b> .....380-383	
Statistics and Probability Lessons 13-20 & Assessments (Evaluations) 4-5.....384-411	
<b>Performance Lesson 9</b> .....412-415	
<b>Integrated Project #3 – <i>Powerful Words</i></b> .....417-425 <i>(Prerequisite Domains/Topics: Statistics &amp; Probability)</i>	

# Common Core Standards Plus® - Mathematics Grade 7

## ***Table of Contents***

<b>Common Core Standards Plus Domains/Topics:</b>	<b>Page(s)</b>
<b>Geometry</b> ( <i>Standards: 7.G.1-7.G.6</i> ).....	<b>427-517</b>
Academic Vocabulary.....	<b>431-432</b>
Skills Trace.....	<b>432-435</b>
Geometry Lessons 1-4 & Assessment (Evaluation) 1.....	<b>436-447</b>
<b><i>Performance Lesson 10</i></b> .....	<b>448-451</b>
Geometry Lessons 5-12 & Assessments (Evaluations) 2-3.....	<b>452-471</b>
<b><i>Performance Lesson 11</i></b> .....	<b>472-475</b>
Geometry Lessons 13-20 & Assessments (Evaluations) 4-5.....	<b>476-495</b>
<b><i>Performance Lesson 12</i></b> .....	<b>496-497</b>
Geometry Lessons 21-28 & Assessments (Evaluations) 6-7.....	<b>498-517</b>
<b>Grade 7 Mathematics Standards and Mathematical Practices</b> .....	<b>519-525</b>

# Common Core Standards Plus® - Mathematics Grade 7

## *What is Common Core Standards Plus?*

### Research Behind Standards Plus:

Common Core Standards Plus is produced by Learning Plus Associates, a Nonprofit Public Benefit Corporation dedicated to creating and providing solutions that increase student achievement and support teacher delivery of high-quality, effective instruction on a daily basis. The lessons are based upon the research of Effective Schools Correlates, Edward Deming's Total Quality Management (TQM), and models of effective instruction. A team of content and grade level experts wrote the Common Core Standards Plus lessons to meet the skills, concepts, depth, and rigor of the Common Core Standards.

### What is Standards Plus?

Standards Plus is a set of research-based, supplemental K-8 language arts and math materials written to the Common Core Standards. These explicit direct instruction lessons were designed to teach discrete elements of the Common Core Standards.

### Benefits:

- Ready-to-teach lessons and projects with very little teacher prep
- Grade level content vocabulary is taught within the context of the lessons.
- Increases student and teacher understanding of the standards
- A year's worth of daily lessons, performance lessons, and integrated projects ensure that all students have equal access to standards at every level of rigor (DOK 1-4)
- Prepares students for the state assessment

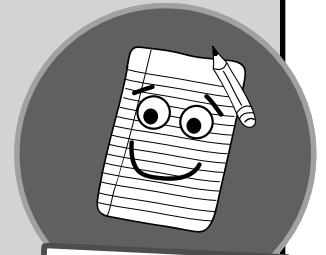
### Three Types of Lessons:

#### Daily Lessons and Weekly Assessments (Evaluations):

*(15-20 minutes daily)*

There are 34 weeks of daily lessons and assessments (evaluations) written directly to the standards.

**A week of instruction** is comprised of **four lessons** and a **corresponding assessment**. The daily lessons are written to DOK Levels 1 and 2.



**Daily Lessons & Weekly Assessments**

#### Performance Lessons:

*(3-5 days 30 minutes each day)*

After one or more weeks of daily lessons written to a particular standard or topic, you will find a Performance Lesson. Performance Lessons are written to DOK Level 3.

These lessons require that students apply what they have learned and use reasoning, planning, evidence, and a higher level of thinking than the daily lessons. Many standards are assessed at this level of rigor on state assessments.



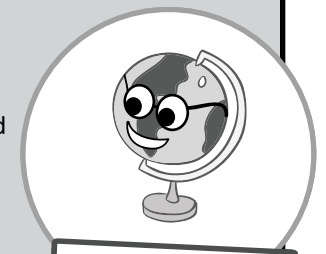
**Performance Lessons**

#### Integrated Projects:

*(Multiple class sessions over several days or weeks)*

Three Integrated Projects are located immediately after the supporting daily lessons, assessments, and performance lessons. Integrated Projects require that students plan, synthesize information, produce high-quality products, and present their findings. Integrated Projects are written to DOK level 4.

Integrated Projects require that students plan, synthesize information, produce high-quality products, and present their findings. Integrated Projects are written to DOK level 4.



**Integrated Projects**

# Common Core Standards Plus® - Mathematics Grade 7

## *Delivering the Daily Lessons*

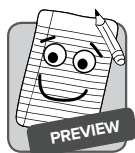


### Prepare to Teach/Plan Instruction

Select the week of instruction you will be teaching. View the sample pacing on pages 8-9 or create your own pacing to match the content and standards of Standards Plus lessons to classroom instruction, district pacing guides, or benchmark information.



A **week of instruction** is a set of four daily lessons and a weekly assessment.



### Preview the Week of Instruction (5 minutes)

Look at the teacher lesson plans for all four lessons paying particular attention to the standard(s), lesson objective, and introduction. Those three pieces of information will identify what students will learn and be able to do. Quickly scan the student page to gain an understanding of what students will be expected to do in independent practice. Repeat this process for the next three lessons and the assessment. This will give you a clear picture of how the week unfolds and will help you keep the daily lessons focused and concise.



### Prepare to Teach a Daily Lesson (5 minutes)

- Read the entire teacher lesson plan.
- Identify academic vocabulary.
- Determine your instructional focus, “What do I want students to know and do by the end of today’s lesson?”
- Consider any relevant prior knowledge connections you can share with students, so they can connect the new learning to previous learning.



### Teach a Daily Lesson (15-20 minutes)



1. **Project the student lesson**
2. **Read the standard(s)** aloud with students, highlighting the part of the standard being taught in today’s lesson.
3. **Read the Introduction** provided in the Teacher Edition or provide your own.
4. **Read the Instruction aloud to students.**  
Focus on new academic vocabulary, teaching the concept directly, and modeling the concept for students.
5. **Read the Guided Practice** and work through the examples together with students, sharing your thoughts aloud as you work through the item(s) step-by-step.
  - Monitor the class – If students are struggling, DO NOT MOVE onto Independent Practice, continue with Guided Practice.

6. **Read the Independent Practice and/or the Directions.**
  - Continue to monitor the class to catch common errors or misconceptions and correct immediately.
  - Differentiate instruction for struggling students by assigning fewer items.
  - Prompt and praise students for making attempts.
7. **Complete the Review**
  - Review answers when all students have completed Independent Practice or when your timeframe has expired.
  - Have students correct their mistakes or improve their answers.
8. **Read the Closure**
  - Read or paraphrase the closure or have students summarize the important concepts or skills learned in the lesson.

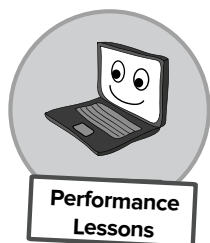
# Common Core Standards Plus® - Mathematics Grade 7

## *Delivering the Lessons*



### Weekly Formative Assessments (Evaluations)

- Formative assessments that include items that match the week's instruction.
- Use these assessments to identify students' understanding of the concept taught and identify students for intervention.



### Prepare to Teach a Performance Lesson

*Allocate 30 minutes a day for 3-5 days to complete a performance lesson.*

Periodically



### Preview the Entire Performance Lesson (5-10 Minutes)

- Read the teacher lesson plan (1-2 pages) and student pages
- Focus on the standards listed at the top of the teacher page, the Lesson Objective, and the Overview. This information will provide a broad overview of the performance lessons.

**NOTE:** Performance lessons are more complex and more difficult for students than the daily lessons. **Performance lessons must be taught, not assigned.** Each performance lesson *has a large guided practice section*. This is so that the teacher can model and guide students through each component of the lesson. These lessons teach students how to successfully complete a performance task.



### Prepare to Teach an Integrated Project

*Multiple class sessions over several days or weeks.*

3 Times a Year



### Preview the Entire Integrated Project (10-15 Minutes)

- Previewing the project will provide an overview of the standards and components of the project.
- This allows the teacher to gain an understanding of how several different standards can be taught and evaluated.

**NOTE:** Even if you are not planning to teach a Standards Plus Integrated Project, it is helpful to view the components of the project listed in the Teacher Edition. It provides a broad look at how to integrate many topics and standards. It is a good reminder for teachers to include standards and expectations often overlooked, whether it is planning and delivering an opinion speech, or using technology to produce and publish writing as well as to interact and collaborate with others. Each project component may take up to a week or two of instruction.

### Helpful Hint

To ensure all heavily-weighted standards are taught prior to state testing, you may need to teach a Performance Lesson and/or a component of an Integrated Project **in addition to** a week of Daily Lessons. **See PBL sample pacing on page 10-11 for an example.**

# Common Core Standards Plus® - Mathematics Grade 7

## Suggested Pacing



Standards Plus is supplemental and **does not** have to be taught in the printed order.

The pacing guide below provides instruction of the **most heavily-weighted standards in the 26 weeks prior to state testing.**

### Suggested Pacing Guide

WEEK	DOMAIN/TOPIC, LESSON (L), EVALUATIONS (E)	STANDARD(S)	TE PG#	DOK
1	Ratios & Proportional Relationships L1-4, E1	7.RP.1	32-41	<b>DOK 1-2</b>
	<i>Performance Lesson 1 – Using Unit Rates</i>	7.RP.1	42	<b>DOK 3</b>
2	Ratios & Proportional Relationships L5-8, E2	7.RP.2a, 7.RP.2b	46-59	<b>DOK 1-2</b>
3	Ratios & Proportional Relationships L9-12, E3	7.RP.2a, 7.RP.2b, 7.RP.3	60-71	<b>DOK 1-2</b>
4	Ratios & Proportional Relationships L13-16, E4	7.RP.3	72-81	<b>DOK 1-2</b>
5	Ratios & Proportional Relationships L17-20, E5	7.RP.3	82-91	<b>DOK 1-2</b>
6	Ratios & Proportional Relationships L21-24, E6	7.RP.3	92-101	<b>DOK 1-2</b>
7	Ratios & Proportional Relationships L25-28, E7	7.RP.3	102-111	<b>DOK 1-2</b>
	<i>Performance Lesson 2 – Exploring Proportionality</i>	7.RP.2a, 7.RP.2b, 7.RP.3	112	<b>DOK 3</b>
8	The Number System L1-4, E1	7.NS.1a, 7.NS.1b	130-139	<b>DOK 1-2</b>
9	The Number System L5-8, E2	7.NS.1b, 7.NS.1c	140-149	<b>DOK 1-2</b>
10	The Number System L9-12, E3	7.NS.1d	150-159	<b>DOK 1-2</b>
11	The Number System L13-16, E4	7.NS.1d	160-173	<b>DOK 1-2</b>
	<i>Performance Lesson 3 – Adding &amp; Subtracting Rational Numbers</i>	7.NS.1, 7.NS.1a-d	174	<b>DOK 3</b>
12	The Number System L17-20, E5	7.NS.2a	178-187	<b>DOK 1-2</b>
13	The Number System L21-24, E6	7.NS.2a, 7.NS.2b	188-197	<b>DOK 1-2</b>
14	The Number System L25-28, E7	7.NS.2c, 7.NS.2d	198-207	<b>DOK 1-2</b>
	<i>Performance Lesson 4 – Multiplying &amp; Dividing Rational Numbers</i>	7.NS.2, 7.NS.2a-d	208	<b>DOK 3</b>
15	The Number System L29-32, E8	7.NS.3	212-221	<b>DOK 1-2</b>
16	Expressions & Equations L1-4, E1	7.EE.1	244-253	<b>DOK 1-2</b>
17	Expressions & Equations L5-8, E2	7.EE.1, 7.EE.2	254-263	<b>DOK 1-2</b>
	<i>Performance Lesson 5 – Working with Expressions</i>	7.EE.1, 7.EE.2	264	<b>DOK 3</b>
18	Expressions & Equations L9-12, E3	7.EE.3	268-277	<b>DOK 1-2</b>
19	Expressions & Equations L13-16, E4	7.EE.3	278-287	<b>DOK 1-2</b>
20	Expressions & Equations L17-20, E5	7.EE.4a	288-297	<b>DOK 1-2</b>
	<i>Performance Lesson 6 – Equations</i>	7.EE.3, 7.EE.4a	298	<b>DOK 3</b>
21	Expressions & Equations L21-24, E6	7.EE.4a, 7.EE.4b	302-311	<b>DOK 1-2</b>
22	Expressions & Equations L25-28, E7	7.EE.4b	312-321	<b>DOK 1-2</b>
	<i>Performance Lesson 7 – Inequalities</i>	7.EE.4a, 7.EE.4b	322	<b>DOK 3</b>
23	Geometry L1-4, E1	7.G.1	436-447	<b>DOK 1-2</b>
	<i>Performance Lesson 10 – Draw It to Scale</i>	7.G.1	448	<b>DOK 3</b>
24	Geometry L5-8, E2	7.G.2	452-461	<b>DOK 1-2</b>
25	Geometry L17-20, E5	7.G.5, 7.G.6	486-495	<b>DOK 1-2</b>
26	Geometry L21-24, E6	7.G.6	498-507	<b>DOK 1-2</b>
<b>STATE TESTING BEGINS</b>				

→ Suggested pacing continues at the top of the next page.



Daily Lessons & Weekly Assessments

Each white row represents a week of instruction.

A week of instruction includes four daily lessons (L) and a weekly formative assessment /evaluation (E).



Performance Lessons

Each shaded row represents a performance lesson.

Performance lessons may take up to three 30-minute sessions to complete.



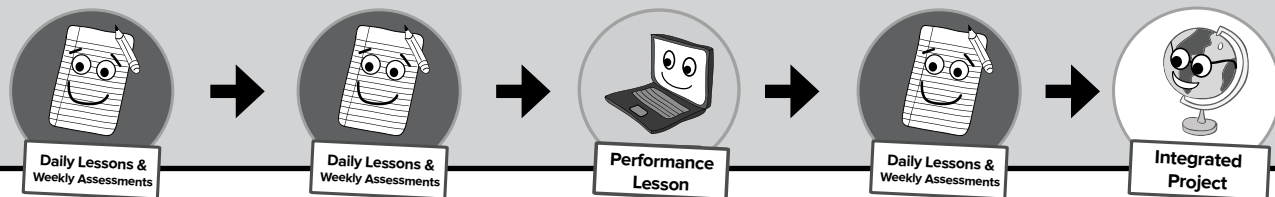
# Common Core Standards Plus® - Mathematics Grade 7

## ***Suggested Pacing Continued***

### Suggested Pacing Guide Continued

↓ These lessons are scheduled to be taught after state testing begins or they may be taught as needed throughout the year to support instruction. ↓				
WEEK	DOMAIN/TOPIC, LESSON (L), EVALUATIONS (E)	STANDARD(S)	TE PG#	DOK
27	Statistics & Probability L1-4, E1	7.SP.5, 7.SP.6	344-353	<b>DOK 1-2</b>
28	Statistics & Probability L5-8, E2	7.SP.7a, 7.SP.7b	354-365	<b>DOK 1-2</b>
29	Statistics & Probability L9-12, E3	7.SP.8a, 7.SP.8b, 7.SP.8c	366-379	<b>DOK 1-2</b>
<i>Performance Lesson 8 – Exploring Probability</i>		7.SP.5, 7.SP.6, 7.SP.7a-b, 7.SP.8a-c	380-381	<b>DOK 3</b>
30	Statistics & Probability L13-16, E4	7.SP.1, 7.SP.2	384-395	<b>DOK 1-2</b>
31	Statistics & Probability L17-20, E5	7.SP.3, 7.SP.4	396-411	<b>DOK 1-2</b>
<i>Performance Lesson 9 – Exploring Statistics</i>		7.SP.1, 7.SP.2, 7.SP.3, 7.SP.4	412	<b>DOK 3</b>
32	Geometry L9-12, E3	7.G.3, 7.G.4	462-471	<b>DOK 1-2</b>
<i>Performance Lesson 11 – Two- and Three Dimensional Figures</i>		7.G.2, 7.G.3, 7.G.4	472	<b>DOK 3</b>
33	Geometry L13-16, E4	7.G.4, 7.G.5	476-485	<b>DOK 1-2</b>
<i>Performance Lesson 12 – All About Angles</i>		7.G.4, 7.G.5, 7.G.6	496	<b>DOK 3</b>
34	Geometry L25-28, E7	7.G.6	508-517	<b>DOK 1-2</b>

## ***Developing Your Own Standards Plus Pacing is Easy***



The Common Core Standards Plus lessons can be easily paced to match:

- Core publisher textbooks
- District or site pacing
- District benchmarks

#### Here's How:

The Lesson Index found on pages **12-19** lists the Domain, Lesson Focus, and Standard(s) taught in each lesson. Every week of instruction (four Daily Lessons & a Weekly Assessment), Performance Lesson, and an Integrated Project is included in the lesson index. Use the Strand, Lesson Focus, or Standard listed on the Lesson Index to match the Standards Plus content to your own textbooks, units, or pacing. Schedule the Daily Lessons that lead up to each Performance Lesson to ensure students can apply the skills and concepts taught in the Daily Lessons.

## Common Core Standards Plus® - Mathematics Grade 7

### ***Project-Based Learning Pacing***

#### **Pacing Explanation:**

Standards Plus materials are Common Core by design. They offer instruction at all four levels of Webb’s Depth of Knowledge (DOK 1-4), and they include three instructional components (Daily Lessons, Performance Lessons, and Integrated projects) that can be scheduled to support Project-Based Learning. Each grade level and subject may be organized into three distinct sets of instruction that include several weeks of Daily Lessons and Weekly Assessments (evaluations), multiple Performance Lessons, and an Integrated Project.

**If you are using Common Core Standards Plus to support Project-Based Learning, here’s an example of how you might schedule the instruction to fit your instructional day:**

Week	Monday	Tuesday	Wednesday	Thursday	Friday
<b>20</b>	<i>Expressions &amp; Equations Lesson 17</i>	<i>Expressions &amp; Equations Lesson 18</i>	<i>Expressions &amp; Equations Lesson 19</i>	<i>Expressions &amp; Equations Lesson 20</i>	<i>Expressions &amp; Equations Evaluation 5</i>
	<i>Performance Lesson 6: Equations</i>				
	<i>Project Component: Writing Inequalities to Interpret Data</i>				



This is an example of a week of PBL instruction that includes instruction at **every level of rigor**. In this example, you teach the Daily Lessons, a Performance Lesson, and a component of an Integrated Project in one week.

# Common Core Standards Plus® - Mathematics Grade 7

## ***Project-Based Learning Pacing***

### 15-Week PBL Plan

WEEK	STRAND, LESSONS, EVALUATIONS (E)	INTEGRATED PROJECT COMPONENTS
1	Ratios and Proportional Relationships 1-4, E1 <i>*Performance Lesson #1</i>	<b>Integrated Project #1</b> <i>Launching Your Business</i>
2	Ratios and Proportional Relationships 5-8, E2	
3	Ratios and Proportional Relationships 9-12, E3	Choosing a Business
4	Ratios and Proportional Relationships 13-16, E4	Naming and Describing the Business
5	Ratios and Proportional Relationships 17-20, E5	Goods or Services: Researching Prices
6	Ratios and Proportional Relationships 21-24, E6	Goods or Services: Researching Prices
7	Ratios and Proportional Relationships 25-28, E7 <i>*Performance Lesson #2</i>	The Cost of Doing Business
8	The Number System 1-4, E1	Determining Markup and Profit
9	The Number System 5-8, E2	Creating a Spreadsheet
10	The Number System 9-12, E3	Creating a Spreadsheet
11	The Number System 13-16, E4 <i>*Performance Lesson #3</i>	Writing the Plan
12	The Number System 17-20, E5	Writing the Plan
13	The Number System 21-24, E6	Oral Presentation
14	The Number System 25-28, E7 <i>*Performance Lesson #4</i>	Disaster Strikes
15	The Number System 29-32, E8	


### 7-Week PBL Plan

16	Expressions and Equations 1-4, E1	<b>Integrated Project #2</b> <i>In the Real World...</i>
17	Expressions and Equations 5-8, E2 <i>*Performance Lesson #5</i>	Reading and Analyzing the Report
18	Expressions and Equations 9-12, E3	Writing Expressions to Interpret Data
19	Expressions and Equations 13-16, E4	Writing Equations to Interpret Data
20	Expressions and Equations 17-20, E5 <i>*Performance Lesson #6</i>	Writing Inequalities to Interpret Data
21	Expressions and Equations 21-24, E6	Using the Data to Influence and Estimate Future Earnings
22	Expressions and Equations 25-28, E7 <i>*Performance Lesson #7</i>	Writing the Analysis Sharing the Findings



### 12-Week PBL Plan

23	Statistics and Probability 1-4, E1	<b>Integrated Project #3</b> <i>Powerful Words</i>
24	Statistics and Probability 5-8, E2	
25	Statistics and Probability 9-12, E3 <i>*Performance Lesson #8</i>	What Is Average Word Length?
26	Statistics and Probability 13-16, E4	Selecting Print Sources
27	Statistics & Probability 17-20, E5 <i>*Performance Lesson #9</i>	Determining Average Word Length
28	Geometry 1-4, E1 <i>*Performance Lesson #10</i>	Analyzing and Displaying the Data
29	Geometry 5-8, E2	Analyzing and Displaying the Data
30	Geometry 9-12, E3 <i>*Performance Lesson #11</i>	Predict and Determine Probability of Similar Word Lengths
31	Geometry 13-16, E4	Reporting the Results
32	Geometry 17-20, E5 <i>*Performance Lesson #12</i>	Reporting the Results
33	Geometry 21-24, E6	Sharing the Results
34	Geometry 25-28, E7	



**Integrated Project**

Each project component may take up to two weeks of instruction.

# Common Core Standards Plus® - Mathematics Grade 7

## Lesson Index

Domain	Lesson	Focus	Standard(s)	TE Page	St. Ed. Page	DOK Level
<b>Ratios &amp; Proportional Relationships</b> (Ratios & Proportional Relationships Standards: 7.RP.1 – 7.RP.3)	1	Unit Rate		32	3	1-2
	2	Unit Rate		34	4	
	3	Unit Rate		36	5	
	4	Unit Rate		38	6	
	E1	Evaluation – Unit Rate		40	7	
	P1	<b>Performance Lesson #1 – Using Unit Rates (7.RP.1)</b>		42	9-10	3
	5	Proportional Relationships	7.RP.2a: Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.	46	11	1-2
	6	Proportional Relationships	7.RP.2a, 7.RP.2b: Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	48	12	
	7	Proportional Relationships		50	13-14	
	8	Proportional Relationships		54	15-16	
	E2	Evaluation – Proportional Relationships		58	17	
	9	Proportional Relationships	7.RP.2a, 7.RP.2b	60	19	1-2
	10	Proportional Relationships		62	20-21	
	11	Multistep Ratio Problems	7.RP.3: Use proportional relationships to solve multi-step ratio and percent problems. <i>Examples: simple interest, tax, markups &amp; markdowns, gratuities &amp; commissions, fees, percent increase &amp; decrease, percent error.</i>	66	22	
	12	Multistep Ratio Problems		68	23	
	E3	Evaluation – Proportional Relationships		70	24	
	13	Multistep Ratio Problems	7.RP.3	72	25	1-2
	14	Multistep Ratio Problems		74	26	
	15	Simple Interest		76	27	
	16	Multistep Ratio Problems		78	28	
	E4	Evaluation – Simple Interest		80	29	
	17	Sales Tax & Gratuities	7.RP.3	82	31	1-2
	18	Sales Tax & Gratuities		84	32	
	19	Discount		86	33	
	20	Discount		88	34	
	E5	Tax, Gratuity, & Discount		90	35	
21	Markup	7.RP.3	92	37	1-2	
22	Markup		94	38		
23	Commission & Fees		96	39		
24	Commission & Fees		98	40		
E6	Commission & Fees		100	41		

# Common Core Standards Plus® - Mathematics Grade 7

## Lesson Index

Domain	Lesson	Focus	Standard(s)	TE Page	St. Ed. Page	DOK Level
Ratios & Proportional Relationships	25	Percent Increase/Decrease	7.RP.3	102	43	1-2
	26	Percent Increase/Decrease		104	44	
	27	Percent Error		106	45	
	28	Percent Increase, Decrease, & Error		108	46	
	E7	Markdown, Markup, Commission & Percent of Change		110	47	
	P2	<b>Performance Lesson #2 – Exploring Proportionality (7.RP.2a, 7.RP.2b, 7.RP.3)</b>			112	49-52
The Number System (The Number System Standards: 7.NS.1a-c, 7.NS.2b-d, 7.NS.3)	1	Opposite Quantities on the Number Line	7.NS.1a: Describe situations in which opposite quantities combine to make 0. <i>For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.</i>	130	53	1-2
	2	Opposite Quantities on the Number Line		132	54	
	3	Adding Rational Numbers on the Number Line	7.NS1.b: Understand $p + q$ as the number located a distance $ q $ from $p$ , in the positive or negative direction depending on whether $q$ is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.	134	55	
	4	Adding Rational Numbers on the Number Line		136	56	
	E1	Adding Rational Numbers	7.NS.1a, 7.NS.1b	138	57	
	5	Adding Quantities on the Number Line	7.NS.1b	140	59	1-2
	6	Subtraction and Additive Inverses	7.NS1c: Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$ . Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.	142	60	
	7	Absolute Value on a Number Line		144	61	
	8	Absolute Value in Real-World Contexts		146	62	
	E2	Evaluation – Adding and Subtracting Rational Numbers	7.NS.1b, 7.NS.1b	148	63	
	9	Adding and Subtracting Integers	7.NS.1d: Apply properties of operations as strategies to add and subtract rational numbers.	150	65	1-2
	10	Adding and Subtracting Integers		152	66	
	11	Adding and Subtracting Integers		154	67	
	12	Adding and Subtracting Decimals		156	68	
	E3	Adding and Subtracting Decimals		158	69	
	13	Adding and Subtracting Decimals	7.NS.1d	160-161	71	1-2
	14	Adding and Subtracting Decimals		164	72	
	15	Adding and Subtracting Decimals		166-167	73	
	16	Adding and Subtracting Decimals		170	74	
E4	Evaluation – Adding and Subtracting Decimals	172		75		
P3	<b>Performance Lesson #3 – Adding and Subtracting Rational Numbers (7.NS.1a, 7.NS.1b, 7.NS.1c, 7.NS.1d)</b>			174	77-78	3
17	Multiplying Integers with Tiles	7.NS.2a: Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.	178	79	1-2	
18	Multiplying Integers on a Number Line		180	80		
19	Integers and the Distributive Property		182	81		
20	Products in Real-World Contexts		184	82		
E5	Evaluation – Multiplying Integers		186	83		

# Common Core Standards Plus® - Mathematics Grade 7

## Lesson Index

Domain	Lesson	Focus	Standard(s)	TE Page	St. Ed. Page	DOK Level	
<b>The Number System</b> (The Number System Standards: 7.NS.1a-c, 7.NS.2b-d, 7.NS.3)	21	Decimals and the Distributive Property	7.NS.2a	188	85	1-2	
	22	Multiplying Fractions	7.NS.2a, 7.NS.2b: Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If $p$ and $q$ are integers, then $-(p/q) = (-p)/q = p/(-q)$ . Interpret quotients of rational numbers by describing real world contexts.	190	86		
	23	Dividing Rational Numbers	7.NS.2b	192	87		
	24	Dividing Rational Numbers		194	88		
	E6	Evaluation – Multiplying and Dividing Rational Numbers	7.NS.2a, 7.NS.2b	196	89		
	25	Multiplying Rational Numbers	7.NS.2c: Apply properties of operations as strategies to multiply and divide rational numbers.	198	91	1-2	
	26	Dividing Rational Numbers		200	92		
	27	Converting Rational Numbers to Decimals	7.NS.2d: Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.	202	93		
	28	Converting Rational Numbers to Decimals		204	94		
	E7	Evaluation – Multiplying, Dividing and Converting Rational Numbers	7.NS.2c, 7.NS.2d	206	95		
	P4	<b>Performance Lesson #4 – Multiplying and Dividing Rational Numbers (7.NS.2a, 7.NS.2b, 7.NS.2c, 7.NS.2d)</b>			208	97-99	3
	29	Solving Problems Involving the Four Operations with Rational Numbers	7.NS.3: Solve real-world and mathematical problems involving the four operations with rational numbers.	212	100	1-2	
	30	Solving Problems Involving the Four Operations		214	101		
	31	Solving Real-World Problems		216	102		
	32	Solving Real-World Problems		218	103		
E8	Solving Real-World Problems	220		104			
<b>Integrated Project #1 – Launching Your Business</b> (7.RP.1, 7.RP.2a, 7.RP.2b, 7.RP.2c, 7.RP.2d, 7.RP.3, 7.NS.1, 7.NS.1a, 7.NS.1b, 7.NS.1c, 7.NS.1d, 7.NS.2, 7.NS.2a, 7.NS.2b, 7.NS.2c, 7.NS.2d, 7.NS.3)				225-230	105-108	4	
<b>Prerequisite Standards Plus Domains: <u>Ratios and Proportional Relationships</u> and <u>The Number System</u></b>							
<b>Project Objective:</b> The students will create a plan to launch a new business. They will present their plans to the class.							
<b>Overview:</b> In this project, the students will create a business plan. They will determine a business that they would like to have, research and determine prices for their goods or services, and determine the percent of profit they would expect to make. They will create a spreadsheet that shows their expected activity in the first year of operation. Since this is a learning activity, all components will be completed in class.							

# Common Core Standards Plus® - Mathematics Grade 7

## Lesson Index

Domain	Lesson	Focus	Standard(s)	TE Page	St. Ed. Page	DOK Level	
<b>Expressions and Equations</b> (Expressions and Equations Standards: 7.EE.1-3, 7.EE.4a-b)	1	Simplify Algebraic Expressions	7.EE.1: Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	244	109	1-2	
	2	Generate Equivalent Expressions		246	110		
	3	Generate Equivalent Expressions		248	111		
	4	Generate Equivalent Expressions		250	112		
	E1	Evaluation – Generating Equivalent Expressions		252	113		
	5	Factor Generate Equivalent Expressions	7.EE.1	254	115	1-2	
	6	Factor Generate Equivalent Expressions		256	116		
	7	Expressions in Problem Situations	7.EE.2: Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, $a + 0.05a = 1.05a$ means that “increase by 5%” is the same as “multiply by 1.05.”	258	117		
	8	Expressions in Problem Situations		260	118		
	E2	Evaluation – Use Properties of Operations to Generate Equivalent Expressions	7.EE.1 & 7.EE.2	262	119		
	P5	<b>Performance Lesson #5 – Working with Expressions (7.EE.1, 7.EE.2)</b>			264	121-122	3
	9	Solve Multi-Step Real-Life Problems	7.EE.3: Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.	268	123	1-2	
	10	Solve Multi-Step Real-Life Problems		270	124		
	11	Solve Multi-Step Real-Life Problems		272	125		
	12	Solve Multi-Step Real-Life Problems		274	126		
	E3	Evaluation – Solving Multi-Step Real-Life Problems		276	127		
	13	Solving Multi-Step Real-Life Problems	7.EE.3	278	129	1-2	
	14	Solving Multi-Step Real-Life Problems		280	130		
	15	Solving Multi-Step Real-Life Problems		282	131		
	16	Solving Multi-Step Real-Life Problems		284	132		
	E4	Evaluation – Solve Multi-Step Real-Life Problems		286	133		
	17	Solve Equations in the Form of $px + q = r$	7.EE.4a: Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$ , where $p$ , $q$ , and $r$ are specific rational numbers.	288	135	1-2	
	18	Solve Equations in the Form of $p(x + q) = r$		290	136		
	19	Solve Word Problems		292	137		
	20	Solve Word Problems		294	138		
	E5	Evaluation – Solve Linear Equations and Word Problems		296	139		
P6	<b>Performance Lesson #6 – Equations - (7.EE.3, 7.EE.4a)</b>			298	141-142	3	

# Common Core Standards Plus® - Mathematics Grade 7

## *Lesson Index*

Lesson	Focus	Standard(s)	TE Page	St. Ed. Page	DOK Level
21	Solve Word Problems	7.EE.4a	302	143	1-2
22	Solve Linear Equations and Word Problems		304	144	
23	Solve and Graph Solutions to Inequalities	7.EE.4b: Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$ , where $p$ , $q$ , and $r$ are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.	306	145	
24	Solve and Graph Solutions to Inequalities		308	146	
E6	Evaluation – Solve Equations and Inequalities	7.EE.4a and 7.EE.4b	310	147	
25	Solve Word Problems Leading to Inequalities	7.EE.4b	312	149	1-2
26	Solve Word Problems Leading to Inequalities		314	150	
27	Solve Word Problems Leading to Inequalities		316	151	
28	Solve Word Problems Leading to Inequalities		318	152	
E7	Evaluation – Solve Word Problems Leading to Inequalities		320	153	
P7	<b>Performance Lesson #7 – Inequalities (7.EE.4a, 7.EE.4b)</b>		322	155-156	
<b>Integrated Project #2 – In the Real World...</b> (7.EE.1, 7.EE.2, 7.EE.3, 7.EE.4, 7.EE.4a, 7.EE.4b, 7.RP.1, 7.RP.3)			327-331	157-158	4
<p><b>Prerequisite Standards Plus Domain: <i>Expressions and Equations</i></b></p> <p><b>Project Objective:</b> The students will analyze a scenario of income over a year and write expressions, equations, and inequalities to interpret fluctuations. The students will analyze the information to estimate future income under given circumstances.</p> <p><b>Overview:</b> In this project, the students will analyze a report of income over a year for a painter. They will write expressions, equations, and inequalities to interpret the fluctuations and provide a written explanation of the fluctuations. They will analyze the information to determine how to influence future earnings and estimate those earnings. The students will share their findings in peer groups. Since this is a learning activity, all components will be completed in class.</p>					



# Common Core Standards Plus® - Mathematics Grade 7

## Lesson Index

Domain	Lesson	Focus	Standard(s)	TE Page	St. Ed. Page	DOK Level	
<b>Statistics and Probability</b> (Statistics & Probability Standards: 7.SP.1-6, 7.SP.7a-b, 7.SP.8a-c)	1	Understanding Probabilities	7.SP.5: Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	344	159	1-2	
	2	Understanding Probabilities		346	160		
	3	Experimental Probabilities		7.SP.6: Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.	348		161
	4	Experimental Probabilities			350		162
	E1	Evaluation – Theoretical and Experimental Probability			352		163
	5	Determine Probabilities	7.SP.7a: Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.	354	165	1-2	
	6	Determine Probabilities		356	166		
	7	Understanding Probabilities	7.SP.7b: Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.	358	167-168		
	8	Understanding Probabilities		362	169		
	E2	Evaluation – Determining Probability		7.SP.7a-b	364		170
	9	Finding Probabilities of Compound Events	7.SP.8a: Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.	366	171	1-2	
	10	Finding Compound Probabilities	7.SP.8a-b: Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams.	368	172		
	11	Finding Compound Probabilities	7.SP.8b	370-371	173		
	12	Using a Simulation	7.SP.8c: Design and use a simulation to generate frequencies for compound events. <i>For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?</i>	374-375	174		
	E3	Finding Compound Probabilities	7.SP.8a, 7.SP.8b, and 7.SP.8c	378	175		
	P8	<b>Performance Lesson #8 – Exploring Probability</b> (7.SP.5, 7.SP.6, 7.SP.7a, 7.SP.7b, 7.SP.8a, 7.SP.8b, 7.SP.8c)			380-381	177-178	3
	13	Sample Population	7.SP.1: Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.	384	179	1-2	
	14	Making Inferences of a Population	7.SP.2: Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.	386	180		
	15	Making Inferences of a Population		388	181		
	16	Evaluate Multiple Samples		390-391	182		
	E4	Evaluation – Random Sampling and Drawing Inferences	7.SP.1, 7.SP.2	394	183		
	17	Assess Overlap Between Data Distributions	7.SP.3: Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.	396-397	185-186	1-2	
	18	Assess Overlap of Data Distributions		400-401	187-188		
	19	Inferences about Two Populations	7.SP.4: Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.	404	189-190		
	20	Inferences about Two Populations		408	191		
	E5	Evaluation – Inferences about Two Populations		410	192		
P9	<b>Performance Lesson #9 – Exploring Statistics</b> (7.SP.1, 7.SP.2, 7.SP.3, 7.SP.4)			412	193-195	3	

# Common Core Standards Plus® - Mathematics Grade 7

## Lesson Index

Domain	Lesson Focus	Standard(s)	TE Page	St. Ed. Page	DOK Level	
<b>Integrated Project #3 – Powerful Words</b> (7.SP.1, 7.SP.2, 7.SP.3, 7.SP.4, 7.SP.5, 7.SP.6, 7.SP.7, 7.SP.7a, 7.SP.7b, 7.SP.8, 7.SP.8a, 7.SP.8b, 7.SP.8c)			419-423	196-197	4	
<b>Prerequisite Standards Plus Domain: <u>Statistics and Probability</u></b>						
<b>Project Objective:</b> The students will analyze four different sources of print to determine the average word length in each. They will determine the probability of finding a similar average word length in similar materials. They will test their theories and report the results.						
<b>Overview:</b> In this project the students will select four different sources of print (e.g., magazines, newspapers, comic books, novels, graphic novels, math textbooks, history books, etc.). They will sample three different sets of 100 words within each source to find the average word length. They will analyze and display their findings. Then they will predict the average word length in materials similar to those they have sampled. They will determine the probability of similar word lengths and test their theories. They will select the results of one print source and the similar source to which it was compared to share with the class. Since this is a learning activity, all components will be completed in class.						
<b>Geometry</b> (Geometry Standards: 7.G.1-6)	<b>1</b>	Scale Factors	7.G.1: Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	<b>436</b>	<b>199</b>	1-2
	<b>2</b>	Similar Figures		<b>438</b>	<b>200</b>	
	<b>3</b>	Computing Lengths and Area of Scale Drawings		<b>440</b>	<b>201</b>	
	<b>4</b>	Reproduction of Scale Drawings		<b>442</b>	<b>202-203</b>	
	<b>E1</b>	Evaluation – Similarity and Scale Drawings		<b>446</b>	<b>204</b>	
	<b>P10</b>	<b>Performance Lesson #10 – Draw It to Scale (7.G.1)</b>		<b>448</b>	<b>205-207</b>	<b>3</b>
	<b>5</b>	Classification of Triangles	7.G.2: Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	<b>452</b>	<b>208</b>	1-2
	<b>6</b>	Constructing Triangles Using Angles		<b>454</b>	<b>209</b>	
	<b>7</b>	Constructing Triangles Using Side Lengths		<b>456</b>	<b>210</b>	
	<b>8</b>	Determining Unique Triangles		<b>458</b>	<b>211</b>	
	<b>E2</b>	Evaluation – Constructions		<b>460</b>	<b>212</b>	
	<b>9</b>	Planes and Three-Dimensional Figures	7.G.3: Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.	<b>462</b>	<b>213</b>	1-2
	<b>10</b>	Relationship of Pi	7.G.4: Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	<b>464</b>	<b>214</b>	
	<b>11</b>	Circumference of a Circle		<b>466</b>	<b>215</b>	
	<b>12</b>	Circumference of Circles in Real-Life		<b>468</b>	<b>216</b>	
	<b>E3</b>	Slicing 3-Dimensional Figures and Circumference of a Circle	7.G.3 and 7.G.4	<b>470</b>	<b>217</b>	
	<b>P11</b>	<b>Performance Lesson #11 – Two- and Three-Dimensional Figures (7.G.2, 7.G.3, 7.G.4)</b>		<b>472</b>	<b>219-221</b>	<b>3</b>
	<b>13</b>	Area of a Circle	7.G.4	<b>476</b>	<b>222</b>	1-2
	<b>14</b>	Areas of Circles in Real-Life		<b>478</b>	<b>223</b>	
	<b>15</b>	Complimentary and Supplementary Angles	7.G.5: Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	<b>480</b>	<b>224</b>	
<b>16</b>	Vertical Adjacent Angles	<b>482</b>		<b>225</b>		
<b>E4</b>	Evaluation – Circular Area and Angles	7.G.4 and 7.G.5	<b>484</b>	<b>226</b>		

# Common Core Standards Plus® - Mathematics Grade 7

## *Lesson Index*

Domain	Lesson Focus	Standard(s)	TE Page	St. Ed. Page	DOK Level	
<b>Geometry</b> (Geometry Standards: 7.G.1-6)	<b>17</b>	Finding Unknown Angles	7.G.5	<b>486</b>	<b>227</b>	1-2
	<b>18</b>	Unknown Angles in Real-World		<b>488</b>	<b>228</b>	
	<b>19</b>	Area of Parallelograms	7.G.6: Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	<b>490</b>	<b>229</b>	
	<b>20</b>	Area of Triangles		<b>492</b>	<b>230</b>	
	<b>E5</b>	Evaluation – Finding Unknown Angles and Area	7.G.5, 7.G.6	<b>494</b>	<b>231</b>	
	<b>P12</b>	Performance Lesson #12 – All About Angles (7.G.4, 7.G.5, 7.G.6)		<b>496</b>	<b>233</b>	<b>3</b>
	<b>21</b>	Area of Trapezoids	7.G.6	<b>498</b>	<b>234</b>	1-2
	<b>22</b>	Area of Composite Figures		<b>500</b>	<b>235</b>	
	<b>23</b>	Area in Real-World Contexts		<b>502</b>	<b>236</b>	
	<b>24</b>	Surface Area of Prisms and Pyramids		<b>504</b>	<b>237</b>	
	<b>E6</b>	Evaluation – Area in Real-World Contexts		<b>506</b>	<b>238</b>	
	<b>25</b>	Surface Area of Cubic Figures	7.G.6	<b>508</b>	<b>239</b>	1-2
	<b>26</b>	Surface Area in Real-World Context		<b>510</b>	<b>240</b>	
	<b>27</b>	Volume		<b>512</b>	<b>241</b>	
	<b>28</b>	Volume in Real-World Contexts		<b>514</b>	<b>242</b>	
<b>E7</b>	Surface Area and Volume	<b>516</b>		<b>243</b>		