Michigan Alternative Content Standards - Mathematics

Grade 7

Students demonstrate increasingly complex understanding of number sense.

Ratios and Proportional Relationships

1-3 Use a ratio to model or describe a relationship. EE.7.RP.1-3

- H The student can complete a ratio using numbers to describe a relationship. EE.7.RP.H.1-3
- M The student can use a simple ratio to describe a relationship. EE.7.RP.M.1-3
- L The student can recognize a 1:1 relationship of a given modeled ratio. EE.7.RP.L.1-3

The Number System

1 Add fractions with like denominators (halves, thirds, fourths, and tenths) with sums less than or equal to one. EE.7.NS.1

- H The student can add fractions with common denominators with sums less than or equal to 1. EE.7.NS.H.1
- M The student can add fractions with common denominators with sums less than or equal to 1 and limited to halves, thirds, and fourths (fractions shown as models). EE.7.NS.M.1
- L The student can identify that the sum of two halves is equal to 1 whole. EE.7.NS.L.1

2.a Solve multiplication problems with products to 100. EE.7.NS.2.A

- H The student can solve a simple multiplication problem (one factor times another) using concrete objects or a calculator. EE.7.NS.H.2.A
- M The student can solve a simple multiplication problem (one factor times another) with products up to 30 using concrete objects and/or a calculator. EE.7.NS.M.2.A
- L The student can identify double the amount of specified quantity (limited to 1, 2, 3 or 4). EE.7.NS.L.2.A

2.b Solve division problems with divisors up to five and also with a divisor of 10 without remainders. EE.7.NS.2.B

- H The student can solve division problems with a divisor of 2, 5, or 10 or where the dividend is less than 30 using concrete objects or a calculator. EE.7.NS.H.2.B
- M The student can solve division problems with a divisor of 2, 5, or 10 or where the dividend is 20 or less using concrete objects and/or a calculator. EE.7.NS.M.2.B
- L The student can identify a larger set of up to 10 that has been divided into 2 or 3 equal subsets. EE.7.NS.L.2.B

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2.c-d Express a fraction with a denominator of 10 as a decimal. EE.7.NS.2.C-D

- H The student can express a fraction with a denominator of 10 as a decimal. (Functional skill is expressing money as a fraction/decimal of a dollar, limited to tenths of a dollar: $0.10, $0.20, etc.) EE.7.NS.H.2.C-D
- M The student can identify that one-half equals .50 and one-fourth equals .25 with models as support. (e.g., model of .50 is the same as one-half of a dollar.) EE.7.NS.M.2.C-D
- L The student can use models to identify the fractions one-half and one-fourth. EE.7.NS.L.2.C-D

3 Compare quantities represented as decimals in real-world examples to tenths. EE.7.NS.3

- H The student can compare quantities represented as decimals in real-world examples to tenths (e.g., a combination of bills and coins, a discount of 10 percent = .10). EE.7.NS.H.3
- M The student can identify a combination of coins and bills up to $5 using decimal notation. (e.g., $2.50 is equal to two one-dollar bills and two quarters). EE.7.NS.M.3
- L The student can differentiate coins and bills from each other and from other similar objects. EE.7.NS.L.3

Students demonstrate increasingly complex spatial reasoning and understanding of geometric principles.

Geometry

1 Match two similar geometric shapes that are proportional in size and in the same orientation. EE.7.G.1

- H The student can identify two similar two- and three-dimensional shapes that are proportional in size and in the same orientation. EE.7.G.H.1
- M The student can identify two similar two-dimensional shapes or objects that are proportional in size and in the same orientation; limited to square, circle, and triangle. (e.g., a postage stamp and a picture frame). EE.7.G.M.1
- L The student can match a similar two-dimensional shape with an object that is proportional in size and in the same orientation; limited to round and square (e.g., an analog clock and a coin). EE.7.G.L.1

2 Recognize geometric shapes with given conditions. EE.7.G.2

- H The student can recognize geometric shapes with specified attributes. EE.7.G.H.2
- M The student can identify common two-dimensional shapes (e.g., square, circle, triangle, and star). EE.7.G.M.2
- L The student can differentiate between round/circle and square or sphere and cube. EE.7.G.L.2

3 Match a two-dimensional shape with a three-dimensional shape that shares an attribute. EE.7.G.3

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4 Determine the perimeter of a rectangle by adding the measures of the sides. EE.7.G.4

- H The student can determine the perimeter of a rectangle by adding the measures of the sides. EE.7.G.H.4
- M The student can use a model to determine the perimeter of a rectangle by adding the side lengths; lengths limited to 1, 2, or 3. EE.7.G.M.4

5 Recognize angles that are acute, obtuse, and right. EE.7.G.5

- L The student can match objects to their outlines. EE.7.G.L.4
- H The student can recognize an angle as being greater than or less than a right angle when given a model of a right angle. EE.7.G.H.5
- M The student can match an angle to a shape that has the same angle. EE.7.G.M.5
- L The student can differentiate between a shape that has corners and one that does not. EE.7.G.L.5

6 Determine the area of a rectangle using the formula for length × width, and confirm the result using tiling or partitioning into unit squares. EE.7.G.6

- H The student can find the area of a rectangle when given the formula of length x width, a model, and the dimensions of the rectangle up to 40 square units. EE.7.G.H.6
- M The student can use unit squares to determine the area of a model of a rectangle up to 20 square units. EE.7.G.M.6
- L The student can count unit squares to find the area of a model of a rectangle up to 6 square units. EE.7.G.L.6

Students demonstrate increasingly complex understanding of measurement, data and analytic procedures.

Statistics and Probability

1-2 Answer a question related to the collected data from an experiment, given a model of data, or from data collected by the student. EE.7.SP.1-2

3 Compare two sets of data within a single data display such as a picture graph, line plot, or bar graph. EE.7.SP.3

- H The student can solve problems using data presented within a single data display: tables, bar graphs, circle graphs, tallies, and pictographs, including graphs and charts that have more than one set of data. EE.7.SP.H.3
- M The student can compare sets of data within two similar data displays (2 bar graphs or 2 picture graphs) to determine whether two quantities are the same, more than, or less than. EE.7.SP.M.3
- L The student can identify the quantity of data, limited to 1, 2, or 3 on a pictograph. EE.7.SP.L.3

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5-7 Describe the probability of events occurring as possible or impossible. EE.7.SP.5-7

H The student can describe the probability of events occurring as possible or impossible. EE.7.SP.H.5-7

M The student can identify possible events that occur in the natural environment (e.g., possible: sun produces warmth; rain results in wet). EE.7.SP.M.5-7

L The student can identify when activities are likely to happen (e.g., go to school in the morning, eat lunch at noon). EE.7.SP.L.5-7

Students solve increasingly complex mathematical problems, making productive use of algebra and functions.

Solving Expressions and Equations

1 Use the properties of operations as strategies to demonstrate that expressions are equivalent. EE.7.EE.1

2 Identify an arithmetic sequence of whole numbers with a whole-number common difference. EE.7.EE.2

H The student can recognize an arithmetic sequence of numbers with and without decimals (e.g., 2, 4, 6; 2.5, 4.5, 6.5) with a whole-number common difference EE.7.EE.H.2

M The student can recognize an arithmetic sequence of whole numbers with and without a model and limited to 2s, 5s, and 10s. EE.7.EE.M.2

L The student can recognize the number that comes next in a sequence of numbers to 10 in sequential order with a difference of 1. EE.7.EE.L.2

4 Use the concept of equality with models to solve one-step addition and subtraction equations. EE.7.EE.4

H The student can solve one-step addition and subtraction equations with an unknown represented with a box. (e.g., box + 5 = 10; box – 2 = 3). EE.7.EE.H.4

M The student can solve one-step addition and subtraction equations, where the unknown is the sum or difference, paired with pictures or objects. (e.g., 5 + 5 = box; 5 – 2 = box) EE.7.EE.M.4

L The student can identify how much is “one more” or when one is “taken away” from a quantity up to 5 with a model. EE.7.EE.L.4