7th GRADE MATH, 2013-14 Tennessee State Performance Indicators AND Common Core State Standards

SPI

Mathematical Processes	
1.1	Use proportional reasoning to solve mixture/concentration problems.
1.2	Generalize a variety of patterns to a symbolic rule from tables, graphs, or words.
1.3	Recognize whether information given in a table, graph, or formula suggests a directly proportional, linear, inversely proportional, or other nonlinear relationship.
1.4	Use scales to read maps.
Number and Operations	
2.1	Simplify numerical expressions involving rational numbers.
2.2	Compare rational numbers using appropriate inequality symbols.
2.5	Solve contextual problems that involve operations with integers.
2.6	Express the ratio between two quantities as a percent, and a percent as a ratio or fraction.
2.7	Use ratios and proportions to solve problems.
Algebra	
3.1	Evaluate algebraic expressions involving rational values for coefficients and/or variables.
3.4	Interpret the slope of a line as a unit rate given the graph of a proportional relationship.
3.5	Represent proportional relationships with equations, tables and graphs.
3.6	Solve linear equations with rational coefficients symbolically or graphically.
3.7	Translate between verbal and symbolic representations of real-world phenomena involving linear equations.
3.8	Solve contextual problems involving two-step linear equations.
Geometry and Measurement	
4.1	Solve contextual problems involving similar triangles.
Data Analysis, Statistics, and Probability	
5.3	Calculate and interpret the mean, median, upper-quartile, lower-quartile, and interquartile range of a set of data.
5.4	Use theoretical probability to make predictions.

CCSS

THE NUMBER SYSTEM	
7.NS.1	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers.
7.NS.2	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.
7.NS.3	Solve real-world and mathematical problems involving the four operations with rational numbers.
EXPRESSIONS & EQUATIONS	
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.
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.
RATIOS & PROPORTIONAL RELATIONSHIPS	
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.
GEOMETRY	
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 geometric shapes with given conditions.
7.G.3	Describe the two-dimensional figures that result from slicing three dimensional figures.
7.G.4	Know the formulas for the area and circumference of a circle and use them to solve problems.
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.
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.
STATISTICS & PROBABILITY	
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.
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.
7.SP.5	Students recognize that the probability of any single event can be can be expressed in terms such as impossible, unlikely, likely, or certain or as a number between 0 and 1
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.
7.SP.8	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.