Park Hill School District

Building Successful Futures • Each Student • Every Day

5th Grade Math Curriculum

Scope and Sequence

Quarter	Unit	Instructional Topics
1	**Unit 0**	Introduction to Math Procedures
1, 2, 3	**1: Numbers and Computation**	Topic 1: Understand Place Value Topic 2: Use Models and Strategies to Add and Subtract Decimals Topic 3: Fluently Multiply Multi-Digit Whole Numbers Topic 4: Use Models and Strategies to Multiply Decimals Topic 5: Use Models and Strategies to Divide Whole Numbers Topic 6: Use Models and Strategies to Divide Decimals Topic 7: Use Equivalent Fractions to Add and Subtract Fractions Topic 8: Apply Understanding of Multiplication to Multiply Fractions Topic 9: Apply Understanding of Division to Divide Fractions Topic 10: Represent and Interpret Data
2, 3	**2: Measurement and Data**	Topic 11: Understand Volume Concepts Topic 12: Convert Measurements
4	**3: Operations and Algebra**	Topic 13: Write and Interpret Numerical Expressions
4	**4: Geometry Part 1**	Topic 14: Graph Points on the Coordinate Plane
4	**5: Operations and Algebra**	Topic 15: Algebra: Analyze Patterns and Relationships
4	**6: Geometry Part 2**	Topic 16: Geometric Measurement: Classify Two-Dimensional Figures

Subject: Math
Grade: 5th 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:

Essential Questions:
- How can we create math class procedures and norms that develop a growth mindset and equitable participation?
- How can we establish math routines?

Enduring Understandings:
- Establish math class procedures and norms that help develop a growth mindset and equitable participation.
- Establish math routines including: use of manipulatives, games, and math notebooks.

MATH CLASSROOM NORMS

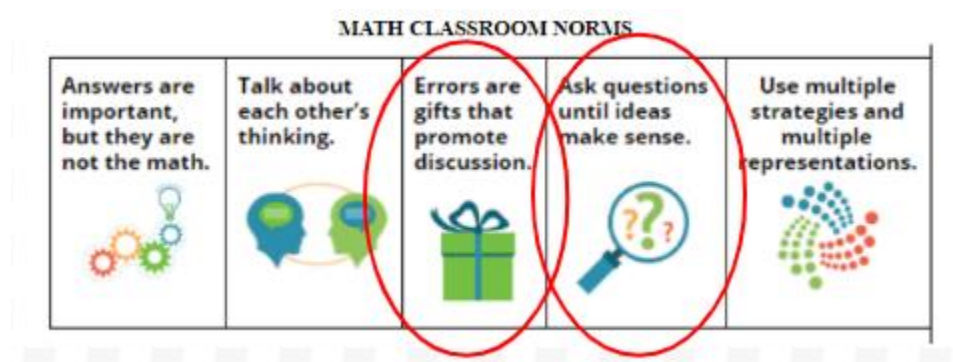| Answers are important, but they are not the math. | Talk about each other's thinking. | Errors are gifts that promote discussion. | Ask questions until ideas make sense. | Use multiple strategies and multiple representations. |

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 organize your thinking in a math notebook and share your thinking with others.

Suggested Length of Time: 1 day

MATH CLASSROOM NORMS

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

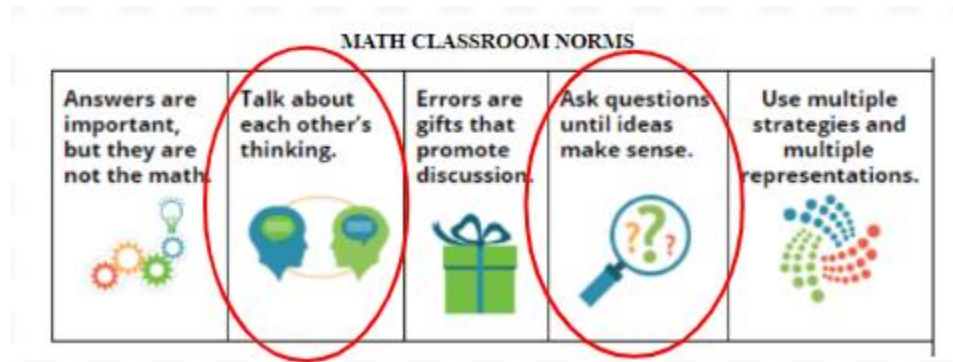**Detailed Description/Instructions:**

One way to do this is to introduce the *Math Classroom Norms* chart to students and discuss. Next, establish a routine for how students will demonstrate and record their thinking during math. After establishing this, facilitate an investigation by students to find $1.00 words by adding decimals. While students are working, encourage them to continue to record their ideas in their notebook and use their errors as an opportunity to continue to grow.

Lesson Plan for "Decimal Activity"
Letter Value Key

Engaging Experience 2

Teaching Point: Today I am going to teach you classroom expectations for working with a partner and how to talk about each other's thinking.

Suggested Length of Time: 1 day

MATH CLASSROOM NORMS

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

Detailed Description/Instructions:

One way to do this is to continue discussing the *Math Classroom Norms*. Review the idea that mathematicians organize their thinking and introduce the concept that mathematicians have to work with others. Establish what classroom expectations will be for students when they are working with a partner. Facilitate students playing the game multiplication clash with a partner where they can practice the classroom expectation(s) of working with a partner.

Lesson Plan for "Multiplication Clash"

BOE Approved June 20, 2019

Engaging Experience 3

Teaching Point: Today I am going to teach you the expectations and routines for a number talk.

Suggested Length of Time: 1 day
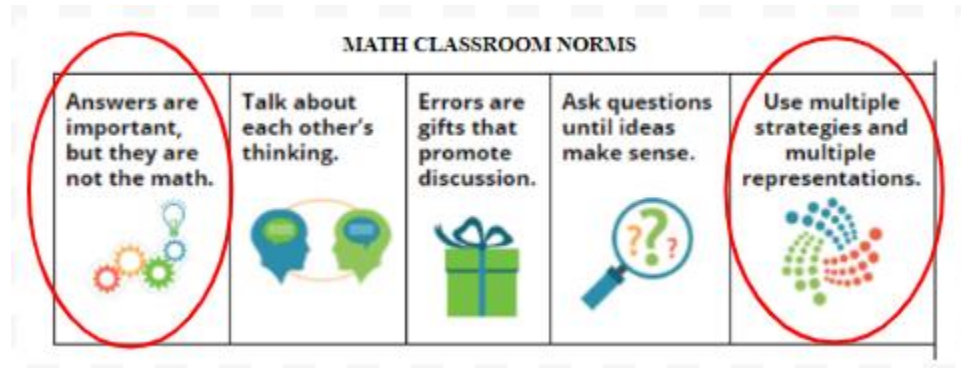
Detailed Description/Instructions:

One way to do this is to continue discussing the *Math Classroom Norms*. The focus today will be on "Answers are important, but they are not the math," and "Use multiple strategies and multiple representations." Students will be introduced to the routine for a number talk and what this looks like in the classroom. Additionally, take this time to pose a problem to student that has multiple correct solutions, it is the reasoning that is important.

Number Talks for Today

Unit 1: Numbers and Computation

Subject: Math
Grade: 5
Name of Unit: Numbers and Computation
Length of Unit: 87 engaging experiences, 9 days of assessment (96 days)

Overview of Unit
Students will expand their understanding of place value. They will use models and strategies to add, subtract, multiply and divide decimals and fractions. Students will apply their understanding of fractions on a line plot.

In Topic 1, students expand their understanding of the place value system for whole numbers and decimals. They read, write and compare decimals to the thousandths.

In Topics 2-6, students extend their understanding of multi-digit multiplication and division with whole numbers. They develop an understanding of operations with decimals.

In Topic 7, students use equivalent fractions as a strategy to add and subtract fractions with unlike denominators.

In Topics 8 and 9, students extend their understanding of multiplication with fractions. They are introduced to division of fractions by dividing with unit fractions.

Getting Ready for the Unit:

Formative Assessment Options *(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)*	Summative Assessment Options *(Administered at the end of unit or topic to assess mastery of learning objectives.)*
- Math Interview/Conference - Quick Checks - Checkmark icon(s) within lesson - Assigned online - Topic Pretest (online assessment) - Convince Me - Look Back - Lesson Assessment Practice	- Online Assessment - Topic Assessment - Workbook version - Printable version - Topic Performance Task - Workbook version - Printable version - 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:
- See Number Routines within each topic

Additional Personalized Practice and Application Suggestions:

Remediation	On-level	Advanced
● Reteach to Build Understanding ● Intervention Activity ● Additional Practice	● Build Mathematical Fluency ● Additional Practice ● Practice Buddy ● Build Mathematical Literacy ● Technology Center	● Enrichment ● Pick a Project ● enVision STEM Activity ● Problem Solving Reading Mat

Topic 1: Understand Place Value
Students expand their understanding of the place value system for whole numbers and decimals. They read, write, and compare decimals to thousandths.

Number Routines:

Number Talk: Making Tens (Category 3)... page 188

Looking for "quick tens" in computation is one of the first things you want to establish as a cornerstone strategy in computation. The sequence of problems within a given number talk allows students to apply strategies from previous problems to subsequent problems.
The following number talks encourage students to make a quick ten by decomposing at least one of the numbers.

$9 + 1$	$8 + 2$	$7 + 3$
$9 + 1 + 4$	$8 + 2 + 3$	$7 + 3 + 2$
$9 + 5$	$8 + 5$	$7 + 5$
$9 + 8$	$8 + 4$	$7 + 6$

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

Number Talk: Making Landmark or Friendly Numbers (Category 3)... page 192

When students understand that you can 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. The sequence of problems within a given number talk allows students to apply strategies from previous problems to subsequent problems.
The following number talks consist of computation problems with two- and three- digit addends. The addends are one or more away from a multiple of ten or landmark number. The further the addends are from landmark numbers, the more challenging the strategy.

$99 + 38$	$116 + 29$	$119 + 119$
$98 + 47$	$39 + 127$	$149 + 149$
$98 + 99$	$114 + 118$	$129 + 139$
$99 + 99 + 5$	$46 + 118$	$199 + 199$

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

This strategy capitalizes on a child's strength of doubles by adjusting one or both numbers to make doubles or near-doubles combinations.
The following number talks use doubles with two-and three digit numbers.

100 + 100	200 + 200	400 + 400
99 + 99	199 + 199	399 + 399
98 + 99	198 + 199	398 + 399
97 + 99	198 + 198	398 + 398

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

The key to crafting number talks to encourage students to break each number into its place value is to choose numbers that do not have an obvious relationship to each other. By selecting numbers with this characteristic, students are more likely to break numbers apart into their respective place values and work mentally from left to right.
The following number talks consist of computation problems with three-digit numbers that require regrouping.

365 + 247	238 + 184	444 + 177
138 + 292	361 + 292	333 + 277
168 + 254	515 + 127	276 + 258
292 + 139	209 + 136	518 + 265

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

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.
The following number talks consist of adding multiples of ten and one hundred while keeping one number whole.

56 + 40	37 + 40	345 + 200
56 + 50	37 + 46	345 + 400
156 + 40	237 + 40	345 + 450
156 + 43	237 + 48	345 + 457

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

Essential Questions:
- How are whole numbers and decimals written, compared, and ordered?

Enduring Understandings:
- Understanding each digit's place value in a number provides a way to understand the number's value.
- Our number system is based on powers of 10. Whenever we get 10 in one place value, we move to the next greater place value.
- Understanding a digit's decimal place value in a number helps determine the value of the number.
- Place value can be used to compare and order whole numbers and decimals.

Priority Standards:
- 5.NBT.A.1 Read, write and identify numbers from billions to thousandths using number names, base ten numerals and expanded form.

Supporting Standards for unit:
- 5.NBT.A.2 Compare two numbers from billions to thousandths using the symbols >, = or <, and justify the solution.
- 5.NBT.A.3 Understand that in a multi-digit number, a digit represents 1/10 times what it would represent in the place to its left.
- 5.NBT.A.4 Evaluate the value of powers of 10 and understand the relationship to the place value system.
- 5.NBT.A.5 Round numbers from billions to thousandths place.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
5.NBT.A.1	Numbers from billions to thousandths using number names, base ten numerals and expanded form	Read, write, interpret	Understand	1

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	power base expanded form exponent value thousandths equivalent decimals digits place value period whole numbers

Engaging Experience 1

Teaching Point: Today I'm going to teach you how use patterns and the properties of multiplication to calculate a product when multiplying by a power of 10 by using basic facts and place-value patterns to find products when one factor is a multiple of 10, 100, or 1,000.

Suggested Length of Time: 1 day

Standards Addressed

Priority: 5.NBT.A.1 Read, write and identify numbers from billions to thousandths using number names, base ten numerals and expanded form.

Supporting: 5.NBT.A.4 Evaluate the value of powers of 10 and understand the relationship to the place value system.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 1-1 to teach students how to use basic facts and

place-value patterns to find products when one factor is a multiple of 10, 100, or 1,000.
Bloom's Levels: Understand
Webb's DOK: 1

Engaging Experience 2

Teaching Point: Today I'm going to teach you to read and write whole numbers using standard form, expanded form, and number names by understanding that each digit's place value in a number provides a way to understand the number's value.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.1 Read, write and identify numbers from billions to thousandths using number names, base ten numerals and expanded form.
>
> **Supporting:** 5.NBT.A.3 Understand that in a multi-digit number, a digit represents 1/10 times what it would represent in the place to its left.

Detailed Description/Instructions:

> **One way to do this** is to use lesson 1-2 to teach students that understanding each digit's place value in a number provides a way to understand the number's value.

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

Engaging Experience 3

Teaching Point: Today I'm going to teach you to represent decimals to thousandths as fractions and fractions with denominators of 1,000 as decimals by understanding that our number system is based on powers of 10 and whenever we get 10 in one place value, we move to the next greater place value.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.1 Read, write and identify numbers from billions to thousandths using number names, base ten numerals and expanded form.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 1-3 to teach students how to understand that our number system is based on powers of 10 and whenever we get 10 in one place value, we move to the next greater place value.

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

Engaging Experience 4

Teaching Point: Today I'm going to teach you how read and write numbers within decimals through thousandths using standard form, expanded form, and number names by understanding a digit's decimal place value in a number helps determine the value of a number.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.1 Read, write and identify numbers from billions to thousandths using number names, base ten numerals and expanded form.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 1-4 to teach students how to understand a digit's

decimal place value in a number helps determine the value of a number.
Bloom's Levels: Understand
Webb's DOK: 1

Engaging Experience 5
Teaching Point: Today I'm going to teach you to use place value to compare decimals through thousandths by using place value to compare and order whole numbers and decimals.
Suggested Length of Time: 1 day
Standards Addressed
    Priority: 5.NBT.A.1 Read, write and identify numbers from billions to thousandths using number names, base ten numerals and expanded form.
    Supporting: 5.NBT.A.2 Compare two numbers from billions to thousandths using the symbols >, = or <, and justify the solution.
Detailed Description/Instructions:
- ☐ **One way to do this** is to use lesson 1-5 to teach students how to use place value to compare and order whole numbers and decimals.

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

Engaging Experience 6

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3- ACT Math: Buzz In
- ☐ Use the 3-Act Math Task on pages 4-4C to teach students that many real-world problems can be represented with a mathematical model, but that model may not represent a real-world situation exactly.

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Engaging Experience 7
Teaching Point: Today I'm going to teach you to use place value to round decimals to different places by understanding that rounding is a process for finding the multiple of 10, 100, and so on, or of 0.1, 0.01, and so on, closest to a given number.
Suggested Length of Time: 1 day
Standards Addressed
    Priority: 5.NBT.A.1 Read, write and identify numbers from billions to thousandths using number names, base ten numerals and expanded form.
    Supporting: 5.NBT.A.5 Round numbers from billions to thousandths place.
Detailed Description/Instructions:
- ☐ **One way to do this** is to use lesson 1-6 to teach students that rounding is a process for finding the multiple of 10, 100, and so on, or of 0.1, 0.01, and so on, closest to a given number.

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

Engaging Experience 8
Teaching Point: Today we are going to review some ways whole numbers and decimals can be written in standard, expanded, and word form and how whole numbers can decimals can be

compared and ordered using place value.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:**

- 5.NBT.A.1 Read, write and identify numbers from billions to thousandths using number names, base ten numerals and expanded form.

> **Supporting:**

- 5.NBT.A.2 Compare two numbers from billions to thousandths using the symbols >, = or <, and justify the solution.
- 5.NBT.A.3 Understand that in a multi-digit number, a digit represents 1/10 times what it would represent in the place to its left.
- 5.NBT.A.4 Evaluate the value of powers of 10 and understand the relationship to the place value system.
- 5.NBT.A.5 Round numbers from billions to thousandths place.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 37-38.
>
> ☐ **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 35-36.
>
> ☐ **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 39-40.

Bloom's Levels: Understand

Webb's DOK: 1

Topic 2: Use Models and Strategies to Add and Subtract Decimals
Students extend their understanding of multi-digit multiplication and division with whole numbers. They develop an understanding of operations with decimals.

Number Routines:

[Number Talk](): Adding Up (Category 3)... page 211

This strategy allows students to build on their strength with addition by adding up from the subtrahend (the number being subtracted) to the minuend (the whole). When students begin to understand that subtraction is finding the difference between two quantities, they realize that they can add up to compute that distance.

The following number talks consist of computation problems where the whole is no longer an exact multiple of ten or one hundred, and the subtrahend is a farther distance from the whole.

50 - 29	100 - 75	300 - 174
55 - 29	120 - 75	315 - 174
55 - 48	135 - 75	335 - 219
55 - 37	125 - 83	335 - 287

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

[Number Talk](): Removal (Category 3)... page 216

This strategy allows students to start with the whole and remove the subtrahend in parts that are easy for the student to navigate. The ability to decompose numbers into easy-to-remove parts gives students access to this strategy.

The following number talks utilize two-and three-digit numbers; some require decomposing.

100 - 50	150 - 20	150 - 15
100 - 52	150 - 28	150 - 100
100 - 60	155 - 20	150 - 115
100 - 64	155 - 28	153 - 115

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

Number Talk: Adjusting One Number to Create an Easier Problem (Category 3)... page 225

This strategy allows students to adjust only one of the numbers in a subtraction problem. If this strategy is used, a couple of decisions must be made: 1) which number would be the most helpful to adjust and why, and 2) how does the final answer need to be adjusted to compensate for this? A student's understanding about part/whole relationships will help in reasoning through these decisions.

The following number talks require students to make decisions about which numbers might be adjusted to create an easier problem.

49 - 28	52 - 40	149 - 118
50 - 30	49 - 39	151 - 120
50 - 28	52 - 39	151 - 118
53 - 28	51 - 37	155 - 128

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

Number Talk: Keeping a Constant Difference (Category 3)... page 229

This strategy allows students to understand that subtraction is the difference between two quantities and they can investigate what occurs if both numbers are changed by the same amount. Manipulating numbers to keep a constant difference allows students to create a friendlier problem without compromising the results.

The following number talks consist of computation problems that do not build one upon the other. Instead, each problem offers opportunities for students to choose the best method for keeping a constant difference. Many of the problems can be adjusted up or down to create easier problems.

32 - 19	111 - 56	234 - 119
48 - 29	134 - 68	271 - 158
35 - 18	127 - 88	251 - 126
41 - 13	122 - 77	209 - 151

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

Essential Questions:
- How can sums and differences of decimals be estimated?
- What are some common procedures for adding and subtracting decimals?
- How can sums and differences be found mentally?

Enduring Understandings:
- There is more than one way to estimate a sum or difference. To estimate sums and differences, numbers are replaced with other numbers that are easier to add and subtract.
- Place-value blocks can be used to add and subtract decimals. Models and strategies for adding and subtracting multi-digit decimals are just an extension of models and strategies for adding and subtracting whole numbers.
- Adding and subtracting multi-digit decimals is similar to adding and subtracting multi-digit decimals.

Priority Standards:
- 5.NBT.A.6 Add and subtract multi-digit whole numbers and decimals to the thousandths place, and justify the solution.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
5.NBT.A.6	Multi-digit whole numbers and decimals to the thousandths place	Add, subtract	Apply	1
5.NBT.A.6	The solution	Justify	Evaluate	4

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	Associative Property of Addition
	Commutative Property of Addition
	compatible numbers
	compensation
	addend
	inverse operation
	difference
	round
	equivalent
	sum

Engaging Experience 1

Teaching Point: Today I'm going to teach you to use properties of addition and strategies to solve problems mentally by understanding there's more than one way to do a mental calculation.

Suggested Length of Time: 1 day

Standards Addressed:

    Priority: 5.NBT.A.6 Add and subtract multi-digit whole numbers and decimals to the thousandths place, and justify the solution.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 2-1 to teach students that there's more than one way to do a mental calculation.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 2

Teaching Point: Today I'm going to teach you to use rounding or compatible numbers to estimate sums and differences by replacing numbers with other numbers that are easier to add or subtract.

Suggested Length of Time: 1 day

Standards Addressed

    Priority: 5.NBT.A.6 Add and subtract multi-digit whole numbers and decimals to the

thousandths place, and justify the solution.

Detailed Description/Instructions:

- ☐ **One way to do this** is to use lesson 2-2 to teach students to replace numbers with other numbers that are easier to add or subtract.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 3

Teaching Point: Today I'm going to teach you to model sums and differences of decimals by using place-value blocks, models, and strategies to add and subtract.
Suggested Length of Time: 1 day
Standards Addressed
> **Priority:** 5.NBT.A.6 Add and subtract multi-digit whole numbers and decimals to the thousandths place, and justify the solution.

Detailed Description/Instructions:

- ☐ **One way to do this** is to use lesson 2-3 to teach students to use place-value blocks, models, and strategies to add and subtract.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 4

Teaching Point: Today I'm going to teach you to add decimals to hundredths using familiar strategies, such as partial sums, by understanding that adding multi-digit decimals is similar to adding multi-digit whole numbers.
Suggested Length of Time: 1 day
Standards Addressed
> **Priority:** 5.NBT.A.6 Add and subtract multi-digit whole numbers and decimals to the thousandths place, and justify the solution.

Detailed Description/Instructions:

- ☐ **One way to do this** is to use lesson 2-4 to teach students to understand that adding multi-digit decimals is similar to adding multi-digit whole numbers.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 5

Teaching Point: Today I'm going to teach you to subtract decimals to hundredths using familiar strategies, such as partial differences, by understanding that subtracting multi-digit decimals is similar to subtracting multi-digit whole numbers.
Suggested Length of Time: 1 day
Standards Addressed
> **Priority:** 5.NBT.A.6 Add and subtract multi-digit whole numbers and decimals to the thousandths place, and justify the solution.

Detailed Description/Instructions:

- ☐ **One way to do this** is to use lesson 2-5 to teach students to understand that subtracting multi-digit decimals is similar to subtracting multi-digit whole numbers.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 6

Teaching Point: Today I'm going to teach you to use prior math knowledge and equations or bar diagrams to solve problems by applying math strategies to show and solve problems from everyday life.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.6 Add and subtract multi-digit whole numbers and decimals to the thousandths place, and justify the solution.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 2-6 to teach students to apply math strategies to show and solve problems from everyday life.

Bloom's Levels: Evaluate
Webb's DOK: 4

Engaging Experience 7

Teaching Point: Today we are going to review some ways sums and differences of decimals can be estimated by rounding or by substituting compatible numbers, and how to add and subtract decimals using place value and addition and subtracting strategies.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.6 Add and subtract multi-digit whole numbers and decimals to the thousandths place, and justify the solution.

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: Evaluate
Webb's DOK: 4

Topic 3: Fluently Multiply Multi-Digit Whole Numbers
Students extend their understanding of multi-digit multiplication and division with whole numbers. They develop an understanding of operations with decimals.

Number Routines:

Number Talk: Making Landmark or Friendly Numbers (Category 1)... page 269

The following number talks consists of 1x2-digit problems and have a connection to US coin values. The problems in each section are purposely ordered to help students build their knowledge from one problem to the next.

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

Number Talk: Making Landmark or Friendly Numbers (Category 2)... page 270

The following number talks are intentionally ordered to help students use relationships from the sequence to solve the final 1 x 3- digit problems.

4 x 25	3 x 10	3 x 100
4 x 200	3 x 50	3 x 200
4 x 250	3 x 100	3 x 199
4 x 249	3 x 149	

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

Number Talk: Partial Products (Category 1)... page 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

2 x 7	2 x 15	2 x 16
4 x 7	3 x 15	8 x 5
4 x 8	6 x 5	8 x 10
3 x 8	6 x 10	8 x 6
8 x 7	6 x 15	8 x 16

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

Number Talk: Partial Products (Category 2)... page 274

The following number talks are ordered so that students can use the relationships from the sequence to solve the final 1 x 3-digit problems.

2 x 125	2 x 124	2 x 45
4 x 25	6 x 100	5 x 100
6 x 100	6 x 20	5 x 40
6 x 20	6 x 4	5 x 5
6 x 125	6 x 124	5 x 245

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

Number Talk: Doubling and Halving (Category 1)... page 278

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

1 x 16	1 x 24	1 x 12
2 x 8	2 x 12	2 x 6
4 x 4	4 x 6	4 x 3
8 x 2	8 x 3	
16 x 1		

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

The following number talks investigate doubling and halving with 1 x 2-digit and 1 x 3-digit numbers

8 x 16	8 x 125	125 x 8
4 x 32	4 x 250	250 x 4
2 x 64	2 x 500	500 x 2

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

Essential Questions:
- What are the standard procedures for estimating and finding products of multi-digit numbers?

Enduring Understandings:
- Estimating products is a useful technique to quickly solve mathematical problems and understand the value of numbers in real-world situations. There is more than one way to estimate a product.
- The standard multiplication algorithm can be used to find the product of multi-digit numbers.
- The meaning of multiplication is the same, no matter the size of the numbers. Both the partial products method and the standard algorithm for multiplying whole numbers are based on properties of operations.

Priority Standards:
- 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Supporting Standards:
- 5.NBT.A.4 Evaluate the value of powers of 10 and understand the relationship to the place value system.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
5.NBT.A.7	Multi-digit whole numbers and decimals to the hundredths place	Multiply	Apply	1

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific

	underestimate overestimate partial products variable equation multiple exponent power factor product

Engaging Experience 1

Teaching Point: Today I'm going to teach you to use place value understandings and patterns to mentally multiply whole numbers and powers of 10 by using place value patterns and mental math to write the product of a whole number and a power of 10.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

> **Supporting:** 5.NBT.A.4 Evaluate the value of powers of 10 and understand the
relationship to the place value system.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 3-1 to teach students to use place value patterns and mental math to write the product of a whole number and a power of 10.

Bloom's Levels: Evaluate

Webb's DOK: 4

Engaging Experience 2

Teaching Point: Today I'm going to teach you to use rounding and compatible numbers to estimate products by estimating products to quickly solve mathematical problems.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 3-2 to teach students to estimate products to quickly solve mathematical problems.

Bloom's Levels: Evaluate

Webb's DOK: 4

Engaging Experience 3

Teaching Point: Today I'm going to teach you to use place value and the standard algorithm to multiply multi-digit numbers by 1-digit numbers by using regrouping rather than showing all the partial products (standard multiplication algorithm).

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths

place, and justify the solution.

Detailed Description/Instructions:
- ☐ **One way to do this** is to use lesson 3-3 to teach students to use regrouping rather than showing all the partial products (standard multiplication algorithm).

Bloom's Levels: Evaluate
Webb's DOK: 4

Engaging Experience 4

Teaching Point: Today I'm going to teach you to use the expanded and standard algorithm to multiply 2-digit by 2-digit numbers by breaking the calculation into simpler ones using place value and properties of operations.

Suggested Length of Time: 1 day

Standards Addressed

    Priority: 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instructions:
- ☐ **One way to do this** is to use lesson 3-4 to teach students to break the calculation into simpler ones using place value and properties of operations.

Bloom's Levels: Evaluate
Webb's DOK: 4

Engaging Experience 5

Teaching Point: Today I'm going to teach you to multiply 3-digit by 2-digit numbers by adding partial products or by using the standard algorithm.

Suggested Length of Time: 1 day

Standards Addressed

    Priority: 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instructions:
- ☐ **One way to do this** is to use lesson 3-5 to teach students to multiply whole numbers by using partial products or the standard algorithm.

Bloom's Levels: Evaluate
Webb's DOK: 4

Engaging Experience 6

<div style="background-color:#5c3317; color:white; text-align:center; font-size:2em;">Engaging Scenario</div>

<div style="background-color:#f5c842;">

3- ACT Math: Morning Commute
- ☐ Use the 3-ACT Math task on pages 80-80C to teach students that many real-world problems can be represented with a mathematical model, but that model may not represent a real-world situation exactly.

</div>

Engaging Experience 7

Teaching Point: Today I'm going to teach you to use knowledge about place value and multiplying with 2-digit and 3-digit numbers to multiply with zeros by understanding the process for multiplying factors with zeros is always the same regardless of the size of the numbers with

zeros.

Suggested Length of Time: 1 day

Standards Addressed

   Priority: 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instructions:

   ☐ **One way to do this** is to use lesson 3-6 to teach students multiply whole numbers with zeros using the standard algorithm.

Bloom's Levels: Evaluate

Webb's DOK: 4

Engaging Experience 8

Teaching Point: Today I'm going to teach you to use properties and the standard algorithm for multiplication to find the product of multi-digit numbers by understanding the process for multiplication is the same, no matter the size of the numbers.

Suggested Length of Time: 1 day

Standards Addressed

   Priority: 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instructions:

   ☐ **One way to do this** is to use lesson 3-7 to teach students how to multiply whole numbers using the standard algorithm.

Bloom's Levels: Evaluate

Webb's DOK: 4

Engaging Experience 9

Teaching Point: Today I'm going to teach you to use models and strategies to solve word problems by using bar diagrams and writing equations.

Suggested Length of Time: 1 day

Standards Addressed

   Priority: 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instructions:

   ☐ **One way to do this** is to use lesson 3-8 to teach students to use bar diagrams and write equations.

Bloom's Levels: Evaluate

Webb's DOK: 4

Engaging Experience 10

Teaching Point: Today I'm going to teach you to critique the reasoning of others by asking questions, looking for flaws, and using prior knowledge of estimating products.

Suggested Length of Time: 1 day

Standards Addressed

   Priority: 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instructions:

□ **One way to do this** is to use lesson 3-9 to teach students to ask questions, look for flaws, and use prior knowledge of estimating products.

Bloom's Levels: Evaluate

Webb's DOK: 4

Engaging Experience 11

Teaching Point: Today we are going to review some ways you can multiply whole numbers using place value and how to find products of numbers mentally using basic facts and patterns of zeros.

Suggested Length of Time: 1 day

Standards Addressed

Priority: 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instructions:

□ **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 121-122.

□ **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 119-120.

□ **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 123-124..

Bloom's Levels: Evaluate

Webb's DOK: 4

Topic 4: Use Models and Strategies to Multiply Decimals

Students extend their understanding of multi-digit multiplication and division with whole numbers. They develop an understanding of operations with decimals.

NOTE: Do Lesson 4-8 after Lesson 4-2

Number Routines:

Number Talk: Doubling and Halving (Category 3)... page 280

The following number talks investigate doubling and halving with 2 x 2-digit numbers.

3 x 60 6 x 30 12 x 15	104 x 3 52 x 6 26 x 12	112 x 2 56 x 4 28 x 8 14 x 16

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

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

The following number talks consist of problems that focus on breaking basic facts into smaller factors.

2 x 3 x 4 4 x 3 x 2 6 x 4	2 x 3 x 8 4 x 2 x 6 6 x 8	4 x 3 x 4 2 x 2 x 12 8 x 3 x 2 2 x 2 x 3 x 4 12 x 4

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

<table>
<tr><td colspan="3">Number Talk: Breaking Factors into Smaller Factors (Category 2)... page 284</td></tr>
</table>

The following number talks use the associative property to solve 1 x 2-digit multiplication problems.

3 x 5 x 4 2 x 15 x 2 15 x 4	5 x 5 x 8 2 x 4 x 25 2 x 25 x 4 25 x 8	2 x 4 x 35 8 x 5 x 7 8 x 35

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

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Number Talk: Making Landmark or Friendly Numbers (Category 3)... page 271

The following number talks consist of computation problems that are ordered to help students use relationships from the sequence to solve the final 2 x 2-digit and 2 x 3-digit problems.

6 x 20 30 x 20 36 x 20 36 x 19	6 x 40 10 x 40 16 x 40 16 x 39	2 x 150 10 x 150 12 x 150 12 x 149

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

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Number Talk: Making Landmark or Friendly Numbers (Category 3)... page 271

The following number talks consist of multiplication problems designed to help students use their relationships from the sequence to solve the final 2 x 2-digit problems.

6 x 20 30 x 20 36 x 20 36 x 19	6 x 40 10 x 40 16 x 40 16 x 39	2 x 150 10 x 150 12 x 150 12 x 149

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

Essential Questions:
- What are some common procedures for estimating and finding products involving decimals?

Enduring Understandings:
- You can estimate the product of a decimal and a whole number by using compatible numbers and rounding.
- Place-value models can be used to represent multiplying a whole number and a decimal.
- The steps for multiplying decimals are similar to steps for multiplying whole numbers. Place value determines the placement of the decimal point.

Priority Standards:

- 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Supporting Standards:
- 5.NBT.A.4 Evaluate the value of powers of 10 and understand the relationship to the place value system.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
5.NBT.A.7	Multi-digit whole numbers and decimals to the hundredths place	Multiply	Apply	1

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	exponent hundredths overestimate partial products power round tenths thousandths underestimate

Engaging Experience 1
Teaching Point: Today I'm going to teach you to use knowledge about place value and patterns to find the product of a decimal number and a power of 10 by identifying and using patterns to multiply decimals by 10, 100, and 1,000.
Suggested Length of Time: 1 day
Standards Addressed
> **Priority:** 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.
> **Supporting:** 5.NBT.A.4 Evaluate the value of powers of 10 and understand the relationship to the place value system.

Detailed Description/Instructions:
- ☐ **One way to do this** is to use lesson 4-1 to teach students to identify and use patterns to multiply decimals by 10, 100, and 1,000.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 2
Teaching Point: Today I'm going to teach you to use rounding and compatible numbers to estimate the product of a decimal and a whole number by estimating the product of a decimal and a whole number by using compatible numbers and rounding.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 4-2 to teach students to estimate the product of a decimal and a whole number by using compatible numbers and rounding.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 3

Teaching Point: Today I'm going to teach you to use number sense and reasoning to place the decimal point in a product by thinking about the relative size of the decimals being multiplied to help determine the relative size of the product.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 4-8 to teach students to determine location of decimal point in product.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 4

Teaching Point: Today I'm going to teach you to use models to represent multiplying a decimal and a whole number by using place value models.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 4-3 to teach students to use place value models to multiply a decimal by a whole number.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 5

Teaching Point: Today I'm going to teach you to multiply a decimal and a whole number by using place value understanding and an algorithm.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 4-4 to teach students to use place value understanding and an algorithm to multiply a decimal by a whole number.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 6

Teaching Point: Today I'm going to teach you to use grids to model decimals and find the product of a decimal and a decimal by understanding the steps for multiplying decimals are similar to multiplying whole numbers.

Suggested Length of Time: 1 day

Standards Addressed

   Priority: 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 4-5 to teach students to multiply a decimal by a decimal.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 7

Teaching Point: Today I'm going to teach you to multiply decimals by using the partial products process and models.

Suggested Length of Time: 1 day

Standards Addressed

   Priority: 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 4-6 to teach students to multiply decimals.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 8

Teaching Point: Today I'm going to teach you to use properties to multiply decimals by using the Associative and Commutative Properties to break apart and multiply two decimals.

Suggested Length of Time: 1 day

Standards Addressed

   Priority: 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 4-7 to teach students to multiply decimals.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 9

Teaching Point: Today I'm going to teach you to use previously learned concepts and skills to represent and solve problems by applying math strategies to show and solve problems from everyday life.

Suggested Length of Time: 1 day

Standards Addressed

Priority: 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instructions:

> **One way to do this** is to use lesson 4-9 to teach students to apply math strategies to show and solve problems from everyday life.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 10

Teaching Point: Today we are going to review some ways you can multiply decimals using place value and common procedures for multiplying whole numbers.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instructions:

- ☐ **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 171-174.
- ☐ **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 167-170.
- ☐ **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 175-176.

Bloom's Levels: Evaluate
Webb's DOK: 4

Topic 5: Use Models and Strategies to Divide Whole Numbers
Students extend their understanding of multi-digit multiplication and division with whole numbers. They develop an understanding of operations with decimals.

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.

4 x 10 4 x 5 4 x 4 56 ÷ 4	5 x 5 5 x 10 5 x 2 79 ÷ 5	3 x 10 3 x 20 3 x 3 3 x 2 68 ÷ 3

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

Number Talk: Division: Multiplying Up (Category 2)... p. 296

The following number talks include three-digit numbers with single-digit divisors that encourage students build on multiples of ten and one hundred.

3 x 100	4 x 25	4 x 25

3 x 50	4 x 100	4 x 50
3 x 1	4 x 20	4 x 100
453 ÷ 3	999 ÷ 4	500 ÷ 4

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

Number Talk: Division: Multiplying Up (Category 3)... p. 297

The following number talks consist of three digit numbers with two-digit divisors that build on using multiples of ten and one hundred.

50 x 2	35 x 2	25 x 10
50 x 5	35 x 10	25 x 4
50 x 10	35 x 20	25 x 2
900 ÷ 50	755 ÷ 35	840 ÷ 25

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

Number Talk: Division: Partial Quotients (Category 1)... p. 290

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.

40 ÷ 4	40 ÷ 4	30 ÷ 3
16 ÷ 4	24 ÷ 4	18 ÷ 3
56 ÷ 4	67 ÷ 4	48 ÷ 3

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

Number Talk: Division: Partial Quotients (Category 2)...p. 291

The following number talks include problems that encourage students to build on multiples of ten and one hundred and find easy multiples of the divisor within the dividend.

300 ÷ 3	400 ÷ 4	120 ÷ 6
120 ÷ 3	80 ÷ 4	18 ÷ 6
420 ÷ 3	16 ÷ 4	60 ÷ 6
	496 ÷ 4	300 ÷ 6
		180 ÷ 6
		500 ÷ 6

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

Number Talk: Division: Proportional Reasoning… p. 299

The following number talks consist of division problems that can be solved using proportional reasoning.

100 ÷ 4	720 ÷ 36	800 ÷ 40
200 ÷ 8	360 ÷ 18	80 ÷ 4
400 ÷ 16	60 ÷ 3	40 ÷ 2

Essential Questions:
- What are some common procedures for division and why do they work?

Enduring Understandings:
- Division problems with dividends and divisors that are multiples of 10 can be solved using basic facts and patterns.
- Dividing with 2-digit divisors is just an extension os the steps for dividing with 1-digit divisors.
- Different strategies can be used to divide with 2-digit divisors. Estimating quotients and the relationship between multiplication and division are used with most strategies.

Priority Standard for unit:
- 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.

Supporting Standard:
- 5.NBT.A.4 Evaluate the value of powers of 10 and understand the relationship to the place value system.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
5.NBT.A.8	Multi-digit whole numbers and decimals to hundredths place using up to two-digit divisors and four-digit dividends	Divide	Apply	1
5.NBT.A.8	The solution	Justify	Evaluate	4

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	dividend quotient divisor remainder

Engaging Experience 1
Teaching Point: Today I'm going to teach you to use place value patterns and mental math to find quotients by using basic facts and analyzing patterns.
Suggested Length of Time: 1 day
Standards Addressed
> **Priority:** 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.
> **Supporting:** 5.NBT.A.4 Evaluate the value of powers of 10 and understand the relationship to the place value system.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 5-1 to teach students to use place value patterns and mental math to find quotients.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 2

Teaching Point: Today I'm going to teach you to estimate quotients by using compatible numbers and place value patterns.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 5-2 to teach students to estimate quotients.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 3

Engaging Scenario

3- ACT Math: Flapjack Stack
☐ Use the 3-ACT Math task on pages 180-180C to teach students that many real-world problems can be represented with a mathematical model, but that model may not represent a real-world situation exactly.

Engaging Experience 4

Teaching Point: Today I'm going to teach you to find quotients by using area models and properties.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 5-3 to teach students to use area models and properties to find quotients.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 5

Teaching Point: Today I'm going to teach you to solve division problems by using partial

quotients.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 5-4 to teach students to solve division problems.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 6

Teaching Point: Today I'm going to teach you to divide by 2-digit divisors by using place value and sharing.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 5-5 to teach students to divide 2-digit divisors.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 7

Teaching Point: Today I'm going to teach you to divide greater dividends by using place value and sharing.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 5-6 to teach students to divide greater dividends.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 8

Teaching Point: Today I'm going to teach you to divide 3- and 4-digit numbers by selecting from different strategies.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 5-7 to teach students to divide 3- and 4-digit numbers.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 9

Teaching Point: Today I'm going to teach you to make sense of problems by thinking of ways to solve problems and not giving up when stuck.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 5-8 to teach students to make sense of problems.

Bloom's Levels: Evaluate

Webb's DOK: 4

Engaging Experience 10

Teaching Point: Today we are going to review some ways you can use basic facts and place-value patterns to divide mentally by multiples of 10, and that the process of dividing with 2-digit divisors is an extension of dividing with 1-digit divisors.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.

Detailed Description/Instructions:

☐ **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 219-222.

☐ **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 215-218.

☐ **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 223-224.

Bloom's Levels: Evaluate

Webb's DOK: 2

## Topic 6: Use Models and Strategies to Divide Decimals
Students extend their understanding of multi-digit multiplication and division with whole numbers. They develop an understanding of operations with decimals.

Number Routines:

Number Talk: Reasoning About Equal Parts of a Fraction (Category 1)... p. 77-81

The number talks in this category are structured to help students confront the idea that a fraction is divided into equal, but not necessarily congruent, parts. They are designed to provide opportunities for discussions around students misconceptions that are likely to arise.

Which of these models represent ½ of the whole? How do you know?

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish
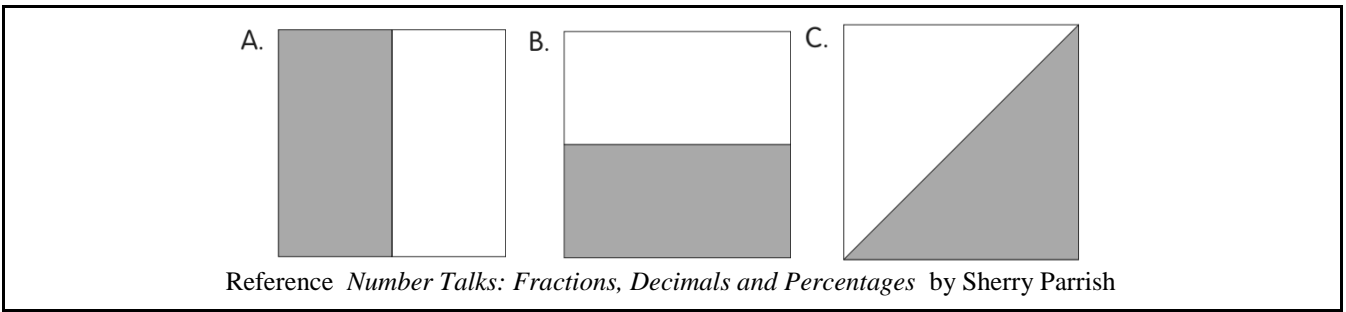
Essential Questions:
- What are some common procedures for estimating and finding quotients involving decimals?

Enduring Understandings:
- Place-value patterns can be used to divide decimals by powers of 10.
- Rounding and compatible numbers can be used to estimate quotients with decimals.
- Strategies for dividing decimals are an extension of strategies for dividing whole numbers.
- Models and the relationship between multiplication and division can be used to divide a decimal by a decimal.

Priority Standard:
- 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.

Supporting Standard:
- 5.NBT.A.4 Evaluate the value of powers of 10 and understand the relationship to the place value system.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
5.NBT.A.8	Multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends	Divide	Apply	1
5.NBT.A.8	The solution	Justify	Evaluate	4

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	decimal divisor dividend quotient

Engaging Experience 1

Teaching Point: Today I'm going to teach you to divide a decimal by a power of 10 by using mental math and place value patterns.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.
> **Supporting:** 5.NBT.A.4 Evaluate the value of powers of 10 and understand the relationship to the place value system.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 6-1 to teach students to divide a decimal by a power of 10.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 2

Teaching Point: Today I'm going to teach you to estimate quotients in problems with decimals by using reasoning and strategies such as rounding and compatible numbers.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 6-2 to teach students to estimate quotients in problems with decimals.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 3

Teaching Point: Today I'm going to teach you to find quotients in problems involving decimals by using models.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 6-3 to teach students to find quotients in problems involving decimals.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 4

Teaching Point: Today I'm going to teach you to divide decimals by 2-digit whole numbers by using models.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths

place using up to two-digit divisors and four-digit dividends, and justify the solution.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 6-4 to teach students to divide decimals by 2-digit whole numbers.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 5

Teaching Point: Today I'm going to teach you to divide a decimal by a decimal by using models.

Suggested Length of Time: 1 day

Standards Addressed

 Priority: 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 6-5 to teach students to divide a decimal by a decimal.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 6

Teaching Point: Today I'm going to teach you to solve problems by making sense of quantities and relationships.

Suggested Length of Time: 1 day

Standards Addressed

 Priority: 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 6-6 to teach students to solve problems.

Bloom's Levels: Evaluate

Webb's DOK: 4

Engaging Experience 7

Teaching Point: Today we are going to review some ways you can use models and strategies to divide decimals.

Suggested Length of Time: 1 day

Standards Addressed

 Priority: 5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.

Detailed Description/Instructions:

☐ **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 259-262.

☐ **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 255-256.

☐ **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 263-264.

Bloom's Levels: Evaluate
Webb's DOK: 4

## Topic 7: Use Equivalent Fractions to Add and Subtract Fractions
Students use equivalent fractions as a strategy to add and subtract fractions with unlike denominators.

Number Routines:

Number Talk: Reasoning About Equivalence Among Fractions (Category 2)... p. 86-88

We can use area models in number talks to help students develop an understanding of equivalence. The fact that multiple fractions can equal the same amount is an important idea and it impacts the facets of students' use of and operations with rational numbers.

Can you see ½ of the whole? Can you see ½ in a different way? How can you prove your thinking?
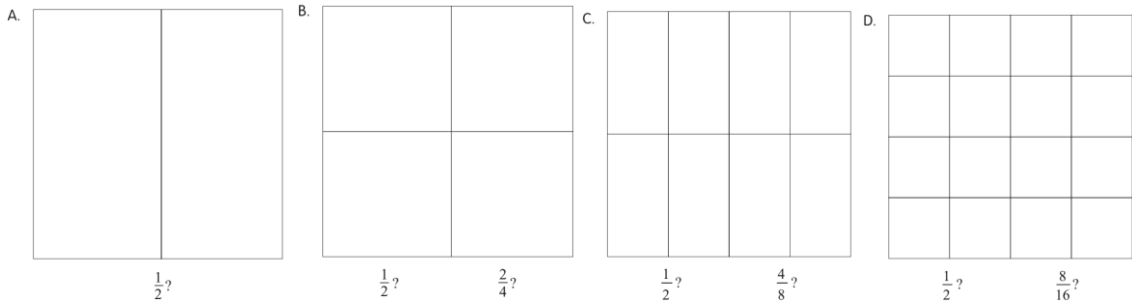
A.

B.

C.

D.

$\frac{1}{2}$? $\frac{1}{2}$? $\frac{2}{4}$? $\frac{1}{2}$? $\frac{4}{8}$? $\frac{1}{2}$? $\frac{8}{16}$?
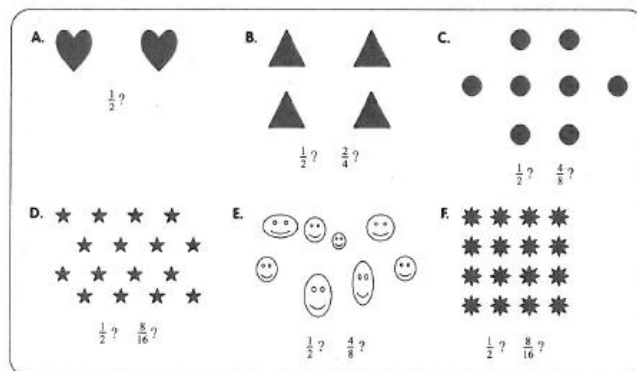
Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Reasoning About Equivalence Among Fractions... p. 90-92

These number talks are organized in groups that start by using a benchmark fraction (½. ¼ , ⅛, ⅓ or ⅙) progress in difficulty from (A to B to C, etc.,) and may be introduced individually or as a collection of problems.

Can you see ___ of the whole? Can you see ___ in a different way?
How can you prove your thinking?

A. $\frac{1}{2}$?
B. $\frac{1}{2}$? $\frac{2}{4}$?
C. $\frac{1}{2}$? $\frac{4}{8}$?
D. $\frac{1}{2}$? $\frac{8}{16}$?
E. $\frac{1}{2}$? $\frac{4}{8}$?
F. $\frac{1}{2}$? $\frac{8}{16}$?

Number Talk: Use Linear Models to Build Fractional Reasoning (Category 1)... p. 94-95

The number talks strings in this category use a linear model and require students to reason about eh numerator and denominator; partitioning and equivalence.

Where should _____ be placed on the number line? How do you know?

Number Talk: Use Linear Models to Build Fractional Reasoning (Category 2)... p. 96-98

These number talks are intended to be used as stand-alone problems and can be presented in any order according to your students' needs.

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Essential Questions:
- How can sums and differences of fractions and mixed numbers be estimated?
- What are common procedures for adding and subtracting fractions and mixed numbers?

Enduring Understandings:
- Sums and differences of fractions and mixed numbers can be estimated using a number line to determine what nearest half or whole a fraction or mixed number is closest to
- Sums and differences of fractions can be estimated using benchmark fractions.
- Fractions and mixed numbers can be added and subtracted by renaming fractions with equivalent fractions with like denominators.

Priority Standards:
- 5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.

Supporting Standards:
- 5.NF.B.4 Estimate results of sums, differences and products with fractions and decimals to the thousandths.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
5.NF.B.6	Problems involving addition and subtraction of fractions and mixed numbers with unlike denominators	Solve	Apply	2
5.NF.B.6	The solution	Justify	Evaluate	4

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	benchmark fraction common denominator equivalent fractions mixed number

Engaging Experience 1

Teaching Point: Today I'm going to teach you how to estimate sums and differences of fractions by using a number line to find the nearest half or whole number.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.
> **Supporting:** 5.NF.B.4

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 7-1 to teach students that a number line can be used to determine what half or whole number a fraction is closest to.

Bloom's Levels: Apply
Webb's DOK: 2

Engaging Experience 2

Teaching Point: Today I'm going to teach you how to find common denominators for fractions with unlike denominators by using equivalent fractions with like denominators.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 7-2 to teach students that common denominators for fractions with unlike denominators can be found using equivalent fractions with like denominators.

Bloom's Levels: Apply
Webb's DOK: 2

Engaging Experience 3

Teaching Point: Today I'm going to teach you how to add fractions with unlike denominators using equivalent fractions with a common denominator.

Suggested Length of Time: 1 day

Standards Addressed:

> **Priority:** 5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 7-3 to teach students that fractions with unlike denominators can be added by replacing them with equivalent fractions that have common denominators.

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 4

Teaching Point: Today I'm going to teach you how to subtract fractions with unlike denominators by replacing them with equivalent fractions that have common denominators.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 7-4 to teach students that fractions with unlike denominators can be subtracted by replacing them with equivalent fractions that have common denominators.

Bloom's Levels: Apply
Webb's DOK: 2

Engaging Experience 5

Teaching Point: Today I'm going to teach you how to add and subtract fractions with unlike denominators by replacing them with equivalent fractions.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 7-5 to teach students that equivalent fractions can be used to add and subtract fractions with unlike denominators.

Bloom's Levels: Apply
Webb's DOK: 2

Engaging Experience 6

Teaching Point: Today I'm going to teach you how to estimate sums and differences of fractions and mixed numbers by rounding to the nearest whole number or by using benchmark fractions.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.
> **Supporting:** 5.NF.B.4

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 7-6 to teach students that sums and differences of mixed numbers can be estimated by rounding to the nearest whole number or by using benchmark fractions.

Bloom's Levels: Apply
Webb's DOK: 2

Engaging Experience 7

Teaching Point: Today I'm going to teach you how to add mixed numbers by using models to show different ways of adding mixed numbers.

Suggested Length of Time: 1 day

Standards Addressed:

> **Priority:** 5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 7-7 to teach students how models can be used to show different ways of adding mixed numbers.

Bloom's Levels: Apply
Webb's DOK: 2

Engaging Experience 8

Teaching Point: Today I'm going to teach you how to add mixed numbers by using equivalent fractions and a common denominator.

Suggested Length of Time: 1 day

Standards Addressed:

> **Priority:** 5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 7-8 to teach students how adding mixed numbers is an extension of adding fractions by using equivalent fractions and a common denominator.

Bloom's Levels: Apply
Webb's DOK: 2

Engaging Experience 9

Teaching Point: Today I'm going to teach you how to subtract mixed numbers using models to show different ways of subtracting mixed numbers.

Suggested Length of Time: 1 day

Standards Addressed:

> **Priority:** 5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 7-9 to teach students how models can be used to show different ways of subtracting mixed numbers.

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 using equivalent fractions and a common denominator by understanding that subtracting mixed numbers is an extension of subtracting fractions.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NF.B.6 Solve problems involving addition and subtraction of fractions and

mixed numbers with unlike denominators, and justify the solution.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 7-10 to teach students how subtracting mixed numbers is an extension of subtracting fractions.

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 11

Teaching Point: Today I'm going to teach you how to add and subtract mixed numbers by using equivalent fractions and a common denominator.

Suggested Length of Time: 1 day

Standards Addressed:

Priority: 5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 7-11 to teach students how to use equivalent fractions and a common denominator to add and subtract mixed numbers.

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 12

Engaging Scenario

3- ACT Math: The Gif Recipe

☐ Use the 3 ACT Math task from pages 268-268C to understand that many real-world problems can be represented with a mathematical model, but that model may not represent a real-world situation exactly.

Engaging Experience 13

Teaching Point: Today I'm going to teach you how to represent a problem situation with a mathematical model by choosing and applying math strategies to show and solve problems from everyday life.

Suggested Length of Time: 1 day

Standards Addressed:

Priority: 5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 7-12 to teach students how to choose and apply math strategies to show and solve problems from everyday life.

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 14

Teaching Point: Today we are going to review the idea that sums and differences of mixed numbers and fractions can be estimated using benchmarks and rounding. We are also going to

review the idea that when adding and subtracting fractions, you can rewrite as equivalent fractions with like denominators first.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.

Detailed Description/Instructions:

- ☐ **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 323-326.
- ☐ **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 319-322.
- ☐ **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 327-328.

Bloom's Levels: Apply

Webb's DOK: 2

Topic 8: Apply Understanding of Multiplication to Multiply Fractions

Students extend their understanding of multiplication and fractions. They are introduced to division of fractions by dividing with unit fractions.

Number Routine:

- Comparing and Ordering Fractions

Number Talk: Is the Fraction Closer to 0, ½, or 1 Whole? (Category 1)... page 101

This category includes proper fractions that you can choose from for each problem.

Is the fraction closer to 0, $\frac{1}{2}$, or 1 whole? How do you know?

$\frac{3}{8}$	$\frac{9}{10}$	$\frac{4}{6}$
$\frac{4}{10}$	$\frac{6}{10}$	$\frac{4}{12}$
$\frac{2}{6}$	$\frac{5}{8}$	$\frac{1}{4}$
$\frac{7}{8}$	$\frac{3}{4}$	$\frac{2}{8}$
$\frac{5}{6}$	$\frac{7}{10}$	$\frac{1}{6}$
$\frac{12}{16}$	$\frac{10}{16}$	$\frac{7}{12}$
$\frac{3}{5}$	$\frac{1}{3}$	$\frac{4}{7}$
$\frac{2}{5}$	$\frac{2}{3}$	$\frac{8}{9}$
$\frac{5}{9}$	$\frac{4}{5}$	$\frac{5}{7}$
$\frac{5}{11}$	$\frac{8}{11}$	$\frac{1}{5}$
$\frac{6}{7}$	$\frac{4}{9}$	$\frac{3}{11}$
$\frac{2}{9}$	$\frac{5}{9}$	$\frac{6}{11}$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Is the Fraction Closer to 0, ½, or 1 Whole? (Category 2)... page 103

The Number talks in this category include both improper fractions and mixed numbers.

Is the fraction closer to 1, $1\frac{1}{2}$, or 2 wholes? How do you know?

$1\frac{5}{8}$	$\frac{6}{4}$	$1\frac{9}{10}$
$\frac{11}{16}$	$\frac{14}{8}$	$1\frac{3}{4}$
$1\frac{5}{6}$	$\frac{5}{4}$	$1\frac{7}{8}$
$\frac{7}{4}$	$\frac{8}{6}$	$1\frac{1}{4}$
$1\frac{3}{8}$	$1\frac{6}{10}$	$\frac{18}{12}$
$1\frac{1}{10}$	$\frac{20}{14}$	$1\frac{9}{12}$
$\frac{4}{3}$	$1\frac{3}{7}$	$\frac{15}{9}$
$1\frac{2}{3}$	$\frac{6}{5}$	$\frac{9}{7}$
$\frac{9}{5}$	$1\frac{1}{3}$	$1\frac{3}{5}$
$\frac{11}{9}$	$1\frac{5}{9}$	$\frac{12}{7}$
$\frac{12}{11}$	$1\frac{6}{13}$	$\frac{18}{15}$
$\frac{7}{5}$	$\frac{6}{3}$	$1\frac{6}{11}$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Comparing Fractions Using Proximity to ½ (Category 1)... page 106

This strategy builds on the understanding of ½ and reasoning about how far each additional fraction is from this benchmark. Each of the following number talks consists of two fractions close to ½.

Are the fractions equivalent or is one fraction greater? How do you know?

A. $\frac{4}{10}$ $\frac{7}{12}$

B. $\frac{3}{8}$ $\frac{6}{10}$

C. $\frac{5}{8}$ $\frac{3}{7}$

D. $\frac{5}{12}$ $\frac{7}{13}$

E. $\frac{4}{9}$ $\frac{5}{10}$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Using Distance from the Whole (Category 2)... page 108

When students reason about how far a fraction is from one whole, they often use their understanding of unit fractions. Each of the following number talks consists of two fractions close to one whole.

Are the fractions equivalent or is one fraction greater? How do you know?

A. $\dfrac{7}{8}$ $\dfrac{8}{9}$

B. $\dfrac{3}{4}$ $\dfrac{2}{3}$

C. $\dfrac{4}{5}$ $\dfrac{3}{4}$

D. $\dfrac{9}{10}$ $\dfrac{10}{11}$

E. $\dfrac{3}{4}$ $\dfrac{8}{9}$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Using Common Numerators (Category 3)... page 109

When the numerators in two fractions are the same, students can use the denominators to compare the fractions by reasoning about the size of the individual unit. Each of the following number talks consists of two fractions with common numerators.

Which fraction is greater? How do you know?

A. $\dfrac{7}{9}$ $\dfrac{7}{11}$

B. $\dfrac{8}{9}$ $\dfrac{8}{11}$

C. $\dfrac{5}{6}$ $\dfrac{5}{7}$

D. $\dfrac{2}{3}$ $\dfrac{2}{5}$

E. $\dfrac{4}{5}$ $\dfrac{4}{7}$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

The number strings in this category are structured to help students compare fractions and reason about scale and proportionality. These number talks are organized into four columns and progress in difficulty (from A to B to C, etc.)

What fraction is greater? How do you know?

A.	$\frac{2}{5}$	$\frac{4}{9}$
B.	$\frac{3}{8}$	$\frac{6}{15}$
C.	$\frac{6}{7}$	$\frac{12}{15}$
D.	$\frac{10}{17}$	$\frac{20}{33}$
E.	$\frac{5}{13}$	$\frac{10}{27}$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Essential Questions:
- What does it mean to multiply whole numbers and fractions?
- How can multiplication with whole numbers and fractions be shown using models and symbols?

Enduring Understandings:
- Strategies for multiplying whole numbers can be applied when multiplying fractions and mixed numbers.
- Models can be used to represent multiplying a fraction by a whole number.

Priority Standard:
- 5.NF.B.7 Extend the concept of multiplication to multiply a fraction or whole number by a fraction.

Supporting Standard for unit:
- 5.NF.B.5 Justify the reasonableness of a product when multiplying with fractions.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
5.NF.B.7	The concept of multiplication	Extend	Analysis	2
5.NF.B.7	A fraction or whole number by a fraction	Multiply	Apply	1

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	common factor equivalent fractions estimate like denominators mixed number quotient

Engaging Experience 1

Teaching Point: Today I'm going to teach you how to multiply a fraction by a whole number by using a model to show that the product of a fraction and a whole number can be represented as repeated addition.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NF.B.7 Extend the concept of multiplication to multiply a fraction or whole number by a fraction.

Detailed Description/Instructions:

> **One way to do this** is to use lesson 8-1 to teach students how to use models to show that the product of a fraction and a whole number can be interpreted as repeated addition.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 2

Teaching Point: Today I'm going to teach you how to multiply a whole number by a fraction by using models to represent multiplying a whole number by a fraction.

Suggested Length of Time: 1 day

Standards Addressed:

> **Priority:** 5.NF.B.7 Extend the concept of multiplication to multiply a fraction or whole number by a fraction.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 8-2 to teach students how to use models to represent multiplying a whole number by a fraction.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 3

Teaching Point: Today I'm going to teach you how to multiply fractions and whole numbers by rewriting the fraction as a whole number times a fraction, then multiplying the whole numbers and writing the product as a fraction or mixed number.

Suggested Length of Time: 1 day

Standards Addressed:

> **Priority:** 5.NF.B.7 Extend the concept of multiplication to multiply a fraction or whole number by a fraction.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 8-3 to teach students how to multiply fractions and whole numbers by writing the fraction as the product of a whole number (the numerator) and a fraction (the denominator), then multiply the whole numbers and write the product as a fraction or mixed number.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 4

Teaching Point: Today I'm going to teach you how to use models to multiply two fractions by extending the meaning of multiplying a whole number by a fraction to multiplying a fraction by a fraction using different models.

Suggested Length of Time: 1 day

Standards Addressed:

> **Priority:** 5.NF.B.7 Extend the concept of multiplication to multiply a fraction or whole number by a fraction.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 8-4 to teach students how to use models to multiply two fractions by extending the meaning of multiplying a whole number by a fraction to multiplying a fraction by a fraction using different models.

Bloom's Levels: Analysis
Webb's DOK: 2

Engaging Experience 5

Teaching Point: Today I'm going to teach you how to multiply two fractions by finding the product of two fractions, multiplying the numerators, and then multiplying the denominators.

Suggested Length of Time: 1 day

Standards Addressed:

> **Priority:** 5.NF.B.7 Extend the concept of multiplication to multiply a fraction or whole number by a fraction.
>
> **Supporting:** 5.NF.B.5 Justify the reasonableness of a product when multiplying with fractions.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 8-5 to teach students how to multiply two fractions by finding the product of two fractions, multiplying the numerators, and then multiplying the denominators.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 6

Teaching Point: Today I'm going to teach you how to find the area of a rectangle using fractions and diagrams by using an area model to represent the product of two fractions.

Suggested Length of Time: 1 day

Standards Addressed:

> **Priority:** 5.NF.B.7 Extend the concept of multiplication to multiply a fraction or whole number by a fraction.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 8-6 to teach students how to find the area of a rectangle using fractions and diagrams by using an area model to represent the product of two fractions.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 7

Teaching Point: Today I'm going to teach you how to use models, equations and previously learned strategies to multiply mixed numbers by extending the concept of multiplying fractions.
Suggested Length of Time: 1 day
Standards Addressed:

> **Priority:** 5.NF.B.7 Extend the concept of multiplication to multiply a fraction or whole number by a fraction.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 8-7 to teach students how to use models, equations and previously learned strategies to multiply mixed numbers by extending the concept of multiplying fractions.

Bloom's Levels: Analysis
Webb's DOK: 2

Engaging Experience 8

Teaching Point: Today I'm going to teach you how to compare the size of the product to the size of one factor without multiplying by using the relative size of the factors to determine the relative size of the product.
Suggested Length of Time: 1 day
Standards Addressed:

> **Priority:** 5.NF.B.7 Extend the concept of multiplication to multiply a fraction or whole number by a fraction.
> **Supporting:** 5.NF.B.5 Justify the reasonableness of a product when multiplying with fractions.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use lesson 8-8 to teach students how to use the relative size of the factors to determine the relative size of the product.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 9

Teaching Point: Today I'm going to teach you how to use previously learned knowledge to make sense of problems and persevere in solving them by making sense of problems and thinking of ways to solve them.
Suggested Length of Time: 1 day
Standards Addressed:

Priority: 5.NF.B.7 Extend the concept of multiplication to multiply a fraction or whole number by a fraction.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 8-9 to teach students how to use previously learned knowledge to make sense of problems and persevere in solving them by making sense of problems and thinking of ways to solve them.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 10

Teaching Point: Today we are going to review the idea that to multiply a whole number by a fraction means to find the value for a fraction of a whole and that models can be used to represent multiplying a fraction by a whole number.

Suggested Length of Time: 1 day

Standards Addressed

Priority: 5.NF.B.7 Extend the concept of multiplication to multiply a fraction or whole number by a fraction.

Detailed Description/Instructions:

☐ **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 375-378.

☐ **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 371-374.

☐ **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: 1

Topic 9: Apply Understanding of Division to Divide Fractions

Students extend their understanding of multiplication and fractions. They are introduced to division of fractions by dividing with unit fractions.
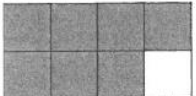
Number Routines

Number Talk: Use Area Models Partitioned into Eighths and Twelfths… page 192-194

The number strings in this category are structured to help students subtract fractions with like and unlike denominators. These number talks strings are organized into two columns and progress in difficulty.
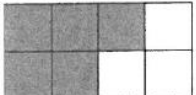
What is _____- _____? How do you know?
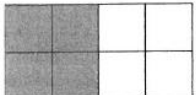*How can you use what you already know to solve the next problem?*

A.

$$\frac{7}{8} - \frac{2}{8}$$

$$\frac{7}{8} - \frac{3}{8}$$

$$\frac{7}{8} - \frac{5}{8}$$

B.

$$\frac{5}{8} - \frac{1}{8}$$

$$\frac{5}{8} - \frac{1}{2}$$

$$\frac{5}{8} - \frac{1}{4}$$

C.

$$\frac{1}{2} - \frac{1}{8}$$

$$\frac{1}{2} - \frac{3}{8}$$

$$\frac{1}{2} - \frac{1}{4}$$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Number Talks That Use Set Models for Subtraction with Fractions… page 195-199

These number talk strings are structured to help students think about composing and decomposing fractions and to consider equivalence when subtracting fractions. These number talks are organized into two columns and progress in difficulty (from A to B to C, etc.,...)

What is ___-___? How do you know?
How can you use what we already know to solve this next problem?

$$\underline{\hspace{3cm}} - \underline{\hspace{3cm}}$$

A. $\frac{5}{8} - \frac{1}{8}$

$\frac{5}{8} - \frac{1}{2}$

$\frac{5}{8} - \frac{1}{4}$

B. $\frac{1}{2} - \frac{1}{8}$

$\frac{1}{2} - \frac{3}{8}$

$\frac{1}{2} - \frac{1}{4}$

A. $\frac{3}{4} - \frac{1}{4}$

$\frac{3}{4} - \frac{1}{2}$

$\frac{3}{4} - \frac{1}{8}$

B. $\frac{3}{4} - \frac{1}{8}$
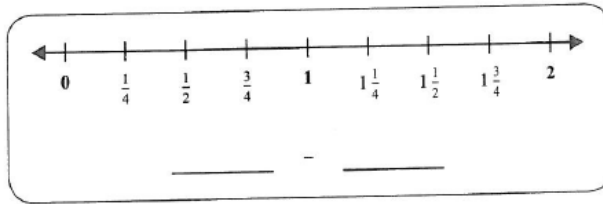
$\frac{3}{4} - \frac{3}{8}$

$\frac{3}{4} - \frac{5}{8}$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Using a Number Line Partitioned into Halves and Fourths (Category 1)... page 201-202

These number talk strings in this category are structured to help students subtract fractions with like and unlike denominators. These number talks are organized into three columns and progress in difficulty going from the first column (from A, to B to C, etc.,...) to the 2nd column to the 3rd column.

What is _____ − _____ ? How do you know?
How can you use what we already know to solve this next problem?

A. $\frac{3}{4} - \frac{1}{4}$

$\frac{3}{4} - \frac{1}{2}$

B. $1\frac{1}{2} - \frac{3}{4}$

$1\frac{1}{2} - 1\frac{1}{4}$

C. $2 - \frac{3}{4}$

$2 - 1\frac{1}{2}$

D. $\frac{6}{8} - \frac{2}{8}$

$\frac{6}{8} - \frac{1}{2}$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Using a Number Line Partitioned into Halves and Fourths (Category 2)... page 203-204

The number strings in this category are structured to help students consider subtracting fractions with like and unlike denominators. The number talks are organized into three columns and progress in difficulty going from the first column (from A to B to C, etc.,...) to the second column and third column.

What is _____ − _____ ? How do you know?
How can you use what we already know to solve this next problem?
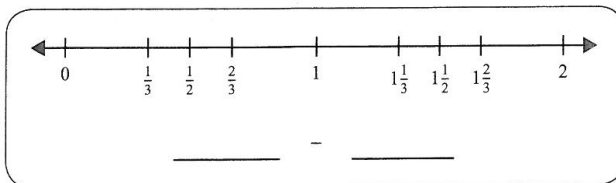
A. $\frac{5}{6} - \frac{3}{6}$

$\frac{5}{6} - \frac{2}{6}$

B. $1\frac{1}{3} - \frac{1}{3}$

$1\frac{1}{3} - \frac{2}{3}$

C. $2 - 1\frac{1}{3}$

$2 - 1\frac{2}{3}$

D. $\frac{5}{6} - \frac{1}{2}$

$\frac{5}{6} - \frac{1}{3}$

E. $1\frac{1}{3} - \frac{1}{6}$

$1\frac{1}{3} - \frac{3}{6}$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry   Parrish

Number Talk: Using Like Denominators (Category 1).... Page 207-208

The number talk strings in this category are structured to help students decompose fractions to get to a benchmark number. The number talks are organized into three columns and progress in difficulty going from the first column (from A to B to C) to the second column to the third column.

What is ___ - ___? How do you know?
How can you use what we already know to solve this next problem?

A. $4 - 1\frac{1}{2}$

$4 - 1\frac{1}{4}$

$4 - 1\frac{3}{4}$

B. $2 - 1\frac{4}{5}$

$2 - 1\frac{3}{5}$

$2 - 1\frac{2}{5}$

C. $3 - \frac{2}{3}$

$3 - 1\frac{2}{3}$

$3 - 1\frac{1}{3}$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Essential Questions:
- How are fractions related to division?
- How can you divide with whole numbers and unit fractions?

Enduring Understandings:
- A fraction can be interpreted as division of the numerator by the denominator.
- Models can be used to show how dividing a whole number by a fraction relates to multiplication.
- Models can be used to show part of a whole divided into equal parts, and to represent solving problems involving whole numbers divided by unit fractions.
- Area models and number lines can be used to represent and solve division problems involving whole numbers and unit fractions.

Priority Standards:
- 5.NF.B.8 Extend the concept of division to divide unit fractions and whole numbers by using visual fraction models and equations.

Supporting Standards:
- 5.RA.C.5 Solve and justify multi-step problems involving variables, whole numbers, fractions and decimals.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK

5.NF.B.8	The concept of division	Extend	Analysis	2
5.NF.B.8	Unit fractions and whole numbers	Divide	Apply	1

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	unit fraction
	common factor
	equivalent fractions
	estimate
	like denominators
	mixed numbers
	quotient

Engaging Experience 1

Teaching Point: Today I want to teach you how fractions are related to division by interpreting a fraction as division of the numerator by the denominator.

Suggested Length of Time: 1 day

Standards Addressed

　　　　Priority: 5.NF.B.8 Extend the concept of division to divide unit fractions and whole numbers by using visual fraction models and equations.

Detailed Description/Instructions:

　　☐ **One way to do this** is to use lesson 9-1 to teach students how a fraction can be interpreted as division of the numerator by the denominator.

Bloom's Levels: Analysis
Webb's DOK: 2

Engaging Experience 2

Teaching Point: Today I want to teach you how to implement division of fractions to show quotients as fractions and mixed numbers by understanding a fraction or mixed number is representing the quotient of two whole numbers.

Suggested Length of Time: 1 day

Standards Addressed

　　　　Priority: 5.NF.B.8 Extend the concept of division to divide unit fractions and whole numbers by using visual fraction models and equations.

Detailed Description/Instructions:

　　☐ **One way to do this** is to use lesson 9-2 to teach students how to represent the quotient of two whole numbers.

Bloom's Levels: Analysis
Webb's DOK: 2

Engaging Experience 3

Teaching Point: Today I want to teach you that multiplication can be used to divide a whole number by a unit fraction by using models to show how dividing a whole number by a fraction

relates to multiplication.

Suggested Length of Time: 1 day

Standards Addressed

    Priority: 5.NF.B.8 Extend the concept of division to divide unit fractions and whole numbers by using visual fraction models and equations.

Detailed Description/Instructions:

    ☐ **One way to do this** is to use lesson 9-3 to teach students how models can be used to show how dividing a whole number by a fraction relates to multiplication.

Bloom's Levels: Analysis

Webb's DOK: 2

Engaging Experience 4

Engaging Scenario

☐

3- ACT Math:
☐ Use the 3 ACT Math task from pages 384-384C to understand that many real-world problems can be represented with a mathematical model, but that model may not represent a real-world situation exactly.

Engaging Experience 5

Teaching Point: Today I want to teach you how to use models, such as pictorial models or a number line, to show dividing a whole number by a unit fraction by using visual fraction models to represent and solve problems involving whole numbers divided by unit fractions.

Suggested Length of Time: 1 day

Standards Addressed

    Priority: 5.NF.B.8 Extend the concept of division to divide unit fractions and whole numbers by using visual fraction models and equations.

Detailed Description/Instructions:

    ☐ **One way to do this** is to use lesson 9-4 to teach students how to use visual fraction models to represent and solve problems involving whole numbers divided by unit fractions.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 6

Teaching Point: Today I want to teach you to use models to divide unit fractions by non-zero whole numbers by dividing a unit fraction by a non-zero whole number using a model to show part of a whole divided into equal parts.

Suggested Length of Time: 1 day

Standards Addressed

    Priority: 5.NF.B.8 Extend the concept of division to divide unit fractions and whole numbers by using visual fraction models and equations.

Detailed Description/Instructions:

□ **One way to do this** is to use lesson 9-5 to teach students how models can be used to divide unit fractions by non-zero whole numbers by showing a part of a whole divided into equal parts.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 7

Teaching Point: Today I want to teach you how to use models to divide whole numbers and unit fractions by using area models and number lines to represent and solve division problems involving whole numbers and unit fractions.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NF.B.8 Extend the concept of division to divide unit fractions and whole numbers by using visual fraction models and equations.

Detailed Description/Instructions:

> □ **One way to do this** is to use lesson 9-6 to teach students how to use area models and number lines to represent and solve division problems involving whole numbers and unit fractions.

Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 8

Teaching Point: Today I want to teach you how solve multi-step problems involving division with unit fractions by solving sub-problems and then using those answers to solve the original problem.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NF.B.8 Extend the concept of division to divide unit fractions and whole numbers by using visual fraction models and equations.
> **Supporting:** 5.RA.C.5 Solve and justify multi-step problems involving variables, whole numbers, fractions and decimals.

Detailed Description/Instructions:

> □ **One way to do this** is to use lesson 9-7 to teach students how to solve sub-problems and then using those answers to solve the original problem.

Bloom's Levels: Analysis
Webb's DOK: 2

Engaging Experience 9

Teaching Point: Today I want to teach you to notice repetition in calculations and generalize about how to divide whole numbers and unit fractions by looking for things that reperat, and making generalizations.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:** 5.NF.B.8 Extend the concept of division to divide unit fractions and whole numbers by using visual fraction models and equations.

Detailed Description/Instructions:

    ☐ **One way to do this** is to use lesson 9-8 to teach students that good math thinkers look for things that repeat, and they make generalizations.

Bloom's Levels: Analysis
Webb's DOK: 2

Engaging Experience 10
Teaching Point: Today we are going to review the idea that to divide a whole number by a fraction means to find how many of the fraction parts there are in the whole, and to divide a fraction by a whole number means to find the original fraction of a whole and separate it into a certain number of equal parts.
Suggested Length of Time: 1 day
Standards Addressed
    Priority: 5.NF.B.8 Extend the concept of division to divide unit fractions and whole numbers by using visual fraction models and equations.
Detailed Description/Instructions:
    ☐ **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 421-422.
    ☐ **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 419-420.
    ☐ **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 423-424.
Bloom's Levels: Analysis
Webb's DOK: 2

Unit 2: Measurement and Data

Subject: Math
Grade: 5
Name of Unit: Measurement and Data
Length of Unit: 23 engaging experiences, 3 days of assessment (26 days)

Overview of Unit:
Students will explore the measurement system by solving problems and converting measurements while relating it to multiplication and division.

In Topic 10, students represent and interpret data on a line plot, with an emphasis on data involving fractions. They apply their understanding of line plots and operations with fractions and solve problems.

In Topic 11, students explore concepts of volume measurement for rectangular prisms and some composite solid figures. They relate volume to multiplication and addition.

In Topic 12, students convert measurement within a measurement system and solve problems using measurement conversions.

Getting Ready for the Unit:.

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

● Math Interview/Conference
● Quick Checks
  ○ Checkmark icon(s) within lesson
  ○ Assigned online
● Topic Pretest (online assessment)
● Convince Me
● Look Back
● Lesson Assessment Practice
	● Online Assessment
	● Topic Assessment
	  ○ Workbook version
	  ○ Printable version
	● Topic Performance Task
	  ○ Workbook version
	  ○ Printable version
	● 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:
- Multiplying Fractions

Number Talk: Number Talks that Use Unit Fractions and Whole Numbers with Multiplication… page 236-237
The following number talk strings use a unit fraction and a whole number as factors. The whole numbers are multiples of the denominators in the unit fractions to make it easier to partition.

What is _____ of _____? How do you know?

How can you use what we already know to solve this next problem?

How does this new problem relate to the previous problem(s)?

A. $\frac{1}{2}$ of 2

$\frac{1}{2}$ of 4

$\frac{1}{2}$ of 6

$\frac{1}{2}$ of 8

$\frac{1}{2}$ of 10

B. $\frac{1}{4}$ of 4

$\frac{1}{4}$ of 8

$\frac{1}{4}$ of 12

$\frac{1}{4}$ of 16

$\frac{1}{4}$ of 20

C. $\frac{1}{5}$ of 5

$\frac{1}{5}$ of 10

$\frac{1}{5}$ of 15

$\frac{1}{5}$ of 20

Reference *Number Talks: Fractions, Decimals and Percentages* by   Sherry Parrish

Number Talk: Number Talks that Use Fractions and Whole Numbers with Multiplication… page 238-241

These number talks are structured to help students extend their reasoning with unit fractions to multiply with fractions and whole numbers.

What is _____ of _____? How do you know?
How can you use what we already know to solve this next problem?
How does this new problem relate to the previous problem(s)?

A. $\frac{1}{10}$ of 10

$\frac{2}{10}$ of 10

$\frac{4}{10}$ of 10

$\frac{5}{10}$ of 10

$\frac{7}{10}$ of 10

B. $\frac{1}{4}$ of 8

$\frac{2}{4}$ of 8

$\frac{3}{4}$ of 8

$\frac{4}{4}$ of 8

$\frac{5}{4}$ of 8

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

The number talks in this section are structured to help students confront the idea of a shifting whole. Listen carefully to find out if students have formed the misconception of not relating the part of the part back to the original whole.

What is _____ of _____? How do you know?
How can you use what we already know to solve this next problem?

A.

$\frac{1}{2}$ of the whole

$\frac{1}{2}$ of $\frac{1}{2}$

$\frac{1}{4}$ of $\frac{1}{2}$

B.

$\frac{1}{2}$ of $\frac{3}{4}$

$\frac{1}{3}$ of $\frac{3}{4}$

$\frac{2}{3}$ of $\frac{3}{4}$

C.

$\frac{1}{4}$ of $\frac{4}{8}$

$\frac{1}{3}$ of $\frac{3}{8}$

$\frac{2}{3}$ of $\frac{3}{8}$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Multiplying a Fraction by a Fraction (Category 3)... page 252-253

These number strings are structured to help students think about decomposing a fraction into smaller fractions and using the distributive property to multiply. Each of the number talk strings begin with multiplying a fraction by a unit fraction to to offer students a more accessible starting point. The first problem can be used to solve all of the other problems in the string.

What is _____ × _____? How do you know? How can you use what we already know to solve this next problem?

A. $\frac{1}{4} \times \frac{4}{5}$

$\frac{1}{2} \times \frac{4}{5}$

$\frac{3}{4} \times \frac{4}{5}$

B. $\frac{1}{4} \times \frac{4}{7}$

$\frac{1}{2} \times \frac{4}{7}$

$\frac{3}{4} \times \frac{4}{7}$

C. $\frac{1}{4} \times \frac{4}{9}$

$\frac{1}{2} \times \frac{4}{9}$

$\frac{3}{4} \times \frac{4}{9}$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry   Parrish

Number Talk: Number Talks That Highlight the Multiplication Strategy "Switching Numerators or Denominators"... page 254-257

These number talks provide the opportunity for students to discuss why the products for each problem are the same. The factors in a multiplication problem can be multiplied in any order because of the commutative property.

What is _____ × _____? How do you know?
Why are the answers the same for each problem?
What relationships do you notice between these two problems?

A. $\frac{2}{2} \times \frac{1}{5}$

$\frac{1}{2} \times \frac{2}{5}$

B. $\frac{3}{2} \times \frac{2}{4}$

$\frac{2}{2} \times \frac{3}{4}$

C. $\frac{1}{3} \times \frac{3}{5}$

$\frac{3}{3} \times \frac{1}{5}$

D. $\frac{2}{3} \times \frac{3}{5}$

$\frac{3}{3} \times \frac{2}{5}$

E. $\frac{1}{4} \times \frac{4}{5}$

$\frac{4}{4} \times \frac{1}{5}$

F. $\frac{2}{4} \times \frac{4}{5}$

$\frac{4}{4} \times \frac{2}{5}$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Multiplying a Fraction by a Whole Number (Category 1)... page 259-260

Decomposing factors into factors can create easier multiplication problems. The strategy works because of the associative property. The number talk strings in this category consist of three problems and are structured to help students consider decomposing a factor into other factors to make a multiplication problem easier to solve. At least one factor in each problem is a whole number to provide a beginning place to investigate this strategy. The first two problems represent different ways to decompose the factors so the third problem in each string.

A. $3 \times \frac{1}{4} \times 8$

  $2 \times 4 \times \frac{3}{4}$

  $\frac{3}{4} \times 8$

B. $5 \times \frac{1}{8} \times 8$

  $\frac{5}{8} \times 2 \times 4$

  $\frac{5}{8} \times 8$

C. $3 \times \frac{1}{4} \times 12$

  $\frac{3}{4} \times 4 \times 3$

  $12 \times \frac{3}{4}$

What is _____ × _____? How do you know?
How can you use what we already know to solve this next problem?
How does this new problem relate to the previous problem(s)?

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Multiplying a Fraction by a Fraction (Category 2)... page 261-262

The following number talks consist of different ways to break apart the factors of the final problem in each string into other factors. The first two problems represent different ways to decompose the factors of the third problem in each string.

What is _____ × _____? How do you know?
How can you use what we already know to solve this next problem?
How does this new problem relate to the previous problem(s)?

A. $3 \times \frac{1}{4} \times \frac{4}{8}$

$\frac{3}{4} \times 4 \times \frac{1}{8}$

$\frac{3}{4} \times \frac{4}{8}$

B. $3 \times \frac{1}{4} \times \frac{4}{12}$

$\frac{3}{4} \times 4 \times \frac{1}{12}$

$\frac{3}{4} \times \frac{4}{12}$

C. $2 \times \frac{1}{3} \times \frac{3}{5}$

$\frac{2}{3} \times 3 \times \frac{1}{5}$

$\frac{2}{3} \times \frac{3}{5}$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Number Talks that Highlight Multiplication Strategy "Doubling and Halving" (Category 1)... page 263-267

When factors in a multiplication problem are changed by dividing one factor by a quantity and multiplying the other factor by that same amount, the product will always remain the same. This idea holds true whether students double and halve,

triple and third, quadruple and quarter, and so forth. This category of "Doubling and Halving" number talks are structured to begin with whole numbers and progress into fractions.

What is _____ × _____? How do you know?
How does this problem relate to the previous problem(s)?
Why do you think we are getting the same answer
each time?

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

A. 2×5

1×10

$\frac{1}{2} \times 20$

$\frac{1}{4} \times 40$

B. 2×10

1×20

$\frac{1}{2} \times 40$

$\frac{1}{4} \times 80$

C. 6×5

3×10

$1\frac{1}{2} \times 20$

$\frac{3}{4} \times 40$

Category 2: Multiplying a Fraction by a Fraction

The number strings in this category are comprised of strings of four sequential problems. The first multiplication problem in each string uses two fractions, and the final problem uses a whole number and a fraction. They are structured to give students opportunities to investigate relationships between problems when one factor is doubled and the other is halved.

What is _____ × _____ ? How do you know?
How does this problem relate to the previous problem(s)?
Why do you think we are getting the same answer each time?"

A. $\frac{1}{2} \times \frac{1}{2}$

$\frac{1}{4} \times 1$

$\frac{1}{8} \times 2$

$\frac{1}{16} \times 4$

B. $\frac{2}{5} \times \frac{1}{2}$

$\frac{1}{5} \times 1$

$\frac{1}{10} \times 2$

$\frac{1}{20} \times 4$

C. $\frac{4}{3} \times \frac{1}{2}$

$\frac{2}{3} \times 1$

$\frac{1}{3} \times 2$

$\frac{1}{6} \times 4$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Additional Personalized Practice and Application Suggestions:

Intervention	On-level	Advanced
● Reteach to Build Understanding ● Intervention Activity ● Additional Practice	● Build Mathematical Fluency ● Additional Practice ● Practice Buddy ● Build Mathematical Literacy ● Technology Center	● Enrichment ● Pick a Project ● enVision STEM Activity ● Problem Solving Reading Mat

Topic 10: Represent and Interpret Data

Students represent and interpret data on a line plot, with an emphasis on data involving fractions. They apply their understanding of line plots and operations with fractions to solve problems.

Essential Questions:
● How can line plots be used to represent data and answer questions?

Enduring Understandings:
● Line plots are one way to organize and represent numerical data collected in a survey.

- You can use line plots to see how data is distributed and to solve problems that involve data.

Priority Standards:
- 5.DS.A.2 Create a line plot to represent a given or generated data set, and analyze the data to answer questions and solve problems, recognizing the outliers and generating the median.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
5.DS.A.2	A line plot to represent a given or generated data set	Create	Analyze	2
5.DS.A.2	The data to answer questions and solve problems, recognizing the outliers and generating the median	Analyze	Analyze	2

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	line plot data bar graph compare frequency table overestimate underestimate

Engaging Experience 1

Teaching Point: Today I want to teach you to read and analyze line plots by organizing and representing numerical data collected in a survey.

Suggested Length of Time: 1 day

Standards Addressed

Priority:
- 5.DS.A.2 Create a line plot to represent a given or generated data set, and analyze the data to answer questions and solve problems, recognizing the outliers and generating the median.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 10-1 to teach students how organize and represent numerical data collected in a survey.

Bloom's Levels: Analyze
Webb's DOK: 2

Engaging Experience 2

Teaching Point: Today I want to teach you how to organize and display data in a line plot by using a line plot to organize and represent numerical data and using a line plot to see how data is distributed.

BOE Approved June 20, 2019

Suggested Length of Time: 1 day
Standards Addressed
    Priority:
- 5.DS.A.2 Create a line plot to represent a given or generated data set, and analyze the data to answer questions and solve problems, recognizing the outliers and generating the median.

Detailed Description/Instructions:
- ☐ **One way to do this** is to use lesson 10-2 to teach students that line plots are one way to organize and represent numerical data and that you can use a line plot to see how data is distributed.

Bloom's Levels: Analyze
Webb's DOK: 2

Engaging Experience 3

Teaching Point: Today I want to teach you to solve problems using data in a line plot by using plots to solve problems that involve data.
Suggested Length of Time:
Standards Addressed
    Priority:
- 5.DS.A.2 Create a line plot to represent a given or generated data set, and analyze the data to answer questions and solve problems, recognizing the outliers and generating the median.

Detailed Description/Instructions:
- ☐ **One way to do this** is to use lesson 10-3 to teach students how to use line plots to solve problems that involve data.

Bloom's Levels: Analyze
Webb's DOK: 2

Engaging Experience 4

Teaching Point: Today I want to teach you to critique the reasoning of others using understanding of line plots and fractions by explaining why you are right and talking about the math that others do.
Suggested Length of Time: 1 day
Standards Addressed
    Priority:
- 5.DS.A.2 Create a line plot to represent a given or generated data set, and analyze the data to answer questions and solve problems, recognizing the outliers and generating the median.

Detailed Description/Instructions:
- ☐ **One way to do this** is to use lesson 10-4 to teach students that good math thinkers use math to explain why they are right and can talk about the math that others do.
- ☐ **Bloom's Levels:** Analyze

Webb's DOK: 2

Engaging Experience 5

Teaching Point: Today we are going to review the idea that line plots are used to analyze and

compare data and can be used to represent data and answer questions.

Suggested Length of Time: 1 day

Standards Addressed

> **Priority:**
>> ● 5.DS.A.2 Create a line plot to represent a given or generated data set, and analyze the data to answer questions and solve problems, recognizing the outliers and generating the median.

Detailed Description/Instructions:

> ☐ **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 449-450.
>
> ☐ **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 447-448.
>
> ☐ **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 4451-452.

Bloom's Levels: Analyze

Webb's DOK: 2

Topic 11: Understand Volume Concepts
Students explore concepts of volume measurement for rectangular prisms and some composite solid figures. They relate volume to multiplication and addition.

Essential Questions:

- What is the meaning of volume of a solid?
- How can the volume of a rectangular prism be found?

Enduring Understandings:

- Formulas can be used to find the volume of rectangular prisms and cubes.
- The volume of a solid figure composed of rectangular prisms can be found by adding the volumes of the rectangular prisms.

Priority Standard:

- 5.GM.B.5 Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for volume of right rectangular prisms with whole-number edge lengths.

Supporting Standard:

- 5.GM.B.4 Understand the concept of volume and recognize that volume is measured in cubic units.
- 5.GM.A.3 Analyze and describe the properties of prisms and pyramids.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
5.GM.B.5	The formulas $V = l \times w \times h$ and $V = B \times h$ for volume of right rectangular prisms with whole number edge lengths	Apply	Apply	1

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	volume
	cubic unit
	cube
	rectangular prism
	unit cube
	formula
	compensation
	rectangle
	partial products
	unit fraction

Engaging Experience 1

Teaching Point: Today I'm going to teach you to find the volume of solid figures by counting the number of cubic units needed to fill a three-dimensional figure.

Suggested Length of Time: 1 day

Standards Addressed:

    Priority:
- 5.GM.B.5 Apply the formulas V=l x w x h and V=B xh for volume of right rectangular prisms with whole-number edge lengths.

    Supporting:
- 5.GM.B.4 Understand the concept of volume and recognize that volume is measured in cubic units.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 11-1 to show how to count the number of cubic units needed to fill a three-dimensional figure to find the volume.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 2

Teaching Point: Today I'm going to teach you how to find the volume of rectangular prisms by using a formula to find the volume of rectangular prism and cubes.

Suggested Length of Time: 1 day

Standards Addressed:

    Priority:
- 5.GM.B.5 Apply the formulas V=l x w x h and V=B xh for volume of right rectangular prisms with whole-number edge lengths.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 11-2 to show how formulas can be used to find the volume of rectangular prisms and cubes.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 3

<div style="background:#5c3a16; color:white; text-align:center; padding:10px;">Engaging Scenario</div>

<div style="background:#f2c04d; padding:10px;">

3- ACT Math: Filler'Up

☐ Use the 3-ACT Math task on pages 456-456C to teach students that many real-world problems can be represented with a mathematical model, but that model may not represent a real-world situation exactly.

</div>

Engaging Experience 4

Teaching Point: Today I'm going to teach you how to find the volume of a solid figure that is combination of two or more rectangular prisms by adding the volumes of the rectangular prisms.

Suggested Length of Time: 1 day

Standards Addressed:

    Priority:

- 5.GM.B.5 Apply the formulas V=l x w x h and V=B xh for volume of right rectangular prisms with whole-number edge lengths.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 11-3 to show how formulas can be used to find the volume of rectangular prisms and cubes.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 5

(Note: See below for printable PDF to use with students during lesson.)

Teaching Point: Today I'm going to teach you to analyze and describe the properties of prisms and pyramids by exploring prisms and pyramids.

Suggested Length of Time: 1 day

Standards Addressed:

    Supporting:

- 5.GM.A.3 Analyze and describe the properties of prisms and pyramids.

Detailed Description/Instructions:

☐ **One way to do this** is to use prism and pyramid manipulatives to explore the properties. Use the page to guide discussion.
http://media.pearsoncmg.com/curriculum/math/envision2012/pdf/cc5_MD_7.pdf

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 6

Teaching Point: Today I'm going to teach you to solve word problems by using models, prior knowledge of volume and previously learned strategies.

Suggested Length of Time: 1 day

Standards Addressed:

    Priority:

- 5.GM.B.5 Apply the formulas V=l x w x h and V=B xh for volume of right rectangular prisms with whole-number edge lengths.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 11-4 to solve word problems.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 7

Teaching Point: Today I'm going to teach you to solve volume problems by using previously learned knowledge about volume to choose appropriate tools.

Suggested Length of Time: 1 day

Standards Addressed:

    Priority:

- 5.GM.B.5 Apply the formulas V=l x w x h and V=B xh for volume of right rectangular prisms with whole-number edge lengths.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 11-5 to solve volume problems.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 8

Teaching Point: Today we are going to review the idea that volume is the number of cubic units needed to fill a solid figure and for a rectangular prism, volume can be found using the formula: volume=(length x width) x height

Suggested Length of Time: 1 day

Standards Addressed

    Priority:

- 5.GM.B.5 Apply the formulas V=l x w x h and V=B xh for volume of right rectangular prisms with whole-number edge lengths.

    Supporting:

- 5.GM.B.4 Understand the concept of volume and recognize that volume is measured in cubic units.

Detailed Description/Instructions:

☐ **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 481-482.

☐ **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 479-480.

☐ **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 483-484.

Bloom's Levels: Apply

Webb's DOK: 1

Topic 12: Convert Measurements
Students convert measurements within a measurement system and solve problems using measurement conversions.

Essential Questions:
- What are customary measurement units and how are they related?
- What are metric measurement units and how are they related?

Enduring Understandings:
- Multiplication and division are used to convert among different customary units of measurement.
- Multiplication and division are used to convert among different metric units of measurements.
- Good math thinkers can solve problems by first solving one or more sub-problems and then using the answer(s) to solve the original problem.

Priority Standards:
- 5.GM.D.8 Convert measurements of capacity, length and weight within a given measurement system.

Supporting Standards:
- 5.GM.D.9 Solve multi-step problems that require measurement conversions.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
5.GM.D.8	measurements of capacity, length and weight within a given measurement system	Convert	Apply	1

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	inch (in.) foot (ft) yard (yd) mile (mi) millimeter (mm) meter (m) centimeter (cm) kilometer (km) capacity cup (c)

	fluid ounce (fl oz)
	pint (pt)
	quart (qt)
	gallon (gal)
	liter (L)
	milliliter (mL)
	hour (hr)
	minute (min)
	second (sec)
	weight
	mass
	ton (T)
	pound (lb)
	ounce (oz)
	milligram (mg)
	gram (g)
	kilogram (kg)

Engaging Experience 1

Teaching Point: Today I am going to teach you how to convert customary units of length by using multiplication and division to convert among different units of length.

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- 5.GM.D.8 Convert measurements of capacity, length and weight within a given measurement system.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 12-1 to convert customary units of length.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 2

Teaching Point: Today I am going to teach you how to convert customary units of capacity by using multiplication and division to convert among different units of capacity.

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- 5.GM.D.8 Convert measurements of capacity, length and weight within a given measurement system.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 12-2 to convert customary units of capacity.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 3

Teaching Point: Today I am going to teach you how to convert customary units of weight by using multiplication and division to convert among different units of weight.

Suggested Length of Time: 1 day
Standards Addressed
    Priority:
- 5.GM.D.8 Convert measurements of capacity, length and weight within a given measurement system.

Detailed Description/Instructions:
    ☐ **One way to do this** is to use lesson 12-3 to convert customary units of weight.
Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 4
Teaching Point: Today I am going to teach you how to convert metric units of length by using multiplication and division to convert among different units of length.
Suggested Length of Time: 1 day
Standards Addressed
    Priority:
- 5.GM.D.8 Convert measurements of capacity, length and weight within a given measurement system.

Detailed Description/Instructions:
    ☐ **One way to do this** is to use lesson 12-4 to convert metric units of length.
Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 5
Teaching Point: Today I am going to teach you how to convert metric units of capacity by using multiplication and division to convert among different units of capacity.
Suggested Length of Time: 1 day
Standards Addressed
    Priority:
- 5.GM.D.8 Convert measurements of capacity, length and weight within a given measurement system.

Detailed Description/Instructions:
    ☐ **One way to do this** is to use lesson 12-5 to convert metric units of capacity.
Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 6
Teaching Point: Today I am going to teach you how to convert metric units of mass by using multiplication and division to convert among different units of mass.
Suggested Length of Time: 1 day
Standards Addressed
    Priority:
- 5.GM.D.8 Convert measurements of capacity, length and weight within a given measurement system.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 12-6 to convert metric units of mass.
Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 7

Teaching Point: Today I am going to teach you how to convert units of time by using multiplication and division to convert between units of time.
Suggested Length of Time: 1 day
Standards Addressed
    Priority:
- 5.GM.D.8 Convert measurements of capacity, length and weight within a given measurement system.

Detailed Description/Instructions:
☐ **One way to do this** is to use lesson 12-7 to convert units of time.
Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 8

Teaching Point: Today I am going to teach you to solve real-world problems with measurement conversions by first finding and solving one or more sub-problems, and then using the answer(s) to solve the original problem.
Suggested Length of Time: 1 day
Standards Addressed
    Priority:
- 5.GM.D.8 Convert measurements of capacity, length and weight within a given measurement system.

    Supporting:
- 5.GM.D.9 Solve multi-step problems that require measurement conversions.

Detailed Description/Instructions:
☐ **One way to do this** is to use lesson 12-8 to solve real-world problems with measurement conversions.
Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 9

Teaching Point: Today I am going to teach you how to be precise when solving measurement problems by being careful about what you write and say so that your ideas about math are clear.
Suggested Length of Time: 1 day
Standards Addressed
    Priority:
- 5.GM.D.8 Convert measurements of capacity, length and weight within a given measurement system.

Detailed Description/Instructions:
☐ **One way to do this** is to use lesson 12-9 to be precise when solving measurement problems.
Bloom's Levels: Apply

Engaging Experience 10

Teaching Point: Today we are going to review 1.) converting units of time, 2.) converting measurement conversions in customary units of length, capacity, and weight, 3.) converting metric units of length, capacity, and mass, and 4.) solving word problems using measurement conversions with precision.

Suggested Length of Time: 1 day

Standards Addressed

    Priority:
- 5.GM.D.8 Convert measurements of capacity, length and weight within a given measurement system.

    Supporting:
- 5.GM.D.9 Solve multi-step problems that require measurement conversions.

Detailed Description/Instructions:
- ☐ **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 529-530.
- ☐ **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 527-528.
- ☐ **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 531-532.

Bloom's Levels: Apply

Webb's DOK: 1

Unit 3: Operations and Algebra Part 1

Subject: Math
Grade: 5
Name of Unit: Operations and Algebra Part 1
Length of Unit: 5 engaging experiences, 1 day of assessment (6 days)

Overview of Unit:
Students look for patterns and plot their relationship on a coordinate plane.

In Topic 13, students use the Order of Operations to evaluate, write, and interpret numerical expressions with grouping symbols.

Getting Ready for the Unit:

Formative Assessment Options *(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)*	Summative Assessment Options *(Administered at the end of unit or topic to assess mastery of learning objectives.)*
- Math Interview/Conference - Quick Checks - Checkmark icon(s) within lesson - Assigned online - Topic Pretest (online assessment) - Convince Me - Look Back - Lesson Assessment Practice	- Online Assessment - Topic Assessment - Workbook version - Printable version - Topic Performance Task - Workbook version - Printable version - 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:

- Dividing Fractions Number Talks

<table>
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Number Talk: Using Whole Number Divisors with Mixed Quotients (Category 1)... page 291-292

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The number talk strings in this category are structured to help student interpret remainders when using whole number divisors. Each string consists of 3 problems; the answer to each problem will result in a quotient that can be represented as a fraction or a mixed number.

There are _____ brownies left from the party. _____ friends plan to share them.
How can they share the brownies so they each have the same amount?
How do you know?
How can you use what we already know to solve this next problem?

A.	$1 \div 2$
	$3 \div 2$
	$5 \div 2$
B.	$7 \div 6$
	$8 \div 6$
	$9 \div 6$
C.	$3 \div 3$
	$5 \div 3$
	$8 \div 3$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

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Number Talk: Using Whole Number Divisors with Quotients Less Than 1 (Category 2)... page 293-294

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The number talk strings in this category are structured to help students continue with whole number division using divisors equal to or greater than the dividend. Each string consists of 4 problems.

There are ___ cookies to share among _____ people. How can the cookies be shared so everyone has the same amount How do you know? How can you use what we already know to solve the next problem?

$$2 \div 2$$
$$2 \div 3$$
$$2 \div 4$$
$$2 \div 5$$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

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The number talk strings in this category are structured to help students consider the relationship between the divisor and the quotient. Each number talk string consists of three problems using the same whole number dividend.

How many _____ are in _____ ? How do you know? How can you use what we already know to solve this next problem?

A. $1 \div \frac{1}{2}$

$1 \div \frac{1}{4}$

$1 \div \frac{1}{8}$

B. $2 \div \frac{1}{2}$

$2 \div \frac{1}{4}$

$2 \div \frac{1}{8}$

C. $3 \div \frac{1}{2}$

$3 \div \frac{1}{4}$

$3 \div \frac{1}{8}$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry   Parrish

Additional Personalized Practice and Application Suggestions:

Intervention	On-level	Advanced
● Reteach to Build Understanding ● Intervention Activity ● Additional Practice	● Build Mathematical Fluency ● Additional Practice ● Practice Buddy ● Build Mathematical Literacy ● Technology Center	● Enrichment ● Pick a Project ● enVision STEM Activity ● Problem Solving Reading Mat

Topic 13: Write and Interpret Numerical Expressions
Students use the Order of Operations to evaluate, write, and interpret numerical expressions with

BOE Approved June 20, 2019

Essential Questions:
- How is the value of a numerical expression found?

Enduring Understandings:
- There is an agreed-upon order in which operations are carried out in a numerical expression.
- Numerical expressions can represent the calculations needed to solve a problem.

Priority Standards:
- 5.RA.B.3 Write, evaluate and interpret numeric expressions using the order of operations.

Supporting Standards:
- 5.RA.B.4 Translate written expressions into algebraic expressions.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
5.RA.B.3	Numeric expressions using the order of operations.	Write	Apply	1
5.RA.B.3	Numeric expressions using the order of operations.	Evaluate	Apply	1
5.RA.B.3	Numeric expressions using the order of operations.	Interpret	Apply	1

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	numerical expression order of operations brackets evaluate parentheses braces

Engaging Experience 1

Teaching Point: Today I am going to teach you to use the order of operations to evaluate expressions by understanding the agreed upon order in which operations are carried out in a numerical expression.

Suggested Length of Time: 1 day

Standards Addressed

    Priority:
- 5.RA.B.3 Write, evaluate and interpret numeric expressions using the order of operations.

Detailed Description/Instructions:
- ☐ **One way to do this** is to use lesson 13-1 to teach how to use the order of operations

to evaluate expressions.
Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 2
Teaching Point: Today I am going to teach you to write simple expressions that show calculations with numbers by representing the calculations needed to solve a problem with numerical expressions.
Suggested Length of Time: 1 day
Standards Addressed
    Priority:
- 5.RA.B.3 Write, evaluate and interpret numeric expressions using the order of operations.
    Supporting:
- 5.RA.B.4 Translate written expressions into algebraic expressions.
Detailed Description/Instructions:
    ☐ **One way to do this** is to use lesson 13-2 to write simple expressions that show calculations with numbers.
Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 3
Teaching Point: Today I am going to teach you to interpret numerical expressions without evaluating them by knowing numerical expressions show relationships among the quantities involved, which you can interpret without evaluating the expressions.
Suggested Length of Time: 1 day
Standards Addressed
    Priority:
- 5.RA.B.3 Write, evaluate and interpret numeric expressions using the order of operations.
Detailed Description/Instructions:
    ☐ **One way to do this** is to use lesson 13-3 to interpret numerical expressions without evaluating them.
Bloom's Levels: Apply
Webb's DOK: 1

Engaging Experience 4

Engaging Scenario

3- ACT Math: Measure Me!
☐ Use the Topic 13 3-ACT math task on page 536 to teach how to model with math to solve a problem that involves working with numerical expressions.

Engaging Experience 5
Teaching Point: Today I am going to teach you to use reasoning to solve problems by making sense of quantities and relationships in the situation by understanding that good math thinkers know how to think about words and numbers to solve problems.

Suggested Length of Time: 1 day

Standards Addressed

    Priority:

- 5.RA.B.3 Write, evaluate and interpret numeric expressions using the order of operations.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 13-4 to teach how to use reasoning to solve problems by making sense of quantities and relationships in the situation.

Bloom's Levels: Apply

Webb's DOK: 1

Engaging Experience 5

Teaching Point: Today we are going to review writing and interpreting numerical expressions.

Suggested Length of Time: 1 day

Standards Addressed

    Priority: 5.RA.B.3 Write, evaluate and interpret numeric expressions using the order of operations.

Detailed Description/Instructions:

☐ **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 557-558.

☐ **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 555-556.

☐ **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 559-560.

Bloom's Levels: Apply

Webb's DOK: 1

Unit 4: Geometry Part 1

Subject: Math
Grade: 5
Name of Unit: Geometry Part 1
Length of Unit: 5 engaging experiences, 1 day of assessment (6 days)

Overview of Unit:
Students will learn to use a the coordinate plane to graph ordered pairs.

In Topic 14, students develop an understanding of the coordinate system. They graph ordered pairs in the first quadrant of the coordinate plane to solve problems.

Getting Ready for the Unit:

Formative Assessment Options *(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)*	Summative Assessment Options *(Administered at the end of unit or topic to assess mastery of learning objectives.)*
- Math Interview/Conference - Quick Checks - Checkmark icon(s) within lesson - Assigned online - Topic Pretest (online assessment) - Convince Me - Look Back - Lesson Assessment Practice	- Online Assessment - Topic Assessment - Workbook version - Printable version - Topic Performance Task - Workbook version - Printable version - 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: Adding Tenths and Hundredths (Category 1)... p. 337-338

The number talks strings in this category use addends with tenths and hundredths. The addends in the first two columns have like place values, while the third column requires thinking about tenths and hundredths simultaneously.

What is _____ + _____ ? How do you know?
How can you use what we already know to solve this next problem?

A. $0.20 + 0.10$
    $0.02 + 0.05$
    $0.22 + 0.15$

B. $0.10 + 0.10$
    $0.03 + 0.04$
    $0.13 + 0.14$

C. $0.30 + 0.20$
    $0.06 + 0.02$
    $0.36 + 0.22$

D. $0.50 + 0.30$
    $0.06 + 0.03$
    $0.56 + 0.33$

E. $0.30 + 0.20$
    $0.05 + 0.04$
    $0.35 + 0.24$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Adding Hundredths and Thousandths (Category 2)... p. 339-340

The number talk strings in this category use addends with hundredths and thousandths. The addends in the first columns have like place values, while the second and third columns have a combination of hundredths and thousandths.

What is _____ + _____? How do you know?
How can you use what we already know to solve this next problem?

A. $0.200 + 0.200$
   $0.060 + 0.30$
   $0.007 + 0.02$
   $0.267 + 0.232$

B. $0.100 + 0.200$
   $0.010 + 0.070$
   $0.005 + 0.002$
   $0.115 + 0.272$

C. $0.200 + 0.100$
   $0.010 + 0.030$
   $0.006 + 0.003$
   $0.216 + 0.133$

D. $0.100 + 0.200$
   $0.030 + 0.010$
   $0.005 + 0.003$
   $0.135 + 0.213$

E. $0.300 + 0.100$
   $0.010 + 0.080$
   $0.005 + 0.002$
   $0.315 + 0.182$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Number Talks That Highlight the Addition Strategy "Adding Up by Chunks": Adding Hundredths (Category 1)... p. 342-343

The number talk strings in this category are organized by pairs of problems that use hundredths. The sums for the problems in the first two columns are less than 1 and use numbers that do not require regrouping.

What is _____ + _____? How do you know?
How can you use what we already know to solve
this next problem?

A.	$0.16 + 0.40$
	$0.16 + 0.42$
B.	$0.26 + 0.50$
	$0.26 + 0.53$
C.	$0.24 + 0.50$
	$0.24 + 0.55$
D.	$0.46 + 0.50$
	$0.46 + 0.53$
E.	$0.62 + 0.30$
	$0.62 + 0.37$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Number Talks That Highlight the Addition Strategy "Adding Up by Chunks":

The number talk strings in this category are organized by problems that use hundredths and thousandths. The first two columns use pairs of problems with addends that are a combination of hundredths and thousandths. Both addends in the third column are in the thousandths.

A. $0.156 + 0.40$

$0.156 + 0.43$

What is _____ + _____ ? How do you know?
How can you use what we already know to solve this next problem?

B. $0.125 + 0.60$

$0.125 + 0.68$

C. $0.247 + 0.80$

$0.247 + 0.84$

D. $0.325 + 0.70$

$0.325 + 0.74$

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Additional Personalized Practice and Application Suggestions:

Intervention	On-level	Advanced
● Reteach to Build Understanding ● Intervention Activity ● Additional Practice	● Build Mathematical Fluency ● Additional Practice ● Practice Buddy ● Build Mathematical Literacy ● Technology Center	● Enrichment ● Pick a Project ● enVision STEM Activity ● Problem Solving Reading Mat

Topic 14: Graph Points on the Coordinate Plane

Students develop an understanding of the coordinate system. They graph ordered pairs in the first quadrant of the coordinate plane to solve problems.

Essential Questions:
- How are points plotted?
- How are relationships shown on a graph?

Enduring Understandings:

- The coordinate system uses two perpendicular number lines intersecting at 0 to name the location of points in the plane.
- A coordinate grid has an x-axis and a y-axis that can be used to locate points in two dimensions.

Priority Standards:
- 5.GM.C.7 Plot and interpret points in the first quadrant of the Cartesian coordinate plane.

Supporting Standards:
- 5.GM.C.6 Define a first quadrant Cartesian coordinate system
  a. Represent the axes as scaled perpendicular number lines that both intersect at 0, the origin.
  b. Identify any point on the Cartesian coordinate plane by its ordered pair coordinates.
  c. Define the first number in an ordered pair as the horizontal distance from the origin.
  d. Define the second number in an ordered pair as the vertical distance from the origin.
- 5.DS.A.1 Create a line graph to represent a data set, and analyze the data to answer questions and solve problems.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
5.GM.C.7	Points in the first quadrant of the Cartesian coordinate plane	Plot	Apply	2
5.GM.C.7	Points in the first quadrant of the Cartesian coordinate plane	Interpret	Analyze	2

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	Coordinate plane
	Ordered pairs
	X-axis
	Y-axis
	X-coordinate
	Y-coordinate

Engaging Experience 1

Teaching Point: Today I am going to teach you how to locate points on a coordinate grid by understanding the coordinate system uses two perpendicular number lines intersecting at 0 to name the location of points in the plane.

Suggested Length of Time: 1 day
Standards Addressed
    Priority:
- 5.GM.C.7 Plot and interpret points in the first quadrant of the Cartesian coordinate plane.

    Supporting:
- 5.GM.C.6 Define a first quadrant Cartesian coordinate system

Detailed Description/Instructions:
    ☐ **One way to do this** is to use lesson 14-1 to locate points on a coordinate grid.
Bloom's Levels: Apply
Webb's DOK: 2

Engaging Experience 2

Teaching Point: Today I am going to teach you how to graph points on a coordinate grid by understanding a coordinate grid has an x-axis and a y-axis that can be used to locate points in two dimensions.
Suggested Length of Time: 1 day
Standards Addressed
    Priority:
- 5.GM.C.7 Plot and interpret points in the first quadrant of the Cartesian coordinate plane.

    Supporting:
- 5.GM.C.6 Define a first quadrant Cartesian coordinate system

Detailed Description/Instructions:
    ☐ **One way to do this** is to use lesson 14-2 to graph points on a coordinate grid.
Bloom's Levels: Apply
Webb's DOK: 2

Engaging Experience 3

Teaching Point: Today I am going to teach you how to solve real-world problems by graphing points by understanding points that lie on a line can be connected and extended to solve problems.
Suggested Length of Time: 1 day
Standards Addressed
    Priority:
- 5.GM.C.7 Plot and interpret points in the first quadrant of the Cartesian coordinate plane.

    Supporting:
- 5.GM.C.6 Define a first quadrant Cartesian coordinate system.
- 5.DS.A.1 Create a line graph to represent a data set, and analyze the data to answer questions and solve problems.

Detailed Description/Instructions:
    ☐ **One way to do this** is to use lesson 14-3 to solve real-world problems by graphing points.
Bloom's Levels: Analyze

Webb's DOK: 2

Engaging Experience 4
Teaching Point: Today I am going to teach you how to use reasoning to solve problems by making sense of quantities and relationships in the situation.
Suggested Length of Time: 1 day
Standards Addressed
    Priority:
- 5.GM.C.7 Plot and interpret points in the first quadrant of the Cartesian coordinate plane.
- 5.DS.A.1 Create a line graph to represent a data set, and analyze the data to answer questions and solve problems.

Detailed Description/Instructions:
- ☐ **One way to do this** is to use lesson 14-4 to use reasoning to solve problems by making sense of quantities and relationships in the situation.

Bloom's Levels: Analyze
Webb's DOK: 2

Engaging Experience 5
Teaching Point: Today we are going to review how points are graphed on a grid with an x-axis and y-axis and how related information in a table can be used as ordered pairs and then graphed on a coordinate grid.
Suggested Length of Time: 1 day
Standards Addressed
    Priority:
- 5.GM.C.7 Plot and interpret points in the first quadrant of the Cartesian coordinate plane.
    Supporting:
- 5.GM.C.6 Define a first quadrant Cartesian coordinate system

Detailed Description/Instructions:
- ☐ **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 585-586.
- ☐ **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 583-584.
- ☐ **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 587-588.

Bloom's Levels: Apply
Webb's DOK: 1

Unit 5: Operations and Algebra Part II

Subject: Math
Grade: 5
Name of Unit: Operations and Algebra
Length of Unit: 6 engaging experiences, 1 day of assessment (7 days)

Overview of Unit:
Students look for patterns and plot their relationship on a coordinate plane.

In Topic 15, students generate and analyze numerical patterns. They identify a relationship between two patterns and graph the relationship on a coordinate plane.

Getting Ready for the Unit:

Formative Assessment Options *(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)*	Summative Assessment Options *(Administered at the end of unit or topic to assess mastery of learning objectives.)*
● Math Interview/Conference ● Quick Checks	● Online Assessment ● Topic Assessment

○ Checkmark icon(s) within lesson
○ Assigned online
● Topic Pretest (online assessment)
● Convince Me
● Look Back
● Lesson Assessment Practice
	○ Workbook version
	○ Printable version
	● Topic Performance Task
	  ○ Workbook version
	  ○ Printable version
	● 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:
- Algebra: Analyze Patterns and Relationships

Number Talk: Number Talks That Highlight the Addition Strategy "Making Benchmark Numbers": Adding Hundredths (Category 1)... p. 346-347
The number talk strings in this category are organized by pairs of problems that use hundredth. In the second problem of each pair, one addend is one unit away from a benchmark number. What is ____ + ____ ? How do you know? How can you use what we already know to solve this next problem? A. $0.20 + 0.26$ $0.19 + 0.26$ B. $0.28 + 0.40$ $0.28 + 0.39$ C. $0.40 + 0.51$ $0.39 + 0.51$ D. $0.23 + 0.50$ $0.23 + 0.49$

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Number Talk: Number Talks That Highlight the Addition Strategy "Making Benchmark Numbers": Adding Mixed Decimals (Category 2)... p. 348

The number talk strings in this category are organized by pairs of problems that use mixed decimals and decimals in the hundredths. One or both addends in each of the problems in close to a benchmark number.

What is _____ + _____ ? How do you know?
How can you use what we already know to solve this next problem?

A. 1.00 + 1.38
    0.99 + 1.38

B. 1.20 + 0.26
    1.19 + 0.26

C. 0.36 + 1.10
    0.36 + 1.09

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Additional Personalized Practice and Application Suggestions:

Intervention	On-level	Advanced
● Reteach to Build Understanding ● Intervention Activity ● Additional Practice	● Build Mathematical Fluency ● Additional Practice ● Practice Buddy ● Build Mathematical Literacy ● Technology Center	● Enrichment ● Pick a Project ● enVision STEM Activity ● Problem Solving Reading Mat

Topic 15: Algebra: Analyze Patterns and Relationships
Students generate and analyze numerical patterns. They identify a relationship between two patterns and graph the relationship on a coordinate plane.

Essential Questions:

- How can number patterns be analyzed and graphed?
- How can number patterns and graphs be used to solve problems?

Enduring Understandings:
- Two patterns can be extended using the same rule, and there will be a relationship between the patterns.
- A graph can show the relationship between two number sequences.

Priority Standards:
- 5.RA.A.1 Investigate the relationship between two numeric patterns.
    - a. Generate two numeric patterns given two rules.
    - b. Translate two numeric patterns in two sets of ordered pairs.
    - c. Graph numeric patterns on the Cartesian coordinate plane.
    - d. Identify the relationship between two numeric patterns.

Supporting Standards:
- 5.RA.A.2 Write a rule to describe or explain a given numeric pattern

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
5.RA.A.1	The relationship between two numeric patterns	Investigate	Analyze	3

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	corresponding terms number sequence

Engaging Experience 1
Teaching Point: Today I am going to to teach you to analyze numerical patterns by understanding that two patterns can be extended using the same rule, and there will be a relationship between the patterns.
Suggested Length of Time: 1 day
Standards Addressed
> **Priority:**
> - 5.RA.A.1 Investigate the relationship between two numeric patterns.

Detailed Description/Instructions:
   ☐ **One way to do this** is to use lesson 15-1 to teach how to analyze numerical patterns.
Bloom's Levels: Analyze
Webb's DOK: 3

Engaging Experience 2
Teaching Point: Today I am going to teach you to use tables to identify relationships between patterns by understanding that two patterns can be extended using rules, and there will be a

relationship between the patterns.

Suggested Length of Time: 1 day

Standards Addressed

    Priority:

- 5.RA.A.1 Investigate the relationship between two numeric patterns.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 15-2 to teach students to use tables to identify relationships between patterns.

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Experience 3

Teaching Point: Today I am going to teach you to analyze patterns, and graph ordered pairs generated from number sequences by understanding that a graph can show the relationship between two number sequences.

Suggested Length of Time: 1 day

Standards Addressed

    Priority:

- 5.RA.A.1 Investigate the relationship between two numeric patterns.

  Supporting:

- 5.RA.A.2 Write a rule to describe or explain a given numeric pattern

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 15-3 to teach students to analyze patterns and graph ordered pairs generated from number sequences.

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Experience 4

Engaging Scenario

3- ACT Math: Speed Stacks

☐ Use the 3-ACT Math task on pages 592-592A to teach students that many real-world problems can be represented with a mathematical model, but that model may not represent a real-world situation exactly.

Engaging Experience 5

Teaching Point: Today I am going to teach you to make sense of problems and persevere in solving them by understanding that when good math thinkers get stuck, they do not give up.

Suggested Length of Time: 1 day

Standards Addressed

    Priority:

- 5.RA.A.1 Investigate the relationship between two numeric patterns.

Detailed Description/Instructions:

☐ **One way to do this** is to use lesson 15-4 to teach students to make sense of problems and persevere in solving them.

Bloom's Levels: Analyze
Webb's DOK: 3

<u>Engaging Experience 6</u>
Teaching Point: Today we are going to review how number patterns can be analyzed by finding a rule that identifies the relationship between numbers in a sequence.
Suggested Length of Time: 1 day
Standards Addressed
> **Priority:**
> ● 5.RA.A.1 Investigate the relationship between two numeric patterns.

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: Analyze
Webb's DOK: 3

Unit 6: Geometry Part 2

Subject: Math
Grade: 5
Name of Unit: Geometry Part 2
Length of Unit: 5 engaging experiences, 1 day of assessment (6 days)

Overview of Unit:
Students study and evaluate the properties of triangles and quadrilaterals.

In Topic 16, students classify triangles and quadrilaterals by their properties. They learn that the properties of a two dimensional shape also belong to all subcategories of that shape.

Getting Ready for the Unit:

Formative Assessment Options *(Administered before or during a unit, topic*	Summative Assessment Options *(Administered at the end of unit or topic to*

or lesson to guide instruction and give feedback to students.)	*assess mastery of learning objectives.)*
- Math Interview/Conference - Quick Checks - Checkmark icon(s) within lesson - Assigned online - Topic Pretest (online assessment) - Convince Me - Look Back - Lesson Assessment Practice	- Online Assessment - Topic Assessment - Workbook version - Printable version - Topic Performance Task - Workbook version - Printable version - 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:
- Decimals and Percentages

Number Talk: Using Benchmark Fractions to Find Percentages (Category 1)... page 120-121
The number talk strings in this category are structured to help students compose and decompose benchmark numbers to make relationships between fractions and percentages. Each string is comprised of four problems. What is the percentage equivalent of the fraction _____? How do you know? How can you use what we already know to solve this next problem?

A. $\frac{1}{2} = \underline{\hspace{1cm}}$ %

$\frac{1}{4} = \underline{\hspace{1cm}}$ %

$\frac{3}{4} = \underline{\hspace{1cm}}$ %

$\frac{4}{4} = \underline{\hspace{1cm}}$ %

B. $\frac{1}{5} = \underline{\hspace{1cm}}$ %

$\frac{2}{5} = \underline{\hspace{1cm}}$ %

$\frac{4}{5} = \underline{\hspace{1cm}}$ %

$\frac{3}{5} = \underline{\hspace{1cm}}$ %

C. $\frac{1}{2} = \underline{\hspace{1cm}}$ %

$\frac{1}{4} = \underline{\hspace{1cm}}$ %

$\frac{1}{8} = \underline{\hspace{1cm}}$ %

$\frac{3}{8} = \underline{\hspace{1cm}}$ %

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Finding Percentages of Whole Numbers (Category 2)... page 122-123

The number talk strings in this category are structured to help students compose and decompose whole numbers to make relationships between fractions and percentages. Each string is comprised of four problems.

What is _____% of _____? How do you know? How can you use what we already know to solve this next problem?

A. 50% of 200

25% of 200

10% of 200

20% of 200

B. 10% of 50

20% of 50

50% of 50

75% of 50

C. 10% of 360

50% of 360

25% of 360

75% of 360

D. 10% of 72

50% of 72

25% of 72

$12\frac{1}{2}$% of 72

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Comparing and Ordering Fractions and Decimals (Category 1)... page 128

Once students are comfortable moving flexibly between fractions and decimals, we should transition into comparing and ordering them interchangeably. We can do this using number talks that incorporate both fractions and decimals.

How would you order these numbers from least to greatest? How do you know?

A. $\frac{1}{4}$, 0.34, $\frac{7}{8}$, 0.75

B. $\frac{3}{4}$, 0.60, $\frac{2}{3}$, 0.48

C. $\frac{4}{5}$, 0.90, $\frac{5}{6}$, 0.78

D. $\frac{6}{10}$, 0.54, $\frac{2}{3}$, 0.06

E. $\frac{1}{4}$, 0.34, $\frac{7}{8}$, 0.75

F. $\frac{3}{4}$, 0.60, $\frac{2}{3}$, 0.48

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Number Talk: Comparing Decimals to Decimals (Category 2)... page 129

A challenge students face when comparing decimals is simultaneously considering destiny and equivalence. The number talks in this category use decimals that are close to common benchmark numbers to help students confront these ideas.

How would you order these numbers from least to greatest? How do you know?

A. 0.1   0.10   0.01

B. 0.5   0.05   0.50

C. 0.5   0.48   0.06

D. 0.7   0.51   0.08

E. 0.16   0.4   0.08

F. 0.200   0.21   0.02

Reference *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish

Additional Personalized Practice and Application Suggestions:

Intervention	On-level	Advanced
● Reteach to Build Understanding ● Intervention Activity ● Additional Practice	● Build Mathematical Fluency ● Additional Practice ● Practice Buddy ● Build Mathematical Literacy ● Technology Center	● Enrichment ● Pick a Project ● enVision STEM Activity ● Problem Solving Reading Mat

Students classify triangles and quadrilaterals by their properties. They learn that properties of a two dimensional shape also belong to subcategories of that shape.

Essential Questions:
- How can triangles and quadrilaterals be described, classified, and named?

Enduring Understandings:
- Triangles and quadrilaterals are classified by their sides and by their angles.

Priority Standards:
- 5.GM.A.2 Classify figures in a hierarchy based on properties.

Supporting Standards:
- 5.GM.A.1 Understand that attributes belonging to a category of figures also belong to all subcategories.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
5.GM.A.2	Figures in a hierarchy based on properties	Classify	Analyze	2

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	trapezoid rhombus isosceles triangle acute triangle parallelogram square scalene triangle obtuse triangle rectangle equilateral triangle right triangle Venn diagram

Engaging Experience 1
Teaching Point: Today I am going to teach you how to classify triangles by their angles and sides by understanding that triangles are classified by their sides and their angles.
Suggested Length of Time: 1 day
Standards Addressed

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Priority:
- 5.GM.A.2 Classify figures in a hierarchy based on properties.
  Supporting:
- 5.GM.A.1 Understand that attributes belonging to a category of figures also belong to all subcategories.

Detailed Description/Instructions:
- ☐ **One way to do this** use lesson 16-1 to classify triangles by their angles and sides.

Bloom's Levels: Analyze
Webb's DOK: 2

Engaging Experience 2

Teaching Point: Today I am going to teach you to classify quadrilaterals by their properties by understanding quadrilaterals are classified by their sides and their angles.

Suggested Length of Time: 1 day

Standards Addressed

     Priority:
- 5.GM.A.2 Classify figures in a hierarchy based on properties.
  Supporting:
- 5.GM.A.1 Understand that attributes belonging to a category of figures also belong to all subcategories.

Detailed Description/Instructions:
- ☐ **One way to do this** is to use lesson 16-2 to teach students to classify quadrilaterals by their properties.

Bloom's Levels: Analyze
Webb's DOK: 2

Engaging Experience 3

Teaching Point: Today I am going to teach you to classify quadrilaterals using a hierarchy by understanding that quadrilaterals are classified by their sides and by their angles.

Suggested Length of Time: 1 day

Standards Addressed

     Priority:
- 5.GM.A.2 Classify figures in a hierarchy based on properties.
  Supporting:
- 5.GM.A.1 Understand that attributes belonging to a category of figures also belong to all subcategories.

Detailed Description/Instructions:
- ☐ **One way to do this** is to use lesson 16-3 to teach students to classify quadrilaterals using a hierarchy.

Bloom's Levels: Analyze
Webb's DOK: 2

Engaging Experience 4

Teaching Point: Today I am going to teach you how to construct arguments about geometric figures by understanding that good math thinkers use math to explain why they are right.

Suggested Length of Time: 1 day

Standards Addressed

    Priority:
- 5.GM.A.2 Classify figures in a hierarchy based on properties.

Detailed Description/Instructions:
- ☐ **One way to do this** is to use lesson 16-4 to teach students to construct arguments about geometric figures.

Bloom's Levels: Analyze
Webb's DOK: 2

<u>Engaging Experience 5</u>

Teaching Point: Today we are going to review how triangles and quadrilaterals are classified, named, and described based on their sides and angles.

Suggested Length of Time: 1 day

Standards Addressed

    Priority:
- 5.GM.A.2 Classify figures in a hierarchy based on properties.

Detailed Description/Instructions:
- ☐ **One way to do this** is to use the Topic Assessment Practice in the student workbook on pages 641-642.
- ☐ **Another way to do this** is to use the Topic Reteaching questions in the student workbook on pages 639-640.
- ☐ **Another way to do this** is to use the Topic Performance Task in the student workbook on pages 643-644.

Bloom's Levels: Analyze
Webb's DOK: 2