NRS Level 1 Overview

Counting and Cardinality / Numeracy (CC)

- Know number names and the count sequence.
- Count to tell the number of objects
- Compare numbers

Operations and Algebraic Thinking (OA)

- Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from
- Represent and solve problems involving addition and subtraction
- Understand and apply properties and the relationship between addition and subtraction
- Add and subtract within 20
- Work with addition and subtraction equations

Number and Operations in Base Ten (NBT)

- Extend the counting sequence
- Work with numbers 11-19 and tens to gain foundations for place value
- Use place value understanding and properties of operations to add and subtract

Measurement and Data (MD)

- Describe and compare measurable attributes
- Classify objects and count the number of objects in each category
- Measure lengths indirectly and by iterating length units
- Tell and write time
- Represent and interpret data

Geometry (G)

- Identify and describe shapes
- Analyze, compare, create, and compose shapes
- Reason with shapes and their attributes

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.

NRS Level 2 Overview

Operations and Algebraic Thinking (OA)

- Represent and solve problems involving addition and subtraction
- Add and subtract within 20
- Work with equal groups of objects to gain foundations for multiplication
- Represent and solve problems involving multiplication and division
- Understand properties of multiplication and the relationship between multiplication and division
- Multiply and divide within 100
- Solve problems involving the four operations and identify and explain patterns in arithmetic

Number and Operations in Base Ten (NBT)

- Understand place value
- Use place value understanding and properties of operations to add and subtract and to perform multi-digit arithmetic

Number and Operations – Fractions (NF)

- Develop understanding of fractions as numbers

Measurement and Data (MD)

- Measure and estimate lengths in standard units
- Relate addition and subtraction to length
- Work with time and money
- Represent and interpret 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
- Geometric measurement: recognize perimeter as an attribute of plan figures an distinguish between linear and area measures

Geometry (G)

- Reason with shapes and their attributes

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.

NRS Level 3 Overview

Operations and Algebraic Thinking (OA)

- Use the four operations with whole numbers to solve problems
- Gain familiarity with factors and multiples
- Generate and analyze patterns
- Write and interpret numerical expressions
- Analyze patterns and relationships

Number and Operations in Base Ten (NBT)

- Generalize place value understanding for multi-digit whole numbers
- Use place value understanding and properties of operations to perform multi-digit arithmetic
- Understand the place value system
- Perform operations with multi-digit whole numbers and with decimals to hundredths

Number and Operations – Fractions (NF)

- 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
- 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 & Data (MD)

- Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit
- Represent and interpret data
- Geometric measurement: understand concepts of angle and measure angles
- Convert like measurement units within a given measurement system
- Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition

NRS Level 3 Overview (continued)

Geometry (G)

- Draw and identify lines and angles, and classify shapes by properties of their lines and angles
- Graph points on the coordinate plane to solve real-world and mathematical problems
- Classify two-dimensional figures into categories based on their properties

Mathematical Practices

1. Make sense of problems and persevere in solving them.
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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.

NRS Level 4 Overview

Ratios and Proportional Relationships (RP)

- Understand ratio concepts and use ratio reasoning to solve problems
- Analyze proportional relationships and use them to solve real-world and mathematical problems

The Number System (NS)

- Apply and extend previous understandings of multiplication and division to divide fractions by fractions
- Compute fluently with multi-digit numbers and find common factors and multiples
- Apply and extend previous understandings of numbers to the system of rational numbers
- Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers
- Know that there are numbers that are not rational, and approximate them by rational numbers

Expressions and Equations (EE)

- Apply and extend previous understandings of arithmetic to algebraic expressions
- Reason about and solve one-variable equations and inequalities
- Represent and analyze quantitative relationships between dependent and independent variables
- Use properties of operations to generate equivalent expressions
- Solve real-life and mathematical problems using numerical and algebraic expressions and equations
- Work with radicals and integer exponents
- Understand the connections between proportional relationships, lines, and linear equations
- Analyze and solve linear equations and pairs of simultaneous linear equations

Functions (F)

- Define, evaluate, and compare functions
- Use functions to model relationships between quantities

NRS Level 4 Overview (continued)

Geometry (G)

- Solve real-world and mathematical problems involving area, surface area, and volume
- Draw, construct, and describe geometrical figures and describe the relationship between them
- Solve real-life and mathematical problems involving angle measure, area, surface area, and volume
- Understand congruence and similarity using physical models, transparencies, or geometry software
- Understand and apply the Pythagorean Theorem
- Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres

Statistics and Probability (SP)

- Develop understanding of statistical variability
- Summarize and describe distributions
- Use random sampling to draw inferences about a population
- Draw informal comparative inferences about two populations
- Investigate chance processes and develop, use, and evaluate probability models
- Investigate patterns of association in bivariate data

Mathematical Practices

1. Make sense of problems and persevere in solving them.
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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.