Michigan Alternative Content Standards - Mathematics

Grade 8

Students demonstrate increasingly complex understanding of number sense.

The Number System

1 Subtract fractions with like denominators (halves, thirds, fourths, and tenths) with minuends less than or equal to one. EE.8.NS.1

- 1 The student can add and subtract fractions with common denominators (limited to halves, thirds, fourths and tenths) with sums and differences less than or equal to one. EE.8.NS.H.1
- 2 The student can add and subtract fractions with common denominators with sums or differences less than or equal to one and limited to halves, thirds, and fourths (fractions shown as models). EE.8.NS.M.1
- 3 The student can recognize that subtracting one-half from one whole equals one-half. EE.8.NS.L.1

2.a Express a fraction with a denominator of 100 as a decimal. EE.8.NS.2.A

- 1 The student can express a fraction with a denominator of 100 as a decimal. Functional skill is expressing money as a fraction/decimal of a dollar (e.g. 23/100 of a dollar = $0.23, etc.) EE.8.NS.H.2.A
- 2 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.8.NS.M.2.A
- 3 The student can differentiate coins and bills from each other and from other similar objects. EE.8.NS.L.2.A

2.b Compare quantities represented as decimals in real-world examples to hundredths. EE.8.NS.2.B

Expressions and Equations

2 Identify the meaning of an exponent (limited to exponents of 2 and 3). EE.8.EE.2

2 Identify a geometric sequence of whole numbers with a whole number common ratio. EE.8.EE.2

3-4 Compose and decompose whole numbers up to 999. EE.8.EE.3-4

- 1 The student can compose and decompose whole numbers. EE.8.EE.H.3-4
- 2 The student can compose and decompose two-digit whole numbers with base-10 blocks. EE.8.EE.M.3-4
- 3 The student can differentiate between a single unit or a few single blocks and a group of 10. EE.8.EE.L.3-4

5-6 Graph a simple ratio by connecting the origin to a point representing the ratio in the form of y/x. For example, when given a ratio in standard form (2:1), convert to 2/1, and plot the point (1,2). EE.8.EE.5-6

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

Geometry

1 Recognize translations, rotations, and reflections of shapes. EE.8.G.1

2 Identify shapes that are congruent. EE.8.G.2

- 1 The student can identify shapes that are congruent. EE.8.G.H.2
- 2 The student can identify similar shapes without rotation. EE.8.G.M.2
- 3 The student can match similar two-dimensional shapes, limited to circle, square, rectangle, and triangle when presented without rotation. EE.8.G.L.2

4 Identify similar shapes with and without rotation. EE.8.G.4

- 1 The student can identify similar shapes and/or letters with and without rotation. EE.8.G.H.4
- 2 The student can identify similar shapes and/or letters with and without rotation (limited to quarter- and half-turns). EE.8.G.M.4
- 3 The student can match similar two-dimensional shapes, limited to circle, square, star, and triangle with the same shape highlighted within a functional context (e.g., a square and square window frame). EE.8.G.L.4

5 Compare any angle to a right angle, and describe the angle as greater than, less than, or congruent to a right angle. EE.8.G.5

- 1 The student can recognize an angle as being greater than, less than, or equal to a right angle when given a model of a right angle. EE.8.G.H.5
- 2 The student can recognize a right angle. EE.8.G.M.5
- 3 The student can identify a corner when compared with another attribute or shape without a corner. EE.8.G.L.5

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). EE.8.G.9

- 1 When given the formulas for perimeter, area, and volume, the student can use the formulas to solve real-world and mathematical problems, limited to rectangles and rectangular prisms. EE.8.G.H.9
- 2 The student can identify the area or perimeter using models and dimensions of rectangles, limited to single-digit numbers (e.g., 2 + 3 + 2 + 3) with a shape that also contains unit squares. EE.8.G.M.9
- 3 The student can use informal units to determine the perimeter of a rectangle of 8 units or less without using the word perimeter (e.g., how many steps, blocks, etc.). EE.8.G.L.9

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

Statistics and Probability

4 Construct a graph or table from given categorical data, and compare data categorized in the graph or table. EE.8.SP.4

- 1 The student can match given data with a graph or table that shows this data and compare data categorized in a graph or table. EE.8.SP.H.4
- 2 The student can identify a graph or table that matches given information, limited to 3 data entries. EE.8.SP.M.4
- 3 The student can sort given data into two groups. EE.8.SP.L.4

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

Solving Expressions and Equations

7 Solve simple algebraic equations with one variable using addition and subtraction. EE.8.EE.7

- 1 The student can solve algebraic equations with one variable using addition and subtraction. EE.8.EE.H.7
- 2 The student can select appropriate numbers in order to solve addition and subtraction problems and solve as appropriate. EE.8.EE.M.7
- 3 The student can identify which of two choices is needed to answer a question or solve a problem. EE.8.EE.L.7

Functions

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). EE.8.F.1-3

- 1 The student can identify the missing number that completes an ordered pair in a function table. EE.8.F.H.1-3
- 2 The student can recognize a growing or shrinking pattern in a data table that contains at least 3 data points. EE.8.F.M.1-3
- 3 The student can extend or describe patterns involving objects or symbols. EE.8.F.L.1-3

4 Determine the values or rule of a function using a graph or a table. EE.8.F.4

5 Describe how a graph represents a relationship between two quantities. EE.8.F.5

- 1 The student can describe a relationship between two quantities shown on a graph using increasing, decreasing, or maintaining. EE.8.F.H.5
- 2 The student can identify a relationship between two quantities shown in a graph as more than or less than. EE.8.F.M.5
- 3 The student can identify the topic of information presented in a picture graph or bar graph (e.g., use a model of a graph to identify the topic of favorite pizza toppings). EE.8.F.L.5