

## WARREN COUNTY SCHOOL DISTRICT

### PLANNED INSTRUCTION

#### **COURSE DESCRIPTION**

**Course Title:** Mathematics 4

**Course Number:** 08423

**Course Prerequisites:** None

**Course Description:** In Grade 4, instructional time focuses on eleven critical areas: (1) use the four operations with whole numbers to solve problems; (2) gain familiarity with factors and multiples; (3) generate and analyze patterns; (4) generalize place value understanding for multi-digit whole numbers; (5) use place value understanding and properties of operations to perform multi-digit arithmetic; (6) extend understanding of fraction equivalence and ordering; (7) build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers; (8) understand decimal notation for fractions, and compare decimal fractions; (9) solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit; (10) represent and interpret data; (10) geometric measurement: understand concepts of angle and measure angles; and (11) draw and identify lines and angles, and classify shapes by properties of their lines and angles.

**Suggested Grade Level:** Grade 4

**Length of Course:** Two Semesters

**Units of Credit:** None

**PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certifications:**

CSPG 69 Grades PK-4, CSPG 70 Grades 4-8, Elementary K-6

To find the CSPG information, go to [CSPG](#)

**Certification verified by the WCSD Human Resources Department:** ☒ Yes ☐ No

#### **WCSD STUDENT DATA SYSTEM INFORMATION**

**Course Level:** Academic

**Mark Types:** Check all that apply.

☒ F – Final Average ☒ MP – Marking Period ☐ EXM – Final Exam

**GPA Type:** ☒ GPAEL-GPA Elementary ☐ GPAML-GPA for Middle Level ☐ NHS-National Honor Society  
☐ UGPA-Non-Weighted Grade Point Average ☐ GPA-Weighted Grade Point Average

**State Course Code:** 02034

To find the State Course Code, go to [State Course Code](#), download the Excel file for SCED, click on SCED 6.0 tab, and choose the correct code that corresponds with the course.

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#### **TEXTBOOKS AND SUPPLEMENTAL MATERIALS**

##### **Board Approved Textbooks, Software, and Materials:**

**Title:** enVision Math 4<sup>th</sup> Grade  
**Publisher:** Pearson  
**ISBN #:** 9780768573459  
**Copyright Date:** 2020  
**WCSD Board Approval Date:** 3/8/2021

**Supplemental Materials:** Manipulatives, ST Math, calculators, flashcards

#### **Curriculum Document**

##### **WCSD Board Approval:**

**Date Finalized:** 7/20/2022  
**Date Approved:** Click or tap to enter a date.  
**Implementation Year:** 2022-2023

#### **SPECIAL EDUCATION, 504, and GIFTED REQUIREMENTS**

The teacher shall make appropriate modifications to instruction and assessment based on a student's Individual Education Plan (IEP), Chapter 15 Section 504 Plan (504), and/or Gifted Individual Education Plan (GIEP).

**SCOPE AND SEQUENCE OF CONTENT AND CONCEPTS**

**Marking Period 1**

Generalize Place Value Understanding

Fluently Add and Subtract Multi-Digit Whole Numbers

Use Strategies and Properties to Multiply by 1 Digit Numbers

**Marking Period 2**

Use Strategies and Properties to Multiply by 2- Digit Numbers

Use Strategies and properties to Divide by 1-Digit Numbers

Use Operations with Whole Number to Solve Properties

**Marking Period 3**

Factors and Multiplies

Extend Understanding of Fraction Equivalence and Ordering

Understand Addition and Subtractions of Fractions

Extend Multiplication Concepts of Fractions

**Marking Period 4**

Represent and Interpret Data on Line Plots

Understand and Compare Decimals

Measurement: Find Equivalence in Units of Measure

Generate and Analyze Patterns

Geometric Measurement: Understand Concepts of Angle and Angle Measurement

Lines, Angles, and Shapes

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**Standards/Eligible Content and Skills**

<b>Performance Indicator</b>	<b>PA Core Standard and/or Eligible Content</b>	<b>Marking Period Taught</b>
<b>Apply place value concepts to show an understanding of multi-digit whole numbers.</b>	<b>CC.2.1.4.B.1</b>	MP1
Generalize place-value understanding for multi-digit whole numbers.	M04.A-T.1	MP1
Apply place-value and numeration concepts to compare, find equivalencies, and round.	M04.A-T.1.1	MP1
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. Example: Recognize that in the number 770, the 7 in the hundreds place is ten times the 7 in the tens place.	M04.A-T.1.1.1	MP1
Read and write whole numbers in expanded, standard, and word form through 1,000,000.	M04.A-T.1.1.2	MP1
Compare two multi-digit numbers through 1,000,000 based on meanings of the digits in each place, using $>$ , $=$ , and $<$ symbols.	M04.A-T.1.1.3	MP1
Round multi-digit whole numbers (through 1,000,000) to any place.	M04.A-T.1.1.4	MP1
<b>Use place value understanding and properties of operations to perform multi-digit arithmetic.</b>	<b>CC.2.1.4.B.2</b>	MP1
Use operations to solve problems.	M04.A-T.2.1	MP1
Add and subtract multi-digit whole numbers (limit sums and subtrahends up to and including 1,000,000).	M04.A-T.2.1.1	MP1
Multiply a whole number of up to four digits by a one-digit whole number and multiply 2 two-digit numbers.	M04.A-T.2.1.2	MP1
Divide up to four-digit dividends by one-digit divisors with answers written as whole-number quotients and remainders.	M04.A-T.2.1.3	MP1
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).	M04.A-T.2.1.4	MP1
<b>Extend the understanding of fractions to show equivalence and ordering.</b>	<b>CC.2.1.4.C.1</b>	MP1
Extend understanding of fraction equivalence and ordering.	M04.A-F.1	MP3
Find equivalencies and compare fractions.	M04.A-F.1.1	MP3
Recognize and generate equivalent fractions.	M04.A-F.1.1.1	MP3
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.A-F.1.1.2	4
<b>Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.</b>	<b>CC.2.1.4.C.2</b>	MP3
Solve problems involving fractions and whole numbers (straight computation or word problems).	M04.A-F.2.1	MP3
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.2.1.1	MP3
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	M04.A-F.2.1.2	MP3

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<b>Performance Indicator</b>	<b>PA Core Standard and/or Eligible Content</b>	<b>Marking Period Taught</b>
decompositions (e.g., by using a visual fraction model). Example 1: $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$ OR $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$ Example 2: $2\frac{1}{12} = 1 + 1 + \frac{1}{12} = \frac{12}{12} + \frac{12}{12} + \frac{1}{12}$		
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).	M04.A-F.2.1.3	MP3
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).	M04.A-F.2.1.4	MP3
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). Example: $5 \times (\frac{1}{4}) = \frac{5}{4}$	M04.A-F.2.1.5	MP3
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). Example: $3 \times (\frac{5}{6}) = \frac{15}{6}$	M04.A-F.2.1.6	MP3
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).	M04.A-F.2.1.7	MP3
<b>Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., <math>\frac{19}{100}</math>).</b>	<b>CC.2.1.4.C.3</b>	MP4
Understand decimal notation for fractions and compare decimal fractions.	M04.A-F.3	MP4
Use operations to solve problems involving decimals, including converting between fractions and decimals (may include word problems).	M04.A-F.3.1	MP4
Add two fractions with respective denominators 10 and 100. Example: Express $\frac{3}{10}$ as $\frac{30}{100}$ and add $\frac{3}{10} + \frac{4}{100} = \frac{30}{100} + \frac{4}{100} = \frac{34}{100}$ .	M04.A-F.3.1.1	MP4
Use decimal notation for fractions with denominators 10 or 100. Example: Rewrite 0.62 as $\frac{62}{100}$ and vice versa.	M04.A-F.3.1.2	MP4
Compare two decimals to hundredths using the symbols $>$ , $=$ , or $<$ , and justify the conclusions.	M04.A-F.3.1.3	MP4
<b>Represent and solve problems involving the four operations.</b>	<b>CC.2.2.4.A.1</b>	MP2
Use the four operations with whole numbers to solve problems.	M04.B-O.1	MP2
Use numbers and symbols to model the concepts of expressions and equations.	M04.B-O.1.1	MP2
Interpret a multiplication equation as a comparison. Represent verbal statements of multiplicative comparisons as multiplication equations. Example 1: Interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Example 2: Know that the statement 24 is 3 times as many as 8 can be represented by the equation $24 = 3 \times 8$ or $24 = 8 \times 3$ .	M04.B-O.1.1.1	MP2

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Multiply or divide to solve word problems involving multiplicative comparison, distinguishing multiplicative comparison from additive comparison. Example: Know that $3 \times 4$ can be used to represent that Student A has 4 objects and Student B has 3 times as many objects not just 3 more objects.	M04.B-O.1.1.2	MP2
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.1.1.3	MP2
Identify the missing symbol (+, −, ×, ÷, =, ) that makes a number sentence true (single-digit divisor only).	M04.B-O.1.1.4	MP2
<b>Develop and/or apply number theory concepts to find factors and multiples.</b>	<b>CC.2.2.4.A.2</b>	MP2
Gain familiarity with factors and multiples.	M04.B-O.2	MP3
Develop and apply number theory concepts to represent numbers in various ways.	M04.B-O.2.1	MP3
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.	M04.B-O.2.1.1	MP3
<b>Generate and analyze patterns using one rule.</b>	<b>CC.2.2.4.A.4</b>	MP3
Generate and analyze patterns.	M04.B-O.3	MP4
Recognize, describe, extend, create, and replicate a variety of patterns.	M04.B-O.3.1	MP4
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. Example 1: Given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms alternate between odd and even numbers. Example 2: Given the rule “increase the number of sides by 1” and starting with a triangle, observe that the tops of the shapes alternate between a side and a vertex.	M04.B-O.3.1.1	MP4
Determine the missing elements in a function table (limit to +, −, or × and to whole numbers or money).	M04.B-O.3.1.2	MP4
Determine the rule for a function given a table (limit to +, −, or × and to whole numbers).	M04.B-O.3.1.3	MP4
<b>Draw lines and angles and identify these in two-dimensional figures.</b>	<b>CC.2.3.4.A.1</b>	MP4
Draw and identify lines and angles and classify shapes by properties of their lines and angles.	M04.C-G.1	MP4
List properties, classify, draw, and identify geometric figures in two dimensions.	M04.C-G.1.1	MP4
Draw points, lines, line segments, rays, angles (right, acute, and obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	M04.C-G.1.1.1	MP4
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.1.1.2	MP4

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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).	M04.C-G.1.1.3	MP4
<b>Classify two-dimensional figures by properties of their lines and angles.</b>	<b>CC.2.3.4.A.2</b>	MP4
Draw and identify lines and angles and classify shapes by properties of their lines and angles.	M04.C-G.1	MP4
List properties, classify, draw, and identify geometric figures in two dimensions.	M04.C-G.1.1	MP4
Draw points, lines, line segments, rays, angles (right, acute, and obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	M04.C-G.1.1.1	MP4
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.1.1.2	MP4
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).	M04.C-G.1.1.3	MP4
<b>Recognize symmetric shapes and draw lines of symmetry.</b>	<b>CC.2.3.4.A.3</b>	MP4
Draw and identify lines and angles and classify shapes by properties of their lines and angles.	M04.C-G.1	MP4
List properties, classify, draw, and identify geometric figures in two dimensions.	M04.C-G.1.1	MP4
Draw points, lines, line segments, rays, angles (right, acute, and obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	M04.C-G.1.1.1	MP4
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.1.1.2	MP4
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).	M04.C-G.1.1.3	MP4
<b>Solve problems involving measurement and conversions from a larger unit to a smaller unit.</b>	<b>CC.2.4.4.A.1</b>	MP4
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	M04.D-M.1	MP4
Solve problems involving length, weight (mass), liquid volume, time, area, and perimeter.	M04.D-M.1.1	MP4
Know relative sizes of measurement units within one system of units 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. Example 1: Know that 1 kg is 1,000 times as heavy as 1 g. Example 2: Express the length of a 4-foot snake as 48 in.	M04.D-M.1.1.1	MP4

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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.	M04.D-M.1.1.2	MP4
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.	M04.D-M.1.1.3	MP4
Identify time (analog or digital) as the amount of minutes before or after the hour. Example 1: 2:50 is the same as 10 minutes before 3:00. Example 2: Quarter past six is the same as 6:15.	M04.D-M.1.1.4	MP4
<b>Translate information from one type of data display to another.</b>	<b>CC.2.4.4.A.2</b>	MP4
Represent and interpret data.	M04.D-M.2	MP4
Organize, display, and answer questions based on data.	M04.D-M.2.1	MP4
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 $\frac{1}{8}$ ).	M04.D-M.2.1.1	MP4
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 $\frac{1}{4}$ , $\frac{2}{4}$ , $\frac{3}{4}$ ).	M04.D-M.2.1.2	MP4
Translate information from one type of display to another (table, chart, bar graph, or pictograph).	M04.D-M.2.1.3	MP4
<b>Represent and interpret data involving fractions using information provided in a line plot.</b>	<b>CC.2.4.4.A.4</b>	MP4
Represent and interpret data.	M04.D-M.2	MP4
Organize, display, and answer questions based on data.	M04.D-M.2.1	MP4
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 $\frac{1}{8}$ ).	M04.D-M.2.1.1	MP4
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 $\frac{1}{4}$ , $\frac{2}{4}$ , $\frac{3}{4}$ ).	M04.D-M.2.1.2	MP4
Translate information from one type of display to another (table, chart, bar graph, or pictograph).	M04.D-M.2.1.3	MP4
<b>Measure angles and use properties of adjacent angles to solve problems.</b>	<b>CC.2.4.4.A.6</b>	MP4
Geometric measurement: understand concepts of angle; measure and create angles.	M04.D-M.3	MP4
Use appropriate tools and units to sketch an angle and determine angle measurements.	M04.D-M.3.1.1	MP4
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.)	M04.D-M.3.1.2	MP4



## **ASSESSMENTS**

**PDE Academic Standards, Assessment Anchors, and Eligible Content:** The teacher must be knowledgeable of the PDE Academic Standards, Assessment Anchors, and Eligible Content and incorporate them regularly into planned instruction.

**Formative Assessments:** The teacher will utilize a variety of assessment methods to conduct in-process evaluations of student learning.

**Effective formative assessments for this course include:** center activities, cooperative learning activities, games, online activities, oral responses, teacher observations, writing, and worksheets

**Summative Assessments:** The teacher will utilize a variety of assessment methods to evaluate student learning at the end of an instructional task, lesson, and/or unit.

**Effective summative assessments for this course include:** performance assessments, projects, tests, writing, and quizzes.