ESSENTIAL ELEMENTS FOR GRADE 1: MATHEMATICS

For all Target Grade 1 Essential Elements, the Michigan Range of Complexity is not measured at the state level; range of complexity is determined at the classroom level.

**Claim #1: Students demonstrate increasingly complex understanding of number sense.

Number and Operations in Base 10

Target Essential Element	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
Michigan Grade 1 Standard for Mathematics: 1.NBT.1: Count to 120, starting at any number less than 120. In this range, read and write numerals, and represent a number of objects with a written numeral.			
EE.1.NBT.1.a: Count by ones to 30.	Locally determined	Locally determined	Locally determined
EE.1.NBT.1.b: Count as many as 10 objects and represent the quantity with the corresponding numeral.	Locally determined	Locally determined	Locally determined
Michigan Grade 1 Standard for Mathematics: 1.NBT.2: Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: A. 10 can be thought of as a bundle of ten ones—called a "ten." B. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. C. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).			
EE.1.NBT.2: Create sets of 10.	Locally determined	Locally determined	Locally determined
Michigan Grade 1 Standard for Mathematics: 1.NBT.3: Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.			
EE.1.NBT.3: Compare two groups of 10 or fewer items when the number of items in each group is similar.	Locally determined	Locally determined	Locally determined

Target Essential Element	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
Michigan Grade 1 Standard for Mathematics: 1.NBT.4: Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.			
EE.1.NBT.4: Compose numbers less than or equal to five in more than one way.	Locally determined	Locally determined	Locally determined
Michigan Grade 1 Standard for Mathematics: 1.NBT.6: Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.			
EE.1.NBT.6: Decompose numbers less than or equal to five in more than one way.	Locally determined	Locally determined	Locally determined

****Claim #2: Students demonstrate increasingly complex spatial reasoning and understanding of geometric principles.**

Geometry

Target Essential Element	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
Michigan Grade 1 Standard for Mathematics: 1.G.1: Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.			
EE.1.G.1: Identify the relative position of objects that are on, off, in, and out.	Locally determined	Locally determined	Locally determined
Michigan Grade 1 Standard for Mathematics: 1.G.2: Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.			
EE.1.G.2: Sort shapes of same size and orientation (circle, square, rectangle, triangle).	Locally determined	Locally determined	Locally determined
Michigan Grade 1 Standard for Mathematics: 1.G.3: Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths,* and *quarters*, and use the phrases *half of, fourth of*, and *quarter of*. Describe the whole as *two of* or *four* of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.			
EE.1.G.3: Put together two pieces to make a shape that relates to the whole (i.e., two semicircles to make a circle, two squares to make a rectangle).	Locally determined	Locally determined	Locally determined

****Claim #3: Students demonstrate increasingly complex understanding of measurement, data and analytic procedures.**

Using Measurement and Data

Target Essential Element	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
Michigan Grade 1 Standard for Mathematics: 1.MD.1: Order three objects by length; compare the lengths of two objects indirectly by using a third object. **Michigan Grade 1 Standard for Mathematics**: 1.MD.2: Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*			
EE.1.MD.1-2: Compare lengths to identify which is longer/shorter, taller/shorter.	Locally determined	Locally determined	Locally determined
Michigan Grade 1 Standard for Mathematics: 1.MD.3: Tell and write time in hours and half-hours using analog and digital clocks.			
EE.1.MD.3.a: Demonstrate an understanding of the terms *tomorrow*, *yesterday*, and *today*.	Locally determined	Locally determined	Locally determined
EE.1.MD.3.b: Demonstrate an understanding of the terms *morning*, *afternoon*, *day*, and *night*.	Locally determined	Locally determined	Locally determined
EE.1.MD.3.c: Identify activities that come before, next, and after.	Locally determined	Locally determined	Locally determined
EE.1.MD.3.d: Demonstrate an understanding that telling time is the same every day.	Locally determined	Locally determined	Locally determined

Target Essential Element	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
Michigan Grade 1 Standard for Mathematics: 1.MD.4: Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.			
EE.1.MD.4: Organize data into categories by sorting.	Locally determined	Locally determined	Locally determined

****Claim #4: Students solve increasingly complex mathematical problems, making productive use of algebra and functions.**

Problem Solving

Target Essential Element	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
Michigan Grade 1 Standard for Mathematics: 1.OA.1: Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.			
EE.1.OA.1.a: Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), or acting out situations.	Locally determined	Locally determined	Locally determined
EE.1.OA.1.b: Recognize two groups that have the same or equal quantity.	Locally determined	Locally determined	Locally determined
Michigan Grade 1 Standard for Mathematics: 1.OA.2: Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.			
EE.1.OA.2: Use "putting together" to solve problems with two sets.	Locally determined	Locally determined	Locally determined
Michigan Grade 1 Standard for Mathematics: 1.OA.5: Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).			
EE.1.OA.5.a: Use manipulatives or visual representations to indicate the number that results when adding one more.	Locally determined	Locally determined	Locally determined
EE.1.OA.5.b: Apply knowledge of "one less" to subtract one from a number.	Locally determined	Locally determined	Locally determined

Target Essential Elements as developed by: Dynamic Learning Maps Consortium (2013). Dynamic Learning Maps Essential Elements for Mathematics. Lawrence, KS: University of Kansas.