| **Grade** | **Big Idea** | **Essential Questions** | **Concepts** | **Competencies** | **Standard** | **Eligible Content** | **Vocabulary** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **7** | Mathematical relationships among numbers can be represented, compared, and communicated.  Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations.  Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.  Patterns exhibit relationships that can be extended, described, and generalized. | How is mathematics used to quantify, compare, represent, and model numbers?    How can mathematics support effective communication?  How are relationships represented mathematically?  How can expressions, equations and inequalities be used to quantify, solve, model and/or analyze mathematical situations?  What does it mean to estimate or analyze numerical quantities?  What makes a tool and/or strategy appropriate for a given task?  How can recognizing repetition or regularity assist in solving problems more efficiently? | Ratios, Proportions, and Percent | Compute unit rates associated with ratios of fractions.  Recognize and represent proportional relationships between quantities.  Use proportional relationships to solve multistep ratio and percent problems. | CC.2.1.7.D.1 | M07.A-R.1.1.1  M07.A-R.1.1.2  M07.A-R.1.1.3  M07.A-R.1.1.4  M07.A-R.1.1.5  M07.A-R.1.1.6 | Acute triangle  Adjacent angles  Alternate exterior angles  Alternate interior angles  Chance event  Circumference  Complementary angles  Compound event  Corresponding angles  Data distribution  decrease  Equally likely  Equilateral triangle  Independent event  Isosceles triangle  Likely event  Linear expression  Obtuse triangle  Outcome  Percent increase and  Population  Probability  Process of chance  Proportion  Random sample  Relative frequency  Repeating decimal  Scale drawing  Scalene triangle |
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| **7** | Mathematical relationships among numbers can be represented, compared, and communicated.  Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations.  Patterns exhibit relationships that can be extended, described, and generalized. | How is mathematics used to quantify, compare, represent, and model numbers?  How are relationships represented mathematically?  How can expressions, equations and inequalities be used to quantify, solve, model, and/or analyze mathematical situations?  How can recognizing repetition or regularity assist in solving problems more efficiently? | Algebraic Expressions | Apply properties of operations to generate equivalent expressions. | CC.2.2.7.B.1 | M07.B-E.1.1.1 |  |
| **7** | Mathematical relationships among numbers can be represented, compared, and communicated.  Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations.  Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions.  Data can be modeled and used to make inferences. | How is mathematics used to quantify, compare, represent, and model numbers?  How can mathematics support effective communication?  How are relationships represented mathematically?  How can expressions, equations and inequalities be used to quantify, solve, model, and/or analyze mathematical situations?  How can data be organized and represented to provide insight into the relationship between quantities?  How does the type of data influence the choice of display?  How can probability and data analysis be used to make predictions? | Algebraic Equations | Model and solve real world and mathematical problems using multiple representations such as algebraic, graphical and using tables.  Solve multi-step equations or inequalities with one variable.  Solve and interpret multi-step real life and mathematical problems posed with positive and negative rational numbers. | CC.2.2.7.B.3 | M07.B-E.2.1.1  M07.B-E.2.2.1  M07.B-E.2.2.2  M07.B-E.2.3.1 |  |
| **7** | Patterns exhibit relationships that can be extended, described, and generalized.  Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization. | How can patterns be used to describe relationships in mathematical situations?  How can recognizing repetition or regularity assist in solving problems more efficiently?  How are spatial relationships, including shape and dimension, used to draw, construct, model, and represent real situations or solve problems?  How can the application of the attributes of geometric shapes support mathematical reasoning and problem solving?  How can geometric properties and theorems be used to describe, model, and analyze situations? | Area, Volume, Angles, and Circumference | Use properties of angle types and properties of angles formed when two parallel lines are cut by a transversal line to solve problems.  Solve problems involving area and circumference of a circle(s).  Solve mathematical problems involving area, volume and surface area of two- and three-dimensional objects. | CC.2.3.7.A.1 | M07.C-G.2.1.1  M07.C-G.2.1.2  M07.C-G.2.2.1  M07.C-G.2.2.2 |  |
| **7** | Patterns exhibit relationships that can be extended, described, and generalized.  Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization. | How can patterns be used to describe relationships in mathematical situations?  How can recognizing repetition or regularity assist in solving problems more efficiently?  How are spatial relationships, including shape and dimension, used to draw, construct, model, and represent real situations or solve problems?  How can the application of the attributes of geometric shapes support mathematical reasoning and problem solving?  How can geometric properties and theorems be used to describe, model, and analyze situations? | Geometric Figures | Solve problems involving scale drawings of geometric figures.  Apply the properties of all types of triangles based on angle and side measure including the triangle inequality theorem.  Describe the two-dimensional figures that result from slicing three-dimensional figures. | CC.2.3.7.A.2 | M07.C-G.1.1.1  M07.C-G.1.1.2  M07.C-G.1.1.3  M07.C-G.1.1.4 |  |
| **7** | Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.  Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions.  Data can be modeled and used to make inferences. | What does it mean to estimate or analyze numerical quantities?    What makes a tool and/or strategy appropriate for a given task?  How can data be organized and represented to provide insight into the relationship between quantities?  How does the type of data influence the choice of display?  How can probability and data analysis be used to make predictions? | Data, Distributions, and Random Sampling | Draw inferences about two populations based on random sampling concepts.  Determine and approximate relative frequencies and probabilities of events.    Draw informal comparative inferences about two populations using measures of center and measures of variability. | CC.2.4.7.B.1 CC.2.4.7.B.2 | M07.D-S.1.1.1  M07.D-S.1.1.2 M07.D-S.2.1.1 |  |
| **7** | Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.  Measurement attributes can be quantified, and estimated using customary and non-customary units of measure.  Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions.  Data can be modeled and used to make inferences. | What makes a tool and/or strategy appropriate for a given task?  In what ways are the mathematical attributes of objects or processes measured, calculated and/or interpreted?  How can data be organized and represented to provide insight into the relationship between quantities?  How can probability and data analysis be used to make predictions? | Probability | Find probabilities of independent compound events.  Predict the approximate relative frequency given the probability.  Find the probability of a simple event, including the probability of a simple event not occurring. | CC.2.4.7.B.3 | M07.D-S.3.1.1  M07.D-S.3.2.1  M07.D-S.3.2.2  M07.D-S.3.2.3 |  |