

**New Mexico
Common Core
Extended Grade Band Extensions
Mathematics**

Acknowledgements

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Introduction

In 2010, the state of New Mexico adopted the Common Core State Standards (CCSS) for English Language Arts and Mathematics. The CCSS are now part of the New Mexico Content Standards. Recognizing the need to make the content standards accessible for all students, the New Mexico Public Education Department in collaboration with the American Institutes for Research developed the New Mexico Common Core Extended Grade Band Extensions.

Grade Band Extensions

The extensions are designed to assist teachers in providing access to the general education curriculum for students with significant cognitive disabilities. Students receiving instruction based on the grade band extensions total approximately 1% of New Mexico's student population and are assessed through the New Mexico Alternate Performance Assessment (NMAPA). Standards (academic skills) from the CCSS were identified within the following grade bands: 3–5, 6–8, and high school. For each standard, three levels of extensions were created from highest to lowest complexity. Extensions are meant to provide a continuum of entry points related to the English Language Arts and Mathematics standards. Following the full text of the standard, the extensions are organized as follows:

- Extension 1—Most complex application of the standard
- Extension 2—Less complex application of the standard
- Extension 3—Least complex application of the standard

Within each grade band, standards were selected from the highest grade. If a concept was not represented within the highest grade, a standard that reflects the concept was included from a lower grade. Some standards within specific grade bands were not extended due to the complexity of the skills and are not included in this document. *Please note students should not be categorized according to a particular extension level. Instead, instruction should target extensions appropriate to individual strengths which may vary across standards.*

Purpose

The extensions will be used by school personnel to plan and implement lessons based on academic standards. Extensions will assist special educators in planning academic activities aligned to the state standards. In planning academic activities, teachers must consider incorporation of non-academic skills necessary for student success such as communication, self-determination, gross/fine motor, and social skills. Additionally, the extensions will be the basis of the NMAPA.

Students will participate in NMAPA testing in the spring of each school year. Test items will be aligned to the extensions. Therefore, it is imperative that students receive instruction aligned to the extensions throughout the school year.

Considerations for Use

The New Mexico Common Core Extended Grade Band Extensions do not specify individual accommodations or supports that may be necessary for students to access the curriculum. When designing lessons based on the extensions, teachers should consider the unique learning needs of each student and employ the necessary accommodations. According to the CCSS *Application to Students with Disabilities* document Council of Chief State School Officers (CCSSO) 2010, “These supports and accommodations should ensure that students receive access to multiple means of learning and opportunities to demonstrate knowledge, but retain the rigor and high expectations of the Common Core State Standards.” In addition to considering accommodations, teachers should reference the complete CCSS document for grade-specific standards, text and writing exemplars, and suggested texts.

Navigating the New Mexico Common Core Extended Grade Band Extensions

The document is divided by **grade bands**, and each section is identified by informational text at the top of each page.

- **Common Core (CC) Clusters** describe how multiple Common Core (CC) standards and New Mexico Benchmarks are related.
- **Common Core (CC) Standards** define what students should understand and be able to do.
- **Corresponding New Mexico (NM) Benchmarks** define what students should understand and be able to do.
- **Common Core (CC) Essence** is the main idea of the standard.
- **Common Core (CC) Extensions** are entry points to the standard.

Grade Band: 3-5				
CC Domain: I. Operations and Algebraic Thinking (OA)				
CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
Write and interpret numerical expressions.	5.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	Standard II: Students will understand algebraic concepts and applications. 5–8 Benchmark 2: Represent and analyze mathematical situations and structures using algebraic symbols	Use grouping symbols to evaluate expressions	Extension 1: Evaluate addition and subtraction expressions using grouping symbols.
				Extension 2: Identify the operation(s) needed to evaluate expressions.
				Extension 3: Use manipulatives to add and subtract numbers less than 20.
	5.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.	Standard II: Students will understand algebraic concepts and applications. 5–8 Benchmark 3: Use mathematical models to represent and understand quantitative relationships	Interpret numerical expressions using grouping symbols	Extension 1: Identify which operation comes first when a calculation requires up to two operations.
				Extension 2: Use a visual representation or manipulatives to model a problem that requires two operations.
				Extension 3: Use manipulatives to model a problem that requires one operation.

**New Mexico
Common Core
Extended Grade Band Extensions**

**Mathematics
Grade Band 3–5**

Grade Band: 3–5

CC Domain: I. Operations and Algebraic Thinking (OA)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p>Write and interpret numerical expressions.</p>	<p>5.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.</p>	<p>Standard II: Students will understand algebraic concepts and applications.</p> <p>5–8 Benchmark 2: Represent and analyze mathematical situations and structures using algebraic symbols</p>	<p>Use grouping symbols to evaluate expressions</p>	<p>Extension 1: Evaluate addition and subtraction expressions using grouping symbols.</p>
				<p>Extension 2: Identify the operation(s) needed to evaluate expressions.</p>
				<p>Extension 3: Use manipulatives to add and subtract numbers less than 20.</p>

Grade Band: 3–5

CC Domain: I. Operations and Algebraic Thinking (OA)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p>Write and interpret numerical expressions.</p>	<p>5.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.</p>	<p>Standard II: Students will understand algebraic concepts and applications.</p> <p>5–8 Benchmark 3: Use mathematical models to represent and understand quantitative relationships</p>	<p>Interpret numerical expressions using grouping symbols</p>	<p>Extension 1: Identify which operation comes first when a calculation requires up to two operations.</p>
				<p>Extension 2: Use a visual representation or manipulatives to model a problem that requires two operations.</p>
				<p>Extension 3: Use manipulatives to model a problem that requires one operation.</p>

Grade Band: 3–5

CC Domain: I. Operations and Algebraic Thinking (OA)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p align="center">Analyze patterns and relationships.</p>	<p>5.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.</p>	<p>Standard II: Students will understand algebraic concepts and applications.</p> <p>5-8 Benchmark 1: Understand patterns, relations, and functions</p>	<p align="center">Generate patterns</p>	<p>Extension 1: Given a pattern, identify the rule.</p>
				<p>Extension 2: Continue a sequence of numbers with a given rule.</p>
				<p>Extension 3: Continue a non-numeric pattern.</p>

Grade Band: 3–5

CC Domain: II. Number and Operations in Base Ten (NBT)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p>Understand the place value system.</p>	<p>5.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.</p>	<p>Standard I: Students will understand numerical concepts and mathematical operations.</p> <p>5–8 Benchmark 1: Understand numbers, ways of representing numbers, relationships among numbers, and number systems</p>	<p align="center">Place value</p>	<p>Extension 1: Use a visual representation or manipulatives to model that ten 10s equals 100 and vice versa.</p>
				<p>Extension 2: Use a visual representation or manipulatives to model that ten 1s equals 10 and vice versa.</p>
				<p>Extension 3: Create and match sets of objects up to 10 using concrete objects.</p>

Grade Band: 3–5

CC Domain: II. Number and Operations in Base Ten (NBT)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p align="center">Understand the place value system.</p>	<p align="center">5.3 Read, write, and compare decimals to thousandths.</p>	<p>Standard 1: Students will understand numerical concepts and mathematical operations.</p> <p>5–8 Benchmark 3: Compute fluently and make reasonable estimates</p>	<p align="center">Decimal place value</p>	<p>Extension 1: Compare two decimals up to the tenths place using $>$, $=$, $<$ symbols by using visual representations or manipulatives.</p>
				<p>Extension 2: Compare a whole number and a decimal using $>$, $=$, $<$ symbols by using visual representations or manipulatives.</p>
				<p>Extension 3: Compare sets of concrete objects to identify which is greater.</p>

Grade Band: 3–5

CC Domain: II. Number and Operations in Base Ten (NBT)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p align="center">Understand the place value system.</p>	<p align="center">5.4 Use place value understanding to round decimals to any place.</p>	<p>Standard 1: Students will understand numerical concepts and mathematical operations.</p> <p>5–8 Benchmark 3: Compute fluently and make reasonable estimates</p>	<p align="center">Rounding decimals</p>	<p>Extension 1: Given a decimal, round to the nearest whole number.</p>
				<p>Extension 2: Given a number up to 100, round to the nearest ten.</p>
				<p>Extension 3: Given a number less than 10, determine if the number is closer to zero or closer to ten.</p>

Grade Band: 3–5

CC Domain: II. Number and Operations in Base Ten (NBT)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p align="center">Perform operations with multi-digit whole numbers and with decimals to hundredths.</p>	<p align="center">5.5 Fluently multiply multi-digit whole numbers using the standard algorithm.</p>	<p>Standard 1: Students will understand numerical concepts and mathematical operations.</p> <p>5–8 Benchmark 2: Understand the meaning of operations and how they relate to one another</p>	<p align="center">Multiply whole numbers</p>	<p>Extension 1: Use repeated addition to solve a multiplication problem involving a two-digit and a single-digit number.</p>
				<p>Extension 2: Use repeated addition to solve a multiplication problem involving single-digit numbers.</p>
				<p>Extension 3: Identify a model representing repeated addition of single-digit numbers from a choice of two or more.</p>

Grade Band: 3–5

CC Domain: II. Number and Operations in Base Ten (NBT)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p align="center">Perform operations with multi-digit whole numbers and with decimals to hundredths.</p>	<p align="center">5.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p>	<p>Standard 1: Students will understand numerical concepts and mathematical operations.</p> <p>5–8 Benchmark 2: Understand the meaning of operations and how they relate to one another</p>	<p align="center">Divide whole numbers</p>	<p>Extension 1: Given a two-digit number, divide by a one-digit number with no remainder.</p>
				<p>Extension 2: Given a set of objects up to 20, divide objects into equal groups.</p>
				<p>Extension 3: Given a set of objects up to 10, divide into equal groups.</p>

Grade Band: 3–5

CC Domain: II. Number and Operations in Base Ten (NBT)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p align="center">Perform operations with multi-digit whole numbers and with decimals to hundredths.</p>	<p>5.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p>	<p>Standard I: Students will understand numerical concepts and mathematical operations.</p> <p>5–8 Benchmark 2: Understand the meaning of operations and how they relate to one another</p>	<p align="center">Decimal operations</p>	<p>Extension 1: Solve decimal problems involving addition and subtraction.</p>
				<p>Extension 2: Solve decimal problems involving addition.</p>
				<p>Extension 3: Add and subtract using concrete objects.</p>

Grade Band: 3–5

CC Domain: III. Number and Operations—Fractions (NF)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p>Use equivalent fractions as a strategy to add and subtract fractions.</p>	<p>5.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$. (In general, $\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$.)</p>	<p>Standard I: Students will understand numerical concepts and mathematical operations.</p> <p>K–4 Benchmark 1: Understand numbers, ways of representing numbers, relationships among numbers, and number systems</p>	<p>Add and subtract fractions</p>	<p>Extension 1: Add or subtract fractions with like and unlike denominators.</p>
				<p>Extension 2: Given a visual or object model, add or subtract fractions with like denominators.</p>
				<p>Extension 3: Given an object model with one fraction displayed, add a fraction with a like denominator.</p>

Grade Band: 3–5

CC Domain: III. Number and Operations—Fractions (NF)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p>Use equivalent fractions as a strategy to add and subtract fractions.</p>	<p>5.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.</p>	<p>Standard I: Students will understand numerical concepts and mathematical operations.</p> <p>K–4 Benchmark 1: Understand numbers, ways of representing numbers, relationships among numbers, and number systems</p> <p>K–4 Benchmark 2: Understand the meaning of operations and how they relate to one another</p>	<p>Fraction word problems</p>	<p>Extension 1: Solve addition or subtraction word problems involving fractions with like denominators.</p>
				<p>Extension 2: Given a visual or object model, solve addition or subtraction word problems involving fractions with like denominators.</p>
				<p>Extension 3: Given a visual or object model of a fraction and the denominator, identify the numerator.</p>

Grade Band: 3–5

CC Domain: III. Number and Operations—Fractions (NF)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p align="center">Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p>	<p>5.3 Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret $3/4$ as the result of dividing 3 by 4, noting that $3/4$ multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size $3/4$. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?</p>	<p>Standard I: Students will understand numerical concepts and mathematical operations.</p> <p>K–4 Benchmark 1: Understand numbers, ways of representing numbers, relationships among numbers, and number systems</p> <p>K–4 Benchmark 2: Understand the meaning of operations and how they relate to one another</p>	<p align="center">Fractions represent division problems</p>	<p>Extension 1: Given a fraction, identify the numerator and denominator.</p>
				<p>Extension 2: Given a visual or object model, construct a fraction.</p>
				<p>Extension 3: Given a visual or object model of a fraction and the denominator, identify the numerator.</p>

Grade Band: 3–5

CC Domain: III. Number and Operations—Fractions (NF)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p align="center">Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p>	<p align="center">5.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.</p>	<p>Standard I: Students will understand numerical concepts and mathematical operations.</p> <p>K–4 Benchmark 1: Understand numbers, ways of representing numbers, relationships among numbers, and number systems</p> <p>K–4 Benchmark 2: Understand the meaning of operations and how they relate to one another</p>	<p align="center">Multiply fractions</p>	<p>Extension 1: Multiply a fraction by a whole number using repeated addition ($1/2 \times 3 = 1/2 + 1/2 + 1/2$).</p>
				<p>Extension 2: Using a visual or object model, multiply a fraction by a whole number using repeated addition.</p>
				<p>Extension 3: Identify how many parts make a whole using a model.</p>

Grade Band: 3–5

CC Domain: III. Number and Operations—Fractions (NF)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p align="center">Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p>	<p align="center">5.5 Interpret multiplication as scaling (resizing).</p>	<p>Standard I: Students will understand numerical concepts and mathematical operations.</p> <p>K–4 Benchmark 1: Understand numbers, ways of representing numbers, relationships among numbers, and number systems</p> <p>K–4 Benchmark 2: Understand the meaning of operations and how they relate to one another</p>	<p align="center">Multiplying by a whole number produces a bigger product; multiplying by a fraction produces a smaller product</p>	<p>Extension 1: Multiply a fraction by a whole number and then compare the product to the original whole number ($1/2 \times 4 = 2$, 2 is smaller than 4).</p>
				<p>Extension 2: Compare fractional numbers or models using $>$, $=$, $<$ symbols.</p>
				<p>Extension 3: Given a visual or object model, compare two fractions and identify which is bigger or smaller.</p>

Grade Band: 3–5

CC Domain: III. Number and Operations—Fractions (NF)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p align="center">Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p>	<p>5.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.</p>	<p>Standard I: Students will understand numerical concepts and mathematical operations.</p> <p>K–4 Benchmark 1: Understand numbers, ways of representing numbers, relationships among numbers, and number systems</p> <p>K–4 Benchmark 2: Understand the meaning of operations and how they relate to one another</p>	<p align="center">Multiplication word problems involving fractions</p>	<p>Extension 1: Solve multiplication word problems involving a fraction and a whole number.</p>
				<p>Extension 2: Given a visual or object model, solve multiplication word problems involving a fraction and a whole number.</p>
				<p>Extension 3: Given a visual or object model of a fraction and its denominator, identify the numerator.</p>

Grade Band: 3–5

CC Domain: III. Number and Operations—Fractions (NF)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p align="center">Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p>	<p align="center">5.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.</p>	<p>Standard I: Students will understand numerical concepts and mathematical operations.</p>	<p align="center">Divide whole numbers by fractions</p>	<p>Extension 1: Given a visual or object model, divide a whole number by a fraction.</p>
		<p>K–4 Benchmark 1: Understand numbers, ways of representing numbers, relationships among numbers, and number systems</p>		<p>Extension 2: Given a visual or object model, divide a whole number by $\frac{1}{4}$ or $\frac{1}{2}$.</p>
		<p>K–4 Benchmark 2: Understand the meaning of operations and how they relate to one another</p>		<p>Extension 3: Given a set of objects, divide the set into half and count the pieces.</p>

Grade Band: 3–5

CC Domain: IV. Measurement and Data (MD)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p>Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.</p>	<p>3.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.</p>	<p>Standard IV: Students will understand measurement systems and applications.</p> <p>5-8 Benchmark 1: Understand measurable attributes of objects and the units, systems, and process of measurement</p> <p>5-8 Benchmark 2: Apply appropriate techniques, tools, and formulas to determine measurements</p>	<p align="center">Tell time</p>	<p>Extension 1: Tell time to the nearest quarter or half hour.</p>
				<p>Extension 2: Tell time to the nearest hour.</p>
				<p>Extension 3: Use a schedule to determine the order of events.</p>

Grade Band: 3–5

CC Domain: IV. Measurement and Data (MD)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p>Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.</p>	<p>4.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p>	<p>Standard IV: Students will understand measurement systems and applications.</p> <p>5-8 Benchmark 1: Understand measurable attributes of objects and the units, systems, and process of measurement</p> <p>5-8 Benchmark 2: Apply appropriate techniques, tools, and formulas to determine measurements</p>	<p>Solve real world problems involving time and money</p>	<p>Extension 1: Solve word problems involving elapsed time or amount of money necessary for a purchase.</p>
				<p>Extension 2: Estimate the amount of elapsed time or the amount of money necessary for a purchase.</p>
				<p>Extension 3: Using models, identify the appropriate interval of time or amount of money to solve a problem.</p>

Grade Band: 3–5

CC Domain: IV. Measurement and Data (MD)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p align="center">Convert like measurement units within a given measurement system.</p>	<p>5.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.</p>	<p>Standard IV: Students will understand measurement systems and applications.</p>	<p align="center">Equivalent measurement</p>	<p>Extension 1: Measure an object using two measurements and compare the measures (<, =, >).</p>
		<p>5-8 Benchmark 1: Understand measurable attributes of objects and the units, systems, and process of measurement</p>		<p>Extension 2: Measure an object using two measurements.</p>
		<p>5-8 Benchmark 2: Apply appropriate techniques, tools, and formulas to determine measurements</p>		<p>Extension 3: Order measures from smallest to biggest or shortest to longest and vice versa.</p>

Grade Band: 3–5

CC Domain: IV. Measurement and Data (MD)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p>Represent and interpret data.</p>	<p>5.2 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.</p>	<p>Standard V: Students will understand how to formulate questions, analyze data, and determine probabilities.</p> <p>Data Analysis 5–8 Benchmark 2: Select and use appropriate statistical methods to analyze data</p>	<p>Organize and represent data</p>	<p>Extension 1: Create a line plot, bar graph, or number line using $\frac{1}{2}$ and whole numbers.</p>
				<p>Extension 2: Create a line plot, bar graph, or number line using whole numbers.</p>
				<p>Extension 3: Match data points to a given line plot, bar graph, or number line.</p>

Grade Band: 3–5

CC Domain: IV. Measurement and Data (MD)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p align="center">Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.</p>	<p align="center">5.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.</p>	<p>Standard IV: Students will understand measurement systems and applications.</p> <p>5–8 Benchmark 2: Apply appropriate techniques, tools, and formulas to determine measurements</p>	<p align="center">Properties of volume</p>	<p>Extension 1: Determine how much a three-dimensional figure holds by filling with specified units (cup, ounce, liter).</p>
				<p>Extension 2: Fill a three-dimensional figure to a specified volume (cup, ounce, liter).</p>
				<p>Extension 3: Identify a three-dimensional figure as full or empty.</p>

Grade Band: 3–5

CC Domain: IV. Measurement and Data (MD)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p>Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.</p>	<p>5.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.</p>	<p>Standard IV: Students will understand measurement systems and applications.</p> <p>5–8 Benchmark 2: Apply appropriate techniques, tools, and formulas to determine measurements</p>	<p>Measure volume</p>	<p>Extension 1: Choose the appropriate units (cups, ounces, liters, gallons) to measure volume of a selected container.</p>
				<p>Extension 2: Find volume by counting unit cubes or improvised units.</p>
				<p>Extension 3: Fill containers to capacity.</p>

Grade Band: 3–5

CC Domain: IV. Measurement and Data (MD)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p>Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.</p>	<p>5.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.</p>	<p>Standard IV: Students will understand measurement systems and applications.</p> <p>5–8 Benchmark 2: Apply appropriate techniques, tools, and formulas to determine measurements</p>	<p>Relate volume to addition and multiplication</p>	<p>Extension 1: Find the total volume of two combined measures.</p>
				<p>Extension 2: Choose an appropriate container to hold combined volumes of two containers.</p>
				<p>Extension 3: Indicate if more or less is needed to fill containers to a specified line of measurement.</p>

Grade Band: 3–5

CC Domain: V. Geometry (G)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p>Graph points on the coordinate plane to solve real-world and mathematical problems.</p>	<p>5.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).</p>	<p>Standard III: Students will understand geometric concepts and applications.</p> <p>5–8 Benchmark 2: Specify locations and describe spatial relationships using coordinate geometry and other representational systems</p>	<p align="center">Plot coordinates on a graph</p>	<p>Extension 1: Given a coordinate system, plot points on the plane.</p>
				<p>Extension 2: Given a coordinate system, identify the coordinates of a point.</p>
				<p>Extension 3: Locate numbers on a number line.</p>

Grade Band: 3–5

CC Domain: V. Geometry (G)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p>Graph points on the coordinate plane to solve real-world and mathematical problems.</p>	<p>5.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.</p>	<p>Standard III: Students will understand geometric concepts and applications.</p> <p>5–8 Benchmark 2: Specify locations and describe spatial relationships using coordinate geometry and other representational systems</p>	<p align="center">Plot coordinates on a graph</p>	<p>Extension 1: Given a coordinate system, plot points on the plane.</p>
				<p>Extension 2: Given a coordinate system, identify the coordinates of a point.</p>
				<p>Extension 3: Locate numbers on a number line.</p>

Grade Band: 3–5

CC Domain: V. Geometry (G)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p>Classify two-dimensional figures into categories based on their properties.</p>	<p>5.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of That category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.</p>	<p>Standard III: Students will understand geometric concepts and applications.</p> <p>K–4 Benchmark 1: Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships</p>	<p>Categories of shapes have similar attributes</p>	<p>Extension 1: Label attributes of shapes.</p>
				<p>Extension 2: Sort shapes according to attributes.</p>
				<p>Extension 3: Match shapes.</p>

Grade Band: 3–5

CC Domain: V. Geometry (G)

CC Clusters	CC Standards	Corresponding NM Benchmark	CC Essence	CC Extension
<p>Classify two-dimensional figures into categories based on their properties.</p>	<p>5.4 Classify two-dimensional figures in a hierarchy based on properties.</p>	<p>Standard III: Students will understand geometric concepts and applications.</p> <p>K–4 Benchmark 1: Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships</p> <p>5–8 Benchmark 1: Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships</p>	<p>Classify shapes</p>	<p>Extension 1: Sort shapes by multiple attributes and label the attributes.</p>
				<p>Extension 2: Sort shapes by multiple attributes.</p>
				<p>Extension 3: Sort shapes according to a given attribute.</p>

**New Mexico
Common Core
Extended Grade Band Extensions**

**Mathematics
Grade Band 6–8**

Grade Band 6–8

CC Domain: I. Ratios and Proportional Relationships (RP)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Analyze proportional relationships and use them to solve real-world and mathematical problems.</p>	<p align="center">7.1 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 $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $\frac{\frac{1}{2}}{\frac{1}{4}}$ miles per hour, equivalently 2 miles per hour.</p>	<p align="center">Standard II: Students will understand algebraic concepts and applications.</p> <p align="center">5-8 Benchmark 4: Analyze changes in various contexts</p>	<p align="center">Create and solve ratios</p>	<p>Extension 1: Given a visual model, identify ratios involving fractions.</p>
				<p>Extension 2: Given a visual model or manipulative, identify ratios involving whole numbers.</p>
				<p>Extension 3: Identify the ratio, when given a set of manipulatives.</p>

Grade Band 6–8

CC Domain: I. Ratios and Proportional Relationships (RP)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Analyze proportional relationships and use them to solve real-world and mathematical problems.</p>	<p align="center">7.2 Recognize and represent proportional relationships between quantities.</p>	<p align="center">Standard II: Students will understand algebraic concepts and applications.</p> <p align="center">5–8 Benchmark 4: Analyze changes in various contexts</p>	<p align="center">Represent proportional relationships</p>	<p>Extension 1: Identify if a graph represents a proportional (linear) relationship.</p>
				<p>Extension 2: Given coordinate pairs involving whole numbers, identify the rule.</p>
				<p>Extension 3: Given a rule, continue a sequence of whole numbers.</p>

Grade Band 6–8

CC Domain: I. Ratios and Proportional Relationships (RP)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Analyze proportional relationships and use them to solve real-world and mathematical problems.</p>	<p align="center">7.3 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>	<p align="center">Standard II: Students will understand algebraic concepts and applications.</p> <p align="center">5-8 Benchmark 4: Analyze changes in various contexts</p>	<p align="center">Use ratios to solve real world problems</p>	<p>Extension 1: Given a ratio table involving whole numbers, identify the rule and fill in a missing value.</p>
				<p>Extension 2: Given a ratio table involving whole numbers, identify the rule.</p>
				<p>Extension 3: Given a rule, continue a sequence of whole numbers.</p>

Grade Band 6–8

CC Domain: II. The Number System (NS)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Know that there are numbers that are not rational, and approximate them by rational numbers.</p>	<p>8.1 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.</p>	<p>Standard I: Students will understand numerical concepts and mathematical operations.</p> <p>5–8 Benchmark 1: Understand numbers, ways of representing numbers, relationships among numbers, and number systems</p>	<p>Identify rational and irrational numbers</p>	<p>Extension 1: Identify and extend the pattern in a rational decimal.</p>
				<p>Extension 2: Identify the pattern in a rational decimal.</p>
				<p>Extension 3: Given a rule, continue a sequence of whole numbers.</p>

Grade Band 6–8

CC Domain: II. The Number System (NS)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Know that there are numbers that are not rational, and approximate them by rational numbers.</p>	<p>8.2 Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.</p>	<p>Standard 1: Students will understand numerical concepts and mathematical operations.</p> <p>5–8 Benchmark 3: Compute fluently and make reasonable estimates</p>	<p>Estimate the values of numbers</p>	<p>Extension 1: Given decimals, identify corresponding points on a number line and compare.</p>
				<p>Extension 2: Round decimals to the nearest whole number and identify the corresponding points on a number line.</p>
				<p>Extension 3: Given whole numbers, identify the corresponding points on a number line.</p>

Grade Band 6–8

CC Domain: III. Expressions and Equations (EE)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Work with radicals and integer exponents.</p>	<p>8.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = 1/33 = 1/27$.</p>	<p>Standard I: Students will understand numerical concepts and mathematical operations.</p> <p>5–8 Benchmark 1: Understand numbers, ways of representing numbers, relationships among numbers, and number systems</p>	<p>Know how to evaluate numerical expressions that contain exponents</p>	<p>Extension 1: Express single-digit exponents in expanded form ($3^3 = 3 \times 3 \times 3$).</p>
				<p>Extension 2: Identify a model representing repeated multiplication (exponents in expanded form).</p>
				<p>Extension 3: Identify a model representing repeated addition (multiplication) of single-digit numbers.</p>

Grade Band 6–8

CC Domain: III. Expressions and Equations (EE)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Work with radicals and integer exponents.</p>	<p>8.2 Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.</p>	<p>Standard I: Students will understand numerical concepts and mathematical operations.</p> <p>5–8 Benchmark 1: Understand numbers, ways of representing numbers, relationships among numbers, and number systems</p>	<p>Evaluate square root and cube root of perfect squares and cubes</p>	<p>Extension 1: Recognize perfect squares up to 25</p>
				<p>Extension 2: Create a representation of a perfect square</p>
				<p>Extension 3: Given a visual or manipulative model, select the perfect square</p>

Grade Band 6–8

CC Domain: III. Expressions and Equations (EE)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Work with radicals and integer exponents.</p>	<p>8.3 Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3×10^8 and the population of the world as 7×10^9, and determine that the world population is more than 20 times larger.</p>	<p>Standard I: Students will understand numerical concepts and mathematical operations.</p> <p>5–8 Benchmark 1: Understand numbers, ways of representing numbers, relationships among numbers, and number systems</p>	<p align="center">Understand the powers of 10</p>	<p>Extension 1: Match a number with its scientific notation form (single digit times an integer power of 10).</p>
				<p>Extension 2: Multiply by 10.</p>
				<p>Extension 3: Compare numbers greater than 100 in standard form.</p>

Grade Band 6–8

CC Domain: III. Expressions and Equations (EE)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Work with radicals and integer exponents.</p>	<p>8.4 Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.</p>	<p>Standard I: Students will understand numerical concepts and mathematical operations.</p> <p>5–8 Benchmark 1: Understand numbers, ways of representing numbers, relationships among numbers, and number systems</p>	<p>Scientific notation</p>	<p>Extension 1: Match a number with its scientific notation form (single digit times an integer power of 10).</p>
				<p>Extension 2: Multiply by 10.</p>
				<p>Extension 3: Compare numbers greater than 100 in standard form.</p>

Grade Band 6–8

CC Domain: III. Expressions and Equations (EE)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Understand the connections between proportional relationships, lines, and linear equations.</p>	<p>8.5 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.</p>	<p>Standard II: Students will understand algebraic concepts and applications.</p> <p>5–8 Benchmark 3: Use mathematical models to represent and understand quantitative relationships</p>	<p>Graph and compare slope</p>	<p>Extension 1: When given similar representations, identify the greater slope (steeper line has the greater slope).</p>
				<p>Extension 2: Identify if a line has positive, negative, or no slope.</p>
				<p>Extension 3: Identify directionality of lines (increasing or decreasing).</p>

Grade Band 6–8

CC Domain: III. Expressions and Equations (EE)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Understand the connections between proportional relationships, lines, and linear equations.</p>	<p>8.6 Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b.</p>	<p>Standard II: Students will understand algebraic concepts and applications.</p> <p>5–8 Benchmark 2: Represent and analyze mathematical situations and structures using algebraic symbols</p> <p>5–8 Benchmark 3: Use mathematical models to represent and understand quantitative relationships</p> <p>Standard III: Students will understand geometric concepts and applications.</p> <p>5–8 Benchmark 2: Specify locations and describe spatial relationships using coordinate geometry and other representational systems</p>	<p align="center">Define slope and y-intercept</p>	<p>Extension 1: Identify the coordinates for points on a line.</p>
				<p>Extension 2: Given a line on a graph, identify the y-intercept.</p>
				<p>Extension 3: Identify the x and y axes.</p>

Grade Band 6–8

CC Domain: III. Expressions and Equations (EE)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Analyze and solve linear equations and pairs of simultaneous linear equations.</p>	<p>8.7 Solve linear equations in one variable.</p>	<p>Standard II: Students will understand algebraic concepts and applications.</p> <p>5–8 Benchmark 2: Represent and analyze mathematical situations and structures using algebraic symbols</p>	<p>Solve linear equations</p>	<p>Extension 1: Solve a one-step equation with positive numbers involving addition and subtraction only ($y + 3 = 5$).</p>
				<p>Extension 2: Given a one-step equation, identify the operation needed to solve (the inverse operation).</p>
				<p>Extension 3: Solve for an unknown number within a number sentence ($5 + x = 8$).</p>

Grade Band 6–8

CC Domain: III. Expressions and Equations (EE)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Analyze and solve linear equations and pairs of simultaneous linear equations.</p>	<p>8.8 Analyze and solve pairs of simultaneous linear equations.</p>	<p>Standard II: Students will understand algebraic concepts and applications.</p> <p>5–8 Benchmark 2: Represent and analyze mathematical situations and structures using algebraic symbols</p> <p>5–8 Benchmark 3: Use mathematical models to represent and understand quantitative relationships</p>	<p>Solve pairs of linear equations</p>	<p>Extension 1: Given a graph with two lines, compare the slopes of the lines (line a is steeper than line b).</p>
				<p>Extension 2: Given a graph with two lines, identify the coordinates of the point of intersection.</p>
				<p>Extension 3: Given a graph with two lines, identify the point of intersection.</p>

Grade Band 6–8

CC Domain: IV. Functions (F)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Define, evaluate, and compare functions.</p>	<p align="center">8.1 Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.</p>	<p>Standard I: Students will understand algebraic concepts and applications.</p> <p>5–8 Benchmark 2: Represent and analyze mathematical situations and structures using algebraic symbols</p>	<p align="center">Specific input will yield specific output</p>	<p>Extension 1: Given a set of at least three ordered pairs, identify the next ordered pair in the sequence.</p>
				<p>Extension 2: Identify the rule of a numeric pattern.</p>
				<p>Extension 3: Given the rule, continue a numeric pattern.</p>

Grade Band 6–8

CC Domain: IV. Functions (F)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Define, evaluate, and compare functions.</p>	<p>8.2 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.</p>	<p>Standard I: Students will understand algebraic concepts and applications.</p> <p>5–8 Benchmark 1: Understand patterns, relations, and functions</p> <p>5–8 Benchmark 2: Represent and analyze mathematical situations and structures using algebraic symbols</p>	<p align="center">Compare/ contrast two different input/output relationships</p>	<p>Extension 1: Describe the similarities/differences between a set of repeated patterns.</p>
				<p>Extension 2: Identify similar sets of repeated patterns presented numerically in tables.</p>
				<p>Extension 3: Identify similar sets of repeated patterns represented graphically.</p>

Grade Band 6–8

CC Domain: IV. Functions (F)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Define, evaluate, and compare functions.</p>	<p>8.3 Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.</p>	<p>Standard I: Students will understand algebraic concepts and applications.</p> <p>5–8 Benchmark 2: Represent and analyze mathematical situations and structures using algebraic symbols</p> <p>5–8 Benchmark 3: Use mathematical models to represent and understand quantitative relationships</p>	<p align="center">Equations of linear and non-linear functions</p>	<p>Extension 1: Describe the similarities/differences of linear or non-linear functions.</p>
				<p>Extension 2: Classify graphs of functions as linear or non-linear.</p>
				<p>Extension 3: Identify the directionality (increasing or decreasing) of a line on a graph.</p>

Grade Band 6–8

CC Domain: IV. Functions (F)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Use functions to model relationships between quantities.</p>	<p>8.4 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.</p>	<p>Standard I: Students will understand algebraic concepts and applications.</p> <p>5–8 Benchmark 2: Represent and analyze mathematical situations and structures using algebraic symbols</p>	<p>Construct a linear graph using a table or equation</p>	<p>Extension 1: Given a graph, plot multiple coordinates.</p>
				<p>Extension 2: Identify the coordinates of given points.</p>
				<p>Extension 3: Identify the directionality (increasing or decreasing) of a line on a graph.</p>

Grade Band 6–8

CC Domain: IV. Functions (F)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Use functions to model relationships between quantities.</p>	<p>8.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.</p>	<p>Standard I: Students will understand algebraic concepts and applications.</p> <p>5–8 Benchmark 2: Represent and analyze mathematical situations and structures using algebraic symbols</p> <p>5–8 Benchmark 3: Use mathematical models to represent and understand quantitative relationships</p>	<p>Construct a linear graph as described verbally</p>	<p>Extension 1: Find multiple sets of coordinate pairs on a graph plot based on verbal directions.</p>
				<p>Extension 2: Find one set of coordinate pairs on a graph plot based on verbal directions.</p>
				<p>Extension 3: Find numbers on a line diagram/number line based on verbal directions.</p>

Grade Band 6–8

CC Domain: V. Geometry (G)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Understand congruence and similarity using physical models, transparencies, or geometry software.</p>	<p>8.1 Verify experimentally the properties of rotations, reflections, and translations.</p>	<p>Standard III: Students will understand geometric concepts and applications.</p> <p>5–8 Benchmark 3: Apply transformations and use symmetry to analyze mathematical situations</p>	<p>Demonstrate rotations (turns), reflections (flips), and translations (slides)</p>	<p>Extension 1: Manipulate multiple shapes to fit matching spaces.</p>
				<p>Extension 2: Match shapes in different orientations.</p>
				<p>Extension 3: Manipulate shapes to fit matching spaces.</p>

Grade Band 6–8

CC Domain: V. Geometry (G)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Understand congruence and similarity using physical models, transparencies, or geometry software.</p>	<p>8.2 Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.</p>	<p>Standard III: Students will understand geometric concepts and applications.</p> <p>5–8 Benchmark 1: Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships</p>	<p>Properties of shapes stay the same regardless of orientation</p>	<p>Extension 1: Manipulate multiple shapes to fit matching spaces.</p>
				<p>Extension 2: Match shapes in different orientations.</p>
				<p>Extension 3: Manipulate shapes to fit the matching space.</p>

Grade Band 6–8

CC Domain: V. Geometry (G)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Understand congruence and similarity using physical models, transparencies, or geometry software.</p>	<p>8.3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.</p>	<p>Standard III: Students will understand geometric concepts and applications.</p> <p>5–8 Benchmark 3: Apply transformations and use symmetry to analyze mathematical situations</p>	<p>Describe the manipulation or resizing of geometric figures</p>	<p>Extension 1: Identify the orientation of a figure related to another figure.</p>
				<p>Extension 2: Demonstrate concepts of size and directionality (top, bottom, right, left, flips, turns).</p>
				<p>Extension 3: Match shapes in different orientations and sizes.</p>

Grade Band 6–8

CC Domain: V. Geometry (G)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Understand congruence and similarity using physical models, transparencies, or geometry software.</p>	<p>8.4 Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.</p>	<p>Standard III: Students will understand geometric concepts and applications.</p> <p>5–8 Benchmark 1: Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships</p>	<p>Properties of shapes stay the same regardless of orientation or size</p>	<p>Extension 1: Describe the steps needed to match shapes in different orientations or sizes.</p>
				<p>Extension 2: Match shapes in different orientations and sizes.</p>
				<p>Extension 3: Manipulate shapes to fit matching spaces.</p>

Grade Band 6–8

CC Domain: V. Geometry (G)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Understand congruence and similarity using physical models, transparencies, or geometry software.</p>	<p>8.5 Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.</p>	<p>Standard III: Students will understand geometric concepts and applications.</p> <p>5–8 Benchmark 1: Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships</p>	<p align="center">Properties of angles</p>	<p>Extension 1: Arrange angles in order from smallest to largest and vice versa.</p>
				<p>Extension 2: Sort angles into predetermined categories.</p>
				<p>Extension 3: Match identical angles.</p>

Grade Band 6–8

CC Domain: V. Geometry (G)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Understand and apply the Pythagorean Theorem.</p>	<p>8.6 Explain a proof of the Pythagorean Theorem and its converse.</p>	<p>Standard III: Students will understand geometric concepts and applications.9–12 Benchmark 1: Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships</p>	<p>Pythagorean Theorem is a formula that only applies to right triangles</p>	<p>Extension 1: Identify the parts of a right triangle (right angle, legs, hypotenuse).</p>
				<p>Extension 2: Given an assortment of triangles, identify right triangles.</p>
				<p>Extension 3: Given shapes, identify triangles.</p>

Grade Band 6–8

CC Domain: V. Geometry (G)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Understand and apply the Pythagorean Theorem.</p>	<p>8.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.</p>	<p>Standard III: Students will understand geometric concepts and applications.</p> <p>9–12 Benchmark 1: Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships</p>	<p>Pythagorean Theorem</p>	<p>Extension 1: Identify the parts of a right triangle (right angle, legs, hypotenuse).</p>
				<p>Extension 2: Identify right triangles in the environment.</p>
				<p>Extension 3: Identify triangles in the environment.</p>

Grade Band 6–8

CC Domain: V. Geometry (G)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Understand and apply the Pythagorean Theorem.</p>	<p>8.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.</p>	<p>Standard III: Students will understand geometric concepts and applications.</p> <p>5–8 Benchmark 2: Specify locations and describe spatial relationships using coordinate geometry and other representational systems</p>	<p>Pythagorean Theorem</p>	<p>Extension 1: Given three points on a coordinate plane, determine if the points create a right triangle.</p>
				<p>Extension 2: Identify a right triangle when drawn on a coordinate plane.</p>
				<p>Extension 3: Given shapes, identify triangles.</p>

Grade Band 6–8

CC Domain: V. Geometry (G)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.</p>	<p>8.9 Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.</p>	<p>Standard III: Students will understand geometric concepts and applications.</p> <p>5–8 Benchmark 4: Use visualization, spatial reasoning, and geometric modeling to solve problems</p>	<p>Volume of cones, cylinders, and spheres</p>	<p>Extension 1: Order alike three-dimensional shapes from least to greatest volume and vice versa.</p>
				<p>Extension 2: Compare the volume of two alike three-dimensional shapes.</p>
				<p>Extension 3: Sort and label three-dimensional shapes (cones, cylinders, spheres).</p>

Grade Band 6–8

CC Domain: VI. Statistics and Probability (SP)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Investigate patterns of association in bivariate data.</p>	<p>8.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.</p>	<p>Standard V: Students will understand how to formulate questions, analyze data, and determine probabilities.</p> <p>5–8 Benchmark 2: Select and use appropriate statistical methods to analyze data</p>	<p>Describe patterns on a graph</p>	<p>Extension 1: Identify patterns on scatter plots as positive, negative, or no association.</p>
				<p>Extension 2: Identify an outlier or cluster within a pattern on a scatter plot.</p>
				<p>Extension 3: Given a pattern on a scatterplot, identify the pattern as linear or nonlinear.</p>

Grade Band 6–8

CC Domain: VI. Statistics and Probability (SP)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Investigate patterns of association in bivariate data.</p>	<p>8.2 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.</p>	<p>Standard V: Students will understand how to formulate questions, analyze data, and determine probabilities.</p> <p>5–8 Benchmark 3: Develop and evaluate inferences and predictions that are based on data</p>	<p>Describe patterns on a graph using a line of best fit</p>	<p>Extension 1: Create a line of best fit when given a scatter plot.</p>
				<p>Extension 2: Given a scatter plot and multiple lines, select which line most closely represents the line of best fit.</p>
				<p>Extension 3: Construct a line to connect two points on a graph.</p>

Grade Band 6–8

CC Domain: VI. Statistics and Probability (SP)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Investigate patterns of association in bivariate data.</p>	<p>8.3 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.</p>	<p>Standard V: Students will understand how to formulate questions, analyze data, and determine probabilities.</p> <p>5–8 Benchmark 3: Develop and evaluate inferences and predictions that are based on data</p>	<p>Describe patterns on a graph using slope and intercept</p>	<p>Extension 1: Given a graph with a line, describe the line as positive, negative, or no association.</p>
				<p>Extension 2: Match representations of positive, negative, and no association to sample graphs.</p>
				<p>Extension 3: Identify directionality of lines (increasing or decreasing).</p>

Grade Band 6–8

CC Domain: VI. Statistics and Probability (SP)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Investigate patterns of association in bivariate data.</p>	<p>8.4 Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?</p>	<p>Standard V: Students will understand how to formulate questions, analyze data, and determine probabilities.</p> <p>5–8 Benchmark 3: Develop and evaluate inferences and predictions that are based on data</p>	<p>Construct a two-way table and interpret association between the two variables</p>	<p>Extension 1: Given a two-way table, determine association between two variables.</p>
				<p>Extension 2: Match representations of positive, negative, and no association to sample graphs.</p>
				<p>Extension 3: Identify directionality of lines (increasing or decreasing).</p>

**New Mexico
Common Core
Extended Grade Band Extensions

Mathematics

Grade Band High School**

Grade Band: High School

CC Domain: I. Algebra—Seeing Structure in Expressions (SSE)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Interpret the structure of expressions.</p>	<p>HS.1 Interpret expressions that represent a quantity in terms of its context.</p>	<p>Standard I: Students will understand algebraic concepts and applications.</p> <p>9–12 Benchmark 1: Represent and analyze mathematical situations and structures using algebraic symbols</p>	<p>Interpret expressions</p>	<p>Extension 1: Identify how many terms there are in the equation.</p>
				<p>Extension 2: Identify expressions as numeric or variable.</p>
				<p>Extension 3: Identify mathematical symbols (+, -, ÷, ×, =).</p>

Grade Band: High School

CC Domain: I. Algebra—Seeing Structure in Expressions (SSE)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Interpret the structure of expressions.</p>	<p>HS.2 Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.</p>	<p>Standard I: Students will understand algebraic concepts and applications.</p> <p>9–12 Benchmark 1: Represent and analyze mathematical situations and structures using algebraic symbols</p>	<p>Write equivalent expressions</p>	<p>Extension 1: Rewrite linear equations to show equivalence ($2x + 3 = 3 + 2x$).</p>
				<p>Extension 2: Rewrite expressions with whole numbers to show equivalence ($7 + 5 = 5 + 7$).</p>
				<p>Extension 3: Use a visual representation or manipulatives to show equivalent expressions with whole numbers less than 20.</p>

Grade Band: High School

CC Domain: I. Algebra—Seeing Structure in Expressions (SSE)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Write expressions in equivalent forms to solve problems.</p>	<p>HS.3 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.</p>	<p>Standard I: Students will understand algebraic concepts and applications.</p> <p>9–12 Benchmark 1: Represent and analyze mathematical situations and structures using algebraic symbols</p>	<p align="center">Use factoring to create equivalent expressions</p>	<p>Extension 1: Match given examples of equivalent expressions using factoring ($2(x + 4) = 2x + 8$).</p>
				<p>Extension 2: Identify equivalent expressions with whole numbers using factoring ($7 + 5 = 5 + 7$).</p>
				<p>Extension 3: Use a visual representation or manipulatives to show repeated addition with whole numbers less than 20.</p>

Grade Band: High School

CC Domain: II. Algebra—Creating Equations (CED)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Create equations that describe numbers or relationships.</p>	<p>HS.1 Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.</p>	<p>Standard I: Students will understand algebraic concepts and applications.</p> <p>9–12 Benchmark 1: Represent and analyze mathematical situations and structures using algebraic symbols</p>	<p align="center">Create equations to solve problems with one variable</p>	<p>Extension 1: Given a problem that requires a linear equation (variable problem); select the best equation that represents the problem.</p>
				<p>Extension 2: Given a one-step variable problem, identify which operation (addition, subtraction, multiplication, division) is needed to solve.</p>
				<p>Extension 3: Use a visual representation or manipulatives to solve a one-step problem involving whole numbers less than 20.</p>

Grade Band: High School

CC Domain: II. Algebra—Creating Equations (CED)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Create equations that describe numbers or relationships.</p>	<p>HS.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.</p>	<p>Standard I: Students will understand algebraic concepts and applications.</p> <p>9–12 Benchmark 3: Use mathematical models to represent and understand quantitative relationships</p>	<p align="center">Create equations and graph on a coordinate axis</p>	<p>Extension 1: Identify the equation that corresponds to the appropriate graph and plot (extend) more points.</p>
				<p>Extension 2: Identify the equation that corresponds to the appropriate graph.</p>
				<p>Extension 3: Plot points on a graph.</p>

Grade Band: High School

CC Domain: II. Algebra—Creating Equations (CED)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Create equations that describe numbers or relationships.</p>	<p>HS.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R.</p>	<p>Standard I: Students will understand algebraic concepts and applications.</p> <p>9–12 Benchmark 1: Represent and analyze mathematical situations and structures using algebraic symbols</p>	<p align="center">Rearrange an equation to highlight a specific variable</p>	<p>Extension 1: Given a one-step formula, rearrange for the highlighted variable.</p>
				<p>Extension 2: Given a formula, identify which operation would be used to solve for the highlighted variable (the inverse operation).</p>
				<p>Extension 3: Identify mathematical symbols (+, -, ×, ÷, =) and variables in an equation.</p>

Grade Band: High School

CC Domain: III. Algebra—Reasoning with Equations and Inequalities (REI)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Understand solving equations as a process of reasoning and explain the reasoning.</p>	<p align="center">HS.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.</p>	<p align="center">Standard I: Students will understand algebraic concepts and applications.</p> <p align="center">9–12 Benchmark 1: Represent and analyze mathematical situations and structures using algebraic symbols</p>	<p align="center">Justify a solution method</p>	<p>Extension 1: Given the steps to solve an equation, sequence the steps in the correct order.</p>
				<p>Extension 2: Identify operation(s) needed to solve an equation.</p>
				<p>Extension 3: Match the equation with an equivalent expression.</p>

Grade Band: High School

CC Domain: III. Algebra—Reasoning with Equations and Inequalities (REI)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Understand solving equations as a process of reasoning and explain the reasoning.</p>	<p align="center">HS.2 Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.</p>	<p>Standard 1: Students will understand algebraic concepts and applications.</p> <p>9–12 Benchmark 1: Represent and analyze mathematical situations and structures using algebraic symbols</p>	<p align="center">Extraneous solutions may arise when solving simple equations</p>	<p>Extension 1: Given an equation that models a real-world problem and potential solutions, identify between viable and nonviable solutions.</p>
				<p>Extension 2: Given a real-world problem and two solutions, identify which one is viable.</p>
				<p>Extension 3: Given an equation involving addition, subtraction, multiplication, and division of whole numbers and two solutions, identify which solution is viable.</p>

Grade Band: High School

CC Domain: III. Algebra—Reasoning with Equations and Inequalities (REI)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Solve equations and inequalities in one variable.</p>	<p>HS.3 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.</p>	<p>Standard I: Students will understand algebraic concepts and applications.</p> <p>9–12 Benchmark 1: Represent and analyze mathematical situations and structures using algebraic symbols</p>	<p>Solve linear equations with coefficients represented by letters</p>	<p>Extension 1: Solve a one-step linear equation including coefficients represented by letters ($bx = 20$).</p>
				<p>Extension 2: Solve a one-step linear equation by using addition or subtraction including a constant represented by a letter ($x + b = 20$).</p>
				<p>Extension 3: Solve for the missing number within a given expression involving addition, subtraction, multiplication, and division of whole numbers.</p>

Grade Band: High School

CC Domain: III. Algebra—Reasoning with Equations and Inequalities (REI)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Solve systems of equations.</p>	<p>HS.6 Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.</p>	<p>Standard I: Students will understand algebraic concepts and applications.</p> <p>9–12 Benchmark 3: Use mathematical models to represent and understand quantitative relationships</p>	<p>Solve a system of linear equations with graphs</p>	<p>Extension 1: Identify the solution to the system of equations.</p>
				<p>Extension 2: Given a graph with two intersecting lines, identify the coordinates of the point of intersection.</p>
				<p>Extension 3: Given a graph with two intersecting lines, identify the solution of the system of equations by locating the point of intersection.</p>

Grade Band: High School

CC Domain: III. Algebra—Reasoning with Equations and Inequalities (REI)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Solve systems of equations.</p>	<p>HS.7 Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. For example, find the points of intersection between the line $y = -3x$ and the circle $x^2 + y^2 = 3$.</p>	<p>Standard I: Students will understand algebraic concepts and applications.</p> <p>9–12 Benchmark 3: Use mathematical models to represent and understand quantitative relationships</p>	<p>Graph and solve a system with a linear relationship and a quadratic relationship</p>	<p>Extension 1: Given the graphed quadratic and two points, identify the solution to the system of equations by connecting the points to create a line and identify the coordinates of the point(s) where the quadratic and line intersect.</p>
				<p>Extension 2: Given a graph of a quadratic and a line, identify the coordinates of the point(s) where the quadratic and line intersect.</p>
				<p>Extension 3: Given a graph of a quadratic and a line, identify the solution to the system of equations by locating where the quadratic and line intersect.</p>

Grade Band: High School

CC Domain: IV. Geometry—Congruence (CO)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Experiment with transformations in the plane.</p>	<p>HS.5 Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.</p>	<p>Standard II: Students will understand geometric concepts and applications.</p> <p>9–12 Benchmark 3: Apply transformations and use symmetry to analyze mathematical situations</p>	<p>Demonstrate rotations (turns), reflections (flips), and translations (slides)</p>	<p>Extension 1: Demonstrate rotations, reflections, and translations.</p>
				<p>Extension 2: Demonstrate translations and reflections.</p>
				<p>Extension 3: Demonstrate translations.</p>

Grade Band: High School

CC Domain: V. Geometry—Similarity, Right Triangles, and Trigonometry (SRT)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Understand similarity in terms of similarity transformations.</p>	<p>HS.2 Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.</p>	<p>Standard II: Students will understand geometric concepts and applications.</p> <p>9–12 Benchmark 1: Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships</p> <p>9–12 Benchmark 3: Apply transformations and use symmetry to analyze mathematical situations</p>	<p>Identify similar figures</p>	<p>Extension 1: Categorize triangles by more than one attribute (acute, obtuse, right angles) and label attributes.</p>
				<p>Extension 2: Categorize shapes by more than one attribute and label attributes.</p>
				<p>Extension 3: Sort shapes by more than one geometric attribute.</p>

Grade Band: High School

CC Domain: V. Geometry—Similarity, Right Triangles, and Trigonometry (SRT)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Understand similarity in terms of similarity transformations.</p>	<p>HS.4 Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.</p>	<p>Standard II: Students will understand geometric concepts and applications.</p> <p>9–12 Benchmark 1: Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships</p>	<p>Pythagorean Theorem is a formula that only applies to right triangles</p>	<p>Extension 1: Construct a right triangle on a coordinate plane, label the parts, and explain two attributes.</p>
				<p>Extension 2: Identify the parts of a right triangle (right angle, legs, hypotenuse) and properties of 45-45-90 and 30-60-90 triangles (no square roots).</p>
				<p>Extension 3: Given an assortment of triangles, identify right triangles.</p>

Grade Band: High School

CC Domain: VI. Geometry—Circles (C)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Understand and apply theorems about circles.</p>	<p>HS.1 Prove that all circles are similar.</p>	<p>Standard II: Students will understand geometric concepts and applications.</p> <p>9–12 Benchmark 1: Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships</p>	<p>Identify the properties of circles</p>	<p>Extension 1: Identify the parts of a circle and compare circles based on their properties.</p>
				<p>Extension 2: Identify three-dimensional shapes with a circle as a cross-section.</p>
				<p>Extension 3: Sort circles based on their geometric properties.</p>

Grade Band: High School

CC Domain: VII. Geometry—Geometric Measurement and Dimension (GMD)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Visualize relationships between two-dimensional and three-dimensional objects.</p>	<p>HS.4 Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two dimensional objects.</p>	<p>Standard II: Students will understand geometric concepts and applications.</p> <p>9–12 Benchmark 1: Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships</p>	<p align="center">Identify the shapes of cross-sections of three-dimensional objects</p>	<p>Extension 1: Identify three-dimensional shapes based on nets.</p>
				<p>Extension 2: Label shapes of cross-sections of three-dimensional objects.</p>
				<p>Extension 3: Categorize three-dimensional objects by the shape of their cross-sections.</p>

Grade Band: High School

CC Domain: VIII. Geometry—Modeling with Geometry (MG)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Apply geometric concepts in modeling situations.</p>	<p>HS.1 Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).</p>	<p>Standard II: Students will understand geometric concepts and applications.</p> <p>9–12 Benchmark 1: Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships</p> <p>9–12 Benchmark 4: Use visualization, spatial reasoning, and geometric modeling to solve problems</p>	<p>Identify geometric shapes in the real world</p>	<p>Extension 1: Label real-world objects as particular geometric shapes.</p>
				<p>Extension 2: Find cones, cylinders, spheres, pyramids, or cubes in the environment.</p>
				<p>Extension 3: Match cones, cylinders, or spheres with real-world objects.</p>

Grade Band: High School

CC Domain: IX. Statistics and Probability—Interpreting Categorical and Quantitative Data (ID)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Summarize, represent, and interpret data on a single count or measurement variable.</p>	<p align="center">HS.1 Represent data with plots on the real number line (dot plots, histograms, and box plots).</p>	<p>Standard III: Students will understand how to formulate questions, analyze data, and determine probabilities.</p> <p>9–12 Benchmark 2: Select and use appropriate statistical methods to analyze data</p> <p>9–12 Benchmark 3: Develop and evaluate inferences and predictions that are based on data</p>	<p align="center">Represent data with plots</p>	<p>Extension 1: Create a histogram to represent given data.</p>
				<p>Extension 2: Given a plot including axes and labels, create the bars to complete a histogram.</p>
				<p>Extension 3: Locate integers on a number line.</p>

Grade Band: High School

CC Domain: IX. Statistics and Probability—Interpreting Categorical and Quantitative Data (ID)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Summarize, represent, and interpret data on a single count or measurement variable.</p>	<p align="center">HS.2 Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.</p>	<p align="center">Standard III: Students will understand how to formulate questions, analyze data, and determine probabilities.</p> <p align="center">9–12 Benchmark 3: Develop and evaluate inferences and predictions that are based on data</p>	<p align="center">Use measures of center to compare data</p>	<p>Extension 1: Given a data set involving numbers less than 100, compute mean (average), median, or mode.</p>
				<p>Extension 2: Given a data set involving numbers less than 100, find the mean (average).</p>
				<p>Extension 3: Given a data set involving numbers less than 20, select the appropriate median from given options.</p>

Grade Band: High School

CC Domain: IX. Statistics and Probability—Interpreting Categorical and Quantitative Data (ID)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Summarize, represent, and interpret data on a single count or measurement variable.</p>	<p>HS.5 Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.</p>	<p>Standard III: Students will understand how to formulate questions, analyze data, and determine probabilities.</p> <p>9–12 Benchmark 3: Develop and evaluate inferences and predictions that are based on data</p> <p>9–12 Benchmark 4: Understand and apply basic concepts of probability</p>	<p align="center">Interpret categorical data in a two-way frequency table</p>	<p>Extension 1: Understand that if an event has a probability of 0 as impossible, less than 1/2 as unlikely, more than 1/2 as likely, and 1 as certain.</p>
				<p>Extension 2: Compare the probability of an event occurring from different sample spaces.</p>
				<p>Extension 3: Identify whether an event is likely, unlikely, certain, or impossible.</p>

Grade Band: High School

CC Domain: IX. Statistics and Probability—Interpreting Categorical and Quantitative Data (ID)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p align="center">Summarize, represent, and interpret data on a single count or measurement variable.</p>	<p>HS.6 Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.</p>	<p>Standard III: Students will understand how to formulate questions, analyze data, and determine probabilities.</p> <p>9–12 Benchmark 2: Select and use appropriate statistical methods to analyze data</p> <p>9–12 Benchmark 3: Develop and evaluate inferences and predictions that are based on data</p>	<p align="center">Interpret data on a scatter plot</p>	<p>Extension 1: Describe the scatter plot as positive, negative, or no correlation, identify outliers, and construct Line of Best Fit.</p>
				<p>Extension 2: Given a scatter plot and multiple lines, select which line most closely represents the line of best fit.</p>
				<p>Extension 3: Identify scatterplot when given a choice of graphs.</p>

Grade Band: High School

CC Domain: IX. Statistics and Probability—Interpreting Categorical and Quantitative Data (ID)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Interpret linear models.</p>	<p>HS.7 Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.</p>	<p>Standard III: Students will understand how to formulate questions, analyze data, and determine probabilities.</p> <p>9–12 Benchmark 2: Select and use appropriate statistical methods to analyze data</p> <p>9–12 Benchmark 3: Develop and evaluate inferences and predictions that are based on data</p>	<p>Interpret the slope and intercept on a graph</p>	<p>Extension 1: Given a graph with a line, identify the slope from given options.</p>
				<p>Extension 2: Given a graph with a line, describe the line as positive, negative, or no correlation.</p>
				<p>Extension 3: Match representations of positive, negative, or no correlation to sample graphs.</p>

Grade Band: High School

CC Domain: X. Statistics and Probability—Making Inferences and Justifying Conclusions (IC)

CC Clusters	CC Clusters	CC Clusters	CC Clusters	CC Clusters
<p>Understand and evaluate random processes underlying statistical experiments.</p>	<p>HS.2 Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?</p>	<p>Standard III: Students will understand how to formulate questions, analyze data, and determine probabilities.</p> <p>9–12 Benchmark 4: Understand and apply basic concepts of probability</p>	<p>Evaluate if data is consistent with a data-generating process</p>	<p>Extension 1: Given data and a data-generating device (spinner, coin, dice), determine if the data could come from the specified device.</p>
				<p>Extension 2: Given a data-generating device, determine the probability (likely, unlikely, certain, or impossible) of different outcomes.</p>
				<p>Extension 3: Match data from the data-generating device to categories corresponding to the device.</p>