Essential Standard: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Why? Endurance/Leverage/Readiness

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Target**  **(Need to Know)** | **Example Question** | **Pre-Req.** | **Methods on how to teach** | **Good (Ext)** | **Nice (Ext)** | **Maps to Assign** | **Core Standard** |
| Define, Identify and Solve proportional relations | - Percent problems  - Percent of change  - Constant of Proportionality | - Solve equations and proportions  - Meaning of percentages  - Simplifying fractions (understanding, equivalent fractions, common denom.)  - Fractions – Decimals – Percents  - Meaning of Ratio |  | Tax, tip, markup, etc. |  |  | 7.RP.1  7.RP.2  7.RP.3 |
| Simple Interest |  |  |  |  |  |  | 7.RP.3 |
| Unit Rates using rational numbers | - Baking, Distances, etc.  - Constant of Proportionality (when graphed)  - Scale Factor | - Simplifying fractions (understanding, equivalent fractions, common denom.) |  | Slope |  |  | 7.RP.1  7.NS.2b |
| Operations with all Rational Numbers | - Order of operations with rational numbers and integers  - Negative on the fraction (out front, with numerator, with denominator) | - Order of Operations with whole number | - Modeling (hot/cold cubes, number line, zero pairs) |  |  |  | 7.NS.1  7.NS.2 |
| Applying Properties | - Commutative, Associative (grouping symbols), Additive Inverse, Distributive, Multiplicative Inverse |  |  |  |  |  | 7.NS.1d  7.NS.2c  7.EE.1 |
| Modeling, Applying, and Interpreting Problems and Solutions in context | - Perimeter  - Percentages | - Converting units within the system (metric / standard) | - Modeling (Bar, Fraction, Number line) |  |  |  |  |
| Simplifying Expressions | - Combine like terms  - Distributive P. with rational numbers  - Factoring to write equivalent expressions with rational numbers | - Knowing Vocab (constant, coefficient, like terms)  - Evaluating Expressions - Factoring with whole numbers  - Distributing with whole numbers |  | Factoring 6x+20 to 6(x+ 20/6) |  |  | 7.EE.1 |
| Solving Equations | - Two-Step (variable on one side)  - Using Distributive Property  - Using Angle relationships to solve for x - Using Triangle Sum Relationship to solve for x | - Inverse operations - Factoring, distributing, other properties - Property of Equality  - Solve one-step equations - Checking solutions |  | - Multi-Step (3x+4+5x =12) | Evaluating equations given one value then solving for the other |  | 7.EE.4a  7.G.5 |
| Solving Inequalities | - Solve Inequalities  - Graph Solution | - Graphing Inequalities  - Soling Equations |  |  |  |  | 7.EE.4b |
| Writing Equations and Inequalities based on Context | - Writing equations from a scenario, then solving |  |  |  |  |  | 7.EE.2  7.EE.3  7.EE.4 |
| Area and Circumference | - Area and Circumference of Circles - Area of Composite figures | - Area of triangles and rectangles | - Informal derivation of area and circumference of a circle | Area of Semicircles |  |  | 7.G.4 7.G.5 7.G.6 |
| Angle Relationships and Triangle Relationships | - Supplementary, Complementary, Vertical, Triangle Sum - Can lengths or angles make a triangle | - Acute, Obtuse, Straight | - Draw with tools and technology |  | Knowing how many triangles can be made based on angle measures or side lengths |  | 7.G.2 |
| Volume & Surface Area | - Volume of prisms  - Surface area of prisms | - Volume of rectangular prisms  - Area of 2D figures |  | - Volume of Pyramids - Volume of Composite Figures (3D) - Surface area of pyramids |  |  | 7.G.6 |
| Experimental and Theoretical Probabilities (simple and compound) | - Theoretical prob.  - Experimental prob.  - Simple prob.  - Compound prob.  - Sample Space  - Fundamental Counting principle |  | - Diagrams and listing sample space  - Multiplying independent prob. |  | Dependent probabilities |  | 7.SP.8  7.SP.5  7.SP.6 |
| Compare Populations using Center and Variability (using 2 data sets) | - Using tools learned in 6th grade to compare two populations (interpret: what does this mean in context) | - Calculate Center and Variability (using one data set)  - Mean, median, range, IQR, MAD, box-and-whisker (box plot), dot plots, histograms |  |  |  |  | 7.SP.4 |
| Determining the validity of a sample | - Random sampling, Representative sampling, bias sampling |  |  |  |  |  | 7.SP.1 |

**Essential Standards:**

1. Define, Identify and Solve proportional relations
2. Simple Interest
3. Unit Rates using rational numbers
4. Operations with all Rational Numbers
5. Applying Properties
6. Solving Inequalities
7. Writing Equations and Inequalities based on Context
8. Solving Equations
9. Simplifying Expressions
10. Area and Circumference
11. Angle Relationships and Triangle Relationships
12. Volume & Surface Area
13. Experimental and Theoretical Probabilities (simple and compound)
14. Compare Populations using Center and Variability (using 2 data sets)
15. Determining the validity of a sample