

Young Scholars of Western Pennsylvania Charter School

1st Mathematics YSWPCS

- Units

Unit 1 Establishing Routines

Literature Extention:

Math Counts: Numbers

Animal Numbers

Cristopher Counting

Ten Red Apples

Fun To Learn Counting

Concepts

Daily Routines, Investigating the Number Line, Tools for Doing Math, Number-Writing Pracctice, One More, One Less, Comparing Numbers, Recording Tally Counts, Investigating Equally Likely Outcomes, The Calendar, Working in Small Groups, Exploring Math Math Materials, Weather and Temperature Routines, Number Stories, Progress Check

OCDEL Standards

2.1: Numbers, Number Systems and Number Relationships

A. Count using whole numbers to 100 by 1's, 2's, 5's, 10's and 25's.

C. Represent equivalent forms of the same number through the use of concrete objects, drawings, word names and symbols to 100.

F. Apply number patterns (even and odd)and compare numbers on the hundred chart

G. Use concrete objects to count, order and group to 100

H. Demonstrate an understanding of one-to-one correspondence up to 100

I. Apply place-value concepts and numeration to counting and ordering numbers up to 100

J. Estimate and approximate number quantities in at least a set of ten

K. Recognize the inverse relationship between addition and subtraction

L. Demonstrate knowledge of basic addition and subtraction facts

Common Core Standards

PA Core:

2.1.1.A:

Demonstrate the relationship between numbers and quantities, including place value, one-to-one correspondence, rote counting, counting by twos to 20, counting by tens and fives and comparing values of whole numbers up to 100.

2.2.1.A: Apply concepts of addition and subtraction to solve problems up to ten.

2.11.1.A:

Order whole numbers, 0 to 100, with least to greatest value.

Vocabulary

Base-10 blocks, calendar, date, degree, exploration, Fahrenheit, geoboard, number line, number story, pattern blocks, Pattern-Block Template, slate, tally mark, temperature, thermometer, tool kit

Assessment(s)

Daily Assessments T.E. pg 8.

Progress Check 1 T.E. pg 76.

Duration

17 days

Units

Unit 2

Everyday Uses of Numbers

Literature Extention:

Count the Monkeys

Math Counts Time

Math Counts Length

Lots and Lots of Coins

Concepts

Number Grids, Numbers All Around, Complements of 10, Unit Labels for Numbers, Analog Clocks, Telling Time to the Hour, Exploring Lengths, Straightedges, and Dominos, Pennies, Nickels, Counting Pennies and Nickels, Number Models, Subtraction Number Models, Number Stories, Progress Check 2

OCDEL Standards

2.1: Numbers, Number Systems, and Number Relationships

A. Count using whole numbers to 100 by 1's, 2's, 5's, 10's and 25's
 B. Use whole numbers and fractions (halves, thirds and fourths) to represent quantities
 C. Represent equivalent forms of the same number through the use of concrete objects, drawings, word names and symbols to 100
 D. Use drawings or models to show the concept of a fraction as part of a whole
 E. Count, compare and make change up to one dollar using a collection of coins (pennies, nickels, dimes and quarters)
 F. Apply number patterns (even and odd) and compare numbers on the hundred chart
 G. Use concrete objects to count, order and group to 100
 H. Demonstrate an understanding of one-to-one correspondence up to 100
 I. Apply place-value concepts and numeration to counting and ordering numbers up to 100
 J. Estimate and approximate number quantities in at least a set of ten
 K. Recognize the inverse relationship between addition and subtraction

L. Demonstrate knowledge of basic addition and subtraction facts

2.3: Measurement and Estimation:

D. Determine and compare lengths of time
 E. Tell time (analog and digital) to the minute
 F. Determine appropriate unit of measure
 G. Demonstrate that a single object has different attributes that can be measured in different ways (e.g., length, mass/weight, time, area, temperature, capacity, perimeter)

Common Core Standards

2.1.1.B:

Represent equivalent forms of the same number through the use of pictures and concrete objects (including penny, nickel, dime, and quarter), up to 100.

2.3.1.C: Tell time on an analog and digital clock to the nearest hour and half hour.

2.4.1.A: Draw conclusions and describe thought process (es) (e.g., think aloud) related to problem solving situations.

2.5.1.A: Solve the problem and check if answer makes sense. Explain how problem is solved in grade appropriate contexts.

Vocabulary

add, A.M., analog clock, cent, clockwise, estimate, hour hand, is equal to, Math Boxes, midnight, minus, minute hand, nickel, noon, number grid, number model, penny, plus, P.M., ruler, subtract, ten frame, unit, unit box

Assessment(s)

Daily Assessments T.E. pg 86.

Progress Check 2 T.E. pg. 142.

Duration

19 days

Units

Unit 3

Visual Patterns, Number Patterns, and Counting

Literature Extension:

Math Counts Patterns

The Shape of Things

Fun To Learn Time

Two Dollars One Wallet

Concepts

Visual Patterns, Even and Odd Number Patterns, Number-Grid Patterns, Exploring Number Patterns, Shapes, and Patterns, Counting on the Number Line, Adding and Subtracting on a Number Line, Telling Time to the Half-Hour, Intro. to the Frames and Arrows Problems, Counting with a Calculator, Dimes, Counting Dimes, Nickels, and Pennies, Data Day, Domino Addition, Progress Check 3

OCDEL Standards

2.1 Numbers, Number Systems and Number Relationships

- A. Count using whole numbers to 100 by 1's, 2's, 5's, 10's and 25's
- B. Use whole numbers and fractions (halves, thirds and fourths) to represent quantities
- C. Represent equivalent forms of the same number through the use of concrete objects, drawings, word names and symbols to 100
- D. Use drawings or models to show the concept of a fraction as part of a whole
- E. Count, compare and make change up to one dollar using a collection of coins (pennies, nickels, dimes and quarters)
- F. Apply number patterns (even and odd) and compare numbers on the hundred chart
- G. Use concrete objects to count, order and group to 100
- H. Demonstrate an understanding of one-to-one correspondence up to 100

2.8: Algebra and Functions:

- A. Recognize and extend patterns based on shape, size, color, sound or number
- B. Identify the rule for a repeating pattern that could be extended infinitely
- C. Identify the rule for a number sequence that could be extended infinitely
- D. Choose the correct operation (addition or subtraction) to solve a story problem

Common Core Standards

2.1.1.E: Describe even and odd numbers as they relate to a number pattern.

2.2.1.B: Demonstrate strategies for addition and subtraction in order to solve single- and double-digit addition and subtraction problems.

2.3.1.A:

Demonstrate that a single object has attributes that can be measured.

2.3.1.B: Use concrete objects to measure length by repeating and the number of nonstandard or standard units.

2.1.1.F Select the appropriate operation b(addition or subtraction) to solve problems

2.2.1.A Apply concepts of addition and subtraction to solve problems up to 10

2.5.1.A Solve the problem and check if answer makes sense. Explain how problem is solved in grade appropriate contexts

Vocabulary

arrow, arrow rule, column, decimal point, dime, dollars-and-cents notation, even number, frame, Frames-and-Arrows diagram, half-past, line plot, negative number, number line, odd number, pattern, program, row

Assessment(s)

Daily Assessments T.E. pg 172.

Progress Check T.E. pg 257.

Duration

19 days

• Units

Unit 4

Measurement and Basic Facts

Literacy Extention:

How Many Inches?

Math Counts Counting

Math Counts Size

Chicka Chicka 1.2.3

Concepts

Math Message and Reading a Thermometer, Nonstandard Linear Measurement, Personal "Foot" and Standard Foot, The Inch, The 6-inch Ruler, Measuring with a Tape Measure, Exploring Data, Shapes, and Base-10 Blocks, Telling Time on the Quarter-Hour, Timelines, Number Scrolls, Introducing Fact Power, Good Fact Habits and Making Ten, Progress Check 4

OCDEL Standards

2.3: Measurement and Estimation

A. Compare two objects using direct comparison
 B. Estimate, measure and compare the lengths of objects using non-standard units
 C. Estimate, measure and compare the lengths of objects using standard units of measure
 D. Determine and compare lengths of time
 E. Tell time (analog and digital) to the minute
 F. Determine appropriate unit of measure
 G. Demonstrate that a single object has different attributes that can be measured in different ways (e.g., length, mass/weight, time, area, temperature, capacity, perimeter)

2.3: Computation and Estimation

A. Solve addition and subtraction in everyday situations using concrete objects with one and two digit numbers (no regrouping)
 B. Solve addition and subtraction in everyday situations with one and two digit numbers (no regrouping)

Common Core Standards

2.1.1.D: Apply place value concepts and base-ten numeration to order and compare whole numbers up to 100

2.2.1.D: Estimate values, sums, and differences of quantities and conclude the reasonableness of those estimates.

2.3.1.F: Compare concrete objects to determine greater or lesser attributes (length, weight, capacity).

2.4.1.B:

Use concrete objects to explain precise terms of logic (e.g., *all, or, every, none, some, or many*).

Materials & Resources

2.6.1.A: Gather data from surveys and observations within the classroom or homes.

2.7.1.A:

Determine the probability of an event occurring.

2.7.1.B:

Predict and explain the outcomes of events.

2.8.1.E: Use concrete objects, symbols and numbers to represent mathematical situations.

Vocabulary

addition facts, arm span, bar graph, cubit, degree, digit, double fact, estimate, fact power, Fahrenheit, feet, foot, half-past, hand, hand span, in., inch, length, Math Message, measure, quarter-after, quarter-before, quarter-past, quarter-to, scroll, standard foot, sum, tape measure, temperature, timeline, turn-around fact, typical, unit, yard

Assessment(s)

Daily Assessment T.E. pg 266.

Progress Check 4 T.E. pg 341.

Duration

17 days

Units

Unit 5

Place Value, Number Stories, and Basic Facts

Literature Extention:

Math Counts Sorting

Math Counts Weight

Math Counts Capacity

Teddy Bear, Teddy Bear, School Day Math

Concepts

Place Value: Tens and Ones, Place Value with Calculators, Relations: Greater Than, Less Than, and Equal To, Exploring Area, Weight, and Counting, Animal Weights, More Than and Less Than Number Stories, Comparison Number Stories, Solving Number Stories, Dice Sums, Facts Using Doubles, Fact Strategy Review, "What's My Rule", Applying Rules, Progress Check 5

OCDEL Standards

2.1: Numbers, Number Systems and Number Relationships

- I. Apply place-value concepts and numeration to counting and ordering numbers up to 100
- J. Estimate and approximate number quantities in at least a set of ten
- K. Recognize the inverse relationship between addition and subtraction
- L. Demonstrate knowledge of basic addition and subtraction facts

2.3: Computation and Estimation

- A. Solve addition and subtraction in everyday situations using concrete objects with one and two digit numbers (no regrouping)
- B. Solve addition and subtraction in everyday situations with one and two digit numbers (no regrouping)
- C. Determine the sum of the same three one-digit numbers (e.g., 5+5+5)
- D. Determine the difference by forming equal groups
- E. Make estimates of objects in a set up to and including 100 using groups of ten as a reference and verify estimate
- F. Compare estimate with verified answer
- G. Explain and describe the process of addition and subtraction

2.5 Mathematical Problem Solving and Communication

- A. Use appropriate problem-solving strategies (e.g., make a model, draw a picture, guess and check, working backwards)
- B. Determine when sufficient information is present to solve a problem and explain how to solve a problem

Common Core Standards

2.5.1.B: Use appropriate mathematical vocabulary when explaining how to solve a problem.

2.6.1.B: Organize and display data using pictures, tallies, charts, bar graphs and pictographs.

2.6.1.C: Describe data displayed in a diagram, graph or table.

2.8.1.D:

Use a rule to find a missing addend or symbol to make a number sentence true, with adult assistance.

2.8.1.E: Use concrete objects, symbols and numbers to represent mathematical situations.

2.11.A Order whole numbers, 0-100, with least to greatest value

Vocabulary

area, base-10, cubes, difference, digit, doubles-plus-1 fact, doubles-plus-2 fact, flat, function machine, hundreds, is less than, is more than, longs, multiple of 10, ones place, pan balance, rule, tens place

Assessment(s)

Daily Assessment T.E. pg 350.

Progress Check 5 T.E. pg 425.

Duration

19 days

- Units

Unit 6

Developing Fact Power

Literature Extension:

The Grapes of Math

Concepts

The Addition/Subtraction Facts Table, Equivalent Names, Fact Families, Fact Triangles, Using Strategies to Solve Subtraction Facts, The Centimeter, Exploring Pattern Blocks, Addition Facts, and Triangles, Addition Fact Practice with "What's My Rule?", Quarters, Digital Clocks, Intro. My Reference Book, Data Landmarks, Progress Check 6

OCDEL Standards

2.3 Measurement and Estimation

A. Compare two objects using direct comparison
 B. Estimate, measure and compare the lengths of objects using non-standard units
 C. Estimate, measure and compare the lengths of objects using standard units of measure
 D. Determine and compare lengths of time
 E. Tell time (analog and digital) to the minute
 F. Determine appropriate unit of measure
 G. Demonstrate that a single object has different attributes that can be measured in different ways (e.g., length, mass/weight, time, area, temperature, capacity, perimeter)

2.6: Statistics and Data Analysis

A. Recognize and extend patterns based on shape, size, color, sound or number
 B. Identify the rule for a repeating pattern that could be extended infinitely
 C. Identify the rule for a number sequence that could be extended infinitely
 D. Choose the correct operation (addition or subtraction) to solve a story problem
 E. Write an equation to solve a story problem
 F. Use concrete objects and trial and error to solve addition or subtraction number sentences and check if solutions are accurate
 G. Find a missing addend that makes a number sentence true
 H. Explain how solutions to equations or missing addends are determined
 I. Identify the missing symbol (+, -, =)

Common Core Standards

2.6.1.D: Answer comparative questions based on representations of data.

2.7.1.E:

Answer questions about predictions and actual outcomes based on data.

2.8.1.A: Use the concept of equality and concrete objects to demonstrate understanding of the commutative and associative properties.

2.8.1.B: Use concrete objects and trial and error to solve number sentences.

Vocabulary

Addition/Subtraction Facts Table, centimeter, cm, digital clock, equivalent names, fact family, Fact Triangle, metric system, middle value, My Reference Book, name-collection box, quarter, range, table of contents

Assessment(s)

Daily Assessments T.E. pg. 528, Progress Check 6 T.E. pg. 604

Duration

19 days

Units

Unit 7

Geometry and Attributes

Literature Extension:

It's a Pattern!

The Biggest Shape

Math Counts Shapes

Fun to Learn Shapes

Concepts

Attribute Rules, Exploring Attributes, Designs, and Fact Platters, Pattern-Block and Template Shapes, Making Polygons, Spheres, Cylinders, and Rectangular Prisms, Pyramids, Cones, and Cubes, Symmetry Progress Check 7

OCDEL Standards

2.9 Geometry

A. Name and label geometric shapes in two and three dimensions (e.g., circle, square, triangle, rectangle, sphere, cube, pyramid and prism)

B. Build geometric shapes using concrete objects

C. Create two- and three-dimensional shapes

D. Find and describe geometric figures in real life

E. Identify and draw lines of symmetry in

geometric figures

F. Identify lines of symmetry in nature

G. Fold paper to demonstrate the reflection of a line

H. Show relationships between and among figures using reflections

I. Predict how shapes can be changed by combining or dividing them

Common Core Standards

2.4.1.B:

Use concrete objects to explain precise terms of logic (e.g., *all, or, every, none, some, or many*).

2.9.1.A: Name, describe and draw/build 2-dimensional shapes

2.9.1.B: Identify and draw lines of symmetry.

Vocabulary

attribute, circle, cone, corner, cube, cylinder, face, hexagon, polygon, pyramid, rectangle, rectangular prism, rhombus, side, sphere, square, square corner, surface, symmetrical, symmetry, trapezoid, triangle

Assessment(s)

Daily Assessment T.E. pg. 614 Progress Check 7 T.E. pg. 658

Duration

12 days

- Units

Unit 8

Mental Arithmetic, Money, and Fractions

Literature Extension:

Writing Prompts

Concepts

Review Money, Dollars, Place Value: Hundreds, Tens, and Ones, Application: Shopping at the School Store, Making Change, Equal Shares, Fractions, Sharing Pennies, Exploring Fractional Parts and Addition Facts, Progress Check 8

OCDEL Standards

2.1 Numbers, Number Systems, and Number Relationships

A. Count using whole numbers to 100 by 1's, 2's, 5's, 10's and 25's
 B. Use whole numbers and fractions (halves, thirds and fourths) to represent quantities
 C. Represent equivalent forms of the same number through the use of concrete objects, drawings, word names and symbols to 100
 D. Use drawings or models to show the concept of a fraction as part of a whole
 E. Count, compare and make change up to one dollar using a collection of coins (pennies, nickels, dimes and quarters)
 F. Apply number patterns (even and odd) and compare numbers on the hundred chart
 G. Use concrete objects to count, order and group to 100

H. Demonstrate an understanding of one-to-one correspondence up to 100
 I. Apply place-value concepts and numeration to counting and ordering numbers up to 100
 J. Estimate and approximate number quantities in at least a set of ten
 K. Recognize the inverse relationship between addition and subtraction
 L. Demonstrate knowledge of basic addition and subtraction facts

2.2 Computation and Estimation:

A. Solve addition and subtraction in everyday situations using concrete objects with one and two digit numbers (no regrouping)
 B. Solve addition and subtraction in everyday situations with one and two digit numbers (no regrouping)
 C. Determine the sum of the same three one-digit numbers (e.g., $5+5+5$)
 D. Determine the difference by forming equal groups
 E. Make estimates of objects in a set up to and including 100 using groups of ten as a reference and verify estimate
 F. Compare estimate with verified answer
 G. Explain and describe the process of addition and subtraction

Common Core Standards

2.1.1.B:

Represent equivalent forms of the same number through the use of pictures and concrete objects (including penny, nickel, dime, and quarter), up to 100.

2.1.1.C:

Use concrete objects, drawings, diagrams or models to show the concept of a fraction as part of a whole; use whole numbers and fractions (halves and fourths) to represent quantities.

2.5.1.B: Use appropriate mathematical vocabulary when explaining how to solve a problem.

2.7.1.E:

Answer questions about predictions and actual outcomes based on data.

Vocabulary

decimal point, equal parts, fourths, fraction, fractional part, halves, hundreds, hundreds place, near doubles, ones, ones place, tens, tens place, thirds, to make change, whole

Assessment(s)

Daily Assessments T.E. pg. 668 Progress Check 8 T.E. pg. 724

Duration

14 days

Units

Unit 9

Place Value and Fractions

Literature Extension:

Writing Prompts

Concepts

Tens and Ones Patterns on the Number Grid, Adding and Subtracting Tens, Number-Grid Puzzles, Adding and Subtracting 2-Digit Numbers, Exploring Capacity, Symmetry, and Heights, Fractional Parts of the Whole, Comparing Fractions, Many Names for Fractional Parts, Progress Check 9

OCDEL Standards

2.1 Number, Number Systems, and Number Relationships:

- A. Count using whole numbers to 100 by 1's, 2's, 5's, 10's and 25's
- B. Use whole numbers and fractions (halves, thirds and fourths) to represent quantities
- C. Represent equivalent forms of the same number through the use of concrete objects, drawings, word names and symbols to 100
- D. Use drawings or models to show the concept of a fraction as part of a whole
- E. Count, compare and make change up to one dollar using a collection of coins (pennies, nickels, dimes and quarters)
- F. Apply number patterns (even and odd) and compare numbers on the hundred chart
- G. Use concrete objects to count, order and group to 100
- H. Demonstrate an understanding of one-to-one correspondence up to 100
- I. Apply place-value concepts and numeration to counting and ordering numbers up to 100
- J. Estimate and approximate number quantities in at least a set of ten
- K. Recognize the inverse relationship between addition and subtraction
- L. Demonstrate knowledge of basic addition and subtraction facts

Common Core Standards

2.1.1.A:

Demonstrate the relationship between numbers and quantities, including place value, one-to-one correspondence, rote counting, counting by twos to 20, counting by tens and fives and comparing values of whole numbers up to 100.

2.1.1.D: Apply place value concepts and base-ten numeration to order and compare whole numbers up to 100

2.6.1.E: Draw conclusions and identify patterns based on a comparison to data displayed in a graph.

2.7.1.D: List or graph the possible results of an experiment

Vocabulary

denominator, number-grid puzzle, numerator

Assessment(s)

Daily Assessments T.E. pg. 734 Progress Check 9 T.E. pg. 783

Duration

15 days

• Units

Unit 10

Year-End Review and Assessment

Literature Extension:

Writing Prompts

Concepts

Data Day: End-of-Year Heights, Review: Telling Time, Mental Arithmetic, Year-End Geometry Review, Review Thermometers and Temperature, Review Place Value, Scrolls, and Number Grids, Progress Check 10

OCDEL Standards

2.1: Numbers, Number Concepts and Number Relationships

- A. Count using whole numbers to 100 by 1's, 2's, 5's, 10's and 25's
- B. Use whole numbers and fractions (halves, thirds and fourths) to represent quantities
- C. Represent equivalent forms of the same number through the use of concrete objects, drawings, word names and symbols to 100
- D. Use drawings or models to show the concept of a fraction as part of a whole
- E. Count, compare and make change up to one dollar using a collection of coins (pennies, nickels, dimes and quarters)
- F. Apply number patterns (even and odd) and compare numbers on the hundred chart
- G. Use concrete objects to count, order and group to 100
- H. Demonstrate an understanding of one-to-one correspondence up to 100
- I. Apply place-value concepts and numeration to counting and ordering numbers up to 100
- J. Estimate and approximate number quantities in at least a set of ten
- K. Recognize the inverse relationship

between addition and subtraction
L. Demonstrate knowledge of basic addition and subtraction facts

2.2: Computation and Estimation

- A. Solve addition and subtraction in everyday situations using concrete objects with one and two digit numbers (no regrouping)
- B. Solve addition and subtraction in everyday situations with one and two digit numbers (no regrouping)
- C. Determine the sum of the same three one-digit numbers (e.g., 5+5+5)
- D. Determine the difference by forming equal groups
- E. Make estimates of objects in a set up to and including 100 using groups of ten as a reference and verify estimate
- F. Compare estimate with verified answer
- G. Explain and describe the process of

addition and subtraction

Common Core Standards

2.7.1.E: Answer questions about predictions and actual outcomes based on data.

Materials & Resources

2.8.1.C: Recognize, describe, extend, replicate and transfer number and geometric patterns.

2.8.1.F:

Describe and answer questions about data from classroom graphs and charts.

Vocabulary

mixed review

Assessment(s)

Daily Assessments T.E. pg. 794 Progress Check 10 T.E. pg. 839

Duration

13 days

Mathematical Practices

- 1 Make sense of problems and persevere in solving them
- 2 Reason abstractly and quantitatively
- 3 Construct viable arguments and critique the reasoning of others.
- 4 Model with mathematics.
- 5 Use appropriate tools strategically.
- 6 Attend to precision.
- 7 Look for and make use of structure.
- 8 Look for and express regularity in repeated reasoning.