

**LEVELS**

**K**  
Kindergarten

**A**  
Grade 1

**B**  
Grade 2

**C**  
Grade 3

**D**  
Grade 4

**E**  
Grade 5

**F**  
Grade 6

**G**  
Grade 7

**H**  
Grade 8

Levels A-H correspond to grades 1 to 8 in the Common Core State Standards. During transition to CCSS, some topics may be taught in earlier or later grade levels.

**OPERATIONS & ALGEBRAIC THINKING**

**Level K**

**K.A1** Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

**Level A**

**A.A1** Represent and solve problems involving addition and subtraction.  
**A.A2** Understand and apply properties of operations and the relationship between addition and subtraction.  
**A.A3** Add and subtract within 20. [Be fluent within 10.]  
**A.A4** Work with addition and subtraction equations.

**Level B**

**B.A1** Represent and solve problems involving addition and subtraction.  
**B.A2** Add and subtract [fluently] within 20.  
**B.A3** Work with equal groups of objects to gain foundations for multiplication.

**Level C**

**C.A1** Represent and solve problems involving multiplication and division.  
**C.A2** Understand properties of multiplication and the relationship between multiplication and division.  
**C.A3** Multiply and divide within 100.  
**C.A4** Solve problems involving the four operations, and identify and explain patterns in arithmetic.

**Level D**

**D.A1** Use the four operations with whole numbers to solve problems.  
**D.A2** Gain familiarity with factors and multiples.  
**D.A3** Generate and analyze patterns.

**Level E**

**E.A1** Write and interpret numerical expressions.  
**E.A2** Analyze patterns and relationships.

**EXPRESSIONS & EQUATIONS**

**Level F**

**F.E1** Apply and extend previous understandings of arithmetic to algebraic expressions.  
**F.E2** Reason about and solve one-variable equations and inequalities.  
**F.E3** Represent and analyze quantitative relationships between dependent and independent variables.

**Level G**

**G.E1** Use properties of operations to generate equivalent expressions.  
**G.E2** Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

**Level H (Includes Functions Domain)**

**H.E1** Work with radicals and integer exponents.  
**H.E2** Understand the connections between proportional relationships, lines, and linear equations.  
**H.E3** Analyze and solve linear equations and pairs of simultaneous linear equations.  
**H.E4** Define, evaluate, and compare functions.  
**H.E5** Use functions to model relationships between quantities.

**NUMBER & OPERATIONS IN BASE TEN**

**Level K**

**K.B1** Work with numbers 11-19 to gain foundations for place value.

**Level A**

**A.B1** Extend the counting sequence [to 120].  
**A.B2** Understand place value [to 100].  
**A.B3** Use place value understanding and properties of operations to add and subtract [within 100].

**Level B**

**B.B1** Understand place value [to 1000].  
**B.B2** Use place value understanding and properties of operations to add and subtract [within 1000, fluently within 100].

**Level C**

**C.B1** Use place value and properties of operations to perform multi-digit arithmetic. [Add & subtract fluently within 1000. Multiply 10s by 1-digit numbers.]

**Level D**

**D.B1** Generalize place value understanding for multi-digit whole numbers [to 1,000,000].  
**D.B2** Use place value understanding and properties of operations to perform multi-digit arithmetic. [Add & subtract fluently. Multiply & divide numbers up to 4-digits by 1-digit, and multiply two 2-digit numbers.]

**Level E**

**E.B1** Understand the place value system.  
**E.B2\*** Perform operations with multi-digit whole numbers. [Divide by 2-digit numbers. Fluently add, subtract, multiply.]  
**E.B3\*** Perform operations with decimals to hundredths.

**THE NUMBER SYSTEM**

**Level F**

**F.N1** Apply and extend previous understandings of multiplication and division to divide fractions by fractions.  
**F.N2** Compute fluently [all operations] with multi-digit numbers and find common factors and multiples.  
**F.N3** Apply and extend previous understandings of numbers to the system of rational numbers.

**Level G**

**G.N1\*** Apply and extend previous understandings of operations with fractions to add and subtract rational numbers.  
**G.N2\*** Apply and extend previous understandings of operations with fractions to multiply and divide rational numbers.

**Level H**

**H.N1** Know that there are numbers that are not rational, and approximate them by rational numbers.

**CONTENT CODES**  
**Common Core State Standards**  
**MATH K-8**

This chart shows all cluster overview statements from CCSS by strands, along with content codes for practice and assessment items. Content in brackets is for clarification purposes only.

**COUNTING & CARDINALITY**

**Level K**

**K.C1** Know number names and the count sequence.  
**K.C2** Count to tell the number of objects.  
**K.C3** Compare numbers.

**NUMBER & OPERATIONS WITH FRACTIONS**

**Level C**

**C.F1** Develop understanding of fractions as numbers. [Use denominators of 2, 3, 4, 6, and 8.]

**Level D**

**D.F1** Extend understanding of fraction equivalence and ordering.  
**D.F2** Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.  
**D.F3** Understand decimal notation for fractions, and compare decimal fractions.

**Level E**

**E.F1** Use equivalent fractions as a strategy to add and subtract fractions.  
**E.F2** Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

**RATIOS & PROPORTIONAL RELATIONSHIPS**

**Level F**

**F.R1** Understand ratio concepts and use ratio reasoning [and percents] to solve problems.

**Level G**

**G.R1\*** Analyze proportional relationships and use them to solve real-world and mathematical problems.  
**G.R2\*** Solve multistep percent problems.

**GEOMETRY**

**Level K**

**K.G1** Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).  
**K.G2** Analyze, compare, create, and compose shapes.

**Level A**

**A.G1** Reason with shapes and their attributes. [Partition circles & rectangles into 2 or 4 equal parts.]

**Level B**

**B.G1** Reason with shapes and their attributes. [Identify shapes by the number of sides.]

**Level C**

**C.G1** Reason with shapes and their attributes. [Identify types of quadrilaterals.]

**Level D**

**D.G1** Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

**Level E**

**E.G1** Graph points on the coordinate plane to solve real-world and mathematical problems.  
**E.G2** Classify two-dimensional figures into categories based on their properties.

**Level F**

**F.G1** Solve real-world and mathematical problems involving area, surface area, and volume.

**Level G**

**G.G1** Draw, construct, and describe geometrical figures and describe the relationships between them.  
**G.G2** Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

**Level H**

**H.G1** Understand congruence and similarity using physical models, transparencies, or geometry software.  
**H.G2** Understand and apply the Pythagorean Theorem.  
**H.G3** Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

**MEASUREMENT & DATA**

**Level K**

**K.M1** Describe and compare measurable attributes.  
**K.M2** Classify objects and count the number of objects in each category.

**Level A**

**A.M1** Measure lengths indirectly and by iterating length units.  
**A.M2** Tell and write time.  
**A.M3** Represent and interpret data.

**Level B**

**B.M1** Measure and estimate lengths in standard units.  
**B.M2** Relate addition and subtraction to length.  
**B.M3** Work with time and money.  
**B.M4** Represent and interpret data.

**Level C**

**C.M1** Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.  
**C.M2** Represent and interpret data.  
**C.M3** Understand concepts of area and relate area to multiplication and to addition.  
**C.M4** Recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

**Level D**

**D.M1** Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.  
**D.M2** Represent and interpret data.  
**D.M3** Understand concepts of angle and measure angles.

**Level E**

**E.M1** Convert like measurement units within a given measurement system.  
**E.M2** Represent and interpret data.  
**E.M3** Understand concepts of volume and relate volume to multiplication and to addition.

**STATISTICS & PROBABILITY**

**Level F**

**F.S1** Develop understanding of statistical variability.  
**F.S2** Summarize and describe distributions.

**Level G**

**G.S1** Use random sampling to draw inferences about a population.  
**G.S2** Draw informal comparative inferences about two populations.  
**G.S3** Investigate chance processes & develop, use, and evaluate probability models.

**Level H**

**H.S1** Investigate patterns of association in bivariate data.

\*Part of cluster was divided for assessment.

# Checklist of Problem Types

## MATH Level K

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NAME \_\_\_\_\_

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### COUNTING & CARDINALITY

#### K.C1 Know number names and the count sequence.

- \_\_\_ 1 Count to 100 by ones and by tens.
- \_\_\_ 2 Count forward in known range beginning from any number.
- \_\_\_ 3 Write numerals from 0 to 9.
- \_\_\_ 4 Write a stated number 0 to 20 when given verbal name.

#### K.C2 Count to tell the number of objects.

- \_\_\_ 1 Count objects accurately by saying one number for each object.
- \_\_\_ 2 Write the number of objects that have been counted.
- \_\_\_ 3 Given a row of objects and the number, write the number for a row that has one more.
- \_\_\_ 4 Write the number for up to 10 objects in any configuration.
- \_\_\_ 5 Write the number for up to 20 objects in a line.
- \_\_\_ 6 Write the number for up to 20 objects in a circle.
- \_\_\_ 7 Write the number for up to 20 objects in an array.

#### K.C3 Compare numbers.

- \_\_\_ 1 Compare two groups of up to 10 objects by one-to-one matching.
- \_\_\_ 2 Compare two groups of up to 10 objects by counting.
- \_\_\_ 3 Compare two numbers between 1 and 10 presented as written numerals.

### OPERATIONS & ALGEBRAIC THINKING

#### K.A1 Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

- \_\_\_ 1 Represent addition and subtraction with objects, fingers, or claps.
- \_\_\_ 2 Represent addition and subtraction with drawings.
- \_\_\_ 3 Represent addition and subtraction with equations.
- \_\_\_ 4 Add within 10 by using objects or drawings.
- \_\_\_ 5 Subtract within 10 by using objects or drawings.
- \_\_\_ 6 Decompose numbers to 10 into pairs in more than one way.
- \_\_\_ 7 Find missing addends to make 10 by using objects or drawings.
- \_\_\_ 8 Fluently add and subtract within 5.

### NUMBER & OPERATIONS IN BASE TEN

#### K.B1 Work with numbers 11–19 to gain foundations for place value.

- \_\_\_ 1 Combine a group of 10 objects with a group of up to 9 objects and write the number sentence.
- \_\_\_ 2 Separate a group of 11 to 19 objects into 10 and ones, and write the number sentence.
- \_\_\_ 3 Write the missing number in a sentence that represents composition or decomposition of 11-19. (i.e.  $10 + \underline{\quad} = 14$ )

### GEOMETRY

#### K.G1 Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

- \_\_\_ 1 Identify squares, circles, triangles, rectangles, and hexagons.
- \_\_\_ 2 Identify cubes, cones, cylinders, and spheres.
- \_\_\_ 3 Describe relative positions of shapes using terms such as above, below, beside, in front of, behind, and next to.
- \_\_\_ 4 Understand that a shape can have any orientation or size.
- \_\_\_ 5 Identify shapes as flat or solid.

#### K.G2 Analyze, compare, create, and compose shapes.

- \_\_\_ 1 Analyze and compare two-dimensional shapes.
- \_\_\_ 2 Analyze and compare three-dimensional shapes.
- \_\_\_ 3 Build simple models of flat shapes.
- \_\_\_ 4 Draw simple two-dimensional shapes.
- \_\_\_ 5 Build simple models of solid shapes.
- \_\_\_ 6 Put simple flat shapes together to form larger shapes.

### MEASUREMENT & DATA

#### K.M1 Describe and compare measurable attributes.

- \_\_\_ 1 Describe measurable attributes of objects, such as length or weight.
- \_\_\_ 2 Directly compare objects to see which is taller/shorter.
- \_\_\_ 3 Directly compare objects to see which is longer/shorter.
- \_\_\_ 4 Directly compare objects to see which is heavier/lighter.

#### K.M2 Classify objects and count the number of objects in each category.

- \_\_\_ 1 Given a group of mixed objects, classify objects into given categories.
- \_\_\_ 2 For a group of mixed objects, count objects in a given category.
- \_\_\_ 3 Tell which category has the most/least objects.
- \_\_\_ 4 Given a group of mixed objects, sort the categories by count.

# Checklist of Problem Types

## MATH Level A

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NAME \_\_\_\_\_

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### OPERATIONS & ALGEBRAIC THINKING

#### A.A1 Represent and solve problems involving addition and subtraction.

- \_\_\_ 1 Add and subtract within 20 to solve word problems about combining or separating.
- \_\_\_ 2 Add and subtract within 20 to solve word problems about comparing.
- \_\_\_ 3 Use objects or drawings to represent word problems.
- \_\_\_ 4 Use equations to represent word problems.
- \_\_\_ 5 Add three numbers with sums to 20 to solve word problems.

#### A.A2 Understand and apply properties of operations and the relationship between addition and subtraction.

- \_\_\_ 1 Apply the commutative property for addition.
- \_\_\_ 2 Apply the associative property when adding three numbers.
- \_\_\_ 3 Relate subtraction to finding a missing addend.

#### A.A3 Add and subtract within 20.

- \_\_\_ 1 Relate counting on or back to adding or subtracting 1 or 2.
- \_\_\_ 2 Relate counting on or back to adding or subtracting 3.
- \_\_\_ 3 Add fluently within 10.
- \_\_\_ 4 Subtract fluently within 10.
- \_\_\_ 5 Find sums greater than 10 by decomposing to make 10.
- \_\_\_ 6 Subtract from numbers greater than 10 by decomposing to make 10.
- \_\_\_ 7 Subtract by recalling addition facts.
- \_\_\_ 8 Add within 20 (using various strategies).
- \_\_\_ 9 Subtract within 20 (using various strategies).

#### A.A4 Work with addition and subtraction equations.

- \_\_\_ 1 Determine if equations involving addition and/or subtraction are true or false.
- \_\_\_ 2 Find a missing number in an addition equation.
- \_\_\_ 3 Find a missing number in a subtraction equation.

### NUMBER & OPERATIONS IN BASE TEN

#### A.B1 Extend the counting sequence.

- \_\_\_ 1 Count to 120, starting at any number less than 120.
- \_\_\_ 2 Read and write numbers to 120.
- \_\_\_ 3 Represent a number of objects to 120 with a written numeral.

#### A.B2 Understand place value.

- \_\_\_ 1 Understand that the two digits of a two-digit number represent amounts of tens and ones.
- \_\_\_ 2 Understand how to represent numbers from 11 to 19 as a 10 and ones.
- \_\_\_ 3 Understand that 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to tens with no ones.
- \_\_\_ 4 Compare numbers to 20 using the symbols  $>$ ,  $=$ , and  $<$ .
- \_\_\_ 5 Compare two 2-digit numbers using the symbols  $>$ ,  $=$ , and  $<$ .

#### A.B3 Use place value understanding and properties of operations to add and subtract.

- \_\_\_ 1 Add within 100 using models or drawings.
- \_\_\_ 2 Add a two-digit number and a one-digit number.
- \_\_\_ 3 Add a two-digit number and a multiple of 10.
- \_\_\_ 4 Add two two-digit numbers, with or without composing a ten.
- \_\_\_ 5 Mentally find 10 more or 10 less than any two-digit number.
- \_\_\_ 6 Subtract with multiples of 10 using models or drawings.
- \_\_\_ 7 Subtract with multiples of 10 using place value.
- \_\_\_ 8 Subtract with multiples of 10 by relating to addition.

### GEOMETRY

#### A.G1 Reason with shapes and their attributes.

- \_\_\_ 1 Sort shapes by a defining attribute such as the number of sides.
- \_\_\_ 2 Draw shapes with a given defining attribute.
- \_\_\_ 3 Combine two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) to create a composite shape.
- \_\_\_ 4 Combine three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape.
- \_\_\_ 5 Partition circles and rectangles into two and four equal shares.
- \_\_\_ 6 Describe shares of wholes using the words halves, fourths, and quarters.

### MEASUREMENT & DATA

#### A.M1 Measure lengths indirectly and by iterating length units.

- \_\_\_ 1 Order three objects by length.
- \_\_\_ 2 Compare the lengths of two objects indirectly by using a third object.
- \_\_\_ 3 Repeat a short object end-to-end to measure a longer object.
- \_\_\_ 4 When measuring, know that there cannot be gaps or overlaps.

#### A.M2 Tell and write time.

- \_\_\_ 1 Tell and write time in hours using analog clocks.
- \_\_\_ 2 Tell and write time in half-hours using analog clocks.
- \_\_\_ 3 Tell and write time in hours and half-hours using digital clocks.

#### A.M3 Represent and interpret data.

- \_\_\_ 1 Organize and represent data with up to three categories.
- \_\_\_ 2 Interpret data with up to three categories.

# Checklist of Problem Types

## MATH Level B

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NAME \_\_\_\_\_

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### OPERATIONS & ALGEBRAIC THINKING

#### B.A1 Represent and solve problems involving addition and subtraction.

- \_\_\_ 1 Add and subtract within 100 to solve word problems about combining or separating.
- \_\_\_ 2 Add and subtract within 100 to solve word problems about comparing.
- \_\_\_ 3 Use objects or drawings to represent word problems.
- \_\_\_ 4 Use equations to represent word problems.

#### B.A2 Add and subtract within 20.

- \_\_\_ 1 Fluently add within 20 using mental strategies.
- \_\_\_ 2 Fluently subtract within 20 using mental strategies.
- \_\_\_ 3 Know from memory all sums of two one-digit numbers.

#### B.A3 Work with equal groups of objects to gain foundations for multiplication.

- \_\_\_ 1 Find out if a group of up to 20 objects is even or odd.
- \_\_\_ 2 Express an even number as a sum of two equal addends.
- \_\_\_ 3 Add to find the number shown by an array with up to 5 rows and 5 columns.
- \_\_\_ 4 Write an equation for an array as a sum of equal addends.

### NUMBER & OPERATIONS IN BASE TEN

#### B.B1 Understand place value.

- \_\_\_ 1 Understand that a three-digit number represents hundreds, tens, and ones.
- \_\_\_ 2 Understand that a hundred is 10 tens.
- \_\_\_ 3 Understand that 100, 200, and so on refer to hundreds with 0 tens and 0 ones.
- \_\_\_ 4 Count by 5s, 10s, and 100s within 1000.
- \_\_\_ 5 Read and write numbers to 1000.
- \_\_\_ 6 Represent numbers to 1000 as written numerals.
- \_\_\_ 7 Write numbers to 1000 in expanded form.
- \_\_\_ 8 Compare two 3-digit numbers using the symbols  $>$ ,  $=$ , and  $<$ .

#### B.B2 Use place value understanding and properties of operations to add and subtract.

- \_\_\_ 1 Fluently add within 100 using various strategies.
- \_\_\_ 2 Fluently subtract within 100 using various strategies.
- \_\_\_ 3 Add up to four 2-digit numbers using various strategies.
- \_\_\_ 4 Add within 1000 using models or drawings.
- \_\_\_ 5 Add within 1000 using place value strategies.
- \_\_\_ 6 Subtract within 1000 using models or drawings.
- \_\_\_ 7 Subtract within 1000 using place value strategies.
- \_\_\_ 8 Mentally find 10 or 100 more or less than any three-digit number.
- \_\_\_ 9 Explain why addition and subtraction strategies work.

### GEOMETRY

#### B.G1 Reason with shapes and their attributes.

- \_\_\_ 1 Draw shapes having a given number of angles or sides.
- \_\_\_ 2 Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
- \_\_\_ 3 Partition a rectangle into squares and count the squares.
- \_\_\_ 4 Partition circles and rectangles into two, three, or four equal shares.
- \_\_\_ 5 Describe shares using the words halves, thirds, half of, a third of, etc.
- \_\_\_ 6 Recognize that equal shares need not have the same shape.

### MEASUREMENT & DATA

#### B.M1 Measure and estimate lengths in standard units.

- \_\_\_ 1 Measure in inches, feet, centimeters, and meters.
- \_\_\_ 2 Measure an object with two units and relate the measurements to the unit size.
- \_\_\_ 3 Estimate lengths in inches, feet, centimeters, and meters.
- \_\_\_ 4 Measure to find out how much longer one object is than another.

#### B.M2 Relate addition and subtraction to length.

- \_\_\_ 1 Use drawings and equations to solve word problems involving lengths.
- \_\_\_ 2 Represent sums and differences within 100 on a number line diagram.

#### B.M3 Work with time and money.

- \_\_\_ 1 Tell and write time to the nearest five minutes.
- \_\_\_ 2 Write times using a.m. and p.m.
- \_\_\_ 3 Solve word problems involving dollar bills and coins, using \$ and ¢ symbols.

#### B.M4 Represent and interpret data.

- \_\_\_ 1 Make a line plot of measurement data, measured to nearest whole unit.
- \_\_\_ 2 Draw a bar graph with up to four categories.
- \_\_\_ 3 Draw a picture graph with up to four categories.
- \_\_\_ 4 Add or subtract to solve problems about data presented in a bar graph.

# Checklist of Problem Types

## MATH Level C

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### OPERATIONS & ALGEBRAIC THINKING

#### C.A1 Represent and solve problems involving multiplication and division.

- \_\_\_ 1 Interpret multiplication as the total of equal groups.
- \_\_\_ 2 Interpret division as sharing equally or making equal shares.
- \_\_\_ 3 Use multiplication and division to solve word problems.
- \_\_\_ 4 Find the missing number in a multiplication or division equation.

#### C.A2 Understand properties of multiplication and the relationship between multiplication and division.

- \_\_\_ 1 Apply the commutative and associative properties for multiplication.
- \_\_\_ 2 Apply the distributive property when learning basic facts.
- \_\_\_ 3 Relate division to finding a missing factor.

#### C.A3 Multiply and divide within 100.

- \_\_\_ 1 Fluently multiply to find products of two one-digit numbers.
- \_\_\_ 2 Fluently divide numbers to 100 by one-digit numbers.

#### C.A4 Solve problems involving the four operations, and identify and explain patterns in arithmetic.

- \_\_\_ 1 Represent and solve two-step word problems using addition and/or subtraction.
- \_\_\_ 2 Represent and solve two-step word problems using multiplication and/or division.
- \_\_\_ 3 Represent and solve two-step word problems using any two operations.
- \_\_\_ 4 Identify and explain arithmetic patterns.

### NUMBER & OPERATIONS IN BASE TEN

#### C.B1 Use place value understanding and properties of operations to perform multi-digit arithmetic.

- \_\_\_ 1 Round numbers to the nearest 10 or 100.
- \_\_\_ 2 Fluently add numbers with sums to 1000.
- \_\_\_ 3 Fluently subtract from numbers to 1000.
- \_\_\_ 4 Subtract by relating to addition.
- \_\_\_ 5 Multiply one-digit numbers by multiples of 10 up to 90.

### NUMBER & OPERATIONS WITH FRACTIONS

#### C.F1 Develop understanding of fractions as numbers. [Use denominators of 2, 3, 4, 6, and 8.]

- \_\_\_ 1 Write a fraction to represent one or more equal parts of a whole unit.
- \_\_\_ 2 Write fractions to represent lengths of intervals on a number line.
- \_\_\_ 3 Write fractions to represent locations on a number line.
- \_\_\_ 4 Recognize that equivalent fractions are the same size.
- \_\_\_ 5 Recognize and generate simple equivalent fractions.
- \_\_\_ 6 Recognize fractions equivalent to whole numbers.
- \_\_\_ 7 Compare two fractions with the same numerator or denominator.

### GEOMETRY

#### C.G1 Reason with shapes and their attributes.

- \_\_\_ 1 Categorize quadrilaterals including rhombuses, rectangles, and squares by their attributes.
- \_\_\_ 2 Partition shapes into parts with equal areas to represent unit fractions.

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DATE \_\_\_\_\_

### MEASUREMENT & DATA

#### C.M1 Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.

- \_\_\_ 1 Write time to the nearest minute.
- \_\_\_ 2 Measure time intervals in minutes.
- \_\_\_ 3 Solve word problems involving time intervals.
- \_\_\_ 4 Measure and estimate liquid volume in liters.
- \_\_\_ 5 Solve word problems involving liquid volume.
- \_\_\_ 6 Measure and estimate mass in grams and kilograms.
- \_\_\_ 7 Solve word problems involving mass.

#### C.M2 Represent and interpret data.

- \_\_\_ 1 Draw a bar graph using an appropriate scale.
- \_\_\_ 2 Solve problems using information from graphs.
- \_\_\_ 3 Make line plots of data measured using rulers to 1/4 inch.

#### C.M3 Understand concepts of area and relate area to multiplication and to addition.

- \_\_\_ 1 Understand that area is measured in square units.
- \_\_\_ 2 Count unit squares to measure area.
- \_\_\_ 3 Relate area of a rectangle to multiplication.
- \_\_\_ 4 Solve real-world problems involving area.
- \_\_\_ 5 Represent products as rectangular areas.
- \_\_\_ 6 Use area models to represent the distributive property.
- \_\_\_ 7 Find areas by decomposing figures to make rectangles.

#### C.M4 Recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

- \_\_\_ 1 Find the perimeter of a polygon.
- \_\_\_ 2 Find an unknown side length in a polygon.
- \_\_\_ 3 Compare perimeters of two rectangles with the same area.
- \_\_\_ 4 Compare areas of two rectangles with the same perimeter.

## Checklist of Problem Types

# MATH Level D

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### NUMBER & OPERATIONS IN BASE TEN

#### D.B1 Generalize place value understanding for multi-digit whole numbers.

- \_\_\_ 1 Relate place value to multiplication and division by 10.
- \_\_\_ 2 Read and write numbers to 1 million.
- \_\_\_ 3 Convert between standard and expanded forms of whole numbers.
- \_\_\_ 4 Compare whole numbers up to 1 million.
- \_\_\_ 5 Round multi-digit whole numbers to any place.
- \_\_\_ 6 Add and subtract whole numbers using place-value concepts.

#### D.B2 Use place value understanding and properties of operations to perform multi-digit arithmetic.

- \_\_\_ 1 Add multi-digit numbers using the standard algorithm.
- \_\_\_ 2 Subtract multi-digit number using the standard algorithm.
- \_\_\_ 3 Multiply 2-digit by 1-digit numbers using place value and/or models.
- \_\_\_ 4 Multiply 3- and 4-digit by 1-digit numbers using place value and/or models.
- \_\_\_ 5 Multiply 2-digit by 2-digit numbers using place value and/or models.
- \_\_\_ 6 Relate division and multiplication.
- \_\_\_ 7 Divide 2-digit dividends by 1-digit divisors using place value and/or models.
- \_\_\_ 8 Divide 3- and 4-digit dividends by 1-digit divisors using place value and/or models.

### GEOMETRY

#### D.G1 Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

- \_\_\_ 1 Identify and draw points, lines, and line segments.
- \_\_\_ 2 Identify and draw parallel and perpendicular lines.
- \_\_\_ 3 Identify and draw rays and acute, right, and obtuse angles.
- \_\_\_ 4 Classify and identify triangles by angles.
- \_\_\_ 5 Identify and draw lines of symmetry.

### NUMBER & OPERATIONS WITH FRACTIONS

#### D.F1 Extend understanding of fraction equivalence and ordering.

- \_\_\_ 1 Identify equivalent fractions using models.
- \_\_\_ 2 Write fractions equivalent to a given fraction.
- \_\_\_ 3 Compare fractions by rewriting them with a common denominator.
- \_\_\_ 4 Compare fractions by using models.
- \_\_\_ 5 Compare fractions by comparing to benchmarks.

#### D.F2 Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

- \_\_\_ 1 Decompose fractions and mixed numbers, and write as equations.
- \_\_\_ 2 Add and subtract fractions with like denominators.
- \_\_\_ 3 Add and subtract mixed numbers with like denominators.
- \_\_\_ 4 Add and subtract fractions to solve word problems.
- \_\_\_ 5 Decompose a non-unit fraction as a whole number times a unit fraction.
- \_\_\_ 6 Multiply fractions by whole numbers.

#### D.F3 Understand decimal notation for fractions, and compare decimal fractions.

- \_\_\_ 1 Express fractions in tenths as hundredths.
- \_\_\_ 2 Add fractions in tenths and hundredths.
- \_\_\_ 3 Convert between decimals and fractions in tenths or hundredths.
- \_\_\_ 4 Locate decimals on a number line.
- \_\_\_ 5 Compare two decimals to hundredths.

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### OPERATIONS & ALGEBRAIC THINKING

#### D.A1 Use the four operations with whole numbers to solve problems.

- \_\_\_ 1 Interpret multiplication as "times as many."
- \_\_\_ 2 Distinguish multiplicative from additive comparison in word problems.
- \_\_\_ 3 Solve number sentences involving multiple operations.
- \_\_\_ 4 Solve multi-step word problems using number sentences.
- \_\_\_ 5 Interpret remainders in division problems.
- \_\_\_ 6 Estimate to assess reasonableness of answers.

#### D.A2 Gain familiarity with factors and multiples.

- \_\_\_ 1 List factors pairs for numbers 1 to 100.
- \_\_\_ 2 Recognize factors and multiples.
- \_\_\_ 3 Recognize prime and composite numbers.

#### D.A3 Generate and analyze patterns.

- \_\_\_ 1 Complete number patterns.
- \_\_\_ 2 Generate number or shape patterns from rules.
- \_\_\_ 3 Identify and explain features of patterns.

### MEASUREMENT & DATA

#### D.M1 Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

- \_\_\_ 1 Compare measurement units and convert from larger to smaller units.
- \_\_\_ 2 Create or complete tables of equivalent measurements.
- \_\_\_ 3 Solve problems involving distance, time, and elapsed time.
- \_\_\_ 4 Solve problems involving capacity (liquid volume) and weight (mass).
- \_\_\_ 5 Solve problems involving money.
- \_\_\_ 6 Represent measurements on number line diagrams.
- \_\_\_ 7 Solve problems involving area of rectangles.
- \_\_\_ 8 Solve problems involving perimeter of rectangles.

#### D.M2 Represent and interpret data.

- \_\_\_ 1 Make line plots using data including fractions.
- \_\_\_ 2 Solve problems involving data shown on a line plot.

#### D.M3 Understand concepts of angle and measure angles.

- \_\_\_ 1 Relate degrees to fractions of a circle.
- \_\_\_ 2 Measure and draw angles using a protractor.
- \_\_\_ 3 Solve problems involving angle measurements.

# Checklist of Problem Types

## MATH Level E

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### NUMBER & OPERATIONS IN BASE TEN

#### E.B1 Understand the place value system.

- \_\_\_1 Relate place value to multiplying by 10 or  $1/10$ .
- \_\_\_2 Multiply and divide whole numbers by powers of 10.
- \_\_\_3 Multiply and divide decimals by powers of 10.
- \_\_\_4 Write powers of 10 using exponents.
- \_\_\_5 Read and write decimals to thousandths.
- \_\_\_6 Convert between standard and expanded forms of decimals.
- \_\_\_7 Compare decimals to thousandths.
- \_\_\_8 Round decimals to any place.

#### E.B2 Perform operations with multi-digit whole numbers.

- \_\_\_1 Multiply whole numbers up to 4-digit by 1-digit using the standard algorithm.
- \_\_\_2 Multiply whole numbers up to 2-digit by 2-digit using the standard algorithm.
- \_\_\_3 Relate division to multiplication by multiples of 10.
- \_\_\_4 Divide 3-digit dividends by multiples of 10 using place value and/or models.
- \_\_\_5 Relate division to multiplication by 2-digit factors.
- \_\_\_6 Divide 3- and 4-digit dividends by 2-digit divisors using place value and/or models.

#### E.B3 Perform operations with decimals to hundredths.

- \_\_\_1 Relate addition and subtraction of decimals.
- \_\_\_2 Add and subtract decimals to hundredths using place value and/or models.
- \_\_\_3 Relate multiplication and division of decimals.
- \_\_\_4 Multiply and divide decimals to hundredths using place value and/or models.

### OPERATIONS & ALGEBRAIC THINKING

#### E.A1 Write and interpret numerical expressions.

- \_\_\_1 Evaluate numerical expressions with parentheses.
- \_\_\_2 Write and interpret numerical expressions.

#### E.A2 Analyze patterns and relationships.

- \_\_\_1 Write and compare two patterns given two rules.
- \_\_\_2 Identify features of related patterns in tables or graphs.

### NUMBER & OPERATIONS WITH FRACTIONS

#### E.F1 Use equivalent fractions as a strategy to add and subtract fractions.

- \_\_\_1 Write equivalent fractions.
- \_\_\_2 Add and subtract fractions with unlike denominators.
- \_\_\_3 Add and subtract mixed numbers with unlike denominators.
- \_\_\_4 Add and subtract fractions to solve word problems.
- \_\_\_5 Add and subtract mixed numbers to solve word problems.
- \_\_\_6 Assess reasonableness of answers by using benchmarks and number sense.

#### E.F2 Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

- \_\_\_1 Interpret fractions as division to solve word problems.
- \_\_\_2 Multiply whole numbers by fractions.
- \_\_\_3 Represent multiplication of fractions using area models.
- \_\_\_4 Multiply fractions by fractions.
- \_\_\_5 Multiply fractions and mixed numbers to solve word problems.
- \_\_\_6 Divide unit fractions by whole numbers using models.
- \_\_\_7 Divide whole numbers by unit fractions using models.
- \_\_\_8 Relate division to multiplication of fractions.
- \_\_\_9 Divide with unit fractions and whole numbers to solve problems.

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### GEOMETRY

#### E.G1 Graph points on the coordinate plane to solve real-world and mathematical problems.

- \_\_\_1 Graph and identify points with positive coordinates on a coordinate system.
- \_\_\_2 Use coordinates (positive only) to represent and solve problems.
- \_\_\_3 Use coordinates to analyze geometric shapes.

#### E.G2 Classify two-dimensional figures into categories based on their properties.

- \_\_\_1 Classify and identify quadrilaterals.
- \_\_\_2 Recognize categories and create hierarchies of shapes.

### MEASUREMENT & DATA

#### E.M1 Convert like measurement units within a given measurement system.

- \_\_\_1 Convert metric measurements.
- \_\_\_2 Convert conventional measurements.

#### E.M2 Represent and interpret data.

- \_\_\_1 Make line plots using data including fractions.
- \_\_\_2 Solve problems about line plots.

#### E.M3 Understand concepts of volume and relate volume to multiplication and to addition.

- \_\_\_1 Identify a cube as a unit of volume.
- \_\_\_2 Measure volume by counting unit cubes.
- \_\_\_3 Add and/or multiply to find volumes of rectangular prisms.
- \_\_\_4 Solve problems involving volume of rectangular prisms (with whole numbers as lengths).
- \_\_\_5 Solve problems involving volumes of connected prisms.

# Checklist of Problem Types

## MATH Level F

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### THE NUMBER SYSTEM

#### F.N1 Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

- \_\_\_1 Relate division and multiplication of fractions.
- \_\_\_2 Divide fractions by fractions using models.
- \_\_\_3 Divide fractions by fractions to solve problems.

#### F.N2 Compute fluently with multi-digit numbers and find common factors and multiples.

- \_\_\_1 Divide multi-digit numbers using the standard algorithm.
- \_\_\_2 Add and subtract multi-digit decimals.
- \_\_\_3 Multiply multi-digit decimals.
- \_\_\_4 Divide multi-digit decimals.
- \_\_\_5 Find greatest common factors.
- \_\_\_6 Find least common multiples.
- \_\_\_7 Use distributive property to isolate a common factor.

#### F.N3 Apply and extend previous understandings of numbers to the system of rational numbers.

- \_\_\_1 Relate positive and negative numbers to real situations.
- \_\_\_2 Write and identify opposites of integers.
- \_\_\_3 Relate opposite numbers in ordered pairs to reflections.
- \_\_\_4 Graph or identify points in four quadrants.
- \_\_\_5 Compare rational numbers using a number line.
- \_\_\_6 Write comparisons for ordering rational numbers in real situations.
- \_\_\_7 Solve problems involving coordinate graphs in four quadrants.
- \_\_\_8 Find distance between two points with the same first or second coordinate.

### EXPRESSIONS & EQUATIONS

#### F.E1 Apply and extend previous understandings of arithmetic to algebraic expressions.

- \_\_\_1 Evaluate numerical expressions that include exponents.
- \_\_\_2 Write or interpret simple expressions with variables.
- \_\_\_3 Identify parts of an expression using mathematical terms.
- \_\_\_4 Evaluate expressions for specific values of variables.
- \_\_\_5 Evaluate formulas for specific values.
- \_\_\_6 Write equivalent expressions using the distributive property.
- \_\_\_7 Identify when two expressions are equivalent.

#### F.E2 Reason about and solve one-variable equations and inequalities.

- \_\_\_1 Use substitution to decide if a number is a solution to an equation.
- \_\_\_2 Use variables and expressions to represent situations.
- \_\_\_3 Write equations of the form  $x + p = q$  to solve problems.
- \_\_\_4 Write equations of the form  $px = q$  to solve problems.
- \_\_\_5 Write or interpret inequalities  $x > c$  or  $x < c$ .
- \_\_\_6 Represent inequalities on number line diagrams.

#### F.E3 Represent and analyze quantitative relationships between dependent and independent variables.

- \_\_\_1 Use two variables to represent two related quantities.
- \_\_\_2 Graph ordered pairs of related quantities.
- \_\_\_3 Write equations to describe related variables.

### RATIOS & PROPORTIONAL RELATIONSHIPS

#### F.R1 Understand ratio concepts and use ratio reasoning [and percents] to solve problems.

- \_\_\_1 Write and interpret ratios.
- \_\_\_2 Find unit rates related to ratios.
- \_\_\_3 Write equivalent ratios, including ratio tables.
- \_\_\_4 Use ratios to convert measurements.
- \_\_\_5 Plot pairs of ratios on the coordinate plane.
- \_\_\_6 Solve unit rate problems such as unit pricing.
- \_\_\_7 Write a fraction or ratio as a percent.
- \_\_\_8 Find a number given the part and the percent.
- \_\_\_9 Find a percent of a number.

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### GEOMETRY

#### F.G1 Solve real-world and mathematical problems involving area, surface area, and volume.

- \_\_\_1 Find areas of triangles.
- \_\_\_2 Decompose and compose shapes into triangles and rectangles.
- \_\_\_3 Find areas of polygons.
- \_\_\_4 Use cubes to find volumes of prisms with fractional edge lengths.
- \_\_\_5 Multiply to find volumes of prisms with fractional edge lengths.
- \_\_\_6 Draw polygons given coordinates for the vertices.
- \_\_\_7 Use coordinates to calculate the length of vertical or horizontal segments.
- \_\_\_8 Represent 3-dimensional figures as nets.
- \_\_\_9 Calculate surface areas.

### STATISTICS & PROBABILITY

#### F.S1 Develop understanding of statistical variability.

- \_\_\_1 Recognize statistical questions.
- \_\_\_2 Describe the center, spread (range), and shape of a data set.
- \_\_\_3 Recognize measures of center and variation of data.
- \_\_\_4 Display data on a dot plot.
- \_\_\_5 Display data using a histogram.
- \_\_\_6 Display data using a box plot.

#### F.S2 Summarize and describe distributions.

- \_\_\_1 Report the number and unit of measurement of a data set.
- \_\_\_2 Find the median and mean of a data set.
- \_\_\_3 Find the interquartile range of a data set.
- \_\_\_4 Find the mean absolute deviation of a data set.

# Checklist of Problem Types

## MATH Level G

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### THE NUMBER SYSTEM

#### G.N1 Apply and extend previous understandings of operations with fractions to add and subtract rational numbers.

- \_\_\_1 Relate sums of rational numbers to movements or situations.
- \_\_\_2 Relate subtraction of rational numbers to adding the opposite.
- \_\_\_3 Find distances between rational numbers on a number line.
- \_\_\_4 Add and subtract integers.
- \_\_\_5 Add and subtract rational numbers.

#### G.N2 Apply and extend previous understandings of operations with fractions to multiply and divide rational numbers.

- \_\_\_1 Apply multiplication properties to rational numbers.
- \_\_\_2 Interpret products of rational numbers in real situations.
- \_\_\_3 Interpret quotients of rational numbers in real situations.
- \_\_\_4 Multiply and divide integers.
- \_\_\_5 Multiply and divide rational numbers.
- \_\_\_6 Write rational numbers as decimals.
- \_\_\_7 Compute with rational numbers to solve problems.
- \_\_\_8 Solve multi-step problems with rational numbers.

### EXPRESSIONS & EQUATIONS

#### G.E1 Use properties of operations to generate equivalent expressions.

- \_\_\_1 Add and subtract linear expressions with rational coefficients.
- \_\_\_2 Expand or factor linear expressions.
- \_\_\_3 Interpret related expressions in real situations.

#### G.E2 Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

- \_\_\_1 Use operations with whole numbers to solve multi-step problems.
- \_\_\_2 Use fractions to solve multi-step problems.
- \_\_\_3 Use decimals to solve multi-step problems.
- \_\_\_4 Assess reasonableness of answers by using estimation.
- \_\_\_5 Solve linear equations of form  $px + q = r$  and  $p(x + q) = r$ .
- \_\_\_6 Write linear equations to solve word problems.
- \_\_\_7 Relate algebraic solutions to arithmetic solutions.
- \_\_\_8 Write and solve linear inequalities for situations.
- \_\_\_9 Graph and interpret solutions to inequalities.

### RATIOS & PROPORTIONAL RELATIONSHIPS

#### G.R1 Analyze proportional relationships and use them to solve real-world and mathematical problems.

- \_\_\_1 Calculate unit rates associated with ratios of fractions.
- \_\_\_2 Decide if two ratios or fractions form a proportion.
- \_\_\_3 Find the missing value in a proportion.
- \_\_\_4 Identify unit rates from tables, diagrams, or graphs.
- \_\_\_5 Identify unit rates from equations or verbal descriptions.
- \_\_\_6 Write equations for proportional relationships.
- \_\_\_7 Interpret points on graphs of proportions.

#### G.R2 Solve multi-step percent problems.

- \_\_\_1 Use percent to solve simple interest and tax problems.
- \_\_\_2 Use percent to solve markup and markdown problems.
- \_\_\_3 Use percent to solve problems about tips, commissions, and fees.
- \_\_\_4 Solve problems about percent increase or decrease.
- \_\_\_5 Calculate percent error.

### GEOMETRY

#### G.G1 Draw, construct, and describe geometrical figures and describe the relationships between them.

- \_\_\_1 Compute lengths and areas from a scale drawing.
- \_\_\_2 Reproduce scale drawing using a different scale.
- \_\_\_3 Draw triangles given measures of sides or angles.
- \_\_\_4 Draw geometric shapes with given conditions.
- \_\_\_5 Describe two-dimensional figures that result from slicing solids.

#### G.G2 Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

- \_\_\_1 Recognize relationships between parts of a circle.
- \_\_\_2 Apply formulas for circumference and area of circles.
- \_\_\_3 Solve equations to find supplementary, complementary, vertical, and adjacent angles.
- \_\_\_4 Solve problems involving area and surface area.
- \_\_\_5 Solve problems involving volume of rectangular prisms.

### STATISTICS & PROBABILITY

#### G.S1 Use random sampling to draw inferences about a population.

- \_\_\_1 Identify representative sampling methods.
- \_\_\_2 Use a sample to draw inferences about a population.
- \_\_\_3 Compare predictions from various samples.

#### G.S2 Draw informal comparative inferences about two populations.

- \_\_\_1 Visually compare the centers and spreads of distributions on dot plots.
- \_\_\_2 Use measures of center and variability to make inferences.

#### G.S3 Investigate chance processes and develop, use, and evaluate probability models.

- \_\_\_1 Compare probabilities and relate to likelihoods of events.
- \_\_\_2 Use relative frequency of outcomes to approximate probability.
- \_\_\_3 Calculate simple probabilities based on equally-likely outcomes.
- \_\_\_4 Make predictions based on relative frequency, and compare results to predictions.
- \_\_\_5 Calculate probabilities of compound events.
- \_\_\_6 Create an organized list, table, or tree diagram for a compound event.
- \_\_\_7 Design and use simulations of compound events.

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# Checklist of Problem Types

## MATH Level H

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### GEOMETRY & MEASUREMENT

#### H.G1 Understand congruence and similarity using physical models, transparencies, or geometry software.

- \_\_\_1 Identify congruent parts in rotations, reflections, and translations.
- \_\_\_2 Identify transformations that move a figure onto a congruent figure.
- \_\_\_3 Use coordinates to describe translations, reflections, and rotations.
- \_\_\_4 Use coordinates to describe dilations.
- \_\_\_5 Compare ratios of side lengths to decide if two figures are similar.
- \_\_\_6 Identify the scale factor that enlarges or reduces a figure to match a similar figure.
- \_\_\_7 Identify transformations that move a figure onto a similar figure.
- \_\_\_8 Justify and calculate angle measures in triangles and line figures.
- \_\_\_9 Justify the angle-angle criterion of similar triangles.

#### H.G2 Understand and apply the Pythagorean Theorem.

- \_\_\_1 Explain a proof of the Pythagorean Theorem and its converse.
- \_\_\_2 Use the Pythagorean Theorem to find lengths.
- \_\_\_3 Use the Pythagorean Theorem to find distance between points.

#### H.G3 Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

- \_\_\_1 Apply the formula for volume of a cone.
- \_\_\_2 Apply the formula for volume of a cylinder.
- \_\_\_3 Apply the formula for volume of a sphere.
- \_\_\_4 Apply formulas to find volumes of combined solids.

### EXPRESSIONS, EQUATIONS, & FUNCTIONS

#### H.E1 Work with radicals and integer exponents.

- \_\_\_1 Simplify and evaluate numerical expressions with integer exponents.
- \_\_\_2 Develop and apply properties of exponents.
- \_\_\_3 Use square root and cube root symbols.
- \_\_\_4 Evaluate square roots and cube roots.
- \_\_\_5 Convert between standard notation and scientific notation.
- \_\_\_6 Use scientific notation to compare relative sizes of numbers.
- \_\_\_7 Perform operations on numbers in scientific notation.
- \_\_\_8 Use scientific notation to solve problems.
- \_\_\_9 Convert measurement results to appropriate units.

#### H.E2 Understand the connections between proportional relationships, lines, and linear equations.

- \_\_\_1 Graph proportional relationships.
- \_\_\_2 Compare two representations of a proportional relationship.
- \_\_\_3 Use similar triangles to verify that a line has constant slope.
- \_\_\_4 Relate linear equations to slopes and intercepts.

#### H.E3 Analyze and solve linear equations and pairs of simultaneous linear equations.

- \_\_\_1 Simplify and solve linear equations by writing equivalent forms.
- \_\_\_2 Identify or write equations with 0, 1, or infinitely many solutions.
- \_\_\_3 Simplify and solve linear equations with rational coefficients.
- \_\_\_4 Identify the solution to a system of two linear equations as the intersection point.
- \_\_\_5 Solve systems of two linear equations algebraically.
- \_\_\_6 Estimate the solution to two linear equations by graphing.
- \_\_\_7 Solve problems involving systems of two linear equations.

#### H.E4 Define, evaluate, and compare functions.

- \_\_\_1 Understand that a function is a rule.
- \_\_\_2 Compare two representations of a function.
- \_\_\_3 Decide if a function is linear or non-linear.

#### H.E5 Use functions to model relationships between quantities.

- \_\_\_1 Identify rate of change from a graph, table, or description.
- \_\_\_2 Identify initial value of a function from a graph, table, or description.
- \_\_\_3 Write a function from the rate of change and initial value.
- \_\_\_4 Describe features of a non-linear function from its graph.
- \_\_\_5 Sketch a graph from a verbal description of its features.

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### THE NUMBER SYSTEM

#### H.N1 Know that there are numbers that are not rational, and approximate them by rational numbers.

- \_\_\_1 Identify rational and irrational numbers.
- \_\_\_2 Convert repeating decimals to rational numbers.
- \_\_\_3 Find approximations for irrational numbers.

### STATISTICS & PROBABILITY

#### H.S1 Investigate patterns of association in bivariate data.

- \_\_\_1 Construct scatter plots.
- \_\_\_2 Interpret scatter plots.
- \_\_\_3 For data that appear to be linear, estimate a line of best fit.
- \_\_\_4 Informally assess the fit of a linear model.
- \_\_\_5 Interpret a linear model for real-world data.
- \_\_\_6 Compare frequencies and relative frequencies from two-way tables.