| Subject/Course: Math | Grade: 4 | | | | | |
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| | Suggested Timeline: 5 weeks | | | | | |
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| **Unit Title: Place Value, Rounding, Fluency with Addition and Subtraction Algorithms of Whole Numbers** | Module 1 begins with a study of large numbers. Students are familiar with big units. For example, movies take about a gigabyte (1,000,000,000 bytes) to store on a computer while songs take about a megabyte (1,000,000 bytes). To understand these big numbers, the students rely upon previous mastery of rounding and the addition and subtraction algorithms. In a sense, the algorithms have come full circle: In Grades 2 and 3 the algorithms were the abstract idea students were trying to learn, but by Grade 4 the algorithms have become the concrete knowledge students use to understand new ideas. | | | | | |
| **I Can Statements / Essential Questions / Objectives** | **Content / Concepts** | **Skills / Competencies** | **Vocabulary** | **Assessments** | **Focus Standards** | **Standards for Math Practice** |
| Demonstrate an understanding that in a multi-digit whole number (through 1,000,000), a digit in one place represents ten times what it represents in the place to its right | Place Value and Properties of Operations | Compare and round multi-digit numbers. | equivalence, digits, whole number, operation, add/addition, subtract/subtraction, place value, estimation, rounding, algorithm, sum, difference, additive comparison | | Apply place value concepts to show an understanding of multi-digit whole numbers. | MP# 1,2,3,4,5,6,7 |
| Read and write whole numbers in expanded, standard, and word form through 1,000,000 | | Demonstrate an understanding of multi-digit whole numbers. | | | Use place value understanding and properties of operations to perform multi-digit arithmetic. | |
| Compare two-digit multi-digit numbers through 1,000,000 based on meanings of the digits in each place | | Perform multi-digit arithmetic. | | | | |
| Round multi-digit whole numbers (through 1,000,000) to any place. | | | | | | |

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| Add and subtract multi-digit whole numbers (limit sums and subtrahends up to and including 1,000,000) | | | | | | |
| Estimate the answer to addition and subtraction using whole numbers through six digits | | | | | | |
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| Important Standards Addressed in This Unit | Misconceptions | Proper Conceptions |
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| Represent and solve problems involving the four operations. | When writing numerals from verbal descriptions, many students will understand the 1000 and the 2 but then instead of placing the 2 in the ones place, students will write the numbers as they hear them, 10002 (ten thousand two). | |
| | Students often assume that the first digit of a multi-digit number indicates the "greatness" of a number. The assumption is made that 954 is greater than 1002 because students are focusing on the first digit instead of the number as a whole. | Partial Products Method: Students could add/subtract by place value, moving left to right placing the answers down below the 'equals' line. (Example: 372 + 249 =… Start with 300+200 to get 500, then 70+40 to get 110, and 2+9 for 11. Total the partial sums (500+110+11 = 621) |
| | Students may confuse when to 'carry' and when to 'borrow'. | Column Addition: Students could add/subtract by place value moving right to left adding each column first and then adjusting for values larger than 10. |

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| | Students often do not notice the need of borrowing and just take the smaller digit from the larger one. | •Emphasize various estimation strategies (not i:) |
| | Students having difficulty with lining up similar place values in numbers as they are adding and subtracting. | •front-end estimation with adjusting (using the highest place value and estimating from the front end, making adjustments to the estimate by taking into account the remaining amounts), |
| | Students are having a difficult time with a standard addition or subtraction algorithm. | •clustering around an average (when the values are close together an average value is selectedand multiplied by the number of values to determine an estimate), |
| | Students have difficulty identifying when estimation is appropriate, reasonable, and accurate. | •rounding and adjusting (students round down or round up and then adjust their estimate depending on how much the rounding affected the original values), |
| | | •using friendly or compatible numbers such as factors (students seek to fit numbers together -e.g., rounding to factors and grouping numbers together that have round sums like 100 or 1000). |
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| Module 2 | Grade: 4 | | | | | |
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| | Suggested Timeline: 5 weeks | | | | | |
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| **Unit Title: Unit Conversions: Addition and Subtraction of Length, Weight, Liquid Volume, Area, and Perimeter; Intervals of Time** | This module focuses on what it means to measure length, weight, liquid volume, area, perimeter, and intervals of time; and the use of standard tools to make these measurements. It also includes the relationships of different units within a system (customary and metric) and the relative sizes of measurement units within one system of units including in., ft., yd., mi.; km, m, cm; kg, g; lb., oz.; l, ml; hr., min., sec; gal., qt., pt., c., and oz. The application of this knowledge is used to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals. It is further explored to use the area and perimeter formulas for rectangles in real world and mathematical problems. | | | | | |
| **I Can Statements / Essential Questions / Objectives** | **Content / Concepts** | **Skills / Competencies** | **Vocabulary** | **Assessments** | **Focus Standards** | **Standards for Math Practice** |
| Know relative sizes of measurement units within one system; including standard units (in., ft., yd., mi; oz., lb.; and c., pt., qt., gal.), metric units (cm, m, km, g, kg, and mL, L), and time (sec., min., hr., day, wk., mo., and yr.) Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit A table of equivalencies will be provided | Place Value and Properties of Operations | Demonstrate an understanding of multi-digit whole numbers | Add, area, centimeter (cm), convert/conversion, cup, customary, decimals, distance, divide, equivalent, foot, fractions, gallon, gram, hour, inch, kilogram, kilometer, length, liquid volume, liter, mass, measure, meter, metric, mile, milliliter, minute, multiply, operations, ounce, perimeter, pint, pound, quart, relatiev size, second, scale, subtract, time, weight, yard | | Solve problems involving measurement and conversions from a larger unit to a smaller unit. | MP# 1,2,3,4,5,6,7 |

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| Use the four operations to solve word problems involving distances, intervals of time (such as elapsed time), liquid volumes, masses of objects; money, including problems involving simple fractions or decimals; and problems that require expressing measurements given in a larger unit in terms of a smaller unit | | Perform multi-digit arithmetic. | | | | |
| Apply the area and perimeter formulas for rectangles in real-world and mathematical problems (may include finding a missing side length) Whole numbers only The formulas will be provided | | | | | | |
| Identify time (analog and digital) as the amount of minutes before or after the hour | | | | | | |

| Important Standards Addressed in This Unit | Misconceptions | Proper Conceptions |
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| Use place value understanding and properties of operations to perform multi-digit arithmetic. | Students believe that larger units will give larger measures. Students should be given multiple opportunities to measure the same object with different measuring units. For example, have the students measure the length of a room with one-inch tiles, with one-foot rulers, and with yard sticks. Students should notice that it takes fewer yard sticks to measure the room than rulers or tiles and explain their reasoning. | When converting a smaller unit to a larger unit, the number of units will decrease. For example, a yard is larger than an inch; therefore one yard contains many inches. |
| Represent and solve problems involving the four operations. | When solving problems that require renaming of units of time, students revert to the base 10 system of renaming. For example, when subtracting 25 minutes from 2 hours, students fail to convert 1 hour to 60 minutes and instead write 2:00 – 0:25 and 1:75. | It is important for students to realize that methods used to solve whole number problems without a unit of time are different than methods used to solve problems involving units of time. |

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| | When measuring length with a ruler, students fail to interpret interval markings appropriately. For example, when measuring to the nearest ⅛", students fail to equate ¼" with 2/8" or ½" with 4/8". | Provide reinforcement of fraction equivalence along with opportunity to make a ruler that includes equivalent fractions at ⅛" intervals. |
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| Subject/Course: Math | Grade: 4 | | | | | |
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| | Suggested Timeline: 6 weeks | | | | | |
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| **Unit Title: Multiplication and Division of up to a 4-Digit Number by up to a 1-Digit Number Using Place Value** | In Module 3, measurements provide the concrete foundation behind the distributive property in the multiplication algorithm: 4. (1 m 2 cm) can be made physical using ribbon, where it is easy to see the 4 copies of 1 m and the 4 copies of 2 cm. Likewise, 4. (1 ten 2 ones) = 4 tens 8 ones. Students then turn to the place value table with number disks to develop efficient procedures for multiplying and dividing one-digit whole numbers and use the table with number disks to understand and explain why the procedures work. Students also solve word problems throughout the module where they select and accurately apply appropriate methods to estimate, mentally calculate, or use the procedures they are learning to compute products and quotients. | | | | | |

| I Can Statements / Essential Questions / Objectives | Content / Concepts | Skills / Competencies | Vocabulary | Assessments | Focus Standards | Standards for Math Practice |
|---|---|---|---|---|---|---|
| Demonstrate an understanding that in a multi-digit whole number (through 1,000,000), a digit in one place represents ten times what it represents in the place to its right | Number Theory | Demonstrate an understanding of multi-digit whole numbers. | Equivalence, Digit, Whole number, operation, multiply / multiplication, divide / division, place value, estimation, rounding, algorithm, multiplicative comparison, factor, factor pairs, multiple, product | | Apply place value concepts to show an understanding of multi-digit whole numbers. | MP# 1,2,3,4,5,6,7 |
| Multiply a whole number of up to four digits by a one-digit whole number and multiply 2 two-digit numbers | Place Value and Properties of Operations | Perform multi-digit arithmetic. | | | Use place value understanding and properties of operations to perform multi-digit arithmetic. | |
| Divide up to four-digit dividends by one-digit divisors with answers written as whole-number quotients and remainders | | Recognize that a whole number is a multiple of each of its factors. | | | Represent and solve problems involving the four operations. | |

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| Estimate the answer to multiplication problems using whole numbers through six digits (for multiplication, no more than 2 digits x 1 digit, excluding powers of 10) | | Represent and solve problems verbally as equations. | | | | |
| Interpret a multiplication equation as a comparison<br>Represent verbal statements of multiplicative comparisons as multiplication equations | | Use factors to represent numbers in various ways. | | | | |
| Multiply or divide to solve word problems involving multiplicative comparison, distinguishing multiplicative comparison from additive comparison | | | | | | |
| Solve multi-step word problems posed with whole numbers using the four operations<br>Answers will be either whole numbers or have remainders that must be interpreted yielding a final answer that is a whole number<br>Represent these problems using equations with a symbol or letter standing for the unknown quantity | | | | | | |

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| **Important Standards Addressed in This Unit** | **Misconceptions** | **Proper Conceptions** |
| Develop and/or apply number theory concepts to find factors and multiples. | Students have difficulty devising a number model to solve a given word problem task. | Have students use drawings or other representations to visualize the problem context. |

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| Generate and analyze patterns using one rule. | Students are not able to distinguish whether a word problem involves multiplicative comparison or additive comparison (solved when adding and subtracting in Grades 1 and 2). | When distinguishing multiplicative comparison from additive comparison, students should note that: additive comparisons focus on the difference between two quantities (e.g., Deb has 3 apples and Karen has 5 apples. How many more apples does Karen have?). A simple way to remember this is, —How many more? ‖ multiplicative comparisons focus on comparing two quantities by showing that one quantity is a specified number of times larger or smaller than the other (e.g., Deb ran 3 miles. Karen ran 5 times as many miles as Deb. How many miles did Karen run?). A simple way to remember this is —How many times as much? ‖or —How many times as many? |
| | Students have difficulty estimating and/or determining if the answer is reasonable. | Problems should be structured so that all acceptable estimation strategies will arrive at a reasonable answer. |

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| | Students have difficulty or experience frustration with solving story problems. | Estimation strategies include, but are not limited to front-end estimation with adjusting (using the highest place value and estimating from the front end, making adjustments to the estimate by taking into account the remaining amounts), clustering around an average (when the values are close together an average value is selected and multiplied by the number of values to determine an estimate), rounding and adjusting (students round down or round up and then adjust their estimate depending on how much the rounding affected the original values), using friendly or compatible numbers such as factors (students seek to fit numbers together - e.g., rounding to factors and grouping numbers together that have round sums like 100 or 1000), using benchmark numbers that are easy to compute (student's select close whole numbers for fractions or decimals to |

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| | | determine an estimate). |
| | Students experience difficulty writing numerals from verbal descriptions. (e.g., writing one thousand two as 10002) | Students need many opportunities solving multistep story problems using all four operations. |
| | Students assume that the first digit of a multi-digit number indicates the “greatness” of a number. (e.g., 954 is greater than 1002 because the focus is on the first digit instead of the number as a whole. | An interactive whiteboard, document camera, drawings, words, numbers, and/or objects may be used to help solve story problems |
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| Subject/Course: Math | Grade: | | | | | |
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| | Suggested Timeline: 4 weeks | | | | | |
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| **Unit Title: Addition and Subtraction of Angle Measurement of Planar Figures** | Module 4 focuses as much on solving unknown angle problems using letters and equations as it does on building, drawing, and analyzing two-dimensional shapes in geometry. Students have already used letters and equations to solve word problems in earlier grades. They continue to do so in Grade 4, and now they also learn to solve unknown angle problems: work that challenges students to build and solve equations to find unknown angle measures. First, students learn the definition of degree and learn how to measure angles in degrees using a protractor. From the definition of degree and the fact that angle measures are additive, the following rudimentary facts about angles naturally follow: 1. Vertical angles are equal. 2. The sum of angle measurements on a line is 180 degrees. 3. The sum of angle measurements around a point is 360 degrees. Armed only with these three facts (and the 2 facts used to justify them), students are able to generate and solve equations that make sense. | | | | | |

| I Can Statements / Essential Questions / Objectives | Content / Concepts | Skills / Competencies | Vocabulary | Assessments | Focus Standards | Standards for Math Practice |
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| •Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. | Geometric Shapes and Figures | Classify shapes by properties of their lines and angles. | Acute angle, angle, decimal, decimal fraction, equivalence, factor, line, line of symmetry, line segment, mixed number, multiple, obtuse triangle, point, ray, right angle, symmetry, unit fraction, weight | | Draw lines and angles and identify these in two-dimensional figures. | MP# 5,6,7 |
| •Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles. | | Draw and identify lines and angles. | | | Classify two-dimensional figures by properties of their lines and angles. | |

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| •Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into mirroring parts. Identify line-symmetric figures and draw lines of symmetry (up to two lines of symmetry). | | Recognize symmetric shapes and draw lines of symmetry. | | | Recognize symmetric shapes and draw lines of symmetry. | |
| •Measure angles in whole-number degrees using a protractor. With the aid of a protractor, sketch angles of specified measure. | | | | | Solve problems involving measurement and conversions from a larger unit to a smaller unit. | |
| •Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems. (Angles must be adjacent and non-overlapping.) | | | | | | |

| Important Standards Addressed in This Unit | Misconceptions | Proper Conceptions |
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| There are no standards currently aligned to this resource. | 1.Students are confused as to which number to use when determining the measure of an angle using a protractor because most protractors have a double set of numbers. | 1.Students should have multiple experiences estimating and comparing angles to the Benchmark 90° or right angle. |
| | 2.They should explain their reasoning by deciding first if the angle appears to be an angle that is less than the measure of a right angle (90°) or greater than the measure of a right angle (90°). If the angle appears to be less than 90°, it is an acute angle and its measure ranges from 0° to 89°. If the angle appears to be an angle that is greater than 90°, it is an obtuse angle and its measures range from 91° to 179°. | 2.Ask questions about the appearance of the angle to help students in deciding which number to use. |

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| | 3.Students believe a wide angle with short sides may seem smaller than a narrow angle with long sides. Students can compare two angles by tracing one and placing it over the other. | 3.Students will then realize that the length of the sides does not determine whether one angle is larger or smaller than another angle. The measure of the angle does not change. |
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| Subject/Course: Math | Grade: | | | | | |
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| | Suggested Timeline: 6 weeks | | | | | |
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| **Unit Title: Order and Operations with Fractions** | | This module explores the understanding of a fraction a/b as a multiple of 1/b. (for example: model the product of ¾ as 3 x ¼). It will teach representations of simple equivalent fractions understanding a multiple of a/b as a multiple of 1/b, and will use this understanding to multiply a fraction by a whole number, including solving word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. | | | | |
| **I Can Statements / Essential Questions / Objectives** | **Content / Concepts** | **Skills / Competencies** | **Vocabulary** | **Assessments** | **Focus Standards** | **Standards for Math Practice** |
| Add and subtract fractions with a common denominator (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; answers do not need to be simplified; and no improper fractions as the final answer) | Fractions | Demonstrate an understanding of multi-digit whole numbers. | Fraction, denominator, equivalent sets, improper fraction, increment, mixed number, numerator, proper fraction, term, unit fraction, whole number | | Extend the understanding of fractions to show equivalence and ordering. | MP# 1,2,4,5,6,7 |
| Decompose a fraction or a mixed number into a sum of fractions with the same denominator (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100), recording the decomposition by an equation. Justify decompositions (e.g., by using a visual fraction model) | | Recognize that a whole number is a multiple of each of its factors. | | | Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. | |

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| Add and subtract mixed numbers with a common denominator (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; no regrouping with subtraction; fractions do not need to be simplified; and no improper fractions as the final answers) | | | | | | |
| Solve word problems involving addition and subtraction of fractions referring to the same whole or set and having like denominators (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100) | | | | | | |
| Multiply a whole number by a unit fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100 and final answers do not need to be simplified or written as a mixed number) | | | | | | |
| Multiply a whole number by a non-unit fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100 and final answers do not need to be simplified or written as a mixed number) | | | | | | |

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| Solve word problems involving multiplication of a whole number by a fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100) | | | | | | |
| Make a line plot to display a data set of measurements in fractions of a unit (e.g., intervals of 1/2, 1/4, or 1/8) | | | | | | |
| Solve problems involving addition and subtraction of fractions by using information presented in line plots (line plots must be labeled with common denominators, such as 1/4, 2/4, 3/4) | | | | | | |
| Translate information from one type of display to another (table, chart, bar graph, or pictograph) | | | | | | |
| Recognize and generate equivalent fractions | | | | | | |
| Compare two fractions with different numerators and different denominators (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100) using the symbols >, =, or < and justify the conclusions | | | | | | |

| Important Standards Addressed in This Unit | Misconceptions | Proper Conceptions |
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| Represent and solve problems involving the four operations. | Students think that when generating equivalent fractions they need to multiply or divide either the numerator or denominator, such as, changing 1/2 to sixths. They would multiply the denominator by 3 to get 1/6, instead of multiplying the numerator by 3 also. Their focus is only on the multiple of the denominator, not the whole fraction. | Multiplying or dividing fractions to obtain equivalent fractions is really the same as multiplying by 1. 3/3 =1, 5/5=1, 8/8=1. Using the Identity Property, any number multiplied or divided by 1=itself. Students need to recognize that they are multiplying by 1 when they are generating equivalent fractions. |
| Translate information from one type of data display to another. | It's important that students use a fraction in the form of one such as 3/3 so that the numerator and denominator do not contain the original numerator or denominator. Students think that it does not matter which model to use when finding the sum or difference of fractions. | Pictorial representations of fractions need to be congruent. When performing mathematical operations using fractions, the size of the unit of 1 needs to remain constant. |

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| Represent and interpret data involving fractions using information provided in a line plot. | They may represent one fraction with a rectangle and the other fraction with a circle. They need to know that the models need to represent the same whole. | |
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| Subject/Course: Math | Grade: | | | | | |
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| | Suggested Timeline: 6 weeks | | | | | |
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| **Unit Title: Decimal Fraction** | Module 6, on decimal fractions, starts with the realization that decimal place value units are simply special fractional units: 1 tenth = 1/10, 1 hundredth = 1/100, etc. Fluency plays an important role in this topic as students learn to relate 3/10 = 0.3 = 3 tenths. | | | | | |
| **I Can Statements / Essential Questions / Objectives** | **Content / Concepts** | **Skills / Competencies** | **Vocabulary** | **Assessments** | **Focus Standards** | **Standards for Math Practice** |
| Recognize and generate equivalent fractions. | Fractions | Compare and order fractions. | Fraction, Denominator, Equivalent sets, improper fraction, increment, mixed number, numerator, proper fraction, term, unit fraction, whole number | | Extend the understanding of fractions to show equivalence and ordering. | MP# 1,2,4,5,6,7 |
| Compare two fractions with different numerators and different denominators (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100) using the symbols >, =, or < and justify the conclusions. | | Demonstrate an understanding of fraction equivalence. | | | Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. | |
| Solve problems involving fractions and whole numbers (straight computation or word problems). | | Demonstrate an understanding of multi-digit whole numbers. | | | Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g, 19/100). | |

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| Use operations to solve problems involving decimals, including converting between fractions and decimals (may include word problems). | | | | | Solve problems involving measurement and conversions from a larger unit to a smaller unit. | |
| Use numbers and symbols to model the concepts of expressions and equations. | | | | | | |

| Important Standards Addressed in This Unit | Misconceptions | Proper Conceptions |
|---|---|---|
| Represent and solve problems involving the four operations | Students think that when generating equivalent fractions they need to multiply or divide either the numerator or denominator, such as, changing 1/2 to sixths. They would multiply the denominator by 3 to get 1/6, instead of multiplying the numerator by 3 also. Their focus is only on the multiple of the denominator, not the whole fraction. | It's important that students use a fraction in the form of one such as 3/3 so that the numerator and denominator do not contain the original numerator or denominator. |
| Develop and/or apply number theory concepts to find factors and multiples. | Students think that it does not matter which model to use when finding the sum or difference of fractions. | They may represent one fraction with a rectangle and the other fraction with a circle. They need to know that the models need to represent the same whole. |
| | Students treat decimals as whole numbers when making comparison of two decimals. They think the longer the number, the greater the value. For example, they think that).03 is greater than 0.3. | Explain the difference in decimals. |

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| | Students believe that larger units will give the larger measure. | Students should be given multiple opportunities to measure the same object with different measuring units. For example, have the students measure the length of a room with one-inch tiles, with one-foot rulers, and with yard sticks. Students should notice that it takes fewer yard sticks to measure the room than rulers or tiles and explain their reasoning. |
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| Subject/Course: Math | Grade: | | | | | |
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| | Suggested Timeline: 6 weeks | | | | | |
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| **Unit Title: Exploring Multiplication** | The year ends with an exploratory module on multiplication. Students have been practicing the algorithm for multiplying by a one-digit number since Module 3. The goal of Module 7 is to structure opportunities for them to discover ways to multiply two-digit × two-digit numbers with their tools (such as place value tables, area models, bar diagrams, number disks, the distributive property and equations). Students also solve fraction and area problems that involve customary measurements (inches and feet, etc.). | | | | | |

| I Can Statements / Essential Questions / Objectives | Content / Concepts | Skills / Competencies | Vocabulary | Assessments | Focus Standards | Standards for Math Practice |
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| Multiply a whole number of up to four digits by a one-digit whole number and multiply 2 two-digit numbers | Place Value and Properties of Operations | Compare and round multi-digit numbers. | Acute angle, angle, decimal, decimal fraction, equivalence, factor, line, line of symmetry, line segment, mixed number, multiple, obtuse triangle, point, ray, right angle, symmetry, unit fraction, weight | | Represent and solve problems involving the four operations. | MP# 2,4,5,7 |
| Estimate the answer to addition, subtraction, and multiplication problems using whole numbers through six digits (for multiplication, no more than 2 digits X 1 digit, excluding powers of 10) | | Demonstrate an understanding of multi-digit whole numbers. | | | Develop and/or apply number theory concepts to find factors and multiples. | |
| Multiply a whole number by a unit fraction (denominators limited to 2,3,4,5,6,8,10,12, and 100) | | Perform multi-digit arithmetic. | | | Solve problems involving measurement and conversions from a larger unit to a smaller unit. | |

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| Multiply a whole number by a non-unit fraction (denominators limited to 2,3,4,5,6,8,10.12, and 100 and final answers do not need to be simplified or written as a mixed number) | | Solve problems involving fractions and mixed numbers. | | | | |
| Solve word problems involving multiplication of a whole number by a fraction (denominators limited to 2,3,4,5,6,8,10,12, and 100) | | | | | | |
| Multiply or divide to solve word problems involving multiplicative comparison, distinguishing multiplicative comparison from additive comparison | | | | | | |
| Apply the area and perimeter formulas for rectangles in real-world and mathematical problems(may include finding a missing side length) | | | | | | |

| Important Standards Addressed in This Unit | Misconceptions | Proper Conceptions |
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| Use place value understanding and properties of operations to perform multi-digit arithmetic. | 1.A common misconception is that the number 1 is prime. | 1.In fact; it is neither prime nor composite. |
| | 2.All prime numbers are odd numbers. | 2.This is not true, since the number 2 has only 2 factors, 1 and 2, and is also an even number. |
| | 3.When listing multiples of numbers, students may not list the number itself. | 3.Emphasize that the smallest multiple is the number itself. |
| | 4.Some students may think that larger numbers have more factors. | 4.Having students share all factor pairs and how they found them will clear up this misconception. |