Wilson Area School District
Planned Course Guide

Title of planned course: Mathematics Grade 4

Subject Area: Math

Grade Level: 4th

Course Description: This course will work on students' prior knowledge to build a strong foundation in whole numbers, addition, subtraction, multiplication, division, fractions, and decimals. Students will focus on multiplying and dividing by one and two digit numbers, adding and subtracting fractions, and basic measurement and geometric concepts.

Time/Credit for this Course: One Full Academic Year

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Wilson Area School District
Planned Course Materials

Course Title: Mathematics Grade 4

Textbook: enVisionMath Common Core

Supplemental Books:

- Scott Foresman Mathematics Grade 4
- Previous textbook resources for use with differentiating instruction

Teacher Resources:

- Teacher's Edition and Resource Package Grade 4
- Digital System Teacher Resource Package Grade 4
- CCSS Guided Problem Solving Math Library Grade 4
- Common Core Reteaching and Practice Workbook Grade 4
- Math Diagnosis and Intervention System, Grade 4
- Pearson Successnet website

Curriculum Map

August:

Diagnostic and placement testing – review of 3rd grade material

September:

Multiplication and Division: Meaning and Facts
Generate and Analyze Patterns

October:

Place Value
Addition and Subtraction of Whole Numbers

November:

Number Sense: Multiplying by 1-Digit Numbers
Developing Fluency: Multiplying by 1-Digit Numbers

December:

Number Sense: Multiplying by 2-Digit Numbers
Developing Fluency: Multiplying by 2-Digit Numbers

January:

Number Sense: Dividing by 1-Digit Divisors
Developing Fluency: Dividing by 1-Digit Divisors

February:

Fractional Equivalence and Ordering
Adding and Subtracting Fractions and Mixed Numbers with like Denominators

March:

Measurement Units and Conversions
Lines, Angles and Shapes

April:

Extending Fraction Concepts (a portion of this topic needs to be taught before the PSSA: 13-4, 7, 8, and 9)
Solving Measurement Problems

May/June:

Step-Up to Grade 5 Lessons

- Algebra
- Long division

Curriculum Scope & Sequence

Planned Course: Mathematics Grade 4

Unit: Multiplication and Division: Meaning and Facts

Time frame: 12-13 days

State Standards: 2.1.4.E, 2.1.4.F, 2.2.4.A, 2.2.4.B, 2.5.4.A, 2.5.4.B

Anchor(s) or adopted anchor: M4.A.1, M4.A.2

Essential content/objectives: At end of the unit, students will be able to:

- Understand and demonstrate fluency with multiplication facts
- Use the four operations with whole numbers to solve problems
- Determine factors and multiples
- Use patterns to solve problems
- Use multiplication and division properties

Core Activities: Students will complete/participate in the following:

- Meaning of multiplication
- Develop patterns for understanding math facts
- Multiplication properties
- 3,4,6,7, and 8 as factors
- Looking for patterns
- Meanings of division
- Relating multiplication and division
- Special quotients
- Using multiplication facts to find division facts
- Drawing pictures and writing equations to problem solve

Extensions:

- Enrichment sheets
- Home-school connection
- Social Studies connection – Indianapolis Speedway

Remediation:

- Reteaching workbook pages

Instructional Methods:

- Teacher-led instruction
- Differentiated instruction

Materials & Resources:

- Hands-on materials
- Practice workbook
- Textbook
- Pearson Successnet

Assessments:

- Placement test
- Daily common core review
- Quick checks
- Homework pages
- Basic facts timed test
- Performance assessment
- Test

Curriculum Scope & Sequence

Planned Course: Mathematics Grade 4

Unit: Generate and Analyze Patterns

Time frame: 8-9 days

State Standards: 2.1.4.A, 2.5.4.A, 2.5.4.B, 2.8.4.C, 2.8.4.F

Anchor(s) or adopted anchor: M4.A.1, M4.D.1

Essential content/objectives: At end of the unit, students will be able to:

- Use the four operations with whole numbers to solve problems
- Generate and analyze patterns

Core Activities: Students will complete/participate in the following:

- Repeating patterns
- Number sequences
- Extending tables
- Writing rules for situations
- Geometric patterns
- Act it out and use reasoning for problem solving

Extensions:

- Enrichment sheets
- Home-school connection
- Science connection – Ostrich growth rate

Remediation:

- Reteaching workbook pages

Instructional Methods:

- Teacher-led instruction
- Differentiated instruction

Materials & Resources:

- Hands-on materials
- Practice workbook
- Textbook
- Pearson Successnet

Assessments:

- Daily common core review
- Quick checks
- Homework pages
- Performance assessment
- Test

Curriculum Scope & Sequence

Planned Course: Mathematics Grade 4

Unit: Place Value

Time frame: 8-9 days

State Standards: 2.1.4.A, 2.1.4.B, 2.1.4.D, 2.5.4.A, 2.5.4.B

Anchor(s) or adopted anchor: M4.A.1, M4.A.3

Essential content/objectives: At end of the unit, students will be able to:

- Generalize place value understanding for multi-digit whole numbers
- Write whole numbers in expanded, standard and word form through 6 digits
- Compare and/or order whole numbers through 6 digits and amounts of money to $100
- Round whole numbers to the nearest ten, hundred, thousand, ten-thousand or hundred-thousand
- Round amounts of money to the nearest dollar
- Solve problems by generating and using organized lists

Core Activities: Students will complete/participate in the following:

- Representing numbers
- Place value relationships
- Comparing numbers
- Ordering numbers
- Rounding whole numbers
- Make an organized list to problem solve

Extensions:

- Enrichment sheets
- Home-school connection
- Social Studies connection – Florida Lakes comparison

Remediation:

- Reteaching workbook pages

Instructional Methods:

- Teacher-led instruction
- Differentiated instruction

Materials & Resources:

- Hands-on materials
- Practice workbook
- Textbook
- Pearson Successnet

Assessments:

- Daily common core review
- Quick checks
- Homework pages
- Performance assessment
- Test

Curriculum Scope & Sequence

Planned Course: Mathematics Grade 4

Unit: Addition and Subtraction of Whole Numbers

Time frame: 8-9 days

State Standards: 2.1.4.F, 2.2.4.D, 2.5.4.A, 2.5.4.B

Anchor(s) or adopted anchor: M4.A.2, M4.A.3

Essential content/objectives: At end of the unit, students will be able to:

- Generalize place value understanding for multi-digit whole numbers
- Use place value understanding and properties of operations to perform multi-digit arithmetic
- Subtract across zeros to thousands
- Solve problems involving all operations with whole numbers, and/or explain the solution
- Solve problems involving addition or subtraction with decimals through the tenths and/or money to the cent and/or explain the solution
- Estimate the answer to addition and subtraction problems using whole numbers

Core Activities: Students will complete/participate in the following:

- Using mental math to add and subtract
- Estimating sums and differences
- Adding whole numbers
- Subtracting whole numbers
- Subtracting across zeros
- Draw a picture and write an equation to problem solve

Extensions:

- Enrichment sheets
- Home-school connection
- Social Studies connection – Determining distances between US cities

Remediation:

- Reteaching workbook pages

Instructional Methods:

- Teacher-led instruction
- Differentiated instruction

Materials & Resources:

- Hands-on materials
- Practice workbook
- Textbook
- Pearson Successnet

Assessments:

- Daily common core review
- Quick checks
- Homework pages
- Benchmark test 1-4
- Performance assessment
- Test

Curriculum Scope & Sequence

Planned Course: Mathematics Grade 4

Unit: Number Sense: Multiplying by 1-Digit Numbers

Time frame: 8-9 days

State Standards: 2.1.4.F, 2.2.4.A, 2.2.4.B, 2.2.4.D

Anchor(s) or adopted anchor: M4.A.2, M4.A.3

Essential content/objectives: At end of the unit, students will be able to:

- Solve problems involving all operations with whole numbers, and/or explain the solution
- Estimate the answer to multiplication problems using whole numbers
- Use place value understanding and properties of operations to perform multi-digit arithmetic
- Using arrays and mental math to multiply by multiples of 10
- Solve multiplication problems using various methods

Core Activities: Students will complete/participate in the following:

- Arrays and multiplying by 10 and 100
- Multiplying by 10 and 100
- Breaking apart to multiply
- Using mental math to multiply
- Using rounding to estimate
- Reasonableness

Extensions:

- Enrichment sheets
- Home-school connection
- Social Studies connection – Cost of visiting National Parks

Remediation:

- Reteaching workbook pages

Instructional Methods:

- Teacher-led instruction
- Differentiated instruction

Materials & Resources:

- Hands-on materials
- Practice workbook
- Textbook
- Pearson Successnet

Assessments:

- Daily common core review
- Quick checks
- Homework pages
- Performance assessment
- Test

Curriculum Scope & Sequence

Planned Course: Mathematics Grade 4

Unit: Developing Fluency: Multiplying by 1-Digit Numbers

Time frame: 8-9 days

State Standards: 2.1.4.F, 2.2.4.B, 2.2.4.D

Anchor(s) or adopted anchor: M4.A.2

Essential content/objectives: At end of the unit, students will be able to:

- Solve problems involving all operations with whole numbers, and/or explain the solution
- Generalize place value understanding for multi-digit whole numbers
- Use place value understanding and properties of operations to perform multi-digit arithmetic
- Identify pertinent information to correctly solve word problems

Core Activities: Students will complete/participate in the following:

- Arrays and using an expanded algorithm
- Connecting the expanded and standard algorithms
- Multiplying 2 digit numbers by 1 digit numbers
- Multiplying 3 and 4 digit numbers by 1 digit numbers
- Multiplying by1 digit numbers
- Missing or extra information in problem solving

Extensions:

- Enrichment sheets
- Home-school connection
- Social Studies connection – Skyline Design

Remediation:

- Reteaching workbook pages

Instructional Methods:

- Teacher-led instruction
- Differentiated instruction

Materials & Resources:

- Hands-on materials
- Practice workbook
- Textbook
- Pearson Successnet

Assessments:

- Daily common core review
- Quick checks
- Homework pages
- Performance Assessment
- Test

Curriculum Scope & Sequence

Planned Course: Mathematics Grade 4

Unit: Number Sense: Multiplying by 2-Digit Numbers

Time frame: 7-8 days

State Standards: 2.1.4.F, 2.2.4.A, 2.2.4.B, 2.2.4.D

Anchor(s) or adopted anchor: M4.A.2, M4.A.3

Essential content/objectives: At end of the unit, students will be able to:

- Solve problems, including multi-step problems, involving all operations with whole numbers, and explain the solution
- Explain solutions/steps in solving problems involving all operations
- Estimate the answer to multiplication problems using whole numbers
- Use properties of operations to perform multi-digit arithmetic

Core Activities: Students will complete/participate in the following:

- Arrays and multiplying 2 digit numbers by multiples of 10
- Using mental math to multiply 2 digit numbers
- Using rounding to estimate
- Using compatible numbers to estimate
- Multiple step problems

Extensions:

- Enrichment sheets
- Home-school connection
- Science Connection – determining household water consumption

Remediation:

- Reteaching workbook pages

Instructional Methods:

- Teacher-led instruction
- Differentiated instruction

Materials & Resources:

- Hands-on materials
- Practice workbook
- Textbook
- Pearson Successnet

Assessments:

- Daily common core review
- Quick checks
- Homework pages
- Performance assessment
- Test

Curriculum Scope & Sequence

Planned Course: Mathematics Grade 4

Unit: Developing Fluency: Multiplying by 2 Digit Numbers

Time frame: 7-8 days

State Standards: 2.1.4.F, 2.2.4.B, 2.2.4.D

Anchor(s) or adopted anchor: M4.A.2

Essential content/objectives: At end of the unit, students will be able to:

- Solve problems, including multi-step problems, involving all operations with whole numbers
- Explain solutions/steps in solving problems involving all operations
- Generalize place value understanding for multi-digit whole numbers
- Use properties of operations to perform multi-digit arithmetic

Core Activities: Students will complete/participate in the following:

- Arrays and multiplying 2 digit numbers
- Arrays and an expanded algorithm
- Multiplying 2 digit numbers by multiples of 10
- Multiplying 2 digit by 2 digit numbers
- Two question problems

Extensions:

- Enrichment sheets
- Home-school connection
- Social Studies connection – calculate cost of train travel

Remediation:

- Reteaching workbook pages

Instructional Methods:

- Teacher-led instruction
- Differentiated instruction

Materials & Resources:

- Hands-on materials
- Practice workbook
- Textbook
- Pearson Successnet

Assessments:

- Daily common core review
- Quick checks
- Homework pages
- Benchmark test 5-8
- Performance assessment
- Test

Curriculum Scope & Sequence

Planned Course: Mathematics Grade 4

Unit: Number Sense: Dividing by 1-digit Divisors

Time frame: 8-9 days

State Standards: 2.1.4.F, 2.2.4.A, 2.2.4.B, 2.2.4.D, 2.8.4.E, 2.8.4.F

Anchor(s) or adopted anchor: M4.A.2, M4.A.3, M4.D.2

Essential content/objectives: At end of the unit, students will be able to:

- Solve problems involving all operations with whole numbers
- Explain solutions in solving problems involving any mathematical operation
- Estimate the answer to multiplication problems using whole numbers
- Use place value understanding and properties of operations to perform multi-digit arithmetic
- Correlate story situations with expressions or equations

Core Activities: Students will complete/participate in the following:

- Using mental math to divide
- Estimating quotients
- Estimating quotients for greater dividends
- Dividing with remainders
- Multiplication and division stories
- Draw a picture and write an equation for problem solving

Extensions:

- Enrichment sheets
- Home-school connection
- Art Connection – Seminole designs

Remediation:

- Reteaching workbook pages

Instructional Methods:

- Teacher-led instruction
- Differentiated instruction

Materials & Resources:

- Hands-on materials
- Practice workbook
- Textbook
- Pearson Successnet

Assessments:

- Daily Common Core Review
- Quick Checks
- Homework Pages
- Performance Assessment
- Topic 9 Test

Curriculum Scope & Sequence

Planned Course: Mathematics Grade 4

Unit: Developing Fluency: Dividing by 1Digit Divisors

Time frame: 10-11 days

State Standards: 2.1.4.F, 2.2.4.B, 2.2.4.D

Anchor(s) or adopted anchor: M4.A.2

Essential content/objectives: At end of the unit, students will be able to:

- Solve problems involving all operations with whole numbers
- Explain solutions in solving problems involving mathematical operations
- Generalize place value understanding for multi-digit whole numbers
- Use place value understanding and properties of operations to perform multi-digit arithmetic

Core Activities: Students will complete/participate in the following:

- Using objects to divide: division as repeated subtraction
- Division as repeated subtraction
- Using objects to divide: division as sharing
- Dividing 2 digit by 1 digit numbers
- Dividing 3 digit by 1digit numbers
- Deciding where to start dividing
- Dividing 4 digit by 1 digit numbers
- Multiple step problems

Extensions:

- Enrichment sheets
- Home-school connection
- Social Studies connection – bird sighting averages

Remediation:

- Reteaching workbook pages

Instructional Methods:

- Teacher-led instruction
- Differentiated instruction

Materials & Resources:

- Hands-on materials
- Practice workbook
- Textbook
- Pearson Successnet

Assessments:

- Daily common core review
- Quick checks
- Homework pages
- Performance assessment
- Topic 10 test

Curriculum Scope & Sequence

Planned Course: Mathematics Grade 4

Unit: Fraction Equivalence and Ordering

Time frame: 10-11 days

State Standards: 2.1.4.A, 2.1.4.B, 2.1.4.C, 2.1.4.E,

Anchor(s) or adopted anchor: M4.A.1

Essential content/objectives: At end of the unit, students will be able to:

- Write the fraction or decimal, including mixed numbers, which corresponds to a drawing or set
- Create a drawing or set that represents a given fraction or decimal, including mixed numbers
- Locate/identify fractions or decimals on a number line
- Identify prime and composite numbers
- Find/list/identify all factors through 10 of any given number
- Find/list/identify multiples of a number, where the multiples do not exceed 100

Core Activities: Students will complete/participate in the following:

- Factors
- Prime and composite numbers
- Multiples
- Equivalent fractions
- Number lines and equivalent fractions
- Comparing fractions
- Ordering fractions
- Writing to explain for problem solving

Extensions:

- Enrichment sheets
- Home-school connection
- Social Studies connection – stars on the state flags

Remediation:

- Reteaching workbook pages

Instructional Methods:

- Teacher-led instruction
- Differentiated instruction

Materials & Resources:

- Hands-on materials
- Practice workbook
- Textbook
- Pearson Successnet

Assessments:

- Daily common core review
- Quick checks
- Homework pages
- Performance assessment
- Test

Curriculum Scope & Sequence

Planned Course: Mathematics Grade 4

Unit: Adding and Subtracting Fractions and Mixed Numbers with Like Denominators

Time frame: 13-14 days

State Standards: 2.1.4.F

Anchor(s) or adopted anchor: M4.A.3

Essential content/objectives: At end of the unit, students will be able to:

- Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers
- Solve addition or subtraction problems with fractions with like denominators
- Recognize and name an amount in two ways, using improper fractions and mixed numbers

Core Activities: Students will complete/participate in the following:

- Modeling addition of fractions
- Adding fractions with like denominators
- Modeling subtraction of fractions
- Subtracting fractions with like denominators
- Adding and subtracting on the number line
- Improper fractions and mixed numbers
- Modeling addition and subtraction of mixed numbers
- Adding mixed numbers
- Subtracting mixed numbers
- Decomposing and composing fractions
- Draw a picture and write an equation

Extensions:

- Enrichment sheets
- Home-school connection
- Science connection – favorite shell island animal

Remediation:

- Reteaching workbook pages

Instructional Methods:

- Teacher led instruction
- Differentiated instruction

Materials & Resources:

- Hands-on materials
- Practice workbook
- Textbook
- Pearson Successnet

Assessments:

- Daily common core review
- Quick checks
- Homework pages
- Benchmark test 9-12
- Performance assessment
- Test

Curriculum Scope & Sequence

Planned Course: Mathematics Grade 4

Unit: Extending Fraction Concepts

Time frame:12-13 days

State Standards: 2.1.4.B, 2.1.4.D, 2.1.4.F

Anchor(s) or adopted anchor: M4.A.1, M4.A.3

Essential content/objectives: At end of the unit, students will be able to:

- Locate/identify fractions or decimals on a number line
- Solve addition or subtraction problems involving decimals through hundredths
- Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers
- Understand decimal notation for fractions, and compare decimal fractions

Core Activities: Students will complete/participate in the following:

- Fractions as multiples of unit fractions: using models
- Multiplying a fraction by a whole number: using models
- Multiplying a fraction by a whole number: using symbols
- *Fractions and decimals
- Fractions and decimals on the number line
- Equivalent fractions and decimals
- *Decimal place value
- *Comparing and ordering decimals
- *Using money to understand decimals
- Draw a picture for problem solving

Note: Activities denoted with a * need to be mastered before PSSA testing

Extensions:

- Enrichment sheets
- Home-school connection
- Social Studies connection – racetrack number line

Remediation:

- Reteaching workbook pages

Instructional Methods:

- Teacher-led instruction
- Differentiated instruction

Materials & Resources:

- Hands-on materials
- Practice workbook
- Textbook
- Pearson Successnet

Assessments:

- Daily common core review
- Quick checks
- Homework pages
- Performance assessment
- Test

Curriculum Scope & Sequence

Planned Course: Mathematics Grade 4

Unit: Measurement Units and Conversions

Time frame: 13-14 days

State Standards: 2.3.4.A, 2.3.4.B, 2.3.4.C, 2.3.4.F

Anchor(s) or adopted anchor: M4.B.1, M4.B.2

Essential content/objectives: At end of the unit, students will be able to:

- Use or read a ruler (provided) to measure to the nearest 1/4 inch or centimeter
- Make reasonable estimates of weights, lengths and capacities of familiar objects
- Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit
- Match/construct analog time (a picture of a clock), to the same time written in digital
- Identify time (analog or digital) as the amount of minutes before and/or after the hour
- Calculate the elapsed time, to the minute, in a given situation
- Determine the beginning or ending time, given the elapsed time

Core Activities: Students will complete/participate in the following:

- Using customary units of length
- Customary units of capacity
- Units of weight
- Changing customary units
- Writing to explain for problem solving
- Using metric units of length
- Metric units of capacity
- Units of mass
- Changing metric units
- Units of time
- Work backward for problem solving

Extensions:

- Enrichment sheets
- Home-school connection
- Social Studies connection – popcorn bag design

Remediation:

- Reteaching workbook pages

Instructional Methods:

- Teacher-led instruction
- Differentiated instruction

Materials & Resources:

- Hands-on materials
- Practice workbook
- Textbook
- Pearson Successnet

Assessments:

- Daily common core review
- Quick checks
- Homework pages
- Performance assessment
- Test

Curriculum Scope & Sequence

Planned Course: Mathematics Grade 4

Unit: Solving Measurement Problems

Time frame: 7-8 days

State Standards: 2.3.4.F, 2.6.4.B, 2.6.4.D

Anchor(s) or adopted anchor: M4.B.2, M4.E.1

Essential content/objectives: At end of the unit, students will be able to:

- Estimate and verify measurements of perimeter, area
- Represent and interpret data
- Solve problems involving measurement and conversion of measurements including money from a larger unit to a smaller unit
- Solve problems using a variety of strategies

Core Activities: Students will complete/participate in the following:

- Solving perimeter and area problems
- Solving measurement problems
- Solving problems involving money
- Solving problems involving line plots
- Solve a simpler problem and make a table for problem solving

Extensions:

- Enrichment sheets
- Home-school connection
- Social Studies connection – area of the state

Remediation:

- Reteaching workbook pages

Instructional Methods:

- Teacher-led instruction
- Differentiated instruction

Materials & Resources:

- Hands-on materials
- Practice workbook
- Textbook
- Pearson Successnet

Assessments:

- Daily common core review
- Quick checks
- Homework pages
- Performance assessment
- Test

Curriculum Scope & Sequence

Planned Course: Mathematics Grade 4

Unit: Lines, Angles, and Shapes

Time frame: 13-14 days

State Standards: 2.9.4.A, 2.9.4.B

Anchor(s) or adopted anchor: M4.C.1

Essential content/objectives: At end of the unit, students will be able to:

- Identify, classify and/or compare two-dimensional figures
- Identify or classify three-dimensional figures
- Identify points, lines, line segments or rays.
- Identify parallel and perpendicular lines.
- Identify or create figures that have one, two or no lines of symmetry.

Core Activities: Students will complete/participate in the following:

- Points, lines and planes
- Line segments, rays, and angles
- Understanding angles and unit angles
- Measuring with unit angles
- Measuring angles
- Adding and subtracting angle measures
- Polygons
- Triangles
- Quadrilaterals
- Line symmetry
- Make and test generalizations

Extensions:

- Enrichment sheets
- Home-school connection
- Social Studies connection – draw figures on a map

Remediation:

- Reteaching workbook pages

Instructional Methods:

- Teacher-led instruction
- Differentiated instruction

Materials & Resources:

- Hands-on materials
- Practice workbook
- Textbook
- Pearson Successnet

Assessments:

- Daily common core review
- Quick checks
- Homework pages
- Benchmark test 13-16
- End-of-year test
- Performance assessment
- Test