

Mathematics Focus Kindergarten

This document shows where students and teachers should spend the large majority of their time in order to meet the expectations of the Standards.

Students should spend the large majority of their time (65-85%) on the major work of the grade. Supporting work and, where appropriate, additional work should be connected to and engage students in the major work of the grade.

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Key: ■ Major Cluster ■ Supporting Cluster ○ Additional Cluster

- K.CC.A ■ Know number names and the count sequence.
- K.CC.B ■ Count to tell the number of objects.
- K.CC.C ■ Compare numbers.
- K.OA.A ■ Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.
- K.NBT.A ■ Work with numbers 11–19 to gain foundations for place value.
- K.MD.A ○ Describe and compare measurable attributes.
- K.MD.B ■ Classify objects and count the number of objects in each category.
- K.MD.C ■ Work with time and money
- K.G.A ○ Identify and describe shapes. (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).
- K.G.B ■ Analyze, compare, create, and compose shapes.

This document was adapted from Achieve the Core (achievethecore.org) for the South Dakota Mathematics Standards.

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Mathematics Focus 1st Grade

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Key: ■ Major Cluster ■ Supporting Cluster ○ Additional Cluster

- 1.OA.A ■ Represent and solve problems involving addition and subtraction.
- 1.OA.B ■ Understand and apply properties of operations and the relationship between addition and subtraction.
- 1.OA.C ■ Add and subtract within 20.
- 1.OA.D ■ Work with addition and subtraction equations.
- 1.NBT.A ■ Extend the counting sequence.
- 1.NBT.B ■ Understand place value.
- 1.NBT.C ■ Use place value understanding and properties of operations to add and subtract.
- 1.MD.A ■ Measure lengths indirectly and by iterating length units.
- 1.MD.B ○ Work with time and money.
- 1.MD.C ■ Represent and interpret data.
- 1.G.A ○ Reason with shapes and their attributes.

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- 2.OA.A ■ Represent and solve problems involving addition and subtraction.
- 2.OA.B ■ Add and subtract within 20.
- 2.OA.C ■ Work with equal groups of objects to gain foundations for multiplication.
- 2.NBT.A ■ Understand place value.
- 2.NBT.B ■ Use place value understanding and properties of operations to add and subtract.
- 2.MD.A ■ Measure and estimate lengths in standard units.
- 2.MD.B ■ Relate addition and subtraction to length.
- 2.MD.C ■ Work with time and money.
- 2.MD.D ■ Represent and interpret data.
- 2.G.A ○ Reason with shapes and their attributes.

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- 3.OA.A ■ Represent and solve problems involving multiplication and division.
- 3.OA.B ■ Understand properties of multiplication and the relationship between multiplication and division.
- 3.OA.C ■ Multiply and divide within 100.
- 3.OA.D ■ Solve problems involving the four operations, and identify and explain patterns in arithmetic.
- 3.NBT.A ■ Use place value understanding and properties of operations to perform multi-digit arithmetic.
- 3.NF.A ■ Develop understanding of fractions as numbers.
- 3.MD.A ■ Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
- 3.MD.B ■ Represent and interpret data.
- 3.MD.C ■ Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
- 3.MD.D ○ Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.
- 3.G.A ■ Reason with shapes and their attributes.

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- 4.OA.A ■ Use the four operations with whole numbers to solve problems.
- 4.OA.B ■ Gain familiarity with factors and multiples.
- 4.OA.C ○ Generate and analyze patterns.
- 4.NBT.A ■ Generalize place value understanding for multi-digit whole numbers.
- 4.NBT.B ■ Use place value understanding and properties of operations to perform multi-digit arithmetic.
- 4.NF.A ■ Extend understanding of fraction equivalence and ordering.
- 4.NF.B ■ Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
- 4.NF.C ■ Understand decimal notation for fractions, and compare decimal fractions.
- 4.MD.A ■ Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.
- 4.MD.B ■ Represent and interpret data.
- 4.MD.C ○ Geometric measurement: understand concepts of angle and measure angles.
- 4.G.A ○ Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

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- 5.OA.A ○ Write and interpret numerical expressions.
- 5.OA.B ○ Analyze patterns and relationships.
- 5.NBT.A ■ Understand the place value system.
- 5.NBT.B ■ Perform operations with multi-digit whole numbers and with decimals to hundredths.
- 5.NF.A ■ Use equivalent fractions as a strategy to add and subtract fractions.
- 5.NF.B ■ Apply and extend previous understandings of multiplication and division to multiply and divide fractions.
- 5.MD.A ■ Convert like measurement units within a given measurement system.
- 5.MD.B ■ Represent and interpret data.
- 5.MD.C ■ Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.
- 5.G.A ○ Graph points on the coordinate plane to solve real-world and mathematical problems.
- 5.G.B ○ Classify two-dimensional figures into categories based on their properties.

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Mathematics Focus 6th Grade

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Key: ■ Major Cluster ■ Supporting Cluster ○ Additional Cluster

- 6.RP.A ■ Understand ratio concepts and use ratio reasoning to solve problems.
- 6.NS.A ■ Apply and extend previous understandings of multiplication and division to divide fractions by fractions.
- 6.NS.B ○ Compute fluently with multi-digit numbers and find common factors and multiples.
- 6.NS.C ■ Apply and extend previous understandings of numbers to the system of rational numbers.
- 6.EE.A ■ Apply and extend previous understandings of arithmetic to algebraic expressions.
- 6.EE.B ■ Reason about and solve one-variable equations and inequalities.
- 6.EE.C ■ Represent and analyze quantitative relationships between dependent and independent variables.
- 6.G.A ■ Solve real-world and mathematical problems involving area, surface area, and volume.
- 6.SP.A ○ Develop understanding of statistical variability.
- 6.SP.B ○ Summarize and describe distributions.

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Key: ■ Major Cluster ■ Supporting Cluster ○ Additional Cluster

- 7.RP.A ■ Analyze proportional relationships and use them to solve real-world and mathematical problems.
- 7.NS.A ■ Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.
- 7.EE.A ■ Use properties of operations to generate equivalent expressions.
- 7.EE.B ■ Solve real-life and mathematical problems using numerical and algebraic expressions and equations.
- 7.G.A ○ Draw, construct and describe geometrical figures and describe the relationships between them.
- 7.G.B ○ Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.
- 7.SP.A ■ Use random sampling to draw inferences about a population.
- 7.SP.B ○ Draw informal comparative inferences about two populations.
- 7.SP.C ■ Investigate chance processes.
- 7.SP.D Develop, use, and evaluate probability models.

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Mathematics Focus 8th Grade

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Key: ■ Major Cluster ■ Supporting Cluster ○ Additional Cluster

- 8.NS.A ■ Know that there are numbers that are not rational, and approximate them by rational numbers.
- 8.EE.A ■ Work with radicals and integer exponents.
- 8.EE.B ■ Understand the connections between proportional relationships, lines, and linear equations.
- 8.EE.C ■ Analyze and solve linear equations and pairs of simultaneous linear equations.
- 8.F.A ■ Define, evaluate, and compare functions.
- 8.F.B ■ Use functions to model relationships between quantities.
- 8.G.A ■ Understand congruence and similarity using physical models, transparencies, or geometry software.
- 8.G.B ■ Understand and apply the Pythagorean Theorem.
- 8.G.C ○ Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.
- 8.SP.A ■ Investigate patterns of association in bivariate data.

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Mathematics Focus Algebra

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Key: ■ Major Cluster ■ Supporting Cluster ○ Additional Cluster

- N.RN.A ■ Extend the properties of exponents to rational exponents.
- N.RN.B ○ Use properties of rational and irrational numbers.
- N.Q.A ■ Reason quantitatively and use units to solve problems.
- A.SSE.A ■ Interpret the structure of expressions.
- A.SSE.B ■ Write expressions in equivalent forms to solve problems
- A.APR.A ■ Perform arithmetic operations on polynomials.
- A.CED.A ■ Create equations that describe numbers or relationships.
- A.REI.A ■ Understand solving equations as a process of reasoning and explain the reasoning.
- A.REI.B ■ Solve equations and inequalities in one variable.
- A.REI.C ■ Solve systems of equations.
- A.REI.D ■ Represent and solve equations and inequalities graphically.
- F.IF.A ■ Understand the concept of a function and use function notation.
- F.IF.B ■ Interpret functions that arise in applications in terms of the context.
- F.IF.C ■ Analyze functions using different representations.
- F.BF.A ■ Build a function that models a relationship between two quantities.
- F.BF.B ■ Build new functions from existing functions.
- F.LE.A ■ Construct and compare linear, quadratic and exponential models and solve problems.
- F.LE.B ■ Interpret expressions for functions in terms of the situation they model.
- S.ID.A ■ Summarize, represent and interpret data on a single count or measurement variable.
- S.ID.B ■ Summarize, represent and interpret data on two categorical and quantitative variables.
- S.ID.C ■ Interpret linear models.

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Mathematics Focus Geometry

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- G.CO.A ■ Experimenting with transformations in the plane.
- G.CO.B ■ Understand congruence in terms of rigid motions.
- G.CO.C ■ Prove geometric theorems.
- G.CO.D ○ Make geometric constructions.
- G.SRT.A ■ Understand similarity in terms of similarity transformations.
- G.SRT.B ■ Prove theorems involving similarity
- G.SRT.C ■ Define trigonometric ratios and solve problems involving right triangles
- G.C.A ○ Understand and apply theorems about circles.
- G.C.B ○ Find arc lengths and areas of sectors of circles.
- G.GPE.A ○ Translate between the geometric description and the equation for a conic section.
- G.GPE.B ○ Use coordinates to prove simple geometric theorems algebraically.
- G.GMD.A ■ Explain volume and surface area formulas and use them to solve problems.
- G.GMD.B ■ Visualize relationships between two-dimensional and three- dimensional objects.
- G.MG.A ■ Applying geometric concepts in modeling situations.
- S.CP.A ○ Understand independence and conditional probability and use them to interpret data.
- S.CP.B ○ Use the rules of probability to compute probabilities of compound events in a uniform probability model.

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Mathematics Focus Algebra 2

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N.CN.A	○	Perform arithmetic operations with complex numbers.
N.CN.B	○	Use complex numbers in polynomial identities and equations.
A.SSE.A	■	Interpret the structure of expressions.
A.APR.A	■	Understand the relationship between zeros and factors of polynomials.
A.APR.B	■	Rewrite rational expressions.
A.CED.A	■	Create equations that describe numbers or relationships.
A.REI.A	■	Understand solving equations as a process of reasoning and explain the reasoning.
A.REI.B	■	Solve equations and inequalities in one variable.
A.REI.C	■	Represent and solve equations and inequalities graphically.
F.IF.A	■	Interpret functions that arise in applications in terms of the context.
F.IF.B	■	Analyze functions using different representations.
F.BF.A	■	Build new functions from existing functions.
F.LE.A	■	Construct and compare linear, quadratic and exponential models and solve problems.
F.TF.A	■	Extend the domain of trigonometric functions using the unit circle.
F.TF.B	■	Model periodic phenomena with trigonometric functions.
F.TF.C	■	Prove and apply trigonometric identities.
S.ID.A	○	Summarize, represent and interpret data on a single count or measurement variable.
S.IC.A	○	Understand and evaluate random processes underlying statistical experiments.
S.IC.B	○	Make inferences and justify conclusions from sample surveys, experiments and observational studies.

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Mathematics Focus 4th Year

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N.CN.A	■	Perform arithmetic operations with complex numbers.
N.CN.B	■	Represent complex numbers and their operations on the complex plane.
N.VM.A	■	Represent and model with vector quantities.
N.VM.B	■	Perform operations on vectors.
N.VM.C	○	Perform operations on matrices and use matrices in applications.
A.SSE.A	■	Write expressions in equivalent forms to solve problems.
A.APR.A	■	Use polynomial identities to solve problems.
A.APR.B	■	Rewrite rational expressions.
A.REI.A	■	Solve systems of equations.
A.REI.B	■	Solving inequalities.
F.IF.A	■	Analyze functions using different representations.
F.BF.A	■	Build a function that models a relationship between two quantities
F.BF.B	■	Build new functions from existing functions.
F.TF.A	■	Extend the domain of trigonometric functions using the unit circle.
F.TF.B	■	Model periodic phenomena with trigonometric functions.
F.TF.C	■	Prove and apply trigonometric identities.
G.SRT.A	■	Apply trigonometry to general triangles.
G.GPE.A	■	Translate between the geometric description and the equation for a conic section.
S.CP.A	■	Use the rules of probability to compute probabilities of compound events in a uniform probability model.
S.MD.A	■	Calculate expected values and use them to solve problems.
S.MD.B	■	Use probability to evaluate outcomes of decisions.
PC.PC.A	■	Define polar coordinates and the relationship between polar coordinates and Cartesian coordinates.
PC.PE.A	■	Define parametric equations.
PC.L.A	■	Define a continuous function.
PC.L.B	■	Define limits.
PC.S.A	■	Define sequences.

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