# 4th Grade Math Curriculum

**Scope and Sequence:**

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<th>Quarter</th>
<th>Unit</th>
<th>Instructional Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unit 0</td>
<td>Introduction to Math Procedures</td>
</tr>
</tbody>
</table>
| 1, 2    | 1: Numbers and Computation Part 1 | Topic 1: Generalize Place Value Understanding  
|         |       | Topic 2: Fluently Add and Subtract Multi-Digit Whole Numbers  
|         |       | Topic 3: Use Strategies and Properties to Multiply by 1-Digit Numbers  
|         |       | Topic 4: Use Strategies and Properties to Multiply by 2-Digit Numbers  
|         |       | Topic 5: Use Strategies and Properties to Divide by 1-Digit Numbers |
| 2       | 2: Operations and Algebra Part 1 | Topic 6: Use Operations with Whole Numbers to Solve Problems  
|         |       | Topic 7: Factors and Multiples |
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|         |       | Topic 9: Understand Addition and Subtraction of Fractions  
|         |       | Topic 10: Extend Multiplication Concepts to Fractions |
| 3       | 4: Measurement and Data Part 1 | Topic 11: Represent and Interpret Data on Line Plots |
| 4       | 5: Numbers and Computation Part 3 | Topic 12: Understand and Compare Decimals |
| 4       | 7: Operations and Algebra Part 2 | Topic 14: Algebra: Generate and Analyze Patterns |
| 4       | 9: Geometry | Topic 16: Lines, Angles, and Shapes |
Unit 0: Introduction
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Subject: Math
Grade: 4th Grade
Name of Unit: Introduction
Length of Unit: 3 days

Overview of Unit:
The first week of school is focused on setting up the classroom culture for the year and developing routines that support the development of the Standards for Mathematical Practice. Teachers will get to know their students as the students get to know themselves as math learners.

Getting Ready for the Unit:
Review the Unit 0: Introduction Lessons and Resources document

Day 1:
How Much is Your Name S C
Names of Family S C
Value of First, Middle, Last Name S C
Secret Code S C
Math notebooks
Chart paper and marker
Scratch paper
Poster paper for Math Talk

Day 2:
Number Clash Rules Teacher
Multiplication Tic-Tac-Toe BLM S C
Place Value Chart BLM S C
Counters (or another type of game marker)
Card Deck OR Digit Cards
Sheet protectors (optional for the math games to be used repeatedly)

Day 3:
Cookie Sale Problem S C
Cookie Sale Problem 3 Read BLM S C
Document Camera or Chart Paper

Essential Questions:
● What questions can you ask yourself to help with understanding a math problem?
● How do errors improve my math learning?
● What are the benefits of discussing your thinking with others?
● Why are the strategies and thinking behind your answers more important than the correct answer?
● Why is it important to solve math problems in a variety of ways?

Enduring Understandings:
● Ask questions until ideas make sense.
● Errors are gifts that promote discussion.
● Talk about each other’s thinking.
● Answers are important, but they are not the math.
● Use multiple strategies and multiple representations.

Mathematical Practices:

● MP1 Make sense of problems and persevere in solving them
● MP2 Reason abstractly and quantitatively.
● MP3 Construct viable arguments and critique the reasoning of others.
● MP4 Model with mathematics.
● MP5 Use appropriate tools strategically.
● MP6 Attend to precision.
● MP7 Look for and make use of structure.
● MP8 Look for and express regularity in repeated reasoning.

Engaging Experience 1
Teaching Point: Today I am going to teach you how to ask questions until ideas make sense and understand that errors are gifts that promote discussion.
Suggested Length of Time: 1 day
Detailed Description/Instructions:
One way to do this is to use the Day 1 Lesson from the Unit 0: Introduction Lessons and Resources document.

Engaging Experience 2
Teaching Point: Today I am going to teach you how to talk about each other’s thinking and understand that answers are important but they are not the math.
Suggested Length of Time: 1 day
Detailed Description/Instructions:
One way to do this is to use the Day 2 Lesson from the Unit 0: Introduction Lessons and Resources document.

Engaging Experience 3
Teaching Point: Today I am going to teach you to use multiple strategies and multiple representations.
Suggested Length of Time: 1 day
Detailed Description/Instructions:
One way to do this is to use the Day 3 Lesson from the Unit 0: Introduction Lessons and Resources document.
Unit 1: Numbers and Computation Part 1

Subject: Math
Grade: 4
Name of Unit: Numbers and Computation Part 1
Length of Unit: 56 days

Overview of Unit:
Students will expand their understanding of place value as well as create and explore strategies for performing multi-digit calculations that involve breaking numbers apart using place value.

In Topic 1, students expand their place value understandings from numbers to 1,000 (Grade 3) to 1,000,000 (Grade 4). Relationships between the values of digits in different places are developed and used to compare and round numbers.

In Topic 2, students will develop fluency with the standard algorithms for addition and subtraction.

In Topic 3, students will develop an understanding of multiplying multi-digit numbers by 1-digit numbers using strategies based on place value and the properties of operations.

In Topic 4, students will develop an understanding of multiplying multi-digit numbers by 2-digit numbers using strategies based on place value and the properties of operations.

In Topic 5, students will find whole-number quotients and remainders with up to four-digit dividends and 1-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.

Getting Ready for the Unit:
Before each topic, watch the Topic Overview Videos and the Listen and Look for Lesson Videos for each lesson to learn additional important information about the content of each topic.

Send home the Home-School Connection Letters (topic specific) to give your families insight on the upcoming unit. These can be found within each topic on Pearson Realize under the Teacher Resources.

You may want to gather these “Teaching Tool” pages prior to the lessons. These can be found in the back of the Teacher’s Resource Masters - Grade 4 - Volume 2 or online (Pearson Realize) in the Teacher Resources section.
TT 3 (place value charts)
TT 4-5 (place value blocks)
TT 10 (¼ inch grid paper)
TT 12 (number lines)
TT 15 (2-color counters)
### Formative Assessment Options
*Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.*
- Math Interview/Conference
- Quick Checks (Check marks within lesson)
- Topic Pretest
- Convince Me
- Look Back
- Lesson Assessment Practice

### Summative Assessment Options
*Administered at the end of unit or topic to assess mastery of learning objectives.*
- Online Topic Assessment
- Topic Assessment Practice
- Topic Performance Task
- Cumulative/ Benchmark Assessment (print or online)

### Math Review:
- Math Anytime
  - Daily Review
  - Today’s Challenge
  - Fluency
    - enVision 2020
- Topic Opener: Review What You Know
- Fluency Practice/Review Activity
- Vocabulary Review

### Number Routines:
**Images (setting expectations)**

#### Number Talk: Doubles/Near Doubles

**Description:**
To foster Doubles/Near-Doubles strategy, initially select numbers that are one away from doubles. If one addend is the targeted double and the other addend is just one away from the double, students will begin to notice this relationship.

**Category 1: Doubles Up to 20**
The following number talks consist of doubles up to twenty.

<table>
<thead>
<tr>
<th>5+5</th>
<th>8+8</th>
<th>16 + 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>5+6</td>
<td>8+7</td>
<td>17+17</td>
</tr>
<tr>
<td>5+7</td>
<td>8+9</td>
<td>17+18</td>
</tr>
<tr>
<td>5+8</td>
<td>8+6</td>
<td>16+17</td>
</tr>
</tbody>
</table>

**Category 2: Doubles with 2-digit numbers**
The following number talks consist of doubles with two-digit numbers.

<table>
<thead>
<tr>
<th>20+20</th>
<th>30+30</th>
<th>45+45</th>
</tr>
</thead>
<tbody>
<tr>
<td>19+19</td>
<td>29+29</td>
<td>46+45</td>
</tr>
<tr>
<td>19+18</td>
<td>29+28</td>
<td>46+46</td>
</tr>
<tr>
<td>19+17</td>
<td>28+27</td>
<td>45+47</td>
</tr>
</tbody>
</table>

**Category 3: Doubles with 2-and 3-digit numbers**
The following number talks uses doubles with two- and three-digit numbers.

<table>
<thead>
<tr>
<th>100+100</th>
<th>200+200</th>
<th>400+400</th>
</tr>
</thead>
<tbody>
<tr>
<td>99+99</td>
<td>199+199</td>
<td>399+399</td>
</tr>
</tbody>
</table>
## Number Talk: Making Ten

**Description:**
One of the core foundations of our number system is the ability to recognize and use groups of ten. Looking for “quick tens” in computation is one of the first things you want to establish as a cornerstone strategy in computation.

**Category 1: Addends that make a quick ten**
The following number talks consist of doubles up to twenty.

<table>
<thead>
<tr>
<th>7+3</th>
<th>5+5</th>
<th>9+5+1</th>
</tr>
</thead>
<tbody>
<tr>
<td>7+5+3</td>
<td>5+6+5</td>
<td>8+9+1</td>
</tr>
<tr>
<td>3+6+7</td>
<td>5+9+5</td>
<td>1+4+9</td>
</tr>
</tbody>
</table>

**Category 2: Pairs of numbers that make a quick ten**
The following number talks consist of two pairs of numbers that make a quick ten.

<table>
<thead>
<tr>
<th>4+6+8+2</th>
<th>3+8+2+7</th>
<th>5+3+5+4+7</th>
</tr>
</thead>
<tbody>
<tr>
<td>9+3+1+7</td>
<td>4+4+6+6</td>
<td>9+5+8+2+1</td>
</tr>
<tr>
<td>5+6+5+4</td>
<td>9+1+1+9</td>
<td>4+5+6+3+7</td>
</tr>
</tbody>
</table>

## Number Talk: Making Landmark or Friendly Numbers

**Description:**
When students understand that you compensate in addition (remove a specific quantity from one addend and add that same quantity to another addend) without altering the sum, they can begin to construct powerful mental computation strategies from this concept. Telling them that this will always work is not sufficient; they need to have opportunities to test and prove this idea.

**Category 1: Away from a landmark or a friendly number**
The following number talks are carefully designed to use numbers that are one away from a landmark or friendly number.

<table>
<thead>
<tr>
<th>19+2</th>
<th>39+16</th>
<th>46+59</th>
</tr>
</thead>
<tbody>
<tr>
<td>19+5</td>
<td>28+39</td>
<td>33+69</td>
</tr>
<tr>
<td>19+8</td>
<td>59+13</td>
<td>58+39</td>
</tr>
<tr>
<td>19+12</td>
<td>23+49</td>
<td>76+24</td>
</tr>
</tbody>
</table>

**Category 2: Away from a multiple of 10 or a landmark number**
The following number talks consist of one addend that is two away from a multiple of ten or a landmark number.

<table>
<thead>
<tr>
<th>8+5</th>
<th>18+63</th>
<th>98+5</th>
</tr>
</thead>
<tbody>
<tr>
<td>8+13</td>
<td>38+37</td>
<td>98+13</td>
</tr>
<tr>
<td>8+24</td>
<td>67+28</td>
<td>98+34</td>
</tr>
<tr>
<td>18+7</td>
<td>48+52</td>
<td>98+52</td>
</tr>
</tbody>
</table>

Reference your copy of *Number Talks: Whole Number Computation* by Sherry Parrish
Number Talk: Breaking Each Number Into Its Place Value

Description:
One of the core foundations of our number system is the ability to recognize and use groups of ten. Looking for “quick tens” in computation is one of the first things you want to establish as a cornerstone strategy in computation.

Category 1: Smaller two-digit numbers. Combine the ten from the ones column with the tens from the tens column
The following number talks consist of smaller two-digit numbers. The first column on the left consists of problems that do not require regrouping. The two columns on the right include problems that encourage students to combine the ten from the ones column with the tens from the tens column.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>28+11</td>
<td>15+27</td>
<td>25+35</td>
</tr>
<tr>
<td>14+35</td>
<td>23+18</td>
<td>32+28</td>
</tr>
<tr>
<td>22+15</td>
<td>17+25</td>
<td>36+27</td>
</tr>
<tr>
<td>18+31</td>
<td>16+27</td>
<td>26+24</td>
</tr>
</tbody>
</table>

Category 2: Two-and three-digit numbers, some which require regrouping
The following number talks consist of two-and three-digit numbers, some of which require regrouping.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>74+18</td>
<td>77+36</td>
<td>354+111</td>
</tr>
<tr>
<td>58+28</td>
<td>58+65</td>
<td>267+232</td>
</tr>
<tr>
<td>37+26</td>
<td>46+88</td>
<td>215+136</td>
</tr>
<tr>
<td>46+38</td>
<td>74+47</td>
<td>342+64</td>
</tr>
</tbody>
</table>

Reference your copy of Number Talks: Whole Number Computation by Sherry Parrish

Additional Personalized Practice and Application Suggestions:

<table>
<thead>
<tr>
<th>Intervention (I)</th>
<th>On-level (O)</th>
<th>Advanced (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Reteach to Build Understanding</td>
<td>● Build Mathematical Fluency</td>
<td>● Enrichment</td>
</tr>
<tr>
<td>● Intervention Activity</td>
<td>● Practice Buddy</td>
<td>● Pick a Project</td>
</tr>
<tr>
<td>● Additional Practice</td>
<td>● Additional Practice</td>
<td>● enVision STEM Activity</td>
</tr>
<tr>
<td>● Another Look Video</td>
<td>● Problem Solving Reading Activity</td>
<td>● Math Tools Activity</td>
</tr>
<tr>
<td>● Game Center</td>
<td>● enVision STEM Activity</td>
<td>● Practice Buddy</td>
</tr>
</tbody>
</table>

Topic 1: Generalize Place Value Understanding
Students expand their place value understandings from numbers to 1,000 (Grade 3) to 1,000,000 (Grade 4)

Essential Questions:
● How are greater numbers written?
● How can whole numbers be compared?
● How are place values related?

Enduring Understandings:
● Greater numbers can be written using base-ten numerals, in expanded form or using number names. A comma is used to separate the periods of a number.
Whole numbers can be compared by using a place value chart.
Each place value represents ten times the value of the place to the right.

Priority Standards:
4.NBT.A.2 Read, write and identify multi-digit whole numbers up to one million using name, base ten numerals and expanded form.
4.NBT.A.3 Compare two multi-digit numbers using the symbols >, = or <, and justify the solution.

Supporting Standards:
4.NBT.A.1 Round multi-digit whole numbers to any place.
4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Unwrapped Concepts (Students need to know)</th>
<th>Unwrapped Skills (Students need to be able to do)</th>
<th>Bloom’s Taxonomy Levels</th>
<th>Webb’s DOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.NBT.A.2</td>
<td>multi-digit whole numbers up to one million using number names, base ten numerals and expanded form.</td>
<td>Read, write, identify</td>
<td>Remember; Understand</td>
<td>1</td>
</tr>
<tr>
<td>4.NBT.A.3</td>
<td>two multi-digit numbers using the symbols &gt;, = or &lt;, and justify the solution.</td>
<td>Compare, justify</td>
<td>Understand</td>
<td>3</td>
</tr>
</tbody>
</table>

Unit Vocabulary:

<table>
<thead>
<tr>
<th>Academic Cross-Curricular Words</th>
<th>Content/Domain Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify, compare, write, justify</td>
<td>place value millions period expanded form rounding conjecture</td>
</tr>
</tbody>
</table>

Engaging Experience 1

Teaching Point: Today I’m going to introduce you to Topic 1 which will focus on students expanding their place value understandings from numbers to 1,000 (Grade 3) to 1,000,000 (Grade 4). Relationships between the values of digits in different places are developed and used to compare and round numbers.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NBT.A.2 Read, write and identify multi-digit whole numbers up to one million using number names, base ten numerals and expanded form.
- 4.NBT.A.3 Compare two multi-digit numbers using the symbols >, = or <, and justify the
solution.

**Supporting:**
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

**Detailed Description/Instructions:**
- **One way to do this** is to assess students with the enVision Topic 1 online assessment.
- **Another way to do this** is to use the enVision student workbook page 1 to introduce topic essential questions and present the enVision STEM projects. Then have students complete page 2, Review What You Know.
- **Another way to do this** is use student vocabulary cards and the vocabulary activity (TT 29) to explore content vocabulary.

**Bloom’s Levels:** Remember, Understand

**Webb’s DOK:** 1,3

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**Engaging Experience 2**

**Teaching Point:** Today I’m going to teach you how to read and write numbers through one million by using expanded form, with numerals, and using number names.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.NBT.A.2 Read, write and identify multi-digit whole numbers up to one million using number names, base ten numerals and expanded form.

**Supporting:**
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

**Detailed Description/Instructions:**
- **One way to do this** is use enVision lesson 1-1 to teach students our number system is based on groups of ten. Whenever we get 10 in one place value, we move to the next greater place value.

**Bloom’s Levels:** Understand

**Webb’s DOK:** 1

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**Engaging Experience 3**

**Teaching Point:** Today I’m going to teach you how to recognize the relationship between adjacent digits in a multi-digit number by using place value understanding.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.NBT.A.2 Read, write and identify multi-digit whole numbers up to one million using number names, base ten numerals and expanded form.

**Supporting:**
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
Detailed Description/Instructions:

- **One way to do this** is use enVision lesson 1-2 to teach students in a multi-digit whole number, a digit in one place represents ten times what it would represent in the place immediately to its right.

**Bloom’s Levels:** Understand  
**Webb’s DOK:** 2

**Engaging Experience 4**
**Teaching Point:** Today I’m going to teach you how to compare multi-digit whole numbers by using place value.  
**Suggested Length of Time:** 1 day

**Standards Addressed**

- **Priority:**
  - 4.NBT.A.2 Read, write and identify multi-digit whole numbers up to one million using number names, base ten numerals and expanded form.

- **Supporting:**
  - 4.NBT.A.3 Compare two multi-digit numbers using the symbols >, = or <, and justify the solution.

**Detailed Description/Instructions:**

- **One way to do this** is use enVision lesson 1-3 to teach students that place value can be used to compare numbers.

**Bloom’s Levels:** Understand  
**Webb’s DOK:** 1

**Engaging Experience 5**
**Teaching Point:** Today I’m going to teach you how to round multi-digit numbers by using place value.  
**Suggested Length of Time:** 1 day

**Standards Addressed**

- **Supporting:**
  - 4.NBT.A.1 Round multi-digit whole numbers to any place.

**Detailed Description/Instructions:**

- **One way to do this** is use enVision lesson 1-4 to teach students rounding whole numbers is a process for finding the multiple of 10, 100, and so on closest to a given number.

**Bloom’s Levels:** Understand  
**Webb’s DOK:** 2

**Engaging Experience 6**
**Teaching Point:** Today I’m going to teach you how to construct arguments about place value by using previously learned concepts and skills.  
**Suggested Length of Time:** 1 day

**Standards Addressed**

- **Priority:**
  - 4.NBT.A.2 Read, write and identify multi-digit whole numbers up to one million using number names, base ten numerals and expanded form.
  - 4.NBT.A.3 Compare two multi-digit numbers using the symbols >, = or <, and justify the solution.

- **Supporting:**
  - 4.NBT.A.1 Round multi-digit whole numbers to any place.
● 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
● 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

**Detailed Description/Instructions:**

- **One way to do this** is use enVision lesson 1-5 to teach students good math thinkers use math to explain why they are right. They can talk about the math that others do, too.

**Bloom’s Levels:** Evaluate  
**Webb’s DOK:** 3

### Engaging Experience 7

#### Engaging Scenario

**3- ACT Math: Page Through**

**Teaching Point:** Today I’m going to teach you to solve a problem that involves rounding, estimating, and computing with whole numbers by modeling with math.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.NBT.A.2 Read, write and identify multi-digit whole numbers up to one million using number names, base ten numerals and expanded form.
- 4.NBT.A.3 Compare two multi-digit numbers using the symbols >, = or <, and justify the solution.

**Supporting:**
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

**Detailed Description/Instructions:**

- **One way to do this** is to use the 3 Act Math lesson to teach students to identify an important problem, identify the important information, develop a model that represents that situation, use the model to propose a solution, and test the appropriateness of that math model.

**Bloom’s Levels:** Apply  
**Webb’s DOK:** 3

### Engaging Experience 8

**Teaching Point:** Today we are going to review how greater numbers are written, whole numbers are compared, and how place values are related.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.NBT.A.2 Read, write and identify multi-digit whole numbers up to one million using number names, base ten numerals and expanded form.
- 4.NBT.A.3 Compare two multi-digit numbers using the symbols >, = or <, and justify the solution.
Supporting:
● 4.NBT.A.1 Round multi-digit whole numbers to any place.
● 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
● 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

Detailed Description/Instructions:

☐ One way to do this is to use the Topic Assessment Practice in the student workbook on pages 29-30.
☐ Another way to do this is to use the Topic Reteaching questions in the student workbook on pages 27-28.
☐ Another way to do this is to use the Topic Performance Task in the student workbook on pages 31-32.

Bloom’s Levels: Remember, Understand
Webb’s DOK: 1, 3

Topic 2: Fluently Add and Subtract Multi-Digit Whole Numbers
Students create and explore strategies for performing multi-digit calculations that involve breaking numbers apart using place value.

Essential Questions:
● How can sums and differences of whole numbers be estimated?
● What are standard procedures for adding and subtracting whole numbers?

Enduring Understandings:
● Sums and differences can be estimated by using rounding.
● The standard procedures for adding and subtracting whole numbers use place value. When the sum of a place is greater than 9, regroup. Remember to add the regrouped digit when finding the sum of the next place. When the digit to be subtracted is greater than the digit to be subtracted from, regroup 10 from the place to the left before subtracting.

Priority Standards:
4.NBT.A.5 Demonstrate fluency with addition and subtraction of whole numbers.

Supporting Standards:
4.NBT.A.1 Round multi-digit whole numbers to any place.
4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Unwrapped Concepts (Students need to know)</th>
<th>Unwrapped Skills (Students need to be able to do)</th>
<th>Bloom’s Taxonomy Levels</th>
<th>Webb’s DOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.NBT.A.5</td>
<td>fluency with addition and subtraction of whole numbers.</td>
<td>demonstrate</td>
<td>apply</td>
<td>1</td>
</tr>
</tbody>
</table>

BOE Approved June 20, 2019
Unit Vocabulary:

<table>
<thead>
<tr>
<th>Academic Cross-Curricular Words</th>
<th>Content/Domain Specific</th>
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</thead>
<tbody>
<tr>
<td>fluency</td>
<td>count up</td>
</tr>
<tr>
<td>demonstrate</td>
<td>countdown</td>
</tr>
<tr>
<td>apply</td>
<td>compensation</td>
</tr>
<tr>
<td>understand</td>
<td>variable</td>
</tr>
<tr>
<td></td>
<td>algorithm</td>
</tr>
<tr>
<td></td>
<td>inverse operations</td>
</tr>
</tbody>
</table>

Engaging Experience 1
Teaching Point: Today I’m going to introduce you to Topic 2 which will focus on developing fluency with the standard algorithms for addition and subtraction.
Suggested Length of Time: 1 day
Standards Addressed

Priority:
- 4.NBT.A.5 Demonstrate fluency with addition and subtraction of whole numbers.

Supporting:
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

Detailed Description/Instructions:

- **One way to do this** is to assess students with the enVision Topic 2 online assessment.
- **Another way to do this** is use the enVision student workbook page 33 to introduce topic essential questions and present the enVision STEM Project. Then have students complete page 34, Review What You Know.
- **Another way to do this** is use student vocabulary cards and the vocabulary activity (TT 25) to explore content vocabulary.

Bloom’s Levels: Apply
Webb’s DOK: 1

Engaging Experience 2
Teaching Point: Today I’m going to teach you how to add and subtract whole numbers mentally by using a variety of methods.
Suggested Length of Time: 1 day
Standards Addressed

Priority:
- 4.NBT.A.5 Demonstrate fluency with addition and subtraction of whole numbers.

Supporting:
● 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:

□ One way to do this is to use enVision lesson 2-1 to teach that representing numbers and numerical expressions in equivalent forms can make some calculations easy to do mentally. There is more than one way to do a mental calculation.

Bloom’s Levels: Understand, Apply
Webb’s DOK: 1, 1

Engaging Experience 3
Teaching Point: Today I’m going to teach you how to estimate sums and differences by rounding greater whole numbers.
Suggested Length of Time: 1 day
Standards Addressed
Priority:
● 4.NBT.A.5 Demonstrate fluency with addition and subtraction of whole numbers.
Supporting:
● 4.NBT.A.1 Round multi-digit whole numbers to any place.

Detailed Description/Instructions:

□ One way to do this is to use enVision lesson 2-2 to teach that there is more than one way to estimate a sum or difference. Estimation is helping for checking to see if an answer is reasonable or to find an approximate answer when an exact answer is not necessary. **Note: Identifying the Properties of Addition are not required as a 4th grade standard, instead focus on the different strategies (make ten, add on, and use compensation) that are associated with the properties to help students add and subtract fluently.

Bloom’s Levels: Understand, Apply
Webb’s DOK: 2, 1

Engaging Experience 4
Teaching Point: Today I’m going to teach you how to add 3-digit numbers by using place-value concepts and the standard algorithm.
Suggested Length of Time: 1 day
Standards Addressed
Priority:
● 4.NBT.A.5 Demonstrate fluency with addition and subtraction of whole numbers.
Supporting:
● 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:

□ One way to do this is to use enVision lesson 2-3 to teach students that the standard algorithm for adding 3-digit numbers is an extension to the standard algorithm for adding 2-digit numbers.

Bloom’s Levels: Apply
Webb’s DOK: 1

Engaging Experience 5
Teaching Point: Today I’m going to teach you how to add numbers to one million with and without regrouping by using the standard algorithm.
Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NBT.A.5 Demonstrate fluency with addition and subtraction of whole numbers.

Supporting:
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:
- **One way to do this** is to use enVision lesson 2-4 to teach that the standard addition algorithm for multi-digit numbers breaks the calculation into simpler calculations using place value.

Bloom’s Levels: Apply
Webb’s DOK: 1

Engaging Experience 6

Teaching Point: Today I’m going to teach you how to subtract whole numbers by using place value and the standard algorithm.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NBT.A.5 Demonstrate fluency with addition and subtraction of whole numbers.

Supporting:
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:
- **One way to do this** is to use enVision lesson 2-5 to teach that the standard subtraction algorithm for multi-digit numbers is an efficient strategy that can be used to subtract any two numbers. The calculations are done by place value starting with the ones, then the tens, and so on, regrouping as needed.

Bloom’s Levels: Apply
Webb’s DOK: 1

Engaging Experience 7

Teaching Point: Today I’m going to teach you how to subtract whole numbers by using place value and an algorithm.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NBT.A.5 Demonstrate fluency with addition and subtraction of whole numbers.

Supporting:
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:
- **One way to do this** is to use enVision lesson 2-6 to teach students that the standard algorithm for subtraction breaks the calculation into simpler calculations using place value starting with the ones, then the tens, and so on.

Bloom’s Levels: Apply
Webb’s DOK: 1
Engaging Experience 8
Teaching Point: Today I’m going to teach you how to subtract across zeros by using number sense and regrouping.
Suggested Length of Time: 1 day
Standards Addressed

Priority:
- 4.NBT.A.5 Demonstrate fluency with addition and subtraction of whole numbers.

Supporting:
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:
- One way to do this is to use enVision lesson 2-7 to teach students the standard algorithm for subtraction breaks the calculation into simpler calculations using place value starting with the ones, then the tens, and so on.

Bloom’s Levels: Apply
Webb’s DOK: 1

Engaging Experience 9
Teaching Point: Today I’m going to teach you how to reason abstractly and make sense of quantities and their relationships in problem situations by using previously learned concepts and skills.
Suggested Length of Time: 1 day
Standards Addressed

Priority:
- 4.NBT.A.5 Demonstrate fluency with addition and subtraction of whole numbers.

Supporting:
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

Detailed Description/Instructions:
- One way to do this is to use enVision lesson 2-8 to teach that good math thinkers know how to think about words and numbers to solve problems.

Bloom’s Levels: Apply
Webb’s DOK: 1, 2

Engaging Experience 10
Teaching Point: Today we are going to review how sums and differences of whole numbers can be estimated and the standard procedures for adding and subtracting whole numbers.
Suggested Length of Time: 1 day
Standards Addressed

Priority:
- 4.NBT.A.5 Demonstrate fluency with addition and subtraction of whole numbers.

Supporting:
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
• 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
• 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

Detailed Description/Instructions:
- **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 73-74.
- **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 71-72.
- **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 75-76.

Bloom’s Levels: Apply
Webb’s DOK: 1

**Topic 3: Use Strategies and Properties to Multiply by 1-Digit Numbers**

Students create and explore strategies for performing multi-digit calculations that involve breaking numbers apart using place value.

Essential Questions:
- How can you multiply by multiples of 10, 100 and 1,000?
- How can you multiply whole numbers?

Enduring Understandings:
- Products can be found mentally by using place value patterns, multiplication properties or compensation.
- Products can be found by using arrays and partial products, area models and partial products or mental math strategies.

Priority Standards:
4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

Supporting Standards:
4.NBT.A.1 Round multi-digit whole numbers to any place.
4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

<table>
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<th>Standard</th>
<th>Unwrapped Concepts (Students need to know)</th>
<th>Unwrapped Skills (Students need to be able to do)</th>
<th>Bloom’s Taxonomy Levels</th>
<th>Webb’s DOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.NBT.A.6</td>
<td>a whole number of up to four digits by a one-digit whole number and multiply two two-</td>
<td>multiply, justify</td>
<td>Apply</td>
<td>2</td>
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</tbody>
</table>
Unit Vocabulary:

<table>
<thead>
<tr>
<th>Academic Cross-Curricular Words</th>
<th>Content/Domain Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>justify</td>
<td>numerical expression</td>
</tr>
<tr>
<td></td>
<td>compensation</td>
</tr>
<tr>
<td></td>
<td>partial products</td>
</tr>
<tr>
<td>array</td>
<td>area model</td>
</tr>
<tr>
<td></td>
<td>partial products</td>
</tr>
</tbody>
</table>

Engaging Experience 1

Teaching Point: Today I’m going to introduce you to Topic 3 which will focus on developing an understanding of multiplying multi-digit numbers by 1-digit numbers using strategies based on place value and the properties of operations.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

Supporting:
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

Detailed Description/Instructions:
- **One way to do this** is to assess students with the enVision Topic 3 online assessment.
- **Another way to do this** is use the enVision student workbook page 77 to introduce topic essential questions and present the enVision STEM Project. Then have students complete page 78, Review What You Know.
- **Another way to do this** is use student vocabulary cards and the vocabulary activity (TT 28) to explore content vocabulary.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 2

BOE Approved June 20, 2019
Teaching Point: Today I’m going to teach you how to multiply multiples of 10, 100, and 1,000 by using mental math and place value strategies.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

Supporting:
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

Detailed Description/Instructions:

☐ One way to do this is to use enVision lesson 3-1 to teach students that basic facts and place value patterns can be used to find products when one factor is 10, 100, or 1,000.

Bloom’s Levels: Apply
Webb’s DOK: 1

Engaging Experience 3

Teaching Point: Today I’m going to teach you how to estimate products, and check if answers are reasonable by using rounding.

Suggested Length of Time: 1 day

Standards Addressed

Supporting:
- 4.NBT.A.1 Round multi-digit whole numbers to any place.

Detailed Description/Instructions:

☐ One way to do this is to use enVision lesson 3-2 to teach students that rounding is one way to estimate products.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 4

Teaching Point: Today I’m going to teach you how to multiply 2 and 3-digit numbers by 1-digit numbers by using arrays and partial products.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

Supporting:
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:

☐ One way to do this is to use enVision lesson 3-3 to teach students that the expanded algorithm for multiplication can be represented with arrays. In the algorithm, numbers are...
broken apart using place value and the parts are used to find partial products.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 5
Teaching Point: Today I’m going to teach you how to multiply larger numbers by using area models and the Distributive Property.
Suggested Length of Time: 1 day

Standards Addressed
Priority:

- 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

Supporting:

- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:

☐ One way to do this is use enVision lesson 3-4 to teach students that area models and properties of multiplication can be used to simplify computation.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 6
Teaching Point: Today I’m going to teach you how to multiply 3 and 4-digit numbers by 1-digit numbers by using place value and partial products.
Suggested Length of Time: 1 day

Standards Addressed
Priority:

- 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

Supporting:

- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:

☐ One way to do this is use enVision lesson 3-5 to teach students that the expanded algorithm for multiplication breaks numbers apart using place value and the parts are used to find partial products. The partial products are then added together to find the product.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 7
Teaching Point: Today I’m going to teach you how to multiply mentally by using place value and properties of operations.
Suggested Length of Time: 1 day

Standards Addressed
Priority:
● 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

Supporting:
● 4.NBT.A.1 Round multi-digit whole numbers to any place.
● 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:
☐ One way to do this is to use enVision lesson 3-6 to teach students that the properties of multiplication and place value understanding can be used to multiply without paper and pencil.

Bloom’s Levels: Apply
Webb’s DOK: 1

Engaging Experience 8
Teaching Point: Today I’m going to teach you how to multiply 2, 3, and 4-digit numbers by 1-digit numbers by choosing an appropriate strategy.
Suggested Length of Time: 1 day

Standards Addressed

Priority:
● 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

Supporting:
● 4.NBT.A.1 Round multi-digit whole numbers to any place.
● 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:
☐ One way to do this is to use enVision lesson 3-7 to teach students that you can use the Distributive Property, area models, and other methods to find a product.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 9

Engaging Scenario

3- ACT Math: Covered Up

Teaching Point: Today I’m going to teach you to solve a problem that involves estimating and computing with area models by modeling with math.
Suggested Length of Time: 1 day

Standards Addressed

Priority:
● 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

Supporting:
● 4.NBT.A.1 Round multi-digit whole numbers to any place.
● 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
● 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

Detailed Description/Instructions:

☐ One way to do this is to use the 3 Act Math lesson to teach students to identify an important problem, identify the important information, develop a model that represents that situation, use the model to propose a solution, and test the appropriateness of that math model.

Bloom’s Levels: Apply
Webb’s DOK: 3

Engaging Experience 10
Teaching Point: Today I’m going to teach you how to represent and solve problems using previously learned concepts and skills.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
● 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

Supporting:
● 4.NBT.A.1 Round multi-digit whole numbers to any place.
● 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
● 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

Detailed Description/Instructions:

☐ One way to do this is to use enVision lesson 3-8 to teach students that good math thinkers choose to apply the math they know in order to show and solve problems from everyday life.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 11
Teaching Point: Today we are going to review how you multiply by multiples of 10, 100, and 1,000 and how you can multiply whole numbers.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
● 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

Supporting:
● 4.NBT.A.1 Round multi-digit whole numbers to any place.
● 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
● 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.
Detailed Description/Instructions:

- **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 119-122.
- **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 115-118.
- **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 123-124.

**Bloom’s Levels:** Apply
**Webb’s DOK:** 2

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**Topic 4: Use Strategies and Properties to Multiply by 2-Digit Numbers**

Students create and explore strategies for performing multi-digit calculations that involve breaking numbers apart using place value.

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**Essential Questions:**

- How can you use a model to multiply?
- How can you use the Distributive Property to multiply?
- How can you use multiplication to solve problems?

**Enduring Understandings:**

- Arrays and area models can represent multiplication.
- The Distributive Property breaks apart factors to make multiplication easier.
- Multiplication is more efficient than repeatedly adding greater numbers. Strategies include using properties, models and estimates to assist in solving problems.

**Priority Standards:**

4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

**Supporting Standards:**

4.NBT.A.1 Round multi-digit whole numbers to any place.
4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

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<th>Webb’s DOK</th>
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BOE Approved June 20, 2019
Engaging Experience 1

**Teaching Point:** Today I’m going to introduce you to Topic 4 which will focus on developing an understanding of multiplying multi-digit numbers by 1-digit numbers using strategies based on place value and the properties of operations.

**Suggested Length of Time:** 1 day

**Priority:**
- 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

**Supporting:**
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

**Detailed Description/Instructions:**
- **One way to do this** is to assess students with the enVision Topic 4 online assessment.
- **Another way to do this** is use the enVision student workbook page 125 to introduce topic essential questions and present the enVision STEM Project. Then have students complete page 126, Review What You Know.
- **Another way to do this** is use student vocabulary cards and the vocabulary activity (TT 25) to explore content vocabulary.

**Bloom’s Levels:** Apply

**Webb’s DOK:** 2

Engaging Experience 2

**Teaching Point:** Today I’m going to teach you how to multiply 2-digit multiples of 10 by 2-digit multiples of 10 by using mental math strategies.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.
Supporting:
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:
- One way to do this is to use enVision lesson 4-1 to teach students that basic facts and place-value patterns can be used to mentally multiply a 2-digit number by a multiple of 10.

Bloom’s Levels: Apply
Webb’s DOK: 1

Engaging Experience 3
Teaching Point: Today I’m going to teach you how to multiply 2-digit numbers by multiples of 10 by using models and properties of operations.
Suggested Length of Time: 1 day
Standards Addressed
Priority:
- 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.
Supporting:
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
Detailed Description/Instructions:
- One way to do this is to use enVision lesson 4-2 to teach students that place-value blocks, area models, and arrays provide ways to visualize and find products.
Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 4
Teaching Point: Today I’m going to teach you how to estimate products of two 2-digit numbers by using rounding or compatible numbers.
Suggested Length of Time: 1 day
Standards Addressed
Priority:
- 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.
Supporting:
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
Detailed Description/Instructions:
- One way to do this is to use enVision lesson 4-3 to teach students that products of 2-digit by 2-digit numbers can be estimated by replacing factors with other numbers that are close and easy to multiply mentally or by replacing each factor with the closest multiple of 10.
Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 5
Teaching Point: Today I’m going to teach you how to multiply two 2-digit numbers by using arrays, place value, partial products, and properties of operations.
Suggested Length of Time: 1 day
Standards Addressed

Priority:
- 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

Supporting:
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:
☐ One way to do this is to use enVision lesson 4-4 to teach students that the expanded algorithm for multiplying with 2-digit numbers is an extension of the expanded algorithm for multiplying with 1-digit numbers.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 6

Teaching Point: Today I’m going to teach you how to multiply two 2-digit numbers by using the Distributive Property and an area model.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

Supporting:
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:
☐ One way to do this is to use enVision lesson 4-5 to teach students that the Distributive Property can be used to multiply two 2-digit numbers by breaking the computation down into four simpler products and adding the partial products together.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 7

Teaching Point: Today I’m going to teach you how to calculate products of 2-digit by 2-digit multiplication problems by using place value and partial products.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

Supporting:
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
Detailed Description/Instructions:

- **One way to do this** is to use enVision lesson 4-6 to teach students that the expanded algorithm for multiplication can be represented with arrays. In the algorithm, numbers are broken apart using place value, and the parts are used to find partial products.

**Bloom’s Levels:** Apply

**Webb’s DOK:** 1

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**Engaging Experience 8**

**Teaching Point:** Today I’m going to teach you how to make sense of problems and persevere in solving them by using problem solving skills.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

**Supporting:**
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

**Detailed Description/Instructions:**

- **One way to do this** is to use enVision lesson 4-7 to teach students that good math thinkers make sense of problems and think of ways to solve them. If they get stuck, they don’t give up.

**Bloom’s Levels:** Apply

**Webb’s DOK:** 2

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**Engaging Experience 9**

**Teaching Point:** Today we are going to review how you can use a model to multiply and how you can use the Distributive Property to multiply.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.

**Supporting:**
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

**Detailed Description/Instructions:**

- **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 161-162.
**Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 159-160.

**Another way to do this** is to use the Topic Performance Task in the student workbook on pages 163-164.

**Bloom’s Levels:** Apply  
**Webb’s DOK:** 2

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**Topic 5: Use Strategies and Properties to Divide by 1-Digit Numbers**

Students create and explore strategies for performing multi-digit calculations that involve breaking numbers apart using place value.

---

**Essential Questions:**

- How can mental math be used to divide?
- How can quotients be estimated?
- How can the steps for dividing be explained?

**Enduring Understandings:**

- Basic facts and place value patterns can be used to divide multiples of 10 and 100  
  - Example: $72/8=9$; $720/8=90$ or 9 tens; $7200/8=900$ or 9 hundreds
- Rounding, substituting compatible numbers, and using multiplication are some ways to estimate quotients.  
  - Example: use rounding to estimate $484/6$; $480/6=80$ so $484/6$ is about 80; use compatible numbers to estimate $496/5$; $500/5=100$ so $496/5$ is about 100; use multiplication to estimate $445/5$; $5 \times 90=450$ so $445/5$ is about 90.
- One way is to use partial quotients.  
  - Example: estimating will help; Estimate---How many 4’s are in 52? Try 12. 12 groups of 4 is 48. Estimate---How many 4’s are in 4? 1 group of 4 is 4.

**Priority Standards:**

4.NBT.A.7 Find whole-number quotients and remainders with up to four digit dividends and one-digit divisors, and justify the solution.

**Supporting Standards:**

4.NBT.A.1 Round multi-digit whole numbers to any place.
4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
4.RA.A.3 Solve whole number division problems involving variables in which remainders needed to be interpreted, and justify the solution.
4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.
Engaging Experience 1

Teaching Point: Today I’m going to introduce you to Topic 5 which focuses on developing an understanding of finding whole-number quotients and remainders with up to four-digit dividends and 1-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NBT.A.7 Find whole-number quotients and remainders with up to four digit dividends and one-digit divisors, and justify the solution.

Supporting:
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
- 4.RA.A.3 Solve whole number division problems involving variables in which remainders needed to be interpreted, and justify the solution.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

Detailed Description/Instructions:
- One way to do this assess students with the enVision Topic 7 online assessment
- Another way to do this is use the enVision student workbook page 165 to introduce topic essential questions and present the enVision STEM projects. Then have students complete page 166, Review What You Know.
- Another way to do this is to use student vocabulary cards and the vocabulary activity (TT 26) to explore content vocabulary.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 2

Teaching Point: Today I’m going to teach you how to divide multiples of 10 and 100 by 1-digit divisors by using mental math and place-value strategies.

Suggested Length of Time: 1 day

Standards Addressed
Supporting:
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:
- **One way to do this** is to use enVision lesson 5-1 to teach students that basic facts and place value patterns can be used to divide multiples of 10 and 100 by 1-digit numbers.

Bloom’s Levels: Apply
Webb’s DOK: 1

Engaging Experience 3
Teaching Point: Today I’m going to teach you how to estimate quotients by using compatible numbers.
Suggested Length of Time: 1 day
Standards Addressed
Supporting:
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:
- **One way to do this** is to use enVision lesson 5-2 to teach students that there is more than one way to estimate a quotient. Substituting compatible numbers is an efficient technique for estimating quotients.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 4
Teaching Point: Today I’m going to teach you how to estimate quotients for 4-digit dividends by using place-value patterns and division facts.
Suggested Length of Time: 1 day
Standards Addressed
Supporting:
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:
- **One way to do this** is to use enVision lesson 5-3 to teach students that there is more than one way to estimate a quotient. Using place value patterns and compatible numbers is an efficient technique for estimating quotients.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 5
Teaching Point: Today I’m going to teach you how to solve division problems and interpret remainders by using models, drawings, and basic facts.
Suggested Length of Time: 1 day
Standards Addressed
Priority:
4.NBT.A.7 Find whole-number quotients and remainders with up to four digit dividends and one-digit divisors, and justify the solution.

Supporting:

4.RA.A.3 Solve whole number division problems involving variables in which remainders needed to be interpreted, and justify the solution.

Detailed Description/Instructions:

- One way to do this is to use enVision lesson 5-4 to teach students that when dividing the remainder must be less than the divisor. When one is solving a real-world problem, the kind of question asked determines how to interpret the remainder.

Bloom’s Levels: Apply

Webb’s DOK: 2

Engaging Experience 6
Teaching Point: Today I’m going to teach you how to divide by using partial quotients.

Suggested Length of Time: 1 day

Standards Addressed

Priority:

4.NBT.A.7 Find whole-number quotients and remainders with up to four digit dividends and one-digit divisors, and justify the solution.

Supporting:

4.NBT.A.1 Round multi-digit whole numbers to any place.
4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.

Detailed Description/Instructions:

- One way to do this is to use enVision lesson 5-5 to teach students that division with partial quotients involves breaking apart the dividend, dividing the parts, and adding the partial quotients.

Bloom’s Levels: Apply

Webb’s DOK: 2

Engaging Experience 7
Teaching Point: Today I'm going to teach you how to divide with greater dividends by using partial quotients and place value understandings.

Suggested Length of Time: 1 day

Standards Addressed

Priority:

4.NBT.A.7 Find whole-number quotients and remainders with up to four digit dividends and one-digit divisors, and justify the solution.

Supporting:

4.NBT.A.1 Round multi-digit whole numbers to any place.
4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
4.RA.A.3 Solve whole number division problems involving variables in which remainders needed to be interpreted, and justify the solution.

Detailed Description/Instructions:

- One way to do this is to use enVision lesson 5-6 to teach students that division with partial quotients involves breaking apart the dividend, dividing the parts and adding the partial quotients.
Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 8
Teaching Point: Today I’m going to teach you how to divide 2 and 3-digit numbers by 1-digit numbers by using place value and models.
Suggested Length of Time: 1 day
Standards Addressed

Priority:
• 4.NBT.A.7 Find whole-number quotients and remainders with up to four digit dividends and one-digit divisors, and justify the solution.

Supporting:
• 4.NBT.A.1 Round multi-digit whole numbers to any place.
• 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
• 4.RA.A.3 Solve whole number division problems involving variables in which remainders needed to be interpreted, and justify the solution.

Detailed Description/Instructions:
☑ One way to do this is to use enVision lesson 5-7 to teach students that sharing is one way to think about division.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 9

Engaging Scenario

3- ACT Math: Snack Attack

Teaching Point: Today I’m going to teach you to solve a problem that involves estimating, rounding, and computing with whole numbers by modeling with math.
Suggested Length of Time: 1 day
Standards Addressed

Priority:
• 4.NBT.A.7 Find whole-number quotients and remainders with up to four digit dividends and one-digit divisors, and justify the solution.

Supporting:
• 4.NBT.A.1 Round multi-digit whole numbers to any place.
• 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
• 4.RA.A.3 Solve whole number division problems involving variables in which remainders needed to be interpreted, and justify the solution.
• 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

Detailed Description/Instructions:
☑ One way to do this is to use the 3 Act Math lesson to teach students to identify an important
problem, identify the important information, develop a model that represents that situation, use the model to propose a solution, and test the appropriateness of that math model.

**Bloom’s Levels:** Apply  
**Webb’s DOK:** 3

**Engaging Experience 10**  
**Teaching Point:** Today I’m going to teach you how to divide 2 and 3-digit numbers by 1-digit numbers by continuing to use place value and sharing.  
**Suggested Length of Time:** 1 day  
**Standards Addressed**  
**Priority:**  
- 4.NBT.A.7 Find whole-number quotients and remainders with up to four digit dividends and one-digit divisors, and justify the solution.  
**Supporting:**  
- 4.NBT.A.1 Round multi-digit whole numbers to any place.  
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.  
- 4.RA.A.3 Solve whole number division problems involving variables in which remainders needed to be interpreted, and justify the solution.  
**Detailed Description/Instructions:**  
☐ **One way to do this** is to use enVision lesson 5-8 to teach students that you can use estimation and place value to divide.  
**Bloom’s Levels:** Apply  
**Webb’s DOK:** 3

**Engaging Experience 11**  
**Teaching Point:** Today I’m going to teach you how to divide by choosing a strategy that follows a series of steps to break division into simpler calculations.  
**Suggested Length of Time:** 1 day  
**Standards Addressed**  
**Priority:**  
- 4.NBT.A.7 Find whole-number quotients and remainders with up to four digit dividends and one-digit divisors, and justify the solution.  
**Supporting:**  
- 4.NBT.A.1 Round multi-digit whole numbers to any place.  
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.  
- 4.RA.A.3 Solve whole number division problems involving variables in which remainders needed to be interpreted, and justify the solution.  
**Detailed Description/Instructions:**  
☐ **One way to do this** is to use enVision lesson 5-9 to teach that there are many ways to perform division, including mental math, models, partial quotients, and sharing.  
**Bloom’s Levels:** Apply  
**Webb’s DOK:** 2

**Engaging Experience 12**  
**Teaching Point:** Today I’m going to teach you how to model and solve problems by using previously learned concepts and skills.
Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NBT.A.7 Find whole-number quotients and remainders with up to four digit dividends and one-digit divisors, and justify the solution.

Supporting:
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
- 4.RA.A.3 Solve whole number division problems involving variables in which remainders needed to be interpreted, and justify the solution.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

Detailed Description/Instructions:
- **One way to do this** is to use enVision lesson 5-10 to teach students that good math thinkers choose and apply math they know to show and solve problems in everyday life.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 13

Teaching Point: Today we are going to review how mental math can be used to divide, how quotients can be estimated, and how the steps for dividing can be explained.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NBT.A.7 Find whole-number quotients and remainders with up to four digit dividends and one-digit divisors, and justify the solution.

Supporting:
- 4.NBT.A.1 Round multi-digit whole numbers to any place.
- 4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.
- 4.RA.A.3 Solve whole number division problems involving variables in which remainders needed to be interpreted, and justify the solution.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

Detailed Description/Instructions:
- **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 215-218.
- **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 211-214.
- **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 219-220.

Bloom’s Levels: Apply
Webb’s DOK: 2
Unit 2: Numbers and Computation Part 1

Subject: Math
Grade: 4
Name of Unit: Operations and Algebra Part 1
Length of Unit: 18 days

Overview of Unit:
Students are introduced to multiplicative comparison situations. They use understandings of operations to solve multi-step problems. Students will represent, analyze, and classify numbers using understandings of multiplication.

In Topic 6, students will solve word problems using skills developed involving multi-digit whole number addition, subtraction, multiplication and division. As students solve word problems, they draw on previously learned meanings of the four operations and they come to understand how multiplication can be used for comparison.

In Topic 7, students will understand the meaning of factors and multiples by building on students’ understanding of multiplication. The concepts of prime and composite numbers are developed through an understanding of factors.

Getting Ready for the Unit:
Before each topic, watch the Topic Overview Videos and the Listen and Look for Lesson Videos for each lesson to learn additional important information about the content of each topic.
Send home the Home-School Connection Letters (topic specific) to give your families insight on the upcoming unit. These can be found within each topic on Pearson Realize under the Teacher Resources.

You may want to gather these “Teaching Tool” pages prior to the lessons. These can be found in the back of the Teacher’s Resource Masters - Grade 4 - Volume 2 or online (Pearson Realize) in the Teacher Resources section.

TT 9 (Centimeter grid paper)
TT 15 (2-color counters)
TT 16 (2-color square counters)

<table>
<thead>
<tr>
<th>Formative Assessment Options</th>
<th>Summative Assessment Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)</td>
<td>(Administered at the end of unit or topic to assess mastery of learning objectives.)</td>
</tr>
<tr>
<td>● Math Interview/Conference</td>
<td>● Online Topic Assessment</td>
</tr>
<tr>
<td>● Quick Checks (Check marks within lesson)</td>
<td>● Topic Assessment Practice</td>
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<td>● Topic Pretest</td>
<td>● Topic Performance Task</td>
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<td>● Convince Me</td>
<td>● Cumulative/ Benchmark Assessment</td>
</tr>
<tr>
<td>● Look Back</td>
<td>(print or online)</td>
</tr>
<tr>
<td>● Lesson Assessment Practice</td>
<td></td>
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</tbody>
</table>

Math Review:

- Math Anytime
  - Daily Review
  - Today’s Challenge
  - Fluency
    - enVision 2020
- Topic Opener: Review What You Know
- Fluency Practice/Review Activity
- Vocabulary Review

Number Routines:

**Number Talk: Adding Up in Chunks**

Description:
Adding up numbers in chunks builds upon adding multiples of ten by encouraging students to keep one number whole while adding “chunks” of the second addend.

**Category 2: Adding multiples of ten while keeping 1 number whole and breaking apart the ones into friendly combinations**
The following number talks consist of doubles with two-digit numbers, adding multiples of ten while keeping one number whole and then breaking apart the ones into friendly combinations. For example, 28 + 24 could be “chunked” as 28 + 20 = 48; the 48 + 4 could be added by breaking the 4 apart into 2 + 2. The problem could then be solved as (48 + 2) + 2 = 50 + 2 = 52.

Reference your copy of *Number Talks: Whole Number Computation* by Sherry Parrish

BOE Approved June 20, 2019
Number Talk: Adding Up (Category 1) ...pg 209

Description:
Two ideas to consider when crafting number talks to encourage the Adding Up strategy for subtraction are: 1) keep the minuend and subtrahend far apart, and 2) frame the problem in a context that implies distance. The farther apart the subtrahend is from the minuend, the more likely it is that students will count or add up. The closer the two numbers are, the more the likelihood that students will count back. For example, if the problem is 50 - 47, it would be quite efficient and easy to count back; but if the problem is 50 - 17, it would be be more cumbersome and tedious to count back.

Category 1: The number is a multiple of ten or one hundred, and the subtrahend is close to the multiple of ten or landmark number
The following number talks include computation problems that foster the Adding Up strategy by incorporating two ideas: 1) the whole is a multiple of ten or one hundred, and 2) the subtrahend is close to a multiple of ten or a landmark number.

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<thead>
<tr>
<th>20-5</th>
<th>50-44</th>
<th>80-69</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-14</td>
<td>50-39</td>
<td>80-59</td>
</tr>
<tr>
<td>20-9</td>
<td>50-29</td>
<td>80-49</td>
</tr>
<tr>
<td>20-8</td>
<td>50-24</td>
<td>80-39</td>
</tr>
</tbody>
</table>

Reference your copy of *Number Talks: Whole Number Computation* by Sherry Parrish

Number Talk: Adding Up (Category 2) ...pg 210

Category 2: The number is a multiple of ten or one hundred, and the subtrahend is close to the multiple of ten or landmark number -using larger numbers
The following number talks include computation problems where the whole is a multiple of ten or one hundred, and the subtrahend is close to a multiple of ten or a landmark number.

<table>
<thead>
<tr>
<th>100-89</th>
<th>250-224</th>
<th>500-449</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-69</td>
<td>250-219</td>
<td>500-419</td>
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<td>100-49</td>
<td>200-199</td>
<td>500-299</td>
</tr>
<tr>
<td>100-37</td>
<td>200-149</td>
<td>500-249</td>
</tr>
</tbody>
</table>

Reference your copy of *Number Talks: Whole Number Computation* by Sherry Parrish

Additional Personalized Practice and Application Suggestions:

<table>
<thead>
<tr>
<th>Intervention (I)</th>
<th>On-level (O)</th>
<th>Advanced (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Reteach to Build Understanding</td>
<td>● Build Mathematical Fluency</td>
<td>● Enrichment</td>
</tr>
<tr>
<td>● Intervention Activity</td>
<td>● Practice Buddy</td>
<td>● Pick a Project</td>
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<tr>
<td>● Additional Practice</td>
<td>● Additional Practice</td>
<td>● enVision STEM Activity</td>
</tr>
<tr>
<td>● Another Look Video</td>
<td>● Problem Solving</td>
<td>● Math Tools Activity</td>
</tr>
<tr>
<td>● Game Center</td>
<td>● Reading Activity</td>
<td>● Practice Buddy</td>
</tr>
<tr>
<td></td>
<td>● enVision STEM Activity</td>
<td>● Game Center</td>
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<td></td>
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</tr>
</tbody>
</table>
**Topic 6: Use Operations with Whole Numbers to Solve Problems**

Students are introduced to multiplicative comparison situations. They use understandings of operations to solve multi-step problems.

**Essential Questions:**
- How is comparing with multiplication different from comparing with addition?
- How can you use equations to solve multi-step problems?

**Enduring Understandings:**
- When comparing with multiplication you find *how many times as many*. When comparing with addition you find *how many more*.
- Writing an equation can help you organize the information given in the problem.

**Priority Standards:**
4.RA.A.1 Multiply or divide to solve problems involving a multiplicative comparison.

**Supporting Standards:**
4.RA.A.3 Solve whole number division problems involving variables in which remainders need to be interpreted, and justify the solution.
4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Unwrapped Concepts (Students need to know)</th>
<th>Unwrapped Skills (Students need to be able to do)</th>
<th>Bloom’s Taxonomy Levels</th>
<th>Webb’s DOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.RA.A.1</td>
<td><em>problems involving a multiplicative comparison</em></td>
<td>multiply, divide, solve,</td>
<td>Apply</td>
<td>2</td>
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</tbody>
</table>

**Unit Vocabulary:**

<table>
<thead>
<tr>
<th>Academic Cross-Curricular Words</th>
<th>Content/Domain Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>generalize comparison</td>
<td>factor pairs multiply divide solve prime number composite number multiple</td>
</tr>
</tbody>
</table>

**Engaging Experience 1**

**Teaching Point:** Today I’m going to introduce you to Topic 6 which will focus on solving word problems using skills developed involving multi-digit whole number addition, subtraction, multiplication and division. As students solve word problems, they draw on previously learned meanings of the four operations and they come to understand how multiplication can be used for comparison.

**Suggested Length of Time:** 1 day
Standards Addressed

Priority:
- 4.RA.A.1 Multiply or divide to solve problems involving a multiplicative comparison.

Supporting:
- 4.RA.A.3 Solve whole number division problems involving variables in which remainders need to be interpreted, and justify the solution.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

Detailed Description/Instructions:
- **One way to do this is to** assess students with the enVision Topic 6 online assessment
- **Another way to do this** is to use the enVision student workbook page 221 to introduce topic essential questions and present the enVision STEM projects. Then have students complete page 222, Review What You Know.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 2
Teaching Point: Today I’m going to teach you how to interpret comparisons as multiplication or addition equations by using bar diagrams and equations.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.RA.A.1 Multiply or divide to solve problems involving a multiplicative comparison.

Supporting:
- 4.RA.A.3 Solve whole number division problems involving variables in which remainders need to be interpreted, and justify the solution.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

Detailed Description/Instructions:
- **One way to do this** is to use enVision lesson 6-1 to teach students that both addition and multiplication can be used to make comparisons. Bar diagrams and equations can be used to show both situations and to distinguish between them.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 3
Teaching Point: Today I’m going to teach you how to use multiplication and division to compare two quantities by using bar diagrams and equations.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.RA.A.1 Multiply or divide to solve problems involving a multiplicative comparison.

Supporting:
- 4.RA.A.3 Solve whole number division problems involving variables in which remainders need to be interpreted, and justify the solution.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

Detailed Description/Instructions:
One way to do this is to use enVision lesson 6-2 to teach students that bar diagrams and equations can be used to solve problems involving multiplicative comparison.

**Bloom’s Levels:** Apply  
**Webb’s DOK:** 2

### Engaging Experience 4

**Teaching Point:** Today I’m going to teach you how to solve multi-step problems by finding hidden questions and using bar diagrams and equations.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.RA.A.1 Multiply or divide to solve problems involving a multiplicative comparison.

**Supporting:**
- 4.RA.A.3 Solve whole number division problems involving variables in which remainders need to be interpreted, and justify the solution.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

**Detailed Description/Instructions:**

One way to do this is to use enVision lesson 6-3 to teach students that bar diagrams and equations can be used to model and solve multi-step problems.

**Bloom’s Levels:** Apply  
**Webb’s DOK:** 2

### Engaging Experience 5

**Teaching Point:** Today I’m going to teach you how to solve multi-step problems and check that answers are reasonable by developing problem solving skills.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.RA.A.1 Multiply or divide to solve problems involving a multiplicative comparison.

**Supporting:**
- 4.RA.A.3 Solve whole number division problems involving variables in which remainders need to be interpreted, and justify the solution.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

**Detailed Description/Instructions:**

One way to do this is to use enVision lesson 6-4 to teach students that multi-step problems can be modeled and solved in more than one way.

**Bloom’s Levels:** Apply  
**Webb’s DOK:** 3

### Engaging Experience 6

**Teaching Point:** Today I’m going to teach you how to solve multi-step problems by writing and solving
Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.RA.A.1 Multiply or divide to solve problems involving a multiplicative comparison.

Supporting:
- 4.RA.A.3 Solve whole number division problems involving variables in which remainders need to be interpreted, and justify the solution.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

Detailed Description/Instructions:

One way to do this is to use enVision lesson 6-5 to teach students that equations can represent problems and are helpful in answering both hidden questions and the original question in the problem.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 7
Teaching Point: Today I’m going to teach you how to make sense of a multi-step problem and keep working until it is solved by perversing through the problems.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.RA.A.1 Multiply or divide to solve problems involving a multiplicative comparison.

Supporting:
- 4.RA.A.3 Solve whole number division problems involving variables in which remainders need to be interpreted, and justify the solution.
- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

Detailed Description/Instructions:

One way to do this is to use enVision lesson 6-6 to teach students that good math thinkers make sense of problems and think of ways to solve them. If they get stuck, they don’t give up.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 8
Teaching Point: Today we are going to review how to comparing with multiplication is different from comparing with addition and how to use equations to solve multi-step problems.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.RA.A.1 Multiply or divide to solve problems involving a multiplicative comparison.

Supporting:
- 4.RA.A.3 Solve whole number division problems involving variables in
which remainders need to be interpreted, and justify the solution.

- 4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.

**Detailed Description/Instructions:**

- **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 253-254.
- **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 251-252.
- **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 255-256.

**Bloom’s Levels:** Apply

**Webb’s DOK:** 2

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**Topic 7: Factors and Multiples**

Students represent, analyze, and classify numbers using understandings of multiplication

**Essential Questions:**

- How can you use arrays or multiplication to find the factors of a number?
- How can you identify prime and composite numbers?
- How can you find multiples of a number?

**Enduring Understandings:**

- Arrays can represent multiplication and the factors of a number.
- Prime numbers have exactly two factors, 1 and the number. Composite numbers have more than two factors.
- Multiply any number by a whole number to find a multiple of the number. Factors and multiples are related.

**Priority Standards:**

- 4.RA.B.4 Recognize that a whole number is a multiple of each of its factors and find the multiples for a given whole number.

**Supporting Standards:**

- 4.RA.B.5 Determine if a whole number within 100 is composite or prime, and find all factor pairs for whole numbers within 100.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Unwrapped Concepts (Students need to know)</th>
<th>Unwrapped Skills (Students need to be able to do)</th>
<th>Bloom’s Taxonomy Levels</th>
<th>Webb’s DOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.RA.B.4</td>
<td>that a whole number is a multiple of each of its factors, multiples of a given whole number</td>
<td>recognize, find</td>
<td>Remember</td>
<td>1</td>
</tr>
</tbody>
</table>

**Unit Vocabulary:**
### Academic Cross-Curricular Words
| generalize | factor pairs |
| recognize  | prime number  |
| find       | composite    |
| remember   | number       |
|            | multiple     |

### Engaging Experience 1

**Teaching Point:** Today I’m going to introduce you to Topic 7 that focuses on understanding the meaning of factors and multiples by building on students’ understanding of multiplication. The concepts of prime and composite numbers are developed through an understanding of factors.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.RA.B.4 Recognize that a whole number is a multiple of each of its factors and find the multiples for a given whole number.

**Supporting:**
- 4.RA.B.5 Determine if a whole number within 100 is composite or prime, and find all factor pairs for whole numbers within 100.

**Detailed Description/Instructions:**
- **One way to do this** is to assess students with the enVision Topic 6 online assessment.
- **Another way to do this** is to use the enVision student workbook page 257 to introduce topic essential questions and present the enVision STEM projects. Then have students complete page 258, Review What You Know.
- **Another way to do this** is to use student vocabulary cards and the vocabulary activity (TT 25) to explore content vocabulary.

**Bloom’s Levels:** Remember

**Webb’s DOK:** 1

### Engaging Experience 2

**Teaching Point:** Today I’m going to teach you to find the factors of a given whole number by using arrays.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.RA.B.4 Recognize that a whole number is a multiple of each of its factors and find the multiples for a given whole number.

**Supporting:**
- 4.RA.B.5 Determine if a whole number within 100 is composite or prime, and find all factor pairs for whole numbers within 100.

**Detailed Description/Instructions:**
- **One way to do this** is to use enVision lesson 7-1 to teach that the factors of a number $n$ can be shown by arranging $n$ counters into rows with the same number of counters in each row. The number of rows and the number of counters in each row are factors of $n$.

**Bloom’s Levels:** Understand

**Webb’s DOK:** 1
Engaging Experience 3
Teaching Point: Today I am going to teach you to find all the factor pairs for a whole number by using multiplication.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.RA.B.4 Recognize that a whole number is a multiple of each of its factors and find the multiples for a given whole number.

Supporting:
- 4.RA.B.5 Determine if a whole number within 100 is composite or prime, and find all factor pairs for whole numbers within 100.

Detailed Description/Instructions:
- **One way to do this** is to use enVision lesson 7-2 to teach that factors of a number can be found in pairs by thinking about multiplication. Note: If students are struggling to determine factor pairs using multiplication encourage them to continue using manipulatives or drawings to help visualize the factors.
- **Another way to do this** is to teach students how to arrange the factor pairs into a list that looks like a “factor rainbow” to help students visualize the complete list of factors. This will help them realize that they have found all of the factor pairs for a given whole number. An example is shown in enVision lesson 7-3, “Convince Me” on page 270.

Bloom’s Levels: Remember
Webb’s DOK: 1

Engaging Experience 4
Teaching Point: Today I’m going to teach you how to generalize how to solve problems that are similar by using repeated reasoning.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.RA.B.4 Recognize that a whole number is a multiple of each of its factors and find the multiples for a given whole number.

Supporting:
- 4.RA.B.5 Determine if a whole number within 100 is composite or prime, and find all factor pairs for whole numbers within 100.

Detailed Description/Instructions:
- **One way to do this** is to use enVision lesson 7-3 to teach that good math thinkers look for things that repeat, and they make generalizations.

Bloom’s Levels: Apply
Webb’s DOK: 3

Engaging Experience 5
Teaching Point: Today I’m going to teach you how to determine whether a whole number greater than 1 is prime or composite by using factors.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.RA.B.4 Recognize that a whole number is a multiple of each of its factors and find the
multiples for a given whole number.

**Supporting:**
- 4.RA.B.5 Determine if a whole number within 100 is composite or prime, and find all factor pairs for whole numbers within 100.

**Detailed Description/Instructions:**
- **One way to do this** is to use enVision lesson 7-4 to help students recognize that prime numbers have exactly 2 factors, and composite numbers have more than 2.
- **Another way to do this** is to use the Frayer Model (Teaching Tool 25) to have students explore the definition, characteristics/visual representations, examples, and non-examples of the vocabulary words prime and composite.

**Bloom’s Levels:** Remember

**Webb’s DOK:** 1

**Engaging Experience 6**

**Teaching Point:** Today I’m going to teach you how find multiples of a given whole number by using multiplication.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.RA.B.4 Recognize that a whole number is a multiple of each of its factors and find the multiples for a given whole number.

**Detailed Description/Instructions:**
- **One way to do this** is to use enVision lesson 7-5 to teach that the product of any nonzero whole number and a given nonzero whole number is a multiple of both.

**Bloom’s Levels:** Remember

**Webb’s DOK:** 1

**Engaging Experience 7**

**Engaging Scenario**

3- ACT Math: Can-Do Attitude

**Teaching Point:** Today I’m going to teach you to solve a problem that involves estimating and using factors and multiples by modeling with math.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.RA.B.4 Recognize that a whole number is a multiple of each of its factors and find the multiples for a given whole number.

**Supporting:**
- 4.RA.B.5 Determine if a whole number within 100 is composite or prime, and find all factor pairs for whole numbers within 100.

**Detailed Description/Instructions:**
- **One way to do this** is to use the 3 Act Math lesson to teach students to identify an important problem, identify the important information, develop a model that represents that situation,
use the model to propose a solution, and test the appropriateness of that math model.

**Bloom’s Levels:** Apply  
**Webb’s DOK:** 3

**Engaging Experience 8**

**Teaching Point:** Today we are going to review how to use arrays or multiplication to find the factors of a number, how to identify prime and composite numbers, and how to find multiples of a number.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.RA.B.4 Recognize that a whole number is a multiple of each of its factors and find the multiples for a given whole number.

**Supporting:**
- 4.RA.B.5 Determine if a whole number within 100 is composite or prime, and find all factor pairs for whole numbers within 100.

**Detailed Description/Instructions:**

- **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 285-286.
- **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 283-284.
- **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 287-288.

**Bloom’s Levels:** Remember  
**Webb’s DOK:** 1

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**Unit 3: Numbers and Computation Part 2**

**Subject:** Math  
**Grade:** 4  
**Name of Unit:** Numbers and Computation Part 2  
**Length of Unit:** 32 days

**Overview of Unit:**

Students use models and mathematical procedure to understand, recognize, and generate equivalent fractions. They will use their understanding of unit fractions to add and subtract fractions with like denominators and multiply a fraction by a whole number.

**In Topic 8,** students will focus on recognizing and generating equivalent fractions, and comparing fractions with different numerators and different denominators.

**In Topic 9,** students will focus on the understanding of adding and subtracting fractions and mixed numbers with like denominators.

**In Topic 10,** students will focus on the understanding of multiplying fractions by whole numbers. Students will also focus on using the four operations to solve time problems.

**Getting Ready for the Unit:**

BOE Approved June 20, 2019
Before each topic, watch the Topic Overview Videos and the Listen and Look for Lesson Videos for each lesson to learn additional important information about the content of each topic.

Send home the Home-School Connection Letters (topic specific) to give your families insight on the upcoming unit. These can be found within each topic on Pearson Realize under the Teacher Resources.

You may want to gather these “Teaching Tool” pages prior to the lessons. These can be found in the back of the Teacher’s Resource Masters - Grade 4 - Volume 2 or online (Pearson Realize) in the Teacher Resources section.

TT 12 (Number Lines)
TT 13 (Fraction Strips)
TT 21 (Clock face)

<table>
<thead>
<tr>
<th>Formative Assessment Options</th>
<th>Summative Assessment Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)</td>
<td>(Administered at the end of unit or topic to assess mastery of learning objectives.)</td>
</tr>
<tr>
<td>● Math Interview/Conference</td>
<td>● Online Topic Assessment</td>
</tr>
<tr>
<td>● Quick Checks (Check marks within lesson)</td>
<td>● Topic Assessment Practice</td>
</tr>
<tr>
<td>● Topic Pretest</td>
<td>● Topic Performance Task</td>
</tr>
<tr>
<td>● Convince Me</td>
<td>● Cumulative/ Benchmark Assessment (print or online)</td>
</tr>
<tr>
<td>● Look Back</td>
<td></td>
</tr>
<tr>
<td>● Lesson Assessment Practice</td>
<td></td>
</tr>
</tbody>
</table>

Math Review:

- Math Anytime
  - Daily Review
  - Today’s Challenge
  - Fluency
    - enVision 2020
- Topic Opener: Review What You Know
- Fluency Practice/Review Activity
- Vocabulary Review

Number Routines:

<table>
<thead>
<tr>
<th>Number Talk: Removal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong></td>
</tr>
<tr>
<td>A primary consideration in helping students think about the Removal strategy is to create a context that implies taking or removing an amount out of the whole. By structuring the following story problem for 50 - 17, we can create a removal action:</td>
</tr>
<tr>
<td>Bethany has 50 marbles. She decides to give her friend Marco 17 of her marbles. How many marbles will Bethany have left?</td>
</tr>
<tr>
<td>To help your students be successful with this strategy, you may wish to introduce each of the problems embedded in a context similar. It is also important to encourage students to keep the minuend intact and remove the subtrahend in parts; otherwise, it is easy for them to lose sight of the whole and the part.</td>
</tr>
</tbody>
</table>
Category 2: Two-digit numbers that require regrouping or decomposing

The following number talks include computation problems with two-digit numbers that require regrouping or decomposing.

Reference your copy of *Number Talks: Whole Number Computation* by Sherry Parrish

**Number Talk: Adjusting One Number to Create an Easier Problem**

Description:

When either the minuend or subtrahend is adjusted to make a friendlier number, the strategy will warrant that the remainder or answer also be adjusted. For the problem 50 - 24, some students change the problem to 49 - 24. Since the child changed the whole by removing 1, she had to add back 1 to the answer of 25 to get 26 (adjust the minuend).

For the same problem, other students might change the 24 to 25 to think about doubles or money. They have removed one too many and will need to add back one to the answer (adjust the subtrahend):

**Category 2: Adjusting the Subtrahend**

The following number talks include problems that focus on adjusting the subtrahend-the part being removed-to create an easier problem..

Reference your copy of *Number Talks: Whole Number Computation* by Sherry Parrish

**Number Talk: Keeping a Constant Difference (Category 1) ...pg 226**

With the Constant Difference Strategy, both the minuend and subtrahend are adjusted by the same amounts.

The following number talks consist of computation problems that use numbers up to one hundred and are focused on adjusting both numbers by adding or subtracting one or two.

<table>
<thead>
<tr>
<th>45-10</th>
<th>42-20</th>
<th>61-29</th>
</tr>
</thead>
<tbody>
<tr>
<td>13-9</td>
<td>39-17</td>
<td>62-30</td>
</tr>
<tr>
<td>14-7</td>
<td>41-19</td>
<td>59-27</td>
</tr>
<tr>
<td>15-6</td>
<td>51-19</td>
<td>49-17</td>
</tr>
</tbody>
</table>

Reference your copy of *Number Talks: Whole Number Computation* by Sherry Parrish

**Number Talk: Keeping a Constant Difference (Category 2) ...pg 228**

With the Constant Difference Strategy, both the minuend and subtrahend are adjusted by the same amounts.

The following number talks include computation problems with numbers above one hundred.

<table>
<thead>
<tr>
<th>101-50</th>
<th>150-125</th>
<th>342-120</th>
</tr>
</thead>
<tbody>
<tr>
<td>99-48</td>
<td>149-124</td>
<td>339-117</td>
</tr>
<tr>
<td>100-49</td>
<td>151-126</td>
<td>341-119</td>
</tr>
<tr>
<td>109-51</td>
<td>171-136</td>
<td>351-119</td>
</tr>
</tbody>
</table>

Reference your copy of *Number Talks: Whole Number Computation* by Sherry Parrish

**Additional Personalized Practice and Application Suggestions:**

<table>
<thead>
<tr>
<th>Intervention (I)</th>
<th>On-level (O)</th>
<th>Advanced (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Reteach to Build</td>
<td>● Build Mathematical</td>
<td>● Enrichment</td>
</tr>
</tbody>
</table>

BOE Approved June 20, 2019
Understanding
- Intervention Activity
- Additional Practice
- Another Look Video
- Game Center

Fluency
- Practice Buddy
- Additional Practice
- Problem Solving
- Reading Activity
- enVision STEM Activity
- Math Tools Activity
- Game Center

Pick a Project
- enVision STEM Activity
- Math Tools Activity
- Practice Buddy
- Game Center

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**Topic 8: Extend Understanding of Fraction Equivalence and Ordering**

Students use models and mathematical procedures to understand, recognize and generate equivalent fractions.

**Essential Questions:**
- What are some ways to name the same part of a whole?
- How can you compare fractions with unlike numerators and denominators?

**Enduring Understandings:**
- A fraction can be written as the sum of unit fractions.
  - Example: $\frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \frac{3}{5}$
- The same fractional amount can be represented by an infinite set of different but equivalent fractions.
  - Example: $\frac{3}{4} = 6/10 = 60/100$
- Fractions can be compared using fraction strips.
  - Example: $\frac{1}{8} < \frac{3}{8}$ (show model of fraction strips)
- Fractions can be renamed to have the same denominator. Then use the numerators of the renamed fractions to compare.
  - Example: $\frac{5}{12} = 8/12, \frac{3}{12} = 9/12; 8/12 < 9/12$ so $\frac{5}{12} < \frac{3}{4}$
- Fractions can be renamed to have the same numerator. When two fractions have different denominators but the same numerators, the fraction with the greater denominator is less.

**Priority Standards:**
- 4.NF.A.2 Recognize and generate equivalent fractions.
- 4.NF.A.3 Compare two fractions using the symbols $>$, $=$, $<$ and justify the solution.

**Supporting Standards:**
- 4.NF.A.1 Explain and/or illustrate why two fractions are equivalent.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Unwrapped Concepts (Students need to know)</th>
<th>Unwrapped Skills (Students need to be able to do)</th>
<th>Bloom’s Taxonomy Levels</th>
<th>Webb’s DOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.NF.A.</td>
<td>equivalent fractions</td>
<td>recognize, generate</td>
<td>Understand</td>
<td>1</td>
</tr>
</tbody>
</table>
Engaging Experience 1

Teaching Point: Today I’m going to introduce you to Topic 8 which will focus on recognizing and generating equivalent fractions and on comparing fractions with different numerators and different denominators.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NF.A.2 Recognize and generate equivalent fractions.
- 4.NF.A.3 Compare two fractions using the symbols >, =, < and justify the solution.

Supporting
- 4.NF.A.1 Explain and/or illustrate why two fractions are equivalent.

Detailed Description/Instructions:

☐ One way to do this is to assess students with the enVision Topic 8 online assessment
☐ Another way to do this is to use the enVision student workbook page 289 to introduce topic essential questions and present the enVision STEM projects. Then have students complete page 290, Review What You Know.
☐ Another way to do this is to use student vocabulary cards and the vocabulary activity (TT 26) to explore content vocabulary.

Bloom’s Levels: Understand

Webb’s DOK: 1, 2

Engaging Experience 2

Teaching Point: Today I’m going to teach you how to recognize and generate equivalent fractions by using area models.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NF.A.2 Recognize and generate equivalent fractions.

Supporting:
- 4.NF.A.1 Explain and/or illustrate why two fractions are equivalent.
Detailed Description/Instructions:
  One way to do this is to use enVision lesson 8-1 to teach that two fractions that represent
the same part of the same whole are equivalent. The two fractions are different names for
the same number.
Bloom’s Levels: Understand
Webb’s DOK: 1, 2

Engaging Experience 3
Teaching Point: Today I’m going to teach you how to locate and identify equivalent fractions by using
a number line.
Suggested Length of Time: 1 day
Standards Addressed
  Priority:
    ● 4.NF.A.2 Recognize and generate equivalent fractions.
  Supporting:
    ● 4.NF.A.1 Explain and/or illustrate why two fractions are equivalent.

Detailed Description/Instructions:
  One way to do this is to use enVision lesson 8-2 to teach that the same fractional amount can be
represented by an infinite set of different but equivalent fractions.
Bloom’s Levels: Understand
Webb’s DOK: 1, 2

Engaging Experience 4
Teaching Point: Today I’m going to teach you how to find equivalent fractions by using multiplication.
Suggested Length of Time: 1 day
Standards Addressed
  Priority:
    ● 4.NF.A.2 Recognize and generate equivalent fractions.
  Supporting:
    ● 4.NF.A.1 Explain and/or illustrate why two fractions are equivalent.

Detailed Description/Instructions:
  One way to do this is to use enVision lesson 8-2 to teach that when the numerator and
denominator of a fraction are multiplied by the same whole number greater than 1, it is the
same as multiplying the fraction by 1. This gives an equivalent fraction because multiplying
by 1 does not change the value of a number.
Bloom’s Levels: Understand
Webb’s DOK: 1, 2

Engaging Experience 5
Teaching Point: Today I’m going to teach you how to find equivalent fractions by using division.
Suggested Length of Time: 1 day
Standards Addressed
  Priority:
    ● 4.NF.A.2 Recognize and generate equivalent fractions.
  Supporting:
    ● 4.NF.A.1 Explain and/or illustrate why two fractions are equivalent.
Detailed Description/Instructions:

☐ One way to do this is to use enVision 8-4 to teach that when the numerator and denominator of a fraction are divided by a common factor greater than 1, the result is an equivalent fraction.

Bloom’s Levels: Understand
Webb’s DOK: 1, 2

Engaging Experience 6
Teaching Point: Today I’m going to teach you how to compare fractions by using benchmarks, area models, and number lines.
Suggested Length of Time: 1 day

Standards Addressed

Priority:

☐ 4.NF.A.3 Compare two fractions using the symbols >, =, < and justify the solution.

Detailed Description/Instructions:

☐ One way to do this to use enVision 8-5 to teach that one way to compare two fractions that are parts of the same whole is by comparing each to a benchmark fractions such as ½.

Bloom’s Levels: Understand
Webb’s DOK: 1, 2

Engaging Experience 7
Teaching Point: Today I’m going to teach you how to rename fractions to compare by using models.
Suggested Length of Time: 1 day

Standards Addressed

Priority:

☐ 4.NF.A.3 Compare two fractions using the symbols >, =, < and justify the solution.

Detailed Description/Instructions:

☐ One way to do this is to use enVision lesson 8-6 to teach that when two fractions have the same denominator, the fraction with the greater numerator is greater. When two fractions have the same numerator, the fraction with the lesser denominator is greater.

Bloom’s Levels: Understand
Webb’s DOK: 1, 2

Engaging Experience 8
Teaching Point: Today I’m going to teach you how to construct arguments about fractions by using multiple problem-solving methods.
Suggested Length of Time: 1 day

Standards Addressed

Priority:

☐ 4.NF.A.2 Recognize and generate equivalent fractions.
☐ 4.NF.A.3 Compare two fractions using the symbols >, =, < and justify the solution.

Supporting:

☐ 4.NF.A.1 Explain and/or illustrate why two fractions are equivalent.

Detailed Description/Instructions:

☐ One way to do this is to use enVision lesson 8-7 to teach that good math thinkers use math to explain why they are right. They can talk about the math that others do, too.

Bloom’s Levels: Evaluate
Webb’s DOK: 3
Engaging Experience 9

Teaching Point: Today we are going to review some ways to name the same part of a whole and compare fractions with unlike numerators and denominators.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NF.A.2 Recognize and generate equivalent fractions.
- 4.NF.A.3 Compare two fractions using the symbols >, =, < and justify the solution.

Supporting:
- 4.NF.A.1 Explain and/or illustrate why two fractions are equivalent.

Detailed Description/Instructions:

☐ One way to do this is to use the Topic Assessment Practice in the student workbook on pages 325-326.
☐ Another way to do this is to use the Topic Reteaching questions in the student workbook on pages 323-324.
☐ Another way to do this is to use the Topic Performance Task in the student workbook on pages 327-328

Bloom’s Levels: Understand, Evaluate

Webb’s DOK: 1, 2, 3

Topic 9: Understand Addition and Subtraction of Fractions

Students use their understanding of unit fractions with like denominators to add and subtract fractions and mixed numbers.

Essential Questions:
- How do you add and subtract fractions and mixed numbers with like denominators?
- How can fractions be added and subtracted on a number line?

Enduring Understandings:
- The meanings of addition and subtraction are the same whether working with fractions, mixed numbers or whole numbers.
- Fractions can be decomposed and then joined or separated to find sums and differences. This shows why the standard procedures for adding and subtracting fractions make sense.
  - Example: 2/8 + 3/8 = 1/8 + 1/8 + 1/8 + 1/8 = (2+3)/8 = 5/8
- Mixed numbers can be added and subtracted by decomposing the mixed number into a whole number and a fraction. Whole numbers may need to be renamed to subtract fractions. Another way to add or subtract mixed numbers is to first change each to an equivalent fraction. A third way to subtract mixed numbers is to count up.
  - Example: to find 5/6 - 1/6, find the point for 5/6 on the number line. Jump to the left a length of 1/6 landing at the point 4/6.

Priority Standards:
- 4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.
Supporting Standards:
- 4.NF.B.4 Understand addition and subtraction of fractions as joining/composing and separating/decomposing parts referring to the same whole.
- 4.NF.B.5 Decompose a fraction into a sum of fractions with the same denominator and record each decomposition with an equation and justification.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Unwrapped Concepts (Students need to know)</th>
<th>Unwrapped Skills (Students need to be able to do)</th>
<th>Bloom’s Taxonomy Levels</th>
<th>Webb’s DOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.NF.B.6</td>
<td>problems, fractions and mixed numbers with like denominators</td>
<td>solve, adding and subtracting</td>
<td>Apply</td>
<td>2</td>
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Unit Vocabulary:

<table>
<thead>
<tr>
<th>Academic Cross-Curricular Words</th>
<th>Content/Domain Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>compare</td>
<td>decompose</td>
</tr>
<tr>
<td>justify</td>
<td>compose</td>
</tr>
<tr>
<td>recognize</td>
<td>mixed number</td>
</tr>
<tr>
<td>generate</td>
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<td>explain</td>
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<td>illustrate</td>
<td>denominator</td>
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<tr>
<td>common</td>
<td>equivalent</td>
</tr>
<tr>
<td>order</td>
<td></td>
</tr>
</tbody>
</table>

Engaging Experience 1

Teaching Point: Today I’m going to introduce you to Topic 9 which will focus on the understanding of adding and subtracting fractions and mixed numbers with like denominators.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.

Supporting:
- 4.NF.B.4 Understand addition and subtraction of fractions as joining/composing and separating/decomposing parts referring to the same whole.
- 4.NF.B.5 Decompose a fraction into a sum of fractions with the same denominator and record each decomposition with an equation and justification.

Detailed Description/Instructions:

- One way to do this is to assess students with the enVision Topic 9 online assessment.
- Another way to do this is to use the enVision student workbook page 329 to introduce topic essential questions and present the enVision STEM Project. Then have students complete page 330, Review What You Know.
- Another way to do this is to use student vocabulary cards and the vocabulary activity (TT 25) to explore content vocabulary.

Bloom’s Levels: Apply

Webb’s DOK: 2
Engaging Experience 2
Teaching Point: Today I’m going to teach you how to add fractions by using fraction strips and number lines.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.

Supporting:
- 4.NF.B.4 Understand addition and subtraction of fractions as joining/composing and separating/decomposing parts referring to the same whole.
- 4.NF.B.5 Decompose a fraction into a sum of fractions with the same denominator and record each decomposition with an equation and justification.

Detailed Description/Instructions:

- One way to do this is to use enVision lesson 9-1 to teach that tools can be used to show addition of fractions a joining parts of the same whole.

Bloom’s Levels: Apply, Understand
Webb’s DOK: 2, 2

Engaging Experience 3
Teaching Point: Today I’m going to teach you the sum of a fraction is equal to the original fraction by decomposing a fraction or mixed number into a sum of fractions in more than one way.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.

Supporting:
- 4.NF.B.4 Understand addition and subtraction of fractions as joining/composing and separating/decomposing parts referring to the same whole.
- 4.NF.B.5 Decompose a fraction into a sum of fractions with the same denominator and record each decomposition with an equation and justification.

Detailed Description/Instructions:

- One way to do this is to use enVision lesson 9-2 to teach that a fraction a/b, where a > 1, can be decomposed into the sum of two or more unit or non-unit fractions in one or more ways where the sum of the fractions is equal to the original fraction.

Bloom’s Levels: Apply
Webb’s DOK: 1

Engaging Experience 4
Teaching Point: Today I’m going to teach you how to solve problems involving joining parts of the same whole by adding fractions with like denominators.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.

Supporting:
- 4.NF.B.4 Understand addition and subtraction of fractions as joining/composing and separating/decomposing parts referring to the same whole.
- 4.NF.B.5 Decompose a fraction into a sum of fractions with the same denominator and record each decomposition with an equation and justification.

Detailed Description/Instructions:
- One way to do this is to use enVision lesson 9-3 to teach that two fractions can be joined or added to find the total. There is a general method for adding fractions with like denominators.

Bloom’s Levels: Remember
Webb’s DOK: 1

Engaging Experience 5
Teaching Point: Today I’m going to teach you how to subtract fractions by using tools such as fraction strips, area models, and number lines.
Suggested Length of Time: 1 day
Standards Addressed

Priority:
- 4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.

Supporting:
- 4.NF.B.4 Understand addition and subtraction of fractions as joining/composing and separating/decomposing parts referring to the same whole.
- 4.NF.B.5 Decompose a fraction into a sum of fractions with the same denominator and record each decomposition with an equation and justification.

Detailed Description/Instructions:
- One way to do this is to use enVision lesson 9-4 to teach how tools can be used to show subtraction of fractions as separating a part from the same whole.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 6
Teaching Point: Today I’m going to teach you how to solve problems involving separating parts of the same whole by subtracting fractions.
Suggested Length of Time: 1 day
Standards Addressed

Priority:
- 4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.

Supporting:
- 4.NF.B.4 Understand addition and subtraction of fractions as joining/composing and separating/decomposing parts referring to the same whole.
- 4.NF.B.5 Decompose a fraction into a sum of fractions with the same denominator and record each decomposition with an equation and justification.
One way to do this is to use enVision lesson 9-5 to teach that the difference between two fractions with like denominators can be found by separating one fractional amount from the other. There is a general method for subtracting fractions with like denominators.

Bloom’s Levels: Apply
Webb’s DOK: 1

Engaging Experience 7
Teaching Point: Today I’m going to teach you how to add or subtract fractions by counting forward or backward on a number line.
Suggested Length of Time: 1 day
Standards Addressed

Priority:
- 4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.

Supporting:
- 4.NF.B.4 Understand addition and subtraction of fractions as joining/composing and separating/decomposing parts referring to the same whole.
- 4.NF.B.5 Decompose a fraction into a sum of fractions with the same denominator and record each decomposition with an equation and justification.

Detailed Description/Instructions:
One way to do this is to use enVision lesson 9-6 to teach that fraction addition and subtraction can be thought about as joining and separating segments on the number line. They can also be thought about as counting forward or counting backward on the number line.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 8
Teaching Point: Today I’m going to teach you how to add and subtract mixed numbers by using area models and equivalent fractions.
Suggested Length of Time: 1 day
Standards Addressed

Priority:
- 4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.

Supporting:
- 4.NF.B.4 Understand addition and subtraction of fractions as joining/composing and separating/decomposing parts referring to the same whole.
- 4.NF.B.5 Decompose a fraction into a sum of fractions with the same denominator and record each decomposition with an equation and justification.

Detailed Description/Instructions:
One way to do this is to use enVision lesson 9-7 to teach that adding and subtracting mixed numbers is an extension of the ideas and procedures for adding and subtracting fractions.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 9
Teaching Point: Today I’m going to teach you how to add mixed numbers with like denominators by
using equivalent fractions and properties of operations.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.

**Supporting:**
- 4.NF.B.4 Understand addition and subtraction of fractions as joining/composing and separating/decomposing parts referring to the same whole.
- 4.NF.B.5 Decompose a fraction into a sum of fractions with the same denominator and record each decomposition with an equation and justification.

**Detailed Description/Instructions:**

- **One way to do this** is to use enVision lesson 9-8 to teach two procedures for adding mixed numbers that both involve changing the calculation to a simpler equivalent calculation.

**Bloom’s Levels:** Apply

**Webb’s DOK:** 2

**Engaging Experience 10**

**Teaching Point:** Today I’m going to teach you how to subtract mixed numbers with like denominators by using equivalent fractions, properties of operations, and the relationship between addition and subtraction.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.

**Supporting:**
- 4.NF.B.4 Understand addition and subtraction of fractions as joining/composing and separating/decomposing parts referring to the same whole.
- 4.NF.B.5 Decompose a fraction into a sum of fractions with the same denominator and record each decomposition with an equation and justification.

**Detailed Description/Instructions:**

- **One way to do this** is to use enVision lesson 9-9 to teach two procedures for subtracting mixed numbers that both involve changing the calculation to a simpler equivalent calculation. These are extensions of the same procedures used for adding mixed numbers with like denominators.

**Bloom’s Levels:** Apply

**Webb’s DOK:** 2

**Engaging Experience 11**

**Engaging Scenario**

**3- ACT Math: Just Add Water**

**Teaching Point:** Today I’m going to teach you to solve a problem that involves estimating, adding fractions and mixed numbers, and comparing quantities by modeling with math.
Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.

Supporting:
- 4.NF.B.4 Understand addition and subtraction of fractions as joining/composing and separating/decomposing parts referring to the same whole.
- 4.NF.B.5 Decompose a fraction into a sum of fractions with the same denominator and record each decomposition with an equation and justification.

Detailed Description/Instructions:

☐ One way to do this is to use the 3 Act Math lesson to teach students to identify an important problem, identify the important information, develop a model that represents that situation, use the model to propose a solution, and test the appropriateness of that math model.

Bloom’s Levels: Understand, Analyze
Webb’s DOK: 3, 3

Engaging Experience 12

Teaching Point: Today I’m going to teach you how to use previously learned concepts and skills to represent and solve problems by using problem solving skills.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.

Supporting:
- 4.NF.B.4 Understand addition and subtraction of fractions as joining/composing and separating/decomposing parts referring to the same whole.
- 4.NF.B.5 Decompose a fraction into a sum of fractions with the same denominator and record each decomposition with an equation and justification.

Detailed Description/Instructions:

☐ One way to do this is to use enVision lesson 9-10 to teach that good math thinkers choose and apply math they know to show and solve problems from everyday life.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 13

Teaching Point: Today we are going to review how to add and subtract fractions and mixed numbers with like denominators and how fractions can be added and subtracted on a number line.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.

Supporting:
- 4.NF.B.4 Understand addition and subtraction of fractions as joining/composing and separating/decomposing parts referring to the same whole.
4.NF.B.5 Decompose a fraction into a sum of fractions with the same denominator and record each decomposition with an equation and justification.

Detailed Description/Instructions:
- **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 377-378.
- **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 375-376.
- **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 379-380.

**Bloom’s Levels:** Apply
**Webb’s DOK:** 2

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**Topic 10: Extend Multiplication Concepts to Fractions**

Students use their understanding of unit fractions with like denominators and multiply a fraction by a whole number.

**Essential Questions:**
- How can you describe a fraction using a unit fraction?
- How can you multiply a fraction by a whole number?

**Enduring Understandings:**
- When a whole has been separated into $b$ equal parts, the name for each part is $1/b$. Any number of the shaded parts, $a$, can be represented by the fraction $a/b$.
  - Example: Three-fifths of a rectangle is shaded. $\frac{3}{5}$ can be represented as a multiple of a unit fraction. $3 \times \frac{1}{5} = \frac{3 \times 1}{5} = \frac{3}{5}$
- There is more than one way to multiply a fraction by a whole number.
  - Example: multiply $2 \times \frac{2}{3}$

**Priority Standards:**
- 4.NF.B.8 Solve problems involving multiplication of a fraction by a whole number.

**Supporting Standards:**
- 4.NF.B.7 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.
- 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Unwrapped Concepts (Students need to know)</th>
<th>Unwrapped Skills (Students need to be able to do)</th>
<th>Bloom’s Taxonomy Levels</th>
<th>Webb's DOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.NF.B.8</td>
<td>Multiplication of fractions by a whole number</td>
<td>Solve problems</td>
<td>apply</td>
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**Unit Vocabulary:**
<table>
<thead>
<tr>
<th>Academic Cross-Curricular Words</th>
<th>Content/Domain Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>compare, compute, justify, recognize, generate, explain, illustrate, common, order</td>
<td>Unit fraction, numerator, denominator</td>
</tr>
</tbody>
</table>

**Engaging Experience 1**

**Teaching Point:** Today I’m going to introduce you to Topic 10 which will focus on the understanding of multiplying fractions by whole numbers. It also focuses on using the four operations to solve time problems.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.NF.B.8 Solve problems involving multiplication of a fraction by a whole number.

**Supporting:**
- 4.NF.B.7 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

**Detailed Description/Instructions:**
- **One way to do this** is to assess students with the enVision Topic 10 online assessment.
- **Another way to do this** is to use the enVision student workbook page 381 to introduce topic essential questions and present the enVision STEM Project. Then have students complete page 382, Review What You Know.
- **Another way to do this** is to use student vocabulary cards and the vocabulary activity (TT 28) to explore content vocabulary.

**Bloom’s Levels:** Apply

**Webb’s DOK:** 1

**Engaging Experience 2**

**Teaching Point:** Today I’m going to teach you how to understand a fraction as a multiple of a unit fraction by using a model, repeated addition, and multiplication.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.NF.B.8 Solve problems involving multiplication of a fraction by a whole number.

**Supporting:**
- 4.NF.B.7 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

**Detailed Description/Instructions:**
- **One way to do this** is to use enVision lesson 10-1 to teach that any fraction \(a/b\) can be written as \(a\) times the unit fraction \(1/b\).

**Bloom’s Levels:** Apply

**Webb’s DOK:** 1

**Engaging Experience 3**

**Teaching Point:** Today I’m going to teach you how to multiply fractions by whole numbers by using models.

**Suggested Length of Time:** 1 day

**Standards Addressed**
Engaging Experience 4

Teaching Point: Today I’m going to teach you how to multiply a fraction by a whole number by using symbols and equations.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NF.B.8 Solve problems involving multiplication of a fraction by a whole number.

Supporting:
- 4.NF.B.7 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

Detailed Description/Instructions:
- One way to do this is to use enVision lesson 10-2 to teach that models and equations can be used to represent problems and compute products of whole numbers and fractions.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 5

Teaching Point: Today I’m going to teach you how to solve problems involving time using the four operations.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NF.B.8 Solve problems involving multiplication of a fraction by a whole number.

Supporting:
- 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

Detailed Description/Instructions:
- One way to do this is to use enVision lesson 10-4 to teach the standard algorithms for adding and subtracting, as well as various strategies for multiplying and dividing, that can be used to solve time problems.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 6

Teaching Point: Today I’m going to teach you how to use previously learned concepts and skills to represent and solve problems by using problem solving skills.
Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NF.B.8 Solve problems involving multiplication of a fraction by a whole number.

Supporting:
- 4.NF.B.7 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.
- 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

Detailed Description/Instructions:
- **One way to do this** is to use enVision lesson 10-5 to teach that good math thinkers choose and apply math they know in order to show and solve problems from everyday life.

Bloom’s Levels: Apply
Webb’s DOK: 2

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Engaging Experience 7

Teaching Point: Today we are going to review how to describe a fraction using a unit fraction and how to multiply a fraction by a whole number.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.NF.B.8 Solve problems involving multiplication of a fraction by a whole number.

Supporting:
- 4.NF.B.7 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.
- 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

Detailed Description/Instructions:
- **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 409-410.
- **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 407-408.
- **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 411-412.

Bloom’s Levels: Apply
Webb’s DOK: 1

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Unit 4: Measurement and Data Part 1

Subject: Math
Grade: 4
Name of Unit: Measurement and Data Part 1
Length of Unit: 8 days

Overview of Unit:
Students will represent data visually using line plots, frequency tables, picture graphs and bar graphs. Some data involves fractions and mixed numbers.
In **Topic 11**, students will learn how to read, make, and interpret line plots that represent measurements given in halves, fourths, and eights of a unit. Students will also learn how to read, make and interpret frequency tables, bar graphs and picture graphs.

**Getting Ready for the Unit:**
Before each topic, watch the Topic Overview Videos and the Listen and Look for Lesson Videos for each lesson to learn additional important information about the content of each topic.

Send home the Home-School Connection Letters (topic specific) to give your families insight on the upcoming unit. These can be found within each topic on Pearson Realize under the Teacher Resources.

You may want to gather these “Teaching Tool” pages prior to the lessons. These can be found in the back of the Teacher’s Resource Masters - Grade 4 - Volume 2 or online (Pearson Realize) in the Teacher Resources section.

TT 12 (number lines)
TT 13 (fraction strips)

Review resources for frequency tables, picture graphs and bar graphs on Coaches Corner on Schoology.


<table>
<thead>
<tr>
<th><strong>Formative Assessment Options</strong></th>
<th><strong>Summative Assessment Options</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)</em></td>
<td><em>(Administered at the end of unit or topic to assess mastery of learning objectives.)</em></td>
</tr>
</tbody>
</table>

- Math Interview/Conference
- Quick Checks (Check marks within lesson)
- Topic Pretest
- Convince Me
- Look Back
- Lesson Assessment Practice
- Modified Topic 11 Test to address Missouri 4th grade standards (See Schoology)
- Online Topic Assessment
- Topic Assessment Practice
- Topic Performance Task
- Cumulative/ Benchmark Assessment (print or online)

**Math Review:**
- Math Anytime
  - Daily Review

BOE Approved June 20, 2019
Today’s Challenge
Fluency
- enVision 2020

- Topic Opener: Review What You Know
- Fluency Practice/Review Activity
- Vocabulary Review

Number Routines:

Number Talk: Making Landmark or Friendly Numbers: Category 1 pg 269

| 2 x 25 | 7 x 5 | 2 x 25 |
| 4 x 25 | 7 x 10 | 4 x 20 |
| 6 x 25 | 7 x 9 | 2 x 50 |
|        |        | 4 x 50 |

Reference your copy of *Number Talks: Whole Number Computation* by Sherry Parrish

Additional Personalized Practice and Application Suggestions:

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<th>On-level (O)</th>
<th>Advanced (A)</th>
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</thead>
<tbody>
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<td>Reteach to Build Understanding</td>
<td>Build Mathematical Fluency</td>
<td>Enrichment</td>
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<tr>
<td>Intervention Activity</td>
<td>Practice Buddy</td>
<td>Pick a Project</td>
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<tr>
<td>Additional Practice</td>
<td>Additional Practice</td>
<td>enVision STEM Activity</td>
</tr>
<tr>
<td>Another Look Video</td>
<td>Problem Solving</td>
<td>Math Tools Activity</td>
</tr>
<tr>
<td>Game Center</td>
<td>Reading Activity</td>
<td>Practice Buddy</td>
</tr>
</tbody>
</table>

Topic 11: Represent and Interpret Data

Students represent data visually using line plots, frequency tables, bar graphs and picture graphs. Some data involve fractions and mixed numbers.

Essential Questions:
- How can you solve problems using data on a line plot?
- How can you make a line plot?

Enduring Understandings:
- A line plot is a simple way to organize information on a number line. Questions using the line plot, such as “What is the difference between the greatest amount of rain that fell and the least amount of rain that fell?” or “How many more days did it rain 1 and 4/10 cm than 1 and 7/10 cm?” can be answered by using line plot data.
- Draw a number line showing each possible value. Place a dot at the appropriate spot above the number line for each value.
- Tallying and plotting are done in one step. It’s important to keep all of the dots the same size to compare data in each stack.

**Priority Standards:**
- 4.DS.A.3 Analyze the data in a frequency table, line plot, bar graph or picture graph.

**Supporting Standards:**
- 4.DS.A.2 Solve problems involving addition and subtraction by using information presented in a data display.
- 4.DS.A.1 Create a frequency table and/or line plot to display measurement data.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Unwrapped Concepts (Students need to know)</th>
<th>Unwrapped Skills (Students need to be able to do)</th>
<th>Bloom’s Taxonomy Levels</th>
<th>Webb's DOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.DS.A.3</td>
<td>the data in a frequency table, line plot, bar graph or picture graph</td>
<td>analyze, create</td>
<td>Analyze</td>
<td>2</td>
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</table>

**Unit Vocabulary:**

<table>
<thead>
<tr>
<th>Academic Cross-Curricular Words</th>
<th>Content/Domain Specific</th>
</tr>
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<tbody>
<tr>
<td>analyze</td>
<td>line plot</td>
</tr>
<tr>
<td></td>
<td>scale</td>
</tr>
<tr>
<td></td>
<td>frequency table</td>
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<td></td>
<td>bar graph</td>
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<td></td>
<td>picture graph</td>
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<tr>
<td></td>
<td>range</td>
</tr>
<tr>
<td></td>
<td>mode</td>
</tr>
</tbody>
</table>

**Engaging Experience 1**

**Teaching Point:** Today I am going to introduce you to Topic 11 which will focus on how to read, make, and interpret line plots, frequency tables, bar graphs, and picture graphs that represent measurements given in halves, fourths, and eights of unit.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.DS.A.3 Analyze the data in a frequency table, line plot, bar graph or picture graph.

**Supporting:**
- 4.DS.A.2 Solve problems involving addition and subtraction by using information presented in a data display.
- 4.DS.A.1 Create a frequency table and/or line plot to display measurement data.

**Detailed Description/Instructions:**

- **One way to do this** is to assess students with the enVision Topic 11 online assessment.
  *NOTE: This will only assess students on their understanding of line plots.
- **Another way to do this** is to use the enVision student workbook page 413 to introduce topic essential questions and present the enVision STEM projects. Then have students complete page 414, Review What You Know.
- **Another way to do this** is to use student vocabulary cards and the vocabulary activity (TT
Engaging Experience 2
Teaching Point: Today I’m going to teach you how to use different sets of data to read and create frequency tables.
Suggested Length of Time: 1 day
Standards Addressed
Supporting: 
- 4.DS.A.1 Create a frequency table and/or line plot to display measurement data.

Detailed Description/Instructions:
- One way to do this is to use the SMART notebook lesson Frequency Tables found in Schoology Coaches Corner.
- Another way to do this is to use the Creating Frequency Tables found in Schoology Coaches Corner worksheet to practice making frequency tables.
- Another way to do this is to use different frequency table practice websites listed below.
  - Creating Frequency Tables (IXL)
  - Creating Frequency Tables (Khan Academy)
  - Creating Frequency Tables (Khan Academy)
  - Frequency Table Games (Science Kids)
  - Creating Frequency Tables and Games (Math Games)

Bloom’s Levels: Analyze
Webb’s DOK: 2

Engaging Experience 3
Teaching Point: Today I’m going to teach you how to use different sets of data to read and create line plots.
Suggested Length of Time: 1 day
Standards Addressed
Supporting: 
- 4.DS.A.1 Create a frequency table and/or line plot to display measurement data.

Detailed Description/Instructions:
- One way to do this is to use enVision lessons 11-1 and 11-2 to teach students that a line plot organizes data on a number line and is useful for showing how data is distributed.

Bloom’s Levels: Analyze
Webb’s DOK: 2

Engaging Experience 4
Teaching Point: Today I’m going to teach you how to analyze frequency tables and line plots by exploring sets of data. (When analyzing data make sure to use the vocabulary words “range” and “mode”.)
Suggested Length of Time: 1 day
Standards Addressed
Priority:
- 4.DS.A.3 Analyze the data in a frequency table, line plot, bar graph or picture graph.

**Supporting:**
- 4.DS.A.2 Solve problems involving addition and subtraction by using information presented in a data display.

**Detailed Description/Instructions:**

- **One way to do this** is to use enVision lesson 11-3 to teach students that data from line plots can be used to solve problems.
- **Another way to do this** is to use enVision lesson 11-4 to teach students that good math thinkers use math to explain why they are right. They can talk about math that others do, too.

**Bloom’s Levels:** Analyze

**Webb’s DOK:** 2

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**Engaging Experience 5**

**Engaging Scenario**

3- ACT Math: It’s a Fine Line

**Teaching Point:** Today I’m going to teach you to solve a problem that involves analyzing and interpreting data on line plots. (When analyzing data make sure to use the vocabulary words “range” and “mode”.)

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.DS.A.3 Analyze the data in a frequency table, line plot, bar graph or picture graph.

**Supporting:**
- 4.DS.A.2 Solve problems involving addition and subtraction by using information presented in a data display.
- 4.DS.A.1 Create a frequency table and/or line plot to display measurement data.

**Detailed Description/Instructions:**

- **One way to do this** is to use the 3 Act Math lesson to teach students to identify an important problem, identify the important information, develop a model that represents that situation, use the model to propose a solution, and test the appropriateness of that math model.

**Bloom’s Levels:** Analyze

**Webb’s DOK:** 3

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**Engaging Experience 6**

**Teaching Point:** Today I’m going to teach you how to analyze picture graphs and bar graphs by exploring sets of data. (When analyzing data make sure to use the vocabulary words “range” and “mode”.)

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.DS.A.3 Analyze the data in a frequency table, line plot, bar graph or picture graph.
Detailed Description/Instructions:

- **One way to do this is** to use the Picture Graph SMART notebook found in Schoology under Coaches Corner. This notebook contains information on both Bar and Picture graphs.
- **Clicking Steps:** Coaches Corner Schoology Page - 4th Grade - Math - 4th Grade
  Envision 2020 - Unit 4 Measurement and Data Part 1 - Topic 11 - Topic 11
  Supporting Documents

- **Another way to do this** use any of the bar or picture graph practice pages found on the Coaches Corner Schoology page.
- **Another way to do this is to** use different bar graph practice websites listed below.
  - [Interpret Bar Graphs](IXL - 4th Grade)
  - [Interpret Bar Graphs](IXL - 3rd Grade)
  - [Bar Graph Activities](Soft Schools)

**Bloom’s Levels:** Analyze, Evaluate

**Webb’s DOK:** 2, 3

**Engaging Experience 7**

**Teaching Point:** Today we are going to review how to read, create and analyze data on a frequency table, line plot, picture graph and bar graph. (When analyzing data make sure to use the vocabulary words “range” and “mode”.)

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.DS.A.3 Analyze the data in a frequency table, line plot, bar graph or picture graph.

**Supporting:**
- 4.DS.A.2 Solve problems involving addition and subtraction by using information presented in a data display.
- 4.DS.A.1 Create a frequency table and/or line plot to display measurement data.

**Detailed Description/Instructions:**

**One way to do this is** to use the Modified Topic 11 Review (See Schoology)

- **Clicking Steps:** Coaches Corner Schoology Page - 4th Grade - Math - 4th Grade
  Envision 2020 - Unit 4 Measurement and Data Part 1 - Topic 11 - Topic 11
  Supporting Documents

**Another way to do this is to** use the Topic Assessment Practice in the student workbook on pages 437-438 to review reading and creating line plots.

- **Another way to do this is** to use the Topic Reteaching questions in the student workbook on pages 435-436 to review reading and creating line plots.

- **Another way to do this is** to use the Topic Performance Task in the student workbook on pages 439-440 to review reading and creating line plots.

- **Another way to do this is** to use practice pages and resources on the Coaches Corner Schoology page to review picture graphs, bar graphs, and frequency tables.

**Bloom’s Levels:** Analyze

**Webb’s DOK:** 2
Unit 5: Numbers and Computation Part 3

Subject: Math
Grade: 4
Name of Unit: Numbers and Computation Part 3
Length of Unit: 9 days

Overview of Unit:
Students learn the meaning of a decimal number by connecting to their understanding of fractions.

BOE Approved June 20, 2019
They compare decimals using models and number sense.

**In Topic 12,** students will develop an understanding of decimals and decimal notation through hundredths by connecting fractions and decimals. Students compare decimals by reasoning about their size. Students will also use their understanding of equivalent fractions to add a fraction with a denominator of 10 and a fraction with a denominator of 100.

**Getting Ready for the Unit:**
Before each topic, watch the **Topic Overview Videos** and the **Listen and Look for Lesson Videos** for each lesson to learn additional important information about the content of each topic.

Send home the **Home-School Connection Letters** (topic specific) to give your families insight on the upcoming unit. These can be found within each topic on Pearson Realize under the Teacher Resources.

You may want to gather these “**Teaching Tool**” pages prior to the lessons. These can be found in the back of the Teacher’s Resource Masters - Grade 4 - Volume 2 or online (Pearson Realize) in the Teacher Resources section.

| TT 6 (decimal place chart) |
| TT 7 (decimal models) |
| TT 8 (hundredths grids) |
| TT 15(2-color counters) |
| TT 19 (money) |

| Formative Assessment Options |
| Summative Assessment Options |
|---|---|
| (Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.) | (Administered at the end of unit or topic to assess mastery of learning objectives.) |

- Math Interview/Conference
- Quick Checks (Check marks within lesson)
- Topic Pretest
- Convince Me
- Look Back
- Lesson Assessment Practice
- Online Topic Assessment
- Topic Assessment Practice
- Topic Performance Task
- Cumulative/ Benchmark Assessment (print or online)

**Math Review:**
- Math Anytime
  - Daily Review
  - Today’s Challenge
  - Fluency
    - enVision 2020
- Topic Opener: Review What You Know
- Fluency Practice/Review Activity
Vocabulary Review

Number Routines:

Number Talk: Partial Products: Category 1 pg 273

The following number talks are ordered by section to help students use relationships from the sequence to solve the final 1 x 1-digit and 1 x 2-digit problems.

<p>| | | |</p>
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Reference your copy of Number Talks: Whole Number Computation by Sherry Parrish

Additional Personalized Practice and Application Suggestions:

<table>
<thead>
<tr>
<th>Intervention (I)</th>
<th>On-level (O)</th>
<th>Advanced (A)</th>
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<td>● Problem Solving Reading Activity</td>
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</tr>
<tr>
<td>● Game Center</td>
<td>● enVision STEM Activity</td>
<td>● Practice Buddy</td>
</tr>
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</table>

Topic 12: Understand and Compare Decimals

Students learn the meaning of a decimal number by connecting to their understanding of fractions. They compare decimals using models and number sense.

Essential Questions:
- How can you write a fraction as a decimal?
- How can you locate points on a number line?
- How do you compare decimals?

Enduring Understandings:
- A fraction can be written as a decimal, easily, when the denominator of the fraction is 10 or 100.
  - Example: 5/10 = 0.5 and 45/100 = 0.45
- A number line is divided into equal parts. You can locate a decimal and/or fraction on or between two tick marks. 0.25 is located between the tick marks of 0.2 and 0.3.
  - Example:
● Decimals can be compared using hundredths grids, place value blocks or charts and by comparing each place value starting from the left.
  ○ Example: 0.55>0.50

Priority Standards:
4.NF.C.11 Read, write and identify decimals to the hundredths place using number names, base ten numerals and expanded form.
4.NF.C.12 Compare two decimals to the hundredths place using the symbols >, =, or < and justify the solution.

Supporting Standards:
4.NF.A.2 Recognize and generate equivalent fractions.
4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.
4.NF.C.9 Use decimal notation for fractions with denominators of 10 or 100.
4.NF.C.10 Understand that fractions and decimals are equivalent representations of the same quantity.
4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

<table>
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<th>Standard</th>
<th>Unwrapped Concepts (Students need to know)</th>
<th>Unwrapped Skills (Students need to be able to do)</th>
<th>Bloom’s Taxonomy Levels</th>
<th>Webb's DOK</th>
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<td>4.NF.C.11</td>
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<td>Understand</td>
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<td>Understand</td>
<td>2</td>
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Unit Vocabulary:

<table>
<thead>
<tr>
<th>Academic Cross-Curricular Words</th>
<th>Content/Domain Specific</th>
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<td>tenth</td>
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<tr>
<td>justify</td>
<td>hundredth</td>
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<td>decimal</td>
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<td>generate</td>
<td>decimal point</td>
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<td>explain</td>
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<td>illustrate</td>
<td>numerators</td>
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<tr>
<td>common</td>
<td>place value</td>
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<td>order</td>
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Engaging Experience 1
BOE Approved June 20, 2019
**Teaching Point:** Today I’m going to introduce you to Topic 12 which will focus on developing an understanding of decimals and decimal notation through hundredths by connecting fractions and decimals. Students compare decimals by reasoning about their size. Students will also use their understanding of equivalent fractions to add a fraction with a denominator of 10 and a fraction with a denominator of 100.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.NF.C.11 Read, write and identify decimals to the hundredths place using number names, base ten numerals and expanded form.
- 4.NF.C.12 Compare two decimals to the hundredths place using the symbols >, =, or < and justify the solution.

**Supporting:**
- 4.NF.A.2 Recognize and generate equivalent fractions.
- 4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.
- 4.NF.C.9 Use decimal notation for fractions with denominators of 10 or 100.
- 4.NF.C.10 Understand that fractions and decimals are equivalent representations of the same quantity.
- 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

**Detailed Description/Instructions:**
- One way to do this is to assess students with the enVision Topic 12 online assessment.
- Another way to do this is to use the enVision student workbook page 441 to introduce topic essential questions and present the enVision STEM projects. Then have students complete page 442, Review What You Know.
- Another way to do this is to use student vocabulary cards and the vocabulary activity (TT 27) to explore content vocabulary.

**Bloom’s Levels:** Understand

**Webb’s DOK:** 1

**Engaging Experience 2**

**Teaching Point:** Today I’m going to teach you how relate fractions and decimals with denominators of 10 and 100 by using decimal models.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.NF.C.11 Read, write and identify decimals to the hundredths place using number names, base ten numerals and expanded form.

**Supporting:**
- 4.NF.C.9 Use decimal notation for fractions with denominators of 10 or 100.
- 4.NF.C.10 Understand that fractions and decimals are equivalent representations of the same quantity.

**Detailed Description/Instructions:**
- One way to do this is to use enVision lesson 12-1 to teach students a decimal is another way to represent a fraction.
Engaging Experience 3
Teaching Point: Today I’m going to teach you how to locate and describe fractions and decimals on number lines by using number lines.
Suggested Length of Time: 1 day
Standards Addressed
- **Priority:**
  - 4.NF.C.11 Read, write and identify decimals to the hundredths place using number names, base ten numerals and expanded form.
- **Supporting:**
  - 4.NF.C.9 Use decimal notation for fractions with denominators of 10 or 100.
  - 4.NF.C.10 Understand that fractions and decimals are equivalent representations of the same quantity.

Detailed Description/Instructions:
- **One way to do this** is to use enVision lesson 12-2 to teach students that points on a number line can represent fractions and decimals. A fraction and a decimal tell the distance a point is from 0 on the number line.

Bloom’s Levels: Understand
Webb’s DOK: 2

Engaging Experience 4
Teaching Point: Today I’m going to teach you how to compare decimals by reasoning about their size.
Suggested Length of Time: 1 day
Standards Addressed
- **Priority:**
  - 4.NF.C.11 Read, write and identify decimals to the hundredths place using number names, base ten numerals and expanded form.
  - 4.NF.C.12 Compare two decimals to the hundredths place using the symbols >, =, or < and justify the solution.
- **Supporting:**
  - 4.NF.C.9 Use decimal notation for fractions with denominators of 10 or 100.
  - 4.NF.C.10 Understand that fractions and decimals are equivalent representations of the same quantity.
  - 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

Detailed Description/Instructions:
- **One way to do this** is to use enVision lesson 12-3 to teach students place value can be used to compare decimals.

Bloom’s Levels: Understand
Webb’s DOK: 2

Engaging Experience 5
Teaching Point: Today I’m going to teach you how to add fractions with denominators of 10 and 100 by using equivalent fractions.
Suggested Length of Time: 1 day
Standards Addressed

Priority:
- 4.NF.C.11 Read, write and identify decimals to the hundredths place using number names, base ten numerals and expanded form.

Supporting:
- 4.NF.A.2 Recognize and generate equivalent fractions.
- 4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.

Detailed Description/Instructions:

□ One way to do this is to use enVision lesson 12-4 to teach fractions with denominators of 10 can be written as equivalent fractions with denominators of 100. Fractions with like denominators can be added.

Bloom’s Levels: Understand
Webb’s DOK: 1

Engaging Experience 6
Teaching Point: Today I’m going to teach you how to solve word problems involving money by using fractions and/or decimals.
Suggested Length of Time: 1 day
Standards Addressed

Priority:
- 4.NF.C.11 Read, write and identify decimals to the hundredths place using number names, base ten numerals and expanded form.

Supporting:
- 4.NF.C.9 Use decimal notation for fractions with denominators of 10 or 100.
- 4.NF.C.10 Understand that fractions and decimals are equivalent representations of the same quantity.
- 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

Detailed Description/Instructions:

□ One way to do this is to use enVision lesson 12-5 to teach fractions and decimals can be used to represent amounts of money. Pictorial models and equations can represent problems involving money.

Bloom’s Levels: Understand
Webb’s DOK: 2

Engaging Experience 7
Teaching Point: Today I’m going to teach you how to solve problems by using the structure of the place value system for decimals.
Suggested Length of Time: 1 day
Standards Addressed

Priority:
- 4.NF.C.11 Read, write and identify decimals to the hundredths place using number names, base ten numerals and expanded form.
● 4.NF.C.12 Compare two decimals to the hundredths place using the symbols >, =, or < and justify the solution.

Supporting:
● 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

Detailed Description/Instructions:
□ One way to do this is to use enVision lesson 12-6 to teach students that good math thinkers look for relationships in math to help solve problems.

Bloom’s Levels: Analyze
Webb’s DOK: 2

Engaging Experience 8

Teaching Point: Today we are going to review how to write a fraction as a decimal, how to locate points on a number line and how to compare decimals.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
● 4.NF.C.11 Read, write and identify decimals to the hundredths place using number names, base ten numerals and expanded form.
● 4.NF.C.12 Compare two decimals to the hundredths place using the symbols >, =, or < and justify the solution.

Supporting:
● 4.NF.A.2 Recognize and generate equivalent fractions.
● 4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.
● 4.NF.C.9 Use decimal notation for fractions with denominators of 10 or 100.
● 4.NF.C.10 Understand that fractions and decimals are equivalent representations of the same quantity.
● 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

Detailed Description/Instructions:
□ One way to do this is to use the Topic Assessment Practice in the student workbook on pages 473-474.

□ Another way to do this is to use the Topic Reteaching questions in the student workbook on pages 471-472.

□ Another way to do this is to use the Topic Performance Task in the student workbook on pages 475-476.

Bloom’s Levels: Understand
Webb’s DOK: 2
Subject: Math
Grade: 4
Name of Unit: Measurement and Data Part 2
Length of Unit: 10-12 days

Overview of Unit:
Students will make measurement conversions within the same measurement system.

In Topic 13, students will convert measurements from larger to smaller units within one system of measurement, customary or metric. Students will also solve real-world problems involving distance or area and perimeter.

Getting Ready for the Unit:
Before each topic, watch the Topic Overview Videos and the Listen and Look for Lesson Videos for each lesson to learn additional important information about the content of each topic.

Send home the Home-School Connection Letters (topic specific) to give your families insight on the upcoming unit. These can be found within each topic on Pearson Realize under the Teacher Resources.

You may want to gather these “Teaching Tool” pages prior to the lessons. These can be found in the back of the Teacher’s Resource Masters - Grade 4 - Volume 2 or online (Pearson Realize) in the Teacher Resources section.

TT 17 (Centimeter ruler and meter stick)
TT 9 (Centimeter grid paper)

<table>
<thead>
<tr>
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<th>Summative Assessment Options (Administered at the end of unit or topic to assess mastery of learning objectives.)</th>
</tr>
</thead>
</table>
| ● Math Interview/Conference  
● Quick Checks (Check marks within lesson)  
● Topic Pretest  
● Convince Me  
● Look Back  
● Lesson Assessment Practice | ● Online Topic Assessment  
● Topic Assessment Practice  
● Topic Performance Task  
● Cumulative/ Benchmark Assessment (print or online) |

Math Review:
● Math Anytime  
  ○ Daily Review  
  ○ Today’s Challenge  
  ○ Fluency  
    ■ enVision 2020  
● Topic Opener: Review What You Know  
● Fluency Practice/Review Activity
Vocabulary Review

Number Routines:

### Number Talk: Doubling and Halving: Category 1 pg 278

The following number talks investigate doubling and halving with basic facts.

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Reference your copy of *Number Talks: Whole Number Computation* by Sherry Parrish

### Additional Personalized Practice and Application Suggestions:

<table>
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<tr>
<th>Intervention (I)</th>
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<td></td>
<td>● Game Center</td>
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### Topic 13: Measurement: Find Equivalence in Units of Measure

Students make measurement conversions within the same measurement system.

#### Essential Questions:

- How can you convert from one unit to another?
- How can you be precise when solving math problems?

#### Enduring Understandings:

- To convert from a larger unit to a smaller unit, multiply the number of larger units by the conversion factor, that is, the number of smaller units in each larger unit.
  - Example: Kendra is 4 feet tall. How many inches tall is Kendra?
    - 1 foot = 12 inches
    - 4 feet = 4 x 12 = 48 inches

- Precision involves using clear definitions, stating the meaning of symbols, specifying units of measure and calculating accurately and efficiently.
  - Example: To use precision when determining the area of a rectangle, state the formula, write/use an equation and correctly label the answer.
    - A rectangle has a length of 6cm and a width of 4cm. Find the area.
    - A = l x w
    - = 6cm x 4cm
Priority Standards:
- 4.GM.C.6 Know relative sizes of measurement units within one system of units.
  a) Convert measurements in a larger unit in terms of a smaller unit.
- 4.GM.C.8 Apply the area and perimeter formulas for rectangles to solve problems.

Supporting Standards:
- 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

<table>
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<tr>
<th>Standard</th>
<th>Unwrapped Concepts (Students need to know)</th>
<th>Unwrapped Skills (Students need to be able to do)</th>
<th>Bloom's Taxonomy Levels</th>
<th>Webb's DOK</th>
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<td>relative sizes of measurement units within one system of units, measurements in a larger unit in terms of a smaller unit</td>
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<tr>
<td>4.GM.C.8</td>
<td>the area and perimeter formulas for rectangles, problems</td>
<td>apply, solve</td>
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Unit Vocabulary:

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<td>area</td>
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<td>formula</td>
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</tbody>
</table>

Engaging Experience 1
**Teaching Point:** Today I’m going to introduce you to Topic 13 which will focus on converting measurements from larger to smaller units within one system of measurement, customary or metric. Students will also solve real-world problems involving distance or area and perimeter.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.GM.C.6 Know relative sizes of measurement units within one system of units.
  - a) Convert measurements in a larger unit in terms of a smaller unit.
- 4.GM.C.8 Apply the area and perimeter formulas for rectangles to solve problems.

**Supporting:**
- 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

**Detailed Description/Instructions:**
- **One way to do this** is to assess students with the enVision Topic 13 online assessment
- **Another way to do this** is to use the enVision student workbook page 477 to introduce topic essential questions and present the enVision STEM projects. Then have students complete page 478, Review What You Know.
- **Another way to do this** is to use student vocabulary cards and the vocabulary activity (TT 28) to explore content vocabulary.

**Bloom’s Levels:** Apply  
**Webb’s DOK:** 2

---

**Engaging Experience 2**

**Teaching Point:** Today I’m going to teach you how to recognize the relative size of customary units of length and convert from a larger unit to a smaller unit by multiplying by the conversion factor.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.GM.C.6 Know relative sizes of measurement units within one system of units.
  - a) Convert measurements in a larger unit in terms of a smaller unit.

**Supporting:**
- 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

**Detailed Description/Instructions:**
- **One way to do this** is to use enVision lesson 13-1 to teach how to convert from a larger unit of length to a smaller unit of length, multiply the number of larger units by the conversion factor, that is, the number of smaller units in each larger unit.

**Bloom’s Levels:** Apply  
**Webb’s DOK:** 1

---

**Engaging Experience 3**

**Teaching Point:** Today I’m going to teach you how to recognize the relative size of customary units of capacity and convert from a larger unit to a smaller unit by multiplying by the conversion factor.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.GM.C.6 Know relative sizes of measurement units within one system of units.
a) Convert measurements in a larger unit in terms of a smaller unit.

**Supporting:**
- 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

**Detailed Description/Instructions:**
- One way to do this is to use enVision lesson 13-2 to teach how to convert from a larger unit of capacity to a smaller unit of capacity, multiply the number of larger units by the conversion factor, that is, the number of smaller units in each larger unit.

**Bloom’s Levels:** Apply

**Webb’s DOK:** 1

**Engaging Experience 4**

**Teaching Point:** Today I’m going to teach you how to recognize the relative size of customary units of weight and convert from a larger unit to a smaller unit by multiplying by the conversion factor.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.GM.C.6 Know relative sizes of measurement units within one system of units.
  - a) Convert measurements in a larger unit in terms of a smaller unit.

**Supporting:**
- 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

**Detailed Description/Instructions:**
- One way to do this is to use enVision lesson 13-3 to teach how to convert from a larger unit of weight to a smaller unit of weight, multiply the number of larger units by the conversion factor, that is, the number of smaller units in each larger unit.

**Bloom’s Levels:** Apply

**Webb’s DOK:** 1

**Engaging Experience 5**

**Engaging Scenario**

**3- ACT Math: A Pint’s a Pound**

**Teaching Point:** Today I’m going to teach you to solve a problem that involves estimating and computing with units of weight and capacity by modeling with math.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.GM.C.6 Know relative sizes of measurement units within one system of units.
  - a) Convert measurements in a larger unit in terms of a smaller unit.
- 4.GM.C.8 Apply the area and perimeter formulas for rectangles to solve problems.

**Supporting:**
- 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

**Detailed Description/Instructions:**
- One way to do this is to use the 3 Act Math lesson to teach students to identify an important
problem, identify the important information, develop a model that represents that situation, use the model to propose a solution, and test the appropriateness of that math model.

**Bloom’s Levels:** Apply  
**Webb’s DOK:** 3

**Engaging Experience 6**  
**Teaching Point:** Today I’m going to teach you how to recognize the relative size of metric units of length and convert from a larger unit to a smaller unit by multiplying by the conversion factor.

**Suggested Length of Time:** 1 day  
**Standards Addressed**

**Priority:**
- 4.GM.C.6 Know relative sizes of measurement units within one system of units.
  - a) Convert measurements in a larger unit in terms of a smaller unit.

**Supporting:**
- 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

**Detailed Description/Instructions:**
- **One way to do this** is to use enVision lesson 13-4 to teach how to convert from a larger unit of length to a smaller unit of length, multiply the number of larger units by the conversion factor, that is, the number of smaller units in each larger unit.

**Bloom’s Levels:** Apply  
**Webb’s DOK:** 1

**Engaging Experience 7**  
**Teaching Point:** Today I’m going to teach you how to recognize the relative size of metric units of capacity and mass and convert from a larger unit to a smaller unit by multiplying by the conversion factor.

**Suggested Length of Time:** 1 day  
**Standards Addressed**

**Priority:**
- 4.GM.C.6 Know relative sizes of measurement units within one system of units.
  - a) Convert measurements in a larger unit in terms of a smaller unit.

**Supporting:**
- 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

**Detailed Description/Instructions:**
- **One way to do this** is to use enVision lesson 13-5 to teach how to convert from a larger unit of capacity or mass to a smaller unit of capacity, multiply the number of larger units by the conversion factor, that is, the number of smaller units in each larger unit.

**Bloom’s Levels:** Apply  
**Webb’s DOK:** 1

**Engaging Experience 8**  
**Teaching Point:** Today I’m going to teach you how to find the unknown length or width of a rectangle using the known area or perimeter by applying the formula for the perimeter of a rectangle or the formula for the area of a rectangle.

**Suggested Length of Time:** 2-3 days
Standards Addressed

Priority:

- 4.GM.C.8 Apply the area and perimeter formulas for rectangles to solve problems.

Supporting:

- 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

Detailed Description/Instructions:

- One way to do this is to use enVision lesson 13-6 to teach students that some problems can be solved by applying the formula for the perimeter of a rectangle or the formula for the area of a rectangle.

Bloom’s Levels: Apply

Webb’s DOK: 2

Engaging Experience 9 (optional)

Teaching Point: Today I’m going to teach you how to be precise when solving measurement problems by correctly using the information given and calculating accurately.

Suggested Length of Time: optional 1 day

Standards Addressed

Priority:

- 4.GM.C.6 Know relative sizes of measurement units within one system of units.
  a) Convert measurements in a larger unit in terms of a smaller unit.
- 4.GM.C.8 Apply the area and perimeter formulas for rectangles to solve problems.

Supporting:

- 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

Detailed Description/Instructions:

- One way to do this is to use enVision lesson 13-7 to teach students that good math thinkers are careful about what they write and say, so their ideas about math are clear.

Bloom’s Levels: Apply

Webb’s DOK: 2

Engaging Experience 10

Teaching Point: Today we are going to review how to convert from one unit to another and how you can be precise when solving math problems.

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- 4.GM.C.6 Know relative sizes of measurement units within one system of units.
  a) Convert measurements in a larger unit in terms of a smaller unit.
- 4.GM.C.8 Apply the area and perimeter formulas for rectangles to solve problems.

Supporting:

- 4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.

Detailed Description/Instructions:

- One way to do this is to use the Topic Assessment Practice in the student workbook on pages 513-514.
Another way to do this is to use the Topic Reteaching questions in the student workbook on pages 511-512.

Another way to do this is to use the Topic Performance Task in the student workbook on pages 515-516.

Bloom’s Levels: Apply
Webb’s DOK: 2
Unit 7: Operations and Algebra Part 2

Subject: Math
Grade: 4
Name of Unit: Operations and Algebra Part 2
Length of Unit: 6 days

Overview of Unit:
Students will generate and analyze patterns that grow or repeat in predictable ways.

In Topic 14, students will generate and analyze number and shape patterns.

Getting Ready for the Unit:
Before each topic, watch the Topic Overview Videos and the Listen and Look for Lesson Videos for each lesson to learn additional important information about the content of each topic.

Send home the Home-School Connection Letters (topic specific) to give your families insight on the upcoming unit. These can be found within each topic on Pearson Realize under the Teacher Resources.

You may want to gather these “Teaching Tool” pages prior to the lessons. These can be found in the back of the Teacher’s Resource Masters - Grade 4 - Volume 2 or online (Pearson Realize) in the Teacher Resources section.

TT 20 (Pattern Blocks)
TT 9 (Centimeter grid paper)

<table>
<thead>
<tr>
<th>Formative Assessment Options (Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)</th>
<th>Summative Assessment Options (Administered at the end of unit or topic to assess mastery of learning objectives.)</th>
</tr>
</thead>
</table>
| ● Math Interview/Conference  
 ● Quick Checks (Check marks within lesson)  
 ● Topic Pretest  
 ● Convince Me  
 ● Look Back  
 ● Lesson Assessment Practice | ● Online Topic Assessment  
 ● Topic Assessment Practice  
 ● Topic Performance Task  
 ● Cumulative/ Benchmark Assessment (print or online) |

Math Review:

● Math Anytime
  ○ Daily Review  
  ○ Today’s Challenge  
  ○ Fluency
    ■ enVision 2020
  
● Topic Opener: Review What You Know
**Number Routines:**

**Number Talk:** Breaking Factors into Smaller Factors (Category 1)... page 283

**Category 1: Breaking factors into smaller factors**
The following number talks consist of problems that focus on breaking basic facts into smaller factors.

<table>
<thead>
<tr>
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<td>2 x 2 x 3 x 4</td>
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<td>12 x 4</td>
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</tbody>
</table>

Reference your copy of *Number Talks: Whole Number Computation* by Sherry Parrish

**Additional Personalized Practice and Application Suggestions:**

<table>
<thead>
<tr>
<th>Intervention (I)</th>
<th>On-level (O)</th>
<th>Advanced (A)</th>
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<tr>
<td>● Reteach to Build Understanding</td>
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<td>● Intervention Activity</td>
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<td>● Additional Practice</td>
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<td>● Game Center</td>
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<td>● Build Mathematical Fluency</td>
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<td>● Practice Buddy</td>
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<td>● Additional Practice</td>
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<td>● Problem Solving Reading Activity</td>
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<td>● Game Center</td>
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<td>● Enrichment</td>
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<td>● Pick a Project</td>
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<td>● enVision STEM Activity</td>
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<td>● Practice Buddy</td>
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<td>● Game Center</td>
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**Topic 14: Algebra: Generate and Analyze Patterns**
Students generate and analyze patterns that grow and repeat in predictable ways.

**Essential Questions:**
- How can you use a rule to continue a pattern?
- How can you use a table to extend a pattern?
- How can you use a repeating pattern to predict a shape?

**Enduring Understandings:**
- Quantities have a mathematical relationship; the value of a known quantity can be found if the value of the other quantity is known. Given a rule, you can generate and extend a pattern.
  - Example: Using the rule “add 25”, and starting at the number 42, generate the next 3 numbers in the pattern. 42, 67, 92, 117
- Add, subtract, multiply or divide to extend a pattern within a table.
  - Example: Use the rule “multiply by 3” to find the number of wheels on a given number of tricycles. To find how many wheels are on 4 tricycles, multiply 4x3.
In a pattern of “triangle, circle, triangle, triangle”, to predict the 75th shape, divide 75 by 4 = 18 R3. The quotient tells us that the pattern is repeated 18 times and the remainder tells us that the third shape in the pattern is the 75th shape, a triangle.

Priority Standards:
- 4.RA.C.7 Use words or mathematical symbols to express a rule for a given pattern.

Supporting Standards:
- 4.RA.C.6 Generate a number pattern that follows a given rule.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Unwrapped Concepts (Students need to know)</th>
<th>Unwrapped Skills (Students need to be able to do)</th>
<th>Bloom’s Taxonomy Levels</th>
<th>Webb's DOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.RA.C.7</td>
<td>words or mathematical symbols; identify a rule for a given pattern</td>
<td>identify, express, pattern</td>
<td>analyze</td>
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Unit Vocabulary:

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<th>Content/Domain Specific</th>
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</thead>
<tbody>
<tr>
<td>use</td>
<td>repeating pattern</td>
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<tr>
<td>express</td>
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<tr>
<td>rule</td>
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</table>

Engaging Experience 1

Teaching Point: Today I’m going to introduce you to Topic 14 which will focus on generating and analyzing number and shape patterns.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.RA.C.7 Use words or mathematical symbols to express a rule for a given pattern.

Supporting:
- 4.RA.C.6 Generate a number pattern that follows a given rule.

Detailed Description/Instructions:

☐ One way to do this is to assess students with the enVision Topic 14 online assessment
☐ Another way to do this is to use the enVision student workbook page 517 to introduce topic essential questions and present the enVision STEM projects. Then have students complete page 518, Review What You Know.
☐ Another way to do this is to use student vocabulary cards and the vocabulary activity (TT 25) to explore content vocabulary.

Bloom’s Levels: Analyze
Webb’s DOK: 1

Engaging Experience 2

Teaching Point: Today I’m going to teach you how to create or extend a number sequence based on a rule by looking for features of a pattern in a sequence. Also, how to identify features of the pattern in the sequence that are not described by the rule.

Suggested Length of Time: 1 day
Standards Addressed

Supporting:
  ● 4.RA.C.6 Generate a number pattern that follows a given rule.

Detailed Description/Instructions:
  □ One way to do this is to use enVision lesson 14-1 to teach students that rules can be used to create or extend number sequences that form a pattern. Those patterns sometimes have features not described by the rule.

Bloom’s Levels: Analyze
Webb’s DOK: 1, 2

Engaging Experience 3
Teaching Point: Today I’m going to teach you how to extend a number pattern and solve a problem by using a rule. Also, how to identify features of the pattern.
Suggested Length of Time: 1 day
Standards Addressed
  Priority:
    ● 4.RA.C.7 Use words or mathematical symbols to express a rule for a given pattern.
  Supporting:
    ● 4.RA.C.6 Generate a number pattern that follows a given rule.

Detailed Description/Instructions:
  □ One way to do this is to use enVision lesson 14-2 to teach students that rules can be used to create or extend patterns in tables. Patterns sometimes have features not described by the rule.

Bloom’s Levels: Analyze
Webb’s DOK: 1, 2

Engaging Experience 4 (optional)
Teaching Point: Today I’m going to teach you how to follow a given rule and predict a shape in the pattern by generating shape patterns.
Suggested Length of Time: optional 1 day
Standards Addressed
  ● No 4th grade standards are addressed

Detailed Description/Instructions:
  □ One way to do this is to use enVision lesson 14-3 to teach students it is possible to predict a shape in a repeating pattern of shapes.

Bloom’s Levels: Understand
Webb’s DOK: 2

Engaging Experience 5
Teaching Point: Today I’m going to teach you how to solve problems by using patterns.
Suggested Length of Time: 1 day
Standards Addressed
  Priority:
    ● 4.RA.C.7 Use words or mathematical symbols to express a rule for a given pattern.
  Supporting:
    ● 4.RA.C.6 Generate a number pattern that follows a given rule.
Detailed Description/Instructions:

- **One way to do this** is to use enVision lesson 14-4 to teach students that good math thinkers look for relationships in math to help solve problems.

**Bloom’s Levels:** Analyze
**Webb’s DOK:** 2

**Engaging Experience 6**

**Teaching Point:** Today we are going to review how to use a rule to continue a pattern and use a table to extend a pattern.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.RA.C.7 Use words or mathematical symbols to express a rule for a given pattern.

**Supporting:**
- 4.RA.C.6 Generate a number pattern that follows a given rule.

**Detailed Description/Instructions:**

- **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 541-542.
- **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 539-540.
- **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 543-544.

**Bloom’s Levels:** Analyze
**Webb’s DOK:** 2
Unit 8: Measurement and Data Part 3

Subject: Math  
Grade: 4  
Name of Unit: Measurement and Data Part 3  
Length of Unit: 9 days

Overview of Unit:  
Students will develop an understanding of angles. They use unit angles to measure and draw angles and to add and subtract angle measures.

In Topic 15, students will develop an understanding of angle concepts including angle measurements.

Getting Ready for the Unit:  
Before each topic, watch the Topic Overview Videos and the Listen and Look for Lesson Videos for each lesson to learn additional important information about the content of each topic.

Send home the Home-School Connection Letters (topic specific) to give your families insight on the upcoming unit. These can be found within each topic on Pearson Realize under the Teacher Resources.

You may want to gather these “Teaching Tool” pages prior to the lessons. These can be found in the back of the Teacher’s Resource Masters - Grade 4 - Volume 2 or online (Pearson Realize) in the Teacher Resources section.

TT 9 (centimeter grid paper)  
TT 13 (fraction strips)  
TT 17 (centimeter ruler and meter stick)  
TT 18 (inch ruler and yardstick)  
TT 20 (pattern blocks)  
TT 21 (clock face)  
TT 20 (pattern blocks)  
TT 22 (protractors)

Formative Assessment Options  
(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)

- Math Interview/Conference  
- Quick Checks (Check marks within lesson)  
- Topic Pretest  
- Convince Me  
- Look Back  
- Lesson Assessment Practice

Summative Assessment Options  
(Administered at the end of unit or topic to assess mastery of learning objectives.)

- Online Topic Assessment  
- Topic Assessment Practice  
- Topic Performance Task  
- Cumulative/Benchmark Assessment (print or online)
Math Review:
- Math Anytime
  - Daily Review
  - Today’s Challenge
  - Fluency
    - enVision 2020
- Topic Opener: Review What You Know
- Fluency Practice/Review Activity
- Vocabulary Review

Number Routines:

<table>
<thead>
<tr>
<th>Number Talk: Division: Partial Quotients (Category 1)... p. 290</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following number talks consist of computation problems that help students to build on multiples of ten and find easy multiples of the divisor within the dividend. The following problems focus on double-digit numbers with single digit divisor.</td>
</tr>
<tr>
<td>40 ÷ 4</td>
</tr>
<tr>
<td>16 ÷ 4</td>
</tr>
<tr>
<td>56 ÷ 4</td>
</tr>
<tr>
<td>Reference your copy of <em>Number Talks: Whole Number Computation</em> by Sherry Parrish</td>
</tr>
</tbody>
</table>

Additional Personalized Practice and Application Suggestions:

<table>
<thead>
<tr>
<th>Intervention (I)</th>
<th>On-level (O)</th>
<th>Advanced (A)</th>
</tr>
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<tbody>
<tr>
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<td>Intervention Activity</td>
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<tr>
<td>Additional Practice</td>
<td>Additional Practice</td>
<td>enVision STEM Activity</td>
</tr>
<tr>
<td>Another Look Video</td>
<td>Problem Solving Reading Activity</td>
<td>Math Tools Activity</td>
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<td></td>
<td>Game Center</td>
<td></td>
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</tbody>
</table>

Topic 15: Geometric Measurement: Understand concepts of Angles and Angle Measurement

Students develop an understanding of angles. They use unit angles to measure and draw angles, and to add and subtract angle measures.

Essential Questions:
- What are some common geometric terms?
- How can you measure angles?

Enduring Understandings:
• Common geometric terms related to lines include: point, line, line segment, and ray.
• Common geometric terms related to angles include: right angle, acute angle, obtuse angle and straight angle.
• Common geometric terms related to measuring angles include: degrees, unit angle, angle measure, protractor and vertex.
• Angles are measured in units called degrees, using a protractor or other known angles. 1 degree=1/360th of a circle.
• The measures of non-overlapping angles that share a common ray can be added or subtracted.
  ○ Example: <ABC measures 72 degrees; <DBC measures 27 degrees; 72 degrees + 27 degrees= 99 degrees.

Priority Standards:
• 4.GM.B.5 Draw and measure angles in whole-number degrees using a protractor.

Supporting Standards:
• 4.GM.A.1 Draw and identify points, lines, line segments, rays, angles, perpendicular lines and parallel lines.
• 4.GM.B.4 Identify and estimate angles and their measure.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Unwrapped Concepts (Students need to know)</th>
<th>Unwrapped Skills (Students need to be able to do)</th>
<th>Bloom’s Taxonomy Levels</th>
<th>Webb's DOK</th>
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<tbody>
<tr>
<td>4.GM.B.5</td>
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<td>draw, measure, using</td>
<td>Apply</td>
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</table>

Unit Vocabulary:

<table>
<thead>
<tr>
<th>Academic Cross-Curricular Words</th>
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<tbody>
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<td>compare</td>
<td>point</td>
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<tr>
<td>justify</td>
<td>line</td>
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<tr>
<td>recognize</td>
<td>line segment</td>
</tr>
<tr>
<td>generate</td>
<td>ray</td>
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<tr>
<td>explain</td>
<td>right angle</td>
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<tr>
<td>illustrate</td>
<td>acute angle</td>
</tr>
<tr>
<td>common order</td>
<td>obtuse angle</td>
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<tr>
<td></td>
<td>straight angle degree</td>
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<td></td>
<td>unit angle</td>
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<tr>
<td></td>
<td>angle measure</td>
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<tr>
<td></td>
<td>protractor</td>
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<td></td>
<td>vertex</td>
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</tbody>
</table>

Engaging Experience 1
Teaching Point: Today I’m going to introduce you to Topic 15 which focuses on developing an understanding of angle concepts including angle measurements.
Suggested Length of Time: 1 day
Standards Addressed

Priority:
- 4.GM.B.5 Draw and measure angles in whole-number degrees using a protractor.

Supporting:
- 4.GM.A.1 Draw and identify points, lines, line segments, rays, angles, perpendicular lines and parallel lines.
- 4.GM.B.4 Identify and estimate angles and their measure.

Detailed Description/Instructions:
- One way to do this is to assess students with the enVision Topic 15 online assessment
- Another way to do this is to use the enVision student workbook page 545 to introduce topic essential questions and present the enVision STEM projects. Then have students complete page 546, Review What You Know.
- Another way to do this is to use student vocabulary cards and the vocabulary activity (TT 26) to explore content vocabulary.

Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 2
Teaching Point: Today I’m going to teach you how to recognize and draw lines, rays, and angles with different measures by analyzing attributes.

Suggested Length of Time: 1 day
Standards Addressed

Supporting:
- 4.GM.A.1 Draw and identify points, lines, line segments, rays, angles, perpendicular lines and parallel lines.

Detailed Description/Instructions:
- One way to do this is to use enVision lesson 15-1 to teach students that line segments and rays are sets of points that describe parts of lines and angles. Angles are classified by their measure.

Bloom’s Levels: Remember, Apply
Webb’s DOK: 1, 1

Engaging Experience 3
Teaching Point: Today I’m going to teach you how to find the measure of an angle that turns through a fraction of a circle by comparing a unit to a whole.

Suggested Length of Time: 1 day
Standards Addressed

Priority:
- 4.GM.B.5 Draw and measure angles in whole-number degrees using a protractor.

Supporting:
- 4.GM.B.4 Identify and estimate angles and their measure.

Detailed Description/Instructions:
- One way to do this is to use enVision lesson 15-2 to teach students that the measure of an angle depends upon the fraction of a circle that the angle turns through.

Bloom’s Levels: Apply
Webb’s DOK: 2
Engaging Experience 4
Teaching Point: Today I’m going to teach you how to use known angle measures to measure unknown angles by using unit angles.
Suggested Length of Time: 1 day
Standards Addressed
  Priority:
    ● 4.GM.B.5 Draw and measure angles in whole-number degrees using a protractor.
  Supporting:
    ● 4.GM.B.4 Identify and estimate angles and their measure.
Detailed Description/Instructions:
  □ One way to do this is to use enVision lesson 15-3 to teach students that the unit for measuring angles is 1 degree, the unit angle.
Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 5
Teaching Point: Today I’m going to teach you how to measure and draw angles by using a protractor.
Suggested Length of Time: 1-2 Days
Standards Addressed
  Priority:
    ● 4.GM.B.5 Draw and measure angles in whole-number degrees using a protractor.
  Supporting
    ● 4.GM.A.1 Draw and identify points, lines, line segments, rays, angles, perpendicular lines and parallel lines.
    ● 4.GM.B.4 Identify and estimate angles and their measure.
Detailed Description/Instructions:
  □ One way to do this is to use enVision lesson 15-4 to teach students that the unit for measuring angles is 1 degree, the unit angle. A protractor can be used to measure angles.
Bloom’s Levels: Apply
Webb’s DOK: 2

Engaging Experience 6 (optional)
Teaching Point: Today I’m going to teach you how to solve problems with unknown angle measures by using addition and subtraction.
Suggested Length of Time: optional 1 day
Standards Addressed
  ● No 4th grade standards are addressed
Detailed Description/Instructions:
  □ One way to do this is to use enVision lesson 15-5 to teach students that angle measures can be added and subtracted. Note: This lesson is not a 4th grade assessed standard but could be used as an enrichment lesson.
Bloom’s Levels: Apply
Webb’s DOK: 3

Engaging Experience 7
BOE Approved June 20, 2019
Teaching Point: Today I’m going to teach you how to solve problems by using appropriate tools, such as a protractor and ruler.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.GM.B.5 Draw and measure angles in whole-number degrees using a protractor.

Detailed Description/Instructions:
- One way to do this is to use enVision lesson 15-6 to teach students that good math thinkers know how to pick the right tools to solve math problems.

Bloom’s Levels: Apply
Webb’s DOK: 3

Engaging Experience 8

Engaging Scenario

3- ACT Math: Game of Angles

Teaching Point: Today I’m going to teach you to solve a problem that involves measuring angles and computing with angle measures by modeling with math.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.GM.B.5 Draw and measure angles in whole-number degrees using a protractor.

Supporting
- 4.GM.A.1 Draw and identify points, lines, line segments, rays, angles, perpendicular lines and parallel lines.
- 4.GM.B.4 Identify and estimate angles and their measure.

Detailed Description/Instructions:
- One way to do this is to use the 3 Act Math lesson to teach students to identify an important problem, identify the important information, develop a model that represents that situation, use the model to propose a solution, and test the appropriateness of that math model.

Bloom’s Levels: Apply
Webb’s DOK: 3

Engaging Experience 9

Teaching Point: Today we are going to review common geometric terms and how to measure angles.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.GM.B.5 Draw and measure angles in whole-number degrees using a protractor.

Supporting
- 4.GM.A.1 Draw and identify points, lines, line segments, rays, angles, perpendicular lines and parallel lines.
- 4.GM.B.4 Identify and estimate angles and their measure.

Detailed Description/Instructions:
☐ **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 577-578.

☐ **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 575-576.

☐ **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 579-580.

**Bloom’s Levels:** Apply

**Webb’s DOK:** 2
Unit 9: Geometry

Subject: Math  
Grade: 4  
Name of Unit: Geometry  
Length of Unit: 9 days

Overview of Unit:  
Students classify two-dimensional shapes by their sides and angles. They analyze and draw shapes with lines of symmetry.

In Topic 16, students will understand how shapes can be analyzed, described, and classified with attention to properties of sides, angles, and lines of symmetry.

Getting Ready for the Unit:  
Before each topic, watch the Topic Overview Videos and the Listen and Look for Lesson Videos for each lesson to learn additional important information about the content of each topic.

Send home the Home-School Connection Letters (topic specific) to give your families insight on the upcoming unit. These can be found within each topic on Pearson Realize under the Teacher Resources.

You may want to gather these “Teaching Tool” pages prior to the lessons. These can be found in the back of the Teacher’s Resource Masters - Grade 4 - Volume 2 or online (Pearson Realize) in the Teacher Resources section.

TT 12 (number lines)  
TT 13 (fraction strips)

<table>
<thead>
<tr>
<th>Formative Assessment Options (Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)</th>
<th>Summative Assessment Options (Administered at the end of unit or topic to assess mastery of learning objectives.)</th>
</tr>
</thead>
</table>
| ● Math Interview/Conference  
● Quick Checks (Check marks within lesson)  
● Topic Pretest  
● Convince Me  
● Look Back  
● Lesson Assessment Practice | ● Online Topic Assessment  
● Topic Assessment Practice  
● Topic Performance Task  
● Cumulative/ Benchmark Assessment (print or online) |

Math Review:  
● Math Anytime  
  ○ Daily Review
Today’s Challenge

Fluency

- enVision 2020

- Topic Opener: Review What You Know
- Fluency Practice/Review Activity
- Vocabulary Review

**Number Routines:**

**Number Talk:** Division: Multiplying Up (Category 1)... p. 295

The following number talks consist of computation problems that build on using multiples of ten with two-digit numbers with single-digit divisors.

<table>
<thead>
<tr>
<th>4 x 10</th>
<th>5 x 5</th>
<th>3 x 10</th>
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<tbody>
<tr>
<td>4 x 5</td>
<td>5 x 10</td>
<td>3 x 20</td>
</tr>
<tr>
<td>4 x 4</td>
<td>5 x 2</td>
<td>3 x 3</td>
</tr>
<tr>
<td>56 ÷ 4</td>
<td>79 ÷ 5</td>
<td>68 ÷ 3</td>
</tr>
</tbody>
</table>

Reference your copy of *Number Talks: Whole Number Computation* by Sherry Parrish

**Additional Personalized Practice and Application Suggestions:**

<table>
<thead>
<tr>
<th>Intervention (I)</th>
<th>On-level (O)</th>
<th>Advanced (A)</th>
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</thead>
<tbody>
<tr>
<td>Reteach to Build Understanding</td>
<td>Build Mathematical Fluency</td>
<td>Enrichment</td>
</tr>
<tr>
<td>Intervention Activity</td>
<td>Practice Buddy</td>
<td>Pick a Project</td>
</tr>
<tr>
<td>Additional Practice</td>
<td>Additional Practice</td>
<td>enVision STEM Activity</td>
</tr>
<tr>
<td>Another Look Video</td>
<td>Problem Solving Reading Activity</td>
<td>Math Tools Activity</td>
</tr>
<tr>
<td>Game Center</td>
<td>enVision STEM Activity</td>
<td>Practice Buddy</td>
</tr>
<tr>
<td></td>
<td>Math Tools Activity</td>
<td>Game Center</td>
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</tbody>
</table>

**Topic 16: Lines, Angles and Shapes**

Students classify two-dimensional shapes by their sides and angles. They analyze and draw shapes with line symmetry.

**Essential Questions:**

- How can you classify triangles and quadrilaterals?
- What is line symmetry?

**Enduring Understandings:**

- Triangles can be classified by their sides and by their angle measures.
  - Example: Equilateral triangles have 3 sides that are the same length and 3 acute equal angles.
- Quadrilaterals can be classified by their angles or pairs of sides.
  - Example: A rectangle has 4 right angles and 2 pairs of parallel sides.
A line of symmetry is the line on which a figure can be folded so both halves are the same.

Example: A square is line symmetric because it has 4 lines of symmetry.

Priority Standards:
- 4.GM.A.2 Classify two-dimensional shapes by their sides and/or angles.

Supporting Standards:
- 4.GM.A.1 Draw and identify points, lines, line segments, rays, angles, perpendicular lines and parallel lines.
- 4.GM.A.3 Construct lines of symmetry for a two-dimensional figure.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Unwrapped Concepts (Students need to know)</th>
<th>Unwrapped Skills (Students need to be able to do)</th>
<th>Bloom’s Taxonomy Levels</th>
<th>Webb's DOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.GM.A.2</td>
<td>two-dimensional shapes by their sides and/or angles</td>
<td>classify</td>
<td>Understand</td>
<td>1</td>
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Unit Vocabulary:

<table>
<thead>
<tr>
<th>Academic Cross-Curricular Words</th>
<th>Content/Domain Specific</th>
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</thead>
<tbody>
<tr>
<td>compare</td>
<td>parallel lines</td>
</tr>
<tr>
<td>justify</td>
<td>perpendicular lines</td>
</tr>
<tr>
<td>recognize</td>
<td>intersecting lines</td>
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<tr>
<td>generate</td>
<td>right triangle</td>
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<tr>
<td>explain</td>
<td>obtuse triangle</td>
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<td>illustrate</td>
<td>acute triangle</td>
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<td>common</td>
<td>equilateral triangle</td>
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<td>order</td>
<td>isosceles triangle</td>
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<td>rhombus</td>
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<td>trapezoid</td>
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<td></td>
<td>quadrilateral</td>
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<td></td>
<td>line symmetric</td>
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<td></td>
<td>line of symmetry</td>
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</table>

Engaging Experience 1

Teaching Point: Today I’m going to introduce you to Topic 16 which will focus on understanding how shapes can be analyzed, described, and classified with attention to properties of sides, angles, and lines of symmetry.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 4.GM.A.2 Classify two-dimensional shapes by their sides and/or angles.

Supporting:
- 4.GM.A.1 Draw and identify points, lines, line segments, rays, angles, perpendicular lines and parallel lines.
- 4.GM.A.3 Construct lines of symmetry for a two-dimensional figure.

**Detailed Description/Instructions:**

- **One way to do this is to** assess students with the enVision Topic 16 online assessment
- **Another way to do this** is to use the enVision student workbook page 581 to introduce topic essential questions and present the enVision STEM projects. Then have students complete page 582, Review What You Know.
- **Another way to do this** is to use student vocabulary cards and the vocabulary activity (TT 29) to explore content vocabulary.

**Bloom’s Levels:** Understand  
**Webb’s DOK:** 1

**Engaging Experience 2**

**Teaching Point:** Today I’m going to teach you how to draw and identify perpendicular, parallel, and intersecting lines by identifying attributes.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Supporting:**
- 4.GM.A.1 Draw and identify points, lines, line segments, rays, angles, perpendicular lines and parallel lines.

**Detailed Description/Instructions:**

- **One way to do this** is to use enVision lesson 16-1 to teach students that lines can be classified as parallel, intersecting, or perpendicular.

**Bloom’s Levels:** Remember  
**Webb’s DOK:** 1

**Engaging Experience 3**

**Teaching Point:** Today I’m going to teach you how to classify triangles by line segments and angles.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.GM.A.2 Classify two-dimensional shapes by their sides and/or angles.

**Detailed Description/Instructions:**

- **One way to do this** is to use enVision lesson 16-2 to teach students that triangles are classified by their sides and by their angles.

**Bloom’s Levels:** Understand  
**Webb’s DOK:** 2

**Engaging Experience 4**

**Teaching Point:** Today I’m going to teach you how to classify quadrilaterals by lines and angles.

**Suggested Length of Time:** 1 day

**Standards Addressed**

**Priority:**
- 4.GM.A.2 Classify two-dimensional shapes by their sides and/or angles.

**Detailed Description/Instructions:**

- **One way to do this** is to use enVision lesson 16-3 to teach students that quadrilaterals are
classified by their sides and by their angles.

**Bloom’s Levels:** Understand  
**Webb’s DOK:** 2

**Engaging Experience 5**
**Teaching Point:** Today I’m going to teach you how to understand symmetry by recognizing and drawing lines of symmetry. Also how to identify line symmetric figures.  
**Suggested Length of Time:** 1 day  
**Standards Addressed**  
**Supporting:**  
- 4.GM.A.3 Construct lines of symmetry for a two-dimensional figure.

**Detailed Description/Instructions:**
- **One way to do this** is to use enVision lesson 16-4 to teach how a shape that can be folded along a line into matching parts is line symmetric.

**Bloom’s Levels:** Remember  
**Webb’s DOK:** 1

**Engaging Experience 6**
**Teaching Point:** Today I’m going to teach you how to draw figures that have line symmetry by understanding line symmetry.  
**Suggested Length of Time:** 1 day  
**Standards Addressed**  
**Supporting:**  
- 4.GM.A.3 Construct lines of symmetry for a two-dimensional figure.

**Detailed Description/Instructions:**
- **One way to do this** is to use enVision lesson 16-5 to teach how a shape that can be folded along a line into matching parts is line symmetric.

**Bloom’s Levels:** Understand  
**Webb’s DOK:** 2

**Engaging Experience 7**
**Teaching Point:** Today I’m going to teach you how to critique the reasoning of others by using understanding of two-dimensional shapes.  
**Suggested Length of Time:** 1 day  
**Standards Addressed**  
**Priority:**  
- 4.GM.A.2 Classify two-dimensional shapes by their sides and/or angles.

**Detailed Description/Instructions:**
- **One way to do this** is to use enVision lesson 16-6 to teach students how good math thinkers use math to explain why they are right. They can talk about the math that others do, too.

**Bloom’s Levels:** Evaluate  
**Webb’s DOK:** 3

**Engaging Experience 8**
**Teaching Point:** Today we are going to review how to classify triangles and quadrilaterals and what a line of symmetry is.  
**Suggested Length of Time:** 1 day
Standards Addressed

Priority:
- 4.GM.A.2 Classify two-dimensional shapes by their sides and/or angles.

Supporting:
- 4.GM.A.1 Draw and identify points, lines, line segments, rays, angles, perpendicular lines and parallel lines.
- 4.GM.A.3 Construct lines of symmetry for a two-dimensional figure.

Detailed Description/Instructions:
- **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 613-614.
- **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 611-612.
- **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 615-616.

Bloom’s Levels: Apply
Webb’s DOK: 2