

Math 7 Course Overview

Unit	Major Concepts	Skills	Summative Assessments
Numbers	Why we need an order of operations Why we have multiple sets of numbers	Classify numbers into sets Identify the properties of numbers Use PEMDAS to evaluate expressions Perform all operations with integers, rational numbers, and real numbers Apply the Pythagorean Theorem in context for problem-solving Use exponent properties to simplify expressions Factor a number	Game Project
Algebra Intro	Each arithmetic operation has an inverse operation that “undoes” it It is possible to solve two (or more) equations simultaneously to find a single solution to both? Solutions to problems, like inequalities, can be a set of values rather than just one	Solve multi-step equations using a variety of techniques Solve multi-step inequalities Graph an inequality Find solutions to simple systems of equations by taking linear combinations and substituting	Draw by Numbers -- Math Edition
Solid Geometry	What a dimension is How we can compare the sizes of very differently shaped objects	Solve for missing measurements in geometric shapes Apply skills to real world situations and problems	Miniature Mug Market
Plane Geometry	A variety of ways can be used to describe planar shapes Many special angle relationships are formed when parallel lines are cut by a third line	Identify angle relationships Solve algebraic problems using angle relationships Identify planar shapes and write them with correct notation Identify polygons by number of sides	GeoCities
Transformations	How we can mathematically describe movements in a plane	Translate, rotate, dilate, and reflect shapes (or coordinate points) Tessellate the plane with a shape Identify properties preserved under transformation	Transformation Art Project

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Statistics	<p>There are many ways to look at what an “average” element of a set is</p> <p>Graphs can be used to more effectively communicate data</p> <p>Statistics can be used to mislead others</p>	<p>Compute range, mean, median and mode of a data set</p> <p>Create a box and whisker plot</p> <p>Create a scatter plot, histogram, bar graph, and circle graph</p> <p>Identify the correlation between independent and dependent variables</p> <p>Interpret graphical data and draw conclusions</p>	Statistics Experiments
Probability	<p>The likelihood of an event occurring can often be found by comparing all possible outcomes of that event</p> <p>The number of outcomes of a complex event is related to the number of outcomes to smaller, concurrent events</p> <p>Sometimes one event can alter the likelihood of another occurring.</p>	<p>Create a tree diagram or list a sample space for a series of events</p> <p>Determine the number of possible events using the Fundamental Principle of Counting</p> <p>Determine the number of permutations or combinations of a list of items</p> <p>Calculate the probability of each type of event</p>	Game Creation and Probability Quiz
Percents and Proportions	<p>Fractions, percents, and decimals are all equivalent representations of rational numbers</p> <p>Interest can be represented by a series of percent changes to some original amount</p>	<p>Convert between various representations of rational numbers</p> <p>Compute percent increase/decrease</p> <p>Compute simple and compound interest</p>	Dice Interest Worksheet
Polynomials	<p>Arithmetic operations can be extended to work with operands beyond just numbers</p> <p>Much of math is developed by starting with an intuitive, concrete scenario and then abstracting it</p>	<p>Perform all operations with polynomials</p> <p>Factor polynomials using a variety of techniques</p>	Polynomial Study Guide
Functions	<p>What makes a function</p> <p>Relationships can be expressed in multiple forms</p> <p>How an equation and its graph are related</p>	<p>Write an equation for a line</p> <p>Determine if a relation is a function</p> <p>Determine the domain and range of a function</p> <p>Determine the slope and y-intercept of a line</p> <p>Explain the meaning of slope and intercepts in context</p>	Function Drawings