

8th Grade BIE Essential Math Standards

Interim 1 Standards

1.	M.BIES.7.RPA.03	The Highly Proficient student can create equivalent proportional equations that could be used to solve the same ratio/percent problem. (6-8 days)
2.	M.BIES.8.EE.A.01	The Highly Proficient student can utilize properties of exponents to order and/or evaluate multiple expressions with exponents. (4-6 days)
3.	M.BIES.8.EE.A.03	The Highly Proficient student can 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 express how many times larger or smaller one is than the other. (6-8 days)
4.	M.BIES.8.EE.A.04	The Highly Proficient student can calculate and interpret values written in scientific notation within a context. (4-6 days)
5.	M.BIES.8.G.A.01.a	Lines are taken to lines, and line segments to line segments of the same length. (4-6 days)
6.	M.BIES.8.G.A.01.b	Angles are taken to angles of the same measure. (6-8 days)
7.	M.BIES.8.G.A.01.c	Parallel lines are taken to parallel lines. (4-6 days)
8.	M.BIES.8.G.A.02	The Highly Proficient student can understand that a two-dimensional figure is congruent to another if one can be obtained from the other by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that demonstrates congruence. (6-8 days)

Suggested Standards:

9.	M.BIES.8.G.B.07-08	The Highly Proficient student can recognize situations and apply the Pythagorean Theorem in multi-step problems. The Highly Proficient student can find the coordinates of a point which is a given distance from another point in any direction, including diagonals.
10.	M.BIES.8SPB.05	The Highly Proficient student can compare different simulations to see which best predicts the probability.
11.	M.BIES.8.EE.A.02	The Highly Proficient student can explain how square roots and cube roots relate to each other and to their radicands.

Interim 2 Standards

1.	M.BIES.8.EE.A.04	The Highly Proficient student can calculate and interpret values written in scientific notation within a context.
2.	M.BIES.8.G.A.03	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
3.	M.BIES.8.G.A.04	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.
4.	M.BIES.8.G.A.05	The Highly Proficient student can give an informal argument that a triangle can only have one 90 degree angle and for the pairs of angles that are supplementary when parallel lines are cut by a transversal.

Additional Standards:	
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5.	M.BIES.8.FA.01	The Highly Proficient student can 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. (Function notation is not required in Grade 8.)
6.	M.BIES.8.FA.02	The Highly Proficient student can justify whether two functions represented in different ways are equivalent or not by comparing their properties.
7.	M.BIES.8.FA.03	The Highly Proficient student can explain why the function is linear or nonlinear.
8.	M.BIES.8.FB.04	The Highly Proficient student can identify what prevents a set of values in either a table or graph from being linear and adjusts the values to make them linear.
9.	M.BIES.8.SPA.02	The Highly Proficient student can 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.
Interim 3 Standards		
1.	M.BIES.8.EE.B.05	The Highly Proficient student can generate a representation of a proportional relationship with specific qualities.
2.	M.BIES.8.EE.B.06	The Highly Proficient student can 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 $(0, b)$.
3.	M.BIES.8.EE.C.07:b	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.
4.	M.BIES.8.EE.C.08.a	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.
5.	M.BIES.8.EE.C.08.b	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.
6.	M.BIES.8.EE.C.08.c	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.
Suggested Standards:		
7.	M.BIES.8.FB.05	The Highly Proficient student can interpret qualitative features of a function in a context.
8.	M.BIES.8.G.B.06	The Highly Proficient student can understand the Pythagorean Theorem and its converse.
9.	M.BIES.8.G.C.09	The Highly Proficient student can describe the relationship between the formulas for volumes of cones, cylinders, or spheres and explain how to find the formulas for cones, cylinders, and spheres.
10.	M.BIES.8.SPA.01	The Highly Proficient student can create and interpret scatter plots and find associations between two quantities.
11.	M.BIES.8.SPA.03	The Highly Proficient student can create and use a linear model to interpret the slope and y-intercept.
12.	M.BIES.8.SPA.04	The Highly Proficient student can interpret and compare relative frequencies to identify patterns of association.

