

7th Grade Mathematics Curriculum Map 2023

Pacing Guide	Standard Code & Indicator	Sample Learning Activities	Sample Assessments	Additional Standards:
August-September	<p>7.EE.1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> <p>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.</p> <p>7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.</p>	<p>-Develop a plan for solving a problem.</p> <p>-Write and evaluate algebraic expressions.</p> <p>-Use order of operations.</p> <p>-Find the absolute value of an integer.</p> <p>-Compare and order integers.</p> <p>-Add, subtract, multiply and divide integers.</p> <p>-Write and simplify expressions with exponents.</p> <p>-Identify and use commutative, associative, distributive, and identity properties.</p> <p>Instructional Resources:</p> <p>Big Ideas</p> <p>KahnAcademy.com</p> <p>Kutasoftware.com</p>	<p>Formative Assessments: Checkpoint Quizzes Classwork Homework Problem of the Day Exit Tickets Teacher Observation</p> <p>Summative Assessments: Chapter Test</p> <p>Benchmark Assessment: LinkIt Benchmark BOY Benchmark</p> <p>Accommodations and Modifications</p>	<p>Interdisciplinary Standard: W.7.4 Explain clearly and coherently what “order of operations” entails and how to solve a multi-step arithmetic problem following order of operations</p> <p>Technology Standard: 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.</p>

		<p>Spiral review (Teacher created)</p> <p>Math-Aids.com</p> <p>Teacher created resources</p> <p>Teacher Technology:</p> <p>ActiView ActivPanel YouTube Videos</p> <p>Student Technology:</p> <p>Google Chromebooks Google Classroom Math IXL Kahn Academy Study Island</p>		
October-November	<p>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.</p> <p>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.</p> <p>7.EE.4b Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.</p>	<p>-Solve equations by adding, subtracting, multiplying and dividing.</p> <p>-Solve 2 step equations</p> <p>-Combine like terms.</p> <p>-Simplify algebraic expressions.</p> <p>-Solve equations with variables on both sides.</p> <p>-Graph and write inequalities.</p> <p>-Solve inequalities.</p> <p>-Use formulas to solve problems.</p>	<p>Formative Assessments: Checkpoint Quizzes Classwork/Homework Problem of the Day Teacher Observation</p> <p>Summative Assessments: Chapter Test</p> <p>Accommodations and Modifications</p>	<p>Interdisciplinary Standard RI 7.4 Determine the meaning of phrases in writing inequalities.</p> <p>Technology Standard: 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.</p>

-Identify and graph points in a coordinate plane.

-Solve and graph equations with 2 variables.

-Find the slope of a line from a graph and table.

-Write an equation for a line.

Instructional Resources:

Big Ideas

[KahnAcademy.com](https://www.khanacademy.com)

[Kutasoftware.com](https://www.kutasoftware.com)

Spiral review (Teacher created)

[Math-Aids.com](https://www.math-aids.com)

Teacher created resources

Teacher Technology:

ActiView

ActivPanel

YouTube Videos

Student Technology:

Google Chromebooks

Google Classroom

[Math IXL](https://www.mathixl.com)

[Kahn Academy](https://www.khanacademy.com)

[Study Island](https://www.studyisland.com)

<p>December-January</p>	<p>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.</p> <p>7.NS.1a Describe situations in which opposite quantities combine to make 0. For example, in the first round of a game, Maria scored 20 points. In the second round of the same game, she lost 20 points. What is her score at the end of the second round?</p> <ul style="list-style-type: none"> o 7.NS.1b Understand $p + q$ as the number located a distance q from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. <p>7.NS.1c Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.</p> <p>7.NS.1d Apply properties of operations as strategies to add and subtract rational numbers.</p> <ul style="list-style-type: none"> • 7.NS.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. <p>7.NS.2a Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the</p>	<p>-Identify prime and composite numbers.</p> <p>-Find GCF of 2 or more numbers.</p> <p>-Simplify fractions.</p> <p>-Write decimals as fractions.</p> <p>-Compare and order rational numbers.</p> <p>-Add, subtract, multiply and divide rational numbers.</p> <p>-Find the square root of numbers.</p> <p>-Write and order numbers in standard and in scientific form.</p> <p>-Multiply and divide powers with the same base.</p> <p>-Multiply and divide numbers in scientific notation.</p> <p>-Raise a power to a power $(a^2)^3$</p> <p>-Raise a product to a power $(4abc)^{-2}$</p> <p>Instructional Resources:</p> <p>Big Ideas</p> <p>KahnAcademy.com</p> <p>Kutasoftware.com</p> <p>Spiral review (Teacher created)</p>	<p>Formative Assessments:</p> <p>Checkpoint Quizzes Classwork/Homework Problem of the Day Teacher Observation</p> <p>Summative Assessments:</p> <p>Chapter Test</p> <p>Accommodations and Modifications</p>	<p>Interdisciplinary Standard RI 7.1</p> <p>Word problem analysis</p> <p>Technology Standard:</p> <p>9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.</p>
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	<p>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.</p> <ul style="list-style-type: none"> o 7.NS.2b Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts. o 7.NS.2c Apply properties of operations as strategies to multiply and divide rational numbers. o 7.NS.2d Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats. ● 7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers. 	<p>Math-Aids.com</p> <p>Teacher created resources</p> <p>Teacher Technology:</p> <p>ActiView ActivPanel YouTube Videos</p> <p>Student Technology:</p> <p>Google Chromebooks Google Classroom Math IXL Kahn Academy Study Island</p>		
February-March	<p>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.</p> <p>7.RP.2 Recognize and represent proportional relationships between quantities.</p> <p>7.RP.2a Decide whether two quantities are in a proportional relationship, e.g., by testing for</p>	<p>-Write and express ratios in simplest form.</p> <p>-Find unit rates.</p> <p>-Develop measurement sense.</p> <p>-Use dimensional analysis.</p>	<p>Formative Assessments:</p> <p>Checkpoint Quizzes Classwork/Homework Problem of the Day Teacher Observation</p> <p>Summative Assessments:</p> <p>Chapter Test</p>	<p>Interdisciplinary Standard:</p> <p>RI 7.1 Word Problem Analysis focused on discounts and marks up</p> <p>Technology Standard:</p>

	<p>equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.</p> <p>7.RP.2b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p> <p>7.RP.2c Represent proportional relationships by equations.</p> <p>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.</p> <p>7.RP.3 Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.</p>	<ul style="list-style-type: none"> -Use proportions to solve problems. -Identify similar figures. -Find unknown lengths in similar figures. -Measure indirectly using similar triangles. -Locate dilation images. -Find the scale factor of dilation. -Write fractions and decimals as percents. -Write percents as fractions and decimals. -Estimate using fractions, decimals, and percents. -Use proportions to find a part of a whole. -Use proportions to find a whole amount or a percent. -Find percent of increase and percent of decrease. -Solve problems involving mark-up and discount. -Compute simple and compound interest. <p>Instructional Resources:</p> <p>Big Ideas</p>	<p style="text-align: center;"><u>Accommodations and Modifications</u></p>	<p>9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.</p>
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April	<p>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.</p> <p>7.G.2. Draw (with technology, with ruler and protractor as well as freehand) 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.</p> <p>7.G.3. Describe the two-dimensional figures that result from slicing three-dimensional figures, as in</p>	<ul style="list-style-type: none"> -Use adjacent, vertical, complementary, supplementary, alternate interior and corresponding angles. -Identify congruent figures. -Classify triangles and quadrilaterals. -Find the angle measures of a polygon. -Use Pythagorean Theorem to find a missing length of a right triangle. 	<p>Formative Assessments: Checkpoint Quizzes Classwork/Homework Problem of the Day Teacher Observation</p> <p>Summative Assessments: Chapter Test Angle Project</p> <p>Accommodations and Modifications</p>	<p>Interdisciplinary Standard: SL 7.1 Participate in group discussion on shape classification and figure identification, coming prepared with speaking points and supporting evidence.</p>

	<p>plane sections of right rectangular prisms and right rectangular pyramids.</p> <p>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.</p> <p>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.</p> <p>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.</p>	<ul style="list-style-type: none"> -Find the areas of polygons (triangle, rectangle, square, trapezoid, parallelogram) -Find the area and circumference of a circle. -Understand the meaning of pi -Construct congruent segments, angles and bisectors. -Identify solids and compute surface area and volume (cylinder, cube, prism, pyramid, cone) -Recognize skew lines. -Draw top, front and right views of solids. -Identify nets of solids <p>Instructional Resources:</p> <p>Big Ideas</p> <p>KahnAcademy.com</p> <p>Kutasoftware.com</p> <p>Spiral review (Teacher created)</p> <p>Math-Aids.com</p> <p>Teacher created resources</p> <p style="text-align: center;">Teacher Technology:</p>		<p>Technology Standard:</p> <p>9.4.8.TL.6:</p> <p>Collaborate to develop and publish work that provides perspectives on a real-world problem.</p>
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		<p>ActiView ActivPanel YouTube Videos</p> <p>Student Technology: Google Chromebooks Google Classroom Math IXL Kahn Academy Study Island</p>		
<p>May</p>	<p>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.</p> <p>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.</p> <p>7.SP.3 Informally assess the degree of visual overlap of two numerical data distributions with similar variability, measuring the difference between the centers by expressing it as a multiple of a measure of variability.</p> <p>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.</p>	<p>-Find measures of central tendency including mean, median, mode and range.</p> <p>-Make frequency tables, histograms, line plots, stem and leaf plots, box and whisker plots, scatter plots.</p> <p>-Make and interpret circle graphs, bar charts and line graphs.</p> <p>-Make drawings and Venn Diagrams to solve problems.</p> <p>-Use diagrams</p> <p>Instructional Resources:</p> <p>Big Ideas KahnAcademy.com Kutasoftware.com Spiral review (Teacher created) Math-Aids.com Teacher created resources</p>	<p>Formative Assessments: Checkpoint Quizzes Classwork/Homework Problem of the Day Teacher Observation</p> <p>Summative Assessments: Chapter Test</p> <p>Accommodations and Modifications</p>	<p>Interdisciplinary Standard RI 7.8 Evaluate the specific claims that are made about a certain population based on collected statistics of a sample of the population to assess whether the reasoning was sound.</p> <p>Technology Standards: 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.</p>

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May /June	<p>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.</p> <p>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.</p> <p>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.</p> <p>7.SP.7a Develop a uniform probability model by assigning equal probability to all outcomes, and</p>	<p>-Use tree diagrams and the counting principal</p> <p>-Find permutations</p> <p>-Find combinations</p> <p>-Use permutation and combination notation</p> <p>-Find experimental probability</p> <p>-Find the probability of dependent and independent events</p> <p>-Plan and conduct an unbiased survey</p> <p>Instructional Resources:</p>	<p>Formative Assessments:</p> <p>Checkpoint Quizzes Classwork/Homework Problem of the Day Teacher Observation Probability Game</p> <p>Summative Assessments:</p> <p>Chapter Test</p> <p>Benchmark Assessment:</p> <p>LinkIt Benchmark EOY Benchmark</p> <p>Accommodations and Modifications</p>	<p>Interdisciplinary Standard: W. 7.1 Write argument to support probability model</p> <p>Technology Standards: 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.</p>

	<p>use the model to determine probabilities of events.</p> <p>7.SP.7b Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.</p> <p>7.SP.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.</p> <p>7.SP.8a Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.</p> <p>7.SP.8b Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event.</p> <p>7.SP.8c Design and use a simulation to generate frequencies for compound events.</p> <p>.....</p>	<p>Big Ideas</p> <p>KahnAcademy.com</p> <p>Kutasoftware.com</p> <p>Spiral review (Teacher created)</p> <p>Math-Aids.com</p> <p>Teacher created resources</p> <p>Teacher Technology:</p> <p>ActiView ActivPanel YouTube Videos</p> <p>Student Technology:</p> <p>Google Chromebooks Google Classroom Math IXL Kahn Academy Study Island</p>		
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Alternate Assessments: Catalog Shopping (Percentages), Design Your own Game (playing for probability)

21st Century Standards: 9.1.8.A.1, 9.1.8.B.1

21st Century Skills: Critical Thinking, Creativity, Collaboration, Communication

Career Ready Practices: CRP 2, CRP 4 & CRP 8