



# **GRADE 4 MATHEMATICS**

CURRICULUM

CARLISLE AREA SCHOOL DISTRICT

DATE OF BOARD APPROVAL: AUGUST 18, 2022

## COURSE OVERVIEW

|                        |  |
|------------------------|--|
| <b>Title:</b>          | Grade 4 Mathematics  |
| <b>Grade Level:</b>    | 4  |
| <b>Level:</b>          | N/A  |
| <b>Length:</b>         | 90 Minute Blocks   |
| <b>Duration:</b>       | 165-180 Days   |
| <b>Frequency:</b>      | Daily  |
| <b>Pre-Requisites:</b> | N/A  |
| <b>Credit:</b>         | N/A  |
| <b>Description:</b>    | <p>This curriculum document is part of a vertically-aligned sequence of curricula from grades Kindergarten through five. Each grade level is aligned to the Pennsylvania Mathematics Standards, and addresses the four curricular domains: Numbers and Operations, Algebraic Thinking, Geometry, and Measurement and Data. Throughout elementary school, these courses are designed to develop students’ concrete and abstract understanding of mathematics, foster strong number sense, and strengthen the ability to solve increasingly complex problems using a variety of methods and strategies. Ultimately, the objective is to empower students as mathematical thinkers and communicators.</p> <p><i>*Throughout document, italicized vocabulary appears in PSSA Mathematics Glossary.</i></p> |

## COURSE TIMELINE

| UNIT | TITLE   | KEY CONCEPTS  | DURATIONS (DAYS) |
|------|---|---|------------------|
|      | Number Sense and Math Fluency                   | <ul style="list-style-type: none"> <li>• Ongoing skill development</li> </ul>   | Ongoing          |
| 1    | Numbers and Operations in Base 10 – Place Value | <ul style="list-style-type: none"> <li>• Place value of whole numbers</li> <li>• Addition and subtraction of multi-digit whole numbers</li> <li>• Multiplication and division of multi-digit whole numbers</li> <li>• Rounding</li> </ul>           | 35 Days          |
| 2    | Algebraic Concepts                              | <ul style="list-style-type: none"> <li>• Multiplicative comparison statements</li> <li>• Solving multi-step problems using the four operations</li> <li>• Utilizing function tables and patterns</li> </ul>   | 40 Days          |
| 3    | Numbers and Operations – Fractions and Decimals | <ul style="list-style-type: none"> <li>• Comparing fractions</li> <li>• Adding and subtracting fractions</li> <li>• Understanding common denominators</li> <li>• Understanding mixed numbers</li> <li>• Comparing fractions and decimals</li> </ul> | 40 Days          |
| 4    | Geometry  | <ul style="list-style-type: none"> <li>• Identifying and drawing lines and angles</li> <li>• Classifying objects based on specific attributes</li> </ul>  | 20 Days          |
| 5    | Measurement and Data                            | <ul style="list-style-type: none"> <li>• Measuring angles</li> <li>• Using formulas to find area and perimeter</li> <li>• Measuring and converting measurements in real problems</li> <li>• Reading and interpreting line plots</li> </ul>          | 30 Days          |

## DISCIPLINARY SKILLS and PRACTICES

| DISCIPLINARY SKILL/PRACTICE                                     | DESCRIPTION  |
|---|--|
| Make sense of problems and persevere in solving them            | Make conjectures about how real world application problems may be solved, monitor progress toward a solution, and make adjustments in the problem solving plan if necessary. |
| Reason abstractly and quantitatively                            | Estimate and check answers to problems and determine the reasonableness of results.  |
| Construct viable arguments and critique the reasoning of others | Justify and communicate conclusions effectively and respond to arguments logically.  |
| Model with mathematics  | Use mathematics to model real world problems, interpreting the mathematical results in the context of the situation.   |
| Use appropriate tools strategically                             | Consider the tools available in solving problems and understand the insights gained by using the tool as well as the limitation of the tool.                                 |
| Attend to precision   | Calculate accurately and efficiently within the context of problems and communicate results precisely.   |
| Look for and make use of structure                              | Examine problems to discern a pattern or structure and utilize this finding in similar problems.   |
| Look for and express regularity in repeated reasoning           | Notice repeated calculations or processes and generalize from those insights in order to solve problems.   |

*\*Adapted from PA Academic Standards for Mathematics.*

## FLUENCY UNIT

|                           |  |  |                   |
|---------------------------|--|--|-------------------|
| <b>Unit Title</b>         | Number Sense and Math Fluency ( <b>Ongoing</b> )   |  |                   |
| <b>Unit Description</b>   | This is an ongoing mathematics fluency unit that is designed to be taught and reviewed consistently throughout the school year.  |  |                   |
| <b>Unit Assessment</b>    | N/A  |  |                   |
|                           |  |  |                   |
| <b>Essential Question</b> | <b>Learning Goals</b>  | <b>Content and Vocabulary</b>  | <b>Standards</b>  |
| Fluency Skills            | <input type="checkbox"/> Review and practice addition, subtraction, multiplication, and division for basic facts (1-12).<br><input type="checkbox"/> Develop strategies to assist with mental math.<br><input type="checkbox"/> Review and practice place value and number sense with whole numbers through thousands. | <b>Vocabulary</b><br><i>factors, dividend, divisor, quotient, product, sum, difference</i> | Grade 3 Standards |

# UNIT 1

|   |  |   |  |
|---|--|---|--|
| <b>Unit Title</b>   | Numbers and Operations in Base 10 – Place Value (35 Days)  |   |  |
| <b>Unit Description</b>   | Students will learn about value and operations with whole numbers. They will be able to read and represent whole numbers, identify place value, round whole numbers, as well as add and subtract multi-digit numbers. This unit provides a foundation for number sense and place value that students will need to understand mathematical operations and problem-solving skills. |   |  |
| <b>Unit Assessment</b>  | Common Assessment  |   |  |
| <b>Essential Question</b>   | <b>Learning Goals</b>  | <b>Content and Vocabulary</b>   | <b>Standards</b>   |
| How does the location of the digit determine its value in a whole number? | <input type="checkbox"/> Read and write whole numbers to the millions place.<br><input type="checkbox"/> Read and write whole numbers in standard, word, and expanded forms.<br><input type="checkbox"/> Explain the relationship between the place values in multi-digit numbers (x10).<br><input type="checkbox"/> Compare and order whole numbers.                            | <b>Vocabulary</b><br>standard form/notation, <i>expanded form/notation</i> , word form/notation, place, value | CC.2.1.4.B.1<br>Apply place value concepts to show an understanding of multi-digit whole numbers.<br><br><b>Eligible Content</b><br>M.04.A-T.1.1.2<br>M.04.A-T.1.1.1<br>M.04.A-T.1.1.3 |
| How do I round whole numbers to a given place?                            | <input type="checkbox"/> Round whole numbers through the millions place.   | <b>Vocabulary</b><br>round  | CC.2.1.4.B.1<br>Apply place value concepts to show an understanding of multi-digit whole numbers.<br><br><b>Eligible Content</b><br>M.04.A-T.1.1.4                                     |

|   |   |  |   |
|---|---|--|---|
| <p>How do I add and subtract multi-digit numbers to the millions place?</p> | <p><input type="checkbox"/> Add and subtract multi-digit whole numbers with and without regrouping up to the millions.</p> <p><input type="checkbox"/> Round whole numbers to estimate sums and differences.</p>  | <p><b>Vocabulary</b><br/> difference, regroup, <i>subtrahend</i>,<br/> minuend</p> | <p>CC.2.1.4.B.2<br/> Use place value understanding and properties of operations to perform multi-digit arithmetic.</p> <p><b>Eligible Content</b><br/> M.04.A-T.2.1.1<br/> M.04.A-T.2.1.4</p> |
| <p>How do I multiply whole numbers?</p>                                     | <p><input type="checkbox"/> Multiply by multiples of ten.</p> <p><input type="checkbox"/> Multiply a one-digit by up to four-digit whole number.</p> <p><input type="checkbox"/> Multiply a two-digit by two-digit whole number.</p> <p><input type="checkbox"/> Round whole numbers to estimate products.</p> <p><input type="checkbox"/> Solve single-step and multi-step word problems involving multiplication.</p> | <p><b>Vocabulary</b><br/> <i>product</i></p>                                       | <p>CC.2.1.4.B.2<br/> Use place value understanding and properties of operations to perform multi-digit arithmetic.</p> <p><b>Eligible Content</b><br/> M04.A-T.2.1.2<br/> M04.A-T.2.1.4</p>   |
| <p>How do I divide whole numbers?</p>                                       | <p><input type="checkbox"/> Divide by multiples of ten.</p> <p><input type="checkbox"/> Divide up to four-digit dividends by one-digit divisors.</p> <p><input type="checkbox"/> Explain what a remainder represents.</p> <p><input type="checkbox"/> Round whole numbers to estimate quotients.</p> <p><input type="checkbox"/> Solve single-step and multi-step word problems involving division.</p>                 | <p><b>Vocabulary</b><br/> <i>dividend, divisor</i>, quotient, remainder</p>        | <p>CC.2.1.4.B.2<br/> Use place value understanding and properties of operations to perform multi-digit arithmetic.</p> <p><b>Eligible Content</b><br/> M04.A-T.2.1.3</p>                      |

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|--|---|-----|-----|
| How do I answer open ended questions involving computation with whole numbers? | <input type="checkbox"/> Review the steps to answer open ended questions using whole numbers to the millions place. | N/A | N/A |
|--|---|-----|-----|



## UNIT 2

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|--|--|--|--|
| <b>Unit Title</b>  | Algebraic Concepts (40 Days)   |  |  |
| <b>Unit Description</b>  | Students will learn about the order of operations, patterns, and relationships between whole numbers. Students will identify and use symbols following order of operations to solve and evaluate problems. They will generate and extend rules to identify the relationship of two corresponding terms (i.e. an input/output table).   |  |  |
| <b>Unit Assessment</b>   | Common Assessment  |  |  |
| <b>Essential Question</b>  | <b>Learning Goals</b>  | <b>Content and Vocabulary</b>  | <b>Standards</b>   |
| How do I represent and solve multiplicative comparison statements? | <input type="checkbox"/> Write multiplicative comparisons ( <i>times as many, times more, times as much, and times as large</i> ) as a number sentence.<br><input type="checkbox"/> Multiply or divide to solve word problems with multiplicative comparisons.<br><input type="checkbox"/> Write expressions using phrases such as <i>times as many, times more, times as much, and times as large</i> (ex. 4 times as many as 3). | <b>Vocabulary</b><br>multiplicative comparison, <i>equation</i><br><br><b>Note</b><br>The key idea is focused on understanding multiplication as a comparison. | CC.2.2.4.A.1<br>Represent and solve problems involving the four operations.<br><br><b>Eligible Content</b><br>M04.B-O.1.1.1<br>M04.B-O.1.1.2 |

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|--|--|---|--|
| <p>How do I solve a multi-step equation using the four operations?</p>                   | <p><input type="checkbox"/> Identify the missing symbol (+, -, x, ÷, =, &lt;, and &gt;) that makes a number sentence true.</p> <p><input type="checkbox"/> Use a calculator to solve multi-step word problems with whole numbers using the four operations.</p> <p><input type="checkbox"/> Explain the strategy used to determine the operations needed to solve a multi-step word problem.</p>   | <p><b>Vocabulary</b><br/>variable, number sentence, <i>order of operations</i>*</p> <p><b>Note</b><br/>This term appears in grade 3 and grade 5 standards. While not explicitly in grade 4, the term should be referenced during instruction.</p> | <p>CC.2.2.4.A.1<br/>Represent and solve problems involving the four operations.</p> <p><b>Eligible Content</b><br/>M04.B-O.1.1.3<br/>M04.B-O.1.1.4</p>     |
| <p>How do I use patterns to develop or follow a rule?</p>                                | <p><input type="checkbox"/> Generate a number pattern to determine the rule for a function table.</p> <p><input type="checkbox"/> Explain how to determine the missing elements in a function table.</p> <p><input type="checkbox"/> Determine the rule for a function given a table.</p>  | <p><b>Vocabulary</b><br/><i>function</i>, function table, pattern, rule</p>   | <p>CC.2.2.4.A.4<br/>Generate and analyze patterns using one rule.</p> <p><b>Eligible Content</b><br/>M04.B-O.3.1.1<br/>M04.B-O.3.1.2<br/>M04.B-O.3.1.3</p> |
| <p>How do factors and multiples help me determine if a number is prime or composite?</p> | <p><input type="checkbox"/> Find the factor pairs for a whole number between 1 and 100.</p> <p><input type="checkbox"/> Recognize a whole number is a multiple of each of its factors.</p> <p><input type="checkbox"/> Determine multiples of whole numbers between 1 and 100.</p> <p><input type="checkbox"/> Determine whether a given number between 1 and 100 is prime or composite.</p> <p><input type="checkbox"/> Explain the difference between a factor and a multiple.</p> | <p><b>Vocabulary</b><br/><i>factor pairs, multiple, prime number, composite number</i></p>  | <p>CC.2.2.4.A.2<br/>Develop and/or apply number theory concepts to find factors and multiples.</p> <p><b>Eligible Content</b><br/>M04.B-O.2.1.1</p>        |

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| How do I answer open ended questions involving algebra? | <input type="checkbox"/> Review the steps to answer open ended questions involving algebra. | N/A | N/A |
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## UNIT 3

|                             |  |  |   |
|-----------------------------|--|--|---|
| <b>Unit Title</b>           | Numbers and Operations – Fractions and Decimals (40 Days)  |  |   |
| <b>Unit Description</b>     | Students will learn about fractional relationships, equivalency, and operations including fractions and mixed numbers. Students will be able to compare fractions, order fractions, and solve problems. This unit provides the fractional knowledge and understanding needed for mastery in the domains of algebraic concepts, measurement and data, and geometry. |  |   |
| <b>Unit Assessment</b>      | Common Assessment  |  |   |
| <b>Essential Question</b>   | <b>Learning Goals</b>  | <b>Content and Vocabulary</b>  | <b>Standards</b>  |
| How do I compare fractions? | <input type="checkbox"/> Recognize and generate equivalent fractions.<br><input type="checkbox"/> Explain how to compare two fractions with different numerators and denominators using a line plot.<br><input type="checkbox"/> Explain how to determine if fractions are equivalent.   | <b>Vocabulary</b><br><i>fraction, numerator, denominator, part vs. whole, equivalent, least common denominator</i> | CC.2.1.4.C.1<br>Extend the understanding of fractions to show equivalence and ordering.<br><br><b>Eligible Content</b><br>M04.A-F.1.1.1<br>M04.A-F.1.1.2<br>M04.D-M.2.1.2 |

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| <p>How do I add and subtract fractions with common denominators?</p>     | <p><input type="checkbox"/> Decompose a fraction or mixed number as an equation.</p> <p><input type="checkbox"/> Add and subtract fractions with common denominators or equivalence.</p> <p><input type="checkbox"/> Solve word problems involving addition and subtraction of fractions with common denominators.</p> <p><input type="checkbox"/> Explain how to change an improper fraction into a mixed number.</p> | <p><b>Vocabulary</b><br/>decompose, improper fraction, mixed number</p>  | <p>CC.2.1.4.C.2<br/>Build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers.</p> <p><b>Eligible Content</b><br/>M04.A-F.2.1.2<br/>M04.A-F.2.1.1<br/>M04.A-F.2.1.4</p> |
| <p>How do I add and subtract mixed numbers with common denominators?</p> | <p><input type="checkbox"/> Add and subtract mixed numbers with common denominators (no regrouping).</p>   | <p><b>Vocabulary</b><br/>mixed number</p>  | <p>CC.2.1.4.C.2<br/>Build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers.</p> <p><b>Eligible Content</b><br/>M04.A-F.2.1.3</p>                                     |
| <p>How do I multiply a whole number by a fraction?</p>                   | <p><input type="checkbox"/> Multiply a whole number by a unit and non-unit fractions.</p> <p><input type="checkbox"/> Solve word problems involving multiplication of word problems by a fraction.</p>   | <p><b>Vocabulary</b><br/>unit fraction (1 in the numerator), non-unit fraction (a fraction where the numerator is not 1)</p> | <p>CC.2.1.4.C.2<br/>Build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers.</p> <p><b>Eligible Content</b><br/>M04.A-F.2.1.5<br/>M04.A-F.2.1.6<br/>M04.A-F.2.1.7</p> |

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| <p>How do I add fractions with denominators of 10 and 100?</p>                | <p><input type="checkbox"/> Add fractions with denominators of 10 and 100.</p>  | <p><b>Vocabulary</b><br/>numerator, denominator</p>                      | <p>CC2.1.4.C.3<br/>Connect decimal notation to fractions and compare decimal fractions.</p> <p><b>Eligible Content</b><br/>M04.AF.3.1.1</p>                    |
| <p>How do I compare fractions as decimals?</p>                                | <p><input type="checkbox"/> Write and read decimal notations for fractions with denominators of 10 and 100.</p> <p><input type="checkbox"/> Compare two decimals to hundredths.</p> | <p><b>Vocabulary</b><br/><i>decimal notation</i>, tenths, hundredths</p> | <p>CC2.1.4.C.3<br/>Connect decimal notation to fractions and compare decimal fractions.</p> <p><b>Eligible Content</b><br/>M04.A-F.3.1.2<br/>M04.A-F.3.1.3</p> |
| <p>How do I answer open ended questions involving fractions and decimals?</p> | <p><input type="checkbox"/> Review the steps to answer open ended questions involving fractions and decimals.</p>   | <p>N/A</p>   | <p>N/A</p>   |

## UNIT 4

|   |   |   |   |
|---|---|---|---|
| <b>Unit Title</b>   | Geometry (20 Days)  |   |   |
| <b>Unit Description</b>   | Students will learn about lines, angles, polygons, perimeter, and area. Students will identify types of lines, properties of polygons, calculate perimeter and area, and measure angles.  |   |   |
| <b>Unit Assessment</b>  | Common Assessment   |   |   |
| <b>Essential Question</b>   | <b>Learning Goals</b>   | <b>Content and Vocabulary</b>   | <b>Standards</b>  |
| How do I draw and identify lines and angles in two-dimensional figures? | <input type="checkbox"/> Determine the difference between point, line, line segment, and ray.<br><input type="checkbox"/> Determine the difference between right, acute, and obtuse angles.<br><input type="checkbox"/> Identify parallel, perpendicular, and intersecting lines in two-dimensional shapes.   | <b>Vocabulary</b><br><i>point, line, line segment, ray, angle, right angle, acute angle, obtuse angle, adjacent angle, parallel lines, perpendicular lines, intersecting lines, two-dimensional figure, vertex</i>  | CC.2.3.4.A.1<br>Draw lines and angles and identify these two-dimensional figures.<br><br><b>Eligible Content</b><br>M04.C-G.1.1.1                           |
| How do I classify a two-dimensional shape based on its properties?      | <input type="checkbox"/> Identify the properties of a regular polygon.<br><input type="checkbox"/> Classify triangles based on angles and side lengths.<br><input type="checkbox"/> Classify quadrilaterals based on angles, side lengths, and parallel and perpendicular lines.<br><input type="checkbox"/> Determine the number of lines of symmetry in a regular and irregular polygons. | <b>Vocabulary</b><br><i>congruent, right triangle, quadrilateral, properties, regular polygon, parallelogram, rhombus, rectangle, square, trapezoid, line of symmetry, decagon, heptagon, hexagon, nonagon, octagon, equilateral triangle, isosceles triangle, scalene triangle, acute triangle</i> | C.C.2.3.4.A.2<br>Classify two-dimensional figures by properties of their lines and angles.<br><br><b>Eligible Content</b><br>M04.C-G.1.1.2<br>M04.C-G.1.1.3 |

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| How do I answer open-ended questions using geometry? | Review the steps to answer open ended questions involving geometry. | N/A | N/A |
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## UNIT 5

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|--|---|--|--|
| <b>Unit Title</b>  | Measurement and Data (30 Days)  |  |  |
| <b>Unit Description</b>  | Students will learn conversions within the same system. Students will learn to convert measurements and solve real-world problems.  |  |  |
| <b>Unit Assessment</b>   | Common Assessment   |  |  |
| <b>Essential Question</b>  | <b>Learning Goals</b>   | <b>Content and Vocabulary</b>  | <b>Standards</b>   |
| How do I determine the measurement of an angle?                      | <input type="checkbox"/> Measure angles with a protractor.<br><input type="checkbox"/> Solve addition and subtraction problems to find unknown angles.  | <b>Vocabulary</b><br>protractor, supplementary angles, complimentary angles, <i>degree</i> | CC.2.4.4.A.6<br>Measure angles and use properties of adjacent angles to solve problems.<br><br><b>Eligible Content</b><br>M04.D-M.3.1.1<br>M04.D-M.3.1.2   |
| How do I use a formula to find the area and perimeter of rectangles? | <input type="checkbox"/> Explain the difference between perimeter and area.<br><input type="checkbox"/> Determine whether to find the perimeter or area in a real-world problem by using the given formula.<br><input type="checkbox"/> Calculate the perimeter or area in a real-world problem by using the given formula. | <b>Vocabulary</b><br>perimeter, area, square units   | CC.2.4.4.A.1<br>Solve problems involving measurement and conversions from a larger unit to a smaller unit.<br><br><b>Eligible Content</b><br>M04.D-M.1.1.3 |

|   |   |   |  |
|---|---|---|--|
| <p>How do I convert measurements in a given system?</p>               | <p><input type="checkbox"/> Convert among measurement units within the same system (from a larger unit to a smaller unit) using a formula sheet.</p>  | <p><b>Vocabulary</b><br/> US standard system, metric system, convert, length, weight, capacity, <i>volume, time</i></p> | <p>CC.2.4.4.A.1<br/> Solve problems involving measurement and conversions from a larger unit to a smaller unit.</p> <p><b>Eligible Content</b><br/> M04.D-M.1.1.1<br/> M04.D-M.1.1.4</p>   |
| <p>How do I use conversion of measurement to solve word problems?</p> | <p><input type="checkbox"/> Use measurement conversions to solve multi-step real-world problems within the same system.</p>   | <p><b>Vocabulary</b><br/> US standard system, metric system, convert, length, weight, capacity, <i>volume, time</i></p> | <p>CC.2.4.4.A.1<br/> Solve problems involving measurement and conversions from a larger unit to a smaller unit.</p> <p><b>Eligible Content</b><br/> M04.D-M.1.1.2</p>  |
| <p>How do I display and interpret data by using a line plot?</p>      | <p><input type="checkbox"/> Translate data: table, chart, bar graph, or pictograph (review).<br/> <input type="checkbox"/> Make a line plot to display a data set of measurements in fractions of a unit.</p> | <p><b>Vocabulary</b><br/> label, title, scale, translate, table, chart, <i>bar graph, pictograph, line plot</i></p>     | <p>CC.2.4.4.A.2<br/> Translate information from one type of data display to another.</p> <p>CC.2.4.4.A.4<br/> Represent and interpret data involving fractions using information provided in a line plot.</p> <p><b>Eligible Content</b><br/> M04.D-M.2.1.3<br/> M04.D-M.2.1.1</p> |

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| How do I answer open ended questions using measurement and data? | Review the steps to answer open ended questions involving measurement and data. | N/A | N/A |
|--|---|-----|-----|

# ACCOMMODATIONS AND MODIFICATIONS

Adaptations or modifications to this planned course will allow exceptional students to earn credits toward graduation or develop skills necessary to make a transition from the school environment to community life and employment. The I.E.P. team has determined that modifications to this planned course will meet the student's I.E.P. needs.

Adaptations/Modifications may include but are not limited to:

## **INSTRUCTION CONTENT**

- Modification of instructional content and/or instructional approaches
- Modification or deletion of some of the essential elements

## **SETTING**

- Preferential seating

## **METHODS**

- Additional clarification of content
- Occasional need for one to one instruction
- Minor adjustments or pacing according to the student's rate of mastery
- Written work is difficult, use verbal/oral approaches
- Modifications of assignments/testing
- Reasonable extensions of time for task/project completion
- Assignment sheet/notebook
- Modified/adjusted mastery rates
- Modified/adjusted grading criteria
- Retesting opportunities

## **MATERIALS**

- Supplemental texts and materials
- Large print materials for visually impaired students
- Outlines and/or study sheets
- Carbonless notebook paper
- Manipulative learning materials
- Alternatives to writing (tape recorder/calculator)

## **Grade 4 Eligible Content (EC) Standards**

### **UNIT 1**

*How does the location of the digit determine its value in a whole number?*

M04.A-T.1.1.2

Read and write whole numbers in expanded, standard, and word form through 1,000,000.

M04.A-T.1.1.1

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.

M04.A-T.1.1.3

Compare two multi-digit numbers through 1,000,000 based on meanings of the digits in each place, using  $>$ ,  $=$ , and  $<$  symbols.

*How do I round whole numbers to a given place?*

M04.A-T.1.1.4

Round multi-digit whole numbers (through 1,000,000) to any place.

*How do I add and subtract multi-digit numbers to the millions place?*

M04.A-T.2.1.1

Add and subtract multi-digit whole numbers (limit sums and subtrahends up to and including 1,000,000).

M04.A-T.2.1.4

Estimate the answer to addition, subtraction, and multiplication problems using whole numbers through six digits (for multiplication, no more than 2 digits  $\times$  1 digit, excluding powers of 10).

*How do I multiply whole numbers?*

M04.A-T.2.1.2

Multiply a whole number of up to four digits by a one-digit whole number and multiply 2 two -digit numbers.

M04.A-T.2.1.4

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).

*How do I divide whole numbers?*

M04.A-T.2.1.3

Divide up to four-digit dividends by one-digit divisors with answers written as whole number quotients and remainders.

## **UNIT 2**

*How do I represent and solve multiplicative comparison statements?*

M04.B-O.1.1.1

Interpret a multiplication equation as a comparison. Represent verbal statements of multiplicative comparisons as multiplication equations.

M04.B-O.1.1.2

Multiply or divide to solve word problems involving multiplicative comparison, distinguishing multiplicative comparison from additive comparison.

*How do I solve a multi-step equation using the four operations?*

M04.B-O.1.1.3

Solve multi-step word problems posed with whole numbers using the four operations. Answers will be either whole numbers or have remainders that must be interpreted yielding a final answer that is a whole number. Represent these problems using equations with a symbol or letter standing for the unknown quantity.

M04.B-O.1.1.4

Identify the missing symbol (+, -, x, ÷, =, <, and >) that makes a number sentence true (single-digit divisor only).

*How do I use patterns to develop or follow a rule?*

M04.B-O.3.1.1

Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

M04.B-O.3.1.2

Determine the missing elements in a function table (limit to +, -, or x and to whole numbers or money).

M04.B-O.3.1.3

Determine the rule for a function given a table (limit to +, -, or x and to whole numbers).

*How do factors and multiples help me determine if a number is prime or composite?*

M04.B-O.2.1.1

Find all factor pairs for a whole number in the interval 1 through 100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the interval 1 through 100 is a multiple of a given one-digit number. Determine whether a given whole number in the interval 1 through 100 is prime or composite.

### **UNIT 3**

*How do I compare fractions?*

M04.A-F.1.1.1

Recognize and generate equivalent fractions.

M04.A-F.1.1.2

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.

M04.D-M.2.1.2

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  $\frac{1}{4}$ ,  $\frac{2}{4}$ ,  $\frac{3}{4}$ ).

*How do I add and subtract fractions with common denominators?*

M04.A-F.2.1.2

Decompose a fraction or a mixed number into a sum of fractions with the same denominator, recording the decomposition by an equation. Justify decompositions.

M04.A-F.2.1.1

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).

M04.A-F.2.1.4

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).

*How do I add and subtract mixed numbers with common denominators?*

M04.A-F.2.1.3

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).

*How do I multiply a whole number by a fraction?*

M04.A-F.2.1.5

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).

M04.A-F.2.1.6

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).

M04.A-F.2.1.7

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).

*How do I add fractions with denominators of 10 and 100?*

M04.A-F.3.1.1

Add fractions with respective denominators 10 and 100.

*How do I compare fractions as decimals?*

M04.A-F.3.1.2

Use decimal notation for fractions with denominators 10 or 100.

M04.A-F.3.1.3

Compare two decimals to hundredths using the symbols  $>$ ,  $=$ , or  $<$ , and justify the conclusions.



## UNIT 4

*How do I draw and identify lines and angles in two-dimensional figures?*

M04.C-G.1.1.1

Draw points, lines, line segments, rays, angles (right, acute, and obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

*How do I classify a two-dimensional shape based on its properties?*

M04.C-G.1.1.2

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.

M04.C-G.1.1.3

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).

## UNIT 5

*How do I determine the measurement of an angle?*

M04.D-M.3.1.1

Measure angles in whole-number degrees using a protractor. With the aid of a protractor, sketch angles of specified measure.

M04.D-M.3.1.2

Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems. (Angles must be adjacent to non-overlapping).

*How do I use a formula to find the area and perimeter of rectangles?*

M04.D-M.1.1.3

Apply the area and perimeter formulas for rectangles in real-world and mathematical problems. Whole numbers only. (The formulas will be provided)

*How do I convert measurements in a given system?*

M04.D-M.1.1.1

Know relative sizes of measurement units within one system of units including standard units, metric units, and time. 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.

M04.D-M.1.1.4

Identify time (analog or digital) as the amount of minutes before or after the hour.

*How do I use conversion of measurement to solve word problems?*

M04.D-M.1.1.2

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.

*How do I display and interpret data by using a line plot?*

M04.D-M.2.1.3

Translate information from one type of display to another (table, chart, bar graph, or pictograph)

M04.D-M.2.1.1

Make a line plot to display a data set of measurements in fractions of a unit (e.g., intervals of  $\frac{1}{2}$ ,  $\frac{1}{4}$ , or  $\frac{1}{8}$ ).