

Course Resources:

7th Grade Math Chapter Outcomes.docx

Unit	State Standards	Outcomes	Essential Questions	Essential Skills	Assessments	Faith Integration
Entire Year						
Chapter 1- Integers (updated 6/5/19)	<p>7.NS.A.1(A) 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> <ul style="list-style-type: none"> •a. Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged. •b. 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. •c. 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. •d. Apply properties of operations as strategies to add and subtract rational numbers. <p>7.NS.A.2(A) Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <ul style="list-style-type: none"> •a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the 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. •b. 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. •c. Apply properties of operations as strategies to multiply and divide rational numbers. •d. 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. <p>7.NS.A.3(A) Solve real-world and mathematical problems involving the four operations with rational numbers.</p>		<p>1-1 How can you use integers to represent the velocity and the speed of an object? 1-2 Is the sum of two integers positive, negative, or zero? How can you tell? 1-3 How are adding integers and subtracting integers related? 1-4 Is the product of two integers positive, negative, or zero? How can you tell? 1-5 Is the quotient of two integers positive, negative, or zero? How can you tell?</p>	<p>Define and explain what an integer is. Use a number line to graph integers and their absolute values. Use a number line to compare integers and absolute value. Find the sum of integers with the same sign. Find the sum of integers with different signs. Find the difference of integers with the same signs. Find the difference of integers with different signs. Find the product of integers with the same signs and with different signs. Find the quotient of integers with the same signs and with different signs. Evaluate expressions with integers using order of operations.</p>	<p>-Informal Observations -Target Questions -Exit Tickets -Section Quizzes -Chapter Test</p>	<p>"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.</p>
Chapter 2- Rational Numbers (updated 6/5/19)	<p>7.NS.A.1(A) 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> <ul style="list-style-type: none"> •a. Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged. •b. 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. •c. 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 		<p>2-1 How can you use a number line to order rational number numbers? 2-2 How can you use what you know about adding integers to add rational numbers? 2-3 How can you use what you know about subtracting integers to subtract rational numbers? 2-4 Why is the product of two</p>	<p>Identify rational numbers, repeating decimals, and terminating decimals. Write rational numbers in decimal form. Write a decimal as a fraction. Use a number line to graph and order rational numbers. Find the sum of rational numbers. Evaluate expressions with rational numbers. Find the difference of</p>	<p>-Informal Observations -Targeted Questions - Exit Tickets - Section Quizzes - Chapter Test</p>	<p>"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the</p>

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	<p>is the absolute value of their difference, and apply this principle in real-world contexts.</p> <ul style="list-style-type: none"> •d. Apply properties of operations as strategies to add and subtract rational numbers. <p>7.NS.A.2(A) Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <ul style="list-style-type: none"> •a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the 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. •b. 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. •c. Apply properties of operations as strategies to multiply and divide rational numbers. •d. 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. <p>7.NS.A.3(A) Solve real-world and mathematical problems involving the four operations with rational numbers.</p>		<p>negative rational numbers positive?</p>	<p>rational numbers. Find the distance between numbers on a number line. Find the quotient of rational numbers. Find the product of rational numbers.</p>		<p>amazing things that God has created like shapes, ratios, the movement of planets and space.</p>
<p>Chapters 3- Expressions & Equations <i>(updated 6/5/19)</i></p>	<p>7.EE.A.1(A) Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> <p>7.EE.A.2(A) 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. For example, $a + 0.05a = 1.05a$ means that "increase by 5%" is the same as "multiply by 1.05."</p> <p>7.EE.B.4(A) 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> <ul style="list-style-type: none"> •a. 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. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width? •b. 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. For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions. 		<p>3-1 How can you simplify an algebraic expression? 3-2 How can you use algebra tiles to add or subtract algebraic expressions? 3-3 How can you use algebra tiles to solve addition and subtraction equations? 3-4 How can you use multiplication or division to solve equations? 3-5 How can you use algebra tiles to solve a two-step equation?</p>	<p>Identify parts of terms and like terms in an expression. Simplify algebraic expressions by combining like terms. Find the sum and difference of linear expressions. Use prime factorization to factor our greatest common factor in expressions. Use the addition property of equality to solve equations. Use the subtraction property of equality to solve equations. Write an equation from a word problem or verbal sentence. Use the multiplication property of equality to solve equations. Use the division property of equality to solve equations. Solve two-step equations by combining like terms and isolating the variable.</p>	<p>-Informal Observations -Targeted Questions - Exit Tickets - Section Quizzes - Chapter Test</p>	<p>"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.</p>

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<p>Chapter 4- Inequalities <i>(updated 6/5/19)</i></p>	<p>7.EE.B.4(A) 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. *a. 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. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width? *b. 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. For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.</p>		<p>4-1 How can you use a number line to represent solutions of an inequality? 4-2 How can you use addition or subtraction to solve an inequality? 4-3 How can you use multiplication or division to solve an inequality? 4-4 How can you use an inequality to describe the dimension of a figure?</p>	<p>Identify the different inequality symbols and verbal phrases that they represent. Write an inequality from a verbal phrase. Substitute a number and solve the inequality to identify it as a solution or not. Graph inequalities. Use the addition property of inequality to solve inequalities. Use the subtraction property of inequality to solve inequalities. Use the division property of inequality to solve inequalities. Solve two- step inequalities and graph them.</p>	<p>-Informal Observations -Targeted Questions - Exit Tickets - Section Quizzes - Chapter Test</p>	<p>"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.</p>
<p>Chapters 5- Ratios & Proportions <i>(updated 6/5/19)</i></p>	<p>7.RP.A.1(A) Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks $1/2$ mile in each $1/4$ hour, compute the unit rate as the complex fraction $1/2 / 1/4$ miles per hour, equivalently 2 miles per hour. 7.RP.A.2(A) Recognize and represent proportional relationships between quantities. *a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. *b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. *c. Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$. *d. 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. 7.RP.A.3(A) 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>		<p>5-1 How do rates help you describe real-life problems? 5-2 How can proportions help you decide when things are "fair"? 5-3 How can you write a proportion that solves a problem in real life? 5-4 How can you use ration tables and cross products to solve proportions? 5-5 How can you compare two rates graphically? 5-6 How can you use a graph to show the relationships between two quantities that vary directly? How can you use an equation?</p>	<p>Define ratio, rate, unit rate, and complex fraction. Write ratios in three different forms. Write a rate to compare to measurements. Find a rate using a ratio table. Find the rate from a graph. Define proportion and proportional. Decide when two quantities are proportional using equivalent fractions or cross products. Graph proportional relationships in a coordinate plane. Write proportions using a table. Solve proportions using mental math, multiplication property of equality, and cross products. Define slope, find it, and interpret it. Define direct variation and the constant of proportionality and identify the direct variation of a graph.</p>	<p>-Informal Observations -Targeted Questions - Exit Tickets - Section Quizzes - Chapter Test</p>	<p>"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.</p>

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<p>Chapter 6- Percents <i>(updated 6/5/19)</i></p>	<p>7.RP.A.3(A) 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> <p>7.EE.B.3(A) 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. For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.</p>		<p>6-1 How does the decimal point move when you rewrite a percent as a decimal and when you rewrite a decimal as a percent? 6-2 How can you order numbers that are written as fractions, decimals, and percents? 6-3 How can you use models to estimate percent questions? 6-4 How can you use an equivalent form of the percent proportion to solve a percent problem? 6-5 What is a percent decrease? What is a percent of increase? 6-6 How can you find discounts and selling prices? 6-7 How can you find the amount of simple interest earned on a savings account? How can you find the amount of interest owed on a loan?</p>	<p>Write a fraction and decimal as a percent. Write a percent as a fraction and decimal. Compare and order fractions, decimals, and percents. Calculate a percent, part, or whole using the percent proportion. Calculate a percent, part, or whole using the percent equation. Define percent of increase and decrease and identify percent changes. Find the percent of increase and decrease. Define and find a percent error. Define discount and mark up. Calculate the sale price, original price, or selling price of an item. Calculate the interest earned, annual interest rate, amount of time, or principal amount of a loan.</p>	<p>-Informal Observations -Targeted Questions - Exit Tickets - Section Quizzes - Chapter Test</p>	<p>"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.</p>
<p>Chapter 7- Constructions and Scale Drawings <i>(updated 6/6/19)</i></p>	<p>7.G.A.1(A) 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.A.2(A) Draw (freehand, with ruler and protractor, and with technology) 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.B.5(A) 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>7-1 What can you conclude about the angles formed by two intersecting lines? 7-2 How can you classify two angles as complementary or supplementary? 7-3 How can you construct triangles? 7-4 How can you classify quadrilaterals? 7-5 How can you enlarge or reduce a drawing proportionally?</p>	<p>Identify adjacent angles, vertical angles, and congruent angles. Use adjacent angles and vertical angles to calculate a missing measures. Construct angles using a protractor. Define complementary and supplementary angles and classify pairs of angles as complementary, supplementary, or neither. Use complementary and supplementary angles to calculate missing measures. Classify triangles using angle measures and side lengths. Calculate the missing angle measure of a triangle using the formula: $x + y + z = 180^\circ$. Construct triangles using given angle measures and a protractor. Construct triangles using</p>	<p>-Informal Observations -Targeted Questions - Exit Tickets - Section Quizzes - Chapter Test</p>	<p>"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.</p>

				<p>side measurements and a protractor. Classify quadrilaterals based on their side measures, segment construction, and angle measure. Calculate the missing angle measure of a quadrilateral using the formula: $w+x + y + z = 180^\circ$. Construct a quadrilateral using side lengths, angle measures, and a protractor. Define scale model and scale drawing. Find an actual distance or scale distance using the scale and a proportion. Define and calculate the scale factor.</p>		
<p>Chapter 8- Circles and Area (updated 6/5/19)</p>	<p>7.G.B.4(A) 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.B.6(A) 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>		<p>8-1 How can you find the circumference of a circle? 8-2 How can you find the perimeter of a composite figure? 8-3 How can you find the area of a circle? 8-4 How can you find the area of a composite figure?</p>	<p>Draw and identify the different parts of a circle. Calculate the radius and diameter of a circle. Calculate the circumference of a circle. Find the perimeter of a semicircle. Explain what composite figures are and estimate their perimeter using grid paper. Calculate the perimeter of composite figures. Calculate the area of a circle. Calculate the area of a semicircle. Estimate the are of a composite figure using grid paper. Calculate the are of composite figures.</p>	<p>-Informal Observations -Targeted Questions - Exit Tickets - Section Quizzes - Chapter Test</p>	<p>"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.</p>
<p>Chapter 9- Surface Area & Volume (updated 6/5/19)</p>	<p>7.G.A.3(A) Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.</p> <p>7.G.B.4(A) 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.B.6(A) 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>		<p>9-1 How can you find the surface area of a prism? 9-2 How can you find the surface area of a pyramid? 9-3 How can you find the surface area of a cylinder? 9-4 How can you find the volume of a prism? 9-5 How can you find the volume of a pyramid?</p>	<p>Draw nets of rectangular and triangular prisms. Calculate the surface are of prisms. Calculate the lateral surface area or prisms. Draw nets for triangular and square pyramids. Calculate the surface area of pyramids. Calculate the lateral surface area of pyramids. Draw nets for cylinders. Calculate the surface area a cylinder.</p>	<p>-Informal Observations -Targeted Questions - Exit Tickets - Section Quizzes - Chapter Test</p>	<p>"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the</p>

				Calculate the lateral surface area of a cylinder. Calculate the volume prisms. Calculate the volume of pyramids.		amazing things that God has created like shapes, ratios, the movement of planets and space.
Chapter 10- Probability & Statistics <i>(updated 6/5/19)</i>	<p>7.SP.A.1(A) 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.A.2(A) 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. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.</p> <p>7.SP.B.3(A) 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. For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.</p> <p>7.SP.B.4(A) Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.</p> <p>7.SP.C.5(A) 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.C.6(A) 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. For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.</p> <p>7.SP.C.7(A) 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. •a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected. •b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from</p>	<p>10-1 In an experiment, how can you determine the number of possible results? 10-2 How can you describe the likelihood of an event? 10-3 How can you use relative frequencies to find probabilities? 10-4 How can you find the number of possible outcomes of one or more events? 10-5 What is the difference between dependent and independent events? 10-6 How can you determine whether a sample accurately represents a population? 10-7 How can you compare data sets that represent two populations?</p>	<p>Define experiment, outcome, event, and favorable outcome. Identify different outcomes and count the outcomes. Define probability and calculate the probability of an event. Interpret and explain what the probability means in a real-life context. Define and calculate the experimental probability of an event. Define and calculate the theoretical probability of an outcome. Compare and contrast experimental and theoretical probability. Find the sample space using diagrams and the Fundamental Counting Principle. Calculate the probability of compound events. Identify independent and dependent events. Calculate the probability of independent, dependent, and compound events. Identify and explain why a sample might be unbiased or biased. Determine whether conclusions made based on a sample are valid. Make predictions using samples. Compare populations using dot plots, measures of center, and measures of variation. Use random samples to compare populations.</p>	<p>-Informal Observations -Targeted Questions - Exit Tickets - Section Quizzes - Chapter Test</p>	<p>"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. 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a chance process. For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?

7.SP.C.8(A)

Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

- a. 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.
- b. 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.
- c. Design and use a simulation to generate frequencies for compound events. For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?