



Grade 7 Mathematics

Related Schoolwide Learner Outcomes

Ratios and Proportional Relationships

- 7.RP.1: I can find a unit rate using fractions that deal with lengths, areas, and other types of quantities.
- 7.RP.2: I can recognize and show proportional relationships.
- 7.RP.2a: I can figure out if two quantities have a proportional relationship by testing them through tables and/or graphs.
- 7.RP.2b: I can find the unit rate in tables, graphs, equations, diagrams, and verbal descriptions.
- 7.RP.2c: I can show proportional relationships using equations.
- 7.RP.2d: I can explain what a point on a graph of a proportional relationship means. I can pay special attention to $(0,0)$ and $(1, r)$ where r is the unit rate.
- 7.RP.3: I can use what I know about proportional relationships to solve multi-step, real-world problems.

The Number System

- 7.NS.1: I can add and subtract rational numbers. I can show addition and subtraction on horizontal and vertical number line diagrams.
- 7.NS.1a: I can talk about situations in which opposite quantities combine to make 0.
- 7.NS.1b: I can explain $p + q$ as the number located a distance $|q|$ from p , in the positive or negative direction, depending on whether q is positive or negative. I know that a number and its opposite have a sum of 0. I can talk about sums of rational numbers by describing real-world situations.
- 7.NS.1c: I can subtract rational numbers. I can show that the distance between two rational numbers on a number line is the absolute value of their difference. I can apply what I've learned to real-world situations.
- 7.NS.1d: I can add and subtract rational numbers by applying the properties I have learned.
- 7.NS.2: I can multiply and divide rational numbers using what I have learned about multiplication, division, and fractions.
- 7.NS.2a: I can explain how properties of operations must be followed when working with multiplication, fractions, signed numbers, etc. I know how to multiply rational numbers in real-world situations.

- 7.NS.2b: I can explain that integers (with a non-zero divisor) can be divided. I know that the quotient of integers (with a non-zero divisor) is a rational number. I can describe real-world situations involving the quotients of rational numbers.
- 7.NS.2c: I can multiply and divide rational numbers by applying the properties I have learned.
- 7.NS.2d: I can use long division to change a rational number into a decimal. I can explain how rational numbers end in 0s or eventually repeat.
- 7.NS.3: I can use addition, subtraction, multiplication, and division to solve real-world problems involving rational numbers.

Expressions and Equations

- 7.EE.1: I can use what I know about operations to add, subtract, factor, and expand linear expressions.
- 7.EE.2: I can understand that rewriting an expression in a different way can show how numbers in the problem are related.
- 7.EE.3: I can calculate real-world math problems using positive and negative rational numbers, including whole numbers, fractions, and decimals. I can convert between different number forms. I can use estimation to make sure my answers are reasonable.
- 7.EE.4: I can use variables while solving real-world math problems. I can create equations and inequalities to solve problems.
- 7.EE.4a: I can solve word problems involving equations such as $px+q=r$ and $p(x+q)=r$, where p , q , and x are rational numbers. I can compare algebraic and arithmetic solutions and can figure out the order of operations to use.
- 7.EE.4b: I can solve word problems involving inequalities such as $px+q>r$ or $px+q<r$, where p , q , and r are rational numbers. I can graph the inequality.

Geometry

- 7.G.1: I can use scale drawings of geometric shapes to solve problems. I can figure out actual lengths using scale drawings. I can create a scale drawing of a different size than one I am given.
- 7.G.2: I can draw geometric shapes when given information about the shape. I can draw triangles when I am given information about their angles or sides. I can realize when the shape drawn will be a unique triangle, more than one triangle, or no triangle.
- 7.G.3: I can talk about 2D figures that are formed when 3D figures (right rectangular prisms, right rectangular pyramids) are sliced.
- 7.G.4: I can tell you the formulas for area and circumference of a circle and can use these formulas to solve problems. I can discuss how circumference and area of a circle are related.

- 7.G.5: I can use what I know about angles (supplementary, complementary, vertical, adjacent) to solve multi-step problems. I can figure out the measure of an unknown angle using simple equations.
- 7.G.6: I can solve real-world problems involving area, volume, and surface area of 2D and 3D shapes made up of triangles, quadrilaterals, cones, polygons, cubes, and right prisms.

Statistics and Probability

- 7.SP.1: I can discuss the purpose of using statistics. I can understand how generalizations can be made using random and representative samples.
- 7.SP.2: I can make inferences about data using random samples. I can use samples to estimate or make predictions.
- 7.SP.3: I can figure out how two sets of data compare to each other and how much the two sets overlap. I can find the difference between their centers.
- 7.SP.4: I can use what I know about measures of center and variability to infer information about two populations.
- 7.SP.5: I can understand what 0, $\frac{1}{2}$, and 1 mean in terms of probability. I can identify likely, unlikely, and neither unlikely nor likely when discussing probability.
- 7.SP.6: I can approximate the probability of a chance event happening and make predictions about chance events.
- 7.SP.7: I can make and use probability models. I can compare models to actual probabilities and explain any major differences.
- 7.SP.7a: I can create and use a uniform probability model to figure out the probability of events.
- 7.SP.7b: I can create a probability model by looking at the data that results from a chance process.
- 7.SP.8: I can use lists, tables, tree diagrams, and simulations to find probabilities.
- 7.SP.8a: I can explain that the probability of a compound event is the fraction of the outcomes in the given sample space.
- 7.SP.8b: I can use lists, tables, tree diagrams, and simulations to show sample spaces for compound events. I can point out possible outcomes.
- 7.SP.8c: I can simulate frequencies for compound events.