INDIANA DEPARTMENT of EDUCATION

2024 INDIANA CONTENT CONNECTORS

MATHEMATICS

GRADE 2

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Indiana Content Connectors Context and Purpose

Introduction

The Indiana Content Connectors for Grade 2 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 2 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	
2.NS.1: Count by ones, twos, fives, tens, and hundreds up to at least 1,000 from any given number. (E)	**2.NS.1a:** Count to 50 by ones, twos, fives, and tens. Count on by ones from any number up to 50. (E)
2.NS.2: Read and write whole numbers up to 1,000. Use words, models, standard form, and expanded form to represent and show equivalent forms of whole numbers up to 1,000. (E)	**2.NS.2a:** Read, write, and identify whole numbers up to 50. Use words, models, standard form, or expanded form to represent and show equivalent forms of whole numbers up to 50. (E)
2.NS.3: Determine whether a group of objects (up to 20) has an odd or even number of members (e.g., by placing that number of objects in two groups of the same size and recognizing that for even numbers no object will be left over and for odd numbers one object will be left over, or by pairing objects or counting them by twos).	**2.NS.3a:** Identify a group of objects up to 10 as odd or even.
2.NS.4: Define and model a "hundred" as a group of ten tens. Model place value concepts of three-digit numbers, multiples of 100, and equivalent forms of whole numbers using objects and drawings. (E)	**2.NS.4a:** Build and model representations of numbers up to 50 by creating groups of tens, and ones using objects and drawings. Build and model representations of multiples of 10 up to 50 by creating groups of 10 using objects or drawings. Identify the value of the numbers in the tens and ones place within a given number up to 50. (E)
2.NS.5: Use place value understanding to compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using > , = , and < symbols to record the results of comparisons. (E)	**2.NS.5a:** Use place value modeling with objects and numbers to compare two two-digit numbers up to 50 (e.g., identify more tens, less tens, more ones, less ones, larger value, smaller value). Record the comparisons using > , = , and < symbols. (E)

Computation and Algebraic Thinking	
2.CA.1: Solve real-world problems involving addition and subtraction within 100 in situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all parts of the addition or subtraction problem (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem). Use estimation to decide whether answers are reasonable in addition problems. (E)	**2.CA.1a:** Solve real-world addition and subtraction problems within 50 using objects, drawings, or pictures. Use estimation to decide whether answers are reasonable in addition problems. (E)
2.CA.2: Using number sense and place value strategies, add and subtract within 1,000, including composing and decomposing tens and hundreds. Use models, drawings, and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; describe the strategy and explain the reasoning used.	**2.CA.2a:** Add and subtract numbers within 50 using models or drawings, strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. (E)
2.CA.3: Show that the order in which two numbers are added (commutative property) and how the numbers are grouped in addition (associative property) will not change the sum. These properties can be used to show that numbers can be added in any order. (E)	**2.CA.3a:** Show that the order in which two numbers are added (commutative property) and how the numbers are grouped in addition (associative property) will not change the sum. These properties can be used to show that numbers can be added in any order.
2.CA.4: Create, extend, and give an appropriate rule for number patterns using addition and subtraction within 1,000.	**2.CA.4a:** Create and extend a number pattern using addition or subtraction within 50 when given a rule.
Geometry	
2.G.1: Identify, describe, and classify two- and three-dimensional shapes (i.e., triangle, square, rectangle, cube, right rectangular prism) according to the number and shape of faces and the number of sides and/or vertices. Draw two-dimensional shapes.	**2.G.1a:** Identify and describe two-dimensional shapes (i.e., triangle, square, and rectangle). Identify and describe three-dimensional shapes (e.g., cube and right rectangular prism). Identify and count faces, sides, and vertices of three-dimensional shapes.
2.G.2: Investigate and predict the result of composing and decomposing two- and three-dimensional shapes.	**2.G.2a:** Compose and decompose two- and three-dimensional composite shapes.

2.G.3: Partition a rectangle into rows and columns of same-size (unit) squares and count to find the total number of same-size squares.	**2.G.3a:** Given a rectangle partitioned into rows and columns of same-size (unit) squares, count to find the total number of same-size squares.
2.G.4: Partition circles and rectangles into two, three, or four equal parts; describe the shares using the words halves, thirds, half of, a third of, etc.; and describe the whole as two halves, three thirds, or four fourths. Recognize that equal parts of identical wholes need not have the same shape.	**2.G.4a:** Partition circles and rectangles into two, three, and four equal parts. Label each part of a partitioned shape using words such as halves, thirds, fourths, half of, third of, etc. (E)
Measurement	
2.M.1: Describe the relationships among an inch, foot, and yard. Describe the relationship between a centimeter and meter.	**2.M.1a:** Describe the relationships among an inch, foot, and yard.
2.M.2: Estimate and measure the length of an object by selecting and using appropriate tools, such as rulers, yardsticks, meter sticks, and measuring tapes to the nearest inch, foot, yard, centimeter, and meter. (E)	**2.M.2a:** Identify the appropriate tool (ruler, yard stick, or measuring tape) and unit of measurement to measure an object to the nearest inch or foot. (E)
2.M.3: Estimate and measure volume (capacity) using cups and pints. Add and subtract to solve real-world problems involving capacities that are given in the same units or obtained through investigations. (E)	**2.M.3a:** Identify the appropriate tool and unit of measurement to measure volume in cups and pints. Add and subtract to solve real-world problems involving cups and pints.
2.M.4: Tell and write time to the nearest five minutes from analog clocks, using a.m. and p.m. Solve real-world problems involving addition and subtraction of time intervals on the hour or half hour. (E)	**2.M.4a:** Tell time to the nearest half-hour using analog clocks and a.m. and p.m. Solve real-world problems involving addition and subtraction of time intervals on the hour or half-hour. (E)
2.M.5: Describe relationships of time, including seconds in a minute; minutes in an hour; hours in a day; days in a week; and days, weeks, and months in a year.	**2.M.5a:** Demonstrate understanding of the relationships among seconds, minutes, hours, days, weeks, months, and years. (E)
2.M.6: Find the value of a collection of pennies, nickels, dimes, quarters, and dollars. (E)	**2.M.6a:** Identify a penny, nickel, dime, quarter, and dollar. Identify the value of a collection of coins up to one dollar or dollars up to ten dollars. (E)

Data Analysis	
2.DA.1: Collect, organize, and graph data from observations, surveys, and investigations using scaled bar graphs and pictographs (limit scale to 2s, 5s, 10s, and 100s); interpret mathematical relationships within the data using grade-level addition, subtraction, and comparison strategies. (E)	**2.DA.1a:** With guidance, collect and organize data into simple bar graphs and pictographs with scales of five or ten. Answer simple questions about the total number of data points, how many in each category, and how many more or how many less.