Utah Core Standards for Math

Amplify Desmos Math

A Correlation of Amplify Desmos Math, Grade K to the Utah Core State Standards for Mathematics

Grade K

Utah Core State Standards for Mathematics	Amplify Desmos Math
Counting and Cardinality	
*Know number names and the counting sequence (**Standards K.CC.1–3**). Count to tell the number of objects (**Standards K.CC. 4–5**). Identify and compare quantities of objects and numerals (**Standards K.CC.6–7**).*	
K.CC.1 Count to 100 by ones and by tens.	**Unit 1:** Lessons 2, 4, 14, 15 **Unit 2:** Lessons 2, 18, 20 **Unit 3:** Lessons 5, 8 **Unit 4:** Lessons 3, 4, 13, 14, 16, 20 **Unit 6:** Lessons 2, 9, 11 **Unit 7:** Lesson 11
K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	**Unit 4:** Lessons 5, 16, 20 **Unit 6:** Lessons 2, 9
K.CC.3 Read and write numbers using base ten numerals from 0 to 20. Represent a number of objects with a written numeral, in or out of sequence (0 represents a count of no objects).	**Unit 2:** Lessons 2, 12, 13, 15, 16, 19, 22 **Unit 3:** Lessons 13, 14 **Unit 4:** Lessons 3, 13 **Unit 6:** Lessons 6, 7, 9, 10, 11
K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality.	**Unit 1:** Lessons 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 18 **Unit 2:** Lessons 2, 3, 4, 5, 9, 13, 17 **Unit 7:** Lesson 9
K.CC.4.a When counting objects, say the numbers in the standard order. Pair	**Unit 1:** Lessons 13, 15, 16

each quantity of objects with one and only one number, and each number with the correct quantity of objects.	**Unit 6:** Lesson 6
K.CC.4.b Understand that the last number said represents the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	**Unit 1:** Lesson 14 **Unit 2:** Lessons 3, 7, 13, 14, 15, 16 **Unit 6:** Lessons 3, 6
K.CC.4.c Understand that each successive number refers to a quantity that is one greater than the previous number.	**Unit 2:** Lessons 18, 21 **Unit 4:** Lesson 19
K.CC.5 Use counting to answer questions about "how many." *For example, 20 or fewer objects arranged in a line, a rectangular array, or circle; 10 or fewer in a scattered configuration.* Using a number from 1–20, count out that many objects.	**Unit 1:** Lessons 13, 14, 15, 16, 17, 18 **Unit 2:** Lessons 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 22 **Unit 3:** Lessons 6, 12, 13, 14, 15 **Unit 4:** Lessons 2, 3, 4, 5, 6, 7 **Unit 5:** Lesson 11 **Unit 6:** Lessons 2, 3, 4, 5, 6, 7, 8 **Unit 7:** Lesson 10
K.CC.6 Use matching or counting strategies to identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group. Include groups with up to ten objects.	**Unit 1:** Lessons 7, 8, 11, 12 **Unit 2:** Lessons 4, 5, 6, 8, 9, 10, 11, 18, 19, 20, 21 **Unit 3:** Lessons 12, 13, 14 **Unit 7:** Lesson 11
K.CC.7 Compare two numbers between 1 and 10 presented as written numerals using "greater than," "less than," or "equal to."	**Unit 2:** Lessons 19, 20, 21, 22 **Unit 3:** Lesson 12

Grade K

Utah Core State Standards for Mathematics	Amplify Desmos Math
Operations and Algebraic Thinking	
Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from (Standards K.OA.1–5).	

K.OA.1 Represent addition and subtraction with objects, fingers, mental images, simple drawings, or sounds. For example, use clapping, act out situations, and use verbal explanations, expressions, or equations.	**Unit 2:** Lesson 14 **Unit 4:** Lessons 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20 **Unit 5:** Lessons 6, 7, 8, 9, 10, 11, 12 **Unit 7:** Lessons 13, 14, 15, 16
K.OA.2 Solve addition and subtraction word problems within 10. Use objects or drawings to represent the problem.	**Unit 4:** Lessons 3, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20 **Unit 5:** Lessons 7, 8, 9, 10 **Unit 7:** Lessons 14, 15, 16
K.OA.3 Decompose numbers less than or equal to 10 into pairs in more than one way by using objects or drawings. Record each decomposition by a drawing or equation. *For example, 5 = 2 + 3 and 5 = 4 + 1.*	**Unit 5:** Lessons 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15 **Unit 7:** Lesson 12
K.OA.4 Make sums of 10 using any number from 1 to 9. *For example, 2 + 8 = 10.* Use objects or drawings to represent and record the answer.	**Unit 5:** Lessons 13, 14, 15 **Unit 7:** Lesson 12
K.OA.5 Fluently add and subtract using numbers within 5.	**Unit 4:** Lessons 6, 18 **Unit 7:** Lessons 5, 8, 9, 10

Grade K

Utah Core State Standards for Mathematics	Amplify Desmos Math
Number and Operations in Base Ten	
*Compose and decompose numbers 11–19 to gain foundations for place value (**Standard K.NBT.1**).*	
K.NBT.1 Compose and decompose numbers from 11–19 into ten ones and some further ones. Use objects or drawings and record each composition or decomposition by a drawing or equation. For example, 18 = 10 + 8. Understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	**Unit 6:** Lessons 7, 8, 9, 10, 11

Grade K

Utah Core State Standards for Mathematics	Amplify Desmos Math
Measurement and Data	
*Describe and compare measurable attributes of objects (**Standards K.MD.1–2**) and classify objects and count the number of objects in each category (**Standard K.MD.3**).*	
K.MD.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	**Unit 3:** Lessons 7, 8 **Unit 7:** Lessons 3, 4
K.MD.2 Directly compare two objects with a measurable attribute in common to see which object has "more of"/"less of" the attribute, and describe the difference. *For example, directly compare the length of two pencils and describe one as shorter or longer.*	**Unit 3:** Lessons 7, 8 **Unit 7:** Lessons 3, 4, 7
K.MD.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. Limit the category counts to less than or equal to 10.	**Unit 3:** Lessons 5, 6, 7, 8, 9 **Unit 7:** Lessons 5, 11

Grade K

Utah Core State Standards for Mathematics	Amplify Desmos Math
Geometry	
*Identify and describe shapes, including squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres (**Standards K.G.1–3**).*	

*Analyze, compare, create, and compose shapes (**Standards K.G.4–6**).*	
K.G.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above*, *below*, *beside*, *in front of*, *behind*, and *next to*.	**Unit 3:** Lessons 10, 11, 15, 16 **Unit 7:** Lessons 2, 6, 8
K.G.2 Correctly name shapes regardless of their orientations or overall sizes.	**Unit 3:** Lessons 6, 7, 8, 9, 10, 11, 13, 16 **Unit 7:** Lessons 6, 7
K.G.3 Identify shapes as two-dimensional ("flat") or three-dimensional ("solid").	**Unit 7:** Lesson 2
K.G.4 Analyze, compare, and sort two- and three-dimensional shapes and objects, in different sizes and orientations, using informal language to describe their similarities, differences, and other attributes *(for example, color, size, shape, number of sides)*.	**Unit 3:** Lessons 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16 **Unit 7:** Lessons 2, 5, 6, 7, 10, 11
K.G.5 Model and create shapes from components such as sticks and clay balls.	**Unit 3:** Lessons 8, 10, 11, 16 **Unit 7:** Lessons 1, 2, 6, 7
K.G.6 Compose simple shapes to form larger shapes. *For example, "Can you join these two triangles with full sides touching to make a rectangle?"*	**Unit 1:** Lesson 3 **Unit 3:** Lessons 12, 13, 14, 15, 16 **Unit 7:** Lessons 8, 10, 13, 16

A Correlation of Amplify Desmos Math, Grade 1 to the Utah Core State Standards for Mathematics

Grade 1

Utah Core State Standards for Mathematics	Amplify Desmos Math
Operations and Algebraic Thinking	
*Represent and solve problems involving addition and subtraction within 20 (**Standards 1.OA.1–2, 1.OA.5–6**). Understand and apply properties of operations and the relationship between addition and subtraction (**Standards 1.OA.3–4**). Work with addition and subtraction equations (**Standards 1.OA.7–8**).*	
1.OA.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions. For example, use objects, drawings, and equations with a symbol for the unknown number to represent the problem.	**Unit 1:** Lessons 6, 8, 10 **Unit 2:** Lessons 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 **Unit 3:** Lessons 7, 8, 9, 12, 14, 17, 18, 19, 20 **Unit 6:** Lessons 11, 12, 14
1.OA.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20. *For example, use objects, drawings, and equations with a symbol for the unknown number to represent the problem.*	**Unit 3:** Lessons 10, 15, 20 **Unit 6:** Lesson 10
1.OA.3 Apply properties of operations as strategies to add and subtract. *For example: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 =12. (Associative property of addition.)* First grade students need not use formal terms for these properties.	**Unit 2:** Lesson 7 **Unit 3:** Lessons 10, 11, 12, 13, 14, 15, 17 **Unit 5:** Lesson 13
1.OA.4 Understand subtraction as an unknown-addend problem. *For example, subtract 10 − 8 by finding the number that makes 10 when added to 8.*	**Unit 2:** Lessons 9, 11, 15, 19 **Unit 3:** Lessons 4, 18, 19, 20

	Unit 6: Lessons 10, 11, 13
1.OA.5 Relate counting to addition and subtraction. *For example, by counting on 2 to add 2.*	**Unit 1:** Lessons 7, 8, 11, 12, 13, 14, 15 **Unit 2:** Lesson 5 **Unit 4:** Lesson 4
1.OA.6 Add and subtract within 20.	**Unit 1:** Lessons 7, 8, 9, 10, 11, 12, 14, 15 **Unit 2:** Lessons 2, 3, 4, 5, 6, 7, 8, 10, 11, 14, 15, 16, 17, 18, 19 **Unit 3:** Lessons 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 **Unit 4:** Lessons 13, 22 **Unit 5:** Lesson 7 **Unit 6:** Lessons 10, 11, 12, 13, 14, 15
1.OA.6.a Use strategies such as counting on; making ten *(for example, 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14)*; decomposing a number leading to a ten *(for example, 13 - 4 = 13 − 3 − 1 = 10 − 1 = 9)*; using the relationship between addition and subtraction *(for example, knowing that 8 + 4 = 12, one knows 12 − 8 = 4)*; and creating equivalent but easier or known sums *(for example, adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13)*.	**Unit 1:** Lessons 7, 8, 9, 10, 11, 12, 14, 15 **Unit 2:** Lessons 2, 3, 4, 5, 6, 7, 8, 10, 11, 14, 15, 16, 17, 18, 19 **Unit 3:** Lessons 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 **Unit 4:** Lessons 13, 22 **Unit 5:** Lesson 7 **Unit 6:** Lessons 10, 11, 12, 13, 14, 15
1.OA.6.b By the end of Grade 1, demonstrate fluency for addition and subtraction within 10.	**Unit 1:** Lessons 7, 8, 9, 10, 11, 12, 14, 15 **Unit 2:** Lessons 2, 3, 4, 5, 6, 7, 8, 10, 11, 14, 15, 16, 17, 18, 19 **Unit 3:** Lessons 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 **Unit 4:** Lessons 13, 22 **Unit 5:** Lesson 7 **Unit 6:** Lessons 10, 11, 12, 13, 14, 15
1.OA.7 Understand the meaning of the equal sign, and determine whether equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 − 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.*	**Unit 1:** Lesson 9, 14 **Unit 2:** Lessons 2, 4, 6, 11, 15 **Unit 3:** Lessons 3, 8, 13 **Unit 4:** Lesson 6 **Unit 6:** Lessons 13, 15

1.OA.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = ? – 3, 6 + 6 = ?*	**Unit 3:** Lessons 4, 6, 8, 9, 16, 20 **Unit 5:** Lesson 2 **Unit 6:** Lesson 14

Grade 1

Utah Core State Standards for Mathematics	Amplify Desmos Math
Number and Operations in Base Ten	
*Extend the counting sequence (**Standard 1.NBT.1**). Understand place value (**Standards 1.NBT.2–3**). Use place value understanding and properties of operations to add and subtract (**Standards 1.NBT.4–6**).*	
1.NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.	**Unit 1:** Lesson 6 **Unit 2:** Lessons 12, 18 **Unit 3:** Lesson 9 **Unit 4:** Lessons 2, 3, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 21, 22 **Unit 5:** Lessons 3, 12 **Unit 6:** Lessons 7, 8, 9
1.NBT.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:	**Unit 4:** Lessons 8, 9, 10, 11, 12, 13, 14, 20, 21
1.NBT.2.a 10 can be thought of as a bundle of ten ones, called a "ten."	**Unit 3:** Lessons 5, 6, 7
1.NBT.2.b The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.	**Unit 3:** Lessons 5, 6, 7
1.NBT.2.c The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).	**Unit 4:** Lessons 3, 4, 5, 6, 7

1.NBT.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.	**Unit 4:** Lessons 14, 15, 16, 17, 18, 19, 22
1.NBT.4 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, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens to tens and ones to ones, and that it is sometimes necessary to compose a ten.	**Unit 4:** Lessons 4, 5, 6, 12, 18 **Unit 3:** Lessons 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 **Unit 6:** Lesson 3
1.NBT.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.	**Unit 4:** Lessons 13, 15, 16
1.NBT.6 Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	**Unit 4:** Lessons 4, 5, 6

Grade 1

Utah Core State Standards for Mathematics	Amplify Desmos Math
Measurement and Data	
*Measure lengths indirectly and by iterating length units (**Standards 1.MD.1–2**). Tell and write time (**Standard 1.MD.3**). Represent and interpret data (Standard 1.MD.4). Identify the value of coins (**Standard 1.MD.5**).*	
1.MD.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.	**Unit 6:** Lessons 2, 3

1.MD.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*	**Unit 6:** Lessons 4, 5, 6, 7, 8, 9, 10
1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks.	**Unit 7:** Lessons 13, 14, 15, 16, 17
1.MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	**Unit 1:** Lessons 2, 3, 4, 13, 14, 15 **Unit 2:** Lessons 15, 16 **Unit 5:** Lesson 14 **Unit 6:** Lessons 10, 15
1.MD.5 Identify the values of pennies, nickels, dimes and quarters, and know their comparative values. *(For example, a dime is of greater value than a nickel.)* Use appropriate notation to designate a coin's value. *(For example, 5¢.)*	This standard is addressed in Amplify Desmos Math, **Grade 2, Unit 2:** Lessons 2, 3, 4, 5, 6.

Grade 1

Utah Core State Standards for Mathematics	Amplify Desmos Math
Geometry	
*Reason with shapes and their attributes (**Standards 1.G.1–3**).*	
1.G.1 Distinguish between defining attributes (for example, triangles are closed and three-sided) versus non-defining attributes (for example, color, orientation, overall size); build and draw shapes that possess defining attributes.	**Unit 7:** Lessons 4, 5, 6
1.G.2 Compose shapes.	**Unit 7:** Lessons 2, 7

1.G.2.a Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) to create a composite shape, and compose new shapes from the composite shape.	**Unit 7:** Lesson 7
1.G.2.b Compose three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. First grade students do not need to learn formal names such as "right rectangular prism."	**Unit 7:** Lesson 2
1.G.3 Partition circles and rectangles into two and four equal shares; describe the shares using the words halves, fourths, and quarters; and use the phrases half of, fourth of, and quarter of. Describe the whole as two or four of the shares. Understand that, for these examples, decomposing into more equal shares creates smaller shares.	**Unit 7:** Lessons 8, 9, 10, 11, 12

A Correlation of Amplify Desmos Math, Grade 2 to the Utah Core State Standards for Mathematics

Grade 2

Utah Core State Standards for Mathematics	Amplify Desmos Math
Operations and Algebraic Thinking	
*Represent and solve problems involving addition and subtraction (**Standard 2.OA.1**). Fluently add and subtract within 20 (**Standard 2.OA.2**) and work with equal groups of objects to gain foundations for multiplication (**Standards 2.OA.3–4**).*	
2.OA.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing with unknowns in all positions, *for example, by using drawings and equations with a symbol for the unknown number to represent the problem.*	**Unit 1:** Lessons 15, 16 **Unit 2:** Lessons 6, 7, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22 **Unit 4:** Lessons 10, 11, 12, 13
2.OA.2 Fluently add and subtract within 20.	**Unit 1:** Lessons 5, 6, 11, 13 **Unit 2:** Lesson 7 **Unit 3:** Lessons 3, 14, 15 **Unit 8:** Lessons 5, 6, 8, 9, 10, 11, 12
2.OA.2.a Add and subtract within 20 using mental strategies such as counting on; making ten *(for example, 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14)*; decomposing a number leading to a ten *(for example, 13 − 4 = 13 − 3 − 1 = 10 − 1 = 9)*; using the relationship between addition and subtraction *(for example, knowing that 8 + 4 = 12, one knows 12 − 8 = 4)*; and creating equivalent but easier or known sums *(for example, adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13)*.	**Unit 1:** Lessons 5, 6, 11, 13 **Unit 2:** Lesson 7 **Unit 3:** Lessons 3, 14, 15 **Unit 8:** Lessons 5, 6, 8, 9, 10, 11, 12
2.OA.2.b By the end of Grade 2, know from memory all sums of two one-digit numbers.	**Unit 1:** Lessons 5, 6, 11, 13 **Unit 2:** Lesson 7 **Unit 3:** Lessons 3, 14, 15

	Unit 8: Lessons 5, 6, 8, 9, 10, 11, 12
2.OA.3 Determine whether a group of objects (up to 20) has an odd or even number of members, *(for example, by pairing objects or counting them by twos)*. Write an equation to express an even number as a sum of two equal addends.	**Unit 8:** Lessons 3, 4, 5, 6, 7, 9
2.OA.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.	**Unit 8:** Lessons 8, 9, 10, 11, 12, 13

Grade 2

Utah Core State Standards for Mathematics	Amplify Desmos Math
Number and Operations in Base Ten	
*Understand place value (**Standards 2.NBT.1–4**). Use place value understanding and properties of operations to add and subtract (**Standards 2.NBT.5–9**).*	
2.NBT.1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; for example, 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:	**Unit 5:** Lessons 4, 5, 6, 8, 10, 11, 12 **Unit 7:** Lessons 7, 8, 11, 12, 13
2.NBT.1.a 100 can be thought of as a bundle of ten tens called a "hundred."	**Unit 5:** Lessons 2, 3, 9
2.NBT.1.b The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).	**Unit 5:** Lesson 3
2.NBT.2 Count within 1,000; skip-count by fives, tens, and hundreds.	**Unit 4:** Lessons 3, 4, 6, 7 **Unit 5:** Lessons 1, 2, 3, 4 **Unit 6:** Lessons 10, 11, 12, 13, 14

	Unit 7: Lessons 2, 9 **Unit 8:** Lesson 7
2.NBT.3 Read and write numbers to 1,000 using base-ten numerals, number names, and expanded form.	**Unit 5:** Lessons 5, 6, 7, 8, 12
2.NBT.4 Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.	**Unit 5:** Lessons 9, 10, 11, 12
2.NBT.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	**Unit 1:** Lessons 15, 16 **Unit 2:** Lessons 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22 **Unit 3:** Lessons 3, 6, 10, 11, 12, 14, 15 **Unit 4:** Lessons 7, 8, 9, 10, 11, 12, 13 **Unit 5:** Lessons 4, 9, 10 **Unit 7:** Lesson 4 **Unit 8:** Lessons 8, 11
2.NBT.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.	**Unit 2:** Lessons 3, 5, 6, 22 **Unit 7:** Lesson 16
2.NBT.7 Add and subtract within 1,000 using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, and ones and ones, and that it is sometimes necessary to compose or decompose tens or hundreds.	**Unit 7:** Lessons 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
2.NBT.8 Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.	**Unit 7:** Lessons 2, 9
2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations. Explanations may be supported by drawings or objects.	**Unit 2:** Lessons 8, 9, 10 **Unit 7:** Lessons 7, 10, 14, 15, 16, 17, 18

Grade 2

Utah Core State Standards for Mathematics	Amplify Desmos Math
Measurement and Data	
*Measure and estimate lengths in standard units (**Standards 2.MD.1–4**) and relate addition and subtraction to length (**Standards 2.MD.5–6**). Work with time and money (**Standards 2.MD.7–8**). Represent and interpret data (**Standards 2.MD.9–10**).*	
2.MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	**Unit 3:** Lessons 2, 3, 4, 5, 7, 8, 9, 10 **Unit 6:** Lessons 5, 6
2.MD.2 Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.	**Unit 3:** Lessons 1, 5, 9
2.MD.3 Estimate lengths using units of inches, feet, centimeters, and meters.	**Unit 3:** Lessons 4, 5, 7, 8, 9
2.MD.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. *For example, after measuring a pencil and a crayon, a student uses the measurements to determine that the pencil is two inches longer than the crayon.*	**Unit 3:** Lessons 2, 3
2.MD.5 Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units. *For example, use drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.*	**Unit 3:** Lessons 6, 11, 12 **Unit 4:** Lessons 10, 11
2.MD.6 Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2… Represent whole-number sums and differences within 100 on a number line diagram.	**Unit 4:** Lessons 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 **Unit 5:** Lesson 11
2.MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	**Unit 6:** Lessons 12, 13, 14, 15

2.MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. *For example, if you have 2 dimes and 3 pennies, how many cents do you have?*	**Unit 2:** Lessons 2, 3, 5, 6, 13, 15, 16, 21, 22
2.MD.9 Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.	**Unit 3:** Lessons 13, 14, 15
2.MD.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and comparison problems using information presented in a bar graph.	**Unit 1:** Lessons 9, 10, 11, 12, 13

Grade 2

Utah Core State Standards for Mathematics	Amplify Desmos Math
Geometry	
*Reason with shapes and their attributes (**Standards 2.G.1–3**).*	
2.G.1 Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Sizes are compared directly or visually, not compared by measuring. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.	**Unit 6:** Lessons 2, 3, 4, 5, 7
2.G.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of squares.	**Unit 8:** Lessons 12, 13
2.G.3 Partition circles and rectangles into two, three, or four equal shares; 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	**Unit 6:** Lessons 8, 9, 10, 11

equal shares of identical wholes need not have the same shape.	

A Correlation of Amplify Desmos Math, Grade 3 to the Utah Core State Standards for Mathematics

Grade 3

Utah Core State Standards for Mathematics	Amplify Desmos Math
Operations and Algebraic Thinking	
*Represent and solve problems involving multiplication and division within 100 (**Standards 3.OA.1–4 and Standard 3.OA.7**). Demonstrate understanding of the properties of multiplication and the relationship between multiplication and division (**Standards 3.OA.5–6**). Use the four operations to identify and explain patterns in arithmetic (**Standards 3.OA.8–9**).*	
3.OA.1 Interpret the products of whole numbers, such as interpreting 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7.*	**Unit 1:** Lessons 2, 4, 6, 7, 8, 9, 10 **Unit 3:** Lessons 20, 21
3.OA.2 Interpret whole-number quotients of whole numbers. *For example, interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into eight shares (partitive), or as a number of shares when 56 objects are partitioned into equal shares of eight objects each (quotative).*	**Unit 4:** Lessons 2, 3, 4, 5, 6, 16, 18
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. *For example, use drawings and equations with a symbol for the unknown number to represent the problem.*	**Unit 1:** Lessons 4, 5, 6, 10, 11 **Unit 2:** Lessons 9, 12, 13 **Unit 4:** Lessons 3, 4, 6, 12, 13, 16, 17, 19 **Unit 6:** Lessons 16, 17
3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown*	**Unit 1:** Lessons 5, 6, 7

number—product, factor, quotient, dividend, or divisor—that makes the equation true in each of the equations 8 x ? = 48, 5 = ? ÷ 3, and 6 x 6 = ?	
3.OA.5 Apply properties of operations as strategies to multiply and divide. *For example: If 6 x 4 = 24 is known, then 4 x 6 = 24 is also known (commutative property of multiplication). 3 x 5 x 2 can be found by 3 x 5 = 15, then 15 x 2 = 30, or by 5 x 2 = 10, then 3 x 10 = 30 (associative property of multiplication). Knowing that 8 x 5 = 40 and 8 x 2 = 16, one can find 8 x 7 as 8 x (5 + 2) = (8 x 5) + (8 x 2) = 40 + 16 = 56 (distributive property).* (Third grade students may, but need not, use formal terms for these properties.)	**Unit 1:** Lesson 9 **Unit 2:** Lessons 6, 7, 8, 9 **Unit 3:** Lesson 14 **Unit 4:** Lessons 12, 13, 14, 15, 17, 18, 19 **Unit 5:** Lesson 11
3.OA.6 Understand division as an unknown-factor problem. Understand the relationship between multiplication and division (multiplication and division are inverse operations). *For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.*	**Unit 4:** Lessons 5, 6, 7 **Unit 6:** Lesson 16
3.OA.7 Fluently multiply and divide.	**Unit 1:** Lessons 5, 6, 7, 10, 11 **Unit 2:** Lesson 11 **Unit 4:** Lessons 7, 8, 9, 10 **Unit 6:** Lessons 8, 10 **Unit 7:** Lessons 9, 11, 12
3.OA.7.a Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division or properties of operations. *(For example, knowing that 8 x 5 = 40, one knows 40 ÷ 5 = 8.)*	**Unit 1:** Lessons 5, 6, 7, 10, 11 **Unit 2:** Lesson 11 **Unit 4:** Lessons 7, 8, 9, 10 **Unit 6:** Lessons 8, 10 **Unit 7:** Lessons 9, 11, 12
3.OA.7.b By the end of Grade 3, know from memory all products of two one-digit numbers.	**Unit 1:** Lessons 5, 6, 7, 10, 11 **Unit 2:** Lesson 11 **Unit 4:** Lessons 7, 8, 9, 10 **Unit 6:** Lessons 8, 10 **Unit 7:** Lessons 9, 11, 12
3.OA.8 Solve two-step word problems.	**Unit 3:** Lessons 19, 20, 21, 22 **Unit 4:** Lessons 15, 20

	Unit 7: Lesson 10
3.OA.8.a Solve two-step word problems using the four operations. Know how to perform operations in the conventional order when there are no parentheses to specify a particular order (Order of Operations). (Limit to problems posed with whole numbers and having whole number answers.)	**Unit 3:** Lessons 20, 21, 22 **Unit 4:** Lessons 15, 20 **Unit 7:** Lesson 10
3.OA.8.b Represent two-step problems using equations with a letter standing for the unknown quantity. Create accurate equations to match word problems.	**Unit 3:** Lessons 20, 21, 22 **Unit 4:** Lessons 15, 20
3.OA.8.c Assess the reasonableness of answers using mental computation and estimation strategies, including rounding.	**Unit 3:** Lessons 19, 20
3.OA.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that four times a number is always even, and explain why four times a number can be decomposed into two equal addends.*	**Unit 3:** Lesson 2 **Unit 4:** Lesson 8

Grade 3

Utah Core State Standards for Mathematics	Amplify Desmos Math
Number and Operations in Base Ten	
*Use place value understanding and properties of operations to perform multi-digit arithmetic. A range of algorithms may be used (**Standards 3.NBT.1–3**).*	
3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.	**Unit 3:** Lessons 15, 16, 17, 18
3.NBT.2 Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between	**Unit 3:** Lessons 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 **Unit 6:** Lesson 8

addition and subtraction.	**Unit 7:** Lesson 7
3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 *(for example, 9 x 80 and 5 x 60)* using strategies based on place value and properties of operations.	**Unit 4:** Lessons 6, 11, 15, 18

Grade 3

Utah Core State Standards for Mathematics	Amplify Desmos Math
Number and Operations—Fractions	
Develop understanding of fractions as numbers. Denominators are limited to 2, 3, 4, 6, and 8 in third grade.	
3.NF.1 Understand that a unit fraction has a numerator of one and a non-zero denominator.	**Unit 5:** Lessons 1, 2, 3, 4, 5
3.NF.1.a Understand a fraction *1/b* as the quantity formed by one part when a whole is partitioned into *b* equal parts.	**Unit 5:** Lessons 1, 2, 3
3.NF.1.b Understand a fraction *a/b* as the quantity formed by a parts of size *1/b. For example: 1/4 + 1/4 + 1/4 = 3/4.*	**Unit 5:** Lessons 4, 5
3.NF.2 Understand a fraction as a number on the number line; represent fractions on a number line diagram.	**Unit 5:** Lessons 6, 7, 8, 9 **Unit 6:** Lesson 10
3.NF.2.a Represent a fraction *1/b* on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into *b* equal parts. Recognize that each part has size *1/b* and that the endpoint of the part based at 0 locates the number *1/b* on the number line.	**Unit 5:** Lesson 6
3.NF.2.b Represent a fraction *a/b* on a number line diagram by marking off *a* lengths *1/b* from 0. Recognize that the resulting interval has size *a/b* and that	**Unit 5:** Lesson 7

its endpoint locates the number *a/b* on the number line.	
3.NF.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.	**Unit 5:** Lessons 8, 10, 11, 12, 13, 14, 15, 16, 17
3.NF.3.a Understand two fractions as equivalent if they are the same size, or the same point on a number line.	**Unit 5:** Lessons 10, 11, 12
3.NF.3.b Recognize and generate simple equivalent fractions, such as 1/2 = 2/4, 4/6 = 2/3. *Explain why the fractions are equivalent by using a visual fraction model, for example.*	**Unit 5:** Lessons 10, 11, 12 **Unit 6:** Lesson 4
3.NF.3.c Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *For example, express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.*	**Unit 5:** Lessons 8, 9, 13, 14 **Unit 6:** Lesson 2, 3
3.NF.3.d Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. *Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, for example, by using a visual fraction model.*	**Unit 5:** Lessons 15, 16, 17

Grade 3

Utah Core State Standards for Mathematics	Amplify Desmos Math
Measurement and Data	
*Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. (**Standards 3.MD.1–2**). Represent and interpret data (**Standards 3.MD.3–4**). Understand concepts of area and relate area to multiplication and addition (**Standards 3.MD.5–7**). Recognize perimeter as an attribute of plane figures and distinguish between linear and area measures (**Standard 3.MD.8**).*	

3.MD.1 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, for example, by representing the problem on a number line diagram.	**Unit 6:** Lessons 11, 12, 13, 14, 17
3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), milliliters (ml), and liters (l). (Excludes compound units such as cubic centimeters [cc or cm3] and finding the geometric volume of a container.) *Add, subtract, multiply, or divide to solve one-step word problems involving masses of objects or volumes of liquids that are given in the same units, for example, by using drawings (such as a beaker with a measurement scale) to represent the problem. (Excludes multiplicative comparison problems.)*	**Unit 6:** Lessons 7, 8, 9, 10, 15, 16, 17
3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent five pets.*	**Unit 1:** Lessons 14, 15, 16, 17, 18
3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot where the horizontal scale is marked off in appropriate units–whole numbers, halves, or quarters.	**Unit 6:** Lessons 1, 2, 3, 4, 5, 6
3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.	**Unit 2:** Lessons 2, 5, 13 **Unit 7:** Lesson 10
3.MD.5.a A square with side length one unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.	**Unit 2:** Lesson 3
3.MD.5.b A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units.	**Unit 2:** Lesson 3
3.MD.6 Measure area by counting unit squares (square centimeters, square meters, square inches, square feet, and improvised units).	**Unit 2:** Lessons 3, 4, 5, 13

3.MD.7 Relate area to the operations of multiplication and addition (refer to 3.OA.5).	**Unit 7:** Lessons 10, 11
3.MD.7.a Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.	**Unit 2:** Lessons 6, 7
3.MD.7.b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.	**Unit 2:** Lessons 6, 7, 8, 9, 13
3.MD.7.c Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths *a* and *b + c* is the sum of *a x b* and *a x c*. Use area models to represent the distributive property in mathematical reasoning.	**Unit 4:** Lessons 9, 10, 13
3.MD.7.d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non- overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real-world problems.	**Unit 2:** Lessons 10, 11, 12, 13
3.MD.8 Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	**Unit 7:** Lessons 6, 7, 8, 9, 10, 11, 12, 13

Grade 3

Utah Core State Standards for Mathematics	Amplify Desmos Math
Geometry	
*Reason with shapes and their attributes (**Standards 3.G.1–2**).*	

3.G.1 Understand that shapes in different categories *(for example, rhombuses, rectangles, and others)* may share attributes *(for example, having four sides)*, and that the shared attributes can define a larger category *(for example, quadrilaterals)*. Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	**Unit 7:** Lessons 2, 3, 4, 5, 8, 9
3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into four parts with equal area, and describe the area of each part as 1/4 of the area of the shape.*	**Unit 5:** Lesson 3

A Correlation of Amplify Desmos Math, Grade 4 to the Utah Core State Standards for Mathematics

Grade 4

Utah Core State Standards for Mathematics	Amplify Desmos Math
Operations and Algebraic Thinking	
*Use the four operations with whole numbers (addition, subtraction, multiplication, and division) to solve problems (**Standards 4.OA.1–3**). Gain familiarity with factors and multiples (**Standard 4.OA.4**). Generate and analyze numeric and shape patterns (**Standard 4.OA.5**).*	
4.OA.1 Interpret a multiplication equation as a comparison *(for example, interpret 35 = 5 x 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5)*. Represent verbal statements of multiplicative comparisons as multiplication equations.	**Unit 5:** Lessons 1, 2, 3, 4, 5, 6, 7
4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, *for example, by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.*	**Unit 5:** Lessons 3, 4, 5, 6, 7, 10, 11
4.OA.3 Solve multi-step word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted.	**Unit 5:** Lessons 6, 7, 13, 14, 15 **Unit 6:** Lessons 18, 19, 20, 21, 22
4.OA.3.a Represent these problems using equations with a letter standing for the unknown quantity.	**Unit 5:** Lesson 6
4.OA.3.b Assess the reasonableness of answers using mental computation and estimation strategies, including rounding.	**Unit 6:** Lesson 18
4.OA.4 Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a	**Unit 1:** Lessons 4, 5, 6, 7, 9, 10, 11

given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.	
4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. *For example, given the rule "add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.*	**Unit 1:** Lessons 1, 2, 3, 4

Grade 4

Utah Core State Standards for Mathematics	Amplify Desmos Math
Numbers and Operations in Base Ten	
*Generalize place value understanding for multi-digit whole numbers by analyzing patterns, writing whole numbers in a variety of ways, making comparisons, and rounding (**Standards 4.NBT.1–3**). Use place value understanding and properties of operations to perform multi-digit addition, subtraction, multiplication, and division using a one-digit divisor (**Standards 4.NBT.4–6**). Expectations in this strand are limited to whole numbers less than or equal to 1,000,000.*	
4.NBT.1 Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. *For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.*	**Unit 4:** Lessons 8, 9, 10, 11 **Unit 5:** Lesson 8
4.NBT.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	**Unit 4:** Lessons 9, 10, 12, 13, 19, 21
4.NBT.3 Use place value understanding to round multi-digit whole numbers to	**Unit 4:** Lessons 14, 15, 16

any place.	
4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.	**Unit 4:** Lessons 17, 18, 19, 20, 21 **Unit 6:** Lesson 22
4.NBT.5 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. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	**Unit 2:** Lessons 8, 14 **Unit 5:** Lessons 7, 9 **Unit 6:** Lessons 2, 3, 4, 5, 6, 7, 8, 9, 19, 20, 21, 22
4.NBT.6 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. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	**Unit 1:** Lesson 10 **Unit 5:** Lesson 7 **Unit 6:** Lessons 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22

Grade 4

Utah Core State Standards for Mathematics	Amplify Desmos Math
Number and Operations—Fractions	
*Extend understanding of equivalence and ordering of fractions (**Standards 4.NF.1–2**). Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers (**Standards 4.NF.3–4**). Understand decimal notation to the hundredths and compare decimal fractions with denominators of 10 and 100 (**Standards 4.NF.5–7**). Denominators for fourth grade are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.*	
4.NF.1 Explain why a fraction *a/b* is equivalent to a fraction *(n x a)/(n x b)* by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.	**Unit 2:** Lessons 5, 6, 7, 8, 9, 10, 12, 13, 14, 15

4.NF.2 Compare two fractions with different numerators and different denominators, *for example, by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2.* Recognize that 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, *for example, by using a visual fraction model.*	**Unit 2:** Lessons 11, 12, 13, 14, 15
4.NF.3 Understand a fraction *a/b* with *a* >1 as a sum of fractions 1/*b*. In other words, any fraction is a sum of unit fractions.	**Unit 3:** Lesson 3
4.NF.3.a Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	**Unit 3:** Lessons 2, 4, 5
4.NF.3.b Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, *for example, by using a visual fraction model. For example, 3/8 = 1/8 + 1/8 + 1/8; 3/8 = 1/8 + 2/8; 2 1/8 = 1 + 1 + 1/8; 2 1/8 = 8/8 + 8/8 + 1/8.*	**Unit 3:** Lessons 1, 3
4.NF.3.c Add and subtract mixed numbers with like denominators, *for example, by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. For example, 3 1/4 + 2 1/4 = 13/4 + 9/4 = 22/4; 3 1/4 + 2 1/4 = (3 + 2) + (1/4 + 1/4) = 5 + 2/4 = 5 2/4, which is equivalent to 22/4.*	**Unit 3:** Lessons 5, 6, 7, 15
4.NF.3.d Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, *for example, by using visual fraction models and equations to represent the problem.*	**Unit 3:** Lessons 2, 4, 6, 7
4.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.	**Unit 3:** Lessons 8, 9, 10, 12
4.NF.4.a Understand a fraction *a/b* as a multiple of 1/*b*. *For example, use a visual fraction model to represent 5/4 as the product 5 x (1/4), recording the conclusion by the equation 5/4 = 5 x (1/4).*	**Unit 3:** Lessons 9, 11

4.NF.4.b Understand a multiple of *a/b* as a multiple of 1/*b*, and use this understanding to multiply a fraction by a whole number. *For example, use a visual fraction model to express 3 x (2/5) as 6 x (1/5), recognizing this product as 6/5. (In general, n x (a/b) = (n x a)/b).*	**Unit 3:** Lessons 10, 11, 12
4.NF.4.c Solve word problems involving multiplication of a fraction by a whole number *(for example, by using visual fraction models and equations to represent the problem). For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be five people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?*	**Unit 3:** Lessons 9, 10, 12, 16
4.NF.5 Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. *For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.*	**Unit 3:** Lesson 14 **Unit 4:** Lessons 4, 5, 7
4.NF.6 Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite 0.62 as 62/100, describe a length as 0.62 meters; locate 0.62 on a number line diagram.*	**Unit 4:** Lessons 2, 3, 4
4.NF.7 Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, *for example, by using a visual model.*	**Unit 4:** Lessons 5, 6, 7

Grade 4

Utah Core State Standards for Mathematics	Amplify Desmos Math
Measurement and Data	

*Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit (**Standards 4.MD.1–2**). Apply knowledge of area and perimeter to solve real-world and mathematical problems (**Standard 4.MD.3**). Represent and interpret data through the use of a line plot (**Standard 4.MD.4**). Understand various concepts of angles and angle measurement (**Standard 4.MD.5–7**).*	
4.MD.1 Know relative sizes of measurement units within each system of units (standard and metric), including kilometers, meters, and centimeters; liters and milliliters; kilograms and grams; pounds and ounces; hours, minutes, and seconds. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example, know that one foot is 12 times as long as one inch. Express the length of a four-foot snake as 48 inches. Know that one meter is 100 times as long as one centimeter. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36)…*	**Unit 5:** Lessons 8, 9, 10, 12, 13, 14, 15, 16, 17
4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money.	**Unit 5:** Lessons 9, 10, 11, 12, 13, 14, 15, 16
4.MD.2.a Include problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.	**Unit 5:** Lessons 9, 10, 11, 12, 13, 14, 15, 16
4.MD.2.b Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	**Unit 5:** Lessons 11
4.MD.3 Apply the area and perimeter formulas for rectangles in real-world and mathematical problems. *For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.*	**Unit 5:** Lesson 12 **Unit 6:** Lessons 6, 11, 21
4.MD.4 Make a line plot to display a data set of measurements in fractions of a unit (halves, quarters, and eighths). Solve problems involving addition and subtraction with like denominators of fractions by using information presented in line plots. *For example, use a line plot to find and interpret the difference in length between the longest and shortest pencils in a classroom.*	**Unit 3:** Lessons 15, 16

4.MD.5 Recognize angles as geometric figures that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.	**Unit 7:** Lessons 5, 6
4.MD.5.a Understand that an angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure other angles.	**Unit 7:** Lesson 7
4.MD.5.b Understand that an angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees.	**Unit 7:** Lesson 7
4.MD.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	**Unit 7:** Lessons 8, 9, 10
4.MD.7 Recognize angle measure as additive.	**Unit 7:** Lessons 7, 11, 18
4.MD.7.a Understand that when an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts.	**Unit 7:** Lessons 7, 11, 18
4.MD.7.b Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems, *for example by using an equation with a symbol for the unknown angle measure.*	**Unit 7:** Lessons 11, 18

Grade 4

Utah Core State Standards for Mathematics	Amplify Desmos Math
Geometry	

*Draw and identify lines and angles, as well as classify shapes by properties of their lines and angles (**Standards 4.G.1–3**).*	
4.G.1 Draw points, lines, line segments, rays, angles (right, acute, and obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	**Unit 7:** Lessons 2, 3, 4, 5, 9, 10, 12, 13, 15
4.G.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.	**Unit 7:** Lessons 12, 13, 15
4.G.3 Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	**Unit 7:** Lessons 16, 17, 18

A Correlation of Amplify Desmos Math, Grade 5 to the Utah Core State Standards for Mathematics

Grade 5

Utah Core State Standards for Mathematics	Amplify Desmos Math
Operations and Algebraic Thinking	
*Write and interpret numerical expressions (**Standards 5.OA.1–2**), and analyze patterns and relationships (**Standard 5.OA.3**).*	
5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	**Unit 1:** Lesson 12 **Unit 4:** Lessons 9, 14, 16, 18
5.OA.2 Write and interpret simple numerical expressions.	**Unit 1:** Lessons 5, 6, 11, 12, 13 **Unit 2:** Lessons 2, 6, 7, 8 **Unit 4:** Lessons 3, 15, 17 **Unit 5:** Lessons 15, 22
5.OA.2.a Write simple expressions that record calculations with numbers. *For example, use 2 x (8+7) to express the calculation "add 8 and 7, then multiply by 2."*	**Unit 1:** Lessons 5, 6 **Unit 2:** Lessons 2, 6, 7, 8 **Unit 4:** Lessons 3, 15, 17 **Unit 5:** Lessons 15, 22
5.OA.2.b Interpret numerical expressions without evaluating them. *For example, use conceptual understanding of multiplication to interpret 3 x (18939 + 921) as being three times as large as 18932 + 921 without calculating the indicated sum or product.*	**Unit 1:** Lesson 5 **Unit 2:** Lessons 2, 6, 7, 8 **Unit 4:** Lesson 17
5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. *For example, given the rule "add 3" and the starting number 0, and given the rule "add 6" and the starting number 0, generate*	**Unit 7:** Lessons 9, 10

terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.	

Grade 5

Utah Core State Standards for Mathematics	Amplify Desmos Math
Numbers and Operations in Base Ten	
*Understand the place value system (**Standards 5.NBT.1–4**). Perform operations with multi-digit whole numbers and with decimals to hundredths (**Standards 5.NBT.5–7**).*	
5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	**Unit 5:** Lessons 4, 17, 18, 23 **Unit 6:** Lessons 1, 3, 4, 5
5.NBT.2 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:** Lessons 2, 3, 4, 5, 6, 7, 8
5.NBT.3 Read, write, and compare decimals to thousandths.	**Unit 5:** Lessons 2, 6, 7, 8
5.NBT.3.a Read and write decimals to thousandths using base-ten numerals, number names, and expanded form. *For example, 347.392 = 3 x 100 + 4 x 10 + 7 x 1 + 3 x (1/10) + 9 x (1/100) + 2 x (1/1000).*	**Unit 5:** Lesson 3
5.NBT.3.b Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	**Unit 5:** Lesson 6

5.NBT.4 Use place value understanding to round decimals to any place.	**Unit 5:** Lessons 7, 8
5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	**Unit 4:** Lessons 4, 6, 7, 8, 9, 13, 16
5.NBT.6 Find whole-number quotients of whole numbers 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. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	**Unit 4:** Lessons 11, 12, 13, 14, 15, 16
5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. In this standard, dividing decimals is limited to a whole number dividend with a decimal divisor or a decimal dividend with a whole number divisor. Compare the value of the quotient on the basis of the values of the dividend and divisor.	**Unit 5:** Lessons 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22

Grade 5

Utah Core State Standards for Mathematics	Amplify Desmos Math
Number and Operations—Fractions	
*Use equivalent fractions as a strategy to add and subtract fractions (**Standards 5.NF.1–2**). Apply and extend previous understandings of multiplication and division to multiply and divide fractions (**Standards 5.NF.3–7**).*	
5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as	**Unit 6:** Lessons 13, 14, 15, 16, 17

to produce an equivalent sum or difference of fractions with like denominators. *For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12.* (*In general*, a/b + c/d = (ad + bc)/bd.)	
5.NF.2 Solve real-world problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators by, *for example, using visual fraction models or equations to represent the problem.* Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *For example, recognize 2/5 + 1/2 = 3/7 as an incorrect result, by observing that 3/7 < 1/2.*	**Unit 6:** Lessons 12, 13, 15, 16, 17, 18, 19
5.NF.3 Interpret a fraction as division of the numerator by the denominator (*a/b = a ÷ b*). Solve real-world problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, through the use of visual fraction models or equations to represent the problem. *For example, interpret 3/4 as the result of dividing three by four, noting that 3/4 multiplied by four equals three, and that when three wholes are shared equally among four people each person has a share of size 3/4. If nine people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?*	**Unit 2:** Lessons 2, 3, 4, 5, 6, 7 **Unit 4:** Lessons 14, 15 **Unit 6:** Lesson 18
5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.	**Unit 2:** Lessons 7, 8, 9, 10, 11, 12, 13, 15 **Unit 3:** Lessons 2, 6, 7, 8
5.NF.4.a Interpret the product (*a/b*) x *q* as a parts of a partition of *q* into *b* equal parts; equivalently, as the result of a sequence of operations *a* x *q* ÷ *b* using a visual fraction model. *For example, use a fraction model to show (2/3) x 4 = 8/3, and create a story context for this equation. Do the same with (2/3) x (4/5) = 8/15. (In general, (a/b) x (c/d) = ac/bd.)*	**Unit 2:** Lesson 8 **Unit 3:** Lessons 3, 4, 6, 7, 8, 15
5.NF.4.b Find the area of a rectangle with fractional side lengths by tiling it 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 2:** Lessons 9, 10, 11, 12, 13 **Unit 3:** Lessons 3, 5, 6

5.NF.5 Interpret multiplication as scaling.	**Unit 3:** Lessons 9, 10
5.NF.5.a Compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. *For example, the products of expressions such as 5 x 3 or ½ x 3 can be interpreted in terms of a quantity, three, and a scaling factor, five or ½. Thus in addition to knowing that 5 x 3 = 15, they can also say that 5 x 3 is five times as big as three, without evaluating the product. Likewise they see ½ x 3 as half the size of three.*	**Unit 3:** Lessons 9, 10 **Unit 5:** Lessons 15, 16
5.NF.5.b Explain why multiplying a given number by a fraction greater than one results in a product greater than the given number (recognizing multiplication by whole numbers greater than one as a familiar case); explain why multiplying a given number by a fraction less than one results in a product smaller than the given number; and relate the principle of fraction equivalence. *For example, 6/10 = (2x3)/(2x5). In general, a/b = (n x a)/(n x b) has the effect of multiplying a/b by one.*	**Unit 3:** Lessons 9, 10
5.NF.6 Solve real-world problems involving multiplication of fractions and mixed numbers, *for example, by using visual fraction models or equations to represent the problem.*	**Unit 2:** Lesson 14 **Unit 3:** Lessons 2, 3, 4, 5, 6, 14, 15 **Unit 6:** Lesson 18
5.NF.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. Use strategies to divide fractions by reasoning about the relationship between multiplication and division. Division of a fraction by a fraction is not a requirement at this grade.	**Unit 3:** Lessons 14
5.NF.7.a Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) x 4 = 1/3.*	**Unit 3:** Lessons 11, 13
5.NF.7.b Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication*	**Unit 3:** Lessons 12, 13

and division to explain that 4 ÷ (1/5) = 20 because 20 x (1/5) = 4.	
5.NF.7.c Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, *for example, by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if three people share 1/2 lb. of chocolate equally? How many 1/3-cup servings are in two cups of raisins?*	**Unit 3:** Lessons 11, 12, 13, 14, 15

Grade 5

Utah Core State Standards for Mathematics	Amplify Desmos Math
Measurement and Data	
*Convert like measurement units within a given measurement system (**Standard 5.MD.1**). Represent and interpret data (**Standard 5.MD.2**). Understand concepts of geometric measurement and volume, as well as how multiplication and addition relate to volume (**Standards 5.MD.3-5**).*	
5.MD.1 Convert among different-sized standard measurement units within a given measurement system (*for example, convert 5 cm to 0.05 m*); use these conversions in solving multi-step, real-world problems.	**Unit 6:** Lessons 6, 7, 8, 9, 10, 11
5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit (halves, quarters, eighths). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given graduated cylinders with different measures of liquid in each, find the amount of liquid each cylinder would contain if the total amount in all the cylinders were redistributed equally.*	**Unit 6:** Lessons 18, 19
5.MD.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.	**Unit 1:** Lessons 2, 3

5.MD.3.a A cube with side length one unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.	**Unit 1:** Lessons 2, 6
5.MD.3.b A solid figure which can be packed without gaps or overlaps using *n* unit cubes is said to have a volume of *n* cubic units.	**Unit 1:** Lessons 5, 6
5.MD.4 Measure volumes by counting unit cubes, using cubic cm, cubic in., cubic ft., and improvised units.	**Unit 1:** Lessons 2, 3, 4, 7, 8, 9
5.MD.5 Relate volume to the operations of multiplication and addition and solve real-world and mathematical problems involving volume.	**Unit 1:** Lesson 8
5.MD.5.a 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, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, *for example, to represent the associative property of multiplication.*	**Unit 1:** Lessons 5, 6, 14
5.MD.5.b Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real-world and mathematical problems.	**Unit 1:** Lessons 6, 8
5.MD.5.c Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real-world problems.	**Unit 1:** Lessons 9, 10, 11, 12, 13, 14

Grade 5

Utah Core State Standards for Mathematics	Amplify Desmos Math

Geometry	
*Graph points on the coordinate plane to solve real-world and mathematical problems in quadrant one (**Standards 5.G.1–2**). Classify two-dimensional figures into categories based on their properties. (**Standards 5.G.3–4**).*	
5.G.1 Compose and understand the coordinate plane.	**Unit 7:** Lessons 6, 7, 8, 11
5.G.1.a Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the zero on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates.	**Unit 7:** Lessons 6, 7
5.G.1.b Using quadrant one on the coordinate plane, understand that the first number in a coordinate pair indicates how far to travel from the origin in the direction of the horizontal axis, and the second number indicates how far to travel in the direction of the vertical axis, with the convention that the names of the two axes and the coordinates correspond (*x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).	**Unit 7:** Lessons 6, 7, 8, 11
5.G.2 Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	**Unit 7:** Lessons 10, 11, 12
5.G.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. *For example, all rectangles have four right angles and all squares are rectangles, so all squares have four right angles.*	**Unit 7:** Lessons 1, 2, 3, 4, 5
5.G.4 Classify two-dimensional figures in a hierarchy based on properties.	**Unit 7:** Lessons 4, 5