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| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|----------------|--|-----------------|----------------------------|---|--|
| 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. | Textbook | 1: Thinking Proportionally | 2: Fractional Rates | 1: Making Punch: Unit Rate Representations pp. M1-51–M1-58 2: Eggzactly!: Solving Problems with Ratios of Fractions pp. M1-59–M1-68 |
| | | MATHia Software | 1: Thinking Proportionally | 2: Ratio and Rate Reasoning | 1: Fractional Rates 2: Determining and Comparing Unit Rates |
| 7.RP.2 | Recognize and represent proportional relationships between quantities. | Textbook | 1: Thinking Proportionally | 3: Proportionality | 4: Minding Your Ps and Qs: Constant of Proportionality in Multiple Representations pp. M1-139–M1-152 |
| 7.RP.2a | 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. | Textbook | 1: Thinking Proportionally | 3: Proportionality | 1: How Does Your Garden Grow?: Proportional Relationships pp. M1-91–M1-108 |
| | | MATHia Software | 1: Thinking Proportionally | 3: Proportional Reasoning | 1: Proportional Relationships |
| | | | | 4: Representing Proportional Relationships by Equations | 2: Determining Characteristics of Graphs of Proportional Relationships 1: Exploring Proportions |
| 7.RP.2b | Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. | Textbook | 1: Thinking Proportionally | 3: Proportionality | 2: Complying with Title IX: Constant of Proportionality pp. M1-109–M1-125 3: Fish-Inches: Identifying the Constant of Proportionality in Graphs pp. M1-127–M1-138 |
| | | MATHia Software | 1: Thinking Proportionally | 4: Representing Proportional Relationships by Equations | 1: Exploring Proportions |
| | | | | | 2: Writing Proportional Relationships with Equations |
| | | | | | 3: Converting Between Forms of Proportional Relationships 4: Modeling the Constant of Proportionality |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|----------------------------------|---|--|----------------------------|---|--|
| 7.RP.2c | Represent proportional relationships by equations. | Textbook | 1: Thinking Proportionally | 2: Fractional Rates | 3: Tagging Sharks: Solving Proportions Using Means and Extremes pp. M1-69–M1-82 |
| | | | | 3: Proportionality | 2: Complying with Title IX: Constant of Proportionality pp. M1-109–M1-125 |
| | | MATHia Software | 1: Thinking Proportionally | 3: Proportional Reasoning | 3: Solving Proportions Using Equivalent Ratios |
| | | | | | 4: Rewriting Proportions as Products |
| | | | | 4: Representing Proportional Relationships by Equations | 5: Solving Proportions Using Means and Extremes |
| 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. | Textbook | 1: Thinking Proportionally | 3: Proportionality | 3: Fish-Inches: Identifying the Constant of Proportionality in Graphs pp. M1-127–M1-138 |
| | | MATHia Software | 1: Thinking Proportionally | 4: Representing Proportional Relationships by Equations | 4: Modeling the Constant of Proportionality |
| 7.RP.3 | Use proportional relationships to solve multistep ratio and percent problems. | Textbook | 1: Thinking Proportionally | 2: Fractional Rates | 3: Tagging Sharks: Solving Proportions Using Means and Extremes pp. M1-69–M1-82 |
| | | | | 4: Proportional Relationships | 1: Markups and Markdowns: Introducing Proportions to Solve Percent Problems pp. M1-161–M1-176 |
| | | | | | 2: Perks of Work: Calculating Tips, Commission, and Simple Interest pp. M1-177–M1-195 |
| | | | | | 3: No Taxation Without Calculation: Sales Tax, Income Tax, and Fees pp. M1-197–M1-208 |
| | | 4: More Ups and Downs: Percent Increase and Percent Decrease pp. M1-209–M1-222 | | | |
| 2: Operating with Signed Numbers | 2: Multiplying and Dividing Rational Numbers | 3: Building a Wright Brothers' Flyer: Simplifying Expressions to Solve Problems pp. M2-113–M2-124 | | | |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|----------------|--|-----------------|--|---|---|
| 7.RP.3 | Use proportional relationships to solve multistep ratio and percent problems. | Textbook | 4: Analyzing Populations and Probabilities | 1: Introduction to Probability | 3: Toss the Cup: Determining Experimental Probability of Simple Events pp. M4-33–M4-46 |
| | | MATHia Software | 1: Thinking Proportionally | 5: Percent Conversions | 1: Fractional Percent Models 2: Converting with Fractional Percents |
| | | | | 6: Proportional Reasoning and Percents | 1: Using Proportions to Solve Percent Problems 2: Solving Simple Percent Problems |
| | | | | 7: Problem Solving with Percents Using Proportional Relationships | 1: Calculating Percent Change and Final Amounts 2: Using Percents and Percent Change |
| | | | | 8: Calculating Sales Tax and Discounts | 1: Calculating Sales Tax or Discounts |
| | | | | | 2: Solving Problems with Both Sales Tax and Discounts |
| | | | | | 3: Analyzing Different Forms of Expressions |
| 7.NS.1 | 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. | Textbook | 2: Operating with Signed Numbers | 1: Adding and Subtracting Rational Numbers | 1: Math Football: Using Models to Understand Integer Addition pp. M2-7–M2-16 |
| 7.NS.1a | Describe situations in which opposite quantities combine to make zero. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged. | Textbook | 2: Operating with Signed Numbers | 1: Adding and Subtracting Rational Numbers | 1: Math Football: Using Models to Understand Integer Addition pp. M2-7–M2-16 3: Two-Color Counters: Adding Integers, Part II pp. M2-31–M2-48 |
| | | MATHia Software | 2: Operating with Signed Numbers | 1: Integer Operations | 1: Understanding Opposites |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|---|--|-----------------|----------------------------------|--|---|
| 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. | Textbook | 2: Operating with Signed Numbers | 1: Adding and Subtracting Rational Numbers | 1: Math Football: Using Models to Understand Integer Addition pp. M2-7–M2-16 |
| | | | | | 2: Walk the Line: Adding Integers, Part I pp. M2-17–M2-30 |
| | | MATHia Software | 2: Operating with Signed Numbers | 1: Integer Operations | 3: Two-Color Counters: Adding Integers, Part II pp. M2-31–M2-48 |
| | | | | | 1: Understanding Opposites |
| 2: Adding and Subtracting Negative Integers | | | | | |
| 3: Using Number Lines to Add and Subtract Integers | | | | | |
| 4: Developing Algorithms for Adding or Subtracting Integers | | | | | |
| 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. | Textbook | 2: Operating with Signed Numbers | 1: Adding and Subtracting Rational Numbers | 1: Math Football: Using Models to Understand Integer Addition pp. M2-7–M2-16 |
| | | | | | 4: What's the Difference?: Subtracting Integers pp. M2-49–M2-68 |
| | | MATHia Software | 2: Operating with Signed Numbers | 1: Integer Operations | 2: Adding and Subtracting Negative Integers |
| | | | | | 3: Using Number Lines to Add and Subtract Integers |
| 4: Developing Algorithms for Adding or Subtracting Integers | | | | | |
| 7.NS.1d | Apply properties of operations as strategies to add and subtract rational numbers. | Textbook | 2: Operating with Signed Numbers | 1: Adding and Subtracting Rational Numbers | 1: Math Football: Using Models to Understand Integer Addition pp. M2-7–M2-16 |
| | | | | 2: Multiplying and Dividing Rational Numbers | 4: Properties of Operations: Using Number Properties to Interpret Expressions with Signed Numbers pp. M2-125–M2-134 |
| 7.NS.2a | 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 $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. | Textbook | 2: Operating with Signed Numbers | 2: Multiplying and Dividing Rational Numbers | 1: Equal Groups: Multiplying and Dividing Integers pp. M2-89–M2-102 |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|----------------|--|-----------------|----------------------------------|--|--|
| 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. | Textbook | 2: Operating with Signed Numbers | 2: Multiplying and Dividing Rational Numbers | 2: Be Rational!: Quotients of Integers pp. M2-103–M2-112 |
| | | MATHia Software | 2: Operating with Signed Numbers | 1: Integer Operations | 5: Multiplying and Dividing Integers |
| 7.NS.2c | Apply properties of operations as strategies to multiply and divide rational numbers. | Textbook | 2: Operating with Signed Numbers | 2: Multiplying and Dividing Rational Numbers | 4: Properties Schmo-properties: Using Number Properties to Interpret Expressions with Signed Numbers pp. M2-125–M2-134 |
| 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. | Textbook | 2: Operating with Signed Numbers | 2: Multiplying and Dividing Rational Numbers | 2: Be Rational!: Quotients of Integers pp. M2-103–M2-112 |
| | | MATHia Software | 2: Operating with Signed Numbers | 1: Integer Operations | 6: Converting Rational Numbers to Decimals |
| 7.NS.3 | Solve real-world and mathematical problems involving the four operations with rational numbers. | Textbook | 2: Operating with Signed Numbers | 1: Adding and Subtracting Rational Numbers | 5: All Mixed Up: Adding and Subtracting Rational Numbers pp. M2-69–M2-80 |
| | | | | 2: Multiplying and Dividing Rational Numbers | 1: Equal Groups: Multiplying and Dividing Integers pp. M2-89–M2-102 3: Building a Wright Brothers' Flyer: Simplifying Expressions to Solve Problems pp. M2-113–M2-124 4: Properties Schmo-properties: Using Number Properties to Interpret Expressions with Signed Numbers pp. M2-125–M2-134 |
| | | MATHia Software | 2: Operating with Signed Numbers | 2: Evaluating Numeric Expressions | 1: Evaluating Simple Numeric Expressions with Integers 2: Evaluating Numeric Expressions Involving Integers with Parentheses and Exponents 3: Evaluating Simple Numeric Expressions with Rational Numbers 4: Evaluating Complex Numeric Expressions with Rational Numbers |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|---|--|-----------------------------------|----------------------------|---|--|
| 7.EE.1 | Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. | Textbook | 3: Reasoning Algebraically | 1: Algebraic Expressions | 2: Mathematics Gymnastics: Rewriting Expressions Using the Distributive Property pp. M3-19–M3-32 |
| | | | | | 3: All My Xs: Combining Like Terms pp. M3-33–M3-43 |
| | | MATHia Software | 3: Reasoning Algebraically | 1: Variable Expressions | 1: Factoring Linear Expressions |
| | | | | | 2: Rewriting Simple Algebraic Expressions Involving Integer Coefficients |
| | | | | | 3: Rewriting Algebraic Expressions Involving Integer Coefficients with Four Operations |
| | | | | | 4: Rewriting Algebraic Expressions Involving Integer Coefficients with Parentheses and Exponents |
| 5: Rewriting Complex Algebraic Expressions Involving Integer Coefficients | | | | | |
| 6: Rewriting Algebraic Expressions Involving Integer 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. | Textbook | 3: Reasoning Algebraically | 1: Algebraic Expressions | 3: All My Xs: Combining Like Terms pp. M3-33–M3-43 |
| | | | | 3: Multiple Representations of Equations | 2: Stretches, Stacks, and Structure: Structure of Linear Equations pp. M3-139–M3-153 |
| | | MATHia Software | 1: Thinking Proportionally | 8: Calculating Sales Tax and Discounts | 3: Analyzing Different Forms of Expressions |
| 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. | Textbook | 3: Reasoning Algebraically | 1: Algebraic Expressions | 1: No Substitute for Hard Work: Evaluating Algebraic Expressions pp. M3-7–M3-18 |
| | | | | | MATHia Software |
| | | 3: Solving Problems with Integers | | | |
| 4: Solving Problems with Decimals and Fractions | | | | | |
| 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. | Textbook | 3: Reasoning Algebraically | 3: Multiple Representations of Equations | 4: Texas Tea and Temperature: Using Multiple Representations to Solve Problems pp. M3-169–M3-180 |
| | | MATHia Software | 3: Reasoning Algebraically | 5: Problem Solving with Two-Step Equations and Inequalities | 2: Using Linear Equations and Inequalities |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|---|---|--|---|---|--|
| 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. | Textbook | 3: Reasoning Algebraically | 2: Two-Step Equations and Inequalities | 1: Picture Algebra: Modeling Equations by Equal Expressions pp. M3-53–M3-63 |
| | | | | | 2: Expressions That Play Together...: Solving Equations on a Double Number Line pp. M3-65–M3-75 |
| | | | | | 3: Formally Yours: Using Inverse Operations to Solve Equations pp. M3-77–M3-94 |
| | | | | 3: Multiple Representations of Equations | 1: Put It on the Plane: Representing Equations with Tables and Graphs pp. M3-125–M3-138 |
| | | | | | 2: Stretches, Stacks, and Structure: Structure of Linear Equations pp. M3-139–M3-153 |
| | | | | MATHia Software | 3: Reasoning Algebraically |
| | | 2: Identifying Attributes of Linear Relationships | | | |
| | | 3: Analyzing Models of Two-Step Linear Relationships | | | |
| | | 4: Modeling Two-Step Equations | | | |
| | | 3: Solving Two-Step Equations | 1: Checking Solutions to Linear Equations | | |
| | | | 2: Solving with Multiplication (No Type In) | | |
| | | | 3: Solving with Multiplication (Type In) | | |
| | | | 4: Solving with Division (No Type In) | | |
| 5: Solving with Division (Type In) | | | | | |
| 6: Solving Two-Step Equations | | | | | |
| 5: Problem Solving with Two-Step Equations and Inequalities | 1: Determining the Value of an Independent Variable | | | | |
| | 3: Solving Problems with Integers | | | | |
| | 4: Solving Problems with Decimals and Fractions | | | | |
| 7: The Coordinate Plane and Two-Step Equations | 1: Graphs of Equations | | | | |
| | 2: Using Graphs to Solve Equations | | | | |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|-------------|---|-----------------|-------------------------------|---|--|
| 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. | Textbook | 3: Reasoning Algebraically | 2: Two-Step Equations and Inequalities | 4: Be Greater Than: Solving Inequalities with Inverse Operations pp. M3-95–M3-116 |
| | | MATHia Software | 3: Reasoning Algebraically | 3: Multiple Representations of Equations | 3: Deep Flight I: Building Inequalities and Equations to Solve Problems pp. M3-155–M3-168 |
| | | | | 4: Solving Two-Step Inequalities | 1: Graphing Inequalities with Rational Numbers 2: Solving One-Step Linear Inequalities 3: Solving Two-Step Linear Inequalities |
| 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. | Textbook | 1: Thinking Proportionally | 4: Proportional Relationships | 5: Pound for Pound, Inch for Inch: Scale and Scale Drawings pp. M1-223–M1-240 |
| | | MATHia Software | 1: Thinking Proportionally | 8: Scale Drawings | 1: Critical Attributes of Similar Figures |
| | | | | | 2: Using Scale Drawings 3: Using Scale Factor |
| 7.G.2 | 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. | Textbook | 5: Constructing and Measuring | 1: Angles and Triangles | 1: Here's Lookin' at Euclid: Geometric Constructions pp. M5-7–M5-18 |
| | | | | | 3: Consider Every Side: Constructing Triangles Given Sides pp. M5-39–M5-52 |
| | | | | | 4: Unique or Not?: Constructing Triangles Given Angles pp. M5-53–M5-66 |
| 7.G.3 | Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids. | Textbook | 5: Constructing and Measuring | 2: Three-Dimensional Figures | 1: Slicing and Dicing: Cross-Sections of Rectangular Prisms pp. M5-75–M5-96 |
| | | MATHia Software | 5: Constructing and Measuring | 2: Three-Dimensional Figures | 2: Dissecting a Pyramid: Cross-Sections of Rectangular Pyramids pp. M5-97–M5-106 1: Visualizing Cross Sections of Three-Dimensional Shapes |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|-------------|--|-----------------|-------------------------------|--|---|
| 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. | Textbook | 1: Thinking Proportionally | 1: Circles and Ratio | 1: Pi: The Ultimate Ratio: Exploring the Ratio of Circle Circumference to Diameter pp. M1-7–M1-18 |
| | | | | | 2: That's a Spicy Pizza: Area of Circles pp. M1-19–M1-32 |
| | | MATHia Software | 1: Thinking Proportionally | 1: Circles | 3: Circular Reasoning: Solving Area and Circumference Problems pp. M1-33–M1-42 |
| | | | | | 1: Investigating Circles |
| 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. | Textbook | 5: Constructing and Measuring | 1: Angles and Triangles | 2: Special Delivery: Special Angle Relationships pp. M5-19–M5-38 |
| | | MATHia Software | 5: Constructing and Measuring | 1: Angle Properties | 1: Calculating Angles 2: Classifying Angles and Determining Unknown Measures |
| 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. | Textbook | 1: Thinking Proportionally | 4: Proportional Relationships | 4: More Ups and Downs: Percent Increase and Percent Decrease pp. M1-209–M1-222 |
| | | | 5: Constructing and Measuring | 2: Three-Dimensional Figures | 3: Hey, Mister, Got Some Bird Seed?: Volume of Pyramids pp. M5-107–M5-127 4: The Sound of Surface Area: Surface Area of Pyramids pp. M5-129–M5-142 5: More Than Four Sides of the Story: Volume and Surface Area of Prisms and Pyramids pp. M5-143–M5-156 |
| | | MATHia Software | 5: Constructing and Measuring | 3: Volume of Prisms and Pyramids | 1: Understanding Volume Formulas for Right Prisms |
| | | | | | 2: Using Volume of Right Prisms |
| | | | | | 3: Calculating Volume of Pyramids |
| | | | | | 4: Using Volume of Pyramids |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|-------------|---|-----------------|--|---|---|
| 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. | Textbook | 4: Analyzing Populations and Probabilities | 3: Drawing Inferences | 1: We Want to Hear From You!: Collecting Random Samples pp. M4-133–M4-149 2: Tiles, Gumballs, and Pumpkins: Using Random Samples to Draw Inferences pp. M4-151–M4-167 |
| | | MATHia Software | 4: Analyzing Populations and Probability | 3: Numerical Data Displays Comparisons | 1: Using Statistics to Draw Inferences About a Population |
| 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. | Textbook | 4: Analyzing Populations and Probabilities | 3: Drawing Inferences | 2: Tiles, Gumballs, and Pumpkins: Using Random Samples to Draw Inferences pp. M4-151–M4-167 |
| | | MATHia Software | 4: Analyzing Populations and Probability | 3: Numerical Data Displays Comparisons | 1: Using Statistics to Draw Inferences About a Population |
| 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. | Textbook | 4: Analyzing Populations and Probabilities | 3: Drawing Inferences | 3: Spicy or Dark?: Comparing Two Populations pp. M4-169–M4-180 4: Finding Your Spot to Live: Using Random Samples from Two Populations to Draw Conclusions pp. M4-181–M4-204 |
| | | MATHia Software | 4: Analyzing Populations and Probability | 3: Numerical Data Displays Comparisons | 2: Comparing Characteristics of Data Displays 3: Comparing Populations Using Data Displays |
| 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. | Textbook | 4: Analyzing Populations and Probabilities | 3: Drawing Inferences | 4: Finding Your Spot to Live: Using Random Samples from Two Populations to Draw Conclusions pp. M4-181–M4-204 |
| 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. | Textbook | 4: Analyzing Populations and Probabilities | 1: Introduction to Probability | 1: Rolling, Rolling, Rolling...: Defining and Representing Probability pp. M4-7–M4-22 |
| | | MATHia Software | 4: Analyzing Populations and Probability | 1: Introduction to Probability | 1: Determining Probabilities |

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|----------------|--|-----------------|--|---|---|
| 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. | Textbook | 4: Analyzing Populations and Probabilities | 1: Introduction to Probability | 3: Toss the Cup: Determining Experimental Probability of Simple Events pp. M4-33–M4-46 |
| | | | | | 4: A Simulating Conversation: Simulating Simple Experiments pp. M4-47–M4-64 |
| | | MATHia Software | 4: Analyzing Populations and Probability | 2: Compound Probability | 1: Evens or Odds?: Using Arrays to Organize Outcomes pp. M4-73–M4-88 |
| | | | | | 4: On a Hot Streak: Simulating Probability of Compound Events pp. M4-113–M4-124 |
| 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. | Textbook | 4: Analyzing Populations and Probabilities | 1: Introduction to Probability | 2: Give the Models a Chance: Probability Models pp. M4-23–M4-32 |
| | | | | 2: Compound Probability | 2: Three Girls and No Boys?: Using Tree Diagrams pp. M4-89–M4-100 |
| 7.SP.7a | Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. | Textbook | 4: Analyzing Populations and Probabilities | 1: Introduction to Probability | 2: Give the Models a Chance: Probability Models pp. M4-23–M4-32 |
| | | | | | 4: A Simulating Conversation: Simulating Simple Experiments pp. M4-47–M4-64 |
| | | MATHia Software | 4: Analyzing Populations and Probability | 1: Introduction to Probability | 1: Determining Probabilities |
| 7.SP.7b | Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. | Textbook | 4: Analyzing Populations and Probabilities | 1: Introduction to Probability | 2: Give the Models a Chance: Probability Models pp. M4-23–M4-32 |
| | | | | | 3: Toss the Cup: Determining Experimental Probability of Simple Events pp. M4-33–M4-46 |
| | | MATHia Software | 4: Analyzing Populations and Probability | 2: Compound Probability | 1: Evens or Odds?: Using Arrays to Organize Outcomes pp. M4-73–M4-88 |
| | 3: Pet Shop Probability: Determining Compound Probability pp. M4-101–M4-112 | | | | |
| | | MATHia Software | 4: Analyzing Populations and Probability | 1: Introduction to Probability | 2: Comparing Experimental and Theoretical Probabilities |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|----------------|---|-----------------|--|---|---|
| 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. | Textbook | 4: Analyzing Populations and Probabilities | 2: Compound Probability | 1: Evens or Odds?: Using Arrays to Organize Outcomes pp. M4-73–M4-88 3: Pet Shop Probability: Determining Compound Probability pp. M4-101–M4-112 |
| | | MATHia Software | 4: Analyzing Populations and Probability | 2: Compound Probability | 1: Introduction to Compound Events |
| 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. | Textbook | 4: Analyzing Populations and Probabilities | 2: Compound Probability | 1: Evens or Odds?: Using Arrays to Organize Outcomes pp. M4-73–M4-88 2: Three Girls and No Boys?: Using Tree Diagrams pp. M4-89–M4-100 3: Pet Shop Probability: Determining Compound Probability pp. M4-101–M4-112 |
| | | MATHia Software | 4: Analyzing Populations and Probability | 2: Compound Probability | 2: Calculating Compound Probabilities |
| 7.SP.8c | Design and use a simulation to generate frequencies for compound events. | Textbook | 4: Analyzing Populations and Probabilities | 2: Compound Probability | 4: On a Hot Streak: Simulating Probability of Compound Events pp. M4-113–M4-124 |
| | | MATHia Software | 4: Analyzing Populations and Probability | 1: Introduction to Probability 2: Compound Probability | 3: Simulating Simple Events 3: Simulating Compound Events |