CSD Math Curriculum Maps 2019–2020 (Grade 7)				8/2019
Gr 7	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**
	Statistics • **Create a five number summary and box and whisker plots** ○ **6.SP.4** Display numerical data in plots on a number line, including dot plots, histograms, and box plots. ○ **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 • **Interpret data in a box plot** (7.SP.2) ○ **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. **Rational Numbers** • **Order rational numbers** ○ **6.NS.6** Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates ○ **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.	**Angles and Geometric Shapes** • **Use tools to measure and draw a given figure** ○ **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. • **Understand which conditions (angles, sides) will produce a unique triangle, infinite triangles, or no triangles** ○ **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. • **Use complementary and supplementary angles, and vertical and adjacent angles to write and solve simple equations for an unknown angle in a figure** ○ **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.	**Volume and Surface Area** • **Determine the surface area and volume of a rectangular prism** ○ **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. • **Determine the volume of cylinders and non-rectangular prisms** ○ **7.G.4** Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. ○ **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. • **Determine the surface area of cylinders and non-rectangular prisms** ○ **7.G.4** Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. ○ **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.	**Equations and Expressions** • **Create a graph from a data table; create a table from a graph** ○ **6.RP.3-review** Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. • **Create an equation, table and graph from a scenario** ○ **7.EE.4a** Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. • **Solve multi-step equations** ○ **7.EE.4a** Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. • **Find the unit rate of change on the graph of a linear relationship (including proportional relationships)** ○ **7.RP.2d** Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate. • **Solve and graph linear inequalities** ○ **7.EE.4b** Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and r

- **Add/Subtract rational numbers**
  - **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.
- **Multiply/Divide rational numbers**
  - **7.NS.2** Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.
- **Order of operations, including the distributive property**
  - **7.NS.2a** Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
  - **7.EE.1** Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

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Ratios and Proportions

- **Convert between fractions, decimals, and percents (Grade 4-6 standards)**
- **Set up and solve a proportional statement**
  - **7.RP.2** Recognize and represent proportional relationships between quantities.
- **Find a unit rate in context or from a table**
  - **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.
- **Determine a scale factor**
  - **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.
- **Use a scale factor**
  - **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.

- **Determine the volume of cones, pyramids and spheres**
  - **8.G.9** Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.
- **Identify 2D figures that result from slicing 3D figures**
  - **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.

are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.

Probability

- **Create models to determine probability**
  - **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 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.
  - **7.SP.8** Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.
- **Find the probability of compound events using probability models**
  - **7.SP.8** Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

Required Fluencies: • Solve one-variable equations of the form px + q = r and p(x + q) = r, (where p, q, and r are specific rational numbers) fluently. (7.EE.4a)	**Required Fluencies:** • Solve one-variable equations of the form px + q = r and p(x + q) = r, (where p, q, and r are specific rational numbers) fluently. (7.EE.4a)	**Required Fluencies:** • Solve one-variable equations of the form px + q = r and p(x + q) = r, (where p, q, and r are specific rational numbers) fluently. (7.EE.4a)	**Required Fluencies:** • Solve one-variable equations of the form px + q = r and p(x + q) = r, (where p, q, and r are specific rational numbers) fluently. (7.EE.4a)
Proficiencies – Quarter 1 • Problem Solve • Model and Use Tools • Construct Viable Arguments • The Number System • Statistics and Probability	**Proficiencies – Quarter 2** • Problem Solve • Model and Use Tools • Construct Viable Arguments • Ratios and Proportional Relationships • Geometry	**Proficiencies – Quarter 3** • Problem Solve • Model and Use Tools • Construct Viable Arguments • Geometry	**Proficiencies – Quarter 4** • Problem Solve • Model and Use Tools • Construct Viable Arguments • Expressions and Equations • Statistics and Probability