Common Core Standards Plus® - Mathematics – Grade 8 with Common Core ELD Standard Alignment

Domain	Lesson	Focus	Standard(s)	ELD Standards
The Number System (The Number System Standards: 8.NS.1-2)	**1**	Types of Numbers	8.NS.1: Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	2	Decimal Expansion		
	3	Converting Repeating Decimals to Fractions		
	4	Converting Repeating Decimals to Fractions		
	E1	Evaluation – Irrational Numbers		
	5	Approximating Square Roots	8.NS.2: Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2).	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading.
	6	Compare Real Numbers		
	7	Order Real Numbers		
	8	Locate Real Numbers on the Real # Line		
	E2	Evaluation – Real Numbers		
	P1	**Performance Lesson #1** – Rational and Irrational Numbers ***(8.NS.1, 8.NS.2)***		
Expressions and Equations (Expressions and Equations Standards: 8.EE.1-7, 8.EE.7a-b, 8.EE.8, 8.EE.8a-c)	**1**	Square Numbers and Roots	8.EE.2: Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that √2 is irrational.	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	2	Using Square Roots		
	3	Evaluate Cube Roots		
	4	Using Cube Roots		
	E1	Square and Cube Roots		
	5	Properties of Exponents	8.EE.1: Know and apply the properties of integer exponents to generate equivalent numerical expressions.	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	6	Properties of Exponents		
	7	Properties of Exponents		
	8	Properties of Exponents		
	E2	Evaluation – Properties of Exponents		
	P2	**Performance Lesson #2** – Square Roots, Cube Roots, Exponents ***(8.EE.1, 8.EE.2)***		
	9	Scientific Notation	8.EE.3: Use #s expressed in the form of a single digit times an integer power of 10 to estimate very large/ small quantities; express how many times as much one is than the other. 8.EE.4: Perform operations with numbers expressed in scientific notation, including problems where both decimal & scientific notation are used. Use scientific notation; choose units of appropriate size for measurements of very large/small quantities.	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	10	Scientific Notation		
	11	Scientific Notation		
	12	Scientific Notation		
	E3	Evaluation – Scientific Notation		
	13	Operations Using Scientific Notation	8.EE.4	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	14	Operations Using Scientific Notation		
	15	Operations Using Scientific Notation		
	16	Using Technology w/ Scientific Notation		
	E4	Evaluation – Scientific Notation		
	P3	**Performance Lesson #3** – Using Scientific Notation ***(8.EE.3, 8.EE.4)***		

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Expressions and Equations (Expressions and Equations Standards: 8.EE.1-7, 8.EE.7a-b, 8.EE.8, 8.EE.8a-c)	**17**	Graph Proportional Relationships & Determine Unit Rate	8.EE.5: Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	18	Graph Proportional Relationships & Determine Unit Rate		
	19	Comparing Proportional Relationships		
	20	Comparing Proportional Relationships		
	E5	Evaluation – Graphing and Comparing Proportional Relationships		
	21	Simple Triangles and Slope	8.EE.6: Use similar triangles to explain why the slope *m* is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at *b*.	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	22	Simple Triangles and Slope		
	23	Derive the Equation $y = mx$		
	24	Derive the Equation $y = mx$		
	E6	Evaluation – Proportional Relationships, Lines, and Linear Equations		
	P4	**Performance Lesson #4** – What is Slope? ***(8.EE.5, 8.EE.6)***		
	25	Types of Solutions to a Linear Equation	8.EE.7a: Give examples of linear equations in 1 variable with 1 solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the 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).	**ELD.PI.8.1:** Exchanging information/ideas via oral communication and conversations. **ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	26	Linear Equations		
	27	Solving 1-Step and 2-Step Equations	8.EE.7a, 8.EE.7b: Solve linear equations with rational # coefficients, including equations whose solutions require expanding expressions using the distributive property & collecting like terms.	
	28	Solving 1-Step and 2-Step Equations		
	E7	Evaluation – Finding Solutions to 1- and 2-Step Linear Equations		
	29	Distributive Property	8.EE.7b	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	30	Simplifying Expressions		
	31	Multi-Step Linear Equations		
	32	Multi-Step Linear Equations		
	E8	Solving Multi-Step Linear Equations		
	33	Multi-Step Linear Equations	8.EE.7a	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard.
	34	Multi-Step Linear Equations		
	35	Multi-Step Linear Equations	8.EE.7b	
	36	Multi-Step Linear Equations		
	E9	Solve Multi-Step Linear Equations	8.EE.7a, 8.EE.7b	
	37	Systems of Equations	8.EE.8a: Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.	**ELD.PI.8.1:** Exchanging information/ideas via oral communication and conversations. **ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	38	Systems of Equations		
	39	System of Equations		
	40	Systems of Equations		
	E10	Evaluation – Systems of Equations		

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Expressions and Equations (Expressions & Equations Standards: 8.EE.1-7a-b, 8.EE.8a-c)	**41**	Systems of Equations	8.EE.8b: Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. *For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.*	**ELD.PI.8.1:** Exchanging information/ideas via oral communication and conversations. **ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Compose/write literary & info texts.
	42	Systems of Equations		
	43	Systems of Equations		
	44	Systems of Equations		
	E11	Evaluation – Solving Systems of Equations Algebraically		
	45	Systems of Equations	8.EE.8c: Solve real-world and mathematical problems leading to two linear equations in two variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.*	**ELD.PI.8.1:** Exchanging information/ideas via oral communication and conversations. **ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	46	Systems of Equations		
	47	Solving Systems of Equations		
	48	Systems of Equations		
	E12	Evaluation – Systems of Equations		
	P5	**Performance Lesson #5** – Systems of Equations ***(8.EE.7a-b, 8.EE.8a-8.EE.8c)***		
Functions (Functions Standards: 8.F.1-5)	**1**	Defining Functions	8.F.1: Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	2	Defining Functions		
	3	Defining Functions		
	4	Defining Functions		
	E1	Evaluation – Defining Functions		
	5	Identifying Linear and Non-Linear Functions	8.F.3: Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	6	Identifying Linear and Non-Linear Functions		
	7	Identifying Linear and Non-Linear Functions		
	8	Linear Parent Function	8.F.3, 8.F.2: Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	
	E2	Evaluation – Comparing Functions		
	9	Linear Functions in $y = k$ Form	8.F.2, 8.F.3	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	10	Rate of Change	8.F.4: Construct a function to model a linear relationship between 2 quantities. Determine the rate of change & initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table/graph. Interpret the rate of change & initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	
	11	Rate of Change		
	12	Rate of Change		
	E3	Evaluation – Comparing Functions	8.F.3, 8.F.4	
	13	Rewrite Linear Equation into Slope-Intercept Form	8.F.2	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	14	Comparing Properties of Two Functions		
	15	Comparing Properties of Two Functions		
	16	Comparing Properties of Two Functions		
	E4	Evaluation – Comparing Functions		
	P6	**Performance Lesson #6** – *Linear Functions & Relations* ***(8.F.1, 8.F.2, 8.F.3, 8.F.4)***		

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Domain	Lesson	Focus	Standard(s)	ELD Standards
Functions (Functions Standards: 8.F.1-5)	**17**	Comparing the Properties of Two Functions	8.F.2	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	18	Construct/Interpret a Function to Model a Linear Relationship	8.F.4	
	19	Construct/Interpret a Function to Model a Linear Relationship		
	20	Construct/Interpret a Function to Solve Problems		
	E5	Evaluation – Constructing and Interpreting Functions	8.F.2, 8.F.4	
	21	Sketch a Function Graph	8.F.5: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	22	Describe Functional Relationships		
	23	Describe Functional Relationships	8.F.5	
	24	Describe Functional Relationships		
	E6	Evaluation – Use Functions to Model Relationships		
	P7	**Performance Lesson #7** – *Functional Relationships* ***(8.F.2, 8.F.4, 8.F.5)***		
Statistics and Probability (Statistics and Probability Standards: 8.SP.1-4)	**1**	Associations of Bivariate Data	8.SP.1: Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	2	Construct Scatter Plots		
	3	Create and Interpret Scatter Plots	8.SP.1, 8.SP.2: Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	
	4	Line of Best Fit		
	E1	Evaluation – Scatter Plots and Line of Best Fit		
	5	Evaluate and Write Linear Models	8.SP.2, 8.SP.3: Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	6	Find and Use Linear Models to Solve Problems	8.SP.3	
	7	Evaluate Goodness of Fit		
	8	Find and Use a Linear Model to Solve Problems		
	E2	Evaluation – Linear Models of Scatter Plots	8.SP.2, 8.SP.3	
	P8	**Performance Lesson #8** – *Scatter Plots* ***(8.SP.1, 8.SP.2, 8.SP.3)***		
	9	Construct Two-Way Frequency Tables	8.SP.4: Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables.	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	10	Construct Two-Way Frequency Tables		
	11	Construct Two-Way Relative Frequency Tables		
	12	Two-Way Relative Frequency Tables		
	E3	Evaluation – Scatter Plots and Two-Way Tables		
	P9	**Performance Lesson #9** – *Two-Way Tables* ***(8.SP.4)***		

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Geometry (Geometry Standards: 8.G.1-8.G.9)	**1**	Verifying Properties	8.G.1: Verify experimentally the properties of rotations, reflections, and translations. 8.G.2: See Below	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	2	Showing Congruency	8.G.2: Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.	
	3	Mapping Figures		
	4	Mapping Figures		
	E1	Evaluation – Using Rotations, Reflections, and Translations	8.G.1, 8.G.2	
	5	Dilating Figures	8.G.3: Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. 8.G.4: Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	6	Transforming Figures		
	7	Transforming Figures		
	8	Transforming Figures		
	E2	Transforming Figures		
	9	Describe a Sequence of Transformations	8.G.4	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	10	Angle Sum and Exterior Angle Theorems	8.G.5: Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.	
	11	Applying the Angle Sum of a Triangle		
	12	Apply the Angle Sum and Exterior Angle of Triangles		
	E3	Evaluation – The Angle Sum and Exterior Angle of Triangles	8.G.4, 8.G.5	
	13	Defining Angles Made by a Transversal	8.G.5	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	14	Measuring the Angles Formed by a Transversal		
	15	Measuring Angles Formed by a Transversal		
	16	Measuring Angles Formed by a Transversal		
	E4	Evaluation – Parallel Lines Cut by a Transversal		
	17	Parallel Lines Cut by a Transversal	8.G.5	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	18	Use Transversals to Find the Angle Sum of a Triangle		
	19	Properties and Criteria for Similar Triangles		
	20	Criteria for Similar Triangles		
	E5	Evaluation – Transformations, Triangles, and Parallel Lines Cut by Transversals		
	P10	**Performance Lesson #10** – *2-D Figures & Transformations* ***(8.G.1, 8.G.2, 8.G.3, 8.G.4, 8.G.5)***		
	21	Proof of the Pythagorean Theorem	8.G.6: Explain a proof of the Pythagorean Theorem and its converse.	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	22	Proof of the Pythagorean Theorem		
	23	Proof of the Pythagorean Theorem		
	24	Converse of the Pythagorean Theorem		
	E6	Evaluation – Proofs of the Pythagorean Theorem and It's Converse		

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Geometry (Geometry Standards: 8.G.1-8.G.9)	**25**	Applying the Pythagorean Theorem	8.G.7: Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading.
	26	Applying the Pythagorean Theorem		
	27	Applying the Pythagorean Theorem		
	28	Applying the Pythagorean Theorem		
	E7	Evaluation – Apply the Pythagorean Theorem		
	29	Applying the Pythagorean Theorem and Its Converse	8.G.7	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	30	Applying the Pythagorean Theorem		
	31	Pythagorean Theorem and Special Right Triangles		
	32	Applying the Pythagorean Theorem to 3-Dimensional Problems		
	E8	Evaluation – Applying the Pythagorean Theorem		
	33	Finding the Distance Between Points on a Coordinate Plane	8.G.8: Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	34	Distance Formula		
	35	Applying the Distance Formula		
	36	Distance Formula and the Converse of the Pythagorean Theorem		
	E9	Evaluation – Pythagorean Theorem		
	P11	**Performance Lesson #11** – *Pythagorean Theorem* ***(8.G.6, 8.G.7, 8.G.8)***		
	37	Use the Volume Formula of Cylinders to Solve Problems	8.G.9: Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	38	Use the Volume Formula of Cylinders to Solve Problems		
	39	Use the Volume Formula of Cylinders to Solve Problems		
	40	Use the Volume Formula of Cylinders to Solve Problems		
	E10	Evaluation – Volume of Cylinders and Cones		
	41	Use the Volume Formula of Spheres to Solve Problems	8.G.9	**ELD.PI.8.5:** Listen actively and ask/answer questions about what was heard. **ELD.PI.8.6:** Reading closely and explaining interpretations/ideas from reading. **ELD.PI.8.10:** Composing/writing literary and informational texts.
	42	Use the Volume Formula of Spheres and Cylinders to Solve Problems		
	43	Use the Volume Formula of Three-Dimensional Shapes to Solve Problems		
	44	Use the Volume Formula of Three-Dimensional Shapes to Solve Problems		
	E11	Evaluation 11 – Use the Volume Formula		
	P12	**Performance Lesson #12** – *Volume* ***(8.G.9)***		