Kindergarten

Focus	Additional	Sample
Counting and Cardinality ▨ Know number names and count sequence. ▨ Count to tell the number of objects. ▨ Compare numbers. **Operations and Algebraic Thinking** ▨ Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. **Number and Operations in Base Ten** ▨ Work with numbers 11-19 to grain foundations for place value.	**Geometry** ☐ Identify and describe shapes. ☐ Analyze, compare, create, and compose shapes.	**Measurement and Data** o Describe and compare measurable attributes. o Classify objects in categories.

Depth Opportunities:

CC 4, 5, 6; OA 2, 4

Grade	Required Fluency
K	Add/subtract within 5
1	Add/subtract within 10
2	Add/subtract within 20^1 Add/subtract within 100 (pencil and paper)
3	Multiply/divide within 100^2 Add/subtract within 1000
4	Add/subtract within 1,000,000
5	Multi-digit multiplication
6	Multi-digit division Multi-digit decimal operations
7	Solve $px + q = r, p(x + q) = r$
8	Solve simple 2×2 systems by inspection

Grade 1

Focus	Additional	Sample
Operations and Algebraic Thinking ▨ Represent and solve problems involving addition and subtraction. ▨ Understand and apply properties of operations and the relationship between addition and subtraction. ▨ Add and subtract within 20. ▨ Work with addition and subtraction equations. **Number and Operations in Base Ten** ▨ Extend the counting sequence. ▨ Understand place value. ▨ Use place value understanding and properties of operations to add and subtract. **Measurement and Data** ▨ Measure lengths indirectly and by iterating length units.	Geometry ☐ Reason with shapes and their attributes.	**Measurement and Data** o Tell and write time. o Represent and interpret data.

Depth Opportunities:

OA 1, 6; NBT 2, 4; MD 2

Grade	Required Fluency
K	Add/subtract within 5
1	Add/subtract within 10
2	Add/subtract within 20[1] Add/subtract within 100 (pencil and paper)
3	Multiply/divide within 100[2] Add/subtract within 1000
4	Add/subtract within 1,000,000
5	Multi-digit multiplication
6	Multi-digit division Multi-digit decimal operations
7	Solve $px + q = r$, $p(x + q) = r$
8	Solve simple 2×2 systems by inspection

Grade 2

Focus	Additional	Sample
Operations and Algebraic Thinking ※ Represent and solve problems involving addition and subtraction. ※ Add and subtract within 20. ※ Work with equal groups of objects to gain foundations for multiplication. **Number and Operations in Base Ten** ※ Understand place value. ※ Use place value understanding and properties of operations to add and subtract. **Measurement and Data** ※ Measure and estimate lengths in standard units. ※ Relate addition and subtraction to length.	Geometry ☐ Reason with shapes and their attributes.	**Measurement and Data** o Work with time and money. o Represent and interpret data.

Depth Opportunities:

OA 1, 2; NBT 1, 7; MD 5

Grade	Required Fluency
K	Add/subtract within 5
1	Add/subtract within 10
2	Add/subtract within 20[1] Add/subtract within 100 (pencil and paper)
3	Multiply/divide within 100[2] Add/subtract within 1000
4	Add/subtract within 1,000,000
5	Multi-digit multiplication
6	Multi-digit division Multi-digit decimal operations
7	Solve $px + q = r$, $p(x + q) = r$
8	Solve simple 2×2 systems by inspection

Grade 3

Focus	Additional	Sample
Operations and Algebraic Thinking ▨ Represent and solve problems involving multiplication and division. ▨ Understand the properties of multiplication and the relationship between multiplication and division. ▨ Multiply and divide within 100.[1] ▨ Solve problems involving the four operations, and identify and explain patterns in arithmetic. **Number and Operations – Fractions** ▨ Develop understanding of fractions as numbers. **Measurement and Data** ▨ Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. ▨ Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	**Number and Operations in Base Ten** ☐ Use place value understanding and figures and distinguish between linear and area measures. **Measurement and Data** ☐ Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.	**Measurement and Data** o Represent and interpret data. (*Opportunity to link to multiplication and division problem solving.*) o Reason with shapes and their attributes.

Depth Opportunities:

OA 3, 6; NF 3; MD 2, 7

[1]Cluster contains a fluency standard.

Grade	Required Fluency
K	Add/subtract within 5
1	Add/subtract within 10
2	Add/subtract within 20[1] Add/subtract within 100 (pencil and paper)
3	Multiply/divide within 100[2] Add/subtract within 1000
4	Add/subtract within 1,000,000
5	Multi-digit multiplication
6	Multi-digit division Multi-digit decimal operations
7	Solve $px + q = r, p(x + q) = r$
8	Solve simple 2×2 systems by inspection

Grade 4

Focus	Additional	Sample
Operations and Algebraic Thinking ▪ Use the four operations with whole numbers to solve problems. **Number and Operations in Base Ten** ▪ Generalize place value understanding for multi-digit whole numbers. ▪ Use place value understanding and properties of operations to perform multi-digit arithmetic.[1] **Number and Operations – Fractions** ▪ Extend understanding of fraction equivalence and ordering. ▪ 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.	**Operations and Algebraic Thinking** ☐ Gain familiarity with factors and multiples. **Measurement and Data** ☐ Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. ☐ Geometric measurement: understand concepts of angle and measure angles. ☐ Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	**Operations and Algebraic Thinking** o Generate and analyze patterns. **Measurement and Data** o Represent and interpret data.

Depth Opportunities:

NBT 5, 6; NF 1, 3, 4

[1]Cluster contains a fluency standard.

Grade	Required Fluency
K	Add/subtract within 5
1	Add/subtract within 10
2	Add/subtract within 20[1] Add/subtract within 100 (pencil and paper)
3	Multiply/divide within 100[2] Add/subtract within 1000
4	Add/subtract within 1,000,000
5	Multi-digit multiplication
6	Multi-digit division Multi-digit decimal operations
7	Solve $px + q = r$, $p(x + q) = r$
8	Solve simple 2×2 systems by inspection

Grade 5

Focus	Additional	Sample
Number and Operations in Base Ten ⚏ Understand the place value system. ⚏ Perform operations with multi-digit whole numbers and with decimals to hundredths.[1] **Number and Operations – Fractions** ⚏ Use equivalent fractions as a strategy to add and subtract fractions. ⚏ Apply and extend previous understandings of multiplication and division to multiply and divide fractions. **Measurement and Data** ⚏ Convert like measurement units within a given measurement system. ⚏ Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	**Geometry** ☐ Graph points on the coordinate plane to solve real-world and mathematical problems. ☐ Classify two-dimensional figures into categories based on their properties.	**Operations and Algebraic Thinking** ○ Write and interpret numerical expressions. ○ Analyze patterns and relationships. **Measurement and Data** ○ Represent and interpret data.

Depth Opportunities:

NBT 1, 6; NF 2, 4; MD 5

[1]Cluster contains a fluency standard.

Grade	Required Fluency
K	Add/subtract within 5
1	Add/subtract within 10
2	Add/subtract within 20[1] Add/subtract within 100 (pencil and paper)
3	Multiply/divide within 100[2] Add/subtract within 1000
4	Add/subtract within 1,000,000
5	Multi-digit multiplication
6	Multi-digit division Multi-digit decimal operations
7	Solve $px + q = r, p(x + q) = r$
8	Solve simple 2×2 systems by inspection

Grade 6

Focus	Additional	Sample
Ratios and Proportional Relationships ⌗ Understand ratio concepts and use ratio reasoning to solve problems. **The Number System** ⌗ Apply and extend previous understandings of multiplication and division to divide fractions by fractions. ⌗ Apply and extend previous understandings of arithmetic to algebraic expressions. **Expressions and Equations** ⌗ Reason about and solve one-variable equations and inequalities. ⌗ Represent and analyze quantitative relationships between dependent and independent variables.	**The Number System** ☐ Compute fluently with multi-digit numbers and find common factors and multiples.[1] ☐ Apply and extend previous understandings of numbers to the system of rational numbers. **Geometry** ☐ Solve real-world and mathematical problems involving area, surface area, and volume.	**Statistics and Probability** o Develop understanding of statistical variability. o Summarize and describe distributions.

Depth Opportunities:

RP 3; NS 1; NS 8; EE 3, 7

Grade	Required Fluency
K	Add/subtract within 5
1	Add/subtract within 10
2	Add/subtract within 20[1] Add/subtract within 100 (pencil and paper)
3	Multiply/divide within 100[2] Add/subtract within 1000
4	Add/subtract within 1,000,000
5	Multi-digit multiplication
6	Multi-digit division Multi-digit decimal operations
7	Solve $px + q = r$, $p(x + q) = r$
8	Solve simple 2×2 systems by inspection

[1]Cluster contains a fluency standard.

Grade 7

Focus	Additional	Sample
Ratios and Proportional Relationships ※ Analyze proportional relationships and use them to solve real-world and mathematical problems. **The Number System** ※ Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. **Expressions and Equations** ※ Use properties of operations to generate equivalent expressions. **Geometry** ※ Solve real-life and mathematical problems using numerical and algebraic expressions and equations.[1]	**Expressions and Equations** ☐ Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. **Geometry** ☐ Draw, construct and describe geometrical figures and describe the relationships between them. **Statistics and Probability** ☐ Use random sampling to draw inferences about a population.	**Statistics and Probability** o Investigate chance processes and develop, use, and evaluate probability models. o Draw informal comparative inferences about two populations.

Depth Opportunities:

RP 2; NS 3; EE 3, 4; G 6

[1]Cluster contains a fluency standard.

Grade	Required Fluency
K	Add/subtract within 5
1	Add/subtract within 10
2	Add/subtract within 20[1] Add/subtract within 100 (pencil and paper)
3	Multiply/divide within 100[2] Add/subtract within 1000
4	Add/subtract within 1,000,000
5	Multi-digit multiplication
6	Multi-digit division Multi-digit decimal operations
7	Solve $px + q = r, p(x + q) = r$
8	Solve simple 2×2 systems by inspection

Grade 8

Focus	Additional	Sample
Expressions and Equations ☒ Work with radicals and integer exponents. **Expressions and Equations** ☒ Understand the connections between proportional relationships, lines, and linear equations. ☒ Analyze and solve linear equations and pairs of simultaneous linear equations.[1] **Functions** ☒ Define, evaluate, and compare functions. **Geometry** ☒ Understand and apply the Pythagorean Theorem. ☒ Understand congruence and similarity using physical models, transparencies, or geometry software.	**The Number System** ☐ Know that there are numbers that are not rational, and approximate them by rational numbers. **Functions** ☐ Use functions to model relationships between quantities. **Geometry** ☐ Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.	**Statistics and Probability** ○ Investigate patterns of associate in bivariate data.

Depth Opportunities:

EE 5, 7, 8; F 2; G 7

[1]Cluster contains a fluency standard.

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K	Add/subtract within 5
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3	Multiply/divide within 100[2] Add/subtract within 1000
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High School: Number and Quantity

Focus	Additional	Sample
Quantities ※ Reason quantitatively and use units to solve problems. **The Real Number System** ※ Extend the properties of exponents to rational exponents.	**The Complex Number System** ☐ Perform arithmetic operations with complex numbers. **The Real Number System** ☐ Use properties of rational and irrational numbers.	**The Complex Number System** o Represent complex numbers and their operations on the complex plane. o Use complex numbers in polynomial identities and equations. **Vector and Matrix Quantities** o Represent and model with vector quantities. o Perform operations on vectors. o Perform operations on matrices and use matrices in applications.

Depth Opportunities:

N–NQ 1

Grade	Required Fluency
K	Add/subtract within 5
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3	Multiply/divide within 100[2] Add/subtract within 1000
4	Add/subtract within 1,000,000
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High School: Algebra

Focus	Additional	Sample
Seeing the Structure in Expressions ▧ Interpret the structure of expressions. ▧ Write expressions in equivalent forms to solve problems. **Arithmetic with Polynomials and Rational Expressions** ▧ Perform arithmetic operations on polynomials. ▧ Understand the relationship between zeros and factors of polynomials. **Creating Equations** ▧ Create equations that describe numbers or relationships. **Reasoning with Equations and Inequalities** ▧ Understand solving equations as a process of reasoning and explain the reasoning. ▧ Solve equations and inequalities in one variable. ▧ Solve systems of equations.	**Arithmetic with Polynomials and Rational Expressions** ☐ Rewrite rational expressions. **Reasoning with Equations and Inequalities** ☐ Represent and solve equations and inequalities graphically.	**Arithmetic with Polynomials and Rational Expressions** ○ Use polynomial identities to solve problems.

Depth Opportunities:

A–SSE 2, 3; A–APR 1; A–CED 3; A–REI 4

Grade	Required Fluency
K	Add/subtract within 5
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High School: Functions

Focus	Additional	Sample
Interpreting Functions	**Building Functions**	**Trigonometric Functions**
▣ Understand the concept of a function and understand function notation.	▢ Build new functions from existing functions.	o Extend the domain of trigonometric functions using the unit circle.
▣ Interpret functions that arise in applications in terms of the context.		o Model periodic phenomena with trigonometric functions.
▣ Analyze functions using different representations.		o Prove and apply trigonometric identities.
Building Functions		
▣ Build a function that models a relationship between two quantities.		
Linear, Quadratic and Exponential Models		
▣ Construct and compare linear, quadratic, and exponential models and solve problems.		
▣ Interpret expressions for functions in terms of the situation they model.		

Depth Opportunities:

F-IF 4, 8, 9; F–LE 1

Grade	Required Fluency
K	Add/subtract within 5
1	Add/subtract within 10
2	Add/subtract within 20^1 Add/subtract within 100 (pencil and paper)
3	Multiply/divide within 100^2 Add/subtract within 1000
4	Add/subtract within 1,000,000
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6	Multi-digit division Multi-digit decimal operations
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High School: Geometry

Focus	Additional	Sample
Congruence ※ Prove geometric theorems. **Expressing Geometric Properties with Equations** ※ Use coordinates to prove simple theorems algebraically. **Similarity, Right Triangles, and Trigonometry** ※ Define trigonometric ratios and solve problems involving right triangles. **Modeling with Geometry** ※ Apply geometric concepts in modeling situations.	**Congruence** ☐ Experiment with transformations in the plane. ☐ Understand congruence in terms of rigid motions. ☐ Make geometric constructions. **Circles** ☐ Understand and apply theorems about circles. ☐ Find arc lengths and areas of sectors of circles. **Similarity, Right Triangles, and Trigonometry** ☐ Understand similarity in terms of similarity transformations.	**Similarity, Right Triangles, and Trigonometry** ○ Prove theorems involving similarity. ○ Apply trigonometry to general triangles. **Geometric Measurement and Dimension** ○ Explain volume formulas and use them to solve problems. ○ Visualize relationships between two-dimensional and three-dimensional objects. **Expressing Geometric Properties with Equations** ○ Translate between the geometric description and the equation for a conic section. (Here because of circles.)

Depth Opportunities:

GPE 1, 4, 7; G–MG 2

Grade	Required Fluency
K	Add/subtract within 5
1	Add/subtract within 10
2	Add/subtract within 20[1] Add/subtract within 100 (pencil and paper)
3	Multiply/divide within 100[2] Add/subtract within 1000
4	Add/subtract within 1,000,000
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6	Multi-digit division Multi-digit decimal operations
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High School: Statistics and Probability

Focus	Additional	Sample
Interpreting Categorical and Quantitative Data ▪ Summarize, represent, and interpret data on a single count or measurement variable. ▪ Summarize, represent, and interpret data on two categorical and quantitative variables. **Making Inferences and Justifying Conclusions** ▪ Make inferences and justify conclusions from sample surveys, experiments, and observational studies.	**Making Inferences and Justifying Conclusions** ☐ Understand and evaluate random processes underlying statistical experiments. **Interpreting Categorical and Quantitative Data** ☐ Interpret linear models.	**Conditional Probability and the Rules of Probability** o Understand independence and conditional probabilities of compound events in a uniform probability model. o Use the rules of probability to compute probabilities of compound events in a uniform probability model. **Using Probability to Make Decisions** o Calculate expected values and use them to solve problems. o Use probability to evaluate outcomes of decisions.

Depth Opportunities:

S–ID 3, 5, 6, 9; S–IC 3

Grade	Required Fluency
K	Add/subtract within 5
1	Add/subtract within 10
2	Add/subtract within 20^1 Add/subtract within 100 (pencil and paper)
3	Multiply/divide within 100^2 Add/subtract within 1000
4	Add/subtract within 1,000,000
5	Multi-digit multiplication
6	Multi-digit division Multi-digit decimal operations
7	Solve $px + q = r$, $p(x + q) = r$
8	Solve simple 2×2 systems by inspection