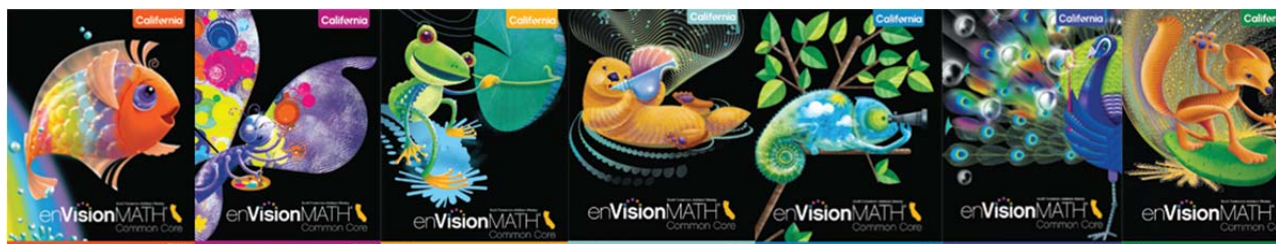


An Alignment of
California enVisionMATH Common Core
©2015



To
**Investigations in Number, Data,
and Space, ©2012**
Grades Kindergarten – 5



And
California enVisionMATH Common Core
©2015
to **Connected Mathematics Project 3**
Grade 6, ©2014



**An Alignment of California *enVisionMATH* Common Core Lessons, ©2015
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**An Alignment of California *enVisionMATH* Common Core Lessons, ©2015
to *Investigations in Number, Data, and Space* Sessions, ©2012**

California <i>enVisionMATH</i> Common Core Kindergarten, ©2015	Investigations in Number, Data, and Space Kindergarten, ©2012
Counting and Cardinality	
Topic 1: One to Five	
Lesson 1-1: Counting 1, 2, and 3	U1 Sessions 1.1, 1.2, 2.1, 2.5, 3.2, 3.6 U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.8, 1.9, 1.10
Lesson 1-2: Counting 1, 2, and 3 in Different Arrangements	U1 Sessions 1.6, 2.1, 2.5 U2 Sessions 1.10 U6 Sessions 1.3, 1.6, 1.7
Lesson 1-3: Reading and Writing 1, 2, and 3	U1 Sessions 1.3, 1.4, 2.5, 3.2 U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.9
Lesson 1-4: Counting 4 and 5	U1 Sessions 1.1, 1.2, 2.1, 2.5, 3.2, 3.6 U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.8, 1.9, 1.10
Lesson 1-5: Counting 4 and 5 in Different Arrangements	U1 Sessions 1.6, 2.1, 2.5 U2 Session 1.10 U6 Sessions 1.3, 1.6, 1.7
Lesson 1-6: Reading and Writing 4 and 5	U1 Sessions 1.3, 1.4, 2.5, 3.2 U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.9
Lesson 1-7: Problem Solving: Use Objects	Students use objects to model and solve mathematical and real-world problems throughout the series. Sample references: U1 Sessions 1.6, 2.1, 2.5 U2 Session 1.10 U6 Sessions 1.3, 1.6, 1.7
Topic 2: Comparing and Ordering 0 to 5	
Lesson 2-1: More, Fewer, and Same As	U2 Sessions 1.7, 2.4, 2.5, 2.6, 2.8, 2.9 U4 Sessions 3.4, 3.5, 3.7

Kindergarten Investigations Curriculum Units

U1 Who Is in School Today?
U2 Counting and Comparing
U3 What Comes Next?
U4 Measuring and Counting

U5 Make a Shape, Build a Block
U6 How Many Do You Have?
U7 Sorting and Surveys

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California <i>enVisionMATH</i> Common Core Kindergarten, ©2015	Investigations in Number, Data, and Space Kindergarten, ©2012
Lesson 2-2: 1 and 2 More	U4 Sessions 3.3, 3.4, 3.5, 3.6, 3.7
Lesson 2-3: 1 and 2 Fewer	U4 Sessions 3.3, 3.4, 3.5, 3.6, 3.7
Lesson 2-4: As Many, More, and Fewer	U2 Sessions 1.7, 2.4, 2.5, 2.6, 2.8, 2.9 U4 Sessions 3.4, 3.5, 3.7
Lesson 2-5: Comparing Numbers Through 5	U2 Sessions 1.7, 2.4, 2.5, 2.6, 2.8, 2.9 U4 Sessions 3.4, 3.5, 3.7
Lesson 2-6: The Number 0	U2 Sessions 1.1, 2.5 (page 102) U4 Session 4.4 U6 Sessions 3.1 (page 101), 4.2
Lesson 2-7: Reading and Writing 0	U2 Sessions 1.1, 2.5 (page 102) U4 Session 4.4 U6 Session 4.2
Lesson 2-8: Ordering Numbers 0 to 5	U2 Sessions 2.10, 2.11, 2.12, 2.13, 2.14
Lesson 2-9: Problem Solving: Use Objects	Students use objects to model and solve mathematical and real-world problems throughout the series. Sample references: U2 Sessions 1.7, 2.4, 2.5, 2.6, 2.8, 2.9 U4 Sessions 3.4, 3.5, 3.7
Topic 3: Six to Ten	
Lesson 3-1: Counting 6 and 7	U1 Sessions 1.1, 1.2, 2.1, 2.5, 3.2, 3.6 U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.8, 1.9, 1.10
Lesson 3-2: Reading and Writing 6 and 7	U1 Sessions 1.3, 1.4, 2.5, 3.2 U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.9

Kindergarten Investigations Curriculum Units

- U1** Who Is in School Today?
- U2** Counting and Comparing
- U3** What Comes Next?
- U4** Measuring and Counting

- U5** Make a Shape, Build a Block
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Lesson 3-3: Counting 8 and 9	U1 Sessions 1.1, 1.2, 2.1, 2.5, 3.2, 3.6 U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.8, 1.9, 1.10
Lesson 3-4: Reading and Writing 8 and 9	U1 Sessions 1.3, 1.4, 2.5, 3.2 U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.9
Lesson 3-5: Counting 10	U1 Sessions 1.1, 1.2, 2.1, 2.5, 3.2, 3.6 U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.8, 1.9, 1.10
Lesson 3-6: Reading and Writing 10	U1 Sessions 1.3, 1.4, 2.5, 3.2 U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.9
Lesson 3-7: Problem Solving: Look for a Pattern	U1 Sessions 1.1, 1.2, 2.1, 2.5, 3.2, 3.6 U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.8, 1.9, 1.10
Topic 4: Comparing and Ordering Numbers 0 to 10	
Lesson 4-1: Comparing Numbers Through 10	U2 Sessions 1.7, 2.4, 2.5, 2.6, 2.8, 2.9 U4 Sessions 3.4, 3.5, 3.7
Lesson 4-2: Comparing Numbers to 5	U2 Sessions 1.7, 2.4, 2.5, 2.6, 2.8, 2.9 U4 Sessions 3.4, 3.5, 3.7
Lesson 4-3: Comparing Numbers to 10	U2 Sessions 1.7, 2.4, 2.5, 2.6, 2.8, 2.9 U4 Sessions 3.4, 3.5, 3.7
Lesson 4-4: 1 More	U4 Sessions 3.3, 3.4, 3.5, 3.6, 3.7
Lesson 4-5: 1 Fewer	U4 Sessions 3.3, 3.4, 3.5, 3.6, 3.7

Kindergarten Investigations Curriculum Units

- U1** Who Is in School Today?
- U2** Counting and Comparing
- U3** What Comes Next?
- U4** Measuring and Counting

- U5** Make a Shape, Build a Block
- U6** How Many Do You Have?
- U7** Sorting and Surveys

**An Alignment of California *enVisionMATH* Common Core Lessons, ©2015
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California <i>enVisionMATH</i> Common Core Kindergarten, ©2015	Investigations in Number, Data, and Space Kindergarten, ©2012
Lesson 4-6: 2 More	Students compare numbers, but there is not a reference specifically to “2 more” or “2 fewer.” The following references are to “more” and “fewer” and to the addition of 1, 2, and 3 to a number of objects up to 5. U4 Sessions 3.4, 3.5, 3.6, 3.7 U6 Session 5A.1
Lesson 4-7: 2 Fewer	Students compare numbers, but there is not a reference specifically to “2 more” or “2 fewer.” The following references are to “more” and “fewer” and to the subtraction of 1, 2, and 3 from a number of objects up to 5. U4 Sessions 3.4, 3.5, 3.6, 3.7 U6 Session 5A.1
Lesson 4-8: Ordering Numbers Through 10	U2 Sessions 2.10, 2.11, 2.12, 2.13, 2.14
Lesson 4-9: Ordering Numbers on a Number Line	Students use the number line as a counting tool, construct attendance sticks, and explore sequences of numbers on calendars. U1 Sessions 1.3, 1.4, 1.6; Dialogue Box (page 142) U4 Session 2.1 (page 60) U6 Session 1.3A
Lesson 4-10: Problem Solving: Use Objects	Students use objects to model and solve mathematical and real-world problems throughout the series. Sample references: U4 Sessions 3.3, 3.4, 3.5, 3.6, 3.7
Topic 5: Numbers to 20	
Lesson 5-1: Counting, Reading, and Writing 11 and 12	U1 Sessions 1.1, 1.2, 2.1, 2.5, 3.2, 3.6 U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.8, 1.9, 1.10

Kindergarten Investigations Curriculum Units

- U1** Who Is in School Today?
- U2** Counting and Comparing
- U3** What Comes Next?
- U4** Measuring and Counting

- U5** Make a Shape, Build a Block
- U6** How Many Do You Have?
- U7** Sorting and Surveys

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Lesson 5-2: Counting, Reading, and Writing 13, 14, and 15	U1 Sessions 1.1, 1.2, 2.1, 2.5, 3.2, 3.6 U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.8, 1.9, 1.10
Lesson 5-3: Counting, Reading, and Writing 16 and 17	U1 Sessions 1.1, 1.2, 2.1, 2.5, 3.2, 3.6 U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.8, 1.9, 1.10
Lesson 5-4: Counting, Reading, and Writing 18, 19, and 20	U1 Sessions 1.1, 1.2, 2.1, 2.5, 3.2, 3.6 U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.8, 1.9, 1.10
Lesson 5-5: How Many?	U1 Sessions 1.1, 1.2, 2.1, 2.5, 3.2, 3.6 U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.8, 1.9, 1.10
Lesson 5-6: Problem Solving: Use Logical Reasoning	U1 Sessions 1.1, 1.2, 2.1, 2.5, 3.2, 3.6 U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.8, 1.9, 1.10
Topic 6: Numbers to 100	
Lesson 6-1: Counting to 30	Students gain experience counting to 30 as they practice the rote counting sequence from 1 to 30, count students present to determine attendance, create attendance sticks, and participate in calendar activities. U1 Sessions 1.1, 1.2, 1.3, 1.4, 1.6 U6 Session 1.3A
Lesson 6-2: Counting to 100	Kindergarten students count to 100 in groups of ten (fingers) and count to 30 using both rote counting and also tools, including number lines, attendance sticks, and calendars. U6 Sessions 1.3A, 1.4, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.3; Teacher Note (page 165) U7 Session 1.7A

Kindergarten Investigations Curriculum Units

- U1** Who Is in School Today?
- U2** Counting and Comparing
- U3** What Comes Next?
- U4** Measuring and Counting

- U5** Make a Shape, Build a Block
- U6** How Many Do You Have?
- U7** Sorting and Surveys

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Lesson 6-3: Counting Groups of Ten	Kindergarten students count fingers in groups of 10 up to 100; they use ten frames and play the games, "Collect 10 Together," "Collect 20 Together," and "How Many to 10?" U4 Sessions 2.2, 2.3, 2.5 U6 Sessions 2.2, 2.3, 2.4, 2.5, 2.6, 5A.2, 5A.4, 5A.5 U7 Session 1.7A
Lesson 6-4: Patterns on a Hundred Chart	Kindergarten students do not use a Hundred Chart. They complete a "People and Fingers" Chart to count to 100 by tens. U7 Session 1.7A
Lesson 6-5: Problem Solving: Look for a Pattern	U6 Sessions 5A.2, 5A.4, 5A.5
Operations and Algebraic Thinking	
Topic 7: Understanding Addition	
Lesson 7-1: Stories About Joining	U4 Sessions 3.2, 3.5 U6 Sessions 3.1 (Activity 3), 3.3, 3.4, 3.5, 3.7
Lesson 7-2: More Joining	U4 Sessions 2.2, 2.3, 2.4, 2.5 U6 Sessions 1.1, 1.2, 2.1, 3.1, 3.3, 3.4, 3.5, 3.7, 4.2, 4.3, 4.4
Lesson 7-3: Joining Groups	U4 Sessions 2.2, 2.3, 2.4, 2.5 U6 Sessions 1.1, 1.2, 2.1, 3.1, 3.3, 3.4, 3.5, 3.7, 4.2, 4.3, 4.4
Lesson 7-4: Using the Plus Sign	U6 Sessions 1.1, 1.2, 3.1, 3.3, 3.4, 4.3, 5A.1, 5A.2, 5A.3, 5A.4, 5A.5
Lesson 7-5: Finding Sums	U4 Sessions 2.2, 2.3, 2.4, 2.5 U6 Sessions 1.1, 1.2, 2.1, 3.1, 3.3, 3.4, 3.5, 3.7, 4.2, 4.3, 4.4
Lesson 7-6: Addition Sentences	U6 Sessions 1.1, 1.2, 3.1, 3.3, 3.4, 4.3

Kindergarten Investigations Curriculum Units

- U1** Who Is in School Today?
- U2** Counting and Comparing
- U3** What Comes Next?
- U4** Measuring and Counting

- U5** Make a Shape, Build a Block
- U6** How Many Do You Have?
- U7** Sorting and Surveys

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Lesson 7-7: Problem Solving: Draw a Picture	U4 Sessions 2.2, 2.3, 2.4, 2.5 U6 Sessions 1.1, 1.2, 2.1, 3.1, 3.3, 3.4, 3.5, 3.7, 4.2, 4.3, 4.4
Topic 8: Understanding Subtraction	
Lesson 8-1: Stories About Separating	U4 Session 3.2, 3.5 U6 Sessions 3.1 (Activity 3), 3.3, 3.4, 3.6
Lesson 8-2: Stories About Take Away	U4 Session 3.2, 3.5 U6 Sessions 3.1 (Activity 3), 3.3, 3.4, 3.6
Lesson 8-3: Problem Solving: Act It Out	U4 Sessions 3.2, 3.3, 3.5, 4.2, 4.5 U6 Sessions 3.1, 3.3, 3.4, 3.5, 3.6, 3.7
Lesson 8-4: Using the Minus Sign	U4 Sessions 3.2, 3.3 U6 Sessions 3.4, 5A.1
Lesson 8-5: Finding Differences	U4 Sessions 3.2, 3.3 U6 Session 3.4
Lesson 8-6: Subtraction Sentences	U4 Sessions 3.2, 3.3 U6 Session 3.4
Lesson 8-7: Subtraction Stories	U4 Sessions 3.2, 3.5 U6 Sessions 3.1 (Activity 3), 3.3, 3.4, 3.6
Lesson 8-8: Problem Solving: Use Objects	U4 Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 3.1, 3.6, 3.7, 4.1, 4.2, 4.3, 4.4 U6 Sessions 4.2, 4.3, 4.4
Topic 9: More Addition and Subtraction	
Lesson 9-1: Making 4 and 5	U6 Sessions 1.3, 1.6, 4.1
Lesson 9-2: Writing Number Sentences for 4 and 5	U6 Sessions 1.3, 1.6, 4.1
Lesson 9-3: Making 6 and 7	U6 Sessions 1.1, 1.3, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.9

Kindergarten Investigations Curriculum Units

- U1** Who Is in School Today?
- U2** Counting and Comparing
- U3** What Comes Next?
- U4** Measuring and Counting

- U5** Make a Shape, Build a Block
- U6** How Many Do You Have?
- U7** Sorting and Surveys

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Lesson 9-4: Writing Number Sentences for 6 and 7	U6 Sessions 1.1, 1.3, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.9
Lesson 9-5: Making 8 and 9	U6 Session 1.7
Lesson 9-6: Writing Number Sentences for 8 and 9	U6 Session 1.7
Lesson 9-7: Making 10	Kindergarten students use ten frames and play the games, "Collect 10 Together" and "How Many to 10?" U4 Sessions 2.2, 2.3, 2.5 U6 Sessions 5A.2, 5A.4, 5A.5
Lesson 9-8: Writing Number Sentences for 10	Kindergarten students use ten frames and play the games, "Collect 10 Together" and "How Many to 10?" U4 Sessions 2.2, 2.3, 2.5 U6 Sessions 5A.2, 5A.4, 5A.5
Lesson 9-9: Problem Solving: Make a Graph	Students represent data to answer "Today's Question." U1 Sessions 3.1, 3.4 U7 Sessions 2.6, 3.1
Number and Operations in Base Ten	
Topic 10: Composing Numbers 11 to 19	
Lesson 10-1: Making 11, 12, and 13	U6 Sessions 2.1 (Math Note, TE page 71), 5A.3, 5A.4, 5A.5
Lesson 10-2: Making 14, 15, and 16	U6 Sessions 2.1, 5A.3, 5A.4, 5A.5
Lesson 10-3: Making 17, 18, and 19	U6 Sessions 2.1 (Math Note, TE page 71), 5A.3, 5A.4, 5A.5
Lesson 10-4: Problem Solving: Look for a Pattern	U4 Sessions 2.2, 2.3, 2.4, 2.5 U6 Sessions 1.1, 1.2, 2.1, 3.1, 3.3, 3.4, 3.5, 3.7, 4.2, 4.3, 4.4

Kindergarten Investigations Curriculum Units

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Topic 11: Decomposing Numbers 11 to 19	
Lesson 11-1: Creating Sets to 19	Kindergarten students play the games, "Collect 10" and "Collect 15," and they build The Teen Numbers. U2 Session 1.7 U4 Sessions 2.2, 2.3, 2.5 U6 Sessions 2.1, 5A.3, 5A.4, 5A.5
Lesson 11-2: Parts of 11, 12, and 13	U6 Sessions 5A.3, 5A.4, 5A.5
Lesson 11-3: Parts of 14, 15, and 16	U6 Sessions 2.1, 5A.3, 5A.4, 5A.5
Lesson 11-4: Parts of 17, 18, and 19	U6 Sessions 5A.3, 5A.4, 5A.5
Lesson 11-5: Problem Solving: Look for a Pattern	U6 Sessions 5A.3, 5A.4, 5A.5
Measurement and Data	
Topic 12: Measurement	
Lesson 12-1: Describing Objects by More Than One Attribute	U1 Sessions 2.2, 2.3, 2.4, 3.3, 3.4 U7 Sessions 2.1, 2.2, 2.3, 2.4, 2.5
Lesson 12-2: Comparing by Length	Kindergarten students measure lengths and compare lengths. U2 Sessions 2.1, 2.2, 2.9 U4 Sessions 1.1, 1.2, 1.3, 1.4, 1.5 U6 Session 2.3
Lesson 12-3: More Comparing Objects by Length	Kindergarten students measure lengths and compare lengths. U2 Sessions 2.1, 2.2, 2.9 U4 Sessions 1.1, 1.2, 1.3, 1.4, 1.5 U6 Session 2.3

Kindergarten Investigations Curriculum Units

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Lesson 12-4: Problem Solving: Try, Check, and Revise	U2 Sessions 2.1, 2.2, 2.9 U4 Sessions 1.1, 1.2, 1.3, 1.4, 1.5 U6 Session 2.3
Lesson 12-5: Comparing by Height	Kindergarten students measure lengths of body parts. U6 Session 2.3
Lesson 12-6: More Comparing Objects by Height	Kindergarten students measure lengths of body parts. U6 Session 2.3
Lesson 12-7: Comparing Capacities	Kindergarten students do not compare capacities of containers.
Lesson 12-8: Comparing by Weight	U4 Sessions 1.6A, 1.6B, 1.6C
Topic 13: Sorting, Classifying, Counting, and Categorizing Data	
Lesson 13-1: Same and Different	U7 Session 2.4
Lesson 13-2: Sorting by One Attribute	U1 Sessions 3.3, 3.4 U7 Sessions 2.1, 2.2, 2.3, 2.4, 2.5
Lesson 13-3: Sorting the Same Set in Different Ways	U1 Sessions 3.3, 3.4 U7 Sessions 2.1, 2.2, 2.3, 2.4, 2.5
Lesson 13-4: Sorting by More Than One Attribute	U1 Sessions 3.3, 3.4 U7 Sessions 2.1, 2.2, 2.3, 2.4, 2.5
Lesson 13-5: Problem Solving: Use Logical Reasoning	U1 Sessions 3.3, 3.4 U7 Sessions 2.1, 2.2, 2.3, 2.4, 2.5

Kindergarten Investigations Curriculum Units

- U1** Who Is in School Today?
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- U4** Measuring and Counting

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Lesson 13-6: Real Graphs	Students represent data to answer "Today's Question." U1 Sessions 3.1, 3.4 U7 Sessions 2.6, 3.1
Lesson 13-7: Picture Graphs	Students represent data to answer "Today's Question." U1 Sessions 3.1, 3.4 U7 Sessions 2.6, 3.1
Geometry	
Topic 14: Identifying and Describing Shapes	
Lesson 14-1: Rectangles	U5 Session 1.2
Lesson 14-2: Squares	U5 Session 1.3
Lesson 14-3: Circles	U5 Session 1.2
Lesson 14-4: Triangles	U5 Session 1.3
Lesson 14-5: Hexagons	U5 Sessions 2.3, 2.6
Lesson 14-6: Solid Figures	U5 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.8
Lesson 14-7: Flat Surfaces of Solid Figures	U5 Sessions 3.3, 3.5
Lesson 14-8: Problem Solving: Use Objects	U5 Sessions 1.2, 1.3, 1.4, 1.5, 2.2, 2.3, 2.4, 2.5, 2.6, 3.2, 3.3, 3.4, 3.5, 3.6, 3.8
Topic 15: Position and Location of Shapes	
Lesson 15-1: Inside and Outside	There are no specific references to position and location of shapes.
Lesson 15-2: Above, Below, and On	There are no specific references to position and location of shapes.

Kindergarten Investigations Curriculum Units

U1 Who Is in School Today?
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U5 Make a Shape, Build a Block
U6 How Many Do You Have?
U7 Sorting and Surveys

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Lesson 15-3: In Front of and Behind	There are no specific references to position and location of shapes.
Lesson 15-4: Left and Right	There are no specific references to position and location of shapes.
Lesson 15-5: Problem Solving: Act It Out	There are no specific references to position and location of shapes.
Topic 16: Analyzing, Comparing, and Composing Shapes	
Lesson 16-1: Creating 2-D Shapes	U5 Sessions 1.4, 1.5, 1.6, 2.1, 2.5
Lesson 16-2: Making Shapes from Other Shapes	U5 Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 2.6
Lesson 16-3: Comparing Solid Figures	U5 Session 3.8
Lesson 16-4: Building with Solid Figures	U5 Session 3.6
Lesson 16-5: Problem Solving: Use Logical Reasoning	U5 Sessions 1.2, 1.3, 1.4, 1.5, 2.2, 2.3, 2.4, 2.5, 2.6, 3.2, 3.3, 3.4, 3.5, 3.6, 3.8

Kindergarten Investigations Curriculum Units

- U1** Who Is in School Today?
- U2** Counting and Comparing
- U3** What Comes Next?
- U4** Measuring and Counting

- U5** Make a Shape, Build a Block
- U6** How Many Do You Have?
- U7** Sorting and Surveys

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California <i>enVisionMATH</i> Common Core Grade 1, ©2015	Investigations in Number, Data, and Space Grade 1, ©2012
Operations and Algebraic Thinking	
Topic 1: Understanding Addition	
Lesson 1-1: Spatial Patterns for Numbers to 10	U1 Session 2.6 U3 Session 1.5 U6 Sessions 1.1, 1.4, 1.7, 2.3 U8 Session 3.1
Lesson 1-2: Making 6 and 7	U1 Sessions 4.1, 4.6 U3 Sessions 1.2, 1.3, 1.5, 3.2 U6 Sessions 2.4
Lesson 1-3: Making 8	U3 Sessions 1.3, 1.5, 3.2
Lesson 1-4: Making 9	U1 Session 4.5 U3 Sessions 1.1, 1.2, 1.5, 3.2
Lesson 1-5: Introducing Addition Expressions and Number Sentences	U1 Sessions 3.3, 3.7 U3 Sessions 1.1, 1.5, 1.9, 3.2, 3.5 U6 Sessions 1.1, 1.4, 1.6, 2.3, 2.4 U8 Sessions 3.1, 3.3, 3.5
Lesson 1-6: Stories about Joining	U1 Sessions 3.3, 3.5, 3.7 U3 Sessions 1.6, 1.7, 1.8, 3.1, 3.3, 3.4, 3.5 U6 Sessions 1.4, 3.3, 3.4, 3.5, 3.6
Lesson 1-7: Adding in Any Order	U3 Sessions 3.2 U6 Sessions 1.2, 1.6, 1.7, 2.1, 3.1
Lesson 1-8: Problem Solving: Use Objects	U1 Sessions 2.2, 2.3, 2.3, 3.4, 4.2 U3 Sessions 1.2, 1.4, 2.1, 3.3 U6 Sessions 1.2, 1.5, 3.2 U8 Sessions 1.1, 3.2, 3.3

Grade 1 Investigations Curriculum Units

U1 How Many of Each?

U2 Making Shapes and Designing Quilts

U3 Solving Story Problems

U4 What Would You Rather Be?

U5 Fish Lengths and Animal Jumps

U6 Number Games and Crayon Puzzles

U7 Color, Shape, and Number Puzzles

U8 Twos, Fives, and Tens

U9 Blocks and Boxes

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California <i>enVisionMATH</i> Common Core Grade 1, ©2015	Investigations in Number, Data, and Space Grade 1, ©2012
Topic 2: Understanding Subtraction	
Lesson 2-1: Finding Missing Parts of 6 and 7	U3 Sessions 1.2, 1.3 U6 Session 1.5
Lesson 2-2: Finding Missing Parts of 8	U3 Session 1.3
Lesson 2-3: Finding Missing Parts of 9	Grade 1 students find missing parts of various numbers. U3 Sessions 1.2, 1.3, 1.9, 3.3 U6 Session 1.5
Lesson 2-4: Introducing Subtraction Expressions and Number Sentences	U3 Sessions 2.2, 2.3, 3.2, 3.5 U6 Sessions 1.1, 1.3, 3.5, 3.7
Lesson 2-5: Stories about Taking Away	U3 Sessions 2.1, 2.2, 2.3, 3.1, 3.5; Teacher Note (page 197) U6 Sessions 1.3, 1.4, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
Lesson 2-6: Stories about Comparing	U3 Teacher Note (page 197) U5 Sessions 1.4, 1.5, 2.4
Lesson 2-7: Stories about Missing Parts	U6 Sessions 1.8A, 1.8B
Lesson 2-8: All Kinds of Subtraction Stories	U3 Sessions 2.1, 2.2, 2.3, 3.1, 3.5; Teacher Note (page 197) U5 Sessions 1.4, 1.5 U6 Sessions 1.3, 1.4, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
Lesson 2-9: Connecting Addition and Subtraction	U3 Sessions 2.1, 2.2, 2.3 U6 Sessions 1.3, 1.4, 3.5
Lesson 2-10: Connecting Models and Symbols	U3 Sessions 2.2, 2.3, 3.2, 3.5 U6 Sessions 1.1, 1.3, 3.5, 3.7

Grade 1 Investigations Curriculum Units

U1 How Many of Each?

U2 Making Shapes and Designing Quilts

U3 Solving Story Problems

U4 What Would You Rather Be?

U5 Fish Lengths and Animal Jumps

U6 Number Games and Crayon Puzzles

U7 Color, Shape, and Number Puzzles

U8 Twos, Fives, and Tens

U9 Blocks and Boxes

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California <i>enVisionMATH</i> Common Core Grade 1, ©2015	Investigations in Number, Data, and Space Grade 1, ©2012
Lesson 2-11: Problem Solving: Act It Out	Grade 1 students use other methods to solve story problems, including modeling with pictures and equations. U3 Sessions 2.1, 2.2, 2.3, 3.1, 3.5; Teacher Notes (pages 190-191, 192-193) U5 Sessions 1.4, 1.5 U6 Sessions 1.3, 1.4, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
Topic 3: Five and Ten Relationships	
Lesson 3-1: Representing Numbers on a Ten-Frame	U6 Session 1.4
Lesson 3-2: Recognizing Numbers on a Ten-Frame	U6 Session 1.4
Lesson 3-3: Parts of 10	U6 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7 U8 Session 3.1, 3.2
Lesson 3-4: Finding Missing Parts of 10	U6 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7 U8 Session 3.1, 3.2
Lesson 3-5: Problem Solving: Make a Table	U1 Sessions 4.3, 4.4 U6 Session 1.5 U8 Sessions 2.2, 2.4
Topic 4: Addition and Subtraction Facts to 12	
Lesson 4-1: Adding with 0, 1, 2	Grade 1 students play the game, Plus or Minus 1 BINGO and use the addition strategy, "counting on." U1 Sessions 2.5A, 3.3, 3.5, 3.6 U3 Sessions 1.6, 1.7, 1.8; Teacher Notes (pages 184, 187-189); Dialogue Boxes (pages 218-219, 222-223) U6 Sessions 1.5, 1.6, 3.3, 3.6 U8 Sessions 1.1, 1.2, 1.3, 1.4, 2.3

Grade 1 Investigations Curriculum Units

- U1** How Many of Each?
- U2** Making Shapes and Designing Quilts
- U3** Solving Story Problems
- U4** What Would You Rather Be?
- U5** Fish Lengths and Animal Jumps

- U6** Number Games and Crayon Puzzles
- U7** Color, Shape, and Number Puzzles
- U8** Twos, Fives, and Tens
- U9** Blocks and Boxes

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California <i>enVisionMATH</i> Common Core Grade 1, ©2015	Investigations in Number, Data, and Space Grade 1, ©2012
Lesson 4-2: Doubles	Grade 1 students count by 2s to determine How Many Hands? and How Many Feet? U8 Sessions 2.1, 2.2, 2.6
Lesson 4-3: Near Doubles	Grade 1 students count by 2s to determine How Many Hands? and How Many Feet? U8 Sessions 2.1, 2.2, 2.6
Lesson 4-4: Facts with 5 on a Ten-Frame	Grade 1 students interpret a partially completed ten-frame as five plus a number; they count by 5s to determine How Many Fingers? U6 Session 1.4 U8 Session 2.4
Lesson 4-5: Making 10 on a Ten-Frame	U6 Session 1.4
Lesson 4-6: Subtracting with 0, 1, 2	Grade 1 students play the game, Plus or Minus 1 BINGO and use the subtraction strategy, "counting back." U1 Session 2.5A U3 Sessions 1.2
Lesson 4-7: Thinking Addition	U3 Session 2.2; Teacher Note (page 198) U6 Sessions 1.3, 3.5, 3.7
Lesson 4-8: Thinking Addition to 8 to Subtract	U3 Session 2.2; Teacher Note (page 198) U6 Sessions 1.3, 3.5, 3.7
Lesson 4-9: Thinking Addition to 12 to Subtract	U3 Session 2.2; Teacher Note (page 198) U6 Sessions 1.3, 3.5, 3.7
Lesson 4-10: Problem Solving: Draw a Picture and Write a Number Sentence	U1 Sessions 3.3, 3.7 U3 Sessions 1.1, 1.5, 1.9, 3.2, 3.5 U6 Sessions 1.1, 1.4, 1.6, 2.3, 2.4 U8 Sessions 3.1, 3.3, 3.5

Grade 1 Investigations Curriculum Units

- U1** How Many of Each?
- U2** Making Shapes and Designing Quilts
- U3** Solving Story Problems
- U4** What Would You Rather Be?
- U5** Fish Lengths and Animal Jumps

- U6** Number Games and Crayon Puzzles
- U7** Color, Shape, and Number Puzzles
- U8** Twos, Fives, and Tens
- U9** Blocks and Boxes

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California <i>enVisionMATH</i> Common Core Grade 1, ©2015	Investigations in Number, Data, and Space Grade 1, ©2012
Topic 5: Addition Facts to 20	
Lesson 5-1: Doubles	Grade 1 students count by 2s to determine How Many Hands? and How Many Feet? U8 Sessions 2.1, 2.2, 2.6
Lesson 5-2: Doubles Plus 1	Grade 1 students count by 2s to determine How Many Hands? and How Many Feet? U8 Sessions 2.1, 2.2, 2.6
Lesson 5-3: Doubles Plus 2	Grade 1 students count by 2s to determine How Many Hands? and How Many Feet? U8 Sessions 2.1, 2.2, 2.6
Lesson 5-4: Problem Solving: Two-Question Problems	There are no references to two-question problems, specifically. Grade 1 students participate in the activity Double Compare, in which they add numbers and then compare the sums. U1 Session 3.1
Lesson 5-5: Making 10 to Add	U8 Sessions 3.1, 3.2, 3.3, 3.5
Lesson 5-6: Making 10 to Add 9	U8 Sessions 3.1, 3.2, 3.3, 3.5
Lesson 5-7: Making 10 to Add 8	U8 Sessions 3.1, 3.2, 3.3, 3.5
Lesson 5-8: Adding Three Numbers	U1 Sessions 4.2, 4.3; Dialogue Box (pages 236-237)
Lesson 5-9: Word Problems with Three Addends	U1 Sessions 4.2, 4.3; Dialogue Box (pages 236-237)
Topic 6: Subtraction Facts to 20	
Lesson 6-1: Making 10 to Subtract	Grade 1 students use combinations of ten to subtract. U6 Session 1.4

Grade 1 Investigations Curriculum Units

- U1** How Many of Each?
- U2** Making Shapes and Designing Quilts
- U3** Solving Story Problems
- U4** What Would You Rather Be?
- U5** Fish Lengths and Animal Jumps

- U6** Number Games and Crayon Puzzles
- U7** Color, Shape, and Number Puzzles
- U8** Twos, Fives, and Tens
- U9** Blocks and Boxes

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California <i>enVisionMATH</i> Common Core Grade 1, ©2015	Investigations in Number, Data, and Space Grade 1, ©2012
Lesson 6-2: More with Making 10 to Subtract	Grade 1 students use combinations of ten to subtract. U6 Session 1.4
Lesson 6-3: Using Related Facts	U3 Session 2.2; Teacher Note (page 198) U6 Sessions 1.3, 3.5, 3.7
Lesson 6-4: Fact Families	U3 Session 2.2; Teacher Note (page 198) U6 Sessions 1.3, 3.5, 3.7
Lesson 6-5: Using Addition to Subtract	U3 Session 2.2; Teacher Note (page 198) U6 Sessions 1.3, 3.5, 3.7
Lesson 6-6: Subtraction Facts	U6 Session 3.5
Lesson 6-7: Problem Solving: Draw a Picture and Write a Number Sentence	U1 Sessions 3.3, 3.7 U3 Sessions 1.1, 1.5, 1.9, 3.2, 3.5 U6 Sessions 1.1, 1.4, 1.6, 2.3, 2.4 U8 Sessions 3.1, 3.3, 3.5
Number and Operations in Base Ten	
Topic 7: Counting and Number Patterns to 120	
Lesson 7-1: Making Numbers 11 to 19	U8 Sessions 3.4, 3.5
Lesson 7-2: Using Numbers 11 to 19	U8 Sessions 3.4, 3.5
Lesson 7-3: Counting by 10s	U8 Sessions 3.2, 3.3, 3.4, 4A.1
Lesson 7-4: Counting to 120	U8 Session 1.3A
Lesson 7-5: Using Counting by 10s	U8 Sessions 3.2, 3.3, 3.4
Lesson 7-6: Problem Solving: Look for a Pattern	U8 Sessions 3.2, 3.3, 3.4, 4A.1

Grade 1 Investigations Curriculum Units

U1 How Many of Each?

U2 Making Shapes and Designing Quilts

U3 Solving Story Problems

U4 What Would You Rather Be?

U5 Fish Lengths and Animal Jumps

U6 Number Games and Crayon Puzzles

U7 Color, Shape, and Number Puzzles

U8 Twos, Fives, and Tens

U9 Blocks and Boxes

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California <i>enVisionMATH</i> Common Core Grade 1, ©2015	Investigations in Number, Data, and Space Grade 1, ©2012
Topic 8: Tens and Ones	
Lesson 8-1: Counting with Groups of 10 and Leftovers	U8 Sessions 3.2, 3.3, 3.4
Lesson 8-2: Numbers Made with Tens	U8 Sessions 3.2, 3.3, 3.4
Lesson 8-3: Tens and Ones	U8 Sessions 3.3, 3.4, 3.5
Lesson 8-4: Expanded Form	Grade 1 students put together and break apart numbers using tens and ones. U8 Sessions 3.2, 3.3, 3.4
Lesson 8-5: Ways to Make Numbers	U8 Sessions 3.2, 3.3, 3.4, 3.5
Lesson 8-6: Problem Solving: Make an Organized List	U8 Sessions 3.2, 3.3, 3.4, 3.5
Topic 9: Comparing Numbers to 100	
Lesson 9-1: 1 More, 1 Less; 10 More, 10 Less	U8 Session 3.3
Lesson 9-2: Making Numbers on a Hundred Chart	U3 Sessions 4.5, 4.6 U8 Sessions 1.2, 1.3
Lesson 9-3: Using Models to Compare Numbers	U1 Session 3.1 U8 Session 4A.1
Lesson 9-4: Comparing Numbers with $>$, $<$, $=$	U1 Sessions 2.2, 2.4, 2.5, 3.1 U8 Session 4A.1
Lesson 9-5: Problem Solving: Make an Organized List	U1 Sessions 2.2, 2.4, 2.5, 3.1 U8 Session 4A.1

Grade 1 Investigations Curriculum Units

U1 How Many of Each?

U2 Making Shapes and Designing Quilts

U3 Solving Story Problems

U4 What Would You Rather Be?

U5 Fish Lengths and Animal Jumps

U6 Number Games and Crayon Puzzles

U7 Color, Shape, and Number Puzzles

U8 Twos, Fives, and Tens

U9 Blocks and Boxes

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California <i>enVisionMATH</i> Common Core Grade 1, ©2015	Investigations in Number, Data, and Space Grade 1, ©2012
Topic 10: Adding with Tens and Ones	
Lesson 10-1: Adding Groups of 10	U8 Sessions 3.2, 3.3, 3.4, 4A.2, 4A.3, 4A.5
Lesson 10-2: Adding Tens on a Hundred Chart	U8 Sessions 4A.2
Lesson 10-3: Adding Tens to Two-Digit Numbers	U8 Sessions 3.2, 3.3, 3.4, 4A.2, 4A.3, 4A.5
Lesson 10-4: Using Mental Math to Add Tens	U8 Sessions 3.2, 3.3, 3.4, 4A.2, 4A.3, 4A.5
Lesson 10-5: Adding to a Two-Digit Number	U8 Sessions 3.2, 3.3, 3.4, 4A.2, 4A.3, 4A.5
Lesson 10-6: Problem Solving: Draw a Picture and Write a Number Sentence	U8 Sessions 3.2, 3.3, 3.4, 4A.2, 4A.3, 4A.5
Topic 11: Subtracting with Tens and Ones	
Lesson 11-1: Subtracting Groups of 10	U8 Sessions 4A.2, 4A.4, 4A.5
Lesson 11-2: Subtracting Tens on a Hundred Chart	U8 Session 4A.2
Lesson 11-3: Subtracting Tens from Two-Digit Numbers	U8 Sessions 4A.2, 4A.4, 4A.5
Lesson 11-4: Using Mental Math to Subtract Tens	U8 Sessions 4A.2, 4A.4, 4A.5
Lesson 11-5: Problem Solving: Draw a Picture and Write a Number Sentence	U8 Sessions 4A.2, 4A.4, 4A.5

Grade 1 Investigations Curriculum Units

- | | |
|--|--|
| U1 How Many of Each? | U6 Number Games and Crayon Puzzles |
| U2 Making Shapes and Designing Quilts | U7 Color, Shape, and Number Puzzles |
| U3 Solving Story Problems | U8 Twos, Fives, and Tens |
| U4 What Would You Rather Be? | U9 Blocks and Boxes |
| U5 Fish Lengths and Animal Jumps | |

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California <i>enVisionMATH</i> Common Core Grade 1, ©2015	Investigations in Number, Data, and Space Grade 1, ©2012
Measurement and Data	
Topic 12: Length	
Lesson 12-1: Comparing and Ordering by Length	U5 Sessions 1.4, 1.5, 1.5A, 2.4
Lesson 12-2: Indirect Measurement	U5 Sessions 1.3, 1.5
Lesson 12-3: Using Units to Estimate and Measure Length	U5 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.5A, 2.1, 2.2, 2.4
Lesson 12-4: More Measuring Length	U5 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.5A, 2.1, 2.2, 2.4
Lesson 12-5: Problem Solving: Use Reasoning	U5 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.5A, 2.1, 2.2, 2.4
Lesson 12-6: Measuring Using Different Units	U5 Sessions 1.5A, 2.2, 2.3
Topic 13: Time	
Lesson 13-1: Understanding the Hour and Minute Hands	U5 Sessions 1.5A, 3A.1
Lesson 13-2: Telling and Writing Time to the Hour	U5 Sessions 1.5A, 3A.1
Lesson 13-3: Telling and Writing Time to the Half Hour	U5 Sessions 1.5A, 3A.1
Lesson 13-4: Problem Solving: Use Data from a Table	Grade 1 students explore daily schedules and calendars. U1 Sessions 1.1, 1.2 U5 Sessions 1.5A, 3A.1
Topic 14: Using Data to Answer Questions	
Lesson 14-1: Lesson 1: Using Data from Real Graphs	U4 Session 3.4A

Grade 1 Investigations Curriculum Units

U1 How Many of Each?

U2 Making Shapes and Designing Quilts

U3 Solving Story Problems

U4 What Would You Rather Be?

U5 Fish Lengths and Animal Jumps

U6 Number Games and Crayon Puzzles

U7 Color, Shape, and Number Puzzles

U8 Twos, Fives, and Tens

U9 Blocks and Boxes

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California <i>enVisionMATH</i> Common Core Grade 1, ©2015	Investigations in Number, Data, and Space Grade 1, ©2012
Lesson 14-2: Using Data from Picture Graphs	U4 Sessions 1.1, 2.1, 2.4, 3.3
Lesson 14-3: Using Data from Bar Graphs	U4 Sessions 3.1, 3.4A
Lesson 14-4: Collecting Data Using Tally Marks	U4 Sessions 2.2, 3.2, 3.4A
Lesson 14-5: Making Real Graphs	U4 Session 3.4A
Lesson 14-6: Making Picture Graphs	U4 Sessions 1.1, 2.1, 2.4, 3.3
Lesson 14-7: Problem Solving: Make a Graph	U4 Sessions 1.1, 2.1, 2.4, 3.1, 3.3, 3.4A
Geometry	
Topic 15: Geometry	
Lesson 15-1: Identifying Plane Shapes	U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3
Lesson 15-2: Problem Solving: Make an Organized List	U2 Session 1.3
Lesson 15-3: Properties of Plane Shapes	U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3
Lesson 15-4: Building with Shapes	U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 3.1, 3.2, 3.3
Lesson 15-5: Making New Shapes from Shapes	U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 3.1, 3.2, 3.3
Lesson 15-6: Identifying Solid Figures	U9 Sessions 1.1, 1.2, 1.3, 1.6, 1.7, 1.8, 2.1, 2.2, 2.3, 2.3A, 2.4, 2.5, 2.6, 2.7
Lesson 15-7: Flat Surfaces and Vertices	U9 Sessions 1.1, 1.2, 1.3, 1.6, 1.7

Grade 1 Investigations Curriculum Units

U1 How Many of Each?

U2 Making Shapes and Designing Quilts

U3 Solving Story Problems

U4 What Would You Rather Be?

U5 Fish Lengths and Animal Jumps

U6 Number Games and Crayon Puzzles

U7 Color, Shape, and Number Puzzles

U8 Twos, Fives, and Tens

U9 Blocks and Boxes

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California <i>enVisionMATH</i> Common Core Grade 1, ©2015	Investigations in Number, Data, and Space Grade 1, ©2012
Lesson 15-8: Sorting Solid Figures	U9 Sessions 1.3, 1.4, 1.6, 1.8
Lesson 15-9: Building with Solid Figures	U9 Sessions 2.2, 2.3, 2.4, 2.5, 2.6, 2.7
Lesson 15-10: Problem Solving: Use Reasoning	U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3 U9 Sessions 1.1, 1.2, 1.3, 1.6, 1.7, 1.8, 2.1, 2.2, 2.3, 2.3A, 2.4, 2.5, 2.6, 2.7
Topic 16: Fractions of Shapes	
Lesson 16-1: Making Equal Parts	U5 Sessions 3A.1, 3A.2, 3A.3, 3A.4
Lesson 16-2: Describing Equal Parts of Whole Objects	U5 Sessions 3A.1, 3A.2, 3A.3, 3A.4
Lesson 16-3: Making Halves and Fourths of Rectangles and Circles	U5 Sessions 3A.1, 3A.2, 3A.3, 3A.4
Lesson 16-4: Problem Solving: Draw a Picture	U5 Sessions 3A.1, 3A.2, 3A.3, 3A.4

Grade 1 Investigations Curriculum Units

U1 How Many of Each?

U2 Making Shapes and Designing Quilts

U3 Solving Story Problems

U4 What Would You Rather Be?

U5 Fish Lengths and Animal Jumps

U6 Number Games and Crayon Puzzles

U7 Color, Shape, and Number Puzzles

U8 Twos, Fives, and Tens

U9 Blocks and Boxes

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California <i>enVisionMATH</i> Common Core Grade 2, ©2015	Investigations in Number, Data, and Space Grade 2, ©2012
Operations and Algebraic Thinking	
Topic 1: Understanding Addition and Subtraction	
Lesson 1-1: Writing Addition Number Sentences	U1 Sessions 4.1, 4.2, 4.4 U2 Session 1.1A U3 Sessions 1.1, 1.2, 1.4, 1.6, 2.1, 2.3, 2.4, 2.5, 2.6 U8 Sessions 4.1, 4.3, 4.4
Lesson 1-2: Stories About Joining	U1 Sessions 4.1, 4.4 U3 Sessions 2.1, 2.3, 2.5, 2.6 U6 Sessions 1.1, 1.2, 1.3, 2.1, 2.4 U8 Session 3.4
Lesson 1-3: Writing Subtraction Number Sentences	U1 Sessions 4.2, 4.3, 4.5 U2 Session 1.1A U3 Sessions 2.2, 2.3, 2.4, 2.5, 2.6 U8 Sessions 3.2, 3.3, 3.4
Lesson 1-4: Stories About Separating	U1 Sessions 4.3, 4.5 U3 Sessions 2.2, 2.3, 2.4, 2.5, 2.6 U6 Sessions 1.4, 2.1 U8 Session 3.4
Lesson 1-5: Stories About Comparing	U1 Sessions 1.1, 1.3, 1.4, 2.2
Lesson 1-6: Connecting Addition and Subtraction	U2 Session 1.1A U3 Sessions 2.3, 2.4, 2.6
Lesson 1-7: Problem Solving: Use Objects	U1 Sessions 4.1, 4.3, 4.4, 4.5 U3 Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 2.6 U6 Sessions 1.1, 1.2, 1.3, 1.4, 2.1

Grade 2 Investigations Curriculum Units

- U1** Counting, Coins, and Combinations
- U2** Shapes, Blocks, and Symmetry
- U3** Stickers, Number Strings, and Story Problems
- U4** Pockets, Teeth, and Favorite Things
- U5** How Many Floors? How Many Rooms?

- U6** How Many Tens? How Many Ones?
- U7** Parts of a Whole, Parts of a Group
- U8** Partners, Teams and Paper Clips
- U9** Measuring Length and Time

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California <i>enVisionMATH</i> Common Core Grade 2, ©2015	Investigations in Number, Data, and Space Grade 2, ©2012
Topic 2: Addition Strategies	
Lesson 2-1: Adding 0,1,2	U1 Sessions 2.6, 2.7, 2.8, 2.10A; Teacher Note (page 192)
Lesson 2-2: Doubles	U1 Sessions 4.6, 4.7; Teacher Note (page 192) U2 Sessions 1.2, 1.3, 1.4, 2.4, 2.5, 3.1, 3.2, 3.3, 3.4, 2.10A U3 Sessions 1.4, 1.5, 1.6
Lesson 2-3: Near Doubles	U1 Teacher Note (page 192) U3 Sessions 1.2, 1.4, 1.5, 1.6
Lesson 2-4: Adding in Any Order	U1 Sessions 1.5, 3.5; Teacher Note (page 186) U3 Sessions 1.1, 1.6, 2.1, 2.2 U6 Session 1.1 U8 Sessions 4.1, 4.4
Lesson 2-5: Adding Three Numbers	U1 Sessions 2.1, 4.2 U3 Sessions 1.1, 1.2, 1.4, 1.5, 1.6 U6 Dialogue Box (page 183)
Lesson 2-6: Making 10 to Add	U1 Sessions 3.1, 3.2, 3.3, 3.4, 3.5; Teacher Note (page 192); Dialogue Box (pages 214-215) U3 Sessions 1.2, 1.4 U6 Sessions 2.2
Lesson 2-7: Problem Solving: Draw a Picture and Write a Number Sentence	U1 Sessions 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7 U3 Sessions 2.1, 2.2, 2.3, 2.4, 2.6, 3.1, 3.6, 4.4

Grade 2 Investigations Curriculum Units

- U1** Counting, Coins, and Combinations
- U2** Shapes, Blocks, and Symmetry
- U3** Stickers, Number Strings, and Story Problems
- U4** Pockets, Teeth, and Favorite Things
- U5** How Many Floors? How Many Rooms?

- U6** How Many Tens? How Many Ones?
- U7** Parts of a Whole, Parts of a Group
- U8** Partners, Teams and Paper Clips
- U9** Measuring Length and Time

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California <i>enVisionMATH</i> Common Core Grade 2, ©2015	Investigations in Number, Data, and Space Grade 2, ©2012
Topic 3: Subtraction Strategies	
Lesson 3-1: Subtracting 0,1,2	U2 Session 2.10A U8 Algebra Connections (page 17)
Lesson 3-2: Thinking Addition to Subtract Doubles	Grade 2 students think addition to subtract up to sums greater than 18. U2 Session 2.10A U3 Sessions 2.2, 2.3, 2.6 U6 Sessions 1.4, 2.4, 2.6 U8 Sessions 3.1, 3.3
Lesson 3-3: Thinking Addition to 10 to Subtract	Grade 2 students think addition to subtract up to sums greater than 18. U2 Sessions 1.1A, 2.10A U3 Sessions 2.2, 2.3, 2.6 U6 Sessions 1.4, 2.4, 2.6 U8 Sessions 3.1, 3.3 U9 Session 1.1A
Lesson 3-4: Thinking Addition to 18 to Subtract	Grade 2 students think addition to subtract up to sums greater than 18. U2 Sessions 1.1A, 2.10A U3 Sessions 2.2, 2.3, 2.6 U6 Sessions 1.4, 2.4, 2.6 U8 Sessions 3.1, 3.3 U9 Session 1.1A
Lesson 3-5: Making 10 to Subtract	U6 Session 1.2

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California <i>enVisionMATH</i> Common Core Grade 2, ©2015	Investigations in Number, Data, and Space Grade 2, ©2012
Lesson 3-6: Problem Solving: Two-Question Problems	Two-question problems are not specifically referenced as such in the Investigations curriculum, but each Investigation is comprised of several Sessions containing related questions. For example, in Unit 3, Investigation 2, students Revisit Addition (Session 2.1) and Subtraction (Session 2.2) Story Problems, and then explore Related Story Problems (Session 2.3; in Unit 6, Investigation 3, students Collect \$1.00 in Session 3.2, and then Spend \$1.00 in Session 3.5. Sample references: U3 Sessions 2.1, 2.2, 2.3 U6 Sessions 3.2, 3.5
Topic 4: Working with Equal Groups	
Lesson 4-1: Repeated Addition	U3 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 4.1, 4.2, 4.3, 4.4, 4.5 U5 Sessions 2.2, 2.3
Lesson 4-2: Building Arrays	U1 Sessions 4.7, 4.8 U2 Sessions 1.2, 1.3, 2.3, 2.4, 2.5, 2.6, 2.10A; Teacher Note (pages 157-158)
Lesson 4-3: Practicing Repeated Addition	U3 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 4.1, 4.2, 4.3, 4.4, 4.5 U5 Sessions 2.2, 2.3
Lesson 4-4: Problem Solving: Draw a Picture and Write a Number Sentence	U3 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 4.1, 4.2, 4.3, 4.4, 4.5
Number and Operations in Base Ten	
Topic 5: Place Value to 100	
Lesson 5-1: Models for Tens and Ones	U1 Sessions 1.1, 1.2, 1.3, 1.4 U3 Sessions 4.1, 4.2, 4.3, 4.4, 4.5 U6 Sessions 2.3, 2.4, 2.5, 3.6, 5A.2 U8 Sessions 4.3, 4.4

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California <i>enVisionMATH</i> Common Core Grade 2, ©2015	Investigations in Number, Data, and Space Grade 2, ©2012
Lesson 5-2: Reading and Writing Numbers	U1 Sessions 1.3, 1.4, 1.5 U3 Sessions 4.2, 4.3, 4.4, 4.5 U6 Sessions 1.1, 1.2, 2.1, 2.2, 2.3, 2.4, 3.3, 5A.2 U8 Session 4.3
Lesson 5-3: Using Symbols to Compare Numbers	U1 Sessions 2.1, 2.6, 2.7 U5 Session 1.3 U9 Session 1.5
Lesson 5-4: Counting to 100	U1 Sessions 1.2, 1.3, 1.4, 2.6 U3 Sessions 3.6, 3.7, 4.1 U5 Sessions 2.2, 2.3 U6 Sessions 2.1, 3.1, 3.6, 4.1, 4.2, 4.3
Lesson 5-5: 10 More or 10 Less	U3 Sessions 4.3, 4.4, 4.5 U6 Session 5A.1
Lesson 5-6: Even and Odd Numbers	U3 Sessions 3.1, 3.2, 3.3 U8 Sessions 1.1, 1.2, 1.3, 1.4
Lesson 5-7: Problem Solving: Use Data from a Chart	U1 Sessions 1.1, 1.2, 1.3, 1.4 U3 Sessions 4.1, 4.2, 4.3, 4.4, 4.5 U6 Sessions 2.3, 2.4, 2.5, 3.6, 5A.2 U8 Sessions 4.3, 4.4
Topic 6: Mental Addition	
Lesson 6-1: Adding Tens	U3 Sessions 4.3, 4.4, 4.5 U6 Sessions 1.1, 1.2, 1.3, 2.1, 2.2, 2.4, 2.5, 3.1, 3.2, 3.3
Lesson 6-2: Adding Ones	U3 Sessions 4.2, 4.3, 4.4, 4.5

Grade 2 Investigations Curriculum Units

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Lesson 6-3: Adding Tens and Ones	U3 Sessions 4.1, 4.3, 4.4, 4.5 U6 Sessions 1.1, 1.2, 1.3, 2.1, 2.2, 2.4, 2.5 U8 Sessions 4.1, 4.2, 4.3, 4.4; Teacher Note (pages 176-179); Dialogue Box (pages 202-203)
Lesson 6-4: Adding on a Hundred Chart	U1 Session 1.4 U6 Sessions 1.2, 2.1, 2.3, 2.6, 5A.1
Lesson 6-5: Adding Multiples of 10	U3 Sessions 4.3, 4.4, 4.5 U6 Sessions 1.1, 1.2, 1.3, 2.1, 2.2, 2.4, 2.5, 3.1, 3.2, 3.3, 4.3
Lesson 6-6: Problem Solving: Look for a Pattern	U3 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 U5 Sessions 2.1, 2.2, 2.3, 2.4 U6 Sessions 2.1, 2.3, 3.3, 4.2
Topic 7: Mental Subtraction	
Lesson 7-1: Subtracting Tens	U6 Sessions 1.2, 1.4, 2.1
Lesson 7-2: Finding Parts of 100	U6 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.1, 4.2, 4.3
Lesson 7-3: Subtracting on a Hundred Chart	Grade 2 students explore the Hundred Chart, including finding the interval between numbers on the chart. U1 Session 1.4 U6 Sessions 2.1, 2.3, 2.6, 5A.1
Lesson 7-4: Subtracting Multiples of 10	U6 Sessions 1.2, 1.4, 2.1

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Lesson 7-5: Problem Solving: Missing or Extra Information	There are no specific references to solving problems with missing or extra information, but Grade 2 students must read and study problems closely to make sure they are answering the questions being asked. Sample references: U6 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.1, 4.2, 4.3
Topic 8: Adding Two-Digit Numbers	
Lesson 8-1: Regrouping 10 Ones for 1 Ten	U3 Sessions 4.1, 4.2, 4.5
Lesson 8-2: Models to Add Two- and One-Digit Numbers	U3 Sessions 4.3, 4.4, 4.5 U6 Sessions 1.1, 1.2, 1.3, 2.1, 2.2, 2.4, 2.5 U8 Sessions 4.1, 4.2, 4.3, 4.4; Teacher Note (pages 176-179); Dialogue Box (pages 202-203)
Lesson 8-3: Adding Two- and One-Digit Numbers	U3 Sessions 4.3, 4.4, 4.5 U6 Sessions 1.1, 1.2, 1.3, 2.1, 2.2, 2.4, 2.5 U8 Sessions 4.1, 4.2, 4.3, 4.4; Teacher Note (pages 176-179); Dialogue Box (pages 202-203)
Lesson 8-4: Models to Add Two-Digit Numbers	U3 Sessions 4.3, 4.4, 4.5 U6 Sessions 1.1, 1.2, 1.3, 2.1, 2.2, 2.4, 2.5 U8 Sessions 4.1, 4.2, 4.3, 4.4; Teacher Note (pages 176-179); Dialogue Box (pages 202-203)
Lesson 8-5: Adding Two-Digit Numbers	U3 Sessions 4.3, 4.4, 4.5 U6 Sessions 1.1, 1.2, 1.3, 2.1, 2.2, 2.4, 2.5 U8 Sessions 4.1, 4.2, 4.3, 4.4; Teacher Note (pages 176-179); Dialogue Box (pages 202-203)

Grade 2 Investigations Curriculum Units

- U1** Counting, Coins, and Combinations
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Lesson 8-6: Adding on a Number Line	U3 Session 4.3 U6 Sessions 1.2, 1.3, 2.2 U8 Sessions 4.1, 4.2, 4.4; Teacher Note (pages 176-179); Dialogue Box (pages 202-203)
Lesson 8-7: Adding More than Two Numbers	U1 Session 2.1 U3 Sessions 1.1, 1.2, 1.3, 1.4, 1.5
Lesson 8-8: Ways to Add	U3 Sessions 4.3, 4.4, 4.5 U6 Sessions 1.1, 1.2, 1.3, 2.1, 2.2, 2.4, 2.5 U8 Sessions 4.1, 4.2, 4.3, 4.4; Teacher Note (pages 176-179); Dialogue Box (pages 202-203)
Lesson 8-9: Problem Solving: Draw a Picture and Write a Number Sentence	U1 Sessions 4.1, 4.3, 4.4, 4.5 U3 Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 2.6 U6 Sessions 1.1, 1.2, 1.3, 1.4, 2.1, 2.4 U8 Session 3.4
Topic 9: Subtracting Two-Digit Numbers	
Lesson 9-1: Regrouping 1 Ten for 10 Ones	U3 Sessions 4.1, 4.2, 4.5
Lesson 9-2: Models to Subtract Two- and One-Digit Numbers	U6 Sessions 1.4, 2.1 U8 Sessions 3.1, 3.2, 3.3, 3.4
Lesson 9-3: Subtracting Two- and One-Digit Numbers	U6 Sessions 1.4, 2.1 U8 Sessions 3.1, 3.2, 3.3, 3.4
Lesson 9-4: Models to Subtract Two-Digit Numbers	U6 Sessions 1.4, 2.1 U8 Sessions 3.1, 3.2, 3.3, 3.4
Lesson 9-5: Subtracting Two-Digit Numbers	U6 Sessions 1.4, 2.1 U8 Sessions 3.1, 3.2, 3.3, 3.4

Grade 2 Investigations Curriculum Units

- U1** Counting, Coins, and Combinations
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Lesson 9-6: Subtracting on a Number Line	U6 Session 1.4 U8 Sessions 3.1, 3.2, 3.3, 3.4
Lesson 9-7: Using Addition to Check Subtraction	U6 Sessions 1.4, 2.1 U8 Sessions 3.1, 3.2, 3.3, 3.4
Lesson 9-8: Ways to Subtract	U6 Sessions 1.4, 2.1 U8 Sessions 3.1, 3.2, 3.3, 3.4
Lesson 9-9: Problem Solving: Two-Question Problems	Two-question problems are not specifically referenced as such in the Investigations curriculum, but each Investigation is comprised of several Sessions containing related questions. For example, in Unit 3, Investigation 2, students Revisit Addition (Session 2.1) and Subtraction (Session 2.2) Story Problems, and then explore Related Story Problems (Session 2.3; in Unit 6, Investigation 3, students Collect \$1.00 in Session 3.2, and then Spend \$1.00 in Session 3.5. Sample references: U3 Sessions 2.1, 2.2, 2.3 U6 Sessions 3.2, 3.5
Topic 10: Place Value to 1,000	
Lesson 10-1: Building 1,000	U6 Sessions 5A.3, 5A.4, 5A.5
Lesson 10-2: Counting Hundreds, Tens, and Ones	U6 Sessions 5A.2, 5A.3, 5A.4, 5A.5

Grade 2 Investigations Curriculum Units

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Lesson 10-3: Reading and Writing Numbers to 1,000	U6 Sessions 5A.2, 5A.3, 5A.4, 5A.5
Lesson 10-4: Changing Numbers by Hundreds and Tens	U6 Sessions 5A.2, 5A.3, 5A.4, 5A.5
Lesson 10-5: Patterns with Numbers on Hundreds Charts	U1 Session 1.4 U6 Sessions 1.2, 2.1, 2.3, 2.6, 5A.1
Lesson 10-6: Skip Counting by 2, 5, 10, 100 to 1000	Grade 2 students skip count by 2s, 5s, and 10s to 100. U6 Session 4.2
Lesson 10-7: Comparing Numbers	U1 Sessions 2.1, 2.7 U3 Sessions 1.4, 1.5, 1.6 U6 Session 5A.1
Lesson 10-8: Problem Solving: Look for a Pattern	U3 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 U5 Sessions 2.1, 2.2, 2.3, 2.4 U6 Sessions 2.1, 2.3, 3.3, 4.2, 5A.1
Topic 11: Three-Digit Addition and Subtraction	
Lesson 11-1: Exploring Adding Three-Digit Numbers	U8 Sessions 5A.1, 5A.2, 5A.5
Lesson 11-2: Mental Math	U8 Sessions 5A.1, 5A.2, 5A.5
Lesson 11-3: Estimating Sums	Students use mental math, modeling, and breaking apart strategies to add 3-digit numbers. U8 Sessions 5A.1, 5A.2, 5A.5

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Lesson 11-4: Models for Adding with Three-Digit Numbers	U8 Sessions 5A.1, 5A.2, 5A.5
Lesson 11-5: Adding Three-Digit Numbers	U8 Sessions 5A.2, 5A.5
Lesson 11-6: Exploring Subtracting Three-Digit Numbers	U8 Sessions 5A.3, 5A.4, 5A.5
Lesson 11-7: Mental Math: Ways to Find Missing Parts	U8 Sessions 5A.3, 5A.4, 5A.5
Lesson 11-8: Estimating Differences	Students use mental math, modeling, and breaking apart strategies to subtract 3-digit numbers. U8 Sessions 5A.3, 5A.4, 5A.5
Lesson 11-9: Models for Subtracting with Three-Digit Numbers	U8 Sessions 5A.3, 5A.4, 5A.5
Lesson 11-10: Subtracting Three-Digit Numbers	U8 Sessions 5A.1, 5A.2, 5A.3, 5A.4, 5A.5
Lesson 11-11: Problem Solving: Use Logical Reasoning	U3 Sessions 3.1, 3.2, 3.3 U8 Sessions 1.1, 1.2, 1.3, 1.4, 5A.1, 5A.2, 5A.3, 5A.4, 5A.5
Geometry	
Topic 12: Geometry	
Lesson 12-1: Flat Surfaces, Vertices, and Edges	U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5
Lesson 12-2: Relating Plane Shapes to Solid Figures	U2 Sessions 1.1, 1.2, 1.3

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Lesson 12-3: Polygons and Angles	U2 Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 2.6
Lesson 12-4: Wholes and Equal Parts	U7 Sessions 1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.3A, 2.4, 2.5
Lesson 12-5: Dividing Rectangles into Equal Squares	U7 Sessions 1.3, 1.4, 2.1, 2.2, 2.3, 2.4, 2.5
Lesson 12-6: Equal Shares, Different Shapes	U7 Sessions 1.1, 2.1, 2.2, 2.3, 2.3A, 2.4
Lesson 12-7: Problem Solving: Use Reasoning	U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6
Measurement and Data	
Topic 13: Counting Money	
Lesson 13-1: Coins	U1 Sessions 2.2, 2.3, 2.4, 2.6, 2.7 U3 Session 3.5, 3.6, 3.7
Lesson 13-2: Counting Collections of Coins	U1 Sessions 2.2, 2.3, 2.4, 2.6, 2.7 U3 Session 3.5, 3.6, 3.7
Lesson 13-3: Ways to Show the Same Amount	U1 Sessions 2.4, 2.6, 2.7 U3 Sessions 3.5, 3.6, 3.7
Lesson 13-4: One Dollar	U6 Sessions 3.2, 3.3, 3.4, 3.5, 3.6

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Lesson 13-5: Problem Solving: Make an Organized List	U1 Sessions 2.4, 2.6, 2.7 U3 Sessions 3.5, 3.6, 3.7
Topic 14: Money	
Lesson 14-1: Adding Money	U1 Sessions 2.4, 2.6, 2.7 U3 Sessions 3.5, 3.6, 3.7 U6 Sessions 3.2, 3.3, 3.4, 4.3
Lesson 14-2: Subtracting Money	U6 Sessions 3.5, 3.6
Lesson 14-3: Estimating Sums and Differences	Grade 2 students estimate the total number of pockets their class is wearing on a given day. U1 Sessions 2.5, 4.2; Dialogue Box (page 221) U3 Session 3.4 U6 Session 4.3
Lesson 14-4: Problem Solving: Try, Check, and Revise	When estimating or predicting outcomes, students are then provided with means of improving the reasonableness and accuracy of their estimates and predictions. U1 Sessions 2.5, 4.2; Dialogue Box (page 221) U3 Session 3.4 U6 Session 4.3 U9 Sessions 1.2, 1.3
Topic 15: Measuring Length	
Lesson 15-1: Exploring Length	U9 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5

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Lesson 15-2: Inches	U9 Sessions 2.1, 2.2, 2.3
Lesson 15-3: Centimeters	U9 Sessions 3.1, 3.2, 3.3, 3.4, 3.5
Lesson 15-4: Inches, Feet, and Yards	U9 Sessions 2.1, 2.2, 2.3
Lesson 15-5: Centimeters and Meters	U9 Sessions 3.1, 3.2, 3.3, 3.4, 3.5
Lesson 15-6: Measuring Length	U9 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5
Lesson 15-7: Adding and Subtracting in Measurement	U9 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5
Lesson 15-8: Comparing Lengths	U9 Sessions 1.3, 1.4, 1.5, 1.6, 2.2, 3.2
Lesson 15-9: Problem Solving: Use Objects	U9 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5
Topic 16: Time, Graphs, and Data	
Lesson 16-1: Telling Time to Five Minutes	Grade 2 students tell time on an analog clock to the nearest hour as part of their daily routine. They also read timelines and explore related concepts, including duration. U1 Session 1.1 U9 Sessions 4.1, 4.2, 4.3, 4.4, 4.5, 4.6
Lesson 16-2: Telling Time Before and After the Hour	Grade 2 students tell time on an analog clock to the nearest hour as part of their daily routine. They also read timelines and explore related concepts, including duration. U1 Session 1.1 U9 Sessions 4.1, 4.2, 4.3, 4.4, 4.5, 4.6

Grade 2 Investigations Curriculum Units

- U1** Counting, Coins, and Combinations
- U2** Shapes, Blocks, and Symmetry
- U3** Stickers, Number Strings, and Story Problems
- U4** Pockets, Teeth, and Favorite Things
- U5** How Many Floors? How Many Rooms?

- U6** How Many Tens? How Many Ones?
- U7** Parts of a Whole, Parts of a Group
- U8** Partners, Teams and Paper Clips
- U9** Measuring Length and Time

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California <i>enVisionMATH</i> Common Core Grade 2, ©2015	Investigations in Number, Data, and Space Grade 2, ©2012
Lesson 16-3: Using a Calendar	Grade 2 students read, interpret, and create timelines; compare times on an analog clock to times on a timeline; calculate duration; and solve problems related to schedules and timelines. U9 Sessions 4.1, 4.2, 4.3, 4.4, 4.5, 4.6
Lesson 16-4 Equivalent Times	Grade 2 students read, interpret, and create timelines with 12-hour and 24-hour clocks; compare times on an analog clock to times on a timeline; calculate duration; and solve problems related to schedules and timelines. U9 Sessions 4.1, 4.2, 4.3, 4.4, 4.5, 4.6
Lesson 16-5 Organizing Data	U4 Sessions 1.3A, 1.5, 1.6, 2.2, 2.3, 2.4, 2.5, 2.6
Lesson 16-6: Graphing Lengths	Grade 2 students represent data involving pockets and teeth in picture graphs, bar graphs, and line plots. U4 Sessions 1.1, 2.2, 2.7; Teacher Note (pages 112, 124-125)
Lesson 16-7 Pictographs	Grade 2 students represent data involving pockets and teeth in picture graphs, bar graphs, and line plots. U4 Sessions 1.1, 2.2, 2.7; Teacher Note (pages 112, 124-125)
Lesson 16-8: Problem Solving: Use a Graph	Grade 2 students represent data involving pockets and teeth in picture graphs, bar graphs, and line plots. U4 Sessions 1.1, 1.4A, 2.2, 2.7; Teacher Note (pages 112, 124-125); Resource Master M58 (see TE page 129)

Grade 2 Investigations Curriculum Units

- U1** Counting, Coins, and Combinations
- U2** Shapes, Blocks, and Symmetry
- U3** Stickers, Number Strings, and Story Problems
- U4** Pockets, Teeth, and Favorite Things
- U5** How Many Floors? How Many Rooms?

- U6** How Many Tens? How Many Ones?
- U7** Parts of a Whole, Parts of a Group
- U8** Partners, Teams and Paper Clips
- U9** Measuring Length and Time

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California <i>enVisionMATH</i> Common Core Grade 3, ©2015	Investigations in Number, Data, and Space Grade 3, ©2012
Number and Operations in Base Ten	
Topic 1: Numeration	
Lesson 1-1: Representing Numbers	U1 Sessions 1.1, 1.2, 1.3, 1.8, 2.1, 2.4, 2.7 U3 Sessions 1.1, 1.2, 1.4, 1.5, 2.1, 2.2 U5 Sessions 2.1, 3.2
Lesson 1-2: Understanding Number Lines	U1 Sessions 1.1, 1.3, 1.4, 2.6; Teacher Note (pages 147-148) U3 Sessions 2.1, 2.6, 3.1, 3.2, 3.3, 3.5, 3.6, 3.7, 4.4, 4.5
Lesson 1-3: Counting on the Number Line	U1 Sessions 1.1, 1.3, 1.4, 2.6; Teacher Note (pages 147-148) U3 Sessions 2.1, 2.6, 3.1, 3.2, 3.3, 3.5, 3.6, 3.7, 4.4, 4.5
Lesson 1-4: Finding the Halfway Number	Grade 3 students find the median of a set of numbers. U2 Introduction (page 13); Session 2.2; Teacher Notes (pages 166, 167, 170)
Lesson 1-5: Rounding	U3 Session 1.7A
Lesson 1-6: More Rounding	U3 Session 1.7A
Lesson 1-7: Problem Solving: Make an Organized List	U1 Sessions 1.1, 1.2, 1.3, 1.8, 2.1, 2.4, 2.7
Topic 2: Number Sense: Addition and Subtraction	
Lesson 2-1: Addition Meaning and Properties	U1 Sessions 1.2, 1.5, 2.1, 2.6 U3 Sessions 2.5, 2.6 U8 Sessions 2.1, 2.2, 2.3, 2.4
Lesson 2-2: Subtraction Meanings	U1 Sessions 1.2, 1.5 U3 Sessions 3.1, 3.5, 4.1, 4.2, 4.3, 4.4, 4.5 U8 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6

Grade 3 Investigations Curriculum Units

U1 Trading Stickers, Combining Coins
U2 Surveys and Line Plots
U3 Collections and Travel Stories
U4 Perimeter, Angles, and Area
U5 Equal Groups

U6 Stories, Tables, and Graphs
U7 Finding Fair Shares
U8 How Many Hundreds? How Many Miles?
U9 Solids and Boxes

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California <i>enVisionMATH</i> Common Core Grade 3, ©2015	Investigations in Number, Data, and Space Grade 3, ©2012
Lesson 2-3: Using Mental Math to Add	U1 Sessions 1.2, 1.5, 2.1 U3 Sessions 2.5, 2.6 U8 Sessions 2.1, 2.2, 2.3, 2.4
Lesson 2-4: Using Mental Math to Subtract	U1 Sessions 1.2, 1.5 U3 Sessions 3.1, 3.5, 4.1, 4.2, 4.3, 4.4, 4.5 U8 Sessions 3.3, 3.4, 3.5, 3.6, 3.7, 3.8
Lesson 2-5: Estimating Sums	U3 Session 2.2
Lesson 2-6: Estimating Differences	U8 Sessions 1.3, 3.1, 3.2
Lesson 2-7: Problem Solving: Reasonableness	U1 Session 2.3 U3 Sessions 1.5, 2.2 U8 Sessions 1.3, 3.1, 3.2
Topic 3: Using Place Value to Add and Subtract	
Lesson 3-1: Adding with an Expanded Algorithm	U8 Sessions 2.1, 2.2, 2.3, 2.4, 2.5
Lesson 3-2: Models for Adding 3-Digit Numbers	U8 Sessions 2.1, 2.2, 2.3, 2.4, 2.5
Lesson 3-3: Adding 3-Digit Numbers	U8 Sessions 2.1, 2.2, 2.3, 2.4, 2.5
Lesson 3-4: Adding 3 or More Numbers	U8 Sessions 2.4, 2.5
Lesson 3-5: Problem Solving: Draw a Picture	U8 Sessions 2.1, 2.2, 2.3, 2.4, 2.5
Lesson 3-6: Subtracting with an Expanded Algorithm	U8 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9
Lesson 3-7: Models for Subtracting 3-Digit Numbers	U8 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9

Grade 3 Investigations Curriculum Units

U1 Trading Stickers, Combining Coins
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U9 Solids and Boxes

**An Alignment of California *enVisionMATH* Common Core Lessons, ©2015
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California <i>enVisionMATH</i> Common Core Grade 3, ©2015	Investigations in Number, Data, and Space Grade 3, ©2012
Lesson 3-8: Subtracting 3-Digit Numbers	U8 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9
Lesson 3-9: Subtracting Across Zero	U8 Sessions 3.2, 3.4, 3.5
Lesson 3-10: Making Sense of Addition Equations	U1 Session 2.6 U3 Sessions 2.1, 2.2, 2.5, 2.6 U8 Sessions 2.1, 2.2, 2.3, 2.4
Lesson 3-11: Making Sense of Subtraction Equations	U3 Sessions 3.4, 3.7, 4.1, 4.2, 4.3, 4.4, 4.5 U8 Sessions 3.1, 3.2, 3.4, 3.5, 3.6, 3.7, 3.8
Lesson 3-12: Adding and Subtracting	U1 Session 2.6 U3 Sessions 2.1, 2.2, 2.5, 2.6, 3.4, 3.7, 4.1 U8 Sessions 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.4
Lesson 3-13: Problem Solving: Draw a Picture and Write a Number Sentence	U1 Session 2.6 U3 Sessions 2.1, 2.2, 2.5, 2.6, 3.4, 3.7, 4.1 U8 Sessions 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.4
Operations and Algebraic Thinking	
Topic 4: Meanings of Multiplication	
Lesson 4-1: Multiplication as Repeated Addition	U5 Sessions 1.1, 1.2, 1.3, 1.4
Lesson 4-2: Arrays and Multiplication	U5 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6
Lesson 4-3: The Commutative Property	U5 Introduction and Overview (page 12); Algebra Connections (page 16); Session 3.1
Lesson 4-4: Writing Multiplication Stories	U5 Sessions 1.1, 1.2, 1.3, 1.4, 2.3
Lesson 4-5: Problem Solving: Writing to Explain	U5 Sessions 1.1, 1.2, 1.3, 1.4, 2.3

Grade 3 Investigations Curriculum Units

U1 Trading Stickers, Combining Coins
U2 Surveys and Line Plots
U3 Collections and Travel Stories
U4 Perimeter, Angles, and Area
U5 Equal Groups

U6 Stories, Tables, and Graphs
U7 Finding Fair Shares
U8 How Many Hundreds? How Many Miles?
U9 Solids and Boxes

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California <i>enVisionMATH</i> Common Core Grade 3, ©2015	Investigations in Number, Data, and Space Grade 3, ©2012
Topic 5: Multiplication Facts: Use Patterns	
Lesson 5-1: 2 and 5 as Factors	U5 Sessions 2.1, 2.2; Teacher Notes (pages 152-153, 160-162); Dialogue Boxes (page 170, 171-172)
Lesson 5-2: 9 as a Factor	U5 Teacher Note (pages 161-163)
Lesson 5-3: Multiplying with 0 and 1	U5 Sessions 3.5; Teacher Note (pages 160-162)
Lesson 5-4: Patterns for Facts	U5 Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.7A
Lesson 5-5: 10 as a Factor	U5 Sessions 2.1, 2.2, 3.7A; Teacher Notes (pages 152-153, 160-162); Dialogue Boxes (page 170, 171-172)
Lesson 5-6: Multiplying by Multiples of 10	U5 Sessions 2.1, 2.2, 3.7A; Teacher Notes (pages 152-153, 160-162); Dialogue Boxes (page 170, 171-172)
Lesson 5-7: Problem Solving: Two-Question Problems	In addition to solving multistep problems, each Investigation is comprised of several Sessions containing related questions. For example, in Unit 3, Investigation 2, students practice Addition Starter Problems in Sessions 2.4 and 2.5, leading to Solving Addition Problems in Session 2.6. Sample references: U3 Sessions 2.4, 2.5, 2.6 U5 Sessions 1.1, 1.2, 1.3, 1.4, 2.3 U8 Sessions 3.7, 3.8
Topic 6: Multiplication Facts: Use Known Facts	
Lesson 6-1: The Distributive Property	U5 Introduction and Overview (page 12); Algebra Connections (pages 16-17); Session 3.5

Grade 3 Investigations Curriculum Units

- U1** Trading Stickers, Combining Coins
- U2** Surveys and Line Plots
- U3** Collections and Travel Stories
- U4** Perimeter, Angles, and Area
- U5** Equal Groups

- U6** Stories, Tables, and Graphs
- U7** Finding Fair Shares
- U8** How Many Hundreds? How Many Miles?
- U9** Solids and Boxes

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Lesson 6-2: 3 as a Factor	U5 Sessions 2.2, 2.5; Teacher Note (pages 160-162); Dialogue Box (pages 171-172)
Lesson 6-3: 4 as a Factor	U5 Teacher Note (pages 160-162)
Lesson 6-4: 6 and 7 as Factors	U5 Sessions 2.2, 2.5; Teacher Note (pages 160-162); Dialogue Box (pages 171-172)
Lesson 6-5: 8 as a Factor	U5 Teacher Note (pages 160-162)
Lesson 6-6: Multiplying with 3 Factors	U5 Sessions 1.4, 2.5
Lesson 6-7: Multiplication Facts	U5 Sessions 2.1, 2.2, 2.4, 2.6, 3.5, 3.5A, 3.5B
Lesson 6-8: Multiplying to Find Combinations	U5 Sessions 2.6, 3.5, 3.5A, 3.5B
Lesson 6-9: Problem Solving: Multiple-Step Problems	U5 Sessions 1.1, 1.2, 1.3, 1.4, 2.3 U8 Sessions 3.7, 3.8
Topic 7: Meanings of Division	
Lesson 7-1: Division as Sharing	U5 Introduction and Overview (pages 12-13); Sessions 4.1, 4.2, 4.3; Teacher Note (pages 163-164)
Lesson 7-2: Division as Repeated Subtraction	U5 Introduction and Overview (pages 12-13); Sessions 4.1, 4.2, 4.3
Lesson 7-3: Finding Missing Numbers in a Multiplication Table	U5 Session 4.4
Lesson 7-4: Problem Solving: Choose an Appropriate Equation	U5 Sessions 4.5, 4.6

Grade 3 Investigations Curriculum Units

- U1** Trading Stickers, Combining Coins
- U2** Surveys and Line Plots
- U3** Collections and Travel Stories
- U4** Perimeter, Angles, and Area
- U5** Equal Groups

- U6** Stories, Tables, and Graphs
- U7** Finding Fair Shares
- U8** How Many Hundreds? How Many Miles?
- U9** Solids and Boxes

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California enVisionMATH Common Core Grade 3, ©2015	Investigations in Number, Data, and Space Grade 3, ©2012
Lesson 7-5: Writing Division Stories	U5 Introduction and Overview (pages 12-13); Sessions 4.1, 4.2, 4.3
Lesson 7-6: Problem Solving: Use Objects and Draw a Picture	U5 Sessions 4.1, 4.2, 4.3, 4.4, 4.5, 4.6
Topic 8: Division Facts	
Lesson 8-1: Relating Multiplication and Division	U5 Session 4.4
Lesson 8-2: Fact Families with 2, 3, 4 and 5	U5 Sessions 2.1, 2.2, 2.4, 2.6, 3.5, 4.4
Lesson 8-3: Fact Families with 6 and 7	U5 Sessions 2.1, 2.2, 2.4, 2.6, 3.5, 4.4
Lesson 8-4: Fact Families with 8 and 9	U5 Sessions 2.1, 2.2, 2.4, 2.6, 3.5, 4.4
Lesson 8-5: Problem Solving: Multiple-Step Problems	U5 Sessions 4.1, 4.2, 4.3, 4.4, 4.5, 4.6 U8 Sessions 3.7, 3.8
Lesson 8-6: Making Sense of Multiplication and Division Equations	U5 Sessions 1.3, 2.3, 4.1, 4.3, 4.5, 4.6
Lesson 8-7: Dividing with 0 and 1	There are no specific references to division by 0 or 1. The following references are to multiplication by 0 or 1. U5 Sessions 3.5; Teacher Note (pages 160-162)
Lesson 8-8: Multiplication and Division Facts	U5 Sessions 2.1, 2.2, 2.4, 2.6, 3.5, 4.4
Lesson 8-9: Problem Solving: Draw a Picture and Write a Number Sentence	U5 Sessions 4.1, 4.2, 4.3, 4.4, 4.5, 4.6

Grade 3 Investigations Curriculum Units

- U1** Trading Stickers, Combining Coins
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- U6** Stories, Tables, and Graphs
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- U9** Solids and Boxes

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California <i>enVisionMATH</i> Common Core Grade 3, ©2015	Investigations in Number, Data, and Space Grade 3, ©2012
Number and Operations - Fractions	
Topic 9: Understanding Fractions	
Lesson 9-1: Dividing Regions into Equal Parts	U7 Sessions 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4
Lesson 9-2: Fractions and Regions	U7 Sessions 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4
Lesson 9-3: Fractions and Sets	U7 Sessions 1.4, 1.5, 1.6
Lesson 9-4: Fractional Parts of a Set	U7 Sessions 1.4, 1.5, 1.6
Lesson 9-5: Fraction Number Lines	U7 Sessions 1.4A, 1.4B
Lesson 9-6: Locating Fractions on the Number Line	U7 Sessions 1.4A, 1.4B
Lesson 9-7: Fractions and Length	U2 Sessions 3.3
Lesson 9-8: Problem Solving: Writing to Explain	Grade 3 students communicate verbally in every investigation in the series by either writing or responding orally to questions about patterns, problems, or solution strategies. Sample references: U7 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4
Topic 10: Fraction Comparison and Equivalence	
Lesson 10-1: Using Models to Compare Fractions: Same Denominator	U7 Sessions 1.3, 1.5
Lesson 10-2: Using Models to Compare Fractions: Same Numerator	U7 Sessions 1.2
Lesson 10-3: Using Fractions	U7 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4

Grade 3 Investigations Curriculum Units

- U1** Trading Stickers, Combining Coins
- U2** Surveys and Line Plots
- U3** Collections and Travel Stories
- U4** Perimeter, Angles, and Area
- U5** Equal Groups

- U6** Stories, Tables, and Graphs
- U7** Finding Fair Shares
- U8** How Many Hundreds? How Many Miles?
- U9** Solids and Boxes

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California <i>enVisionMATH</i> Common Core Grade 3, ©2015	Investigations in Number, Data, and Space Grade 3, ©2012
Lesson 10-4: Comparing Fractions on the Number Line	U7 Session 1.4B
Lesson 10-5: Finding Equivalent Fractions	U7 Sessions 2.2, 2.3, 2.4, 3.3, 1.4A, 1.4B
Lesson 10-6: Equivalent Fractions and the Number Line	U7 Sessions 1.4A, 1.4B
Lesson 10-7: Whole Numbers and Fractions	U7 Sessions 1.4A, 1.4B, 1.5, 2.1, 2.4
Lesson 10-8: Problem Solving: Draw a Picture	U7 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 3.1
Geometry	
Topic 11: Two-Dimensional Shapes and Their Attributes	
Lesson 11-1: Polygons	U4 Sessions 2.3, 3.1, 3.2, 3.3, 3.5 U7 Sessions 2.1, 2.2, 2.4
Lesson 11-2: Quadrilaterals	U4 Session 3.3
Lesson 11-3: Classifying Shapes	U4 Sessions 2.3, 3.1, 3.2, 3.3, 3.5
Lesson 11-4: Problem Solving: Make and Test Generalizations	U3 Algebra Connections (pages 18-19); Session 3.1 U4 Sessions 2.3, 3.1, 3.2, 3.3, 3.5 U5 Session 2.4 U8 Sessions 1.5, 2.1; Teacher Note (pages 168-170)
Lesson 11-5: Problem Solving: Solve a Simpler Problem	U8 Session 2.1

Grade 3 Investigations Curriculum Units

U1 Trading Stickers, Combining Coins
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U7 Finding Fair Shares
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California <i>enVisionMATH</i> Common Core Grade 3, ©2015	Investigations in Number, Data, and Space Grade 3, ©2012
Measurement and Data	
Topic 12: Time	
Lesson 12-1: Time to the Half Hour and Quarter Hour	U3 Sessions 1.7A, 3.1
Lesson 12-2: Time to the Minute	U3 Sessions 1.7A, 3.1
Lesson 12-3: Elapsed Time	U3 Session 3.1
Lesson 12-4: Problem Solving: Work Backward	U3 Sessions 1.7A, 3.1
Topic 13: Perimeter	
Lesson 13-1: Understanding Perimeter	U4 Sessions 1.2, 1.3, 1.4, 1.5
Lesson 13-2: Perimeter of Common Shapes	U4 Sessions 1.2, 1.3, 1.4, 1.5
Lesson 13-3: Perimeter and Unknown Side Lengths	U4 Sessions 1.2, 1.3, 1.4, 1.5
Lesson 13-4: Different Shapes with the Same Perimeter	U4 Sessions 1.2, 1.3, 1.4, 1.5
Lesson 13-5: Problem Solving: Solve a Simpler Problem and Make a Table	U4 Sessions 1.2, 1.3, 1.4, 1.5
Topic 14: Area	
Lesson 14-1: Covering Regions	U4 Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1A
Lesson 14-2: Area and Units	U4 Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1A
Lesson 14-3: Standard Units	U4 Sessions 2.3, 2.4, 2.5, 2.6, 3.1A

Grade 3 Investigations Curriculum Units

- U1** Trading Stickers, Combining Coins
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- U5** Equal Groups

- U6** Stories, Tables, and Graphs
- U7** Finding Fair Shares
- U8** How Many Hundreds? How Many Miles?
- U9** Solids and Boxes

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California <i>enVisionMATH</i> Common Core Grade 3, ©2015	Investigations in Number, Data, and Space Grade 3, ©2012
Lesson 14-4: Area of Squares and Rectangles	U4 Session 2.3, 3.1A
Lesson 14-5: Area and the Distributive Property	U5 Introduction and Overview (page 12); Algebra Connections (pages 16-17); Sessions 3.5, 3.5A, 3.5B
Lesson 14-6: Problem Solving: Solve a Simpler Problem	U8 Session 2.1
Lesson 14-7: Area of Irregular Shapes	U4 Sessions 2.1, 2.2, 2.4, 2.5, 2.6
Lesson 14-8: Different Area, Same Perimeter	U4 Session 2.5A U4 Sessions 1.4, 2.3, 2.4, 2.5, 2.6
Lesson 14-9: Same Area, Different Perimeter	U4 Session 2.5A U4 Session 2.4
Lesson 14-10: Equal Areas and Fractions	U4 Sessions 2.1, 2.2, 2.3, 2.4
Lesson 14-11: Problem Solving: Selecting Appropriate Measurement Units and Tools	U3 Sessions 3.4, 3.6, 3.7, 4.1 U4 Sessions 1.1, 1.2, 1.3, 1.4, 1.5 U6 Sessions 1.1, 1.2, 1.3, 1.4, 1.5 U8 Session 3.2
Topic 15: Liquid Volume and Mass	
Lesson 15-1: Metric Units of Capacity	U9 Sessions 4A.1, 4A.3
Lesson 15-2: Measuring Capacity	U9 Sessions 4A.1, 4A.3
Lesson 15-3: Units of Mass	U9 Sessions 4A.2, 4A.3

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U1 Trading Stickers, Combining Coins
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California enVisionMATH Common Core Grade 3, ©2015	Investigations in Number, Data, and Space Grade 3, ©2012
Lesson 15-4: Measuring Mass	U9 Sessions 4A.2, 4A.3
Lesson 15-5: Problem Solving: Draw a Picture	U7 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 3.1
Topic 16: Data	
Lesson 16-1: Line Plots	U2 Sessions 2.1, 2.2, 2.4, 2.5, 3.1, 3.3, 3.4 U6 Teacher Note (page 117)
Lesson 16-2: Length and Line Plots	U2 Sessions 3.1, 3.3, 3.4
Lesson 16-3: Reading Pictographs and Bar Graphs	U2 Sessions 1.1, 1.4, 1.5, 1.6, 2.4, 2.5
Lesson 16-4: Making Pictographs	U2 Session 2.3A
Lesson 16-5: Making Bar Graphs	U2 Sessions 1.1, 1.4, 1.5, 1.6, 2.4, 2.5
Lesson 16-6: Problem Solving: Use Tables and Graphs to Draw Conclusions	U2 Sessions 1.2, 1.3, 1.4, 1.5, 1.6, 2.3A, 2.4, 2.5, 2.7

Grade 3 Investigations Curriculum Units

- U1** Trading Stickers, Combining Coins
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- U6** Stories, Tables, and Graphs
- U7** Finding Fair Shares
- U8** How Many Hundreds? How Many Miles?
- U9** Solids and Boxes

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California <i>enVisionMATH</i> Common Core Grade 4, ©2015	Investigations in Number, Data, and Space Grade 4, ©2012
Operations and Algebraic Thinking	
Topic 1: Multiplication and Division: Meanings and Facts	
Lesson 1-1: Meanings of Multiplication	U1 Sessions 1.1, 1.2, 1.3, 1.4, 1.5
Lesson 1-2: Patterns for Facts	U1 Sessions 2.1, 2.2, 2.3, 2.4
Lesson 1-3: Multiplication Properties	U8 Algebra Connections (pages 16-19); Sessions 1.2, 1.3
Lesson 1-4: 3, 4, 6, 7, and 8 as Factors	U1 Sessions 3.1, 3.2, 3.3, 3.4
Lesson 1-5: Multiplication as Comparison	U1 Session 1.6A
Lesson 1-6: Meanings of Division	U1 Sessions 3.1, 3.2, 3.3, 3.4 U8 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6
Lesson 1-7: Comparison Problems	U1 Session 1.6A
Lesson 1-8: Special Quotients	There are no references in the Grade 4 series to “special quotients.” The students encounter different possibilities for the solution of a division problem (whole number, whole number with remainder, etc.) The following references are to division computation. U3 Sessions 2.1, 2.2, 2.4, 2.5 U8 Sessions 3.1, 3.2, 3.3, 3.4
Lesson 1-9: Using Multiplication Facts to Find Division Facts	U1 Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 3.1, 3.2, 3.3, 3.4

Grade 4 Investigations Curriculum Units

- U1** Factors, Multiples, and Arrays
- U2** Describing the Shape of the Data
- U3** Multiple Towers and Division Stories
- U4** Size, Shape, and Symmetry
- U5** Landmarks and Large Numbers

- U6** Fraction Cards and Decimal Squares
- U7** Moving Between Solids and Silhouettes
- U8** How Many Packages? How Many Groups?
- U9** Penny Jars and Plant Growth

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Lesson 1-10: Problem Solving: Draw a Picture and Write an Equation	U1 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6A, 3.1, 3.2, 3.3, 3.4 U8 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6
Topic 2: Generate and Analyze Patterns	
Lesson 2-1: Repeating Patterns	U1 Session 1.4 U7 Sessions 3.1, 3.2 U9 Dialogue Box (pages 154-155)
Lesson 2-2: Number Sequences	U5 Session 1.2 U9 Dialogue Box (pages 154-155)
Lesson 2-3: Extending Tables	U9 Sessions 1.1, 2.2, 2.3, 2.4, 2.5, 2.8, 3.1, 3.4, 3.5
Lesson 2-4: Writing Rules for Situations	U9 Sessions 1.1, 2.2, 2.3, 2.4, 2.5, 2.8, 3.1, 3.4, 3.5
Lesson 2-5: Geometric Patterns	U1 Session 1.4 U7 Sessions 3.1, 3.2 U9 Dialogue Box (pages 154-155)
Lesson 2-6: Problem Solving: Act It Out and Use Reasoning	U5 Introduction and Overview (pages 18-19); Teacher Note (pages 174-176) U7 Session 1.4; Dialogue Box (pages 113-114)
Number and Operations in Base Ten	
Topic 3: Place Value	
Lesson 3-1: Representing Numbers	U5 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.5A, 1.6, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1, 3.2, 3.3
Lesson 3-2: Place Value Relationships	U5 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.5A, 1.6, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4, 3.5
Lesson 3-3: Comparing Numbers	U2 Sessions 1.4, 1.5, 2.2, 2.6

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Lesson 3-4: Comparing Greater Numbers	U2 Sessions 1.4, 1.5, 2.2, 2.6
Lesson 3-5: Rounding Whole Numbers	U5 Session 2.5 U8 Session 1.1, 1.2 U9 Sessions 2.1, 2.2, 2.4, 2.5, 2.6, 2.8, 3.3 (Ten-Minute Math)
Lesson 3-6: Problem Solving: Make an Organized List	U5 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.5A, 1.6, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4, 3.5
Topic 4: Addition and Subtraction of Whole Numbers	
Lesson 4-1: Using Mental Math to Add and Subtract	U5 Sessions 1.4, 1.6, 2.1, 2.2, 2.3, 2.4, 4.2, 4.3; Teacher Notes (pages 168, 171-172, 173, 183-185); Dialogue Boxes (pages 196, 197)
Lesson 4-2: Estimating Sums and Differences of Whole Numbers	U5 Session 2.5
Lesson 4-3: Adding Whole Numbers	U5 Sessions 1.6, 2.1, 2.2, 2.3, 2.4, 2.6, 3.5, 4.4, 4.5, 4.6
Lesson 4-4: Subtracting Whole Numbers	U5 Sessions 1.6, 4.1, 4.2, 4.4, 4.4A, 4.5, 4.6
Lesson 4-5: Subtracting Across Zeros	There are no specific references in Grade 4 to subtracting across zeros. The following references are to subtracting multi-digit whole numbers. U5 Sessions 1.6, 4.1, 4.2, 4.4, 4.4A, 4.5, 4.6
Lesson 4-6: Problem Solving: Draw a Picture and Write an Equation	U5 Sessions 1.6, 2.1, 2.2, 2.3, 2.4, 2.6, 3.5, 4.1, 4.2, 4.4, 4.5, 4.6

Grade 4 Investigations Curriculum Units

- U1** Factors, Multiples, and Arrays
- U2** Describing the Shape of the Data
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California <i>enVisionMATH</i> Common Core Grade 4, ©2015	Investigations in Number, Data, and Space Grade 4, ©2012
Topic 5: Number Sense: Multiplying by 1-Digit Numbers	
Lesson 5-1: Arrays and Multiplying by 10 and 100	U1 Sessions 1.1, 1.2, 1.3, 1.4, 1.5 U3 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 3.1, 3.2, 3.3, 3.4
Lesson 5-2: Multiplying by Multiples of 10 and 100	U3 Sessions 3.1, 3.2, 3.3, 3.4
Lesson 5-3: Breaking Apart to Multiply	U3 Algebra Connections (pages 16-17); Sessions 1.1, 1.2, 1.3, 1.4, 2.2, 4.2, 4.4 U8 Introduction and Overview (pages 10-11); Algebra Connections (pages 16-17); Sessions 1.2, 1.4, 1.5, 2.3, 2.4; Teacher Notes (pages 113, 115-116)
Lesson 5-4: Using Mental Math to Multiply	U1 Sessions 2.1, 2.2, 2.3, 2.4, 2.5 U3 Sessions 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4, 4.5
Lesson 5-5: Using Rounding to Estimate	U5 Session 2.5 U8 Sessions 1.1, 1.2 U9 Sessions 2.1, 2.2, 2.4, 2.5, 2.6, 2.8, 3.3 (Ten-Minute Math)
Lesson 5-6: Problem Solving: Reasonableness	U7 Session 1.4; Dialogue Box (pages 113-114) U8 Sessions 1.2, 3.5
Topic 6: Developing Fluency: Multiplying by 1-Digit Numbers	
Lesson 6-1: Arrays and Using an Expanded Algorithm	U1 Sessions 1.1, 1.2, 1.3, 1.4, 1.5 U3 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 3.1, 3.2, 3.3, 3.4
Lesson 6-2: Connecting the Expanded and Standard Algorithms	U3 Sessions 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4, 4.5

Grade 4 Investigations Curriculum Units

- U1** Factors, Multiples, and Arrays
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- U4** Size, Shape, and Symmetry
- U5** Landmarks and Large Numbers

- U6** Fraction Cards and Decimal Squares
- U7** Moving Between Solids and Silhouettes
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- U9** Penny Jars and Plant Growth

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Lesson 6-3: Multiplying 2-Digit by 1-Digit Numbers	U3 Sessions 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4, 4.5
Lesson 6-4: Multiplying 3- and 4-Digit by 1-Digit Numbers	U3 Sessions 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4, 4.5
Lesson 6-5: Multiplying by 1-Digit Numbers	U3 Sessions 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4, 4.5
Lesson 6-6: Problem Solving: Missing or Extra Information	There are no specific references to solving problems with missing or extra information, but Grade 4 students must read and study problems closely to make sure they are answering the questions being asked. Sample references: U1 Session 1.6A U3 Sessions 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4, 4.5
Topic 7: Number Sense: Multiplying by 2-Digit Numbers	
Lesson 7-1: Arrays and Multiplying 2-Digit Numbers by Multiples of 10	U1 Sessions 1.1, 1.2, 1.3, 1.4, 1.5 U3 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 3.1, 3.2, 3.3, 3.4
Lesson 7-2: Using Mental Math to Multiply 2-Digit Numbers	U3 Sessions 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4, 4.5
Lesson 7-3: Using Rounding to Estimate	U5 Session 2.5 U8 Sessions 1.1, 1.2, 3.5 U9 Sessions 2.1, 2.2, 2.4, 2.5, 2.6, 2.8, 3.3 (Ten-Minute Math)

Grade 4 Investigations Curriculum Units

- U1** Factors, Multiples, and Arrays
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Lesson 7-4: Using Compatible Numbers to Estimate	Grade 4 students use rounding and other estimation strategies. U5 Session 2.5 U8 Sessions 1.1, 1.2, 3.5 U9 Sessions 2.1, 2.2, 2.4, 2.5, 2.6, 2.8, 3.3 (Ten-Minute Math)
Lesson 7-5: Problem Solving: Multiple-Step Problems	There are no specific references to multiple-step problems, but each investigation is comprised of multiple sessions which contribute to teaching a larger concept or solving a larger problem. Sample references: U1 Sessions 1.1, 1.2, 1.3, 1.4, 1.5 U3 Sessions 1.1, 1.2, 1.3, 1.4, 1.5
Topic 8: Developing Fluency: Multiplying by 2-Digit Numbers	
Lesson 8-1: Arrays and Multiplying 2-Digit Numbers	U1 Sessions 1.1, 1.2, 1.3, 1.4, 1.5 U3 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 3.1, 3.2, 3.3, 3.4
Lesson 8-2: Arrays and an Expanded Algorithm	U1 Sessions 1.1, 1.2, 1.3, 1.4, 1.5 U3 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 3.1, 3.2, 3.3, 3.4
Lesson 8-3: Multiplying 2-Digit Numbers by Multiples of Ten	U3 Sessions 1.1, 1.2, 1.3, 1.4, 1.5
Lesson 8-4: Multiplying 2-Digit by 2-Digit Numbers	U8 Sessions 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5
Lesson 8-5: Problem Solving: Two-Question Problems	There are no specific references to two-question problems, but one multiplication strategy is to reduce larger problems to smaller, “starter” problems. Sample references: U8 Sessions 2.1, 2.2, 2.3, 2.4, 2.5

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- U1** Factors, Multiples, and Arrays
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Topic 9: Number Sense: Dividing by 1-Digit Divisors	
Lesson 9-1: Using Mental Math to Divide	U3 Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 2.6
Lesson 9-2: Estimating Quotients	U8 Session 3.5 U9 Ten-Minute Math (page 20); Sessions 2.1, 2.2, 2.4, 2.5, 2.6, 2.8, 3.3 (Ten-Minute Math)
Lesson 9-3: Estimating Quotients for Greater Dividends	U8 Session 3.5 U9 Ten-Minute Math (page 20); Sessions 2.1, 2.2, 2.4, 2.5, 2.6, 2.8, 3.3 (Ten-Minute Math)
Lesson 9-4: Dividing with Remainders	U3 Session 2.2; Teacher Note (page 162) U8 Sessions 3.2, 3.5
Lesson 9-5: Multiplication and Division Stories	U3 Sessions 1.1, 2.1, 2.3, 2.4, 3.3 U8 Sessions 2.2, 2.4, 2.5, 3.1, 3.2, 3.5
Lesson 9-6: Problem Solving: Draw a Picture and Write an Equation	U3 Sessions 1.1, 2.1, 2.3, 2.4, 3.3 U8 Sessions 2.2, 2.4, 2.5, 3.1, 3.2, 3.5
Topic 10: Developing Fluency: Dividing by 1-Digit Divisors	
Lesson 10-1: Division as Repeated Subtraction	U8 Session 3.3
Lesson 10-2: Using Objects to Divide: Division as Sharing	U3 Sessions 2.1 2.2 U8 Sessions 3.1, 3.5
Lesson 10-3: Dividing 2-Digit by 1-Digit Numbers	U3 Sessions 2.1, 2.2, 2.3, 2.4, 2.5
Lesson 10-4: Dividing 3-Digit by 1-Digit Numbers	U3 Session 2.6 U8 Sessions 3.1, 3.2

Grade 4 Investigations Curriculum Units

- U1** Factors, Multiples, and Arrays
- U2** Describing the Shape of the Data
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- U5** Landmarks and Large Numbers

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Lesson 10-5: Deciding Where to Start Dividing	U8 Session 3.5
Lesson 10-6: Dividing 4-Digit by 1-Digit Numbers	Grade 4 students divide with up to 3-digit dividends, and with 2-digit divisors. U8 Teacher Note (page 123)
Lesson 10-7: Problem Solving: Multiple-Step Problems	The following references are to division story problems. U3 Sessions 2.3, 2.4 U8 Session 3.5
Number and Operations – Fractions	
Topic 11: Fraction Equivalence and Ordering	
Lesson 11-1: Factors	U1 Sessions 1.2, 1.3, 3.1, 3.2, 3.3, 3.4 U3 Session 4.3
Lesson 11-2: Prime and Composite Numbers	U1 Session 1.3, 3.2
Lesson 11-3: Multiples	U1 Sessions 2.3, 2.4, 2.5 U3 Session 3.1
Lesson 11-4: Equivalent Fractions	U6 Sessions 1.1, 1.2, 2.2, 2.3, 2.4, 2.5; Teacher Note (pages 141-142)
Lesson 11-5: Number Lines and Equivalent Fractions	U6 Session 2.5
Lesson 11-6: Comparing Fractions	U6 Sessions 1.5, 2.4, 2.6
Lesson 11-7: Ordering Fractions	U6 Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 2.6

Grade 4 Investigations Curriculum Units

- U1** Factors, Multiples, and Arrays
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Lesson 11-8: Problem Solving: Writing to Explain	Grade 4 students communicate verbally in every investigation in the series by either writing or responding orally to questions about patterns, problems, or solution strategies. Sample references: U6 Sessions 1.1, 1.2, 1.3, 1.4 (“Students might say”)
Topic 12: Adding and Subtracting Fractions and Mixed Numbers with Like Denominators	
Lesson 12-1: Modeling Addition of Fractions	U6 Sessions 1.6, 1.7, 2.1
Lesson 12-2: Adding Fractions with Like Denominators	U6 Sessions 1.6, 1.7, 2.1
Lesson 12-3: Modeling Subtraction of Fractions	U6 Session 1.8A
Lesson 12-4: Subtracting Fractions with Like Denominators	U6 Session 1.8A
Lesson 12-5: Adding and Subtracting on the Number Line	Grade 4 students graph fractions on a number line for comparison. U6 Session 2.5
Lesson 12-6: Improper Fractions and Mixed Numbers	U6 Sessions 2.1, 2.7A
Lesson 12-7: Modeling Addition and Subtraction of Mixed Numbers	U6 Session 2.7A
Lesson 12-8: Adding Mixed Numbers	U6 Session 2.7A
Lesson 12-9: Subtracting Mixed Numbers	U6 Session 2.7A

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- U1** Factors, Multiples, and Arrays
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Lesson 12-10: Decomposing and Composing Fractions	Grade 4 students find combinations of fractions that equal 1. U6 Sessions 1.6, 2.1
Lesson 12-11: Problem Solving: Draw a Picture and Write an Equation	While working with fractions in Unit 6, students have the opportunity to draw models of fractions and combinations of fractions in every session. They construct fraction cards with picture models and fractions written numerically as ratios. They write equations to model fraction addition. Sample references: U6 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6
Topic 13: Extending Fraction Concepts	
Lesson 13-1: Fractions as Multiples of Unit Fractions: Using Models	To explore fractions with numerators other than 1, students first examine fraction models to determine the fraction representing a shaded region (a unit fraction) and the corresponding unshaded region (usually, a non-unit fraction). Ultimately, students describe the numerator of a non-unit fraction as the number of parts of the given whole, or the number of individual items from a whole group. Students also generate non-unit fractions by multiplying fractions by whole numbers. U6 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3A.1, 3A.2, 3A.3
Lesson 13-2: Multiplying a Fraction by a Whole Number: Using Models	U6 Sessions 3A.1, 3A.2, 3A.3
Lesson 13-3: Multiplying a Fraction by a Whole Number: Using Symbols	U6 Sessions 3A.1, 3A.2, 3A.3

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Lesson 13-4: Fractions and Decimals	U6 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
Lesson 13-5: Fractions and Decimals on the Number Line	Students color squares on 10x10 Squares grids to model decimals. U6 Sessions 2.5, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
Lesson 13-6: Equivalent Fractions and Decimals	U6 Sessions 3.1, 3.2, 3.3, 3.5
Lesson 13-7: Decimal Place Value	U6 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
Lesson 13-8: Comparing Decimals	U6 Sessions 3.5, 3.6
Lesson 13-9: Using Money to Understand Decimals	U5 Teacher Note (page 186) U6 Sessions 3.1 (page 107)
Lesson 13-10: Problem Solving: Draw a Picture	U6 Sessions 2.5, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
Measurement and Data	
Topic 14: Measurement Units and Conversions	
Lesson 14-1: Using Customary Units of Length	U2 Sessions 1.2, 1.3, 1.4 U6 Session 3.4
Lesson 14-2: Customary Units of Capacity	Grade 4 students measure, or use measurements of, height, length, distance, perimeter, area, and angle rotation (more or less than 90°). U2 Sessions 1.2, 1.3, 1.4 U4 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 3.2, 4.5, 4.6

Grade 4 Investigations Curriculum Units

- U1** Factors, Multiples, and Arrays
- U2** Describing the Shape of the Data
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Lesson 14-3: Units of Weight	Grade 4 students measure, or use measurements of, height, length, distance, perimeter, area, and angle rotation (more or less than 90°). U2 Sessions 1.2, 1.3, 1.4 U4 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 3.2, 4.5, 4.6
Lesson 14-4: Changing Customary Units	U7 Sessions 3.5A, 3.5B
Lesson 14-5: Problem Solving: Writing to Explain	Grade 4 students communicate verbally in every investigation in the series by either writing or responding orally to questions about patterns, problems, or solution strategies. The Activity and Discussion sections of each session typically contain open-ended questions for teachers to use as prompts. Sample references: U4 Sessions 1.1, 1.2, 1.3, 1.4, 1.5 U7 Session 3.5B
Lesson 14-6: Using Metric Units of Length	U4 Sessions 1.1, 1.2, 1.3
Lesson 14-7: Metric Units of Capacity	Grade 4 students measure, or use measurements of, height, length, distance, perimeter, area, and angle rotation (more or less than 90°). U2 Sessions 1.2, 1.3, 1.4 U4 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 3.2, 4.5, 4.6
Lesson 14-8: Units of Mass	Grade 4 students measure, or use measurements of, height, length, distance, perimeter, area, and angle rotation (more or less than 90°). U2 Sessions 1.2, 1.3, 1.4 U4 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 3.2, 4.5, 4.6

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- U1** Factors, Multiples, and Arrays
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- U8** How Many Packages? How Many Groups?
- U9** Penny Jars and Plant Growth

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California <i>enVisionMATH</i> Common Core Grade 4, ©2015	Investigations in Number, Data, and Space Grade 4, ©2012
Lesson 14-9: Changing Metric Units	U7 Sessions 3.5A, 3.5B
Lesson 14-10: Units of Time	Students use units of time as they measure and record plant growth and explore the concept of growth rate per day and over longer periods of time. U9 Sessions 3.1, 3.2, 3.3, 3.4, 3.5
Lesson 14-11: Problem Solving: Work Backward	This particular problem-solving strategy is not specifically taught in the Investigations curriculum, but students develop and apply their problem-solving skills in every session and every investigation in every unit of the series. Sample references: U2 Session 1.4 U4 Sessions 1.3, 1.4, 1.5, 4.5, 4.6 U6 Session 3.4
Topic 15: Solving Measurement and Data Problems	
Lesson 15-1: Making Line Plots	U2 Sessions 1.1, 1.2, 1.3, 2.5, 2.6, 2.7, 3.3; Teacher Note (page 121); Dialogue Boxes (pages 144-147)
Lesson 15-2: Solving Problems Involving Line Plots	U2 Sessions 1.1, 1.2, 1.3, 2.5, 2.6, 2.7, 3.3; Teacher Note (page 121); Dialogue Boxes (pages 144-147)
Lesson 15-3: Solving Perimeter and Area Problems	U4 Sessions 1.1, 1.3, 1.4, 1.5, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6
Lesson 15-4: Solving Measurement Problems	U2 Sessions 1.4 U4 Sessions 1.3, 1.4, 1.5, 4.5, 4.6 U6 Session 3.4 U7 Sessions 3.2, 3.3, 3.4, 3.5, 3.5A, 3.5B U9 Sessions 1.1, 1.2, 3.1, 3.2

Grade 4 Investigations Curriculum Units

- U1** Factors, Multiples, and Arrays
- U2** Describing the Shape of the Data
- U3** Multiple Towers and Division Stories
- U4** Size, Shape, and Symmetry
- U5** Landmarks and Large Numbers

- U6** Fraction Cards and Decimal Squares
- U7** Moving Between Solids and Silhouettes
- U8** How Many Packages? How Many Groups?
- U9** Penny Jars and Plant Growth

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Lesson 15-5: Solving Problems Involving Money	U5 Sessions 4.5, 4.6; Teacher Note (page 186)
Lesson 15-6: Problem Solving: Solve a Simpler Problem and Make a Table	U5 Sessions 2.1, 2.2, 2.3 U9 Sessions 3.3, 3.4, 3.5; Teacher Notes (pages 138-139, 140-142, 143, 150-152); Dialogue Box (page 154)
Geometry	
Topic 16: Lines, Angles, and Shapes	
Lesson 16-1: Points, Lines, and Planes	U4 Sessions 2.1, 2.2, 3.1, 4.1, 4.2 U7 Sessions 2.2, 2.3, 2.4, 2.5
Lesson 16-2: Line Segments, Rays, and Angles	U4 Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 3.1, 3.2, 3.3, 3.4A, 4.1, 4.2, 4.5, 4.6 U7 Sessions 1.1, 1.3, 2.4
Lesson 16-3: Understanding Angles and Unit Angles	U4 Sessions 2.4, 2.5, 3.1, 3.2, 3.3; Dialogue Box (page 166)
Lesson 16-4: Measuring with Unit Angles	Students measure angles in comparison to a right angle, and they identify angles in polygons. U4 Sessions 2.4, 2.5, 3.1, 3.2, 3.3; Dialogue Box (page 166)
Lesson 16-5: Measuring Angles	Students measure angles in comparison to a right angle, and they identify angles in polygons. U4 Sessions 2.4, 2.5, 3.1, 3.2, 3.3; Dialogue Box (page 166)

Grade 4 Investigations Curriculum Units

- U1** Factors, Multiples, and Arrays
- U2** Describing the Shape of the Data
- U3** Multiple Towers and Division Stories
- U4** Size, Shape, and Symmetry
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Lesson 16-6: Adding and Subtracting Angle Measures	Students measure angles in comparison to a right angle, and they identify angles in polygons. U4 Sessions 2.4, 2.5, 3.1, 3.2, 3.3; Dialogue Box (page 166)
Lesson 16-7: Polygons	U4 Sessions 2.1, 2.2, 2.3, 2.3A, 2.4, 2.5, 4.5, 4.6
Lesson 16-8: Triangles	U4 Sessions 2.2, 2.3A, 3.2, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6
Lesson 16-9: Quadrilaterals	U4 Sessions 2.3, 2.3A, 2.4, 2.5, 3.1, 3.2, 4.1, 4.2, 4.4, 4.5, 4.6; Teacher Note (pages 155, 156-158)
Lesson 16-10: Line Symmetry	U4 Sessions 4.1, 4.2, 4.3, 4.4, 4.6; Dialogue Box (pages 168-169)
Lesson 16-11: Problem Solving: Make and Test Generalizations	U3 Teacher Note (pages 168-170) U5 Sessions 2.3; Teacher Note (pages 174-176) U9 Sessions 2.2, 3.4

Grade 4 Investigations Curriculum Units

- U1** Factors, Multiples, and Arrays
- U2** Describing the Shape of the Data
- U3** Multiple Towers and Division Stories
- U4** Size, Shape, and Symmetry
- U5** Landmarks and Large Numbers

- U6** Fraction Cards and Decimal Squares
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Number and Operations in Base Ten	
Topic 1: Place Value	
Lesson 1-1: Place Value Relationships	U3 Mathematics in This Unit (pages 10-11); Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.4; Teacher Notes (pages 113-115) U6 Mathematics in This Unit (pages 11-12); Sessions 1.1, 1.2, 1.3, 1.4, 2.4, 2.5, 2.6, 2.7; Teacher Notes (pages 132-133); Dialogue Boxes (pages 143-146)
Lesson 1-2: Tenths and Hundredths	U6 Mathematics in This Unit (pages 10-11); Sessions 1.2, 2.2; Teacher Note (pages 123-124)
Lesson 1-3: Thousandths	U6 Mathematics in This Unit (pages 10-11); Sessions 1.2, 2.2; Teacher Note (pages 123-124)
Lesson 1-4: Decimal Place Value	U6 Sessions 1.1, 1.2, 1.3, 1.4, 1.6, 1.7, 1.8, 1.9, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7
Lesson 1-5: Comparing and Ordering Decimals	U6 Sessions 1.1, 1.3, 1.4, 1.6, 1.8, 1.10, 2.4, 2.5; Dialogue Box (pages 138-139)
Lesson 1-6: Problem Solving: Look for a Pattern	U6 Sessions 1.1, 1.2, 1.3, 1.4, 1.6, 1.7, 1.8, 1.9, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7
Topic 2: Adding and Subtracting Decimals	
Lesson 2-1: Mental Math	U6 Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8
Lesson 2-2: Rounding Decimals	U6 Sessions 1.5A, 2.3, 2.6; Teacher Note (page 133); Dialogue Box (page 143)
Lesson 2-3: Estimating Sums and Differences	U6 Sessions 2.3, 2.6; Teacher Note (page 133); Dialogue Box (page 143)

Grade 5 Investigations Curriculum Units

- U1** Number Puzzles and Multiple Towers
- U2** Prisms and Pyramids
- U3** Thousands of Miles, Thousands of Seats
- U4** What's That Portion?
- U5** Measuring Polygons

- U6** Decimals on Grids and Number Lines
- U7** How Many People? How Many Teams?
- U8** Growth Patterns
- U9** How Long Can You Stand on One Foot?

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Lesson 2-4: Modeling Addition and Subtraction of Decimals	U6 Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 2.5A, 2.6, 2.7, 2.8
Lesson 2-5: Adding Decimals	U6 Mathematics in This Unit (page 12); Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8; Teacher Note (pages 132-133); Dialogue Box (pages 143-144)
Lesson 2-6: Subtracting Decimals	In Grade 5, students focus on the decimal operation of addition. U6 Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8
Lesson 2-7: Problem Solving: Multiple-Step Problems	U6 Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 2.5A, 2.6, 2.7, 2.8
Topic 3: Multiplying Whole Numbers	
Lesson 3-1: Multiplication Properties	U1 Mathematics in This Unit (pages 12-13); Algebra Connections (pages 16-18); Sessions 2.2, 2.3 U7 Mathematics in This Unit (page 11); Algebra Connections (pages 17-19)
Lesson 3-2: Multiplying by Powers of 10	U6 Session 3A.1
Lesson 3-3: Multiplying 2-Digit Numbers by Multiples of 10	U1 Mathematics in This Unit (pages 12-13); Sessions 2.3, 2.4, 2.5, 2.6
Lesson 3-4: Multiplying 2-Digit by 2-Digit Numbers	U1 Mathematics in This Unit (pages 11-12); Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8
Lesson 3-5: Multiplying Greater Numbers	U7 Sessions 2.1, 2.2, 2.3, 2.4

Grade 5 Investigations Curriculum Units

- U1** Number Puzzles and Multiple Towers
- U2** Prisms and Pyramids
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- U4** What's That Portion?
- U5** Measuring Polygons

- U6** Decimals on Grids and Number Lines
- U7** How Many People? How Many Teams?
- U8** Growth Patterns
- U9** How Long Can You Stand on One Foot?

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Lesson 3-6: Problem Solving: Draw a Picture and Write an Equation	U1 Sessions 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7 U7 Sessions 2.1, 2.2, 2.3, 2.4
Topic 4: Dividing by 1-Digit Divisors	
Lesson 4-1: Dividing Multiples of 10 and 100	U1 Session 3.6 U7 Session 3.3
Lesson 4-2: Estimating Quotients	U1 Session 2.3
Lesson 4-3: Problem Solving: Reasonableness	Grade 5 students learn to decide whether a solution is reasonable as they practice division strategies, including the first step in solving a problem or a starter problem, and then apply these strategies to real-world problem situations. U1 Sessions 3.5, 3.6, 3.7 U7 Sessions 3.3, 3.4, 3.5, 3.6, 3.7, 4.1, 4.2, 4.3, 4.4, 4.5
Lesson 4-4: Dividing by 1-Digit Divisors	Students divide with multi-digit divisors and break division problems down into clusters or starter problems. U1 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 U7 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
Lesson 4-5: Zeros in the Quotient	The division strategies presented in the Investigations series do not specifically address the issue of zeros in the quotient because they consist of breaking down the dividend into equal-sized groups using clusters or starter problems. U1 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 U7 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7

Grade 5 Investigations Curriculum Units

U1 Number Puzzles and Multiple Towers
U2 Prisms and Pyramids
U3 Thousands of Miles, Thousands of Seats
U4 What's That Portion?
U5 Measuring Polygons

U6 Decimals on Grids and Number Lines
U7 How Many People? How Many Teams?
U8 Growth Patterns
U9 How Long Can You Stand on One Foot?

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Lesson 4-6: More Dividing by 1-Digit Divisors	Students divide with multi-digit divisors and break division problems down into clusters or starter problems. U1 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 U7 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
Lesson 4-7: Problem Solving: Draw a Picture and Write an Equation	U1 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 U7 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
Topic 5: Dividing by 2-Digit Divisors	
Lesson 5-1: Using Patterns to Divide	U1 Sessions 3.2, 3.4
Lesson 5-2: Estimating Quotients with 2-Digit Divisors	U1 Session 2.3
Lesson 5-3: Connecting Models and Symbols	Investigations students use multiple towers and draw diagrams to model division and to represent multiplication and division problems. U1 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 U7 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
Lesson 5-4: Dividing by Multiples of 10	U1 Session 3.6 U7 Session 3.3

Grade 5 Investigations Curriculum Units

- U1** Number Puzzles and Multiple Towers
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- U9** How Long Can You Stand on One Foot?

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Lesson 5-5: 1-Digit Quotients	The division strategies presented in the Investigations series do not specifically address the situation in which the quotient has only one digit because they consist of breaking down the dividend into equal-sized groups using clusters or starter problems. U1 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 U7 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
Lesson 5-6: 2-Digit Quotients	The division strategies presented in the Investigations series do not specifically address the situation in which the quotient has two digits because they consist of breaking down the dividend into equal-sized groups using clusters or starter problems. U1 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 U7 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
Lesson 5-7: Dividing with Greater Numbers	U7 Sessions 4.3, 4.4
Lesson 5-8: Problem Solving: Missing or Extra Information	There are no specific references to solving problems with missing or extra information, but Grade 5 students must read and study problems closely to make sure they are answering the questions being asked. Sample references: U7 Sessions 4.1, 4.2, 4.3, 4.4
Topic 6: Multiplying Decimals	
Lesson 6-1: Multiplying Decimals by 10, 100, or 1,000	U6 Session 3A.1
Lesson 6-2: Estimating the Product of a Decimal and a Whole Number	U6 Session 3A.2

Grade 5 Investigations Curriculum Units

- U1** Number Puzzles and Multiple Towers
- U2** Prisms and Pyramids
- U3** Thousands of Miles, Thousands of Seats
- U4** What's That Portion?
- U5** Measuring Polygons

- U6** Decimals on Grids and Number Lines
- U7** How Many People? How Many Teams?
- U8** Growth Patterns
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Lesson 6-3: Number Sense: Decimal Multiplication	U6 Sessions 3A.2, 3A.3, 3A.4
Lesson 6-4: Models for Multiplying Decimals	U6 Sessions 3A.2, 3A.3, 3A.4
Lesson 6-5: Multiplying a Decimal by a Whole Number	U6 Sessions 3A.2, 3A.3, 3A.4
Lesson 6-6: Multiplying Two Decimals	U6 Sessions 3A.2, 3A.3, 3A.4, 3A.7
Lesson 6-7: Problem Solving: Multiple-Step Problems	U6 Sessions 3A.2, 3A.3, 3A.4
Topic 7: Dividing Decimals	
Lesson 7-1: Dividing Decimals by 10, 100, or 1,000	U6 Session 3A.5
Lesson 7-2: Estimating Decimal Quotients	U6 Session 3A.6
Lesson 7-3: Number Sense: Decimal Division	U6 Sessions 3A.5, 3A.6
Lesson 7-4: Dividing by a Whole Number	U6 Sessions 3A.5, 3A.6
Lesson 7-5: Dividing a Whole Number by a Decimal	U6 Session 3A.6
Lesson 7-6: Dividing a Decimal by a Decimal	U6 Sessions 3A.6, 3A.7
Lesson 7-7: Problem Solving: Multiple-Step Problems	U6 Sessions 3A.5, 3A.6, 3A.7

Grade 5 Investigations Curriculum Units

- U1** Number Puzzles and Multiple Towers
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Operations and Algebraic Thinking	
Topic 8: Numerical Expressions, Patterns, and Relationships	
Lesson 8-1: Variables and Expressions	U8 Algebra Connections in This Unit (page 19); Sessions 2.1, 2.2, 2.3, 2.4; Teacher Notes (pages 119, 120, 124, 130, 132)
Lesson 8-2: Order of Operations	U1 Session 2.4A
Lesson 8-3: Evaluating Expressions	Students evaluate numerical expressions as they apply operation strategies and substitute values for variables. U1 Sessions 2.1, 2.2, 2.5, 2.6, 3.1, 3.5 U2 Session 1.4 U3 Session 1.4 U6 Session 2.2 U7 Sessions 2.1, 2.2, 2.3 U8 Sessions 2.1, 2.2, 2.3
Lesson 8-4: Addition and Subtraction Expressions	U3 Sessions 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5 U4 Sessions 3.2, 3.3, 3.7, 3.8, 3.9 U6 Sessions 2.3, 2.4, 2.5
Lesson 8-5: Multiplication and Division Expressions	U1 Sessions 1.4, 2.4, 2.5, 2.6, 3.5, 3.6, 3.7 U7 Sessions 2.1, 2.2, 2.3, 2.4, 3.3, 3.4, 3.5, 3.6
Lesson 8-6: Patterns: Extending Tables	U8 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8
Lesson 8-7: Problem Solving: Use Reasoning	U1 Sessions 1.4, 2.4, 2.5, 2.6, 3.5, 3.6, 3.7 U3 Sessions 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5 U4 Sessions 3.2, 3.3, 3.7, 3.8, 3.9 U7 Sessions 2.1, 2.2, 2.3, 2.4, 3.3, 3.4, 3.5, 3.6

Grade 5 Investigations Curriculum Units

- U1** Number Puzzles and Multiple Towers
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Number and Operations-Fractions	
Topic 9: Adding and Subtracting Fractions	
Lesson 9-1 Prime Factorization	U1 Sessions 1.7, Dialogue Box (pp. 181-182)
Lesson 9-2 Finding Prime Factors	U1 Sessions 1.4, 1.5, 1.6, 1.7, Teacher Note (pp. 154-155)
Lesson 9-3: Problem Solving: Writing to Explain	Grade 5 students communicate verbally in every investigation in the series by either writing or responding orally to questions about patterns, problems, or solution strategies. The Activity and Discussion sections of each session typically contain open-ended questions for teachers to use as prompts. Sample references: U4 Assessment (page 14); Sessions 2.2, 2.4, 2.6, 3.3, 3.7 U6 Assessment (page 14); Sessions 1.5, 1.8, 1.10
Lesson 9-4: Estimating Sums and Differences of Fractions	Students estimate sums and differences of larger whole numbers in the Ten-Minute Math feature in Unit 4. They estimate sums of decimals in Unit 6. U4 Sessions 3.2, 3.3, 3.6, 3.7, 3.8, 3.9 U6 Sessions 2.3, 2.6; Teacher Note (page 133); Dialogue Box (page 143)
Lesson 9-5 Adding Fractions with Unlike Denominators	U4 Sessions 3.1, 3.2, 3.3, 3.6, 3.7, 3.8, 3.9
Lesson 9-6 Subtracting Fractions with unlike Denominators	U4 Sessions 3.7, 3.8, 3.9

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- U1** Number Puzzles and Multiple Towers
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Lesson 9-7 More Adding and Subtracting Fractions	U4 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10
Lesson 9-8: Problem Solving: Draw a Picture and Write an Equation	U4 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10
Topic 10: Adding and Subtracting Mixed Number	
Lesson 10-1: Estimating Sums and Differences of Mixed Numbers	Grade 5 students order mixed numbers and break them apart to add them. U4 Mathematics in This Unit (page 11); Sessions 3.5, 3.8, 3.9 (Daily Practice and Homework)
Lesson 10-2: Modeling Addition and Subtraction of Mixed Numbers	Grade 5 students order mixed numbers and break them apart to add them. U4 Mathematics in This Unit (page 11); Sessions 3.5, 3.8, 3.9 (Daily Practice and Homework)
Lesson 10-3: Adding Mixed Numbers	Grade 5 students order mixed numbers and break them apart to add them. U4 Mathematics in This Unit (page 11); Sessions 3.5, 3.8, 3.9 (Daily Practice and Homework)
Lesson 10-4: Subtracting Mixed Numbers	Grade 5 students order mixed numbers and break them apart to add them. U4 Mathematics in This Unit (page 11); Sessions 3.5, 3.8, 3.9 (Daily Practice and Homework)
Lesson 10-5: More Adding and Subtracting Mixed Numbers	Grade 5 students order mixed numbers and break them apart to add them. U4 Mathematics in This Unit (page 11); Sessions 3.5, 3.8, 3.9 (Daily Practice and Homework)

Grade 5 Investigations Curriculum Units

- U1** Number Puzzles and Multiple Towers
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Lesson 10-6: Problem Solving: Draw a Picture and Write an Equation	U4 Sessions 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10
Topic 11: Multiplying and Dividing Fractions and Mixed Numbers	
Lesson 11-1: Multiplying Fractions and Whole Numbers	U4 Sessions 4A.1, 4A.2
Lesson 11-2: Multiplication as Scaling	U4 Sessions 4A.1, 4A.2, 4A.4
Lesson 11-3: Estimating Products	U4 Sessions 4A.2, 4A.3; 4A.4, 4A.7 (Ten-Minute Math)
Lesson 11-4: Multiplying Two Fractions	U4 Sessions 4A.3, 4A.4, 4A.5, 4A.6, 4A.7
Lesson 11-5: Area Models	U1 Sessions 1.1, 1.2 U4 Sessions 4A.1, 4A.4, 4A.5, 4A.6 U5 Session 2.4
Lesson 11-6: Multiplying Mixed Numbers	U4 Sessions 4A.3, 4A.7
Lesson 11-7: Problem Solving: Multiple-Step Problems	U3 Mathematics in This Unit (page 11); Sessions 3.2, 3.3, 3.4 U7 Sessions 3.4, 3.5, 4.1, 4.2, 4.3, 4.4
Lesson 11-8: Fractions and Division	U4 Sessions 4A.8, 4A.9, 4A.10
Lesson 11-9: Fractions, Mixed Numbers, and Decimals as Quotients	U4 Sessions 4A.8, 4A.9, 4A.10
Lesson 11-10: Dividing Whole Numbers by Unit Fractions	U4 Sessions 4A.8

Grade 5 Investigations Curriculum Units

- U1** Number Puzzles and Multiple Towers
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- U3** Thousands of Miles, Thousands of Seats
- U4** What's That Portion?
- U5** Measuring Polygons

- U6** Decimals on Grids and Number Lines
- U7** How Many People? How Many Teams?
- U8** Growth Patterns
- U9** How Long Can You Stand on One Foot?

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Lesson 11-11: Dividing Unit Fractions by Non-Zero Whole Numbers	U4 Sessions 4A.9
Lesson 11-12: Problem Solving: Draw a Picture and Write an Equation	U4 Sessions 4A.1, 4A.2, 4A.3, 4A.4, 4A.5, 4A.6, 4A.7
Measurement and Data	
Topic 12: Volume of Solids	
Lesson 12-1: Models and Volume	U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.5A, 1.6, 1.7, 2.1, 2.2, 2.3, 2.4, 2.4A, 3.1, 3.2, 3.3, 3.4
Lesson 12-2: Volume	U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.5A, 1.6, 1.7, 2.1, 2.2, 2.3, 2.4, 2.4A, 3.1, 3.2, 3.3, 3.4
Lesson 12-3: Combining Volumes	U2 Sessions 1.3, 1.4, 1.5A, 2.4A; Teacher Note (pages 155-116)
Lesson 12-4: Problem Solving: Use Objects and Reasoning	U2 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.5A, 1.6, 1.7, 2.1, 2.2, 2.3, 2.4, 2.4A, 3.1, 3.2, 3.3, 3.4
Topic 13: Units of Measure	
Lesson 13-1: Converting Customary Units of Length	U6 Session 3A.8
Lesson 13-2: Converting Customary Units of Capacity	U6 Session 3A.9
Lesson 13-3: Converting Customary Units of Weight	U6 Session 3A.9
Lesson 13-4: Converting Metric Units of Length	U6 Session 3A.8

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Lesson 13-5: Converting Metric Units of Capacity	U6 Session 3A.9
Lesson 13-6: Converting Metric Units of Mass	U6 Session 3A.9
Lesson 13-7: Problem Solving: Multiple-Step Problems	U6 Session 3A.8, 3A.9
Topic 14: Data	
Lesson 14-1: Line Plots	U5 Sessions 2.1, 3.3 (Ten-Minute Math: Quick Survey), 3.5 (Ten-Minute Math: Quick Survey) U8 Teacher Note (page 115) U9 Session 1.5A
Lesson 14-2: Data from Surveys	U5 Ten-Minute Math in This Unit (page 16); Sessions 2.1, 2.2, 2.5, 2.6, 3.3, 3.4, 3.5
Lesson 14-3: Making Line Plots	U5 Sessions 2.1, 3.3 (Ten-Minute Math: Quick Survey), 3.5 (Ten-Minute Math: Quick Survey) U8 Teacher Note (page 115) U9 Session 1.5A
Lesson 14-4: Measurement Data	U8 Sessions 1.1, 1.2, 1.3, 1.4, 1.5 U9 Session 1.5A
Lesson 14-5: Problem Solving: Writing to Explain	Grade 5 students communicate verbally in every investigation in the series by either writing or responding orally to questions about patterns, problems, or solution strategies. The Activity and Discussion sections of each session typically contain open-ended questions for teachers to use as prompts. Sample references: U5 Assessment (page 14); Sessions 1.1, 1.3, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 3.1, 3.2, 3.3, 3.5

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Geometry	
Topic 15: Classifying Plane Figures	
Lesson 15-1: Polygons	U5 Sessions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 2.1, 2.3, 2.5, 2.7A, 3.1
Lesson 15-2: Triangles	U5 Sessions 1.1, 1.4, 1.5, 3.1, 3.2; Teacher Notes (pages 137-138, 153-154)
Lesson 15-3: Attributes of Quadrilaterals	U5 Sessions Mathematics in This Unit (page 10); 1.2, 1.3, 1.4, 1.5, 1.7, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6; Teacher Notes (pages 137-138, 153-154)
Lesson 15-4: Special Quadrilaterals	U5 Sessions Mathematics in This Unit (page 10); 1.2, 1.3, 1.4, 1.5, 1.7, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6; Teacher Notes (pages 137-138, 153-154)
Lesson 15-5: Classifying Quadrilaterals	U5 Sessions Mathematics in This Unit (page 10); 1.2, 1.3, 1.4, 1.5, 1.7, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6; Teacher Notes (pages 137-138, 153-154)
Lesson 15-6: Problem Solving: Make and Test Generalizations	U5 Sessions Mathematics in This Unit (page 10); 1.2, 1.3, 1.4, 1.5, 1.7, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7A; Teacher Notes (pages 137-138, 153-154)
Topic 16: Coordinate Geometry	
Lesson 16-1: Ordered Pairs	U8 Sessions 1.2, 1.3, 1.4, 1.5, 2.1, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8; Teacher Notes (pages 115-117, 118-119, 120-124, 125-126)
Lesson 16-2: Patterns and Graphing	U8 Sessions 1.2, 1.3, 1.4, 1.5, 2.1, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8; Teacher Notes (pages 115-117, 118-119, 120-124, 125-126)

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Lesson 16-3: More Patterns and Graphing	U8 Sessions 1.2, 1.3, 1.4, 1.5, 2.1, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8; Teacher Notes (pages 115-117, 118-119, 120-124, 125-126)
Lesson 16-4: Graphing Number Patterns	U8 Sessions 1.2, 1.3, 1.4, 1.5, 2.1, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8; Teacher Notes (pages 115-117, 118-119, 120-124, 125-126)
Lesson 16-5: Problem Solving: Work Backward	This particular problem-solving strategy is not specifically taught in the Investigations curriculum, but students develop and apply their problem-solving skills in every session and every investigation in every unit of the series. Sample references: U8 Sessions 1.2, 1.3, 1.4, 1.5, 2.1, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8

Grade 5 Investigations Curriculum Units

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Expression and Equations	
Topic 1: Variables and Expressions	
Lesson 1-1: Exponents	Prime Time: Factors and Multiples: 3.2, 3.3, 3.4 Covering and Surrounding: 4.2, 4.3
Lesson 1-2: Properties of Operations	Prime Time: Factors and Multiples: 4.2, 4.3, 4.4 Variables and Patterns: 4.1, 4.2, 4.3, 4.4, 4.5
Lesson 1-3: Order of Operations	Prime Time: Factors and Multiples: 4.4 Variables and Patterns: 3.4; Inv. 3 ACE (#21)
Lesson 1-4: The Distributive Property	Prime Time: Factors and Multiples: 4.3 Variables and Patterns: 4.3; Inv. 4 ACE (#31-39)
Lesson 1-5: Evaluating Numerical Expressions	Prime Time: Factors and Multiples: 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4
Lesson 1-6: Using Variables to Write Expressions	Covering and Surrounding: 4.2, 4.3 Variables and Patterns: 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4, 4.5
Lesson 1-7: Parts of an Expression	Prime Time: Factors and Multiples: 1.3, 1.4, 3.1, 3.2, 3.3, 3.4, 4.2, 4.3, 4.4
Lesson 1-8: Evaluating Algebraic Expressions	Covering and Surrounding: 4.2, 4.3 Variables and Patterns: 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4, 4.5
Lesson 1-9: Using Expressions to Describe Patterns	Variables and Patterns: 1.1, 1.2, 1.3, 1.4, 2.1, 2.2
Lesson 1-10: Simplifying Algebraic Expressions	Covering and Surrounding: 4.2, 4.3 Variables and Patterns: 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4, 4.5
Lesson 1-11: Writing Equivalent Expressions	Prime Time: Factors and Multiples: 4.2, 4.3, 4.4 Variables and Patterns: 4.1, 4.2, 4.3, 4.4, 4.5

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Lesson 1-12: Equivalent Expressions	Prime Time: Factors and Multiples: 4.2, 4.3, 4.4 Variables and Patterns: 4.1, 4.2, 4.3, 4.4, 4.5
Lesson 1-13: Problem Solving: Make an Organized List	Comparing Bits and Pieces: 2.3 Variables and Patterns: 1.1, 2.1, 3.2
Topic 2: Equations and Inequalities	
Lesson 2-1: Understanding Equations	Variables and Patterns: 4.1, 4.2, 4.3, 4.4
Lesson 2-2: Properties of Equality	Variables and Patterns: 4.1, 4.2, 4.3, 4.4
Lesson 2-3: Solving Addition and Subtraction Equations	Variables and Patterns: 4.1, 4.2, 4.3, 4.4
Lesson 2-4: Problem Solving: Draw a Picture and Write an Equation	Variables and Patterns: 4.1, 4.2, 4.3, 4.4
Lesson 2-5: Solving Multiplication and Division Equations	Variables and Patterns: 4.1, 4.2, 4.3, 4.4
Lesson 2-6: Solving Equations with Fractions	Variables and Patterns: 4.1, 4.2, 4.3, 4.4
Lesson 2-7: Writing Inequalities	Variables and Patterns: 4.5
Lesson 2-8: Solving Inequalities	Variables and Patterns: 4.5
Lesson 2-9: Problem Solving: Draw a Picture and Write an Equation	Variables and Patterns: 4.1, 4.2, 4.3, 4.4
Topic 3: Patterns and Equations	
Lesson 3-1: Dependent and Independent Variables	Variables and Patterns: 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4
Lesson 3-2: Patterns and Equations	Variables and Patterns: 4.1, 4.2, 4.3, 4.4
Lesson 3-3: More Patterns and Equations	Variables and Patterns: 4.1, 4.2, 4.3, 4.4

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Lesson 3-4: Problem Solving: Use Reasoning	<p>The instructional pages and the ACE problem sets frequently refer to a mathematical argument, claim, or reasoning by an individual; students are asked to evaluate this reasoning and conclusion with supporting evidence or counterexamples.</p> <p>Sample references:</p> <p>Prime Time: Factors and Multiples: 1.2, 3.3, 4.1, Inv. 4 ACE (#87-88)</p> <p>Comparing Bits and Pieces: 1.2, 3.5</p> <p>Let's Be Rational: 2.2 (Problem C), 2.3, 4.2 (Problem C)</p> <p>Covering and Surrounding: Inv. 1 ACE (#54, 61)</p>
The Number System	
Topic 4: Achieving Fluency: Adding, Subtracting, and Multiplying Decimals	
Lesson 4-1: Estimating Sums and Differences	<p>Comparing Bits and Pieces: 3.2</p> <p>Let's Be Rational: 1.1</p> <p>Decimal Operations: Computing with Decimals and Percents: 1.2, Inv. 1 ACE (#1-7)</p>
Lesson 4-2: Evaluating Addition and Subtraction Expressions	Decimal Operations: Computing with Decimals and Percents: 2.1, 2.2, 2.3
Lesson 4-3: Solving Addition and Subtraction Equations	Variables and Patterns: 4.1, 4.2, 4.3, 4.4
Lesson 4-4: Estimating Products	Decimal Operations: Computing with Decimals and Percents: 1.2, Inv. 1 ACE (#1-7)
Lesson 4-5: Multiplying Decimals	Decimal Operations: Computing with Decimals and Percents: 3.1, 3.2
Lesson 4-6: Problem Solving: Make a Table and Look for a Pattern	<p>Comparing Bits and Pieces: 2.3</p> <p>Variables and Patterns: 1.1, 2.1, 3.2</p>

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Topic 5: Achieving Fluency: Dividing Whole Numbers and Decimals	
Lesson 5-1: Estimating Quotients: 2 Digit Divisors	Decimal Operations: Computing with Decimals and Percents: 1.2, Inv. 1 ACE (#1-7)
Lesson 5-2: Dividing Whole Numbers: 2-Digit Divisors	Students find factors of composite whole numbers, and divide multi-digit decimals. Prime Time: 1.1, 1.4, 3.2, 3.3 Decimal Operations: Computing with Decimals and Percents: 3.3, 3.4, 3.5
Lesson 5-3: More Dividing Whole Numbers	Students find factors of composite whole numbers, and divide multi-digit decimals. Prime Time: 1.1, 1.4, 3.2, 3.3 Decimal Operations: Computing with Decimals and Percents: 3.3, 3.4, 3.5
Lesson 5-4: Dividing Decimals by a Whole Number	Decimal Operations: Computing with Decimals and Percents: 3.3, 3.4, 3.5
Lesson 5-5: Dividing Decimals	Decimal Operations: Computing with Decimals and Percents: 3.3, 3.4, 3.5
Lesson 5-6: Evaluating Expressions with Decimals	Decimal Operations: Computing with Decimals and Percents: 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5
Lesson 5-7: Solving Equations with Decimals	Students solve equations with positive integer coefficients. Variables and Patterns: 4.1, 4.2, 4.3, 4.4
Lesson 5-8: Problem Solving: Multiple-Step Problems	Decimal Operations: Computing with Decimals and Percents: 4.1, 4.2, 4.3, 4.4
Topic 6: Dividing Fractions	
Lesson 6-1: Greatest Common Factor	Prime Time: Factors and Multiples: 2.1, 2.2, 2.3, 3.2, 3.3, 3.4
Lesson 6-2: Least Common Multiple	Prime Time: Factors and Multiples: 2.1, 2.2, 2.3
Lesson 6-3: Understanding Division of Fractions	Let's Be Rational: 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4

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Lesson 6-4: Dividing Whole Numbers by Fractions	Let's Be Rational: 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4
Lesson 6-5: Modeling Division of Fractions	Let's Be Rational: 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4
Lesson 6-6: Dividing Fractions	Let's Be Rational: 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4
Lesson 6-7: Estimating Mixed Number Quotients	Let's Be Rational: 3.2
Lesson 6-8: Dividing Mixed Numbers	Let's Be Rational: 3.2
Lesson 6-9: Evaluating Expressions with Fractions	Let's Be Rational: 1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3
Lesson 6-10: Solving Equations with Fractions	Students solve equations with positive integer coefficients. Variables and Patterns: 4.1, 4.2, 4.3, 4.4
Lesson 6-11: Problem Solving: Look for a Pattern	Comparing Bits and Pieces: 2.3 Variables and Patterns: 1.1, 2.1, 3.2
Topic 7: Integers and Other Rational Numbers	
Lesson 7-1: Understanding Integers	Comparing Bits and Pieces: 3.1, 3.2 Variables and Patterns: 2.3, 2.4
Lesson 7-2: Comparing and Ordering Integers	Comparing Bits and Pieces: 3.1, 3.2, 3.4
Lesson 7-3: Absolute Value	Comparing Bits and Pieces: 3.1, 3.2, 3.4
Lesson 7-4: Rational Numbers on a Number Line	Comparing Bits and Pieces: 3.1, 3.2, 3.4 Variables and Patterns: 2.3
Lesson 7-5: Comparing and Ordering Rational Numbers	Comparing Bits and Pieces: 3.1, 3.2, 3.4

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Lesson 7-6: Problem Solving: Use Reasoning	Comparing Bits and Pieces: 1.5, Inv. 1 ACE (#3, 12-15, 35-38), 2.3, Inv. 2 ACE (#11-14, 29-30), 3.1, 3.2, 3.3, 3.5; Mathematical Reflections (pages 59-60, 93-94, 110-111)
Topic 8: Coordinate Geometry	
Lesson 8-1: Integers on the Coordinate Plane	Variables and Patterns: 2.3
Lesson 8-2: Rational Numbers on the Coordinate Plane	Covering and Surrounding: 2.1, 3.4 Variables and Patterns: 1.1, 1.2, 1.3, 1.4
Lesson 8-3: Distance on the Coordinate Plane	Covering and Surrounding: 2.1, 3.4
Lesson 8-4: Polygons on the Coordinate Plane	Covering and Surrounding: 2.1, 3.4
Lesson 8-5: Graphing Equations	Variables and Patterns: 1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4
Lesson 8-6: More Graphing Equations	Variables and Patterns: 1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4
Lesson 8-7: Problem Solving: Multiple-Step Problems	Comparing Bits and Pieces: 4.1, 4.2, 4.3 Decimal Operations: Computing with Decimals and Percents: 4.1, 4.2, 4.3, 4.4
Ratios and Proportional Relationships	
Topic 9: Ratios	
Lesson 9-1: Understanding Ratios	Comparing Bits and Pieces: 1.1, 1.2, 1.3, 1.4, 1.5
Lesson 9-2: Equivalent Ratios	Comparing Bits and Pieces: 2.1, 2.2, 2.3 Variables and Patterns: 3.1, 3.2
Lesson 9-3: Modeling Ratios	Comparing Bits and Pieces: 1.1, 1.2, 1.3, 1.4, 1.5, 2.2
Lesson 9-4: Using Ratio Tables	Comparing Bits and Pieces: 2.1, 2.2, 2.3 Variables and Patterns: 3.1, 3.2
Lesson 9-5: Ratios and Graphs	Variables and Patterns: 1.1, 2.1, 3.2
Lesson 9-6: Problem Solving: Draw a Picture	Comparing Bits and Pieces: 1.2, 1.3, 1.4, 2.1, 2.2, 3.1, 3.2, 3.3, 3.4

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Topic 10: Rates	
Lesson 10-1: Understanding Rates	Comparing Bits and Pieces: 2.1, 2.2, 2.3
Lesson 10-2: Comparing Rates	Comparing Bits and Pieces: 2.1, 2.2, 2.3
Lesson 10-3: Unit Rates	Comparing Bits and Pieces: 2.1, 2.2, 2.3 Variables and Patterns: 3.1 Decimal Operations: Computing with Decimals and Percents: 1.3
Lesson 10-4: Unit Price	Variables and Patterns: 2.1, 3.1 Decimal Operations: Computing with Decimals and Percents: 4.4
Lesson 10-5: Constant Speed	Decimal Operations: Computing with Decimals and Percents: 1.3 Variables and Patterns: 3.2
Lesson 10-6: Converting Customary Units	Students do not convert customary or metric units. They transform units appropriately as they calculate rates, area, perimeter, surface area, and volume. Covering and Surrounding: 1.2, 1.3, 4.2, 4.3 Decimal Operations: Computing with Decimals and Percents: 4.4
Lesson 10-7: Converting Metric Units	Students do not convert customary or metric units. They transform units appropriately as they calculate rates, area, perimeter, surface area, and volume. Covering and Surrounding: 1.2, 1.3, 4.2, 4.3 Decimal Operations: Computing with Decimals and Percents: 4.4

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Lesson 10-8: Problem Solving: Writing to Explain	Students write to explain their reasoning in their Reflections and as they complete Unit Projects and Look Back over each unit. Sample references: Comparing Bits and Pieces: Inv. 1 (pages 41-42), Inv. 2 (pages 59-60), Inv. 3 (pages 93-94), Inv. 4 (pages 110-114)
Topic 11: Percents	
Lesson 11-1: Understanding Percent	Comparing Bits and Pieces: 4.1, 4.2, 4.3 Decimal Operations: Computing with Decimals and Percents: 4.1, 4.2, 4.3, 4.4
Lesson 11-2: Fractions, Decimals, and Percents	Comparing Bits and Pieces: 3.5, 4.1, 4.2, 4.3; Looking Back (page 113); Explain Your Reasoning (page 114)
Lesson 11-3: Percents Greater Than 100 or Less Than 1	Comparing Bits and Pieces: 4.2, Inv. 4 ACE (#41-43)
Lesson 11-4: Estimating Percent	Comparing Bits and Pieces: 4.1, 4.2, 4.3 Decimal Operations: Computing with Decimals and Percents: 4.1, 4.2, 4.3, 4.4
Lesson 11-5: Finding the Percent of a Number	Comparing Bits and Pieces: 4.1, 4.2, 4.3 Decimal Operations: Computing with Decimals and Percents: 4.1, 4.2, 4.3, 4.4
Lesson 11-6: Finding the Whole	Comparing Bits and Pieces: 4.1, 4.2, 4.3 Decimal Operations: Computing with Decimals and Percents: 4.1, 4.2, 4.3, 4.4
Lesson 11-7: Problem Solving: Reasonableness	Comparing Bits and Pieces: 4.1, 4.2, 4.3 Decimal Operations: Computing with Decimals and Percents: 4.1, 4.2, 4.3, 4.4
Geometry	
Topic 12: Area	
Lesson 12-1: Area of Rectangles	Covering and Surrounding: 1.1, 1.2, 1.3
Lesson 12-2: Area of Parallelograms and Rhombuses	Covering and Surrounding: 3.1, 3.2, 3.3, 3.4

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Lesson 12-3: Area of Triangles	Covering and Surrounding: 2.1, 2.2, 2.3, 2.4, 3.1
Lesson 12-4: Area of Special Quadrilaterals	Covering and Surrounding: 1.1, 1.2, 1.3, 3.1, 3.2, 3.3, 3.4
Lesson 12-5: Finding Areas of Polygons	Covering and Surrounding: 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4
Lesson 12-6: Areas of Polygons on the Coordinate Plane	Covering and Surrounding: 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4
Lesson 12-7: Problem Solving: Use Objects	Covering and Surrounding: 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3
Topic 13: Surface Area and Volume	
Lesson 13-1: Solid Figures and Nets	Covering and Surrounding: 4.1, 4.2, 4.3
Lesson 13-2: Surface Area of Prisms and Pyramids	Covering and Surrounding: 4.1, 4.3
Lesson 13-3: Modeling Volume	Covering and Surrounding: 4.2
Lesson 13-4: Volume with Fractional Edge Lengths	Covering and Surrounding: 4.2
Lesson 13-5: Problem Solving: Use Objects and Reasoning	Covering and Surrounding: 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3
Statistics and Probability	
Topic 14: Statistics	
Lesson 14-1: Statistical Questions	Data About Us: 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3
Lesson 14-2: Looking at Data Sets	Data About Us: 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3
Lesson 14-3: Mean	Data About Us: 2.1, 2.2, 2.3, 3.3, 4.1, 4.2

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Lesson 14-4: Median, Mode, and Range	Data About Us: 1.2, 1.3, 2.3, 3.1, 3.2, 4.1, 4.2, 4.3
Lesson 14-5: Frequency Tables and Histograms	Data About Us: 1.1, 2.4, 4.1, 4.2, 4.3
Lesson 14-6: Box Plots	Data About Us: 4.2, 4.3
Lesson 14-7: Measures of Variability	Data About Us: 1.2, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3
Lesson 14-8: Appropriate Use of Statistical Measures	Data About Us: 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3
Lesson 14-9: Summarizing Data Distributions	Data About Us: 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3
Lesson 14-10: Problem Solving: Try, Check, and Revise	<p>Connected Mathematics Project 3 does not present Try, Check, and Revise as a specific problem-solving strategy. The investigative nature of the curriculum lends requires students to persevere in their problem solving, and they may need to apply more than one problem-solving strategy.</p> <p>Sample references:</p> <p>Prime Time: Factors and Multiples: 1.4, 2.3, 3.4, 4.1 Comparing Bits and Pieces: Inv. 2 ACE (#31-36) Let's Be Rational: 4.3 Covering and Surrounding: 1.1, 1.2, 1.3, 4.3</p>