Math Integrated Blueprint for Delaware DCPS
2017-18 Blueprint
(fall window)

In this document, the "blueprint" refers to the pool of available Essential Elements (EEs). A general description of the content covered is provided for each grade. Educators should select a minimum of one grade level testlet to administer in the fall window.

The specific EEs available in each grade are listed in tables beginning on the next page. EEs are organized according to conceptual area.

NOTE: Grades 9 and 10 are grayed out (pp. 8 and 9), since these grades are not assessed for mathematics at the end of the year.

Major Claims and Conceptual Areas in Mathematics

Major Claim	Conceptual Area	
1. Students demonstrate increasingly complex understanding of number sense.	M.C1.1	Understand number structures (counting, place value, fraction)
	M.C1.2	Compare, compose, and decompose numbers and sets
	M.C1.3	Calculate accurately and efficiently using simple arithmetic operations
2. Students demonstrate increasingly complex spatial reasoning and understanding of geometric principles.	M.C2.1	Understand and use geometric properties of two- and three-dimensional shapes
	M.C2.2	Solve problems involving area, perimeter, and volume
3. Students demonstrate increasingly complex understanding of measurement, data, and analytic procedures.	M.C3.1	Understand and use measurement principles and units of measure
	M.C3.2	Represent and interpret data displays
4. Students solve increasingly complex mathematical problems, making productive use of algebra and functions.	M.C4.1	Use operations and models to solve problems
	M.C4.2	Understand patterns and functional thinking

Grade 3: Available Essential Elements

Claim	Conceptual Area	EE	Description
1			
	M.C1.1	3.NBT.2	Demonstrate understanding of place value to tens.
		3.NBT.3	Count by tens using models such as objects, base ten blocks, or money.
		3.NF.1-3	Differentiate a fractional part from a whole.
	M.C1.3	3.OA.4	Solve addition and subtraction problems when result is unknown, limited to operands and results within 20.
2			
	M.C2.2	3.G.2	Recognize that shapes can be partitioned into equal areas.
3			
	M.C3.1	3.MD.1	Tell time to the hour on a digital clock.
		3.MD.4	Measure length of objects using standard tools, such as rulers, yardsticks, and meter sticks
	M.C3.2	3.MD.3	Use picture or bar graph data to answer questions about data.
4			
	M.C4.1	3.OA.1-2	Use repeated addition to find the total number of objects and determine the sum.
		3.OA.8	Solve one-step real world problems using addition or subtraction within 20.
	M.C4.2	3.OA.9	Identify arithmetic patterns.

Grade 4: Available Essential Elements

Claim	Conceptual Area	EE	Description
1			
	M.C1.1	4.NF.1-2	Identify models of one half (1/2) and one fourth (1/4).
		4.NF.3	Differentiate between whole and half.
	M.C1.2	4.NBT.2	Compare whole numbers to 10 using symbols (<, >, =).
		4.NBT.3	Round any whole number 0-30 to the nearest ten.
	M.C1.3	4.NBT.4	Add and subtract two-digit whole numbers.
2			
	M.C2.1	4.G.1	Recognize parallel lines and intersecting lines.
		4.MD.5	Recognize angles in geometric shapes.
		4.MD.6	Identify angles as larger and smaller.
	M.C2.2	4.MD.3	Determine the area of a square or rectangle by counting units of measure (unit squares).
3			
	M.C3.1	4.MD.2.a	Tell time using a digital clock. Tell time to the nearest hour using an analog clock.
		4.MD.2.b	Measure mass or volume using standard tools.
		4.MD.2.d	Identify coins (penny, nickel, dime, quarter) and their values.
	M.C3.2	4.MD.4.b	Interpret data from a picture or bar graph.
4			
	M.C4.1	4.OA.1-2	Demonstrate the connection between repeated addition and multiplication.
		4.OA.3	Solve one-step real-world problems using addition or subtraction within 100.
	M.C4.2	4.OA.5	Use repeating patterns to make predictions.

Grade 5: Available Essential Elements

Claim	Conceptual Area	EE	Description
1			
	M.C1.1	5.NF.1	Identify models of halves (1/2, 2/2) and fourths (1/4, 2/4, 3/4, 4/4).
		5.NF.2	Identify models of thirds (1/3, 2/3, 3/3) and tenths (1/10, 2/10, 3/10, 4/10, 5/10, 6/10, 7/10, 8/10, 9/10, 10/10).
	M.C1.2	5.NBT.1	Compare numbers up to 99 using base ten models.
		5.NBT.3	Compare whole numbers up to 100 using symbols (<, >, =).
		5.NBT.4	Round two-digit whole numbers to the nearest 10 from 0—90.
	M.C1.3	5.NBT.5	Multiply whole numbers up to 5x5.
		5.NBT.6-7	Illustrate the concept of division using fair and equal shares.
2			
	M.C2.1	5.G.1-4	Sort two-dimensional figures and identify the attributes (angles, number of sides, corners, color) they have in common.
		5.MD.3	Identify common three-dimensional shapes.
	M.C2.2	5.MD.4-5	Determine the volume of a rectangular prism by counting units of measure (unit cubes).
3			
	M.C3.1	5.MD.1.a	Tell time using an analog or digital clock to the half or quarter hour.
		5.MD.1.b	Use standard units to measure weight and length of objects.
		5.MD.1.c	Indicate relative value of collections of coins.
	M.C3.2	5.MD.2	Represent and interpret data on a picture, line plot, or bar graph.
4			
	M.C4.2	5.OA.3	Identify and extend numerical patterns.

Grade 6: Available Essential Elements

Claim	Conceptual Area	EE	Description
1			
	M.C1.1	6.RP.1	Demonstrate a simple ratio relationship.
	M.C1.2	6.NS.1	Compare the relationships between two unit fractions.
		6.NS.5-8	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero).
	M.C1.3	6.NS.2	Apply the concept of fair share and equal shares to divide.
		6.NS.3	Solve two-factor multiplication problems with products up to 50 using concrete objects and/or a calculator.
2			
	M.C2.2	6.G.1	Solve real-world and mathematical problems about area using unit squares.
		6.G.2	Solve real-world and mathematical problems about volume using unit cubes.
3			
	M.C3.2	6.SP.5	Summarize data distributions shown in graphs or tables.
4			
	M.C4.1	6.EE.1-2	Identify equivalent number sentences.
		6.EE.3	Apply the properties of addition to identify equivalent numerical expressions.
		6.EE.5-7	Match an equation to a real-world problem in which variables are used to represent numbers.

Grade 7: Available Essential Elements

Claim	Conceptual Area	EE	Description
1			
	M.C1.1	7.NS.2.c-d	Express a fraction with a denominator of 10 as a decimal.
		7.RP.1-3	Use a ratio to model or describe a relationship.
	M.C1.2	7.NS.3	Compare quantities represented as decimals in real world examples to tenths.
	M.C1.3	7.NS.1	Add fractions with like denominators (halves, thirds, fourths, and tenths) with sums less than or equal to one.
		7.NS.2.a	Solve multiplication problems with products to 100
		7.NS.2.b	Solve division problems with divisors up to five and also with a divisor of 10 without remainders
2			
	M.C2.1	7.G.1	Match two similar geometric shapes that are proportional in size and in the same orientation.
		7.G.2	Recognize geometric shapes with given conditions.
		7.G.5	Recognize angles that are acute, obtuse, and right.
	M.C2.2	7.G.4	Determine the perimeter of a rectangle by adding the measures of the sides.
3			
	M.C3.2	7.SP.3	Compare two sets of data within a single data display such as a picture graph, line plot, or bar graph.
		7.SP.5-7	Describe the probability of events occurring as possible or impossible.
4			
	M.C4.1	7.EE.1	Use the properties of operations as strategies to demonstrate that expressions are equivalent.
	M.C4.2	7.EE.2	Identify an arithmetic sequence of whole numbers with a whole number common difference.

Grade 8: Available Essential Elements

Claim	Conceptual Area	EE	Description
1			
	M.C1.1	8.NS.2.a	Express a fraction with a denominator of 100 as a decimal.
	M.C1.2	8.NS.2.b	Compare quantities represented as decimals in real-world examples to hundredths.
	M.C1.3	8.EE.1	Identify the meaning of an exponent (limited to exponents of 2 and 3).
		8.NS.1	Subtract fractions with like denominators (halves, thirds, fourths, and tenths) with minuends less than or equal to one.
2			
	M.C2.1	8.G.1	Recognize translations, rotations, and reflections of shapes.
		8.G.2	Identify shapes that are congruent.
		8.G.4	Identify similar shapes with and without rotation.
		8.G.5	Compare any angle to a right angle and describe the angle as greater than, less than, or congruent to a right angle.
	M.C2.2	8.G.9	Use the formulas for perimeter, area, and volume to solve real-world and mathematical problems (limited to perimeter and area of rectangles and volume of rectangular prisms).
3			
	M.C3.2	8.SP.4	Construct a graph or table from given categorical data and compare data categorized in the graph or table.
4			
	M.C4.1	8.EE.7	Solve simple algebraic equations with one variable using addition and subtraction.
	M.C4.2	8.EE.2	Identify a geometric sequence of whole numbers with a whole number common ratio.
		8.F.1-3	Given a function table containing at least 2 complete ordered pairs, identify a missing number that completes another ordered pair (limited to linear functions).
		8.F.4	Determine the values or rule of a function using a graph or a table.

High School: Available Essential Elements

Claim	Conceptual Area	EE	Description	Available Math 9	Available Math 10	Available Math 11
1	**M.C1.3**	N-CN.2.a	Use the commutative, associative, and distributive properties to add, subtract, and multiply whole numbers.	●		
		N-CN.2.b	Solve real-world problems involving addition and subtraction of decimals, using models when needed.	●		
		N-CN.2.c	Solve real-world problems involving multiplication of decimals and whole numbers, using models when needed.	●		
		N-RN.1	Determine the value of a quantity that is squared or cubed.			●
		S-CP.1-5	Identify when events are independent or dependent.		●	
		S-IC.1-2	Determine the likelihood of an event occurring when the outcomes are equally likely to occur.			●
2	**M.C2.1**	G-CO.1	Know the attributes of perpendicular lines, parallel lines, and line segments; angles, and circles.	●		
		G-CO.4-5	Given a geometric figure and a rotation, reflection, or translation of that figure, identify the components of the two figures that are congruent.		●	
		G-CO.6-8	Identify corresponding congruent and similar parts of shapes.			●
		G-MG.1-3	Use properties of geometric shapes to describe real-life objects.	●		
	M.C2.2	G-GPE.7	Find perimeter and area of squares and rectangles to solve real-world problems.	●		
3	**M.C3.1**	N-Q.1-3	Express quantities to the appropriate precision of measurement.		●	
	M.C3.2	S-ID.1-2	Given data, construct a simple graph (table, line, pie, bar, or picture) and interpret the data.		●	
		S-ID.3	Interpret general trends on a graph or chart.			●
		S-ID.4	Calculate the mean of a given data set (limit the number of data points to fewer than five).		●	

Claim	Conceptual Area	EE	Description	Available Math 9	Available Math 10	Available Math 11
4	**M.C4.1**	A-CED.1	Create an equation involving one operation with one variable, and use it to solve a real-world problem.		●	
		A-CED.2-4	Solve one-step inequalities.		●	
		A-SSE.1	Identify an algebraic expression involving one arithmetic operation to represent a real-world problem.	●		
		A-SSE.3	Solve simple algebraic equations with one variable using multiplication and division.	●		
	M.C4.2	A-REI.10-12	Interpret the meaning of a point on the graph of a line.		●	
		A-SSE.4	Determine the successive term in a geometric sequence given the common ratio.			●
		F-BF.1	Select the appropriate graphical representation (first quadrant) given a situation involving constant rate of change.		●	
		F-BF.2	Determine an arithmetic sequence with whole numbers when provided a recursive rule.			●
		F-IF.1-3	Use the concept of function to solve problems.			●
		F-IF.4-6	Construct graphs that represent linear functions with different rates of change and interpret which is faster/slower, higher/lower, etc.			●
		F-LE.1-3	Model a simple linear function such as y=mx to show that these functions increase by equal amounts over equal intervals.			●