

RATIOS AND PROPORTIONS - Analyze proportional relationships and use them to solve real-world and mathematical problems

7.RP.1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.

7.RP.2. Recognize and represent proportional relationships between quantities.

7.RP.3. Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.

EE7.RP.1-3. Use a ratio to model or describe a relationship.

4 Complete the ratio using numbers to show relationships.

3 Use a ratio to model or describe a relationship.

2 Demonstrate a simple ratio relationship.

1 Identify one item as it relates to another.

THE NUMBER SYSTEM - Apply and extend previous understandings of operations with fractions

7.NS.1. Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

EE7.NS.1. Add fractions with like denominators (halves, thirds, fourths, and tenths) so the solution is less than or equal to one.

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3 Add fractions with like denominators (halves, thirds fourths, and tenths) so the solution is less than or equal to one.

2 Use models to add halves, thirds, and fourths.

1 Use models to identify the whole and find the missing pieces of a whole.

7.NS.2. Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.

EE7.NS.2.a. Solve multiplication problems with products to 100.

4 Solve multiplication problems with products to 144.

3 Solve multiplication problems with products to 100.

2 Solve multiplication problems using factors 1 – 10.

1 Skip count by twos and tens.

7.NS.2. Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.

EE7.NS.2.b. Solve division problems with divisors up to five and also with a divisor of 10 without remainders.

4 Solve division problems with divisors up to 10 using numbers.

3 Solve division problems with divisors up to five and also with a divisor of 10 without remainders.

2 Determine how many times a number can be subtracted from an equally divisible number.

1 Associate value with the number one by recognizing the group/set that has more than one.

7.NS.2. Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.

EE7.NS.2.c-d. Compare fractions to fractions and decimals to decimals using rational numbers less than one.

4 Compare and order fractions and decimals when all numbers are fractions or when all numbers are decimals or when fractions and decimals are mixed.

3 Compare fractions to fractions and decimals to decimals using rational numbers less than one.

2 Identify the location of a fraction or decimal used in the real world and/or on a number line.

1 Identify decimals or fractions.

7.NS.3. Solve real-world and mathematical problems involving the four operations with rational numbers

EE7.NS.3. Demonstrate the value of various money amounts using decimals.

4	Determine the total value of money written as a decimal given real-world situations.
3	Demonstrate the value of various money amounts using decimals.
2	Identify the decimal value of various coins.
1	Identify money

EXPRESSIONS AND EQUATIONS - Use properties of operations to generate equivalent expressions

7.EE.1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

7.EE.2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.

EE7.EE.1-2. Use the relationship within addition and/or multiplication to illustrate that two expressions are equivalent.

4	Apply the commutative property to complete an equation.
3	Use the relationship within addition and/or multiplication to illustrate that two expressions are equivalent.
2	Use the relationship within addition to illustrate that two expressions are equivalent.
1	Understand that different displays of the same quantity are equal.

EXPRESSIONS AND EQUATIONS - Solve real-life and mathematical problems using numerical and algebraic expressions and equations

7.EE.3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form

7.EE.4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.

EE7.EE.3-4. Use the concept of equality with models to solve one-step addition and subtraction equations.

4	Solve two-step addition and subtraction equations.
3	Use the concept of equality with models to solve one-step addition and subtraction equations.
2	Identify the amount needed to equal the value on the given side of an equation.
1	Recognize equal quantities on both sides of an equation.

GEOMETRY - Draw construct, and describe geometrical figures and describe the relationships between them

7.G.1. Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

7.G.2. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.

EE7.G.1-2. Draw or classify and recognize basic two dimensional geometric shapes without a model (circle, triangle, rectangle/square).

4	Draw or model two-dimensional shapes including a trapezoid and rhombus without a model.
3	Draw or classify and recognize basic two-dimensional geometric shapes without a model (circle, triangle, rectangle/square).
2	Demonstrate the ability to complete a two-dimensional shape (circle, triangle, rectangle, square).
1	Demonstrate the ability to recognize a two-dimensional shape (circle, triangle, rectangle, square) when given a complete shape.

7.G.3. Describe the two dimensional figures that result from slicing three dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.

EE7.G.3. Match a two dimensional shape with a three-dimensional shape that shares an attribute.

4	Pair two- and three-dimensional shapes to complete a real-world task.
3	Match a two-dimensional shape with a three- dimensional shape that shares an attribute.
2	Identify the attributes of a three-dimensional shape (color, number of sides, faces, size, textures, shape, etc.).
1	Replicate the two-dimensional cross-section of a three dimensional shape (cube, sphere, cylinder) when given a complete shape.

GEOMETRY - Solve real-life and mathematical problems involving angle measure, area, surface area, and volume

7.G.5. Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.

EE7.G.5. Find the perimeter of a rectangle given the length and width.

4	Solve simple perimeter problems with rectangles.
3	Find the perimeter of a rectangle given the length and width.
2	Identify the length and width of a rectangle.
1	Outline the perimeter of an object.

7.G.6. Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

EE7.G.6. Find the area of a rectangle given the length and width using a model.

4	Solve simple area problems with rectangles.
3	Find the area of a rectangle given the length and width using a model.
2	Identify the length and width (dimensions) of a rectangle.
1	Duplicate the area of a rectangle (square).

STATISTICS AND PROBABILITY - Use random sampling to draw inferences about a population

7.SP.1. Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.

7.SP.2. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.

EE7.SP.1-2. Answer a question related to the collected data from an experiment, given a model of data, or from data collected by the student.

4	Answer a question about data collected from an experiment and explain or demonstrate the results.
3	Answer a question related to the collected data from an experiment, given a model of data, or from data collected by the student.
2	Collect data to answer a given question.
1	Answer a question for data collection.

STATISTICS AND PROBABILITY - Draw informal comparative inferences about two populations

7.SP.3. Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.

7.SP.4. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.

EE7.SP.3. Compare two sets of data within a single data display such as a picture graph, line plot, or bar graph.

4	Compare data from two picture graphs, two line plots, or two bar graphs.
3	Compare two sets of data within a single data display such as a picture graph, line plot, or bar graph.
2	Summarize data on a graph or table in one way.
1	Read data from one given source.

STATISTICS AND PROBABILITY - Investigate chance processes and develop, use, and evaluate probability models

7.SP.5. Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around $\frac{1}{2}$ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.

7.SP.6. Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.

7.SP.7. Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.

EE7.SP.5-7. Describe the probability of events occurring as possible or impossible.

4	Differentiate and describe examples of a situation that is possible, a situation that is likely, and a situation that is impossible.
3	Describe the probability of events occurring as possible or impossible.
2	Identify possible events that could occur in the natural environment.
1	Identify outcomes based on a possible event.