Curriculum Map: 4th Grade Math (2025)

Course: 4 Math Sub-topic: General

Grade(s): 4

Course Description:

In 4th grade math, students will explore a variety of topics that lay the foundation for their future mathematical understanding. The course follows the Pennsylvania State Standards and covers key areas such as:

- **Number and Operations**: Students will learn to work with whole numbers, fractions, and decimals. They will become proficient in addition, subtraction, multiplication, and division, including multi-digit operations.

- **Place Value**: Students will develop an understanding of place value through the thousands place, comparing and ordering numbers, and rounding to the nearest ten, hundred, or thousand.

- **Geometry**: Students will explore 2D and 3D shapes, their attributes, and how to measure angles and perimeter. They will also learn to classify and identify geometric shapes.

- **Measurement**: Students will measure and estimate length, weight, and capacity using appropriate units of measure. They will also practice converting units within measurement systems.

- **Data and Probability**: Students will collect, organize, and analyze data through tables, graphs, line plots, and charts. They will also learn about basic probability concepts, predicting outcomes, and using data to make informed decisions.

- **Patterns and Algebraic Thinking**: Students will recognize and extend patterns, as well as solve basic algebraic problems involving addition and subtraction.

Throughout the course, students will apply problem-solving skills and develop mathematical reasoning, preparing them for more advanced topics in future grades. Emphasis will be placed

on real-world connections, hands-on learning, and critical thinking to build a strong mathematical foundation.

Essential Questions:
Essential questions for 4th grade math in Pennsylvania would focus on understanding place value, applying all four operations (addition, subtraction, multiplication, division) to solve multi step word problems, grasping fraction concepts including equivalence and interpreting data from graphs with a strong emphasis on reasoning and real world applications.

Unit 1 - Numbers and Operations-Place Value

1. How does place value help represent the value of numbers?

2. What strategies can I use to add or subtract?

Unit 2- Numbers and Operations-Multiplication/Division

1. How are multiplication and division related?

2. How can I communicate multiplication?

3. How can I multiply by a 2 digit number?

4. How does division affect numbers?

Unit 3- Operation and Algebraic Thinking

1. How are patterns used in mathematics?

Unit 4- Numbers and Operations-Fraction

1. How can different fractions name the same amount?

2. How can I just operations to model real world fractions?

3. How are fractions and decimals related?

Unit 5- Measurement and Data

1. Why do we convert measurements?

2. How can conversion of measurements help me solve real-world problems?

3. Why is it important to measure perimeter and area?

Unit 6- Geometry

1. How are different ideas about geometry connected?

Unit 7- Year end benchmark and spiral review

1.How to understand multi-digit numbers, rounding, and comparing numbers.

2. How to master multiplication, division, factors, and patterns.

3.Comparing fractions, adding and subtracting fractions, and understanding decimals.

4.Solving problems with time, money, length/width, and interpreting graphs.
Identifying shapes, angles, symmetry, and measuring area and perimeter.

Course Textbooks, Workbooks, Materials Citations:	District approved curriculum
	iready personal learning pathways, beginning/middle/end of year assessments, and the teacher toolbox

Unit: Unit 1 - Numbers and Operations-Place Value
Timeline: Week 2 to 6

Unit Description:	In Unit 1, Fourth grade students will be able to apply place value concepts to show an understanding of multi-digit whole numbers.

Unit Essential Questions:	1. How does place value help represent the value of numbers?
	2. What strategies can I use to add or subtract?

Unit Big Ideas:	Mathematical relationships among numbers can be represented, compared, and communicated.

Unit Materials:
- district approved math series
- base-ten blocks
- virtual base-ten blocks
- centimeter grid paper
- connecting cubes
- place value chart
- iready

Unit Assignments:
- spiral review check/quiz
- bell ringers
- chapter tests/quizzes
- daily lesson assignments

Unit Key Terminology & Definitions:
digit, place value, expanded form, period, standard form, word form, is equal to, is greater than, is less than, number line, commutative property of addition, associative property of addition, identify property of addition, minuend, subtrahend, equation, and variable

STANDARDS:

STANDARDS

STATE: PA Core Standards (2014)

CC.2.1.4.B.1 (Advanced)	Apply place-value concepts to show an understanding of multi-digit whole numbers.
CC.2.1.4.B.2 (Advanced)	Use place-value understanding and properties of operations to perform multi-digit arithmetic.

Topic:

Unit: Unit 2-Number and Operations-Multiplication/jDivision
Timeline: Week 7 to 15

Unit Description:
In Unit 2, Fourth grade students will be able to use place value understanding and properties of operations to perform multi-digit arithmetic and represent and solve problems involving the

four operations.

Unit Essential Questions:

1. How are multiplication and division related?

2. How can I communicate multiplication?

3. How can I multiply by a 2 digit number?

4. How does division affect numbers?

Unit Big Ideas: Mathematical relationships among numbers can be represented, compared, and communicated focusing on multiplication and division.

Unit Materials:

- district approved math series
- base-ten blocks
- virtual base-ten blocks
- centimeter grid paper
- connecting cubes
- place value chart
- counters
- flash cards
- iready

Unit Assignments:

- spiral review check/quiz
- bell ringers
- chapter tests/quizzes
- daily lesson assignments

Unit Key Terminology & Definitions: dividend, quotient, divisor, product, fact family, factor, repeated subtraction, commutative property of multiplication, identity property of multiplication, zero property of multiplication, associative property of multiplication, decompose, multiple, partial products, regroup, distributive property, operation, compatible numbers, remainder, and partial quotients

This Curriculum Map Unit has no Topics to display

Unit: Unit 3 - Operations and Algebraic Thinking

Timeline: Week 15 to 16

Unit Description: In Unit 3, Fourth grade students will be able to generate and analyze patterns using one rule. Recognize, extend, create, and replicate a variety of patterns.

Unit Essential Questions: How are patterns used in mathematics?

Unit Big Ideas: Patterns exhibit relationships, that can be extended, described, and generalized.

Unit Materials:

- district approved math series
- counters
- iready

Unit Assignments:

- spiral review check/quiz
- bell ringers
- chapter tests/quizzes

- daily lesson assignments

Unit Key Terminology & Definitions: None

STANDARDS:

STANDARDS

STATE: PA Core Standards (2014)

CC.2.2.4.A.1 (Advanced) Represent and solve problems involving the four operations.

CC.2.2.4.A.4 (Advanced) Generate and analyze patterns using one rule.

This Curriculum Map Unit has no Topics to display

Unit: Unit 4 - Number and Operations-Fractions

Timeline: Week 17 to 22

Unit Description: In Unit 4, Fourth Grade students will be able to extend the understanding of fractions to show equivalence and ordering ; Find equivalencies and compare fractions; Recognize and generate equivalent fractions; Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers; Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator); and develop and/or apply number theory concepts to find factors and multiples.

Unit Essential Questions:

1. How can different fractions name the same amount?

2. How can I use operations to model real world fractions?

3. How are fractions and decimals related?

Unit Big Ideas: Mathematical relationships among numbers can be represented, compared, and communicated.

Unit Materials:

- place-value charts
- tenths-hundredths grid
- number lines
- fraction tiles
- play dollars and coins
- ruler
- district approved math series
- iready

Unit Assignments:

- spiral review check/quiz
- bell ringers
- chapter tests/quizzes
- daily lesson assignments

Unit Key Terminology & Definitions: factor pairs, prime numbers, composite numbers, numerator, denominator, equivalent fractions, simplest form, greatest common factor, least common multiple, benchmark fractions, mixed number, improper fraction, like fractions, decimal, tenth, and hundredth

STANDARDS:

STANDARDS

STATE: PA Core Standards (2014)

CC.2.1.4.C.1 (Advanced)	Extend the understanding of fractions to show equivalence and ordering.
CC.2.1.4.C.2 (Advanced)	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
CC.2.1.4.C.3 (Advanced)	Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).

| CC.2.2.4.A.2 (Advanced) | Develop and/or apply number theory concepts to find factors and multiples. |
| CC.2.3.4.A.1 (Advanced) | Draw lines and angles and identify these in two-dimensional figures. |

This Curriculum Map Unit has no Topics to display

Unit:

This Curriculum Map Unit has no Topics to display

Unit: Unit 5-Measurement and Data

Timeline: Week 22 to 26

Unit Description: In Unit 5, Fourth grade students will be able to solve problems involving measurement and conversions from a larger unit to a smaller unit; translate information from one type of data display to another; represent and interpret data involving fractions using information provided in a line plot.

Unit Essential Questions:

1. Why do we convert measurements?

2. How can conversion of measurements help me solve real-world problems?

3. Why is it important to measure perimeter and area?

Unit Big Ideas:

Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.

Measurement attributes can be quantified, and estimated using customary and non-customary units of measure.

Unit Materials:

- district approved math series
- play money
- measuring cups
- bucket balance
- weights
- rulers
- stopwatches
- eye droppers
- virtual base ten blocks
- iready

Unit Assignments:

- spiral review check/quiz
- bell ringers
- chapter tests/quizzes
- daily lesson assignments

Unit Key Terminology & Definitions:

customary system, foot, yard, convert, mile, capacity,gallon, cup, pint, fluid ounce, quart, ounce, weight, pound, ton, seconds, line plot, centimeter,kilometer, meter, metric system, millimeter, liter, millimeter, gram, kilogram, and mass

STANDARDS:

STANDARDS

STATE: PA Core Standards (2014)

CC.2.4.4.A.1 (Advanced)   Solve problems involving measurement and conversions from a larger unit to a smaller unit.

CC.2.4.4.A.2   Translate information from one type of data display to another.

CC.2.4.4.A.4   Represent and interpret data involving fractions using information
provided in a line plot.

This Curriculum Map Unit has no Topics to display

Unit: Unit 6 -Geometry

Timeline: Week 27 to 29

Unit Description: In Unit 6, Fourth grade students will be able to draw raw lines and angles and identify these in two-dimensional figures; classify two-dimensional figures by properties of their lines and angles; measure angles and use properties of adjacent angles to solve problems.

Unit Essential Questions: 1. How are different ideas about geometry connected?

Unit Big Ideas:

Patterns exhibit relationships that can be extended, described, and generalized.

Geometric relationships can be described, analyzed, and classified based on spatial reasoning, an/or visualization.

Unit Materials:

- district approved math series
- rules
- virtual base ten blocks
- number lines
- protractor
- iready

| Unit Assignments: | spiral review check/quiz bell ringers chapter tests/quizzes daily lesson assignments |

| Unit Key Terminology & Definitions: | point, endpoint, line, line segment, ray, parallel, intersecting, perpendicular, angle, degree, acute angle, one-degree angle, obtuse angle, right angle, right triangle, acute triangle, obtuse triangle, parallelogram, square, rectangle, trapezoid, rhombus, line symmetry, and line of symmetry |

STANDARDS:

STANDARDS

STATE: PA Core Standards (2014)

CC.2.3.4.A.1 (Advanced)	Draw lines and angles and identify these in two-dimensional figures.
CC.2.3.4.A.2 (Advanced)	Classify two-dimensional figures by properties of their lines and angles.
CC.2.3.4.A.3 (Advanced)	Recognize symmetric shapes and draw lines of symmetry.
CC.2.4.4.A.6 (Advanced)	Measure angles and use properties of adjacent angles to solve problems.

Topic:

Topic:

Unit: Unit 7-Year end benchmarks and spiral review

Timeline: Week 30 to 32

| Unit Description: | The 4th Grade Year-End Curriculum Review and Data Assessment will provide a comprehensive evaluation of students' understanding of key math concepts covered throughout the year. This |

review will help reinforce essential skills while allowing us to analyze student progress and identify areas for growth.

Unit Essential Questions:

1. How to understand multi-digit numbers, rounding, and comparing numbers.

2. How to master multiplication, division, factors, and patterns.

3. Comparing fractions, adding and subtracting fractions, and understanding decimals.

4. Solving problems with time, money, length/width, and interpreting graphs. Identifying shapes, angles, symmetry, and measuring area and perimeter.

Unit Big Ideas: Students will revisit and practice key math topics. Students will complete a summative assessment to measure their proficiency in grade-level math skills.

Unit Assignments: End of year benchmark assessment

Spiral review

Fifth grade material prep

This Curriculum Map Unit has no Topics to display