Standards Plus High Impact Standards - Mathematics – Grade 8

Domain	Lesson	Focus	Digital Lesson #	Standard(s)
Expressions and Equations	1	Scientific Notation	9	8.EE.3: Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *8.EE.4:* Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities.
	2	Scientific Notation	10	
	3	Scientific Notation	11	
	4	Scientific Notation	12	
	A1	Assessment – Scientific Notation	A3	
	5	Operations Using Scientific Notation	13	8.EE.4
	6	Operations Using Scientific Notation	14	
	7	Operations Using Scientific Notation	15	
	8	Using Technology w/ Scientific Notation	16	
	A2	Assessment – Scientific Notation	A4	
		Performance Lesson – Using Scientific Notation ***(8.EE.3, 8.EE.4)***		
	9	Graph Proportional Relationships & Determine Unit Rate	17	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.
	10	Graph Proportional Relationships & Determine Unit Rate	18	
	11	Comparing Proportional Relationships	19	
	12	Comparing Proportional Relationships	20	
	A3	Assessment – Graphing and Comparing Proportional Relationships	A5	
	13	Simple Triangles and Slope	21	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*.
	14	Simple Triangles and Slope	22	
	15	Derive the Equation $y = mx$	23	
	16	Derive the Equation $y = mx$	24	
	A4	Assessment – Proportional Relationships, Lines, and Linear Equations	A6	
		Performance Lesson – What is Slope? ***(8.EE.5, 8.EE.6)***		
	17	Types of Solutions to a Linear Equation	25	8.EE.7a: 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 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).
	18	Linear Equations	26	
	19	Solving 1-Step and 2-Step Equations	27	8.EE.7a, 8.EE.7b: Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.
	20	Solving 1-Step and 2-Step Equations	28	
	A5	Assessment – Finding Solutions to 1- and 2-Step Linear Equations	A7	
	21	Systems of Equations	37	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.
	22	Systems of Equations	38	
	23	System of Equations	39	
	24	Systems of Equations	40	
	A6	Assessment – Systems of Equations	A10	

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Functions	1	Defining Functions	1	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.
	2	Defining Functions	2	
	3	Defining Functions	3	
	4	Defining Functions	4	
	A1	Assessment – Defining Functions	A1	
	5	Identifying Linear and Non-Linear Functions	5	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.
	6	Identifying Linear and Non-Linear Functions	6	
	7	Identifying Linear and Non-Linear Functions	7	
	8	Linear Parent Function	8	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).
	A2	Assessment – Comparing Functions	A2	
Geometry	1	Verifying Properties	1	8.G.1: Verify experimentally the properties of rotations, reflections, and translations. 8.G.2
	2	Showing Congruency	2	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	3	
	4	Mapping Figures	4	
	A1	Assessment – Using Rotations, Reflections, and Translations	A1	8.G.1, 8.G.2
	5	Dilating Figures	5	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.
	6	Transforming Figures	6	
	7	Transforming Figures	7	
	8	Transforming Figures	8	
	A2	Transforming Figures	A2	
	9	Describe a Sequence of Transformations	9	8.G.4
	10	Angle Sum and Exterior Angle Theorems	10	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	11	
	12	Apply the Angle Sum and Exterior Angle of Triangles	12	
	A3	Assessment – The Angle Sum and Exterior Angle of Triangles	A3	8.G.4, 8.G.5
	13	Proof of the Pythagorean Theorem	21	8.G.6: Explain a proof of the Pythagorean Theorem and its converse.
	14	Proof of the Pythagorean Theorem	22	
	15	Proof of the Pythagorean Theorem	23	
	16	Converse of the Pythagorean Theorem	24	
	A4	Assessment – Proofs of the Pythagorean Theorem and Its Converse	A6	

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Domain	Lesson	Focus	Digital Lesson #	Standard(s)
Geometry	17	Applying the Pythagorean Theorem	25	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.
	18	Applying the Pythagorean Theorem	26	
	19	Applying the Pythagorean Theorem	27	
	20	Applying the Pythagorean Theorem	28	
	A5	Assessment – Apply the Pythagorean Theorem	A7	
	21	Finding the Distance Between Points on a Coordinate Plane	33	8.G.8: Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
	22	Distance Formula	34	
	23	Applying the Distance Formula	35	
	24	Distance Formula and the Converse of the Pythagorean Theorem	36	
	A6	Assessment – Pythagorean Theorem	A9	
		Performance Lesson – *Pythagorean Theorem* ***(8.G.6, 8.G.7, 8.G.8)***		