Math Maps & Unit CCRS Priorities
2016-2017
K10 SBCSC

ISTEP+
Instructional and Assessment Guidance

Prioritizing Instruction

In an effort to empower teachers and focus on college and career readiness, the Office of Student Assessment has created Instructional and Assessment Guidance ("Guidance") documents for grades 3-8. The Content Priority of each Standard is delineated in the Guidance as one of three designations:

Critical –identified as "All of the Indiana Academic Standards represent valuable content, and the Guidance documents are designed to assist teachers in planning and prioritizing instructional time to ensure student success.

1) Critical identified as "check +"
2) Important –identified as "check"
3) Additional –identified as "check –"

All of the Indiana Academic Standards represent valuable content, and the Guidance documents are designed to assist teachers in planning and prioritizing instructional time to ensure student success.

A Final Note

The Guidance documents, as well as the CCRS Standards themselves, are not meant to be used as a **"check list."** Rather, when teachers take into consideration the instructional priorities and deliver rich, meaningful lessons, the Standards come to life in the classroom.

5th Grade/Unit 1A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 1-4	✓+ 5.C.1: Multiply multi-digit whole numbers fluently using a standard algorithmic approach. ✓+ 5.C.2: Find whole-number quotients and remainders 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. Describe the strategy and explain the reasoning used. ✓+ 5.C.9: Evaluate expressions with parentheses or brackets involving whole numbers using the commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property. ✓+ 5.AT.1: Solve real-world problems involving multiplication and division of whole numbers (e.g. by using equations to represent the problem). In division problems that involve a remainder, explain how the remainder affects the solution to the problem.
	✓ 5.AT.8: Define and use up to two variables to write linear expressions that arise from real-world problems, and evaluate them for given values. ✓ 5.DS.2: Understand and use measures of center (mean and median) and frequency (mode) to describe a data set.
	✓ – 5.NS.3: Recognize the relationship 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 inversely, a digit in one place represents 1/10 of what it represents in the place to its left. ✓ – 5.NS.4: Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. ✓ – 5.C.3: Compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 5-8	5.M.1: Convert among different-sized standard measurement units within a given measurement system, and use these conversions in solving multi-step real-world problems.
	5.NS.1: Use a number line to compare and order fractions, mixed numbers, and decimals to thousandths. Write the results using >, =, and < symbols. 5.NS.2: Explain different interpretations of fractions, including: as parts of a whole, parts of a set, and division of whole numbers by whole numbers. 5.NS.6: Understand, interpret, and model percents as part of a hundred (e.g. by using pictures, diagrams, and other visual models).
	5.NS.5: Use place value understanding to round decimal numbers up to thousandths to any given place value.

5th Grade/Unit 2A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 9-12	5.C.4: Add and subtract fractions with unlike denominators, including mixed numbers. 5.C.8: Add, subtract, multiply, and divide decimals to hundredths, using models or drawings and strategies based on place value or the properties of operations. Describe the strategy and explain the reasoning. 5.AT.2: Solve real-world problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators (e.g., by using visual fraction models and equations to represent the problem). Use benchmark fractions and number sense of fractions to estimate mentally and assess whether the answer is reasonable. 5.AT.5: Solve real-world problems involving addition, subtraction, mutliplication, and division with decimals to hundredths, including problems that involve money in decimal notation (e.g. by using equations to represent the problem).

5th Grade/Unit 2B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 14-25	✓+ 5.C.4: Add and subtract fractions with unlike denominators, including mixed numbers. ⊗ ✓+ 5.C.7: Use visual fraction models and numbers to divide a unit fraction by a non-zero whole number and to divide a whole number by a unit fraction. ⊗ ✓+ 5.C.8: Add, subtract, multiply, and divide decimals to hundredths, using models or drawings and strategies based on place value or the properties of operations. Describe the strategy and explain the reasoning. ✓+ 5.C.5: Use visual fraction models and numbers to multiply a fraction by a fraction or a whole number.
	✓ 5.G.1: Identify, describe, and draw triangles (right, acute, obtuse) and circles using appropriate tools (e.g., ruler or straightedge, compass and technology). Understand the relationship between radius and diameter. Thinking ✓ 5.AT.3: Solve real-world problems involving multiplication of fractions, including mixed numbers (e.g., by using visual fraction models and equations to represent the problem). ⊗ ✓ 5.AT.4: Solve real-world problems involving division of unit fractions by non-zero whole numbers, and division of whole numbers by unit fractions (e.g., by using visual fraction models and equations to represent the problem).
	✓ – 5.C.6: Explain why multiplying a number by a fraction greater than 1 results in a product greater than the given number. Explain why multiplying a number by a fraction less than 1 results in a product smaller than the given number. Relate the principle of fraction equivalence, $a/b = (n \times a)/(n \times b)$, to the effect of multiplying a/b by 1.

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 22-25	✓+ 5.C.2: Find whole-number quotients and remainders 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. Describe the strategy and explain the reasoning used. ✓+ 5.C.8: Add, subtract, multiply, and divide decimals to hundredths, using models or drawings and strategies based on place value or the properties of operations. Describe the strategy and explain the reasoning.
	✓ 5.G.1: Identify, describe, and draw triangles (right, acute, obtuse) and circles using appropriate tools (e.g., ruler or straightedge, compass and technology). Understand the relationship between radius and diameter. ✓ 5.G.2: Identify and classify polygons including quadrilaterals, pentagons, hexagons, and triangles (equilateral, isosceles, scalene, right, acute and obtuse) based on angle measures and sides. Classify polygons in a hierarchy based on properties.
	✓ – 5.NS.5: Use place value understanding to round decimal numbers up to thousandths to any given place value.

5th Grade/Unit 3B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 26-29	✓+ 5.M.3: Develop and use formulas for the area of triangles, parallelograms and trapezoids. Solve real-world and other mathematical problems that involve perimeter and area of triangles, parallelograms and trapezoids, using appropriate units for measures. ✓+ 5.M.5: Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for right rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths to solve real-world problems and other mathematical problems involving shapes. ✓+ 5.C.1: Multiply multi-digit whole numbers fluently using a standard algorithmic approach.
	✓ 5.M.2: Find the area of a rectangle with fractional side lengths by modeling with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas. ✓ 5.M.4: Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths or multiplying the height by the area of the base. ✓ 5.M.6: Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real-world problems and other mathematical problems.

5th Grade/Unit 4A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 31-35	✓ 5.AT.6: Graph points with whole number coordinates on a coordinate plane. Explain how the coordinates relate the point as the distance from the origin on each 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). ✓ 5.AT.7: Represent real-world problems and equations by graphing ordered pairs in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. ✓ 5.DS.1: Formulate questions that can be addressed with data and make predictions about the data. Use observations, surveys, and experiments to collect, represent, and interpret the data using tables (including frequency tables), line plots, bar graphs, and line graphs. Recognize the differences in representing categorical and numerical data. ✓ 5.DS.2: Understand and use measures of center (mean and median) and frequency (mode) to describe a data set.

5th Grade/Unit 4B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 36-39	✓+ 5.M.1: Convert among different-sized standard measurement units within a given measurement system, and use these conversions in solving multi-step real-world problems. ✓+ 5.C.1: Multiply multi-digit whole numbers fluently using a standard algorithmic approach. ✓+ 5.C.2: Find whole-number quotients and remainders 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. Describe the strategy and explain the reasoning used. ✓+ 5.C.4: Add and subtract fractions with unlike denominators, including mixed numbers. ✓+ 5.C.5: Use visual fraction models and numbers to multiply a fraction by a fraction or a whole number.

	✓ 5.NS.2: Explain different interpretations of fractions, including: as parts of a whole, parts of a set, and division of whole numbers by whole numbers.
	✓ – 5.C.3: Compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.

APPROXIMATE	IDOE CCRS PRIORITIES

TIME FRAME	
Week 1-4	✓+ 6.C.1: Divide multi-digit whole numbers fluently using a standard algorithmic approach. ⊗ ✓+ 6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach.

6th Grade/Unit 1B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 5-8	✓+ 6.NS.5: Know commonly used fractions (halves, thirds, fourths, fifths, eighths, tenths) and their decimal and percent equivalents. Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator. ✓+ 6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. ⊗ ✓+ 6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations.
	✓ 6.NS.7: Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers from 1 to 100, with a common factor as a multiple of a sum of two whole numbers with no common factor.
	✓ – 6.C.4: Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations. ✓ – 6.NS.6: Identify and explain prime and composite numbers.

6th Grade/Unit 2A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 9-12	✓+6.NS.10: Use reasoning involving rates and ratios to model real-world and other mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations). ✓+6.AF.10: Use variables to represent two quantities in a proportional relationship in a real-world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.
	✓ 6.NS.7: Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers from 1 to 100, with a common factor as a multiple of a sum of two whole numbers with no common factor. ✓ 6.NS.8: Interpret, model, and use ratios to show the relative sizes of two quantities. Describe how a ratio shows the relationship between two quantities. Use the following notations: a/b, a to b, a:b. ⊗ ✓ 6.NS.9: Understand the concept of a unit rate and use terms related to rate in the context of a ratio relationship. Functions ✓ 6.AF.9: Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. ✓ 6.GM.1: Convert between measurement systems (English to metric and metric to English) given conversion factors, and use these conversions in solving real-world problems.

6th Grade/Unit 2B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 14-25	✓+6.C.6: Apply the order of operations and properties of operations (identity, inverse, commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property) to evaluate numerical expressions with nonnegative rational numbers, including those using grouping symbols, such as parentheses, and involving whole number exponents. Justify each step in the process. ✓+6.AF.1: Evaluate expressions for specific values of their variables, including expressions with whole-number exponents and those that arise from formulas used in real-

	world problems. 6.AF.5: Solve equations of the form x + p = q and px = q fluently for cases in which p, q and x are all nonnegative rational numbers. Represent real world problems using equations of these forms and solve such problems.

	6.C.5: Evaluate positive rational numbers with whole number exponents. 6.AF.2: Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions and to justify whether two linear expressions are equivalent when the two expressions name the same number regardless of which value is substituted into them. 6.AF.3: Define and use multiple variables when writing expressions to represent real-world and other mathematical problems, and evaluate them for given values. 6.AF.6: Write an inequality of the form x > c, x ≥ c, x < c, or x ≤ c, where c is a rational number, to represent a constraint or condition in a real-world or other mathematical problem. Recognize inequalities have infinitely many solutions and represent solutions on a number line diagram.
	6.AF.4: Understand that solving an equation or inequality is the process of answering the following question: Which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

6th Grade/Unit 3A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES

Week 22-25	6.NS.3: Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts. 6.DS.3: Formulate statistical questions; collect and organize the data (e.g., using technology); display and interpret the data with graphical representations (e.g., using technology).
	6.NS.1: Understand that positive and negative numbers are used to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge). Use positive and negative numbers to represent and compare quantities in real-world contexts, explaining the meaning of 0 in each situation. 6.NS.4: Understand that the absolute value of a number is the distance from zero on a number line. Find the absolute value of real numbers and know that the distance between two numbers on the number line is the absolute value of their difference. Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. 6.DS.2: Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots . 6.DS.4: Summarize numerical data sets in relation to their context in multiple ways, such as: report the number of observations; describe the nature of the attribute under investigation, including how it was measured and its units of measurement; determine quantitative measures of center (mean and/or median) and spread (range and interquartile range), as well as describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered; and relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered. 6.AF.7: Understand that signs of numbers in ordered pairs indicate the quadrant containing the point; recognize that when wo ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. Graph points vith rational number coordinates on a coordinate plane. 6.AF.8: Solve real-world and other mathematical problems by graphing points with rational number coordinates on a oordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first oordinate or the same second coordinate. 6.GM.3: Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a ide joining points with the same first coordinate or the same second coordinate; apply these techniques to solve real-world and ther mathematical problems.
	6.NS.2: Understand the integer number system. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself (e.g., –(–3) = 3), and that 0 is its own opposite.

	✓ – 6.DS.1: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for the variability in the answers. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.

6th Grade/Unit 3B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 26-29	✓ 6.GM.1: Convert between measurement systems (English to metric and metric to English) given conversion factors, and use these conversions in solving real-world problems. ⊗ ✓ 6.GM.2: Know that the sum of the interior angles of any triangle is 180º and that the sum of the interior angles of any quadrilateral is 360º. Use this information to solve real-world and mathematical problems. ⊗ ✓ 6.GM.4: Find the area of complex shapes composed of polygons by composing or decomposing into simple shapes; apply this technique to solve real-world and other mathematical problems. ⊗ ✓ 6.GM.5: Find the volume of a right rectangular prism with fractional edge lengths using unit cubes of the appropriate unit fraction edge lengths (e.g., using technology or concrete materials), and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = lwh and V = Bh to find volumes of right rectangular prisms with fractional edge lengths to solve real-world and other mathematical problems.
	YS ✓ – 6.GM.6: Construct right rectangular prisms from nets and use the nets to compute the surface area of prisms; apply this technique to solve real-world and other mathematical problems.

6th Grade/Unit 4A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES

Week 31-35	✓+ 6.DS.3: Formulate statistical questions; collect and organize the data (e.g., using technology); display and interpret the data with graphical representations (e.g., using technology). ✓ – 6.DS.1: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for the variability in the answers. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape. ⊗ ✓ 6.DS.2: Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots. ✓ 6.DS.4: Summarize numerical data sets in relation to their context in multiple ways, such as: report the number of observations; describe the nature of the attribute under investigation, including how it was measured and its units of measurement; determine quantitative measures of center (mean and/or median) and spread (range and interquartile range), as well as describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered; and relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered.

6th Grade/Unit 4B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 36-39	✓+ 6.C.1: Divide multi-digit whole numbers fluently using a standard algorithmic approach. ⊗ ✓+ 6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. ⊗ ✓+ 6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations. ✓ – 6.C.4: Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations.

6th Grade/Pre Algebra/Unit 1A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES

Weeks 1-4	**Computation** LD ✓+ 6.C.1: Divide multi-digit whole numbers fluently using a standard algorithmic approach. LD ✓+ 6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. **IN: Grade 8** **Number Sense** LD ✓ 8.NS.1: Give examples of rational and irrational numbers and explain the difference between them. Understand that every number has a decimal expansion; for rational numbers, show that the decimal expansion repeats eventually, and convert a decimal expansion that repeats into a rational number. LD ✓ 8.NS.2: Use rational approximations of irrational numbers to compare the size of irrational numbers, plot them approximately on a number line, and estimate the value of expressions involving irrational numbers. LD ✓ 8.NS.3: Given a numeric expression with common rational number bases and integer exponents, apply the properties of exponents to generate equivalent expressions. **Computation** LD ✓+ 8.C.1: Solve real-world problems with rational numbers by using multiple operations. LD ✓ 8.C.2: Solve real-world and other mathematical problems involving numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Interpret scientific notation that has been generated by technology, such as a scientific calculator, graphing calculator, or excel spreadsheet.

6th Grade/Pre Algebra/Unit 1B

TIME FRAME	IDOE CCRS PRIORITIES

Weeks 5-9	**Number Sense** LD ✓+ 6.NS.5: Know commonly used fractions (halves, thirds, fourths, fifths, eighths, tenths) and their decimal and percent equivalents. Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator. LD ✓– 6.NS.6: Identify and explain prime and composite numbers. LD ✓ 6.NS.7: Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers from 1 to 100, with a common factor as a multiple of a sum of two whole numbers with no common factor. **Computation** LD ✓+ 6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. LD ✓+ 6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations. LD ✓– 6.C.4: Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations. **Number Sense** LD ✓ 8.NS.4: Use square root symbols to represent solutions to equations of the form x^2 = p, where p is a positive rational number. **Geometry and Measurement** LD ✓– 8.GM.7: Use inductive reasoning to explain the Pythagorean relationship. LD ✓+ 8.GM.8: Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and other mathematical problems in two dimensions. LD ✓ 8.GM.9: Apply the Pythagorean Theorem to find the distance between two points in a coordinate plane.

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 10-14	**Number Sense** LD ✓ 6.NS.7: Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers from 1 to 100, with a common factor as a multiple of a sum of two whole numbers with no common factor. LD ✓ 6.NS.8: Interpret, model, and use ratios to show the relative sizes of two quantities. Describe how a ratio shows the relationship between two quantities. Use the following notations: a/b, a to b, a:b. LD ✓ 6.NS.9: Understand the concept of a unit rate and use terms related to rate in the context of a ratio relationship. LD ✓+ 6.NS.10: Use reasoning involving rates and ratios to model real-world and other mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations). **Algebra and Functions** LD ✓ 6.AF.9: Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. LD ✓+ 6.AF.10: Use variables to represent two quantities in a proportional relationship in a real-world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. **Geometry and Measurement** LD ✓ 6.GM.1: Convert between measurement systems (English to metric and metric to English) given conversion factors, and use these conversions in solving real-world problems. **IN: Grade 8** **Algebra and Functions** LD ✓+ 8.AF.1: Solve linear equations with rational number coefficients fluently, including equations whose solutions

	require expanding expressions using the distributive property and collecting like terms. Represent real-world problems using linear equations and inequalities in one variable and solve such problems. LD ✓ 8.AF.2: Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by transforming a given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers). LD ✓ 8.AF.3: Understand that a function assigns to each x-value (independent variable) exactly one y-value (dependent variable), and that the graph of a function is the set of ordered pairs (x,y). LD ✓ 8.AF.4: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear, has a maximum or minimum value). Sketch a graph that exhibits the qualitative features of a function that has been verbally described.

6th Grade/Pre Algebra/Unit 2B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 15-18	**Computation** LD ✓ 6.C.5: Evaluate positive rational numbers with whole number exponents. LD ✓+ 6.C.6: Apply the order of operations and properties of operations (identity, inverse, commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property) to evaluate numerical expressions with nonnegative rational numbers, including those using grouping symbols, such as parentheses, and involving whole number exponents. Justify each step in the process. **Algebra and Functions** LD ✓+ 6.AF.1: Evaluate expressions for specific values of their variables, including expressions with whole-number exponents and those that arise from formulas used in real-world problems. LD ✓ 6.AF.2: Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions and to justify whether two linear expressions are equivalent when the two expressions name the same number regardless of which value is substituted into them. LD ✓ 6.AF.3: Define and use multiple variables when writing expressions to represent real-world and other

mathematical problems, and evaluate them for given values.

- LD ✓+ 6.AF.5: Solve equations of the form x + p = q and px = q fluently for cases in which p, q and x are all nonnegative rational numbers. Represent real world problems using equations of these forms and solve such problems.
- LD ✓ 6.AF.6: Write an inequality of the form x > c, x ≥ c, x < c, or x ≤ c, where c is a rational number, to represent a constraint or condition in a real-world or other mathematical problem. Recognize inequalities have infinitely many solutions and represent solutions on a number line diagram.

IN: Grade 8

Algebra and Functions

- LD ✓ 8.AF.5: 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. Describe similarities and differences between linear and nonlinear functions from tables, graphs, verbal descriptions, and equations.
- LD ✓+ 8.AF.6: Construct a function to model a linear relationship between two quantities given a verbal description, table of values, or graph. Recognize in y = mx + b that m is the slope (rate of change) and b is the y-intercept of the graph, and describe the meaning of each in the context of a problem.
- LD ✓ 8.AF.7: Compare properties of two linear functions given in different forms, such as a table of values, equation, verbal description, and graph (e.g., compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed).
- LD ✓ 8.AF.8: Understand that solutions to a system of two linear equations correspond to points of intersection of their graphs because points of intersection satisfy both equations simultaneously. Approximate the solution of a system of equations by graphing and interpreting the reasonableness of the approximation.

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES

Weeks 19-22	**Number Sense** LD ✓ 6.NS.1: Understand that positive and negative numbers are used to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge). Use positive and negative numbers to represent and compare quantities in real-world contexts, explaining the meaning of 0 in each situation. LD ✓+ 6.NS.3: Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts. LD ✓ 6.NS.4: Understand that the absolute value of a number is the distance from zero on a number line. Find the absolute value of real numbers and know that the distance between two numbers on the number line is the absolute value of their difference. Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. **Data Analysis and Statistics** LD ✓ 6.DS.2: Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots. LD ✓+ 6.DS.3: Formulate statistical questions; collect and organize the data (e.g., using technology); display and interpret the data with graphical representations (e.g., using technology). LD ✓ 6.DS.4: Summarize numerical data sets in relation to their context in multiple ways, such as: report the number of observations; describe the nature of the attribute under investigation, including how it was measured and its units of measurement; determine quantitative measures of center (mean and/or median) and spread (range and interquartile range), as well as describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered; and relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered. **Algebra and Functions** LD ✓ 6.AF.7: Understand that signs of numbers in ordered pairs indicate the quadrant containing the point; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. Graph points with rational number coordinates on a coordinate plane.

	LD ✓ 6.AF.8: Solve real-world and other mathematical problems by graphing points with rational number coordinates on a coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. **Geometry and Measurement** LD ✓ 6.GM.3: Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate; apply these techniques to solve real-world and other mathematical problems. **IN: Grade 8** **Geometry and Measurement** LD ✓ 8.GM.1: Identify, define and describe attributes of three-dimensional geometric objects (right rectangular prisms, cylinders, cones, spheres, and pyramids). Explore the effects of slicing these objects using appropriate technology and describe the two-dimensional figure that results. LD ✓ 8.GM.2: Solve real-world and other mathematical problems involving volume of cones, spheres, and pyramids and surface area of spheres.

6th Grade/Pre Algebra/Unit 3B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 23-26	**Geometry and Measurement** LD ✓ 6.GM.1: Convert between measurement systems (English to metric and metric to English) given conversion factors, and use these conversions in solving real-world problems. LD ✓ 6.GM.2: Know that the sum of the interior angles of any triangle is 180º and that the sum of the interior angles of any quadrilateral is 360º. Use this information to solve real-world and mathematical problems. LD ✓ 6.GM.4: Find the area of complex shapes composed of polygons by composing or decomposing into simple shapes; apply this technique to solve real-world and other mathematical problems. LD ✓ 6.GM.5: Find the volume of a right rectangular prism with fractional edge lengths using unit cubes of the appropriate unit

	fraction edge lengths (e.g., using technology or concrete materials), and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = lwh and V = Bh to find volumes of right rectangular prisms with fractional edge lengths to solve real-world and other mathematical problems.
	LD ✓ – 6.GM.6: Construct right rectangular prisms from nets and use the nets to compute the surface area of prisms; apply this technique to solve real-world and other mathematical problems.
	IN: Grade 8
	Geometry and Measurement
	LD ✓ – 8.GM.3: Verify experimentally the properties of rotations, reflections, and translations, including: lines are mapped to lines, and line segments to line segments of the same length; angles are mapped to angles of the same measure; and parallel lines are mapped to parallel lines.
	LD ✓ 8.GM.4: 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. Describe a sequence that exhibits the congruence between two given congruent figures.
	LD ✓ 8.GM.5: 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. Describe a sequence that exhibits the similarity between two given similar figures.
	LD ✓ 8.GM.6: Describe the effect of dilations, translations, rotations, and reflections on two- dimensional figures using coordinates.

6th Grade/Pre Algebra/Unit 4A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 1-4	**Data Analysis and Statistics**

- LD ✓– 6.DS.1: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for the variability in the answers. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
- LD ✓ 6.DS.2: Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots.
- LD ✓+ 6.DS.3: Formulate statistical questions; collect and organize the data (e.g., using technology); display and interpret the data with graphical representations (e.g., using technology).
- LD ✓ 6.DS.4: Summarize numerical data sets in relation to their context in multiple ways, such as: report the number of observations; describe the nature of the attribute under investigation, including how it was measured and its units of measurement; determine quantitative measures of center (mean and/or median) and spread (range and interquartile range), as well as describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered; and relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered.

IN: Grade 8

Data Analysis, Statistics and Probability

- LD ✓ 8.DSP.1: Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantitative variables. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
- LD ✓ 8.DSP.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 describe the model fit by judging the closeness of the data points to the line.
- LD ✓ 8.DSP.3: Write and use equations that model linear relationships to make predictions, including interpolation and extrapolation, in real-world situations involving bivariate measurement data; interpret the slope and y-intercept.
- LD ✓– 8.DSP.4: Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. Understand and use appropriate terminology to describe independent, dependent, complementary, and mutually exclusive events.
- LD ✓ 8.DSP.5: Represent sample spaces and find probabilities of compound events (independent and dependent) using methods, such as organized lists, tables, and tree diagrams.

	LD ✓ – 8.DSP.6: For events with a large number of outcomes, understand the use of the multiplication counting principle. Develop the multiplication counting principle and apply it to situations with a large number of outcomes.

6th Grade/ Pre Algebra/Unit 4B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 5-9	**Computation** LD ✓+ 6.C.1: Divide multi-digit whole numbers fluently using a standard algorithmic approach. LD ✓+ 6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. LD ✓+ 6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations. LD ✓ – 6.C.4: Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations. **Computation** LD ✓+ 8.C.1: Solve real-world problems with rational numbers by using multiple operations. Algebra I **Real Numbers And Expressions** LD ✓ AI.RNE.3: Rewrite and evaluate numeric expressions with positive rational exponents using the properties of exponents. LD ✓+ AI.RNE.7: Understand polynomials are closed under the operations of addition, subtraction, and multiplication with integers; add, subtract, and multiply polynomials and divide polynomials by monomials.

7th Grade/Unit 1A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
	✓+ 7.C.7: Compute with rational numbers fluently using a standard algorithmic approach.

Week 1-4	
	✓ – 7.C.1: Understand p + q as the number located a distance |q| from p, in the positive or negative direction, depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.
	✓ – 7.C.2: Understand subtraction of rational numbers as adding the additive inverse, p – q = p + (–q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real- world contexts.
	✓ – 7.C.3: Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers.
	✓ – 7.C.4: Understand that integers can be divided, provided that the divisor is not zero, and that every quotient of integers (with non-zero divisor) is a rational number. Understand that if p and q are integers, then –(p/q) = (–p)/q = p/(–q).

7th Grade/Unit 1B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 5-9	✓ + 7.C.8: Solve real-world problems with rational numbers by using one or two operations. ✓ + 7.AF.2: Solve equations of the form px + q= r and p(x + q) = r fluently, where p, q, and r are specific rational numbers. Represent real-world problems using equations of these forms and solve such problems.
	✓ 7.NS.2: Understand the inverse relationship between squaring and finding the square root of a perfect square integer. Find square roots of perfect square integers. ✓ 7.NS.3: Know there are rational and irrational numbers. Identify, compare, and order rational and common irrational numbers (√2, √3, √5, ∏) and plot them on a number line. ✓ 7.AF.1: Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions, including situations that involve factoring (e.g., given 2x - 10, create an equivalent expression 2(x - 5)). Justify each step in the process. ✓ 7.AF.3: Solve inequalities of the form px +q (> or ≥) r or px + q (< or ≤) r, where p, q, and r are specific rational numbers. Represent real-world problems using inequalities of these forms and solve such problems. Graph the solution set of the inequality and interpret it in the context of the problem.
	✓ – 7.NS.1: Find the prime factorization of whole numbers and write the results using exponents.

7th Grade/Unit 2A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 9-12	✓+ 7.C.6: Use proportional relationships to solve ratio and percent problems with multiple operations, such as the following: simple interest, tax, markups, markdowns, gratuities, commissions, fees, conversions within and across measurement systems, percent increase and decrease, and percent error.
	✓ 7.C.5: Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. ✓ 7.AF.6: Decide whether two quantities are in a proportional relationship (e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin). ⊗ ✓ 7.AF.7: Identify the unit rate or constant of proportionality in tables, graphs, equations, and verbal descriptions of proportional relationships. ⊗ ✓ 7.AF.8: Explain what the coordinates of a point on the graph of a proportional relationship mean in terms of the situation, with special attention to the points (0, 0) and (1,r), where r is the unit rate. ⊗ ✓ 7.GM.3: Solve real-world and other mathematical problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing. Create a scale drawing by using proportional reasoning.

7th Grade/Unit 2B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 14-25	✓+ 7.GM.5: Understand the formulas for area and circumference of a circle and use them to solve real-world and other mathematical problems; give an informal derivation of the relationship between circumference and area of a circle. ⊗
	✓+ 7.GM.6: Solve real-world and other mathematical problems involving volume of cylinders and three- dimensional objects composed of right rectangular prisms.
	✓ 7.GM.7: Construct nets for right rectangular prisms and cylinders and use the nets to compute the surface area; apply this technique to solve real-world and other mathematical problems.

7th Grade/Unit 3A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 22-25	✓ 7.AF.4: Define slope as vertical change for each unit of horizontal change and recognize that a constant rate of change or constant slope describes a linear function. Identify and describe situations with constant or varying rates of change. ✓ 7.AF.5: Graph a line given its slope and a point on the line. Find the slope of a line given its graph. ✓ 7.AF.9: Identify real-world and other mathematical situations that involve proportional relationships. Write equations and draw graphs to represent proportional relationships and recognize that these situations are described by a linear function in the form y = mx, where the unit rate, m, is the slope of the line.

7th Grade/Unit 3B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 26-29	✓ 7.GM.2: Identify and describe similarity relationships of polygons including the angle- angle criterion for similar triangles, and solve problems involving similarity. ✓ 7.GM.4: Solve real-world and other mathematical problems that involve vertical, adjacent, complementary, and supplementary angles.
	✓ – 7.GM.1: Draw triangles (freehand, with ruler and protractor, and using technology) with given conditions from three measures of angles or sides, and notice when the conditions determine a unique triangle, more than one triangle, or no triangle.

7th Grade/Unite 4A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 31-35	✓ 7.DSP.3: Find, use, and interpret measures of center (mean and median) and measures of spread (range, interquartile range, and mean absolute deviation) for numerical data from random samples to draw comparative inferences about two populations.

	✓ 7.DSP.4: Make observations about the degree of visual overlap of two numerical data distributions represented in line plots or box plots. Describe how data, particularly outliers, added to a data set may affect the mean and/or median.	⊗
	✓ 7.DSP.5: Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Understand that a probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. Understand that a probability of 1 indicates an event certain to occur and a probability of 0 indicates an event impossible to occur.	⊗
	✓ 7.DSP.6: Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its relative frequency from a large sample.	⊗
	✓ 7.DSP.7: Develop probability models that include the sample space and probabilities of outcomes to represent simple events with equally likely outcomes. Predict the approximate relative frequency of the event based on the model. Compare probabilities from the model to observed frequencies; evaluate the level of agreement and explain possible sources of discrepancy.	
	✓ – 7.DSP.1: Understand that statistics can be used to gain information about a population by examining a sample of the population and generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.	⊗
	✓ – 7.DSP.2: Use data from a random sample to draw inferences about a population. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.	

7th Grade/Unit 4B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 36-39	✓ + 7.AF.2: Solve equations of the form px + q= r and p(x + q) = r fluently, where p, q, and r are specific rational numbers. Represent real-world problems using equations of these forms and solve such problems.

	8.C.1: Solve real-world problems with rational numbers by using multiple operations.
	7.AF.3: Solve inequalities of the form px +q (> or ≥) r or px + q (< or ≤) r, where p, q, and r are specific rational numbers. Represent real-world problems using inequalities of these forms and solve such problems. Graph the solution set of the inequality and interpret it in the context of the problem.

7th Grade/Algebra A/Unit 1A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 1-4	**Computation** LD 7.C.1: Understand p + q as the number located a distance |q| from p, in the positive or negative direction, depending on

	whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. LD ✓ – 7.C.2: Understand subtraction of rational numbers as adding the additive inverse, p – q = p + (–q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real- world contexts. LD ✓ – 7.C.3: Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. LD ✓ – 7.C.4: Understand that integers can be divided, provided that the divisor is not zero, and that every quotient of integers (with non-zero divisor) is a rational number. Understand that if p and q are integers, then –(p/q) = (–p)/q = p/(–q). LD ✓+ 7.C.7: Compute with rational numbers fluently using a standard algorithmic approach.

7th Grade/Algebra A/Unit 1B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 5-9	**Computation** LD ✓+ 7.C.6: Use proportional relationships to solve ratio and percent problems with multiple operations, such as the following: simple interest, tax, markups, markdowns, gratuities, commissions, fees, conversions within and across measurement systems, percent increase and decrease, and percent error. LD ✓+ 7.C.8: Solve real-world problems with rational numbers by using one or two operations. **Algebra and Functions** LD ✓ 7.AF.1: Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions, including situations that involve factoring (e.g., given 2x - 10, create an equivalent

expression 2(x - 5)). Justify each step in the process.

- LD ✓+ 7.AF.2: Solve equations of the form px + q= r and p(x + q) = r fluently, where p, q, and r are specific rational numbers. Represent real-world problems using equations of these forms and solve such problems.
- LD ✓ 7.AF.6: Decide whether two quantities are in a proportional relationship (e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin).
- LD ✓ 7.AF.7: Identify the unit rate or constant of proportionality in tables, graphs, equations, and verbal descriptions of proportional relationships.
- LD ✓ 7.AF.9: Identify real-world and other mathematical situations that involve proportional relationships. Write equations and draw graphs to represent proportional relationships and recognize that these situations are described by a linear function in the form y = mx, where the unit rate, m, is the slope of the line.

Geometry and Measurement

- LD ✓ 7.GM.2: Identify and describe similarity relationships of polygons including the angle- angle criterion for similar triangles, and solve problems involving similarity.
- LD ✓ 7.GM.3: Solve real-world and other mathematical problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing. Create a scale drawing by using proportional reasoning.
- LD ✓ 7.GM.4: Solve real-world and other mathematical problems that involve vertical, adjacent, complementary, and supplementary angles.
- LD ✓+ 7.GM.5: Understand the formulas for area and circumference of a circle and use them to solve real-world and other mathematical problems; give an informal derivation of the relationship between circumference and area of a circle.
- LD ✓+ 7.GM.6: Solve real-world and other mathematical problems involving volume of cylinders and three- dimensional objects composed of right rectangular prisms.
- LD ✓ 7.GM.7: Construct nets for right rectangular prisms and cylinders and use the nets to compute the surface area; apply this technique to solve real-world and other mathematical problems.

IN: High School

Algebra I

	Linear Equations, Inequalities, and Functions LD ✓– AI.L.3: Represent real-world and other mathematical problems using an algebraic proportion that leads to a linear equation and solve such problems. LD ✓ AI.L.11: Solve equations and formulas for a specified variable, including equations with coefficients represented by variables.

7th Grade/Algebra A/Unit 2A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 10-14	**Computation** LD ✓+ 7.C.6: Use proportional relationships to solve ratio and percent problems with multiple operations, such as the following: simple interest, tax, markups, markdowns, gratuities, commissions, fees, conversions within and across measurement systems, percent increase and decrease, and percent error. **Algebra and Functions** LD ✓ 7.AF.3: Solve inequalities of the form px +q (> or ≥) r or px + q (< or ≤) r, where p, q, and r are specific rational numbers. Represent real-world problems using inequalities of these forms and solve such problems. Graph the solution set of the inequality and interpret it in the context of the problem. **IN: High School** Algebra I **Linear Equations, Inequalities, and Functions** LD ✓+ AI.L.2: Represent real-world problems using linear equations and inequalities in one variable and solve such problems. Interpret the solution and determine whether it is reasonable. LD ✓ AI.L.8: Solve compound linear inequalities in one variable, and represent and interpret the solution on a number line. Write a compound linear inequality given its number line representation. LD ✓– AI.L.9: Solve absolute value linear equations in one variable. LD ✓– AI.L.10: Graph absolute value linear equations in two variables.

7th Grade/Algebra A/Unit 2B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 15-18	Algebra I **Functions** AI.F.1: Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. Understand that if f is a function and x is an element of its domain, then f(x) denotes the output of f corresponding to the input x. Understand the graph of f is the graph of the equation y = f(x). AI.F.2: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear, has a maximum or minimum value). Sketch a graph that exhibits the qualitative features of a function that has been verbally described. Identify independent and dependent variables and make predictions about the relationship. AI.F.3: Identify the domain and range of relations represented in tables, graphs, verbal descriptions, and equations. AI.F.4: Understand and interpret statements that use function notation in terms of a context; relate the domain of the function to its graph and to the quantitative relationship it describes. **Data Analysis And Statistics** AI.DS.3: Use technology to find a linear function that models a relationship for a bivariate data set to make predictions; interpret the slope and y- intercept, and compute (using technology) and interpret the correlation coefficient.

7th Grade/Algebra A/Unit 3A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 19-22	**Computation** 7.C.6: Use proportional relationships to solve ratio and percent problems with multiple operations, such as the following: simple interest, tax, markups, markdowns, gratuities, commissions, fees, conversions within and across measurement systems, percent increase and decrease, and percent error.

Algebra and Functions

- LD ✓+ 7.AF.2: Solve equations of the form px + q= r and p(x + q) = r fluently, where p, q, and r are specific rational numbers. Represent real-world problems using equations of these forms and solve such problems.
- LD ✓ 7.AF.4: Define slope as vertical change for each unit of horizontal change and recognize that a constant rate of change or constant slope describes a linear function. Identify and describe situations with constant or varying rates of change.
- LD ✓ 7.AF.5: Graph a line given its slope and a point on the line. Find the slope of a line given its graph.

IN: High School

Algebra I

Linear Equations, Inequalities, and Functions

- LD ✓+ AI.L.4: Represent linear functions as graphs from equations (with and without technology), equations from graphs, and equations from tables and other given information (e.g., from a given point on a line and the slope of the line).
- LD ✓+ AI.L.5: Represent real-world problems that can be modeled with a linear function using equations, graphs, and tables; translate fluently among these representations, and interpret the slope and intercepts.
- LD ✓ AI.L.6: Translate among equivalent forms of equations for linear functions, including slope-intercept, point-slope, and standard. Recognize that different forms reveal more or less information about a given situation.
- LD ✓+ AI.L.7: Represent real-world problems using linear inequalities in two variables and solve such problems; interpret the solution set and determine whether it is reasonable. Solve other linear inequalities in two variables by graphing.
- LD ✓– AI.L.10: Graph absolute value linear equations in two variables.

Data Analysis And Statistics

- LD ✓ AI.DS.2: Graph bivariate data on a scatter plot and describe the relationship between the variables.
- LD ✓ AI.DS.3: Use technology to find a linear function that models a relationship for a bivariate data set to make predictions; interpret the slope and y- intercept, and compute (using technology) and interpret the correlation coefficient.
- LD ✓– AI.DS.4: Distinguish between correlation and causation.

7th Grade/Algebra A/Unit 3B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 23-26	Algebra I **Systems of Equations and Inequalities** LD ✓ AI.SEI.1: Understand the relationship between a solution of a pair of linear equations in two variables and the graphs of the corresponding lines. Solve pairs of linear equations in two variables by graphing; approximate solutions when the coordinates of the solution are non-integer numbers. LD ✓+ AI.SEI.2: Understand that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. Solve pairs of linear equations in two variables using substitution and elimination. LD ✓+ AI.SEI.3: Write a system of two linear equations in two variables that represents a real-world problem and solve the problem with and without technology. Interpret the solution and determine whether the solution is reasonable. LD ✓ AI.SEI.4: Represent real-world problems using a system of two linear inequalities in two variables and solve such problems; interpret the solution set and determine whether it is reasonable. Solve other pairs of linear inequalities by graphing with and without technology.

7th Grade/Algebra A/Unit 4A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 28-31	**Data Analysis, Statistics and Probability** LD ✓− 7.DSP.1: Understand that statistics can be used to gain information about a population by examining a sample of the population and generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences. LD ✓− 7.DSP.2: Use data from a random sample to draw inferences about a population. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.

	LD ✓ 7.DSP.3: Find, use, and interpret measures of center (mean and median) and measures of spread (range, interquartile range, and mean absolute deviation) for numerical data from random samples to draw comparative inferences about two populations. LD ✓ 7.DSP.4: Make observations about the degree of visual overlap of two numerical data distributions represented in line plots or box plots. Describe how data, particularly outliers, added to a data set may affect the mean and/or median. LD ✓ 7.DSP.5: Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Understand that a probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. Understand that a probability of 1 indicates an event certain to occur and a probability of 0 indicates an event impossible to occur. LD ✓ 7.DSP.6: Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its relative frequency from a large sample. LD ✓ 7.DSP.7: Develop probability models that include the sample space and probabilities of outcomes to represent simple events with equally likely outcomes. Predict the approximate relative frequency of the event based on the model. Compare probabilities from the model to observed frequencies; evaluate the level of agreement and explain possible sources of discrepancy.

7th Grade/Algebra A/Unit 4B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 32-35	Algebra I **Real Numbers And Expressions** LD ✓+ AI.RNE.5: Simplify algebraic rational expressions, with numerators and denominators containing monomial bases with integer exponents, to equivalent forms. LD ✓+ AI.RNE.6: Factor common terms from polynomials and factor polynomials completely. Factor the difference of two squares, perfect square trinomials, and other quadratic expressions.

LD AI.RNE.7: Understand polynomials are closed under the operations of addition, subtraction, and multiplication with integers; add, subtract, and multiply polynomials and divide polynomials by monomials.

Linear Equations, Inequalities, and Functions

LD AI.L.1: Understand that the steps taken when solving linear equations create new equations that have the same solution as the original. Solve fluently linear equations and inequalities in one variable with integers, fractions, and decimals as coefficients. Explain and justify each step in solving an equation, starting from the assumption that the original equation has a solution. Justify the choice of a solution method.

LD AI.L.2: Represent real-world problems using linear equations and inequalities in one variable and solve such problems. Interpret the solution and determine whether it is reasonable.

LD AI.L.4: Represent linear functions as graphs from equations (with and without technology), equations from graphs, and equations from tables and other given information (e.g., from a given point on a line and the slope of the line).

LD AI.L.5: Represent real-world problems that can be modeled with a linear function using equations, graphs, and tables; translate fluently among these representations, and interpret the slope and intercepts.

LD AI.L.7: Represent real-world problems using linear inequalities in two variables and solve such problems; interpret the solution set and determine whether it is reasonable. Solve other linear inequalities in two variables by graphing.

Systems of Equations and Inequalities

LD AI.SEI.2: Understand that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. Solve pairs of linear equations in two variables using substitution and elimination.

LD AI.SEI.3: Write a system of two linear equations in two variables that represents a real-world problem and solve the problem with and without technology. Interpret the solution and determine whether the solution is reasonable.

Quadratic and Exponential Equations and Functions

LD AI.QE.3: Graph exponential and quadratic equations in two variables with and without technology.

	LD ✓+ AI.QE.4: Solve quadratic equations in one variable by inspection (e.g., for x^2 = 49), finding square roots, using the quadratic formula, and factoring, as appropriate to the initial form of the equation. LD ✓+ AI.QE.5: Represent real-world problems using quadratic equations in one or two variables and solve such problems with and without technology. Interpret the solution and determine whether it is reasonable.

7th Grade/Algebra/Unit 1A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 1-4	**Computation** LD ✓– 7.C.1: Understand p + q as the number located a distance |q| from p, in the positive or negative direction, depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. LD ✓– 7.C.2: Understand subtraction of rational numbers as adding the additive inverse, p – q = p + (–q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real- world contexts.

LD ✓− 7.C.3: Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers.

LD ✓− 7.C.4: Understand that integers can be divided, provided that the divisor is not zero, and that every quotient of integers (with non-zero divisor) is a rational number. Understand that if p and q are integers, then –(p/q) = (–p)/q = p/(–q).

LD ✓+ 7.C.7: Compute with rational numbers fluently using a standard algorithmic approach.

IN: High School

Algebra I

Real Numbers And Expressions

LD ✓− AI.RNE.1: Understand the hierarchy and relationships of numbers and sets of numbers within the real number system.

LD ✓− AI.RNE.2: Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.

LD ✓ AI.RNE.3: Rewrite and evaluate numeric expressions with positive rational exponents using the properties of exponents.

LD ✓ AI.RNE.4: Simplify square roots of non-perfect square integers and algebraic monomials.

Linear Equations, Inequalities, and Functions

LD ✓+ AI.L.5: Represent real-world problems that can be modeled with a linear function using equations, graphs, and tables; translate fluently among these representations, and interpret the slope and intercepts.

Data Analysis And Statistics

LD ✓ AI.DS.3: Use technology to find a linear function that models a relationship for a bivariate data set to make predictions; interpret the slope and y- intercept, and compute (using technology) and interpret the correlation coefficient.

7th Grade/Algebra/Unit 1B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES

Weeks 5-9	**Computation** LD 7.C.6: Use proportional relationships to solve ratio and percent problems with multiple operations, such as the following: simple interest, tax, markups, markdowns, gratuities, commissions, fees, conversions within and across measurement systems, percent increase and decrease, and percent error. LD 7.C.7: Compute with rational numbers fluently using a standard algorithmic approach. **Algebra and Functions** LD 7.AF.1: Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions, including situations that involve factoring (e.g., given 2x - 10, create an equivalent expression 2(x - 5)). Justify each step in the process. LD 7.AF.2: Solve equations of the form px + q= r and p(x + q) = r fluently, where p, q, and r are specific rational numbers. Represent real-world problems using equations of these forms and solve such problems. LD 7.AF.6: Decide whether two quantities are in a proportional relationship (e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin). LD 7.AF.7: Identify the unit rate or constant of proportionality in tables, graphs, equations, and verbal descriptions of proportional relationships. LD 7.AF.9: Identify real-world and other mathematical situations that involve proportional relationships. Write equations and draw graphs to represent proportional relationships and recognize that these situations are described by a linear function in the form y = mx, where the unit rate, m, is the slope of the line. **Geometry and Measurement** LD 7.GM.2: Identify and describe similarity relationships of polygons including the angle- angle criterion for similar triangles, and solve problems involving similarity. LD 7.GM.3: Solve real-world and other mathematical problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing. Create a scale drawing by using proportional reasoning. LD 7.GM.4: Solve real-world and other mathematical problems that involve vertical, adjacent, complementary, and supplementary angles. LD 7.GM.5: Understand the formulas for area and circumference of a circle and use them to solve real-world and other

mathematical problems; give an informal derivation of the relationship between circumference and area of a circle.

- LD ✓+ 7.GM.6: Solve real-world and other mathematical problems involving volume of cylinders and three- dimensional objects composed of right rectangular prisms.
- LD ✓ 7.GM.7: Construct nets for right rectangular prisms and cylinders and use the nets to compute the surface area; apply this technique to solve real-world and other mathematical problems.

IN: High School

Algebra I

Linear Equations, Inequalities, and Functions

- LD ✓+ AI.L.1: Understand that the steps taken when solving linear equations create new equations that have the same solution as the original. Solve fluently linear equations and inequalities in one variable with integers, fractions, and decimals as coefficients. Explain and justify each step in solving an equation, starting from the assumption that the original equation has a solution. Justify the choice of a solution method.
- LD ✓+ AI.L.2: Represent real-world problems using linear equations and inequalities in one variable and solve such problems. Interpret the solution and determine whether it is reasonable.
- LD ✓– AI.L.3: Represent real-world and other mathematical problems using an algebraic proportion that leads to a linear equation and solve such problems.
- LD ✓ AI.L.8: Solve compound linear inequalities in one variable, and represent and interpret the solution on a number line. Write a compound linear inequality given its number line representation.
- LD ✓– AI.L.9: Solve absolute value linear equations in one variable.
- LD ✓ AI.L.11: Solve equations and formulas for a specified variable, including equations with coefficients represented by variables.

7th Grade/Algebra/Unit 2A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 10-14	**Computation**

LD ✓+ 7.C.6: Use proportional relationships to solve ratio and percent problems with multiple operations, such as the following: simple interest, tax, markups, markdowns, gratuities, commissions, fees, conversions within and across measurement systems, percent increase and decrease, and percent error.

Algebra and Functions

LD ✓ 7.AF.3: Solve inequalities of the form px +q (> or ≥) r or px + q (< or ≤) r, where p, q, and r are specific rational numbers. Represent real-world problems using inequalities of these forms and solve such problems. Graph the solution set of the inequality and interpret it in the context of the problem.

IN: High School

Algebra I

Functions

LD ✓ AI.F.1: Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. Understand that if f is a function and x is an element of its domain, then f(x) denotes the output of f corresponding to the input x. Understand the graph of f is the graph of the equation y = f(x).

LD ✓ AI.F.2: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear, has a maximum or minimum value). Sketch a graph that exhibits the qualitative features of a function that has been verbally described. Identify independent and dependent variables and make predictions about the relationship.

LD ✓ – AI.F.3: Identify the domain and range of relations represented in tables, graphs, verbal descriptions, and equations.

LD ✓ AI.F.4: Understand and interpret statements that use function notation in terms of a context; relate the domain of the function to its graph and to the quantitative relationship it describes.

Linear Equations, Inequalities, and Functions

LD ✓+ AI.L.4: Represent linear functions as graphs from equations (with and without technology), equations from graphs, and equations from tables and other given information (e.g., from a given point on a line and the slope of the line).

LD ✓+ AI.L.5: Represent real-world problems that can be modeled with a linear function using equations, graphs, and tables; translate fluently among these representations, and interpret the slope and intercepts.

LD ✓ AI.L.6: Translate among equivalent forms of equations for linear functions, including slope-intercept, point-slope, and standard. Recognize that different forms reveal more or less information about a given situation.

	LD ✓+ AI.L.7: Represent real-world problems using linear inequalities in two variables and solve such problems; interpret the solution set and determine whether it is reasonable. Solve other linear inequalities in two variables by graphing. LD ✓ – AI.L.10: Graph absolute value linear equations in two variables.

7th Grade/Algebra/Unit 2B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 15-18	Algebra I **Systems of Equations and Inequalities** LD ✓ AI.SEI.1: Understand the relationship between a solution of a pair of linear equations in two variables and the graphs of the corresponding lines. Solve pairs of linear equations in two variables by graphing; approximate solutions when the coordinates of the solution are non-integer numbers. LD ✓+ AI.SEI.2: Understand that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. Solve pairs of linear equations in two variables using substitution and elimination. LD ✓+ AI.SEI.3: Write a system of two linear equations in two variables that represents a real-world problem and solve the problem with and without technology. Interpret the solution and determine whether the solution is reasonable. LD ✓ AI.SEI.4: Represent real-world problems using a system of two linear inequalities in two variables and solve such problems; interpret the solution set and determine whether it is reasonable. Solve other pairs of linear inequalities by graphing with and without technology.

7th Grade/Algebra/Unit 3A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 19-22	**Computation** LD ✓+ 7.C.6: Use proportional relationships to solve ratio and percent problems with multiple operations, such as the following: simple interest, tax, markups, markdowns, gratuities, commissions, fees, conversions within and across measurement systems, percent increase and decrease, and percent error. **Algebra and Functions** LD ✓+ 7.AF.2: Solve equations of the form px + q= r and p(x + q) = r fluently, where p, q, and r are specific rational numbers. Represent real-world problems using equations of these forms and solve such problems. LD ✓ 7.AF.3: Solve inequalities of the form px +q (> or ≥) r or px + q (< or ≤) r, where p, q, and r are specific rational numbers. Represent real-world problems using inequalities of these forms and solve such problems. Graph the solution set of the inequality and interpret it in the context of the problem. LD ✓ 7.AF.4: Define slope as vertical change for each unit of horizontal change and recognize that a constant rate of change or constant slope describes a linear function. Identify and describe situations with constant or varying rates of change. **IN: High School** Algebra I **Real Numbers And Expressions** LD ✓ AI.RNE.3: Rewrite and evaluate numeric expressions with positive rational exponents using the properties of exponents. LD ✓ AI.RNE.4: Simplify square roots of non-perfect square integers and algebraic monomials. **Functions** LD ✓ – AI.F.3: Identify the domain and range of relations represented in tables, graphs, verbal descriptions, and equations.

	Quadratic and Exponential Equations and Functions LD ✓ AI.QE.1: Distinguish between situations that can be modeled with linear functions and with exponential functions. Understand that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. Compare linear functions and exponential functions that model real-world situations using tables, graphs, and equations. LD ✓ AI.QE.2: Represent real-world and other mathematical problems that can be modeled with exponential functions using tables, graphs, and equations of the form y = ab^x (for integer values of x > 1, rational values of b > 0 and b ≠ 1); translate fluently among these representations and interpret the values of a and b. LD ✓+ AI.QE.3: Graph exponential and quadratic equations in two variables with and without technology.

7th Grade/Algebra/Unit 3B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 23-26	Algebra I **Real Numbers And Expressions** LD ✓ AI.RNE.3: Rewrite and evaluate numeric expressions with positive rational exponents using the properties of exponents. LD ✓ AI.RNE.4: Simplify square roots of non-perfect square integers and algebraic monomials. LD ✓+ AI.RNE.6: Factor common terms from polynomials and factor polynomials completely. Factor the difference of two squares, perfect square trinomials, and other quadratic expressions. LD ✓+ AI.RNE.7: Understand polynomials are closed under the operations of addition, subtraction, and multiplication with integers; add, subtract, and multiply polynomials and divide polynomials by monomials.

7th Grade/Algebra/Unit 4A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 28-31	**Data Analysis, Statistics and Probability** LD ✓ – 7.DSP.1: Understand that statistics can be used to gain information about a population by examining a sample of the population and generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences. LD ✓ – 7.DSP.2: Use data from a random sample to draw inferences about a population. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. LD ✓ 7.DSP.3: Find, use, and interpret measures of center (mean and median) and measures of spread (range, interquartile range, and mean absolute deviation) for numerical data from random samples to draw comparative inferences about two populations. LD ✓ 7.DSP.4: Make observations about the degree of visual overlap of two numerical data distributions represented in line plots or box plots. Describe how data, particularly outliers, added to a data set may affect the mean and/or median. LD ✓ 7.DSP.5: Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Understand that a probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. Understand that a probability of 1 indicates an event certain to occur and a probability of 0 indicates an event impossible to occur. LD ✓ 7.DSP.6: Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its relative frequency from a large sample. LD ✓ 7.DSP.7: Develop probability models that include the sample space and probabilities of outcomes to represent simple events with equally likely outcomes. Predict the approximate relative frequency of the event based on the model. Compare probabilities from the model to observed frequencies; evaluate the level of agreement and explain possible sources of discrepancy. **IN: High School** Algebra I **Functions** LD ✓ – AI.F.3: Identify the domain and range of relations represented in tables, graphs, verbal descriptions, and equations. **Quadratic and Exponential Equations and Functions**

	LD ✓+ AI.QE.3: Graph exponential and quadratic equations in two variables with and without technology. LD ✓+ AI.QE.4: Solve quadratic equations in one variable by inspection (e.g., for x^2 = 49), finding square roots, using the quadratic formula, and factoring, as appropriate to the initial form of the equation. LD ✓+ AI.QE.5: Represent real-world problems using quadratic equations in one or two variables and solve such problems with and without technology. Interpret the solution and determine whether it is reasonable. LD ✓ AI.QE.6: Use the process of factoring to determine zeros, lines of symmetry, and extreme values in real-world and other mathematical problems involving quadratic functions; interpret the results in the real-world contexts. LD ✓– AI.QE.7: Describe the relationships among the solutions of a quadratic equation, the zeros of the function, the x-intercepts of the graph, and the factors of the expression **Data Analysis And Statistics** LD ✓ AI.DS.1: Distinguish between random and non-random sampling methods, identify possible sources of bias in sampling, describe how such bias can be controlled and reduced, evaluate the characteristics of a good survey and well-designed experiment, design simple experiments or investigations to collect data to answer questions of interest, and make inferences from sample results. LD ✓ AI.DS.2: Graph bivariate data on a scatter plot and describe the relationship between the variables. LD ✓ AI.DS.3: Use technology to find a linear function that models a relationship for a bivariate data set to make predictions; interpret the slope and y- intercept, and compute (using technology) and interpret the correlation coefficient. LD ✓– AI.DS.5: 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 (including joint, marginal, and conditional relative frequencies) to describe possible associations and trends in the data. LD ✓– AI.DS.6: Understand that statistics and data are non-neutral and designed to serve a particular interest. Analyze the possibilities for whose interest might be served and how the representations might be misleading.

7th Grade/Algebra/Unit 4B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES

Weeks 32-35	Algebra I **Real Numbers And Expressions** LD AI.RNE.5: Simplify algebraic rational expressions, with numerators and denominators containing monomial bases with integer exponents, to equivalent forms. LD AI.RNE.6: Factor common terms from polynomials and factor polynomials completely. Factor the difference of two squares, perfect square trinomials, and other quadratic expressions. LD AI.RNE.7: Understand polynomials are closed under the operations of addition, subtraction, and multiplication with integers; add, subtract, and multiply polynomials and divide polynomials by monomials. **Functions** LD AI.F.2: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear, has a maximum or minimum value). Sketch a graph that exhibits the qualitative features of a function that has been verbally described. Identify independent and dependent variables and make predictions about the relationship. **Linear Equations, Inequalities, and Functions** LD AI.L.1: Understand that the steps taken when solving linear equations create new equations that have the same solution as the original. Solve fluently linear equations and inequalities in one variable with integers, fractions, and decimals as coefficients. Explain and justify each step in solving an equation, starting from the assumption that the original equation has a solution. Justify the choice of a solution method. LD AI.L.2: Represent real-world problems using linear equations and inequalities in one variable and solve such problems. Interpret the solution and determine whether it is reasonable. LD AI.L.4: Represent linear functions as graphs from equations (with and without technology), equations from graphs, and equations from tables and other given information (e.g., from a given point on a line and the slope of the line). LD AI.L.5: Represent real-world problems that can be modeled with a linear function using equations, graphs, and tables; translate fluently among these representations, and interpret the slope and intercepts. LD AI.L.7: Represent real-world problems using linear inequalities in two variables and solve such problems; interpret the solution set and determine whether it is reasonable. Solve other linear inequalities in two variables by graphing.

Systems of Equations and Inequalities

LD AI.SEI.2: Understand that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. Solve pairs of linear equations in two variables using substitution and elimination.

LD AI.SEI.3: Write a system of two linear equations in two variables that represents a real-world problem and solve the problem with and without technology. Interpret the solution and determine whether the solution is reasonable.

Quadratic and Exponential Equations and Functions

LD AI.QE.3: Graph exponential and quadratic equations in two variables with and without technology.

LD AI.QE.4: Solve quadratic equations in one variable by inspection (e.g., for x^2 = 49), finding square roots, using the quadratic formula, and factoring, as appropriate to the initial form of the equation.

LD AI.QE.5: Represent real-world problems using quadratic equations in one or two variables and solve such problems with and without technology. Interpret the solution and determine whether it is reasonable.

8th Grade/Unit 1A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 1-4	✓+ 8.C.1: Solve real-world problems with rational numbers by using multiple operations.
	✓ 8.NS.1: Give examples of rational and irrational numbers and explain the difference between them. Understand that every number has a decimal expansion; for rational numbers, show that the decimal expansion repeats eventually, and convert a decimal expansion that repeats into a rational number. ⊗
	✓ 8.NS.2: Use rational approximations of irrational numbers to compare the size of irrational numbers, plot them approximately on a number line, and estimate the value of expressions involving irrational numbers. ⊗
	✓ 8.NS.3: Given a numeric expression with common rational number bases and integer exponents, apply the properties of exponents to generate equivalent expressions. ✓ 8.C.2: Solve real-world and other mathematical problems involving numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Interpret scientific notation that has been generated by technology, such as a scientific calculator, graphing calculator, or excel spreadsheet.

8th Grade/Unit 1B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
	✓+ 8.GM.8: Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and other mathematical

Week 5-8	problems in two dimensions.
	8.NS.4: Use square root symbols to represent solutions to equations of the form x^2 = p, where p is a positive rational number.
	8.GM.9: Apply the Pythagorean Theorem to find the distance between two points in a coordinate plane.
	YS – 8.GM.7: Use inductive reasoning to explain the Pythagorean relationship.

8th Grade/Unit 2A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 9-12	8.AF.1: Solve linear equations with rational number coefficients fluently, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. Represent real-world problems using linear equations and inequalities in one variable and solve such problems.
	8.AF.2: Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by transforming a given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).
	8.AF.3: Understand that a function assigns to each x-value (independent variable) exactly one y-value (dependent variable), and that the graph of a function is the set of ordered pairs (x,y).
	8.AF.4: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear, has a maximum or minimum value). Sketch a graph that exhibits the qualitative features of a function that has been verbally described.

8th Grade/Unit 2B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES

Week 14-25	8.AF.6: Construct a function to model a linear relationship between two quantities given a verbal description, table of values, or graph. Recognize in y = mx + b that m is the slope (rate of change) and b is the y-intercept of the graph, and describe the meaning of each in the context of a problem.
	8.AF.5: 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. Describe similarities and differences between linear and nonlinear functions from tables, graphs, verbal descriptions, and equations. 8.AF.7: Compare properties of two linear functions given in different forms, such as a table of values, equation, verbal description, and graph (e.g., compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed). 8.AF.8: Understand that solutions to a system of two linear equations correspond to points of intersection of their graphs because points of intersection satisfy both equations simultaneously. Approximate the solution of a system of equations by graphing and interpreting the reasonableness of the approximation.

8th Grade/Unit 3A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 22-25	
	8.GM.1: Identify, define and describe attributes of three-dimensional geometric objects (right rectangular prisms, cylinders, cones, spheres, and pyramids). Explore the effects of slicing these objects using appropriate technology and describe the two-dimensional figure that results. 8.GM.2: Solve real-world and other mathematical problems involving volume of cones, spheres, and pyramids and surface area of spheres.

8th Grade/Unit 3B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 26-29	
	8.GM.4: 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. Describe a sequence that exhibits the congruence between two given congruent figures. 8.GM.5: 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. Describe a sequence that exhibits the similarity between two given similar figures.
	✓ 8.GM.6: Describe the effect of dilations, translations, rotations, and reflections on two- dimensional figures using coordinates.
	✓ – 8.GM.3: Verify experimentally the properties of rotations, reflections, and translations, including: lines are mapped to lines, and line segments to line segments of the same length; angles are mapped to angles of the same measure; and parallel lines are mapped to parallel lines.

8th Grade/Unit 4A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 31-35	
	✓ 8.DSP.1: Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantitative variables. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
	✓ 8.DSP.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 describe the model fit by judging the closeness of the data points to the line.
	✓ 8.DSP.3: Write and use equations that model linear relationships to make predictions, including interpolation and extrapolation, in real-world situations involving bivariate measurement data; interpret the slope and y-intercept. ✓ 8.DSP.5: Represent sample spaces and find probabilities of compound events (independent and dependent) using methods, such as organized lists, tables, and tree diagrams.
	✓ – 8.DSP.4: Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. Understand and use appropriate terminology to describe independent, dependent, complementary, and mutually exclusive events. ✓ – 8.DSP.6: For events with a large number of outcomes, understand the use of the multiplication counting principle. Develop the multiplication counting principle and apply it to situations with a large number of outcomes.

8th Grade/Unit 4B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Week 36-39	✓ 8.GM.4: 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. Describe a sequence that exhibits the congruence between two given congruent figures. ✓ 8.GM.5: 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. Describe a sequence that exhibits the similarity between two given similar figures. ✓ 8.GM.6: Describe the effect of dilations, translations, rotations, and reflections on two- dimensional figures using coordinates. ✓ – 8.GM.3: Verify experimentally the properties of rotations, reflections, and translations, including: lines are mapped to lines, and line segments to line segments of the same length; angles are mapped to angles of the same measure; and parallel lines are mapped to parallel lines.

8th Grade/Pre Algebra/Unit 1A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 1-4	**Number Sense** LD ✓ 8.NS.1: Give examples of rational and irrational numbers and explain the difference between them. Understand that every number has a decimal expansion; for rational numbers, show that the decimal expansion repeats eventually, and convert a decimal expansion that repeats into a rational number. LD ✓ 8.NS.2: Use rational approximations of irrational numbers to compare the size of irrational numbers, plot them approximately on a number line, and estimate the value of expressions involving irrational numbers. LD ✓ 8.NS.3: Given a numeric expression with common rational number bases and integer exponents, apply the properties of exponents to generate equivalent expressions. **Computation** LD ✓+ 8.C.1: Solve real-world problems with rational numbers by using multiple operations. LD ✓ 8.C.2: Solve real-world and other mathematical problems involving numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Interpret scientific notation that has been generated by technology, such as a scientific calculator, graphing calculator, or excel spreadsheet.

8th Grade/Pre Algebra/Unit 1B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 5-9	**Algebra and Functions** LD ✓+ 8.AF.1: Solve linear equations with rational number coefficients fluently, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. Represent real-world problems using linear equations and inequalities in one variable and solve such problems. LD ✓ 8.AF.2: Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by transforming a given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers). LD ✓ 8.AF.3: Understand that a function assigns to each x-value (independent variable) exactly one y-value (dependent variable), and that the graph of a function is the set of ordered pairs (x,y). LD ✓ 8.AF.4: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear, has a maximum or minimum value). Sketch a graph that exhibits the qualitative features of a function that has been verbally described.

8th Grade/Pre Algebra/Unit 2A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES

Weeks 10-14	**Algebra and Functions** LD ✓ 8.AF.5: 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. Describe similarities and differences between linear and nonlinear functions from tables, graphs, verbal descriptions, and equations. LD ✓+ 8.AF.6: Construct a function to model a linear relationship between two quantities given a verbal description, table of values, or graph. Recognize in y = mx + b that m is the slope (rate of change) and b is the y-intercept of the graph, and describe the meaning of each in the context of a problem. LD ✓ 8.AF.7: Compare properties of two linear functions given in different forms, such as a table of values, equation, verbal description, and graph (e.g., compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed). LD ✓ 8.AF.8: Understand that solutions to a system of two linear equations correspond to points of intersection of their graphs because points of intersection satisfy both equations simultaneously. Approximate the solution of a system of equations by graphing and interpreting the reasonableness of the approximation.

8th Grade/Pre Algebra/Unit 2B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 15-18	**Number Sense** LD ✓ 8.NS.4: Use square root symbols to represent solutions to equations of the form x^2 = p, where p is a positive rational number. Geometry and Measurement **Geometry and Measurement** LD ✓− 8.GM.7: Use inductive reasoning to explain the Pythagorean relationship. LD ✓+ 8.GM.8: Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and other mathematical problems in two dimensions. LD ✓ 8.GM.9: Apply the Pythagorean Theorem to find the distance between two points in a coordinate plane.

8th Grade/Pre Algebra/Unit 3A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 19-22	**Geometry and Measurement** LD ✓ 8.GM.1: Identify, define and describe attributes of three-dimensional geometric objects (right rectangular prisms, cylinders, cones, spheres, and pyramids). Explore the effects of slicing these objects using appropriate technology and describe the two-dimensional figure that results. LD ✓ 8.GM.2: Solve real-world and other mathematical problems involving volume of cones, spheres, and pyramids and surface area of spheres.

8th Grade/Pre Algebra/Unit 3B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 23-26	**Geometry and Measurement** LD ✓ – 8.GM.3: Verify experimentally the properties of rotations, reflections, and translations, including: lines are mapped to lines, and line segments to line segments of the same length; angles are mapped to angles of the same measure; and parallel lines are mapped to parallel lines. LD ✓ 8.GM.4: 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. Describe a sequence that exhibits the congruence between two given congruent figures. LD ✓ 8.GM.5: 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. Describe a sequence that exhibits the similarity between two given similar figures. LD ✓ 8.GM.6: Describe the effect of dilations, translations, rotations, and reflections on two- dimensional figures using coordinates.

8th Grade/Pre Algebra/Unit 4A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 28-31	**Data Analysis, Statistics and Probability** LD ✓ 8.DSP.1: Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantitative variables. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. LD ✓ 8.DSP.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 describe the model fit by judging the closeness of the data points to the line. LD ✓ 8.DSP.3: Write and use equations that model linear relationships to make predictions, including interpolation and extrapolation, in real-world situations involving bivariate measurement data; interpret the slope and y-intercept. LD ✓ – 8.DSP.4: Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. Understand and use appropriate terminology to describe independent, dependent, complementary, and mutually exclusive events. LD ✓ 8.DSP.5: Represent sample spaces and find probabilities of compound events (independent and dependent) using methods, such as organized lists, tables, and tree diagrams. LD ✓ – 8.DSP.6: For events with a large number of outcomes, understand the use of the multiplication counting principle. Develop the multiplication counting principle and apply it to situations with a large number of outcomes.

8th Grade/Pre Algebra/Unite 4B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 32-35	**Computation** LD ✓ + 8.C.1: Solve real-world problems with rational numbers by using multiple operations. **IN: High School** Algebra I **Real Numbers And Expressions**

	LD ✓ AI.RNE.3: Rewrite and evaluate numeric expressions with positive rational exponents using the properties of exponents. ⊗ LD ✓+ AI.RNE.7: Understand polynomials are closed under the operations of addition, subtraction, and multiplication with integers; add, subtract, and multiply polynomials and divide polynomials by monomials.

8th Grade/Algebra B/Unit 1A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 1-4	**Computation** LD ✓+ 8.C.1: Solve real-world problems with rational numbers by using multiple operations. ⊗ **Algebra and Functions** LD ✓+ 8.AF.1: Solve linear equations with rational number coefficients fluently, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. Represent real-world problems using linear equations and inequalities in one variable and solve such problems. ⊗ LD ✓ 8.AF.2: Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by transforming a given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers). ⊗ LD ✓ 8.AF.3: Understand that a function assigns to each x-value (independent variable) exactly one y-value (dependent variable), and that the graph of a function is the set of ordered pairs (x,y). ⊗ LD ✓ 8.AF.4: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear, has a maximum or minimum value). Sketch a graph that exhibits the qualitative features of a function that has been verbally described. ⊗

LD 8.AF.5: 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. Describe similarities and differences between linear and nonlinear functions from tables, graphs, verbal descriptions, and equations.

LD 8.AF.6: Construct a function to model a linear relationship between two quantities given a verbal description, table of values, or graph. Recognize in y = mx + b that m is the slope (rate of change) and b is the y-intercept of the graph, and describe the meaning of each in the context of a problem.

LD 8.AF.7: Compare properties of two linear functions given in different forms, such as a table of values, equation, verbal description, and graph (e.g., compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed).

LD 8.AF.8: Understand that solutions to a system of two linear equations correspond to points of intersection of their graphs because points of intersection satisfy both equations simultaneously. Approximate the solution of a system of equations by graphing and interpreting the reasonableness of the approximation.

Data Analysis, Statistics and Probability

LD 8.DSP.1: Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantitative variables. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.

LD 8.DSP.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 describe the model fit by judging the closeness of the data points to the line.

LD 8.DSP.3: Write and use equations that model linear relationships to make predictions, including interpolation and extrapolation, in real-world situations involving bivariate measurement data; interpret the slope and y-intercept.

LD 8.DSP.5: Represent sample spaces and find probabilities of compound events (independent and dependent) using methods, such as organized lists, tables, and tree diagrams.

IN: High School

Algebra I

Linear Equations, Inequalities, and Functions

LD AI.L.1: Understand that the steps taken when solving linear equations create new equations that have the same solution as the original. Solve fluently linear equations and inequalities in one variable with integers, fractions, and decimals as

	coefficients. Explain and justify each step in solving an equation, starting from the assumption that the original equation has a solution. Justify the choice of a solution method. LD ✓+ AI.L.2: Represent real-world problems using linear equations and inequalities in one variable and solve such problems. Interpret the solution and determine whether it is reasonable. LD ✓+ AI.L.4: Represent linear functions as graphs from equations (with and without technology), equations from graphs, and equations from tables and other given information (e.g., from a given point on a line and the slope of the line). LD ✓+ AI.L.5: Represent real-world problems that can be modeled with a linear function using equations, graphs, and tables; translate fluently among these representations, and interpret the slope and intercepts. LD ✓+ AI.L.7: Represent real-world problems using linear inequalities in two variables and solve such problems; interpret the solution set and determine whether it is reasonable. Solve other linear inequalities in two variables by graphing. LD ✓ AI.L.11: Solve equations and formulas for a specified variable, including equations with coefficients represented by variables. **Systems of Equations and Inequalities** LD ✓+ AI.SEI.2: Understand that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. Solve pairs of linear equations in two variables using substitution and elimination. LD ✓+ AI.SEI.3: Write a system of two linear equations in two variables that represents a real-world problem and solve the problem with and without technology. Interpret the solution and determine whether the solution is reasonable.

8th Grade/Algebra B/Unit 1B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 5-9	**Number Sense** LD ✓ 8.NS.3: Given a numeric expression with common rational number bases and integer exponents, apply the properties of exponents to generate equivalent expressions. **Computation**

LD ✓+ 8.C.1: Solve real-world problems with rational numbers by using multiple operations.

LD ✓ 8.C.2: Solve real-world and other mathematical problems involving numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Interpret scientific notation that has been generated by technology, such as a scientific calculator, graphing calculator, or excel spreadsheet.

Geometry and Measurement

LD ✓+ 8.GM.8: Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and other mathematical problems in two dimensions.

IN: High School

Algebra I

Real Numbers And Expressions

LD ✓ AI.RNE.3: Rewrite and evaluate numeric expressions with positive rational exponents using the properties of exponents.

LD ✓ AI.RNE.4: Simplify square roots of non-perfect square integers and algebraic monomials.

Functions

LD ✓– AI.F.3: Identify the domain and range of relations represented in tables, graphs, verbal descriptions, and equations.

Quadratic and Exponential Equations and Functions

LD ✓ AI.QE.1: Distinguish between situations that can be modeled with linear functions and with exponential functions. Understand that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. Compare linear functions and exponential functions that model real-world situations using tables, graphs, and equations.

LD ✓ AI.QE.2: Represent real-world and other mathematical problems that can be modeled with exponential functions using tables, graphs, and equations of the form y = ab^x (for integer values of x > 1, rational values of b > 0 and b ≠ 1); translate fluently among these representations and interpret the values of a and b.

LD ✓+ AI.QE.3: Graph exponential and quadratic equations in two variables with and without technology.

8th Grade/Algebra B/Unit 2A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 10-14	**Number Sense** LD ✓ 8.NS.3: Given a numeric expression with common rational number bases and integer exponents, apply the properties of exponents to generate equivalent expressions. **Computation** LD ✓+ 8.C.1: Solve real-world problems with rational numbers by using multiple operations. **IN: High School** Algebra I **Real Numbers And Expressions** LD ✓ AI.RNE.3: Rewrite and evaluate numeric expressions with positive rational exponents using the properties of exponents. LD ✓ AI.RNE.4: Simplify square roots of non-perfect square integers and algebraic monomials. LD ✓+ AI.RNE.6: Factor common terms from polynomials and factor polynomials completely. Factor the difference of two squares, perfect square trinomials, and other quadratic expressions. LD ✓+ AI.RNE.7: Understand polynomials are closed under the operations of addition, subtraction, and multiplication with integers; add, subtract, and multiply polynomials and divide polynomials by monomials.

8th Grade/Algebra B/Unit 2B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 15-18	**Number Sense** LD ✓ 8.NS.3: Given a numeric expression with common rational number bases and integer exponents, apply the properties of exponents to generate equivalent expressions. Computation

	Computation LD ✓+ 8.C.1: Solve real-world problems with rational numbers by using multiple operations. **IN: High School** Algebra I **Functions** LD ✓– AI.F.3: Identify the domain and range of relations represented in tables, graphs, verbal descriptions, and equations. **Quadratic and Exponential Equations and Functions** LD ✓+ AI.QE.3: Graph exponential and quadratic equations in two variables with and without technology. LD ✓+ AI.QE.4: Solve quadratic equations in one variable by inspection (e.g., for x^2 = 49), finding square roots, using the quadratic formula, and factoring, as appropriate to the initial form of the equation. LD ✓+ AI.QE.5: Represent real-world problems using quadratic equations in one or two variables and solve such problems with and without technology. Interpret the solution and determine whether it is reasonable. LD ✓ AI.QE.6: Use the process of factoring to determine zeros, lines of symmetry, and extreme values in real-world and other mathematical problems involving quadratic functions; interpret the results in the real-world contexts. LD ✓– AI.QE.7: Describe the relationships among the solutions of a quadratic equation, the zeros of the function, the x-intercepts of the graph, and the factors of the expression

8th Grade/Algebra B/Unit 3A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 19-22	**Number Sense**

	LD ✓ 8.NS.1: Give examples of rational and irrational numbers and explain the difference between them. Understand that every number has a decimal expansion; for rational numbers, show that the decimal expansion repeats eventually, and convert a decimal expansion that repeats into a rational number. LD ✓ 8.NS.2: Use rational approximations of irrational numbers to compare the size of irrational numbers, plot them approximately on a number line, and estimate the value of expressions involving irrational numbers. LD ✓ 8.NS.4: Use square root symbols to represent solutions to equations of the form x^2 = p, where p is a positive rational number. **Computation** LD ✓+ 8.C.1: Solve real-world problems with rational numbers by using multiple operations. **Algebra and Functions** LD ✓ 8.AF.8: Understand that solutions to a system of two linear equations correspond to points of intersection of their graphs because points of intersection satisfy both equations simultaneously. Approximate the solution of a system of equations by graphing and interpreting the reasonableness of the approximation. Geometry and Measurement **Geometry and Measurement** LD ✓ 8.GM.9: Apply the Pythagorean Theorem to find the distance between two points in a coordinate plane. **IN: High School** Algebra I **Functions** LD ✓– AI.F.3: Identify the domain and range of relations represented in tables, graphs, verbal descriptions, and equations.

8th Grade/Algebra B/Unit 3B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 23-26	Number Sense **Number Sense**

	LD ✓ 8.NS.2: Use rational approximations of irrational numbers to compare the size of irrational numbers, plot them approximately on a number line, and estimate the value of expressions involving irrational numbers. Computation **Computation** LD ✓+ 8.C.1: Solve real-world problems with rational numbers by using multiple operations. **IN: High School** Algebra I **Real Numbers And Expressions** LD ✓+ AI.RNE.5: Simplify algebraic rational expressions, with numerators and denominators containing monomial bases with integer exponents, to equivalent forms. LD ✓+ AI.RNE.7: Understand polynomials are closed under the operations of addition, subtraction, and multiplication with integers; add, subtract, and multiply polynomials and divide polynomials by monomials. **Linear Equations, Inequalities, and Functions** LD ✓– AI.L.3: Represent real-world and other mathematical problems using an algebraic proportion that leads to a linear equation and solve such problems

8th Grade/Algebra B/Unit 4A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 28-31	**Geometry and Measurement** LD ✓ 8.GM.4: 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. Describe a sequence that exhibits the congruence between two given congruent figures. LD ✓ 8.GM.5: 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. Describe a sequence that exhibits the similarity between two given similar figures. LD ✓ 8.GM.6: Describe the effect of dilations, translations, rotations, and reflections on two- dimensional figures using coordinates. **IN: High School** Algebra I **Data Analysis And Statistics** LD ✓ AI.DS.1: Distinguish between random and non-random sampling methods, identify possible sources of bias in sampling, describe how such bias can be controlled and reduced, evaluate the characteristics of a good survey and well-designed experiment, design simple experiments or investigations to collect data to answer questions of interest, and make inferences from sample results. LD ✓ AI.DS.2: Graph bivariate data on a scatter plot and describe the relationship between the variables. LD ✓ AI.DS.3: Use technology to find a linear function that models a relationship for a bivariate data set to make predictions; interpret the slope and y- intercept, and compute (using technology) and interpret the correlation coefficient. LD ✓ – AI.DS.5: 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 (including joint, marginal, and conditional relative frequencies) to describe possible associations and trends in the data. LD ✓ – AI.DS.6: Understand that statistics and data are non-neutral and designed to serve a particular interest. Analyze the possibilities for whose interest might be served and how the representations might be misleading.

8th Grade/Algebra B/Unite 4B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 32-35	**Computation** LD ✓ + 8.C.1: Solve real-world problems with rational numbers by using multiple operations. **Algebra and Functions**

LD ✓+ 8.AF.1: Solve linear equations with rational number coefficients fluently, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. Represent real-world problems using linear equations and inequalities in one variable and solve such problems.

LD ✓ 8.AF.4: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear, has a maximum or minimum value). Sketch a graph that exhibits the qualitative features of a function that has been verbally described.

LD ✓+ 8.AF.6: Construct a function to model a linear relationship between two quantities given a verbal description, table of values, or graph. Recognize in y = mx + b that m is the slope (rate of change) and b is the y-intercept of the graph, and describe the meaning of each in the context of a problem.

Geometry and Measurement

LD ✓ 8.GM.1: Identify, define and describe attributes of three-dimensional geometric objects (right rectangular prisms, cylinders, cones, spheres, and pyramids). Explore the effects of slicing these objects using appropriate technology and describe the two-dimensional figure that results.

LD ✓ 8.GM.2: Solve real-world and other mathematical problems involving volume of cones, spheres, and pyramids and surface area of spheres.

LD ✓ 8.GM.4: 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. Describe a sequence that exhibits the congruence between two given congruent figures.

LD ✓ 8.GM.5: 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. Describe a sequence that exhibits the similarity between two given similar figures.

LD ✓ 8.GM.6: Describe the effect of dilations, translations, rotations, and reflections on two- dimensional figures using coordinates.

LD ✓+ 8.GM.8: Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and other mathematical problems in two dimensions.

IN: High School

Algebra I

Real Numbers And Expressions

LD AI.RNE.5: Simplify algebraic rational expressions, with numerators and denominators containing monomial bases with integer exponents, to equivalent forms.

LD AI.RNE.6: Factor common terms from polynomials and factor polynomials completely. Factor the difference of two squares, perfect square trinomials, and other quadratic expressions.

LD AI.RNE.7: Understand polynomials are closed under the operations of addition, subtraction, and multiplication with integers; add, subtract, and multiply polynomials and divide polynomials by monomials.

Linear Equations, Inequalities, and Functions

LD AI.L.1: Understand that the steps taken when solving linear equations create new equations that have the same solution as the original. Solve fluently linear equations and inequalities in one variable with integers, fractions, and decimals as coefficients. Explain and justify each step in solving an equation, starting from the assumption that the original equation has a solution. Justify the choice of a solution method.

LD AI.L.2: Represent real-world problems using linear equations and inequalities in one variable and solve such problems. Interpret the solution and determine whether it is reasonable.

LD AI.L.4: Represent linear functions as graphs from equations (with and without technology), equations from graphs, and equations from tables and other given information (e.g., from a given point on a line and the slope of the line).

LD AI.L.5: Represent real-world problems that can be modeled with a linear function using equations, graphs, and tables; translate fluently among these representations, and interpret the slope and intercepts.

LD AI.L.7: Represent real-world problems using linear inequalities in two variables and solve such problems; interpret the solution set and determine whether it is reasonable. Solve other linear inequalities in two variables by graphing.

Systems of Equations and Inequalities

LD AI.SEI.2: Understand that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. Solve pairs of linear equations in two variables using substitution and elimination.

LD AI.SEI.3: Write a system of two linear equations in two variables that represents a real-world problem and solve the problem with and without technology. Interpret the solution and determine whether the solution is reasonable.

Quadratic and Exponential Equations and Functions

	LD ✓+ AI.QE.3: Graph exponential and quadratic equations in two variables with and without technology. LD ✓+ AI.QE.4: Solve quadratic equations in one variable by inspection (e.g., for x^2 = 49), finding square roots, using the quadratic formula, and factoring, as appropriate to the initial form of the equation. LD ✓+ AI.QE.5: Represent real-world problems using quadratic equations in one or two variables and solve such problems with and without technology. Interpret the solution and determine whether it is reasonable.

8th Grade/Algebra/Unit 1A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 1-4	**IN: High School** Algebra I **Real Numbers And Expressions** LD ✓– AI.RNE.1: Understand the hierarchy and relationships of numbers and sets of numbers within the real number system. LD ✓– AI.RNE.2: Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational. LD ✓ AI.RNE.3: Rewrite and evaluate numeric expressions with positive rational exponents using the properties of exponents. LD ✓ AI.RNE.4: Simplify square roots of non-perfect square integers and algebraic monomials. **Linear Equations, Inequalities, and Functions** LD ✓+ AI.L.5: Represent real-world problems that can be modeled with a linear function using equations, graphs, and tables; translate fluently among these representations, and interpret the slope and intercepts. **Data Analysis And Statistics** LD ✓ AI.DS.3: Use technology to find a linear function that models a relationship for a bivariate data set to make predictions; interpret the slope and y- intercept, and compute (using technology) and interpret the correlation coefficient.

8th Grade/Algebra/Unit 1B

APPROXIMATE	IDOE CCRS PRIORITIES

TIME FRAME	
Weeks 5-9	Algebra I **Linear Equations, Inequalities, and Functions** LD ✓+ AI.L.1: Understand that the steps taken when solving linear equations create new equations that have the same solution as the original. Solve fluently linear equations and inequalities in one variable with integers, fractions, and decimals as coefficients. Explain and justify each step in solving an equation, starting from the assumption that the original equation has a solution. Justify the choice of a solution method. LD ✓+ AI.L.2: Represent real-world problems using linear equations and inequalities in one variable and solve such problems. Interpret the solution and determine whether it is reasonable. LD ✓– AI.L.3: Represent real-world and other mathematical problems using an algebraic proportion that leads to a linear equation and solve such problems. LD ✓ AI.L.8: Solve compound linear inequalities in one variable, and represent and interpret the solution on a number line. Write a compound linear inequality given its number line representation. LD ✓– AI.L.9: Solve absolute value linear equations in one variable. LD ✓ AI.L.11: Solve equations and formulas for a specified variable, including equations with coefficients represented by variables.

8th Grade/Algebra/Unit 2A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 10-14	Algebra I **Functions** LD ✓ AI.F.1: Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. Understand that if f is a function and x is an element of its domain, then f(x) denotes the output of f corresponding to the input x. Understand the graph of f is the graph of the equation y = f(x). LD ✓ AI.F.2: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the

	function is increasing or decreasing, linear or nonlinear, has a maximum or minimum value). Sketch a graph that exhibits the qualitative features of a function that has been verbally described. Identify independent and dependent variables and make predictions about the relationship. LD ✓ – AI.F.3: Identify the domain and range of relations represented in tables, graphs, verbal descriptions, and equations. LD ✓ AI.F.4: Understand and interpret statements that use function notation in terms of a context; relate the domain of the function to its graph and to the quantitative relationship it describes. **Linear Equations, Inequalities, and Functions** LD ✓+ AI.L.4: Represent linear functions as graphs from equations (with and without technology), equations from graphs, and equations from tables and other given information (e.g., from a given point on a line and the slope of the line). LD ✓+ AI.L.5: Represent real-world problems that can be modeled with a linear function using equations, graphs, and tables; translate fluently among these representations, and interpret the slope and intercepts. LD ✓ AI.L.6: Translate among equivalent forms of equations for linear functions, including slope-intercept, point-slope, and standard. Recognize that different forms reveal more or less information about a given situation. LD ✓+ AI.L.7: Represent real-world problems using linear inequalities in two variables and solve such problems; interpret the solution set and determine whether it is reasonable. Solve other linear inequalities in two variables by graphing. LD ✓ – AI.L.10: Graph absolute value linear equations in two variables.

8th Grade/Algebra/Unit 2B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 15-18	**Computation** LD ✓+ 8.C.1: Solve real-world problems with rational numbers by using multiple operations. **IN: High School** Algebra I **Systems of Equations and Inequalities** LD ✓ AI.SEI.1: Understand the relationship between a solution of a pair of linear

	equations in two variables and the graphs of the corresponding lines. Solve pairs of linear equations in two variables by graphing; approximate solutions when the coordinates of the solution are non-integer numbers. LD ✓+ AI.SEI.2: Understand that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. Solve pairs of linear equations in two variables using substitution and elimination. LD ✓+ AI.SEI.3: Write a system of two linear equations in two variables that represents a real-world problem and solve the problem with and without technology. Interpret the solution and determine whether the solution is reasonable. LD ✓ AI.SEI.4: Represent real-world problems using a system of two linear inequalities in two variables and solve such problems; interpret the solution set and determine whether it is reasonable. Solve other pairs of linear inequalities by graphing with and without technology.

8th Grade/Algebra/Unit 3A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 19-22	Algebra I **Real Numbers And Expressions** LD ✓ AI.RNE.3: Rewrite and evaluate numeric expressions with positive rational exponents using the properties of exponents. LD ✓ AI.RNE.4: Simplify square roots of non-perfect square integers and algebraic monomials. **Functions** LD ✓− AI.F.3: Identify the domain and range of relations represented in tables, graphs, verbal descriptions, and equations. **Quadratic and Exponential Equations and Functions** LD ✓ AI.QE.1: Distinguish between situations that can be modeled with linear functions and with exponential functions. Understand that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. Compare linear functions and exponential functions that model real-world situations using tables, graphs, and equations.

	LD ✓ AI.QE.2: Represent real-world and other mathematical problems that can be modeled with exponential functions using tables, graphs, and equations of the form y = ab^x (for integer values of x > 1, rational values of b > 0 and b ≠ 1); translate fluently among these representations and interpret the values of a and b. LD ✓+ AI.QE.3: Graph exponential and quadratic equations in two variables with and without technology.

8th Grade/Algebra/Unit 3B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 23-26	Algebra I **Real Numbers And Expressions** LD ✓ AI.RNE.3: Rewrite and evaluate numeric expressions with positive rational exponents using the properties of exponents. LD ✓ AI.RNE.4: Simplify square roots of non-perfect square integers and algebraic monomials. LD ✓+ AI.RNE.6: Factor common terms from polynomials and factor polynomials completely. Factor the difference of two squares, perfect square trinomials, and other quadratic expressions. LD ✓+ AI.RNE.7: Understand polynomials are closed under the operations of addition, subtraction, and multiplication with integers; add, subtract, and multiply polynomials and divide polynomials by monomials.

8th Grade/Algebra/Unit 4A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 28-31	Algebra I **Functions** LD ✓− AI.F.3: Identify the domain and range of relations represented in tables, graphs, verbal descriptions, and equations. **Quadratic and Exponential Equations and Functions** LD ✓+ AI.QE.3: Graph exponential and quadratic equations in two variables with and without technology.

	LD ✓+ AI.QE.4: Solve quadratic equations in one variable by inspection (e.g., for x^2 = 49), finding square roots, using the quadratic formula, and factoring, as appropriate to the initial form of the equation. LD ✓+ AI.QE.5: Represent real-world problems using quadratic equations in one or two variables and solve such problems with and without technology. Interpret the solution and determine whether it is reasonable. LD ✓ AI.QE.6: Use the process of factoring to determine zeros, lines of symmetry, and extreme values in real-world and other mathematical problems involving quadratic functions; interpret the results in the real-world contexts. LD ✓– AI.QE.7: Describe the relationships among the solutions of a quadratic equation, the zeros of the function, the x-intercepts of the graph, and the factors of the expression **Data Analysis And Statistics** LD ✓ AI.DS.1: Distinguish between random and non-random sampling methods, identify possible sources of bias in sampling, describe how such bias can be controlled and reduced, evaluate the characteristics of a good survey and well-designed experiment, design simple experiments or investigations to collect data to answer questions of interest, and make inferences from sample results. LD ✓ AI.DS.2: Graph bivariate data on a scatter plot and describe the relationship between the variables. LD ✓ AI.DS.3: Use technology to find a linear function that models a relationship for a bivariate data set to make predictions; interpret the slope and y- intercept, and compute (using technology) and interpret the correlation coefficient. LD ✓– AI.DS.5: 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 (including joint, marginal, and conditional relative frequencies) to describe possible associations and trends in the data. LD ✓– AI.DS.6: Understand that statistics and data are non-neutral and designed to serve a particular interest. Analyze the possibilities for whose interest might be served and how the representations might be misleading.

8th Grade/Algebra/Unite 4B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES

Weeks 32-35	Algebra I **Real Numbers And Expressions** LD AI.RNE.5: Simplify algebraic rational expressions, with numerators and denominators containing monomial bases with integer exponents, to equivalent forms. LD AI.RNE.6: Factor common terms from polynomials and factor polynomials completely. Factor the difference of two squares, perfect square trinomials, and other quadratic expressions. LD AI.RNE.7: Understand polynomials are closed under the operations of addition, subtraction, and multiplication with integers; add, subtract, and multiply polynomials and divide polynomials by monomials. **Functions** LD AI.F.2: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear, has a maximum or minimum value). Sketch a graph that exhibits the qualitative features of a function that has been verbally described. Identify independent and dependent variables and make predictions about the relationship. **Linear Equations, Inequalities, and Functions** LD AI.L.1: Understand that the steps taken when solving linear equations create new equations that have the same solution as the original. Solve fluently linear equations and inequalities in one variable with integers, fractions, and decimals as coefficients. Explain and justify each step in solving an equation, starting from the assumption that the original equation has a solution. Justify the choice of a solution method. LD AI.L.2: Represent real-world problems using linear equations and inequalities in one variable and solve such problems. Interpret the solution and determine whether it is reasonable. LD AI.L.4: Represent linear functions as graphs from equations (with and without technology), equations from graphs, and equations from tables and other given information (e.g., from a given point on a line and the slope of the line). LD AI.L.5: Represent real-world problems that can be modeled with a linear function using equations, graphs, and tables; translate fluently among these representations, and interpret the slope and intercepts. LD AI.L.7: Represent real-world problems using linear inequalities in two variables and solve such problems; interpret the solution set and determine whether it is reasonable. Solve other linear inequalities in two variables by graphing. **Systems of Equations and Inequalities**

LD AI.SEI.2: Understand that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. Solve pairs of linear equations in two variables using substitution and elimination.

LD AI.SEI.3: Write a system of two linear equations in two variables that represents a real-world problem and solve the problem with and without technology. Interpret the solution and determine whether the solution is reasonable.

Quadratic and Exponential Equations and Functions

LD AI.QE.3: Graph exponential and quadratic equations in two variables with and without technology.

LD AI.QE.4: Solve quadratic equations in one variable by inspection (e.g., for x^2 = 49), finding square roots, using the quadratic formula, and factoring, as appropriate to the initial form of the equation.

LD AI.QE.5: Represent real-world problems using quadratic equations in one or two variables and solve such problems with and without technology. Interpret the solution and determine whether it is reasonable.

8th Grade/Geometry/Unit 1A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 1-4	**Logic and Proofs** LD G.LP.1: Understand and describe the structure of and relationships within an axiomatic system (undefined terms, definitions, axioms and postulates, methods of reasoning, and theorems). Understand the differences among supporting evidence, counterexamples, and actual proofs. LD G.LP.2: Know precise definitions for angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, and plane. Use standard geometric notation. LD G.LP.3: State, use, and examine the validity of the converse, inverse, and contrapositive of conditional ("if – then") and bi-conditional ("if and only if") statements. LD G.LP.4: Develop geometric proofs, including direct proofs, indirect proofs, proofs by contradiction and proofs involving coordinate geometry, using two- column, paragraphs, and flow charts formats. **Points, Lines, Angles** LD G.PL.1: Identify, justify, and apply properties of planes. LD G.PL.2: Describe the intersection of two or more geometric figures in the same plane. LD G.PL.3: Prove and apply theorems about lines and angles, including the following: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent, alternate exterior angles are congruent, and corresponding angles are congruent; when a transversal crosses parallel lines, same side interior angles are supplementary; and points on a perpendicular bisector of a line segment are exactly those equidistant from the endpoints of the segment. LD G.PL.5: Explain and justify the process used to construct, with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.), congruent segments and angles, angle bisectors, perpendicular bisectors, altitudes, medians, and parallel and perpendicular lines.

8th Grade/ Geometry /Unit 1B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 5-9	**Logic and Proofs** LD G.LP.1: Understand and describe the structure of and relationships within an axiomatic system (undefined terms, definitions, axioms and postulates, methods of reasoning, and theorems). Understand the differences among supporting evidence, counterexamples, and actual proofs. LD G.LP.3: State, use, and examine the validity of the converse, inverse, and contrapositive of conditional ("if – then") and bi-conditional ("if and only if") statements. LD G.LP.4: Develop geometric proofs, including direct proofs, indirect proofs, proofs by contradiction and proofs involving coordinate geometry, using two- column, paragraphs, and flow charts formats. **Points, Lines, Angles** LD G.PL.3: Prove and apply theorems about lines and angles, including the following: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent, alternate exterior angles are congruent, and corresponding angles are congruent; when a transversal crosses parallel lines, same side interior angles are supplementary; and points on a perpendicular bisector of a line segment are exactly those equidistant from the endpoints of the segment. LD G.PL.4: Know that parallel lines have the same slope and perpendicular lines have opposite reciprocal slopes. Determine if a pair of lines are parallel, perpendicular, or neither by comparing the slopes in coordinate graphs and in equations. Find the equation of a line, passing through a given point, that is parallel or perpendicular to a given line. LD G.PL.5: Explain and justify the process used to construct, with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.), congruent segments and angles, angle bisectors, perpendicular bisectors, altitudes, medians, and parallel and perpendicular lines.

8th Grade/ Geometry /Unit 2A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 10-14	**Triangles** LD G.T.1: Prove and apply theorems about triangles, including the following: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point; a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem, using triangle similarity; and the isosceles triangle theorem and its converse. LD G.T.2: Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions. LD G.T.3: Explain and justify the process used to construct congruent triangles with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.).

8th Grade/ Geometry /Unit 2B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 15-18	**Triangles** LD G.T.4: Given two triangles, 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, and to establish the AA criterion for two triangles to be similar. LD G.T.7: State and apply the relationships that exist when the altitude is drawn to the hypotenuse of a right triangle. Understand and use the geometric mean to solve for missing parts of triangles. **Transformations** LD G.TR.1: Use geometric descriptions of rigid motions to transform figures and to predict and describe the results of translations, reflections and rotations on a given figure. Describe a motion or series of motions that will show two shapes are congruent. LD G.TR.2: Understand a dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. Verify experimentally the properties of dilations given by a center and a scale factor. Understand the dilation of a line segment is longer or shorter in the ratio given by the scale factor.

8th Grade/ Geometry /Unit 3A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES

Weeks 19-22	**Triangles** LD G.T.8: Develop the distance formula using the Pythagorem Theorem. Find the lengths and midpoints of line segments in one- or two-dimensional coordinate systems. Find measures of the sides of polygons in the coordinate plane; apply this technique to compute the perimeters and areas of polygons in real-world and mathematical problems. **Quadrilaterals and Other Polygons** LD G.QP.1: Prove and apply theorems about parallelograms, including the following: opposite sides are congruent; opposite angles are congruent; the diagonals of a parallelogram bisect each other; and rectangles are parallelograms with congruent diagonals. LD G.QP.2: Prove that given quadrilaterals are parallelograms, rhombuses, rectangles, squares or trapezoids. Include coordinate proofs of quadrilaterals in the coordinate plane. LD G.QP.3: Find measures of interior and exterior angles of polygons. Explain and justify the method used. LD G.QP.4: Identify types of symmetry of polygons, including line, point, rotational, and self-congruencies. IN: CCSS: Mathematics **IN: HS: Geometry** Congruence **G-CO Prove geometric theorems** LD 11. Prove theorems about parallelograms. Show details Expressing Geometric Properties with Equations **G-GPE Use coordinates to prove simple geometric theorems algebraically** LD 4. Use coordinates to prove simple geometric theorems algebraically

8th Grade/ Geometry /Unit 3B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES

Weeks 23-26	**Triangles** LD G.T.9: Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles. LD G.T.10: Use trigonometric ratios (sine, cosine and tangent) and the Pythagorean Theorem to solve real-world and mathematical problems involving right triangles. LD G.T.11: Use special right triangles (30° - 60° and 45° - 45°) to solve real-world and mathematical problems.

8th Grade/ Geometry /Unit 4A

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 28-31	**IN: HS: Geometry** Geometric Measurement & Dimension **G-GMB Explain volume formulas and use them to solve problems** LD 1. Give an informal argument for the formulas for the volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri's principle, and informal limit arguments. LD 2. (+) Given an informal argument using Cavalieri's principle for the formulas for the volume of a sphere and other solid figures. LD 3. Use volume formulas for cylinders, pyramids, cones and spheres to solve problems.★ **G-GMB Visualize the relation between two-dimensional and three-dimensional objects** LD 4. Identify cross-sectional shapes of slices of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects. Modeling with Geometry **G-MG Apply geometric concepts in modeling situations** LD 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).★ LD 2. Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).★ LD 3. Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy constraints or minimize cost; working with typographic grid systems based on ratios).★

8th Grade/ Geometry /Unite 4B

APPROXIMATE TIME FRAME	IDOE CCRS PRIORITIES
Weeks 32-35	**IN: HS: Geometry** Congruence **G-CO Make geometric constructions** LD 13. Construct an equilateral triangle, a square and a regular hexagon inscribed in a circle. Circles **G-C Understand and apply theorems about circles** LD 1. Prove that all circles are similar. LD 2. Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle. LD 3. Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle. LD 4. (+) Construct a tangent line from a point outside a given circle to the circle. **G-C Find arc lengths and areas of sectors of circles** LD 5. Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector. Expressing Geometric Properties with Equations **G-GPE Translate between the geometric description and the equation for a conic section** LD 1. Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation. **G-GPE Use coordinates to prove simple geometric theorems algebraically** LD 4. Use coordinates to prove simple geometric theorems algebraically. Geometric Measurement & Dimension

G-GMB Explain volume formulas and use them to solve problems

- LD 1. Give an informal argument for the formulas for the volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri's principle, and informal limit arguments.

Modeling with Geometry

G-MG Apply geometric concepts in modeling situations

- LD 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).★