

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
<p>Operations and Algebraic Thinking</p> <p>Write and interpret numerical expressions.</p>	<p>Standard: 5.OA.1 – Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.</p>	<p>We will solve numerical expressions that use brackets, braces, or parentheses.</p>	<p>Trimester 1</p>	<p>braces brackets evaluate numerical expression parentheses number sentence</p>		<p>The following links may be helpful for all CCSS:  <a href="http://www.dpi.state.nc.us/docs/acre/standards/common-core-tools/unpacking/math/5th.pdf">http://www.dpi.state.nc.us/docs/acre/standards/common-core-tools/unpacking/math/5th.pdf</a>   <a href="http://www.wiki-teacher.com/unwrapSearch.php#contentAreald=6&amp;courseId=1171">http://www.wiki-teacher.com/unwrapSearch.php#contentAreald=6&amp;courseId=1171</a>   <a href="http://catalog.mathlearningcenter.org/catalog/supplemental-materials-elementary/lessons-activities-grade-5-free">http://catalog.mathlearningcenter.org/catalog/supplemental-materials-elementary/lessons-activities-grade-5-free</a>                      -----                      Investigations Unit 1, 2, 6, 8                       Houghton Mifflin (HM) Lesson 5.6</p>

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
<p>Operations and Algebraic Thinking</p> <p>Write and interpret numerical expressions.</p>	<p>Standard: 5.OA.2 – Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.</p> <p><i>For example, express the calculation “add 8 and 7, then multiply by 2” as <math>2 \times (8 + 7)</math>. Recognize that <math>3 \times (18932 + 921)</math> is three times as large as <math>18932 + 921</math>, without having to calculate the indicated sum or product.</i></p>	<p>We will write numerical expressions that show calculations with brackets, braces, parentheses, and numbers without solving them.</p>	<p>Trimester 1</p>	<p>calculation grouping symbols numerical expression order of operations brackets braces parentheses</p>		<p>Investigations Units 1, 7, 8</p>

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
--------	----------------------	--	--	--------------------------	---	-----------

<p>Operations and Algebraic Thinking</p> <p>Analyze patterns and relationships.</p>	<p>Standard: 5.OA.3 –</p> <p>Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.</p> <p><i>For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.</i></p>	<p>We will use two given rules to form ordered pairs, identify their relationship, and graph the ordered pairs on a coordinate plane.</p> <p>(Teacher Note: teach 5.G.1 &amp; 5.G.2 first)</p>	<p>Trimester 3</p>	<p>coordinate plane corresponding terms horizontal axis/x-axis numerical/number pattern ordered pair relationship rule sequence vertical axis/y-axis x-coordinate y-coordinate</p>		<p>Investigations Unit 8</p> <p><u>Teaching Student-Centered Mathematics 3-5</u> Van de Walle (VDW) Textbook ISBN 0205408443 - Ch 14</p>
---	--	--	--------------------	--	--	--

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

<b>Domain</b>	<b>Common Core Standard</b>	<b>Student Outcomes (Objectives Skills/Verbs)</b>	<b>Pacing Notes/ Comments/ Date(s) Introduced</b>	<b>Key Vocabulary/ Concepts</b>	<b>Projects/Activities to support Differentiation and Student Engagement</b>	<b>Resources</b>
---------------	-----------------------------	---	---	---------------------------------	--	------------------

<p>Number and Operations in Base Ten</p> <p>Understand the place value system.</p>	<p>Standard: 5.NBT.1 –</p> <p>Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.</p>	<p>We will recognize the relationship of each digit’s value based on its place in a multi-digit whole number and decimal.</p>	<p>Trimester 1</p>	<p>decimal digit fraction multiple place value place value positions (ones, tenths, etc.) whole number period</p>		<p>Investigations Units 3 &amp; 6</p> <p>HM Lesson 1.2</p>
<p>Number and Operations in Base Ten</p> <p>Understand the place value system.</p>	<p>Standard: 5.NBT.2 –</p> <p>Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole- number exponents to denote powers of 10.</p>	<p>We will explain patterns in the number of zeros in a product when multiplying by powers of 10.</p> <p>We will explain patterns in the placement of the decimal point when multiplying or dividing a decimal by powers of 10.</p> <p>We will use whole number exponents to represent powers of 10.</p>	<p>Trimester 1</p>	<p>base decimal exponent power of 10 pattern product quotient</p>		<p>Investigations Unit 1</p> <p>HM Lesson 1.2, 1.5</p> <p>VDW Ch 17</p>

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
Number and Operations in Base Ten  Understand the place value system.	Standard: 5.NBT.3a – Read, write, and compare <b>decimals to thousandths</b> . Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$ .	We will read, write, and compare decimals to thousandths using standard form, word form, and expanded form.	Trimester 1	decimal expanded form place value positions ( <b>to thousandths</b> ) standard form word form		Investigations Unit 6, 8  HM Lesson 1.7  VDW Ch 17 Pg 345 Figure 17.10
Number and Operations in Base Ten  Understand the place value system.	Standard: 5.NBT.3b – Read, write, and compare decimals to thousandths. Compare two <b>decimals to thousandths</b> based on meanings of the digits in each place, using $>$ , $=$ , and $<$ symbols to record the results of comparisons.	We will use symbols to compare decimal inequalities.	Trimester 1	compare comparison symbols decimal place value positions ( <b>to thousandths</b> ) inequalities		Investigations Unit 6, 8  HM Lesson 1.7  VDW Ch 17

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
Number and Operations in Base Ten  Understand the place value system.	Standard: 5.NBT.4 –  Use place value understanding to round <b>decimals to any place.</b>	We will use place value to round decimals to any place.	Trimester 1	benchmark decimal estimate place value positions ( <b>to thousandths</b> ) round		Investigations Unit 6  VDW Ch 17
Number and Operations in Base Ten  Perform operations with multi-digit whole numbers and with decimals to hundredths.	Standard: 5.NBT.5 –  Fluently multiply multi-digit whole numbers using the standard algorithm.	Efficiently and precisely multiply multi-digit whole numbers using the standard algorithm, and strategies such as the distributive or array model.	Trimester 1	algorithm multiple digit or multi-digit multiply standard algorithm		Investigations Units 1, 2 ,3, 6, 7, & 9  HM Lesson 3.7  VDW Ch 9

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

<b>Domain</b>	<b>Common Core Standard</b>	<b>Student Outcomes (Objectives Skills/Verbs)</b>	<b>Pacing Notes/ Comments/ Date(s) Introduced</b>	<b>Key Vocabulary/ Concepts</b>	<b>Projects/Activities to support Differentiation and Student Engagement</b>	<b>Resources</b>
---------------	-----------------------------	---	---	---------------------------------	--	------------------

<p>Number and Operations in Base Ten</p> <p>Perform operations with multi-digit whole numbers and with decimals to hundredths.</p>	<p>Standard: 5.NBT.6 –</p> <p>Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p>	<p>We will efficiently and precisely divide whole numbers with up to 4 digit dividends and 2 digit divisors using multiple strategies.</p> <p>We will model and explain division strategies with equations, rectangular arrays, and/or area models.</p>	<p>Trimester 1</p>	<p>area model dividend divisor inverse operation model partial quotient properties of operations (working knowledge rather than knowing the formal terms) quotient rectangular array</p>		<p>Investigations Units 1, 3, 6, 7, &amp; 9</p> <p>VDW Ch 9</p>
<p>Number and Operations in Base Ten</p> <p>Perform operations with multi-digit whole numbers and with decimals to hundredths.</p>	<p>Standard: 5.NBT.7 –</p> <p>Add, subtract, multiply, and divide <b>decimals to hundredths</b>, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p>	<p>We will add, subtract, multiply and divide decimals to hundredths.</p> <p>We will explain the reasoning for using models, equations, and rectangular arrays to solve addition, subtraction, multiplication, and division of decimals to hundredths.</p>	<p>Trimester 1</p>	<p>model place value positions (<b>to hundredths</b>) properties of operations strategies rectangular array</p>		<p>Investigations Unit 6</p> <p>VDW Ch 17</p>

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
Number and Operations- Fractions  Use equivalent fractions as a strategy to add and subtract fractions.	Standard: 5.NF.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.  <i>For example, <math>2/3 + 5/4 = 8/12 + 15/12 = 23/12</math>. (In general, <math>a/b + c/d = (ad + bc)/bd</math>.)</i>	We will find equivalent fractions.  We will use equivalent fractions as a strategy to add and subtract fractions including mixed numbers with unlike denominators.	Trimester 2	numerator denominator common denominator equivalent fraction mixed number multiple		Investigations Unit 4  VDW Ch 16

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
--------	----------------------	--	--	--------------------------	---	-----------

<p>Number and Operations- Fractions</p> <p>Use equivalent fractions as a strategy to add and subtract fractions.</p>	<p>Standard: 5.NF.2 – Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.</p> <p><i>For example, recognize an incorrect result <math>2/5 + 1/2 = 3/7</math>, by observing that <math>3/7 &lt; 1/2</math>.</i></p>	<p>We will recognize benchmark fractions.</p> <p>We will recognize the whole in a word problem involving fractions.</p> <p>We will add and subtract fractions in word problems using fraction models or equations.</p> <p>We will use benchmark fractions and number sense of fractions to check reasonableness of answers.</p>	<p>Trimester 2</p>	<p>benchmark fractions numerator denominator</p> <p>difference equation estimate fraction models (area model, tape diagram, length model, etc.) multiple sum</p>		<p>Investigations Unit 2</p> <p>VDW Ch 16</p>
--	--	---	--------------------	--	--	---

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
--------	----------------------	--	--	--------------------------	---	-----------

<p>Number and Operations- Fractions</p> <p>Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p>	<p>Standard: 5.NF.3 – Interpret a fraction as division of the numerator by the denominator (<math>a/b = a \div b</math>). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.</p> <p><i>For example, interpret <math>3/4</math> as the result of dividing 3 by 4, noting that <math>3/4</math> multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size <math>3/4</math>. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?</i></p>	<p>We will recognize a fraction as a numerator divided by a denominator.</p> <p>We will solve division word problems resulting in a quotient that is a fraction.</p> <p>We will use visual fraction models or equations to represent and solve a word problem.</p>	<p>Trimester 2</p>	<p>numerator denominator improper fraction mixed number visual fraction models: set model area model linear model quotient divisor dividend</p>		<p>Investigations Unit 6</p> <p>VDW Ch 15</p>
--	--	--	--------------------	---	--	---

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
--------	----------------------	--	--	--------------------------	---	-----------

<p>Number and Operations- Fractions</p> <p>Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p>	<p>Standard: 5.NF.4a – Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. Interpret the product <math>(a/b) \times q</math> as a parts of a partition of <math>q</math> into <math>b</math> equal parts; equivalently, as the result of a sequence of operations <math>a \times q \div b</math>.</p> <p><i>For example, use a visual fraction model to show <math>(2/3) \times 4 = 8/3</math>, and create a story context for this equation. Do the same with <math>(2/3) \times (4/5) = 8/15</math>. (In general, <math>(a/b) \times (c/d) = ac/bd</math>.)</i></p>	<p>We will recognize a fraction as a partition of a whole.</p> <p>We will explain the meaning of <math>(c/d) \times n</math>.</p> <p>We will explain the meaning of <math>(c/d) \times (e/f)</math></p> <p>We will create a story to explain the product of a fraction and a whole number, and the product of a fraction and a fraction.</p>	<p>Trimester 2</p>	<p>equal parts equivalent factor fraction partition product</p>		<p>Investigations Unit 4</p> <p>VDW Ch 16</p>
--	--	--	--------------------	---	--	---

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
--------	----------------------	--	--	--------------------------	---	-----------

<p>Number and Operations- Fractions</p> <p>Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p>	<p>Standard: 5.NF.4b – Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.</p> <p>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.</p>	<p>We will find the area of a rectangle with fractional side lengths by using appropriate unit squares.</p> <p>We will show that the area of a rectangle with fractional side lengths can be found by multiplying the side lengths.</p> <p><math>A = l \times w</math></p>	<p>Trimester 2</p>	<p>area arrays fractional length square units: (in<sup>2</sup>, ft<sup>2</sup>, etc...) unit fractions width</p>		<p>Investigations Unit 4</p> <p>VDW Ch 16</p>
--	--	--	--------------------	--	--	---

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
Number and Operations- Fractions  Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	Standard: 5.NF.5a – Interpret multiplication as scaling (resizing), by:  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.	We will recognize that the size of a product depends on the size of the factors.	Trimester 3	factor product resize/resizing scaling		Investigations Unit 4  VDW Literature Connection pg 335

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
--------	----------------------	--	--	--------------------------	---	-----------

<p>Number and Operations- Fractions</p> <p>Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p>	<p>Standard: 5.NF.5b – Interpret multiplication as scaling (resizing), by:</p> <p>Explaining why multiplying a given number by a <b>fraction greater than 1</b> results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a <b>fraction less than 1</b> results in a product smaller than the given number; and relating the principle of fraction equivalence <math>a/b = (n \times a)/(n \times b)</math> to the effect of multiplying <math>a/b</math> by 1.</p>	<p>We will explain why the product of a whole number, a fraction, or a mixed number by a factor greater than 1 will always be greater than the whole number, the fraction, or the mixed number.</p>	<p>Trimester 3</p>	<p>numerator denominator factor product fraction equivalence improper fraction proper fraction resizing simplest form</p>		<p>Investigations Unit 4</p> <p>VDW Ch 16</p>
--	--	---	--------------------	---	--	---

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
Number and Operations- Fractions  Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	Standard: 5.NF.6 –  Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	We will use fraction models or equations to represent and solve real world problems with fractions and mixed numbers.	Trimester 3	improper fraction mixed number proper fraction		Investigations Unit 4  VDW Ch 16

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
--------	----------------------	--	--	--------------------------	---	-----------

<p>Number and Operations- Fractions</p> <p>Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p>	<p>Standard: 5.NF.7a</p> <p>Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. Interpret division of <b>a unit fraction</b> by a non-zero whole number, and compute such quotients.</p> <p><i>For example, create a story context for <math>(1/3) \div 4</math>, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that <math>(1/3) \div 4 = 1/12</math> because <math>(1/12) \times 4 = 1/3</math>. (Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.)</i></p>	<p>We will use visual fraction models to show and solve a unit fraction divided by a whole number.</p> <p>We will show how division with unit fractions is related to multiplication.</p>	<p>Trimester 3</p>	<p>compute interpret non-zero whole number quotients unit fraction</p>		<p>Investigations Unit 4</p> <p>VDW Ch 16</p>
--	---	---	--------------------	--	--	---

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
--------	----------------------	--	--	--------------------------	---	-----------

<p>Number and Operations- Fractions</p> <p>Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p>	<p>Standard: 5.NF.7b – Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. Interpret division of a whole number by a <b>unit fraction</b>, and compute such quotients. <i>For example, create a story context for <math>4 \div (1/5)</math>, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that <math>4 \div (1/5) = 20</math> because <math>20 \times (1/5) = 4</math>.</i> (Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.)</p>	<p>We will use visual models to show and solve a whole number divided by a unit fraction.</p> <p>We will show how division with unit fractions is related to multiplication.</p>	<p>Trimester 3</p>	<p>interpret quotient unit fraction</p>		<p>Investigations Unit 4</p> <p>VDW Ch 16 (Figure 16.14)</p>
--	--	--	--------------------	---	--	--

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
<p>Number and Operations- Fractions</p> <p>Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p>	<p>Standard: 5.NF.7c – Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. Solve real world problems involving division of <b>unit fractions</b> by non-zero whole numbers and division of whole numbers <b>by unit fractions</b>, e.g., by using visual fraction models and equations to represent the problem. <i>For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 1/3-cup servings are in 2 cups of raisins?</i> (Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.</p>	<p>We will use visual fraction models and equations to solve real world division problems involving unit fractions and whole numbers.</p>	<p>Trimester 3</p>	<p>non-zero whole number unit fractions</p>		<p>Investigations Unit 4</p> <p>VDW Ch 16</p>

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

<b>Domain</b>	<b>Common Core Standard</b>	<b>Student Outcomes (Objectives Skills/Verbs)</b>	<b>Pacing Notes/ Comments/ Date(s) Introduced</b>	<b>Key Vocabulary/ Concepts</b>	<b>Projects/Activities to support Differentiation and Student Engagement</b>	<b>Resources</b>
---------------	-----------------------------	---	---	---------------------------------	--	------------------

<p>Measurement and Data</p> <p>Convert like measurement units within a given measurement system.</p>	<p>Standard: 5.MD.1 – Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.</p>	<p>We will convert customary units of measure such as inches to feet, quarts to gallons, ounces to pound, minute to seconds.</p> <p>We will convert metric units of measure such as centimeter to meter, milliliters to liters, and grams to kilograms.</p> <p>We will solve multi-step real world problems using conversions.</p>	<p>Trimester 2</p>	<p>conversion convert equivalent hour volume linear mass capacity Metric System (meter, centimeter, gram, etc.) U.S. standard units/ Customary System (pounds, ounces, inches, etc.)</p>		<p>Investigations Unit 6</p> <p>HM Lesson 6.2, 6.3, 6.4, 6.5, 6.7,</p>
--	--	--	--------------------	--	--	--

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
--------	----------------------	--	--	--------------------------	---	-----------

<p>Measurement and Data</p> <p>Represent and interpret data.</p>	<p>Standard: 5.MD.2 –</p> <p>Make a line plot to display a data set of measurements in fractions of a unit (<math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{8}</math>). Use operations on fractions for this grade to solve problems involving information presented in line plots.</p> <p><i>For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally</i></p>	<p>We will represent data in a line plot using fractional measurements.</p> <p>We will solve problems by using fractional data on a line plot.</p>	<p>Trimester 2</p>	<p>data set increments line plot dot plot redistribute</p>		<p>Investigations unit 9</p> <p>HM 8.2, 8.5</p> <p>VDW Ch 21</p>
--	--	--	--------------------	--	--	--

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

<b>Domain</b>	<b>Common Core Standard</b>	<b>Student Outcomes (Objectives Skills/Verbs)</b>	<b>Pacing Notes/ Comments/ Date(s) Introduced</b>	<b>Key Vocabulary/ Concepts</b>	<b>Projects/Activities to support Differentiation and Student Engagement</b>	<b>Resources</b>
---------------	-----------------------------	---	---	---------------------------------	--	------------------

<p>Measurement and Data</p> <p>Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.</p>	<p>Standard: 5.MD.3a –</p> <p>Recognize volume as an attribute of solid figures and understand concepts of volume measurement. A cube with side length 1 unit, called a “unit cube,” is said to have “1 cubic unit” of volume, and can be used to measure volume.</p>	<p>We will recognize that solid figures have volume.</p> <p>We will recognize that volume is measured in cubic units.</p>	<p>Trimester 2</p>	<p>attribute cubic unit solid figure unit cube volume</p>		<p>Investigations Unit 2</p> <p>HM 17.6 *Teacher note: pg 460 TE Introduce Activity only (not algorithms)</p> <p>VDW Ch 19 Figure 19.21</p>
<p>Measurement and Data</p> <p>Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.</p>	<p>Standard: 5.MD.3b –</p> <p>Recognize volume as an attribute of solid figures and understand concepts of volume measurement. A solid figure which can be packed without gaps or overlaps using <math>n</math> unit cubes is said to have a volume of <math>n</math> cubic units.</p>	<p>We will identify volume as an attribute of solid figures.</p> <p>We will pack a container with <math>n</math> unit cubes, and recognize the volume as <math>n</math> cubic units.</p>	<p>Trimester 2</p>	<p>attribute cubic unit solid figure unit cube volume</p>		<p>Investigations Unit 2</p> <p>HM 17.6 *Teacher note: pg 460 TE Introduce Activity only (not algorithms)</p> <p>VDW Ch 19 Figure 19.21</p>

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
Measurement and Data  Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	Standard: 5.MD.4 – Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	We will count various unit cubes to measure volume.  (Teacher note: without utilizing the algorithm)	Trimester 2	cubic units = units <sup>3</sup> cubic centimeter = cm <sup>3</sup> cubic foot = ft <sup>3</sup> cubic inch=in <sup>3</sup> volume improvised units (crayon boxes in large box, milk cartons in crate, etc...)		Investigations Unit 2  HM 17.6 *Teacher note: pg 460 TE Introduce Activity only (not algorithms)  VDW Ch 19 Figure 19.21

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

<b>Domain</b>	<b>Common Core Standard</b>	<b>Student Outcomes (Objectives Skills/Verbs)</b>	<b>Pacing Notes/ Comments/ Date(s) Introduced</b>	<b>Key Vocabulary/ Concepts</b>	<b>Projects/Activities to support Differentiation and Student Engagement</b>	<b>Resources</b>
---------------	-----------------------------	---	---	---------------------------------	--	------------------

<p>Measurement and Data</p> <p>Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.</p>	<p>Standard: 5.MD.5a –</p> <p>Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. 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 threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.</p>	<p>We will solve real world volume problems by using addition and multiplication.</p> <p>We will relate that volume solved by packing rectangular prisms with unit cubes can also be solved by multiplying edge lengths or base area by height.</p> <p>We will relate the associative property of multiplication to multiplying the edge lengths.</p>	<p>Trimester 2</p>	<p>cubic unit edge length base area rectangular prism three-dimensional volume width height length associative property of multiplication</p>		<p>Investigations Unit 2</p> <p>HM 17.6</p> <p>VDW Ch 19</p>
--	---	---	--------------------	---	--	--

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
Measurement and Data  Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	Standard: 5.MD.5b –  Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for rectangular prisms to find volumes of right rectangular prisms <b>with whole- number edge lengths</b> in the context of solving real world and mathematical problems.	We will solve for volume using $V = l \times h \times w$ $V = b \times h$	Trimester 2	area area of the Base base formula height length right rectangular prism volume width		Investigations Unit 2  HM 17.7  VDW Ch 19 Figure 19.19

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
<p>Measurement and Data</p> <p>Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.</p>	<p>Standard: 5.MD.5c –</p> <p>Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. 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.</p>	<p>We will relate volume to multiplication and addition in real world problems.</p> <p>We will find the total volume of a solid figure that consists of two rectangular prisms by decomposing the shape into two prisms and adding their volumes.</p>	<p>Trimester 2</p>	<p>decomposing rectangular prism figure solid figure volume width height length</p>		<p>HM 17.6 pg 461</p> <p>VDW Ch 19 Figure 19.19</p>

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

Domain	Common Core Standard	Student Outcomes (Objectives Skills/Verbs)	Pacing Notes/ Comments/ Date(s) Introduced	Key Vocabulary/ Concepts	Projects/Activities to support Differentiation and Student Engagement	Resources
--------	----------------------	--	--	--------------------------	---	-----------

<p>Geometry</p> <p>Graph points on the coordinate plane to solve real-world and mathematical problems.</p>	<p>Standard: 5.G.1 –</p> <p>Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).</p>	<p>We will define a coordinate system as two perpendicular number lines called axes that intersect at the origin, zero.</p> <p>We will recognize that the first coordinate, x, travels horizontally along the x axis starting at the origin.</p> <p>We will recognize that the second coordinate, y, travels vertically along the y axis starting at origin.</p> <p>We will plot ordered pairs (x,y.)</p>	<p>Trimester 3</p>	<p>axis axes coordinate system coordinates intersection ordered pairs origin perpendicular number lines x-axis x-coordinate y-axis y-coordinate</p>		<p>Investigations Units 5, 8</p>
--	--	---	--------------------	---	--	----------------------------------

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

<b>Domain</b>	<b>Common Core Standard</b>	<b>Student Outcomes (Objectives Skills/Verbs)</b>	<b>Pacing Notes/ Comments/ Date(s) Introduced</b>	<b>Key Vocabulary/ Concepts</b>	<b>Projects/Activities to support Differentiation and Student Engagement</b>	<b>Resources</b>
---------------	-----------------------------	---	---	---------------------------------	--	------------------

<p>Geometry</p> <p>Graph points on the coordinate plane to solve real-world and mathematical problems.</p>	<p>Standard: 5.G.2 –</p> <p>Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.</p>	<p>We will graph and interpret coordinate points to represent real world problems.</p>	<p>Trimester 3</p>	<p>coordinate plane coordinate values quadrant</p>		<p>Investigations Unit 8</p>
<p>Geometry</p> <p>Classify two-dimensional figures into categories based on their properties.</p>	<p>Standard: 5.G.3 –</p> <p>Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.</p> <p><i>For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.</i></p>	<p>We will identify that attributes of two-dimensional figures create a hierarchy.</p>	<p>Trimester 3</p>	<p>attribute angles (acute, obtuse, right) equilateral, isosceles, scalene sides parallel lines perpendicular lines subcategory vertex hierarchy</p>		<p>Investigations Unit 5</p> <p>HM 15.3, 15.5</p> <p>VDW Ch 20</p>

**DCSD 5<sup>th</sup> Grade Math Curriculum Guide**

<b>Domain</b>	<b>Common Core Standard</b>	<b>Student Outcomes (Objectives Skills/Verbs)</b>	<b>Pacing Notes/ Comments/ Date(s) Introduced</b>	<b>Key Vocabulary/ Concepts</b>	<b>Projects/Activities to support Differentiation and Student Engagement</b>	<b>Resources</b>
---------------	-----------------------------	---	---	---------------------------------	--	------------------

Geometry  Classify two-dimensional figures into categories based on their properties.	Standard: 5.G.4 –  Classify two-dimensional figures in a hierarchy based on properties.	We will define attributes as properties.  We will classify two-dimensional figures using the hierarchy.	Trimester 3	classify hierarchy properties		Investigations Unit 5  VDW Ch 20
---	---	---	-------------	-------------------------------	--	--