Grades K–5

Amplify Desmos Math

Indiana Academic Standards for Mathematics for Amplify Desmos Math, Grade K.
Source: https://www.in.gov/doe/students/indiana-academic-standards/mathematics/

Number Sense	
Learning Outcome: Students explore the foundations of numbers through counting strategies, one-to-one correspondence, and place value of numbers up to 20.	
K.NS.1 Count to at least 100 by ones and tens. Count by one from any given number. (E)	Unit 1, Unit 2, Unit 3, Unit 4, Unit 6, Unit 7
K.NS.2 Write whole numbers from 0 to 20 and identify number words from 0 to 10. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). (E)	Unit 2, Unit 3, Unit 4, Unit 6 Identifying number words is not explicitly addressed in Amplify Desmos Math, Grade K.
K.NS.3 Say the number names in standard order when counting objects, pairing each object with one and only one number name and each number name with one and only one object. Understand that the last number name describes the number of objects counted and that the number of objects is the same regardless of their arrangement or the order in which they were counted. Count out the number of objects, given a number from 1 to 20. (E)	Unit 1, Unit 2, Unit 3, Unit 4, Unit 5, Unit 6, Unit 7
K.NS.4 Identify sets of 1 to 10 objects in patterned arrangements and tell how many without counting. (E)	Unit 2, Unit 3
K.NS.5 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (e.g., by using matching and counting strategies).	Unit 1, Unit 2, Unit 3, Unit 7
K.NS.6 Compare the values of two numbers from 1 to 20 presented as written numerals.	Unit 1, Unit 2, Unit 6
K.NS.7 Define and model a "ten" as a group of ten ones. Model equivalent forms of whole numbers from 10 to 20 as groups of tens and ones using objects and drawings. (E)	Unit 1, Unit 6

Computation and Algebraic Thinking	
Learning Outcome: Within the numbers 1-10, students use objects and drawings to model the composing (addition) and decomposing (subtraction) of numbers, and solve real-world problems. Students investigate beginning algebra concepts through simple repeating and growing patterns.	
K.CA.1 Solve real-world problems that involve addition and subtraction within 10 using modeling with objects or drawings. (E)	Unit 4, Unit 5, Unit 7
K.CA.2 Use objects or drawings to model the decomposition of numbers less than 10 into pairs in more than one way. Identify corresponding equations. (E)	Unit 5, Unit 7
K.CA.3 Find the number that makes 10 when added to the given number for any number from 1 to 9 (e.g., by using objects or drawings), and record the answer with a drawing or an equation. (E)	Unit 5, Unit 7
K.CA.4 Create, extend, and give an appropriate rule for simple repeating and growing patterns with numbers and shapes.	This standard is not addressed in Amplify Desmos Math, Grade K.

Geometry	
Learning Outcome: Students investigate and compare two- and three-dimensional shapes based on simple attributes.	
K.G.1 Compare two- and three-dimensional shapes in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners"), and other attributes (e.g., having sides of equal length).	Unit 3, Unit 7

Measurement	
Learning Outcome: Students investigate beginning concepts of length, weight, capacity, temperature, and time through observations of direct comparisons.	
K.M.1 Make direct comparisons of the length, capacity, weight, and temperature of objects, and identify which object is shorter, longer, taller, lighter, heavier, warmer, cooler, or holds more. (E)	Unit 3, Unit 7

K.M.2 Identify and use appropriate terms to describe intervals of time including: morning, afternoon, evening, today, yesterday, tomorrow, day, week, month, and year; describe how calendars and clocks are tools to measure time.	Intervals of time on clocks are first introduced in Amplify Desmos Math, Grade 1, Unit 7. Intervals of time on calendars are addressed in Amplify Desmos Math, Grade 2, Unit 6

Data Analysis	
Learning Outcome: Students begin interacting with data to create and interpret data for patterns and comparison.	
K.DA.1 With guidance, collect and organize data into simple bar graphs, pictographs, and/or tables to identify patterns and make comparisons.	Organizing data is first introduced in Amplify Desmos Math, Grade 1, Unit 1. Graphs are first introduced in Amplify Desmos Math, Grade 2, Unit 1.

Amplify Desmos Math

Indiana Academic Standards for Mathematics for Amplify Desmos Math, Grade 1.
Source: https://www.in.gov/doe/students/indiana-academic-standards/mathematics/

Number Sense	
Learning Outcome: Students fluently count, read, and represent numbers up to 120 and apply place value concepts to two-digit numbers	
1.NS.1 Count to at least 120 by ones, fives, and tens from any given number. In this range, read and write numerals and represent a number of objects with a written numeral. (E)	Unit 1, Unit 2, Unit 3, Unit 4, Unit 5, Unit 6, Unit 7 Amplify Desmos Math Grade 1 is limited to skip counting by 10s. Skip counting by 5s and 10s is addressed in Amplify Desmos Math Grade 2, Units 5–8.
1.NS.2 Model place value concepts of two-digit numbers, multiples of 10, and equivalent forms of whole numbers using objects and drawings. (E)	Unit 3, Unit 4
1.NS.3 Match the ordinal numbers (e.g., first, second, third) with an ordered set of up to 20 items.	This standard is not addressed in Amplify Desmos Math, Grade 1.
1.NS.4 Use place value understanding to compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols > , = , and <. (E)	Unit 4, Unit 7

Computation and Algebraic Thinking	
Learning Outcome: Within the numbers 1-20, students demonstrate fluency and apply addition and subtraction strategies to solve real-world problems. Students apply place value and number sense to add numbers within 100 and investigate beginning algebra concepts through the growing number patterns within 100.	
1.CA.1 Demonstrate fluency with addition facts and the corresponding subtraction facts within 20. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a 10 (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and	Unit 1, Unit 2, Unit 3, Unit 4, Unit 5, Unit 6 Modeling the role of 0 is addressed in Amplify Desmos Math, Grade K, Unit 4

subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). Model the role of 0 and the equal sign in addition and subtraction using objects or drawings. (E)	
1.CA.2 Solve real-world problems involving addition and subtraction within 20 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 objects, drawings, and equations with a symbol for the unknown number to represent the problem). (E)	Unit 1, Unit 2, Unit 3, Unit 6
1.CA.3 Using number sense and place value strategies, 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. Use models or 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. (E)	Unit 4, Unit 5, Unit 6
1.CA.4 Create, extend, and give an appropriate rule for number patterns using addition within 100.	Unit 3

Geometry	
Learning Outcome: Students make observations about a shape's defining attributes and utilize them to classify, draw, and compose two-dimensional or three-dimensional shapes. Students begin exploring fractional foundations through the partitioning of rectangles and circles.	
1.G.1 Distinguish between defining attributes of two- and three-dimensional shapes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size). Create and draw two-dimensional shapes with defining attributes.	Unit 7
1.G.2 Use two-dimensional shapes (e.g., rectangles, squares, trapezoids, triangles, half-circles, quarter-circles) or three-dimensional shapes (e.g., cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. [In grade 1, students do not need to learn	Unit 7

formal names such as "right rectangular prism."]	
1.G.3 Partition circles and rectangles into two and four equal parts; describe the parts 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 parts. Understand for partitioning circles and rectangles into two and four equal parts that decomposing into equal parts creates smaller parts.	Unit 7

Measurement	
Learning Outcome: Using standard and non-standard measurements, students compare and order objects, tell time to the hour and half-hour, and investigate beginning concepts of money.	
1.M.1 Use direct comparison or a nonstandard unit to compare and order objects according to length, area, capacity, weight, and temperature. (E)	Unit 6 Amplify Desmos Math Grade 1 is limited to comparing lengths. Comparisons with capacity and weight are first addressed in Amplify Desmos Math Grade K, Unit 7. Comparisons with area and weight are addressed in Amplify Desmos Math Grade 3, Units 2, 6, and 7.
1.M.2 Tell and write time to the nearest half-hour and relate time to events (before/after, shorter/longer) using analog clocks. Explain how to read hours and minutes using digital clocks. (E)	Unit 7 Comparisons with time are addressed in Amplify Desmos Math, Grade 2, Unit 6
1.M.3 Identify the value of a penny, nickel, dime, and a collection of pennies, nickels, and dimes.	This standard is addressed in Amplify Desmos Math Grade 2, Unit 2

Data Analysis	
Learning Outcome: Students collect, organize, and evaluate simple data using grade-level appropriate strategies.	
1.DA.1 With guidance, collect data from a simple survey or collaborative investigation; organize data into appropriate single-unit bar graphs, pictographs, and/or tables and draw conclusions based on mathematical observations, comparisons, and grade-level computation strategies. (E)	Unit 1 Amplify Desmos Math Grade 1 is limited to organizing data through tables and tally charts. Bar graphs and pictographs are addressed in Amplify Desmos Math Grade 2, Unit 1

Amplify Desmos Math

Indiana Academic Standards for Mathematics for Amplify Desmos Math, Grade 2.
Source: https://www.in.gov/doe/students/indiana-academic-standards/mathematics/

Number Sense	
Learning Outcome: Students fluently count, read, and represent numbers up to 1,000 using place value concepts.	
2.NS.1 Count by ones, twos, fives, tens, and hundreds up to at least 1,000 from any given number. (E)	Unit 4, Unit 5, Unit 6, Unit 7, Unit 8 Skip counting by 2s is not addressed in Amplify Desmos Math Grade 2.
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)	Unit 5
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).	Unit 8
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)	Unit 5, Unit 7
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)	Unit 5

Computation and Algebraic Thinking
Learning Outcome: Within the numbers 1-100, students apply place value concepts and addition and subtraction concepts to solve real-world problems and reason about their strategies and solutions. Students explore effects of properties of addition on solutions and investigate number patterns, and apply concepts of addition and subtraction within 1,000.

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)	Unit 1, Unit 2, Unit 3, Unit 4, Unit 5, Unit 7
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.	Unit 7
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)	Unit 2, Unit 7
2.CA.4 Create, extend, and give an appropriate rule for number patterns using addition and subtraction within 1,000.	This standard is addressed in Amplify Desmos Math, Grade 3, Unit 3.

Geometry	
Learning Outcome: Students investigate and classify two- and three-dimensional shapes based on faces, sides, and vertices, and investigate the results of composing and decomposing each shape. Students continue to build foundational fraction knowledge through specific partitioning and naming of rectangles and circles.	
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.	Unit 6
2.G.2 Investigate and predict the result of composing and decomposing two- and three-dimensional shapes.	Composing two-dimensional shapes is first addressed in Amplify Desmos Math, Grade K, Units 3 and 7. Composing three-dimensional shapes is first addressed in Amplify Desmos Math, Grade K, Unit 7.

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.	Unit 8
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.	Unit 6

Measurement	
Learning Outcome: Students use appropriate tools, computation strategies, and relationships of measurement to solve real-world problems including measurements of length and capacity, telling time to the nearest five minutes, and collections of coins and dollars.	
2.M.1 Describe the relationships among an inch, foot, and yard. Describe the relationship between a centimeter and meter.	Unit 2, Unit 3 Students measure in centimeters and meters in Amplify Desmos Math Grade 2, but are not required to describe the relationship. Amplify Desmos Math Grade 3 is limited to relating square yards to square inches and square feet and only addresses the linear relationship between inches and feet.
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)	Unit 3, Unit 6
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)	This standard is addressed in Amplify Desmos Math, Grade 3, Unit 6
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)	Unit 6 Addition and subtraction of time intervals is addressed in Amplify Desmos Math Grade 3, Unit 6.

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.	This standard is addressed in Amplify Desmos Math, Grade 3, Unit 6
2.M.6 Find the value of a collection of pennies, nickels, dimes, quarters, and dollars. (E)	Unit 2

Data Analysis	
Learning Outcome: Students interact with a variety of data collection models and evaluate mathematical relationships within the data using grade-level appropriate strategies.	
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)	This standards is addressed in Amplify Desmos Math Grade 3, Unit 1

Amplify Desmos Math

Indiana Academic Standards for Mathematics for Amplify Desmos Math, Grade 3.
Source: https://www.in.gov/doe/students/indiana-academic-standards/mathematics/

Number Sense	
Learning Outcome: Students represent and round whole numbers up to 10,000. Students model, compare, and generate simple equivalent unit and non-unit fractions..	
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.	This standard is addressed in Amplify Desmos Math, Grade 4, Unit 4.
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)	Unit 5
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)	Unit 5, Unit 6
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).	Unit 5, Unit 6, Unit 7
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)	Unit 5
3.NS.6 Use place value understanding to round two- and three-digit whole numbers to the nearest 10 or 100.	Unit 3

Computation and Algebraic Thinking	
Learning Outcome: Students use modeling and conceptual strategies to multiply and divide numbers within 100 in real-world situations. Students apply concepts and strategies of addition and subtraction to	
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	Unit 3, Unit 4, Unit 7 Amplify Desmos Math, Grade 3 is limited to adding and subtracting within 1,000. Within 10,000 is addressed in Amplify Desmos Math, Grade 4, Unit 4.
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)	Unit 3
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)	Unit 1, Unit 3 Properties of 0 and 1 in multiplication are not addressed.
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)	Unit 4 Properties of 0 and 1 in division are not addressed.
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)	Unit 1, Unit 2, Unit 4, Unit 5
3.CA.6 Demonstrate fluency with mastery of multiplication facts and corresponding division facts of 0 to 10.	Unit 1, Unit 2, Unit 4, Unit 6
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)	Unit 1, Unit 2, Unit 4, Unit 6
3.CA.8 Create, extend, and give an appropriate rule for number patterns within 100 (including patterns in the addition table or multiplication table).	Unit 3

Geometry	
Learning Outcome: Students continue to investigate and classify more complex two-dimensional shapes based on their attributes.	
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.	Unit 7
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.	This standard is addressed in Amplify Desmos Math, Grade 4, Unit 7.
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).	Unit 5

Measurement	
Learning Outcome: Students use appropriate tools, computation strategies, and relationships of measurement to solve real-world problems including more specific measurements of length, weight, temperature, mass, time, and money. Students investigate and model the area of rectangles and perimeter of all polygons.	
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)	Unit 6 Measuring with quarts and gallons is addressed in Amplify Desmos Math Grade 5, Unit 6.
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.	Unit 6 Weight in pounds is addressed in Amplify Desmos Math, Grade 4, Unit 5. Temperature is not addressed in Amplify Desmos Math, Grade 3.
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)	Unit 6

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)	This standard is addressed in Amplify Desmos Math, Grade 2, Unit 2
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)	Unit 2, Unit 7
3.M.6 Find perimeters of polygons given the side lengths or given an unknown side length.	Unit 7

Data Analysis	
Learning Outcome: Students collect and present data in multiple manners and solve multi-step problems with the data.	
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)	Unit 1

Amplify Desmos Math

Indiana Academic Standards for Mathematics for Amplify Desmos Math, Grade 4.
Source: https://www.in.gov/doe/students/indiana-academic-standards/mathematics/

Number Sense	
Learning Outcome: Students represent and round multi-digit numbers. Students model, compare, and generate equivalent fractions, mixed numbers, and decimal numbers to the tenths and hundredths.	
4.NS.1 Read and write whole numbers up to 1,000,000. Use words, models, standard form, and expanded form to represent and show equivalent forms of whole numbers up to 1,000,000.	Unit 4
4.NS.2 Model mixed numbers and improper fractions using visual fraction models such as number lines and area models. Use a visual fraction model to show the equivalency between whole numbers and whole numbers as fractions.	This standard is addressed in Amplify Desmos Math, Grade 3, Unit 5.
4.NS.3 Use fraction models to represent two equivalent fractions with attention to how the number and size of the parts differ even though the fractions themselves are the same size. Use this principle to generate equivalent fractions. [In grade 4, limit denominators of fractions to 2, 3, 4, 5, 6, 8, 10, 25, 100.] (E)	Unit 2, Unit 3 Amplify Desmos Math, Grade 4 addresses additional denominators beyond what is listed in this standard.
4.NS.4 Compare two fractions with different numerators and different denominators (e.g., by creating common denominators or numerators, or by comparing to a benchmark, such as 0, 1/2, and 1). Explain why comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols > , = , or < , and justify the conclusions (e.g., by using a visual fraction model). (E)	Unit 2, Unit 3
4.NS.5 Write tenths and hundredths in decimal and fraction notations. Use words, models, standard form, and expanded form to represent decimal numbers to hundredths. Mentally calculate fraction and decimal equivalents for halves and fourths (e.g., 1/2 = 0.5 = 0.50, 7/4 = 1 3/4 = 1.75). (E)	Unit 3, Unit 4 Mentally calculating fraction and decimal equivalents for halves and fourths is not addressed.
4.NS.6 Compare two decimals to hundredths 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 model). (E)	Unit 4
4.NS.7 Use place value understanding to round multi-digit whole numbers to any given place value.	Unit 4

Computation and Algebraic Thinking	
Learning Outcome: Students solve real-world problems using place value strategies and properties of multiplication and division with limitations. Students compose (addition) and decompose (subtraction) non-unit fractions and mixed numbers using models and strategies, applying these concepts to real-world situations. Students investigate the relationship between two given sets of numbers and generate number patterns based upon given rules.	
4.CA.1 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Describe the strategy and explain the reasoning. (E)	Unit 2, Unit 5, Unit 6
4.CA.2 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Describe the strategy and explain the reasoning. (E)	Unit 6
4.CA.3 Show how the order in which two numbers are multiplied (commutative property) and how numbers are grouped in multiplication (associative property) will not change the product. Use these properties to show that numbers can be multiplied in any order. Investigate and apply the distributive property. (E)	This standard is addressed in Amplify Desmos Math, Grade 3, Units 1 and 4.
4.CA.4 Investigate the mathematical relationship between factors and multiples for whole numbers from 1-100, including the set of factors and multiples for given numbers. Identify sets of factors and multiples for any given whole number up to 100.	Unit 1
4.CA.5 Solve real-world problems with whole numbers involving multiplicative comparison (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem), distinguishing multiplicative comparison from additive comparison. [In grade 4, division problems should not include a remainder.] (E)	Unit 5, Unit 6 Amplify Desmos Math, Grade 4 also addresses division with remainders.
4.CA.6 Add and subtract fractions with common denominators using visual fraction models. Decompose non-unit fractions to resent them as iterations of unit fractions. (E)	Unit 3

Computation and Algebraic Thinking	
4.CA.7 Add and subtract mixed numbers with common denominators (e.g., by replacing each mixed number with an equivalent fraction and/or by using properties of operations and the relationship between addition and subtraction).	Unit 3
4.CA.8 Solve real-world problems involving addition and subtraction of fractions referring to the same whole and having common denominators (e.g., by using visual fraction models and equations to represent the problem). (E)	Unit 3
4.CA.9 Describe the relationship between two terms and use it to find a second number when a first number is given. Generate a number pattern that follows a given rule.	Unit 1

Geometry	
Learning Outcome: Students utilize appropriate tools to identify, describe, and draw parallelograms, rhombuses, and trapezoids in addition to classifying two-dimensional shapes.	
4.G.1 Identify, describe, and draw parallelograms, rhombuses, and trapezoids using appropriate tools (e.g., ruler, straightedge, and technology).	Unit 7 Trapezoids are not addressed in Amplify Desmos Math, Grade 4.
4.G.2 Identify, describe, and draw rays, angles (right, acute, obtuse), and perpendicular and parallel lines using appropriate tools (e.g., ruler, straightedge, and technology). Identify these in two-dimensional figures.	Unit 7
4.G.3 Classify triangles and quadrilaterals based on the presence or absence of parallel or perpendicular lines, or right, acute, or obtuse angles.	Unit 7

Measurement	
Learning Outcome: Students solve real-world problems involving distance, intervals of time, volumes, masses of objects, and money by applying computation strategies, precise measurement skills, and relationships between systems of measurement. Students continue to apply the concept of area and perimeter to complex shapes to identify solutions.	
4.M.1 Measure length to the nearest quarter-inch, eighth-inch, and millimeter. (E)	Measuring within a quarter-inch is addressed in Amplify Desmos Math Grade 3, Unit 6. Measuring to the closest eighth-inch and millimeter are not addressed in Amplify Desmos Math, Grade 4.
4.M.2 Within given measurement systems, convert larger units to smaller units, including km, m, cm; kg, g; lb, oz; l, ml; hr, min, sec., and use these conversions to solve real-world problems. (E)	Unit 5
4.M.3 Use the four operations to solve real-world problems involving distances, intervals of time, volumes, masses of objects, and money. Include addition and subtraction problems involving simple fractions and problems that require expressing measurements given in a larger unit in terms of a smaller unit. (E)	Unit 5
4.M.4 Apply the area and perimeter formulas for rectangles to solve real-world and other mathematical problems. Investigate the area of complex shapes composed of rectangles by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts; apply this technique to solve real-world problems and other mathematical problems. (E)	Unit 5, Unit 6

Data Analysis	
Learning Outcome: Students collect and ask questions of the data	
4.DA.1 Formulate questions that can be addressed with data. Collect, organize, and graph data from observations, surveys, and experiments using line plots with whole number intervals, single- and scaled bar graphs, and frequency tables. Solve real-world problems by analyzing and interpreting the data using grade-level computation and comparison strategies. (E)	Unit 3 Formulating questions and collecting data are not addressed in Amplify Desmos Math, Grade 4.
4.DA.2 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using data displayed in line plots.	Unit 3

Amplify Desmos Math

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Source: https://www.in.gov/doe/students/indiana-academic-standards/mathematics/

Number Sense	
Learning Outcome: Students explore place value through representing powers of 10 as exponents, modeling percents as parts of 100, and comparing and ordering fractions, mixed numbers, and decimals to the thousandth	
5.NS.1 Use a number line to compare and order fractions, mixed numbers, and decimals to thousandths. Write the results using > , = , and < symbols. (E)	Unit 3, Unit 5 Amplify Desmos Math, Grade 5 is limited to comparing and ordering decimals. Comparing and ordering fractions and mixed numbers is addressed in Amplify Desmos Math, Grade 4, Unit 2.
5.NS.2 Explain different interpretations of fractions, including as parts of a whole, parts of a set, and division of whole numbers by whole numbers.	Unit 2, Unit 4
5.NS.3 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	Unit 6
5.NS.4 Model percents as parts of 100 using pictures or diagrams and identify the equivalent fraction.	This standard is addressed in Amplify Desmos Math, Grade 6, Unit 3.

Computation and Algebraic Thinking	
Learning Outcome: Students apply concepts and strategies of multiplication and division to solve real-world problems. Students add and subtract unlike fractions and use visual fraction models to multiply and divide fractions and whole numbers. Students apply conceptual models and strategies to all operations with decimals to solve real-world problems and represent real-world situations within the first quadrant of the coordinate plane.	
5.CA.1 Find whole-number quotients and remainders with up to four-digit dividends and two-digit divisors using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Describe the strategy and explain the reasoning used. (E)	Unit 4

5.CA.2 Solve real-world problems involving multiplication and division of whole numbers (e.g., by using equations to represent the problem). In division problems that involve a remainder, explain how the remainder affects the solution to the problem. (E)	Unit 4
5.CA.3 Add and subtract fractions and mixed numbers with unlike denominators using strategies or the standard algorithm.	Unit 6
5.CA.4 Solve real-world problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators (e.g., by using visual fraction models and equations to represent the problem). Use benchmark fractions and number sense of fractions to estimate mentally and assess whether the answer is reasonable. (E)	Unit 6
5.CA.5 Use visual fraction models to multiply a fraction by a fraction or a whole number. (E)	Unit 2, Unit 3
5.CA.6 Use visual fraction models and numbers to divide a fraction by a fraction or a whole number. (E)	Unit 3 Amplify Desmos Math, Grade 5 is limited to determining the quotient of whole numbers and unit fractions Dividing fractions and whole numbers is addressed in Amplify Desmos Math, Grade 6, Unit 4.
5.CA.7 Solve real-world problems involving multiplication of fractions, including mixed numbers (e.g., by using visual fraction models and equations to represent the problem). (E)	Unit 3
5.CA.8 Solve real-world problems involving division of fractions and mixed numbers (e.g., by using visual fraction models and equations to represent the problem). (E)	Unit 3
5.CA.9 Add, subtract, multiply, and divide decimals to hundredths, using models or drawings and strategies based on place value or the properties of operations. Describe the strategy and explain the reasoning.	Unit 5

5.CA.10 Solve real-world problems involving addition, subtraction, multiplication, and division with decimals to hundredths including problems that involve money in decimal notation (e.g., by using equations, models or drawings, and strategies based on place value or properties of operations to represent the problem). (E)	Unit 5
5.CA.11 Represent real-world problems and equations by graphing ordered pairs in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	Unit 7

Geometry	
Learning Outcome: Students use appropriate tools to investigate attributes of triangles and circles..	
5.G.1 Identify, describe, and draw triangles (right, acute, obtuse) and circles using appropriate tools (e.g., ruler or straightedge, compass, and technology). Define and model the relationship between radius and diameter.	Identifying, describing, and drawing triangles addressed in Amplify Desmos Math Grade 4, Unit 7. Circles are addressed in Amplify Desmos Math Grade 7, Unit 3.

Measurement	
Learning Outcome: Students investigate the volume of rectangular prisms and solve real-world problems through the development and application of area formulas for rectangles, triangles, parallelograms, and trapezoids. Students investigate and convert measurements within the Customary and metric measurement systems.	
5.M.1 Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step, real-world problems.	Unit 6
5.M.2 Find the area of a rectangle with fractional side lengths by modeling with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	Unit 3

5.M.3 Develop and use formulas for the area of triangles, parallelograms, and trapezoids. Solve real-world and other mathematical problems that involve perimeter and area of triangles, parallelograms, and trapezoids, using appropriate units for measures. (E)	This standard is addressed in Amplify Desmos Math, Grade 6, Unit 1.
5.M.4 Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths or multiplying the height by the area of the base. (E)	Unit 1
5.M.5 Apply the formulas V = l × w × h and V = B × h for right rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths to solve real-world problems and other mathematical problems. (E)	Unit 1

Data Analysis	
Learning Outcome: Students create questions appropriate to the data and answer the questions using multiple representations.	
5.DA.1 Formulate questions that can be addressed with categorical and numerical data and make predictions about the data. Collect, organize, and graph data from observations, surveys, and experiments using line plots with fractional intervals, histograms, or other graphical representations that appropriately represent the data set. (E)	Unit 6 Formulating questions and collecting data are not addressed in Amplify Desmos Math, Grade 5.
5.DA.2 Calculate measures of central tendency (mean, median, and mode) to describe a data set. Analyze data sets to determine which measure of central tendency appropriately describes the distribution of data. (E)	This standard is addressed in Amplify Desmos Math, Grade 6, Unit 8.