**Correlation of the Prince Edward Island Mathematics Curriculum
with Mathology Grade 7 (Number)**

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| **Outcomes** | **Grade 7 Mathology.ca** | **Mathology Practice Workbook 7** | **Pearson Canada Grades 4–9 Mathematics Learning Progression** |
| **General Curriculum Outcome**Develop number sense. |
| **Specific Curriculum Outcomes**N1. Determine and explain why a number is divisible by 2, 3, 4, 5, 6, 8, 9 or 10, and why a number cannot be divided by 0. | **Number Unit 1: Number Relationships** 1: Developing Divisibility Rules for 2, 4, 5, 8, and 102: Developing Divisibility Rules for 3, 6, and 93. Relating Factors, Multiples, and Divisibility | Unit 2 Questions 1-19, 31 (pp. 11-16, 20) | **Big Idea: Quantities and numbers can be operated on to determine how many and how much.****Investigating number and arithmetic properties** - Examines and classifies whole numbers based on their properties (e.g., even/odd; prime; composite; divisible by 2, 5, 10).* Uses reasoning and knowledge of factors to examine divisibility of numbers (by 4, 8, 3, 6, and 9).
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| N2. Demonstrate an understanding of the addition, subtraction, multiplication and division of decimals (for more than 1-digit divisors or 2-digit multipliers, the use of technology is expected) to solve problems.  | **Number Unit 4: Operations with Decimals and Percents**17: Adding and Subtracting Decimals18: Multiplying Decimals19: Dividing Decimals20: Applying the Order of Operations with Decimals 23: Calculating Sales Taxes and Tips24: Calculating Sales Taxes and Discounts | Unit 3 Questions 1-13 (pp. 21-26)Unit 12 Questions 15, 17, 18 (pp. 114-115) | **Big Idea:** **Quantities and numbers can be operated on to determine how many and how much.****Developing conceptual meaning of operations*** Demonstrates an understanding of decimal number computation through modelling and flexible strategies.

**Developing fluency of operations** * Solves decimal number computation using efficient strategies.

**Investigating number and arithmetic properties*** Evaluates equations with brackets using order of operations.
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| N3. Solve problems involving percents from 1% to 100%.  | **Number Unit 3: Fractions, Decimals, and Percents**16: Relating Fractions, Decimals, and Percents**Number Unit 4: Operations with Decimals and Percents**21: Working with Percents22: Using Mental Math to Calculate Percents23: Calculating Sales Taxes and Tips24: Calculating Sales Taxes and Discounts | Unit 8 Questions 16-22 (pp. 73-75)Unit 11 Questions 7-16 (pp. 99-102)Unit 12 Question 15 (pp. 114) | **Big Idea: Numbers are related in many ways.****Using ratios, rates, proportions, and percents creates a relationship between quantities**  * Understands and applies the concept of percentage as a rate per 100 (e.g., calculating sales tax, tips, or discounts).

**Big Idea: Numbers are related in many ways.****Decomposing and composing numbers to investigate equivalencies** * Models and explains the relationships among fractions, decimals, and percents.
* Translates flexibly between representations.
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| N4. Demonstrate an understanding of addition and subtraction of integers, concretely, pictorially and symbolically.  | **Number Unit 2: Fluency with Integers**4: Representing Integers 5: Adding Integers with Models6: Adding Integers7: Subtracting Integers with Models8: Subtracting Integers 9: Adding and Subtracting Integers10: Solving Problems Involving Integers  | Unit 12 Questions 1-7, 14-17, 21 (pp. 109-116) | **Big Idea: The set of real numbers is infinite.****Extending whole number understanding to the set of real numbers*** Understands that a positive integer and its negative opposite are the same distance from zero (e.g., both 5 and –5 are five units from zero on a number line).

**Big Idea:** **Numbers are related in many ways.** **Comparing and ordering quantities (multitude or magnitude)** * Compares, orders, and locates integers.

**Big Idea:** **Quantities and numbers can be operated on to determine how many and how much.****Developing conceptual meaning of operations*** Models and demonstrates an understanding of integer addition and subtraction.

**Big Idea:** **Quantities and numbers can be operated on to determine how many and how much.****Developing fluency of operations*** Estimates and solves integer addition and subtraction using efficient strategies.
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| N5. Demonstrate an understanding of multiplication and division of integers, concretely, pictorially and symbolically.  | **Number Unit 2: Fluency with Integers**11: Multiplying Integers12: Dividing Integers13: Order of Operations with Integers | Unit 12 Questions 8-13, 20, 21 (pp. 112-113, 115-116) | **Big Idea: Quantities and numbers can be operated on to determine how many and how much.****Developing conceptual meaning of operations*** Models and demonstrates an understanding of integer multiplication and division.

**Big Idea: Quantities and numbers can be operated on to determine how many and how much.****Investigating Number and Arithmetic Properties*** Evaluates equations with brackets using order of operations.
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| N6. Compare and order positive fractions, positive decimals (to thousandths) and whole numbers by using: • benchmarks • place value • equivalent fractions and/or decimals. | **Number Unit 3: Fractions, Decimals, and Percents**14: Comparing and Ordering Fractions and Decimals (to hundredths)15: Comparing and Ordering Fractions and Decimals (to thousandths) | Unit 7 Questions 7-10, 18 (pp. 62-63, 67) | **Big Idea: Numbers are related in many ways.** **Comparing and ordering quantities (multitude or magnitude)*** Compares, orders, and locates positive rational numbers using flexible strategies.
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**Correlation of the Prince Edward Island Mathematics Curriculum
with Mathology Grade 7 (Patterns and Relations: Patterns)**

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| **Outcomes** | **Grade 7 Mathology.ca** | **Mathology Practice Workbook 7** | **Pearson Canada Grades 4–9 Mathematics Learning Progression** |
| **General Curriculum Outcome**Use patterns to describe the world and to solve problems. |
| PR1. Create a table of values from a linear relation, graph the table of values, and analyse the graph to draw conclusions and solve problems.  | **Patterns and Relations Unit 1: Linear Patterns and Equations**1: Representing Patterns 2: Comparing Linear Patterns3: Working with Linear Patterns11: Writing and Solving Patterns Involving Linear Relations | Unit 1 Questions 1-6, 8, 15 (pp. 2-10)Unit 13 Question 16 (p. 123) | **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically**. **Representing patterns, relations, and functions** * Represents a mathematical context or problem with expressions and equations using variables to represent unknowns.
* Generates ordered pairs for a linear relation and plots the coordinates on a graph. (Limited to integer values on four quadrants.)
* Matches different representations of the same linear relation (e.g., graph, equation, table of values)
* Differentiates between linear and non-linear relations by their graphical representation.
* Models and solves problems with integers using linear equations in different forms (e.g., a*x* = *b*; *ax* + *b* = *c*; *a*(*x* + *b*) = *c*).

**Big Idea: Patterns and relations can be represented with symbols, equations, and expressions. Using variables, algebraic expressions, and equations to represent mathematical relations*** Evaluates algebraic expressions, including formulas, given speciﬁc values for the variables (e.g., evaluate 3*r* – 12, when *r* = 3; $\frac{1}{2}b$*h*, when base is 12 cm and height is 5 cm).
* Writes expressions to describe patterns and contexts representing linear relations (e.g., 5, 8, 11, 14 can be represented as 3*n* + 2).

**Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically. Generalizing and analyzing patterns, relations, and functions*** Predicts the value of a given element in a numeric or shape pattern using pattern rules.
* Investigates, analyzes, and compares equations and graphs of linear relations to make generalizations and predictions
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**Correlation of the Prince Edward Island Mathematics Curriculum
with Mathology Grade 7 (Patterns and Relations: Variables and Equations)**

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| **Outcomes** | **Grade 7 Mathology.ca** | **Mathology Practice Workbook 7** | **Pearson Canada Grades 4–9 Mathematics Learning Progression** |
| **General Curriculum Outcome**Represent algebraic expressions in multiple ways. |
| **Specific Curriculum Outcomes**PR2. Demonstrate an understanding of the preservation of equality by: • modelling preservation of equality, concretely, pictorially and symbolically • applying preservation of equality to solve equations.  | **Patterns and Relations Unit 1: Linear Patterns and Equations**4: Modelling and Solving One-Step Equations6: Solving One-Step Equations (with Relational Rods)7: Solving Equations with Multiple Terms (with Relational Rods)8: Modelling and Solving One-Step Linear Equations9: Modelling and Solving Multi-Step Linear Equations10: Writing and Solving Equations to Solve Problems11: Writing and Solving Problems Involving Linear Relations | Unit 13 Questions 12-15 (pp. 120-122) | **Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.****Understanding equality and inequality, building on generalized properties of numbers and operations.*** Investigates and models the meaning of preservation of equality of single variable equations (e.g., 3*x* = 12).
* Applies arithmetic properties (e.g., distributive, commutative, identities) to identify, transform, and generate equivalent numeric expressions (e.g., 3(2 + 5) = (2 + 5) + (2 + 5) + (2 + 5)).
* Models the preservation of equality to solve equations involving integer coefﬁcients (e.g., –4*m* + 16 = –12).

**Using variables, algebraic expressions, and equations to represent mathematical relations** * Evaluates algebraic expressions, including formulas, given speciﬁc values for the variables (e.g., evaluate 3*r* – 12, when *r* = 3; $\frac{1}{2}b$*h*, when base is 12 cm and height is 5 cm).
* Writes expressions to describe patterns and contexts representing linear relations (e.g., 5, 8, 11, 14 can be represented as 3*n* + 2).

**Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.****Representing patterns, relations, and functions*** Represents a mathematical context or problem with expressions and equations using variables to represent unknowns.
* Models and solves problems with integers using linear equations in different forms (e.g., a*x* = *b*; *ax* + *b* = *c*; *a*(*x* + *b*) = *c*).
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| PR3. Explain the difference between an expression and an equation.  | **Patterns and Relations Unit 1: Linear Patterns and Equations**5: Evaluating Expressions and Writing Equations | Unit 13 Question 11 (p. 120) | **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.****Representing patterns, relations, and functions*** Matches different representations of the same linear relation (e.g., graph, equation, table of values)

**Big Idea: Patterns and relations can be represented with symbols, equations, and expressions. Using variables, algebraic expressions, and equations to represent mathematical relations*** Evaluates algebraic expressions, including formulas, given speciﬁc values for the variables (e.g., evaluate 3*r* – 12, when *r* = 3; $\frac{1}{2}b$*h*, when base is 12 cm and height is 5 cm).
* Writes expressions to describe patterns and contexts representing linear relations (e.g., 5, 8, 11, 14 can be represented as 3*n* + 2).
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| PR4. Evaluate an expression, given the value of the variable(s).  | **Patterns and Relations Unit 1: Linear Patterns and Equations**4: Writing and Evaluating Algebraic Expressions5: Evaluating Expressions and Writing Equations | Unit 1 Questions 1-3, 9-15 (pp. 2-10)Unit 13 Questions 1-4, 8, 10 (pp. 117-120) | **Big Idea**: **Regularity and repetition form patterns that can be generalized and predicted mathematically.****Representing patterns, relations, and functions** * Represents a mathematical context or problem with expressions and equations using variables to represent unknowns.
* Matches different representations of the same linear relation (e.g., graph, equation, table of values)

**Big Idea: Patterns and relations can be represented with symbols, equations, and expressions. Using variables, algebraic expressions, and equations to represent mathematical relations*** Evaluates algebraic expressions, including formulas, given speciﬁc values for the variables (e.g., evaluate 3*r* – 12, when *r* = 3; $\frac{1}{2}b$*h*, when base is 12 cm and height is 5 cm).
* Writes expressions to describe patterns and contexts representing linear relations (e.g., 5, 8, 11, 14 can be represented as 3*n* + 2).
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| PR5. Model and solve problems that can be represented by one-step linear equations of the form *x* + *a* = *b*, concretely, pictorially and symbolically, where *a* and *b* are integers.  | **Patterns and Relations Unit 1: Linear Patterns and Equations**6: Solving One-Step Equations (with Relational Rods)8: Modelling and Solving One-Step Linear Equations10: Writing and Solving Equations to Solve Problems | Unit 13 Questions 12-14, 19 (pp. 120-124) | **Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.****Understanding equality and inequality, building on generalized properties of numbers and operations.*** Investigates and models the meaning of preservation of equality of single variable equations (e.g., 3*x* = 12).
* Applies arithmetic properties (e.g., distributive, commutative, identities) to identify, transform, and generate equivalent numeric expressions (e.g., 3(2 + 5) = (2 + 5) + (2 + 5) + (2 + 5)).
* Models the preservation of equality to solve equations involving integer coefﬁcients (e.g., –4*m* + 16 = –12).

**Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.****Using variables, algebraic expressions, and equations to represent mathematical relations*** Evaluates algebraic expressions, including formulas, given speciﬁc values for the variables (e.g., evaluate 3*r* – 12, when *r* = 3; $\frac{1}{2}b$*h*, when base is 12 cm and height is 5 cm).
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| PR6. Model and solve problems that can be represented by linear equations of the form: • *ax* + *b* = *c* • *ax* = *b* • $\frac{x}{a}$ = *b,* a ≠ 0 concretely, pictorially and symbolically, where *a*, *b* and *c* are whole numbers.  | **Patterns and Relations Unit 1: Linear Patterns and Equations**7: Solving Equations with Multiple Terms (with Relational Rods) 9: Modelling and Solving Multi-Step Linear Equations 10: Writing and Solving Equations to Solve Problems11: Writing and Solving Problems Involving Linear Relations | Unit 13 Questions 12-19, 23 (pp. 120-124, 127) | **Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.****Understanding equality and inequality, building on generalized properties of numbers and operations.*** Investigates and models the meaning of preservation of equality of single variable equations (e.g., 3*x* = 12).
* Investigates the process of decomposing arithmetic equations and comparing them with the sequence of operations used to solve algebraic equations (e.g., 4 × 5 + 6 = 26 compared to solving 4*x* + 6 = 26).
* Models the preservation of equality to solve equations involving integer coefﬁcients (e.g., –4*m* + 16 = –12).

**Using variables, algebraic expressions, and equations to represent mathematical relations*** Identifies and describes the meaning of parts of an equation using mathematical terms (e.g., *sum*, *coefficient*, *factor*, *variable*, *constant*).
* Evaluates algebraic expressions, including formulas, given speciﬁc values for the variables (e.g., evaluate 3*r =* 12, when *r* = 3; $\frac{1}{2}bh$, when base is 12 cm and height is 5 cm).
* Writes expressions to describe patterns and contexts representing linear relations (e.g., 5, 8, 11, 14 can be represented as 3*n* + 2).

**Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.****Representing patterns, relations, and functions*** Represents a mathematical context or problem with expressions and equations using variables to represent unknowns.
* Models and solves problems with integers using linear equations in different forms (e.g., a*x* = *b*; *ax* + *b* = *c*; *a*(*x* + *b*) = *c*).
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**Correlation of the Prince Edward Island Mathematics Curriculum
with Mathology Grade 7 (Shape and Space: Measurement)**

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| **Outcomes** | **Grade 7 Mathology.ca** | **Mathology Practice Workbook 7** | **Pearson Canada Grades 4–9 Mathematics Learning Progression** |
| **General Curriculum Outcome**Use direct and indirect measurement to solve problems. |
| **Specific Curriculum Outcomes**SS1. Demonstrate an understanding of circles by:• describing the relationships among radius, diameter and circumference of circles;• relating circumference to pi; • determining the sum of the central angles; • constructing circles with a given radius or diameter; • solving problems involving the radii, diameters and circumferences of circles.  | **Shape and Space Unit 1:** **2-D Shapes**1: Exploring Circles 2: Calculating Circumference 3: Exploring Central Angles  | Unit 4 Questions 1-7, 9 (pp. 29-32) | **Big Idea: Many things in our world (e.g., objects, spaces, events) have attributes that can be measured and compared.****Understanding attributes that can be measured, compared, or ordered*** Understands circumference as the measure around a circle.

**Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.****Selecting and using units to estimate, measure, construct, and make comparisons** * Constructs circles based on radius and diameter measures.
* Relates angle measures to arcs and sectors of a circle.

**Understanding relationships among measured units*** Develops and generalizes strategies to compute the circumference and area of circles.
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| SS2. Develop and apply a formula for determining the area of: • triangles; • parallelograms; • circles.  | **Shape and Space Unit 1:** **2-D Shapes and 3-D Solids**4: Determining the Area of Triangles5: Determining the Area of Parallelograms6: Estimating and Determining the Area of a Circle  | Unit 4 Questions 8-12, 14, 15, 18 (pp. 31-37) | **Big Idea:** **Assigning a unit to a continuous attribute allows us to measure and make comparisons.****Understanding relationships among measured units*** Develops and generalizes strategies to compute the circumference and area of circles.

**Big Idea: 2-D shapes and 3-D solids can be analyzed and classified in different ways by their attributes.****Investigating 2-D shapes, 3-D solids, and their attributes through composition and decomposition** * Constructs and decomposes polygons into shapes with known areas (e.g., triangles, rectangles).

**Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.****Understanding relationships among measured units*** Develops and generalizes strategies to compute area of triangles, quadrilaterals, and other polygons (e.g., decomposing a parallelogram and rearranging to form a rectangle).
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**Correlation of the Prince Edward Island Mathematics Curriculum
with Mathology Grade 7 (Shape and Space: Transformations)**

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| **Outcomes** | **Grade 7 Mathology.ca** | **Mathology Practice Workbook 7** | **Pearson Canada Grades 4–9 Mathematics Learning Progression** |
| **General Curriculum Outcome**Describe and analyze position and motion of objects and shapes. |
| **Specific Curriculum Outcomes** SS3. Identify and plot points in the four quadrants of a Cartesian plane, using integral ordered pairs.  | **Shape and Space Unit 2: The Cartesian Plane**7: Plotting and Reading Coordinates 8: Exploring the Cartesian Plane | Unit 6 Questions 1-4 (pp. 47-49) | **Big Idea: Objects can be located in space and viewed from multiple perspectives.****Locating and mapping objects in space** * Plots and locates points on a Cartesian plane, and relates the location to the two axes. (Limited to the first quadrant.)
* Identifies, locates, and plots points, polygon vertices, and lines on a Cartesian plane in all four quadrants. (Limited to integers.)
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**Correlation of the Prince Edward Island Mathematics Curriculum
with Mathology Grade 7 (Statistics and Probability: Data Analysis)**

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| **Outcomes** | **Grade 7 Mathology.ca** | **Mathology Practice Workbook 7** | **Pearson Canada Grades 4–9 Mathematics Learning Progression** |
| **General Curriculum Outcome**Collect, display and analyze data to solve problems. |
| **Specific Curriculum Outcomes**SP1. Demonstrate an understanding of central tendency and range by: • determining the measures of central tendency (mean, median, mode) and range • determining the most appropriate measures of central tendency to report findings. | **Statistics and Probability** **Unit 1: Data Management**1: Exploring Measures of Data2: Determining Mean and Mode3: Determining Median and Range4: Comparing Measures of Central Tendency  | Unit 10 Questions 7, 8, 10, 11, 13, 16 (pp. 89-95) | **Big Idea: Formulating questions, collecting data, and consolidating data in visual and graphic displays help us understand, predict, and interpret situations that involve uncertainty, variability, and randomness.****Creating graphical displays of collected data** * Creates charts and graphs with appropriate titles and labels to represent data collected.
* Represents data graphically using many -to-one correspondence with appropriate scales and intervals.

**Reading and interpreting data displays and analyzing variability*** Reads and interprets data displays using many-to-one correspondence.
* Visualizes and determines the median value as a middle measure representing a whole data set.
* Visualizes and determines the mean of a data set.
* Understands and describes the differences between the central tendency values (i.e., mode, median, mean) and explores which measure is most appropriate for the data collected.

**Using the language and tools of chance to describe and predict events*** Describes data using frequency counts (e.g., 5 people chose peppermint) and modal value (e.g., dogs are the most common pets).
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| SP2. Determine the effect on the mean, median and mode when an outlier is included in a data set.  | **Statistics and Probability** **Unit 1: Data Management**5: Exploring the Effect of Outliers on Mean, Median, and Mode | Unit 10 Questions 7, 9, 10, 12 (pp. 89-92) | **Big Idea: Formulating questions, collecting data, and consolidating data in visual and graphic displays help us understand, predict, and interpret situations that involve uncertainty, variability, and randomness.****Reading and interpreting data displays and analyzing variability** * Explains the effect of removing or changing values (including outliers) on measures of central tendency.
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**Correlation of the Prince Edward Island Mathematics Curriculum
with Mathology Grade 7 (Statistics and Probability: Chance and Uncertainty)**

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| **Outcomes** | **Grade 7 Mathology.ca** | **Mathology Practice Workbook 7** | **Pearson Canada Grades 4–9 Mathematics Learning Progression** |
| **General Curriculum Outcome**Use experimental or theoretical probabilities to represent and solve problems involving uncertainty. |
| **Specific Curriculum Outcomes**SP3. Express probabilities as ratios, fractions and percents.  | **Statistics and Probability** **Unit 2: Probability**6: Exploring Theoretical Probability 7: Writing Experimental Probabilities9: Exploring Theoretical and Experimental Probability | Unit 9 Questions 3, 4, 5, 6, 9 (pp. 79-81, 84) | **Big Idea: Formulating questions, collecting data, and consolidating data in visual and graphic displays help us understand, predict, and interpret situations that involve uncertainty, variability, and randomness.****Using the language and tools of chance to describe and predict events** * Extends understanding of the probability continuum by expressing and comparing probabilities using decimals (between 0 and 1), ratios, fractions, and percents.
* Determines the relative frequency of each outcome in an experiment involving two independent events by performing multiple trials.

**Big Idea: Formulating questions, collecting data, and consolidating data in visual and graphic displays help us understand, predict, and interpret situations that involve uncertainty, variability, and randomness.****Drawing Conclusions by Making Inferences and Justifying Decisions Based on Data Collected** * Compares short‐ and long‐run experimental probabilities of events to their theoretical expectations, and explains the differences.
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| SP4. Identify the sample space (where the combined sample space has 36 or fewer elements) for a probability experiment involving two independent events.  | **Statistics and Probability** **Unit 2: Probability**8: Identifying and Representing Sample Spaces9: Exploring Theoretical and Experimental Probability | Unit 9 Questions 2-4, 5a, 6a (pp. 78-81) | **Big Idea: Formulating questions, collecting data, and consolidating data in visual and graphic displays help us understand, predict, and interpret situations that involve uncertainty, variability, and randomness.****Using the language and tools of chance to describe and predict events** * Determines and represents theoretical probability of outcomes for two independent events (e.g., rolling a die and tossing a coin) using graphical tools (e.g., tree diagram, lists, matrix).
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