INDIANA DEPARTMENT of EDUCATION

2024 INDIANA CONTENT CONNECTORS

MATHEMATICS

GRADE 3

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Indiana Content Connectors Context and Purpose

Introduction

The Indiana Content Connectors for Grade 3 Mathematics are the result of a process designed to identify, evaluate, synthesize, and create high-quality learning expectations for Indiana students with significant cognitive disabilities.

The Indiana Department of Education (IDOE) convened stakeholder committees to review proposed revisions to Indiana's Alternative Standards, known as content connectors. The content connectors are designed to measure the knowledge and skills of students with the most significant cognitive disabilities and are assessed with the state's alternate assessment. The content connectors are designed to ensure that all Indiana students in this population are prepared with essential knowledge and skills needed to access employment, enrollment, or enlistment leading to service.

What are the Content Connectors and how should they be used?

The Indiana Content Connectors are designed to help educators, parents, students, and community members understand the necessary content for each grade level, and within each content area domain, to access employment, enrollment, or enlistment leading to service. These content connectors should form the basis for strong core instruction for all students at each grade level and content area. The content connectors identify the minimum academic content or skills to which Indiana students need access in order to be prepared for success after graduation, but they are not an exhaustive list.

While the Indiana Content Connectors establish key expectations for knowledge and skills and should be used as the basis for curriculum, the content connectors by themselves do not constitute a curriculum. It is the responsibility of the local school corporation to select and formally adopt curricular tools, including textbooks and any other supplementary materials, that align with Indiana Content Connectors. Additionally, corporation and school leaders should consider the appropriate instructional sequence of the content connectors as well as the length of time needed to teach each one. Every content connector has a unique place in the continuum of learning, but each content connector will not require the same amount of time and attention. A deep understanding of the vertical articulation of the standards will enable educators to make the best instructional decisions. These content connectors must also be complemented by robust, evidence-based instructional practices to support overall student development. By utilizing strategic and intentional instructional practices, other areas such as STEM and employability skills can be integrated with the content connectors.

Acknowledgments

IDOE appreciates the time, dedication, and expertise offered by Indiana's K-12 general and special educators, higher education professors, representatives from business and industry, families, and other stakeholders who contributed to the development of the Indiana Content Connectors. We wish to specially acknowledge the committee members, as well as participants in the public comment period, who dedicated many hours to the review and evaluation of these content connectors designed to prepare Indiana students for success after graduation.

Grade 3 Mathematics

Standards and content connectors identified as essential for mastery by the end of the grade level are indicated with gray shading and an "E."

Indiana Academic Standards	Content Connectors
Number Sense	
3.NS.1: Read and write whole numbers up to 10,000. Use words, models, standard form, and expanded form to represent and show equivalent forms of whole numbers up to 10,000.	**3.NS.1a:** Read and write whole numbers up to 100. Use words, models, standard form, or expanded form to represent whole numbers up to 100. (E)
3.NS.2: Model unit fractions as the quantity formed by 1 part when a whole is partitioned into equal parts; model non-unit fractions as the quantity formed by iterations of unit fractions. [In grade 3, limit denominators of fractions to 2, 3, 4, 6, 8.] (E)	**3.NS.2a:** Model unit fractions as the quantity formed by one part when a whole is partitioned into equal parts. Model non-unit fractions as the quantity formed by iterations of unit fractions. Limit denominators of fractions to 2, 3, and 4 and value of the fraction between 0 and 1. (E)
3.NS.3: Model a non-unit fraction on a number line by marking equal lengths from 0, identifying each part as a unit fraction and locating the non-unit fraction as the endpoint on the number line. (E)	**3.NS.3a:** Locate a unit fraction and a non-unit fraction on a number line. Limit denominators of fractions to 2, 3, and 4 and the value of the fraction between 0 and 1.
3.NS.4: Use fraction models to represent two simple equivalent fractions with attention to how the number and size of the parts differ even though the quantities are the same. Use this principle to generate simple equivalent fractions (e.g., 1/2 = 2/4, 4/6 = 2/3).	**3.NS.4a:** Use fraction models to represent two equivalent fractions. Limit denominators of fractions to 2, 3, and 4 and value of the fraction between 0 and 1.
3.NS.5: Compare two fractions with the same numerator or the same denominator by reasoning about their size based on the same whole. Record the results of comparisons with the symbols > , = , or < , and justify the conclusions (e.g., by using a visual fraction model). (E)	**3.NS.5a:** Compare two fractions with the same denominator using visual models. Record the comparison using the symbols > , = , or < , and justify the comparison using the model. Limit denominators of fractions to 2, 3, and 4 and value of the fraction between 0 and 1.
3.NS.6: Use place value understanding to round two- and three-digit whole numbers to the nearest 10 or 100.	**3.NS.6a:** Use visual models such as number lines, place value charts, and/or hundreds charts to round two-digit whole numbers to the nearest ten.

Computation and Algebraic Thinking	
3.CA.1: Fluently add and subtract multi-digit whole numbers using strategies and algorithms based on place value, properties of operations, and relationships between addition and subtraction.	**3.CA.1a:** Fluently add and subtract two-digit whole numbers within 100 using any appropriate strategy. (E)
3.CA.2: Solve real-world problems involving addition and subtraction of multi-digit whole numbers (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem). (E)	**3.CA.2a:** Solve real-world problems involving addition and subtraction of two-digit whole numbers within 100 involving all problem types with unknowns in all parts of the problem (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem). (E)
3.CA.3: Model the concept of multiplication of whole numbers using equal-sized groups, arrays, area models, and equal intervals on a number line. Model the properties of 0 and 1 in multiplication using objects or drawings. (E)	**3.CA.3a:** Model the concept of multiplication of whole numbers; 1, 2, 3, 4, 5, and 10 using equal-sized groups, arrays, area models, or equal intervals on a number line. (E)
3.CA.4: Model the concept of division of whole numbers with the following models: partitioning, sharing, and an inverse of multiplication. Model the properties of 0 and 1 in division using objects or drawings. (E)	**3.CA.4a:** Model the concept of division of whole numbers with a maximum of 50 total objects divided into groups of 1, 2, 3, 4, 5, and 10 using any of the following models: partitioning, sharing, and an inverse of multiplication. (E)
3.CA.5: Multiply and divide within 100 using strategies such as the relationship between multiplication and division (e.g., knowing that 8 x 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. (E)	**3.CA.5a:** Multiply and divide within 50 using strategies such as the relationship between multiplication and division (e.g., knowing that 4 x 5 =20, one knows 20 ÷ 5 = 4) or properties of operations.
3.CA.6: Demonstrate fluency with mastery of multiplication facts and corresponding division facts of 0 to 10.	**3.CA.6a:** Demonstrate fluency of multiplication facts and corresponding division facts of 0 to 5.
3.CA.7: Solve real-world problems involving whole number multiplication and division within 100 in situations involving equal groups, arrays, and measurement quantities (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem). (E)	**3.CA.7a:** Solve real-world problems involving whole number multiplication and division within 50 in situations involving equal groups, arrays, and measurement quantities (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).

3.CA.8: Create, extend, and give an appropriate rule for number patterns within 100 (including patterns in the addition table or multiplication table).	**3.CA.8a:** Create, extend, and give an appropriate rule for number patterns within 100 (including patterns in the addition table or multiplication table). Rules should be limited to multiplying by 1, 2, 3, 4, 5, and 10.
Geometry	
3.G.1: Define, identify, and classify four-sided shapes such as rhombuses, rectangles, and squares as quadrilaterals. Identify and draw examples and non-examples of quadrilaterals.	**3.G.1a:** Identify and classify four-sided shapes such as rhombuses, rectangles, and squares as quadrilaterals based on their shared characteristics.
3.G.2: Identify, describe, and draw points, lines, and line segments using appropriate tools (e.g., ruler, straightedge, and technology), and use these terms when describing two-dimensional shapes.	**3.G.2a:** Identify points, lines, and line segments in isolation and as characteristics of simple two-dimensional shapes. Use points to draw a line segment using appropriate tools (e.g., ruler, straight edge, or technology).
3.G.3: Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole (i.e., 1/2, 1/3, 1/4, 1/6, 1/8).	**3.G.3a:** Partition shapes into parts with equal areas. Identify each part as a unit fraction. Limit the unit fraction denominator to 2, 3, and 4. (E)
Measurement	
3.M.1: Estimate and measure the mass of objects in grams (g) and kilograms (kg) and the volume of objects in quarts (qt), gallons (gal), and liters (L). Add, subtract, multiply, or divide to solve one-step, real-world problems involving masses or volumes that are given in the same units or obtained through investigation. (E)	**3.M.1a:** Estimate and measure the mass of an object in grams (g) and kilograms (kg) and the volume of objects in quarts (qt), gallons (gal), and liters (L).
3.M.2: Choose and use appropriate units and tools to estimate and measure length, weight, and temperature. Estimate and measure length to a quarter-inch, weight in pounds, and temperature in degrees Celsius and Fahrenheit.	**3.M.2a:** Choose the appropriate tool and unit of measurement to measure the length of an object to the nearest inch, the weight to the nearest pound, and the temperature to the nearest degree Celsius and Fahrenheit. (E)
3.M.3: Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes (e.g., by representing the problem on a number line diagram). (E)	**3.M.3a:** Tell and write time to the nearest quarter hour. Solve real-world problems involving addition and subtraction of time intervals to whole hours or within an hour using appropriate tools such as a number line and pictures of clocks. (E)

3.M.4: Find the value of any collection of coins and bills. Write amounts less than a dollar using the ¢ symbol and write larger amounts using the $ symbol in the form of dollars and cents (e.g., $4.59). Solve real-world problems to determine whether there is enough money to make a purchase. (E)	**3.M.4a:** Find any value of a collection of coins and dollars up to $10. Solve real-world problems including the determination of whether there is enough money given to buy an object. (E)
3.M.5: Find the area of a rectangle with whole-number side lengths by modeling with unit squares, and show that the area is the same as would be found by multiplying the side lengths. Identify and draw rectangles with the same perimeter and different areas or with the same area and different perimeters. (E)	**3.M.5a:** Find the area of rectangles with whole number side lengths by modeling with unit squares and show that the area is the same as would be found by multiplying the side lengths.
3.M.6: Find perimeters of polygons given the side lengths or given an unknown side length.	**3.M.6a:** Find the perimeter of a polygon given the side lengths.
Data Analysis	
3.DA.1: Collect, organize, and graph data from observations, surveys, and experiments using scaled bar graphs and pictographs. Solve real-world problems by analyzing and interpreting the data using grade-level computation and comparison strategies. (E)	**3.DA.1a:** Collect and organize data into simple bar graphs and pictographs with a scale of 2, 5, 10, or 100. (E)
	3.DA.1b: With guidance, answer simple questions about the total number of data points, how many in each category, and how many more or how many less in a real-world context. (E)