

**Flossmoor School District 161
Mathematics Curriculum Framework
Grade 4**

Month August/September

Goal #6 Number Sense

Objective
SD161 Know how and when to use a calculator
SD161 Use estimation to judge the reasonableness of an answer, with or without a calculator
SD161 Multiplication and division facts tests through 12
6.4.01 Read, write, recognize, and model equivalent representations of whole numbers and their place values up to 100,000
6.4.02 Identify and write (in words and standard form) whole numbers up to 100,000
6.4.05 Order and compare whole numbers up to 100,000
6.4.09 Solve problems involving descriptions of numbers, including characteristics and relationships (e.g., odd/even, factors/multiples, greater than, less than)
6.4.10 Solve problems and number sentences involving addition and subtraction (with regrouping)
6.4.11 Solve problems involving the value of a collection of bills and coins whose total value is \$100.00 or less, and make change
6.4.16 Make estimates appropriate to a given situation with whole numbers

Goal #9 Geometry

9.4.01 Identify, describe, and sketch two-dimensional shapes (triangles, quadrilaterals, pentagons, hexagons, and octagons) according to the number of sides, length of sides, number of vertices, and right angles
9.4.03 Differentiate between polygons and non-polygons
9.4.05 Identify whether or not a figure has one or more lines of symmetry, and sketch or identify all lines of symmetry

9.4.07 Identify and sketch parallel and perpendicular lines

9.4.08 Identify and sketch right angles

9.4.12 Identify congruent and similar figures by visual inspection
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Goal #10 Data Analysis, Statistics, and Probability

10.4.01 Read and interpret data represented in a pictograph, bar graph, line (dot) plot, Venn diagram (with two circles), tally chart, table, line graph, or circle graph

10.4.02 Create a pictograph, bar graph, tally chart, or table for a given set of data

Mathematics Curriculum Framework – Grade 4

Month October

Goal #6 Number Sense

Objective
SD161 Know how and when to use a calculator
SD161 Use estimation to judge the reasonableness of an answer, with or without a calculator
6.4.01 Read, write, recognize, and model equivalent representations of whole numbers and their place values up to 100,000
6.4.02 Identify and write (in words and standard form) whole numbers up to 100,000
6.4.04 Represent multiplication as repeated addition
6.4.10 Solve problems and number sentences involving multiplication (up to three digits by one digit) Example: 125×6
6.4.10 Solve problems and number sentences involving multiplication (up to two digits by two digits) Example: 47×23
6.4.12 Model and apply basic multiplication and division facts (up to 12×12), and apply them to related multiples of 10 (e.g., $3 \times 9 = 27$, $30 \times 9 = 270$, $6 \div 3 = 2$, $600 \div 3 = 200$)
6.4.14 Solve problems involving the commutative and distributive properties of operations on whole numbers [e.g., $8 + 7 = 7 + 8$, $27 \times 5 = (20 \times 5) + (7 \times 5)$]
6.4.15 Use the inverse relationships between addition/subtraction and multiplication/division to complete basic fact sentences and solve problems (e.g., $4 \times 3 = 12$, $12 \div 3 = \underline{\quad}$)
6.4.16 Make estimates appropriate to a given situation with whole numbers

Goal #7 Measurement

7.4.01 Solve problems involving elapsed time in compound units (e.g., 1 hour and 40 minutes) that occur in the same half-day (a.m. only or p.m. only)

7.4.03 Solve problems involving the perimeter of a polygon with given side lengths and the area of a square, rectangle, or irregular shape composed of rectangles using diagrams, models, and grids or by measuring (may include sketching a figure from its description)

Goal #8 Algebra

8.4.01 Determine a missing term in a pattern (sequence), describe a pattern (sequence), and extend a pattern (sequence) when given a description or pattern (sequence)

8.4.02 Write an expression using letters or symbols to represent an unknown quantity

8.4.03 Evaluate algebraic expressions with a whole number variable value (e.g., evaluate $3 + m$ when $m = 4$)

Mathematics Curriculum Framework – Grade 4

Month November

Goal #6 Number Sense

Objective
SD161 Know how and when to use a calculator
SD161 Use estimation to judge the reasonableness of an answer, with or without a calculator
SD161 Mixed tests (addition, subtraction, multiplication and division)
6.4.01 Read, write, recognize, and model equivalent representations of whole numbers and their place values up to 1,000,000
6.4.02 Identify and write (in words and standard form) whole numbers up to 1,000,000
6.4.03 Read, write, recognize, and model equivalent representations of fractions; divide regions or sets to represent a fraction
6.4.06 Order and compare decimals through hundredths
6.4.07 Order and compare fractions having like denominators with or without models
6.4.08 Identify and locate whole numbers, halves, and fourths on a number line
6.4.13 Model situations involving addition and subtraction of fractions with like denominators

Goal #7 Measurement

7.4.02 Select and use appropriate standard units and tools to measure length (to the nearest $\frac{1}{2}$ inch or $\frac{1}{2}$ cm), time, and temperature

Mathematics Curriculum Framework – Grade 4

Month December

Goal #6 Number Sense

Objective
SD161 Know how and when to use a calculator
SD161 Use estimation to judge the reasonableness of an answer, with or without a calculator
SD161 Mixed tests (addition, subtraction, multiplication and division)
6.4.01 Read, write, recognize, and model equivalent representations of whole numbers and their place values up to 1,000,000
6.4.02 Identify and write (in words and standard form) whole numbers up to 1,000,000

Goal #7 Measurement

7.4.05 Determine the volume of a solid figure that shows cubic units
7.4.04 Compare and estimate length (including perimeter), area, volume, and weight/mass using referents
7.4.06 Solve problems involving unit conversions <u>within the same measurement system</u> for time, length, and weight/mass

Goal #9 Geometry

9.4.02 Identify and describe three-dimensional shapes (cubes, spheres, cones, cylinders, prisms, and pyramids) according to their characteristics (faces, edges, vertices)
9.4.10 Identify a three-dimensional object from its net
9.4.11 Predict the result of composing or decomposing shapes or figures

Goal #10 Data Analysis, Statistics, and Probability

10.4.03 Determine the mode and range, given a set of data or a graph
10.4.04 Classify events using words such as certain, most likely, equally likely, least likely, possible, and impossible
10.4.05 Describe the chances associated with a context presented visually, including using the response format “3 out of 4” or $\frac{3}{4}$

Mathematics Curriculum Framework – Grade 4

Month January

Goal #6 Number Sense

Objective
SD161 Know how and when to use a calculator
SD161 Use estimation to judge the reasonableness of an answer, with or without a calculator
SD161 Timed test in multiplication and division facts through 12
SD161 Mixed tests (addition, subtraction, multiplication and division)
6.4.01 Read, write, recognize, and model equivalent representations of whole numbers and their place values up to 1,000,000
6.4.02 Identify and write (in words and standard form) whole numbers up to 1,000,000
6.4.04 Represent multiplication as repeated addition
6.4.16 Make estimates appropriate to a given situation with whole numbers
6.5.02 Read, write, recognize, model, and interpret numerical expressions from a given description or situation
6.5.07 Order and compare whole numbers up to 1,000,000
6.5.12 Solve problems and number sentences involving addition, subtraction, multiplication, and division using whole numbers
6.5.15 Solve problems involving the commutative, distributive, and identity properties of operations on whole numbers (e.g., $37 \times 46 = 46 \times 37$, $270 \times 5 = (200 \times 5) + (70 \times 5)$)

Goal #8 Algebra

8.4.04 Identify or represent situations with well-defined patterns using words, tables, and graphs (e.g., represent temperature and time in a line graph)
8.4.05 Translate between different representations (table, written, or pictorial) of whole number relationships

Goal #9 Geometry

9.4.01 Identify, describe, and sketch two-dimensional shapes (triangles, quadrilaterals, pentagons, hexagons, and octagons) according to the number of sides, length of sides, number of vertices, and right angles

9.4.04 Graph, locate, identify points, and describe paths using ordered pairs (first quadrant)

9.4.05 Identify whether or not a figure has one or more lines of symmetry, and sketch or identify all lines of symmetry

9.4.06 Identify images resulting from flips (reflections), slides (translations) or turns (rotations)

9.4.08 Identify and sketch parallel and perpendicular lines

9.4.09 Identify the two-dimensional components of a three-dimensional object

9.4.13 Determine the distance between two points on the number line in whole numbers

9.5.07 Identify, describe, and predict results of reflections, translations, and rotations of two-dimensional shapes

Mathematics Curriculum Framework – Grade 4

Month February

Goal #6 Number Sense

Objective
SD161 Know how and when to use a calculator
SD161 Use estimation to judge the reasonableness of an answer, with or without a calculator
SD161 Mixed tests
SD161 Timed test in multiplication and division facts through 12
6.4.01 Read, write, recognize, and model equivalent representations of whole numbers and their place values up to 10,000,000
6.4.02 Identify and write (in words and standard form) whole numbers up to 10,000,000
6.4.06 Order and compare decimals through hundredths
6.4.09 Solve problems involving descriptions of numbers, including characteristics and relationships (e.g., odd/even, factors/multiples, greater than, less than, square numbers)
6.4.11 Solve problems involving the value of a collection of bills and coins whose total value is \$100.00 or less, and make change
6.4.16 Make estimates appropriate to a given situation with whole numbers
6.5.05 Read, write, recognize, and model decimals and their place values through thousandths

Goal #8 Algebra

8.4.06 Represent simple mathematical relationships with number sentences (equations and inequalities)

8.4.07 Solve for the unknown in an equation with one operation (e.g., $10 = \square + 3 + 2$, $\square - 1 = 3$)

8.4.08 Solve word problems involving unknown quantities

Goal #9 Geometry

9.4.04 Graph, locate, identify points, and describe paths using ordered pairs (first quadrant)

Goal #10 Data Analysis, Statistics, and Probability

10.4.01 Read and interpret data represented in a pictograph, bar graph, line (dot) plot, Venn diagram (with two circles), tally chart, table, line graph, or circle graph

10.4.02 Create a pictograph, bar graph, tally chart, or table for a given set of data

10.4.03 Determine the mode and range given a set of data or a graph

10.4.04 Classify events using words such as certain, most likely, equally likely, least likely, possible and impossible

10.4.05 Describe the chances associated with a context presented visually, including using the response format “3 out of 4” or $3/4$

Mathematics Curriculum Framework – Grade 4

Month March

Goal #6 Number Sense

Objective
SD161 Know how and when to use a calculator
SD161 Use estimation to judge the reasonableness of an answer, with or without a calculator
SD161 Mixed tests
SD161 Timed test in multiplication and division facts through 12
6.4.01 Read, write, recognize, and model equivalent representations of whole numbers and their place values up to 10,000,000
6.4.02 Identify and write (in words and standard form) whole numbers up to 10,000,000
6.5.03 Read, write, recognize, and model equivalent representations of fractions, including improper fractions and mixed numbers
6.5.09 Order and compare fractions having like or unlike denominators with or without models.
6.5.10 Identify and locate whole numbers, halves, fourths, and thirds on a number line.
6.5.16 Make estimates appropriate to a given situation with whole numbers, fractions, and decimals

Goal #7 Measurement

7.5.04 Compare and estimate length (including perimeter), area, volume, weight/mass, and angles (0° to 180°) using referents
7.5.05 Determine the volume of a right rectangular prism using an appropriate formula or strategy

Goal #8 Algebra

8.5.01 Determine a missing term in a sequence, extend a sequence, and identify errors in a sequence when given a description or sequence
8.5.02 Construct and identify a rule that can generate the terms of a given sequence
8.5.05 Demonstrate, in simple situations, how a change in one quantity results in a change in another quantity (e.g., input-output tables)

Goal #9 Geometry

9.5.02 Identify and describe three-dimensional shapes (cubes, spheres, cones, cylinders, prisms, and pyramids) according to their characteristics (faces, edges, vertices)
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9.5.10 Identify the two-dimensional components of a three-dimensional object
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9.5.11 Identify a three-dimensional object from its net

9.5.12 Predict the result of composing or decomposing shapes or figures

Mathematics Curriculum Framework – Grade 4

Month April

Goal #6 Number Sense

Objective
SD161 Know how and when to use a calculator
SD161 Use estimation to judge the reasonableness of an answer, with or without a calculator
SD161 Mixed basic facts tests
6.5.01 Read, write, recognize, and model equivalent representations of whole numbers and their place values up to 100,000,000
6.5.02 Identify and write (in words and standard form) whole numbers up to 100,000,000
6.5.04 Recognize, translate between, and model multiple representations of decimals, fractions less than one (halves, quarters, fifths, and tenths), and percents (0%, 25%, 50%, 75%, and 100%)
6.5.12 Solve problems and number sentences involving multi-digit (+, -, x, ÷) using whole numbers
6.5.12 Solve problems and number sentences involving division using whole numbers (up to three digits by one digit with remainders) Example: $549 \div 2$
6.5.14 Model situations involving addition and subtraction of fractions with and without common denominators
6.5.19 Read, write, recognize, and model percents (0%, 25%, 50%, 75%, and 100%)

Goal #7 Measurement

7.5.06 Solve problems involving unit conversions <u>within the same measurement system</u> for time, length, and weight/mass, including compound units (e.g., 5ft 5in, 2lbs 2oz)
7.5.07 Solve problems involving map interpretation (e.g., one inch represents five miles, so two inches represent ten miles)

Goal #8 Algebra

8.4.03 Evaluate algebraic expressions with a whole number variable value (e.g., evaluate $m + m + 3$ when $m = 4$)

8.4.06 Translate between different representations (table, written, or pictorial) of whole number relationships

8.5.03 Write an expression using variables to represent unknown quantities
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Goal #9 Geometry

9.5.04 Identify, describe, and sketch circles, including radius and diameter
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9.5.15 Determine the distance between two points on a horizontal or vertical number line in whole numbers

Mathematics Curriculum Framework – Grade 4

Month May/June

Goal #6 Number Sense

Objective
SD161 Know how and when to use a calculator
SD161 Use estimation to judge the reasonableness of an answer, with or without a calculator
SD161 Mixed tests
6.5.01 Read, write, recognize, and model equivalent representations of whole numbers and their place values up to 100,000,000
6.5.02 Identify and write (in words and standard form) whole numbers up to 100,000,000
6.5.12 Solve problems and number sentences involving multi-digit (+, -, x, ÷) using whole numbers
6.5.17 Identify and express ratios using appropriate notation (i.e., a/b, a to b), and identify equivalent ratios
6.5.18 Solve problems involving proportional relationships, including unit pricing (e.g., one apple costs 20¢, so four apples cost 80¢)

Goal #8 Algebra

8.5.07 Represent problems with equations and inequalities
8.5.08 Solve for the unknown in an equation with one operation (e.g., $2+n=20$, $n\div 2=6$)
8.5.09 Solve word problems involving unknown quantities