



Fifth Grade Mathematics Curriculum Map, Quarter 2, 2020-2021

Quarter 2		
TN Standards	Learning Outcomes	Content Resources
<p>The Major Work of the Grade for TN Standards Assessments are bolded.</p>		<p>Bolded Math Practices are the Math Practices that can be taught with that task.</p>
Weeks 1-2 (5.NF.A.1 and 5.NF.A.2) Add/Subtract Fractions		
<p>5.NF Number and Operations-Fractions (NF) A. Use equivalent fractions as a strategy to add and subtract fractions.</p> <p>5.NF.A.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general $a/b + c/d = (ad + bc)/bd$.)</p> <p>5.NF.A.2 Solve contextual problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.</p>	<p>Enduring Understandings</p> <ol style="list-style-type: none"> 1. The denominator determines how many parts make the whole; that is why quantities must have the same denominator to be combined. 2. One representation may sometimes be more helpful than another; and, used together multiple representations give a fuller understanding of a problem. <p>Essential Questions</p> <ol style="list-style-type: none"> 1. (6-1) How can you use models to add and subtract fractions with unlike denominators? 2. (6-2) How can you use models to subtract fractions that have different denominators? 3. (6-3) How can you make reasonable estimates of fraction sums and differences? 4. (6-4) How can you add and subtract mixed numbers with unlike denominators? 5. (6-5) How can you use a common denominator to add and subtract fractions with unlike denominators? 6. (6-6) How can you add and subtract mixed numbers with unlike denominators? 7. (6-7) How can you use renaming to find the difference of two mixed numbers? 8. (6-9) How can the strategy work backward help 	<p style="color: blue; text-decoration: underline;">*INSTRUCTIONAL FOCUS DOCUMENT FOR TENNESSEE</p> <p style="color: blue; text-decoration: underline;">Achieve the Core: Go Math Guidance Document</p> <p>Go-Math</p> <p>6-1, Investigate Addition with Unlike Denominators (5.NF.A.1) (5.NF.A.2) MP4, MP5, MP6</p> <p>6-2, Investigate Subtraction with Unlike Denominators (5.NF.A.2) MP2, MP3, MP4, MP5</p> <p>6-3, Estimate Fraction Sums and Differences (5.NF.A.2) MP2, MP3, MP6</p> <p>6-4, Common Denominators and Equivalent Fractions (5.NF.A.1) MP2, MP4, MP6</p> <p>6-5, Add and Subtract Fractions (5.NF.A.1) MP1, MP2, MP3</p> <p>6-6, Add and Subtract Mixed Numbers (5.NF.A.1) MP1, MP2, MP6</p> <p>6-7, Subtracting with Renaming (5.NF.A.1) MP1, MP5, MP6</p> <p>6-8, Algebra-Patterns with Fractions Delete</p> <p>6-9, Problem Solving-Practice Addition and Subtraction (5.NF.A.2) MP1, MP2, MP4, MP6</p> <p>6-10 Algebra-Use Properties of Addition (5.NF.A.1) MP4, MP7, MP8</p>

- you solve a problem with fractions that involves addition and subtraction?
9. (6-10) How can properties help you add fractions with unlike denominators?

Learning Targets

I can use models to add and subtract fractions with unlike denominators.

I can make reasonable estimates of fraction sums and differences.

I *can* determine common multiples of two unlike denominators.

I *can* determine the least common multiple of two numbers.

I can create equivalent fractions using common multiples.

I *can* use multiplication to create a common denominator.

I *can* add and subtract with unlike denominators.

I can add mixed numbers.

I can rename to find the difference of two mixed numbers.

I *can* use division to simplify fractions.

I *can* explain or illustrate my solutions using visual fraction models that represent the fraction.

I *can* use estimate strategies, benchmark fractions, and number sense to check if my answer is reasonable.

I can use models to represent adding/subtracting fractions with unlike denominators.

I can draw models to represent adding/subtracting fractions with unlike denominators.

I can turn my concrete model into a written mathematical problem using the standard operations.

I can explain how to get a common denominator.

I know how adding the same number over and over is related with a multiplication strategy.

I know how taking away the same number over and over is connected to a division strategy.

I can relate the concrete model I used to solve problems into mathematical representations using numbers and symbols.

I can explain the strategy I used to solve the problem.

I can justify my reasoning.

I can write a mathematical representation of the problem and solve it using the model I used to solve the problem.

Mathematical Practices Focus (Students)

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

NCTM Effective Teaching Practices

1. Establish mathematics goals to focus learning.
2. Implement tasks that promote reasoning and problem solving.
3. Build procedural fluency from conceptual understanding.
4. Pose purposeful questions.
5. Use and connect mathematics representations
6. Facilitate meaningful mathematics discourse.
7. Elicit and use evidence of student thinking.
8. Support productive struggle in learning mathematics.

Literary Math Focus

1. Use multiple reading strategies.
2. Understand and use correct mathematical vocabulary.
3. Discuss and articulate mathematical ideas.
4. Write mathematical arguments.

[Graham Fletcher- Fractions: The Meaning, Equivalence, and Comparison Videos](#)

EngageNY

[Module 3 Addition and Subtraction of Fraction](#)
[Topic A: Equivalent Fractions](#)

[Lesson 1](#)

[Lesson 2](#)

[Topic B: Making Like Units Pictorially](#)

[Topic C: Making Like Units Numerically](#)

[Topic D: Further Applications](#)

Instructional Tasks:

[Apple Orchard Task \(5.NF.1\)\(5.NF.2\)](#)

[Pizza \(5.NF.1\)\(5.NF.2\)](#)

Instructional Tasks:

5.NF.A.

- [Measuring Cups](#)
- [To Multiply or not to multiply?](#)
- [To Multiply Or Not to Multiply, Variation 2](#)

5.NF.A.1.

- [Egyptian Fractions](#)
- [Finding Common Denominators to Add](#)
- [Finding Common Denominators to Subtract](#)
- [Fractions on a Line Plot](#)
- [Jog-A-Thon](#)
- [Making S'Mores](#)
- [Mixed Numbers with Unlike Denominators](#)

5.NF.A.2.

- [Do These Add Up?](#)
- [Salad Dressing](#)

- [Sharing Lunches](#)

Vocabulary: fraction, numerator, denominator, mixed numbers, equivalent fractions, common multiple, least common multiple (LCM), least common denominator (LCD), decimals, add/addition, subtract/subtraction, sum, difference, unlike denominator, benchmark fraction, estimate, reasonableness, sum, difference, Benchmark, simplest form, mixed number

Tools: Hamburger Fractions, fraction pieces

More Optional Activities are below:

Journal Topics:

- The Write Way p. 350D
- Explain how a fraction is like a decimal and how they are different. Use a Venn Diagram to show your work.
- Explain how and why we get common denominators when adding and subtracting fractions with unlike denominators. Explain so well that your friend who does not know how to do it can learn how to get the common denominator.
- Reflections on new learning ...How did I do on the learning? What could I do better on in the lesson?

Song-

["Fraction Rock" by Joe Crone](#)

["Fraction Rap" by Gigi Shadid](#)

Literature Connection:

[Fraction House](#) by Dayle Dodds

Slideshow Lesson- [Fractions](#)

[Slideshow- Go Math Ch 6 Lesson 1](#)

Links:

		Study Jams- Math- Add and Subtract with Unlike Denominators BrainPop-Math-Adding and Subtracting Fractions BrainPop-Math-Reducing Fractions 901 Math Videos
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Week 3 (5.NF.B.3) Fraction as Division		
<p>5.NF Number and Operations-Fractions (NF) B. Apply and extend previous understanding of multiplication and division to multiply and divide fractions.</p> <p>5.NF.B.3 Interpret a fraction as division of the numerator by the denominator ($a/b = a$ divided by b). For example, $\frac{3}{4} = 3$ divided by 4 so when 3 wholes are shared equally among 4 people, each person has a share of size $\frac{3}{4}$. Solve contextual problems involving division of whole numbers leading to</p>	<p>Enduring Understandings</p> <p>1. One representation may sometimes be more helpful than another; and, used together multiple representations give a fuller understanding of a problem.</p> <p>Essential Questions</p> <p>1. (8-3) How does a fraction represent division?</p> <p>Learning Targets</p> <p>I can interpret a fraction as division and solve whole-number division problems that result in a fraction or mixed number.</p>	<p>*INSTRUCTIONAL FOCUS DOCUMENT FOR TENNESSEE</p> <p>Achieve the Core: Go Math Guidance Document</p> <p>Go-Math 8-3 -Connect Fractions to Division Delete *Replace Go Math Chapters 7 and 8 with EngageNY Module 4 Lessons 2-33</p> <p>Mathematical Practices Focus (Students)</p> <p>1. Make sense of problems and persevere in solving them.</p>

answers in the form of fractions or mixed numbers by using visual fraction models or equations to represent the problem. For example, if 8 people want to share 49 sheets of construction paper equally, how many sheets will each person receive? Between what two whole numbers does your answer lie?

I can divide the numerator by the denominator to interpret the fraction.
I can simplify an improper fraction by dividing the numerator by the denominator to create an improper fraction.
I can simplify the fraction in a mixed number by dividing the numerator and the denominator by the same number.
I can turn my concrete model into a written mathematical problem using the standard operations.
I know how adding the same number over and over is related with a multiplication strategy.
I know how taking away the same number over and over is connected to a division strategy.
I can relate the concrete model I used to solve problems into mathematical representations using numbers and symbols.
I can explain the strategy I used to solve the problem.
I can justify my reasoning.
I can use concrete materials to model addition, subtraction, multiplication, and division problems.
I can create models that explain strategies for solving addition, subtraction, multiplication, and division problems.
I can write a mathematical representation of the problem and solve it using the model I used to solve the problem.

2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

NCTM Effective Teaching Practices

1. Establish mathematics goals to focus learning.
2. Implement tasks that promote reasoning and problem solving.
3. Build procedural fluency from conceptual understanding.
4. Pose purposeful questions.
5. Use and connect mathematics representations
6. Facilitate meaningful mathematics discourse.
7. Elicit and use evidence of student thinking.
8. Support productive struggle in learning mathematics.

Literary Math Focus

1. Use multiple reading strategies.
2. Understand and use correct mathematical vocabulary.
3. Discuss and articulate mathematical ideas.
4. Write mathematical arguments.

EngageNY

Module 4

Topic B: Fractions as Division

Lesson 2

Lesson 3

Lesson 4

Lesson 5

Instructional Tasks:

5.NF.B. [Painting a Wall](#)

5.NF.B.3.

[Converting Fractions of a Unit into a Smaller Unit](#)

- [How Much Pie?](#)
- [Sharing Lunches](#)
- [What is \$23 \div 5\$?](#)

[Slideshow- Go Math Ch 8 Lesson 3](#)

gfletchy 3-Act Tasks

5.NBT.B.6-7 [The Nectarine](#), [How Much Dew](#), [Let It Flow](#), [The Big Pad](#)

Vocabulary:

Fraction, decimal, improper fraction, mixed number, Divide, numerator, denominator, whole number, equation

Tools: Hamburger Fractions, fraction pieces

More Optional Activities are below:

Journal Topics:

- Explain how to use division to help interpret a fraction.
- Explain how to change a fraction to a decimal.
- Can you always exactly convert a fraction to a decimal? Explain why or why not.
- Explain how to change an improper fraction into a mixed number.
- Reflections on new learning ...How did I do on the learning? What could I do better on in the lesson?

		<p>Song- "If You Want to Convert a Fraction to a Percent" by Gigi Shadid</p> <p>Literature Connection: The Lion's Share by Matthew McElligott</p> <p>Slideshow Lesson- Fraction to Decimal</p> <p>Links: BrainPop-Math-Mixed Numbers 901 Math Videos</p>
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Weeks 4-5 (5.NF.B.4, 5.NF.B.5, and 5.NF.B.5) Multiply Fractions		
<p>5.NF Number and Operations-Fractions (NF) B. Apply and extend previous understanding of multiplication and division to multiply and divide fractions.</p> <p>5.NF.B.4 Apply and extend previous understanding of multiplication to multiply a fraction by a whole number or a fraction by a fraction.</p> <p style="padding-left: 20px;">a. Interpret the product $(a/b) \times q$ as $a \times (q \text{ divided by } b)$ (partition the quantity q into b equal parts and then multiply by a).</p>	<p>Enduring Understandings</p> <ol style="list-style-type: none"> 1. Improper fractions can assist when multiplying and dividing mixed numbers. 2. One representation may sometimes be more helpful than another; and, used together multiple representations give a fuller understanding of a problem. <p>Essential Questions</p> <ol style="list-style-type: none"> 1. How can you find a fractional part of a group? 2. How can you use a model to show the product of a fraction and a whole number? 3. How can you find the product of a fraction and 	<p>*INSTRUCTIONAL FOCUS DOCUMENT FOR TENNESSEE</p> <p>Achieve the Core: Go Math Guidance Document</p> <p>Go Math Replace Go Math Chap 7 and 8 with EngageNY Module 4 Lesson 2-33</p> <p>Mathematical Practices Focus (Students)</p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them.

Interpret the product $a/b \times q$ ($a \times q$) divided by b (multiply a times the quantity q and then partition the product into b equal parts). For example, use a visual fraction model or write a story context to show that $2/3 \times 6$ can be interpreted as $2 \times (6 \text{ divided by } 3)$ or $(2 \times 6) \text{ divided by } 3$. Do the same with $2/3 \times 4/5 = 8/15$. (In general, $a/b \times c/d = ac/bd$.)

- b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles and represent fraction products as rectangular areas.

5.NF.B.5

Interpret multiplication as scaling (resizing).

- a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. For example, know if the product will be greater than, less than, or equal to the factors.
- b. Explain why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explain why multiplying a given number by a fraction less than 1 results in a product less than the given number; and relate the principle of fraction equivalence $a/b = (a \times n)/(b \times n)$ to the effect of

a whole number without using a model?

4. How can you use an area model to show the product of two fractions?
5. How does the size of the product compare to the size of one factor when multiplying fractions?
6. How do you multiply fractions?
7. How can you use a unit tile to find the area of a rectangle with fractional side lengths?
8. How does the size of the product compare to the size of one factor when multiplying fractions greater than one?
9. How do you multiply mixed numbers?
10. How can you use the strategy Guess, Check, and Revise to solve problems with fractions?

Learning Targets

I can model to find the fractional part of a group.

I can model the product of a fraction and a whole number.

I can multiply a fraction by a whole number and by a fraction.

I can create a story context for problems involving multiplication of a fraction and a whole number or multiplication of two fractions by interpreting multiplication with whole numbers.

I can use scaling to estimate multiplying fractions.

I can relate the size of the product compared to the size of one factor when multiplying fractions.

I can multiply mixed numbers.

I can turn my concrete model into a written mathematical problem using the standard operations.

I know how adding the same number over and over is related with a multiplication strategy.

I know how taking away the same number over and over is connected to a division strategy.

I can relate the concrete model I used to solve problems into mathematical representations using numbers and symbols.

2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

NCTM Effective Teaching Practices

1. Establish mathematics goals to focus learning.
2. Implement tasks that promote reasoning and problem solving.
3. Build procedural fluency from conceptual understanding.
4. Pose purposeful questions.
5. Use and connect mathematics representations
6. Facilitate meaningful mathematics discourse.
7. Elicit and use evidence of student thinking.
8. Support productive struggle in learning mathematics.

Literary Math Focus

1. Use multiple reading strategies.
2. Understand and use correct mathematical vocabulary.
3. Discuss and articulate mathematical ideas.
4. Write mathematical arguments.

EngageNY

Module 4

[Topic C: Multiplication of a Whole Number by a Fraction](#)

[Lesson 6](#)

[Lesson 7](#)

[Lesson 8](#)

[Lesson 9](#)

[Topic E-Multiply a Fraction by a Fraction](#)

multiplying a/b by 1.

5.NF.B.6

Solve real world problems involving multiplication of fractions and mixed numbers by using visual fraction models or equations to represent the problem.

I can explain the strategy I used to solve the problem.
I can justify my reasoning.

I can use concrete materials to model multiplication problems.

I can create models that explain strategies for solving multiplication problems.

I can write a mathematical representation of the problem and solve it using the model I used to solve the problem.

I can use an area model to multiply fractions and/or mixed numbers by breaking down a mixed number to the whole number and fraction on each side of the rectangle. Then multiply the whole number by the whole number, then the fraction by the fraction, and finally adding the two products together.

[Topic F-Multiplication with Fractions and Decimals as Scaling and Word Problems](#)

[Module 5, Topic C](#)

[Find the area of rectangles with whole-by-mixed and whole-by-fractional number side lengths by tiling.](#)

Instructional Tasks:

[Scaling Points \(5.NF.5\)](#)

[Illustrative Math](#)

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- [Connor and Makayla Discuss Multiplication](#)
- [Cornbread Fundraiser](#)
- [Cross Country Training](#)
- [Folding Strips of Paper](#)
- [Mrs. Gray's Homework Assignment](#)

5.NF.B.4.a.

- [Connecting the Area Model to Context](#)
- [Sharing Lunches](#)

5.NF.B.4.b.

- [Chavone's Bathroom Tiles](#)
- [New Park](#)

5.NF.B.5.

- [Calculator Trouble](#)

- [Comparing a Number and a Product](#)
- [Comparing Heights of Buildings](#)
- [Fundraising](#)
- [Grass Seedlings](#)
- [Reasoning about Multiplication](#)
- [Running a Mile](#)
- [Scaling Up and Down](#)

5.NF.B.5.b.

- [Mrs. Gray's Homework Assignment](#)

5.NF.B.6.

- [Comparing Heights of Buildings](#)
- [Drinking Juice](#)
- [Half of a Recipe](#)
- [Making Cookies](#)
- [New Park](#)
- [Running to School](#)
- [To Multiply or not to multiply?](#)
- [To Multiply Or Not to Multiply, Variation 2](#)

Vocabulary: fraction, decimal, multiplication/multiply, product, numerator, denominator, area, divide, simplify, scaling

Tools: Hamburger Fractions, fraction pieces, fraction circles, number-line

More Optional Activities are below:

		<p>Journal Topics:</p> <ul style="list-style-type: none"> -Explain how to multiply a fraction by a whole number. (Include a drawing) Is this the same as repeated addition? Explain why or why not. -Explain how to multiply a fraction by a fraction. (Include a drawing) Is this the same as repeated addition? Explain why or why not. -Reflections on new learning ...How did I do on the learning? What could I do better on in the lesson? <p>Slide Show- Multiplying Fractions</p> <p>Slideshow- Go Math Ch 7 Lesson 1</p> <p>Slide Show-Fraction Reasoning/Scaling</p> <p>Slideshow- Go Math Ch 7 Lesson 5</p> <p>Song- “Fraction Rap”- by Gigi Shahid</p> <p>Links: BrainPop-Math- Multiplying and Dividing Fractions 901 Math Videos</p>



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5.NF
Number and Operations-Fractions (NF)
B. Apply and extend previous understanding of multiplication and division to multiply and divide fractions.

5.NF.B.7
Apply and extend previous understanding of division to divide unit fractions by whole numbers and whole numbers by unit fractions.

- a. Interpret division of a unit fraction by a non-zero whole number and compute such quotients. For example, use visual models and the relationship between multiplication and division to explain that $(1/3)$ divided by $4 = 1/12$ because $(1/12) \times 4 = 1/3$.
- b. Interpret division of a whole number by a unit fraction and compute such quotients. For example, use visual models and the relationship between multiplication and division to explain that 4 divided by $(1/5) = 20$ because $20 \times (1/5) = 4$.
- c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share $\frac{1}{2}$ lb of chocolate equally? How many $1/3$ cup servings are in 2 cups of raisins?

*Division of a fraction by a fraction is not a

Enduring Understandings

1. Improper fractions can assist when multiplying and dividing mixed numbers.
2. One representation may sometimes be more helpful than another; and, used together multiple representations give a fuller understanding of a problem.

Essential Questions

1. How do you divide a whole number by a fraction and divide a fraction by a whole number?
2. How can the strategy Draw a Diagram help you solve fraction division problems by writing a multiplication sentence?
3. How does a fraction represent division? How can you divide fractions by solving a related multiplication sentence?
4. How can you use diagrams, equations, and story problems to represent division?

Learning Targets

I can divide unit fractions by whole numbers and divide whole numbers by unit fractions.
 I can create story contexts for problems involving multiplication of a fraction and a whole number for multiplication of two fractions by interpreting multiplications with whole numbers.
 I can solve problems using the strategy draw a diagram.
 I can simplify fractions by dividing the numerator and the denominator by the same number.
 I can turn my concrete model into a written mathematical problem using the standard operations.
 I know how adding the same number over and over is related with a multiplication strategy.
 I know how taking away the same number over and over is connected to a division strategy.

***INSTRUCTIONAL FOCUS DOCUMENT FOR TENNESSEE**

[Achieve the Core: Go Math Guidance Document](#)

Go-Math

Replace Go Math Chap. 7 and 8 with EngageNY Module 4 Lessons 2-33

Mathematical Practices Focus (Students)

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
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4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
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5. Use and connect mathematics representations
6. Facilitate meaningful mathematics discourse.
7. Elicit and use evidence of student thinking.
8. Support productive struggle in learning mathematics.

Literary Math Focus

1. Use multiple reading strategies.
2. Understand and use correct mathematical

requirement at this grade.

I can relate the concrete model I used to solve problems into mathematical representations using numbers and symbols.
I can explain the strategy I used to solve the problem.
I can justify my reasoning.
I can use concrete materials to model division problems.
I can create models that explain strategies for solving division problems.
I can write a mathematical representation of the problem and solve it using the model I used to solve the problem.

vocabulary.

3. Discuss and articulate mathematical ideas.
4. Write mathematical arguments.

EngageNY

Module 4

[Topic B- Fraction as Division](#)

[Topic D- Fraction Expressions and Word Problems](#)

[Topic G- Division of Fractions and Decimal Fractions](#)

Instructional Tasks:

5.NF.B.7.

- [Banana Pudding](#)
- [Dividing by One-Half](#)
- [How many servings of oatmeal?](#)

5.NF.B.7.a.

- [Painting a room](#)

5.NF.B.7.b. [How many marbles?](#)

- [Origami Stars](#)

5.NF.B.7.c.

- [How many marbles?](#)
- [Salad Dressing](#)
- [Standing in Line](#)

Vocabulary: fractions, whole numbers, quotient, multiplication, multiply, division, divide, mixed

		<p>numbers, product, partition, equal parts, inverse operations,</p> <p>Tools: Hamburger Fractions, fraction pieces, number lines</p> <p>More Optional Activities are below:</p> <p>Journal Topics: -The Write Way p.490B -Explain how 2 divided by $\frac{1}{4}$ is different from $\frac{1}{4}$ divided by 2. (Include a drawing, a number-line, equation, and story context to show your work) -Reflections on new learning ...How did I do on the learning? What could I do better on in the lesson?</p> <p>Song- "Fraction Rap"- by Gigi Shadid</p> <p>Links: BrainPop-Math-Multiplying and Dividing Fractions 901 Math Videos</p>
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Week 8 (5.MD.C.3, 5.MD.C.4, and 5.MD.C.4) Volume		
5.MD Measurement and Data (MD)	Enduring Understandings 1. One representation may sometimes be more	*INSTRUCTIONAL FOCUS DOCUMENT FOR TENNESSEE

C. Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

5.MD.C.3

Recognize volume as an attribute of solid figures and understand concepts of volume measurement.

- a. **Understand that a cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume and can be used to measure volume.**
- b. **Understand that a solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.**

5.MD.C.4

Measure volume by counting unit cubes, using cubic centimeters, cubic inches, cubic feet, and improvised units.

5.MD.C.5

Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume of right rectangular prisms.

- a. **Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent whole-number products of three factors as volumes, (e.g., to represent the associative property of multiplication).**

helpful than another; and, used together multiple representations gave a fuller understanding of a problem.

Essential Questions

1. (11-5) What is a unit cube and how can you use it to build a solid figure?
2. (11-6) How can you use unit cubes to find the volume of a rectangular prism?
3. (11-8) How can you find the volume of a rectangular prism?
4. (11-9) How can you use a formula to find the volume of a rectangular prism?
5. (11-10) How can you use the strategy Make a Table to compare different rectangular prisms with the same volume?
6. (11-11) How can you find the volume of rectangular prisms that are combined?

Learning Targets

I can understand unit cubes and how they can be used to build a solid figure.
I can count unit cubes that fill a solid figure to find volume.
I can relate finding the product of three numbers to finding volume and relate both to the associative and communicative property of multiplication.
I can use the formulas to determine the volume of rectangular prisms ($V = L \times W \times H$ and $V = BA \times H$).
I can decompose an irregular figure into non-overlapping rectangular prisms to find the volume of the irregular shape by finding the sums of the volumes of each of the decomposed prisms.
I can turn my concrete model into a written mathematical problem using the standard operations.
I know how adding the same number over and over is related with a multiplication strategy.
I can relate the concrete model I used to solve

[Achieve the Core: Go Math Guidance Document](#)

Go-Math

11-5, Investigate-Unit Cubes and Solid Figures (5.MD.C.3a) **MP2, MP5, MP6**
11-6, Investigate-Understand Volume (5.MD.C.3b)(5.MD.C.4) **MP3, MP5, MP6**
11-7, Investigate-Estimate Volume **Delete**
11-8, Volume of Rectangular Prisms (5.MD.C.5a)(5.MD.C.5b) **MP1, MP2, MP6**
11-9, Algebra-Apply Volume Formulas (5.MD.C.5a)(5.MD.C.5b) **MP2, MP6**
11-10, Problem Solving-Compare Volumes (5.MD.C.5b) **MP1, MP6, MP7**
11-11, Find Volume of Composed Figures (5.MD.C.5c) **MP3, MP6**

Mathematical Practices Focus (Students)

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

NCTM Effective Teaching Practices

1. Establish mathematics goals to focus learning.
2. Implement tasks that promote reasoning and problem solving.
3. Build procedural fluency from conceptual understanding.
4. Pose purposeful questions.
5. Use and connect mathematics representations

b. Know and apply the formulas $V = l \times w \times h$ and $V = B \times h$ (where B represents the area of the base) for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems.

c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

problems into mathematical representations using numbers and symbols.

I can explain the strategy I used to solve the problem.

I can justify my reasoning.

I can use concrete materials to multiplication problems.

I can create models that explain strategies multiplication problems.

I can write a mathematical representation of the problem and solve it using the model I used to solve the problem.

6. Facilitate meaningful mathematics discourse.

7. Elicit and use evidence of student thinking.

8. Support productive struggle in learning mathematics.

Literary Math Focus

1. Use multiple reading strategies.
2. Understand and use correct mathematical vocabulary.
3. Discuss and articulate mathematical ideas.
4. Write mathematical arguments.

EngageNY

Module 5: Addition and Multiplication with Volume and Area

Instructional Task:

5.MD.C. [Box of Clay](#)

5.MD.C.5.

- [Breaking Apart Composite Solids](#)
- [You Can Multiply Three Numbers in Any Order](#)

5.MD.C.5.a.

- [Using Volume to Understand the Associative Property of Multiplication](#)

5.MD.C.5.b. [Cari's Aquarium](#)

5.MD.C.5.c.

- [Breaking Apart Composite Solids](#)

Gfletchy- 3 Act Task

[5.MD.3,4,5- Got Cubed, Packing Sugar, Overflow, The Fishtank](#)

Vocabulary: volume, solid figure, unit cube, multiplication, edge lengths, height, area of base, measurement, rectangular prism, unit, unit cube, overlap, cubic units (cubic cm., cubic in., cubic ft.) multiplication, edge lengths, height, area of base

Tools: cubes

More Optional Activities are below:

Journal Topics:

- Explain how knowing the volume of box could be helpful to a cookie baker? How could the baker determine the volume? Is there another way to determine the volume of the box? Explain.
- Reflections on new learning ...How did I do on the learning? What could I do better on in the lesson?

Song- ["Volume Song"](#) (Audio)

Literature Connection:

[Perimeter, Area, and Volume](#) by David Adler
[The Emperor's Army](#) by Virginia Pilegard

Slide Show- [Volume](#)

Links:

[Study Jams-Math-Measurement-Volume](#)
[BrainPop-Math- Volumes of Cylinders](#)
[BrainPop-Math- Volumes of Prisms](#)

		901 Math Videos

Additional Math Tasks:

Additional Lessons-
[Engage NY Modules](#)

K-5 Math Teaching Resources-3rd grade Journals
<http://www.k-5mathteachingresources.com/5th-grade-number-activities.html>

UnPacking the Standards
<http://www.madison-schools.com/Page/111>