Section g.
Standards Alignment: Demonstrate how each unit and lesson aligns with current New York State Next Generation Mathematics Learning Standards

Standards Alignment

In this section you will find the correlations for Grades K–5 Amplify Desmos Math New York. For each grade, you can review the alignment by standard or by lesson.

Grade K

- New York State Next Generation Mathematics Learning Standards
- The Standards for Mathematical Practice
- Amplify Desmos Math New York Lessons

Grade 1

- New York State Next Generation Mathematics Learning Standards
- The Standards for Mathematical Practice
- Amplify Desmos Math New York Lessons

Grade 2

- New York State Next Generation Mathematics Learning Standards
- The Standards for Mathematical Practice
- Amplify Desmos Math New York Lessons

Grade 3

- New York State Next Generation Mathematics Learning Standards
- The Standards for Mathematical Practice
- Amplify Desmos Math New York Lessons

Grade 4

- New York State Next Generation Mathematics Learning Standards
- The Standards for Mathematical Practice
- Amplify Desmos Math New York Lessons

Grade 5

- New York State Next Generation Mathematics Learning Standards
- The Standards for Mathematical Practice
- Amplify Desmos Math New York Lessons

New York State Next Generation Mathematics Learning Standards, Correlated to Amplify Desmos Math Kindergarten

The following shows the alignment of Amplify Desmos Math to the New York State Next Generation Mathematics Learning Standards for Kindergarten.

NY-K.CC	Counting and Cardinality	Lesson(s)
Know number names and the count sequence.		
NY-K.CC.1	Count to 100 by ones and by tens.	1.14, 1.15, 2.02, 2.18, 2.20, 3.05, 3.08, 4.03, 4.04, 4.13, 4.14, 4.16, 4.20, 6.02, 6.09, 6.11, 7.10
NY-K.CC.2	Count to 100 by ones beginning from any given number (instead of beginning at 1).	4.05, 4.16, 4.20, 6.02, 6.09
NY-K.CC.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	2.02, 2.12, 2.13, 2.15, 2.16, 2.19, 2.22, 3.13, 3.14, 4.03, 4.13, 6.06, 6.07, 6.09, 6.10, 6.11
Count to tell the number of objects.		
NY-K.CC.4	Understand the relationship between numbers and quantities up to 20; connect counting to cardinality.	1.04, 1.06, 1.07, 1.08, 1.09, 1.10, 1.11, 1.12, 1.13, 1.14, 1.17, 1.18, 2.02, 2.03, 2.04, 2.05, 2.09, 2.13, 2.17, 3.05, 5.11
NY-K.CC.4a	When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. (1:1 correspondence)	1.01, 1.05, 1.13, 1.15, 1.16, 3.05, 6.06
NY-K.CC.4b	Understand that the last number name said tells the number of objects counted, (cardinality). The number of objects is the same regardless of their arrangement or the order in which they were counted.	1.01, 1.05, 1.14, 2.03, 2.07, 2.13, 2.14, 2.15, 2.16, 3.05, 6.03, 6.06
NY-K.CC.4c	Understand the concept that each successive number name refers to a quantity that is one larger.	1.01, 1.05, 2.17, 2.18, 2.21, 3.05, 4.18
NY-K.CC.4d	Understand the concept of ordinal numbers (first through tenth) to describe the relative position and magnitude of whole numbers.	2.23
NY-K.CC.5a	Answer counting questions using as many as 20 objects arranged in a line, a rectangular array, and a circle. Answer counting questions using as many as 10 objects in a scattered configuration.	1.04, 1.13, 1.14, 1.15, 1.16, 1.17, 1.18, 2.03, 2.04, 2.05, 2.06, 2.07, 2.08, 2.09, 2.10, 2.11, 2.12, 2.13, 2.16, 2.22, 5.11, 6.02, 6.03, 6.05, 6.06, 6.07, 7.09
NY-K.CC.5b	Given a number from 1–20, count out that many objects.	1.13, 2.14, 2.15, 2.16, 2.17, 2.19, 2.22, 5.11, 6.04, 6.07, 6.08

Compare numbers.		
NY-K.CC.6	Identify whether the number of objects in one group is greater than (more than), less than (fewer than), or equal to (the same as) the number of objects in another group.	2.04, 2.05, 2.06, 2.08, 2.09, 2.10, 2.11, 2.18, 2.19, 2.20, 2.21, 3.12, 7.10
NY-K.CC.7	Compare two numbers between 1 and 10 presented as written numerals.	2.15, 2.19, 2.20, 2.21, 2.22, 3.12
NY-K.OA	**Operations and Algebraic Thinking**	**Lesson(s)**
Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.		
NY-K.OA.1	Represent addition and subtraction using objects, fingers, pennies, drawings, sounds, acting out situations, verbal explanations, expressions, equations, or other strategies.	2.14, 4.02, 4.03, 4.04, 4.05, 4.06, 4.07, 4.08, 4.09, 4.10, 4.11, 4.12, 4.13, 4.14, 4.15, 4.16, 4.17, 4.18, 4.19, 4.20, 5.06, 5.07, 5.08, 5.09, 5.10, 5.12, 7.12, 7.13, 7.14, 7.15
NY-K.OA.2a	Add and subtract within 10.	5.07, 5.08, 5.09, 5.10, 7.11, 7.13, 7.14, 7.15
NY-K.OA.2b	Solve addition and subtraction word problems within 10.	5.07, 5.08, 5.09, 5.10, 7.11, 7.13, 7.14, 7.15
NY-K.OA.3	Decompose numbers less than or equal to 10 into pairs in more than one way. Record each decomposition with a drawing or equation.	5.01, 5.02, 5.03, 5.04, 5.05, 5.06, 5.07, 5.08, 5.09, 5.10, 5.12, 5.13, 5.14, 5.15, 7.11, 7.14
NY-K.OA.4	Find the number that makes 10 when given a number from 1 to 9. Record the answer with a drawing or equation.	5.13, 5.14, 5.15, 7.11
NY-K.OA.5	Fluently add and subtract within 5.	4.06, 4.18, 5.02, 7.05, 7.08, 7.09
Understand simple patterns.		
NY-K.OA.6	Duplicate, extend, and create simple patterns using concrete objects.	3.17
NY-K.NBT	**Number and Operations in Base**	**Lesson(s)**
Work with numbers 11–19 to gain foundations for place value.		
NY-K.NBT.1	Compose and decompose the numbers from 11 to 19 into ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	6.07, 6.08, 6.09, 6.10, 6.11
NY-K.MD	**Ten Measurement and Data**	**Lesson(s)**
Describe and compare measurable attributes.		
NY-K.MD.1	Describe measurable attributes of an object(s), such as length or weight, using appropriate vocabulary.	1.01, 3.07, 3.08, 7.03, 7.04
NY-K.MD.2	Directly compare two objects with a common measurable attribute and describe the difference.	1.01, 3.07, 3.08, 7.03, 7.04, 7.07

Classify objects and count the number of objects in each category.		
NY-K.MD.3	Classify objects into given categories; count the objects in each category and sort the categories by count.	1.01, 3.05, 3.06, 3.07, 3.08, 3.09, 7.01, 7.05
NY-K.MD.4	Explore coins (pennies, nickels, dimes, and quarters) and begin identifying pennies and dimes.	6.12
NY-K.G	**Geometry**	**Lesson(s)**
Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).		
NY-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.	1.02, 1.03, 3.10, 3.11, 3.15, 3.16, 7.02, 7.08
NY-K.G.2	Name shapes regardless of their orientation or overall size.	1.03, 3.01, 3.06, 3.07, 3.08, 3.09, 3.10, 3.11, 3.12, 3.13, 3.16, 7.02, 7.06, 7.08
NY-K.G.3	Understand the difference between two-dimensional (lying in a plane, "flat") and three-dimensional ("solid") shapes.	1.03, 3.01, 7.01, 7.08
Analyze, compare, sort, and compose shapes.		
NY-K.G.4	Analyze, compare, and sort two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts, and other attributes.	1.02, 1.05, 3.02, 3.03, 3.04, 3.05, 3.06, 3.07, 3.09, 3.10, 3.11, 3.14, 3.16, 7.02, 7.05, 7.06, 7.07, 7.09, 7.10
NY-K.G.5	Model objects in their environment by building and/or drawing shapes.	1.03, 1.05, 3.08, 3.09, 3.10, 3.11, 3.16, 7.01, 7.02, 7.06, 7.07, 7.15
NY-K.G.6	Compose larger shapes from simple shapes.	1.02, 1.03, 1.05, 1.13, 1.14, 3.12, 3.13, 3.14, 3.15, 3.16, 7.08, 7.09, 7.10, 7.12

The Standards for Mathematical Practice, Kindergarten

The following shows sample citations of the alignment between Amplify Desmos Math, Kindergarten and the Standards for Mathematical Practice. Each Standard for Mathematical Practice is addressed throughout the grade.

MP1 Make sense of problems and persevere in solving them.	Lesson(s)
Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.	2.01, 3.01, 4.01, 4.12, 4.14, 5.01, 5.10, 6.01, 7.04
MP2 Reason abstractly and quantitatively.	
Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.	1.06, 1.12, 1.17, 2.02, 2.03, 2.12, 2.13, 2.14, 2.15, 2.16, 2.22, 3.06, 3.07, 3.11, 4.08, 4.09, 4.10, 4.12, 4.13, 4.15, 4.16, 4.17, 4.18, 4.20, 5.05, 5.06, 5.07, 5.08, 5.09, 5.10, 5.12, 6.01, 6.10, 7.10, 7.11, 7.12, 7.13, 7.14, 7.15
MP3 Construct viable arguments and critique the reasoning of others.	
Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.	1.14, 2.05, 2.13, 2.19, 2.20, 2.22, 3.03, 3.04, 3.05, 3.06, 3.12, 4.02, 4.16, 5.07, 5.09, 7.05, 7.06

MP4 Model with mathematics.	Lesson(s)
Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.	1.11, 1.18, 2.01, 3.11, 3.15, 3.16, 4.01, 4.08, 4.09, 4.10, 4.11, 4.12, 4.13, 4.14, 4.20, 5.07, 5.08, 7.02, 7.15
MP5 Use appropriate tools strategically.	
Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.	1.01, 1.02, 1.03, 1.04, 1.05, 1.09, 1.10, 1.16, 1.17, 1.18, 5.15, 6.02, 6.10, 7.04, 7.09, 7.11, 7.14
MP6 Attend to precision.	
Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.	1.06, 1.07, 1.13, 1.15, 1.16, 2.04, 2.06, 2.07, 2.17, 3.03, 3.04, 3.06, 3.08, 3.09, 3.10, 3.12, 3.15, 3.16, 4.02, 4.03, 4.04, 4.17, 4.18, 5.01, 5.02, 5.03, 6.02, 6.03, 6.06, 7.03, 7.05, 7.06, 7.08

MP7 Look for and make use of structure.	Lesson(s)
Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as *5 minus a positive number times a square* and use that to realize that its value cannot be more than 5 for any real numbers x and y.	1.07, 1.08, 1.09, 1.10, 1.11, 1.13, 1.14, 1.15, 2.02, 2.04, 2.05, 2.06, 2.08, 2.09, 2.10, 2.11, 2.13, 2.14, 2.15, 2.16, 2.17, 2.18, 2.19, 2.20, 2.21, 3.01, 3.02, 3.03, 3.04, 3.05, 3.06, 3.07, 3.08, 3.09, 3.12, 3.13, 3.14, 3.15, 4.02, 4.03, 4.05, 4.06, 4.07, 4.15, 4.16, 4.19, 4.20, 5.02, 5.04, 5.05, 5.07, 5.08, 5.11, 5.12, 5.13, 5.14, 5.15, 6.01, 6.04, 6.05, 6.06, 6.07, 6.08, 6.09, 6.11, 7.01, 7.02, 7.07
MP8 Look for and express regularity in repeated reasoning.	
Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.	1.12, 2.02, 2.03, 2.05, 2.07, 2.10, 2.11, 2.18, 4.04, 4.05, 4.06, 4.07, 4.11, 4.19, 5.08, 5.11, 5.13, 5.14, 6.03, 6.07, 6.08, 6.09, 6.10, 6.11

Unit 1 Math in Our World

Sub-Unit 1 Exploring Math Tools

1.01	Connecting Cubes | Exploring Math Tools	Building Toward NY-K.CC.4 NY-K.G.6, NY-K.MD.1, NY-K.MD.2, NY-K.MD.3, MP5
1.02	Pattern Blocks | Exploring Math Tools	Building Toward NY-K.CC.1, NY-K.G.4, NY-K.G.6, NY-K.G.1, MP5
1.03	Solid Shapes | Exploring Math Tools	Building Toward NY-K.G.4, NY-K.G.5, NY-K.G.6, NY-K.G.1, NY-K.G.2, NY-K.G.3, MP5
1.04	Counters and 5-Frames | Exploring Math Tools	Building Toward NY-K.CC.1, NY-K.CC.4, NY-K.CC.5a, MP5
1.05	Math Tools | Exploring Math Tools	Building Toward NY-K.CC.4, NY-K.G.4, NY-K.G.5, NY-K.G.6, MP5
	Sub-Unit Quiz	Building Toward NY-K.CC.4, NY-K.CC.5a

Sub-Unit 2 Recognizing Quantities

1.06	Skye's Style | Recognizing Small Groups	NY-K.CC.4, MP2, MP6
1.07	Matching Groups | Different Groups, Same Quantity	NY-K.CC.4, NY-K.CC.6, MP6, MP7
1.08	Packing Up School Supplies | Subitizing Small Groups	NY-K.CC.4, NY-K.CC.6, MP2, MP6
1.09	Skye Goes Shopping | Subitizing and Representing Small Groups	NY-K.CC.4, MP5, MP7
1.10	Designing Shoes With Skye | Representing Groups With the Same Quantity	NY-K.CC.4, MP5, MP7
1.11	Are There Enough? | Comparing Quantities	NY-K.CC.4, NY-K.CC.6, MP4, MP7
1.12	Getting Enough | Using One-to-One Matching to Create Groups With Enough Objects	NY-K.CC.4, NY-K.CC.6, MP2, MP8
	Sub-Unit Quiz	NY-K.CC.6, MP7

Sub-Unit 3 Figuring Out How Many

1.13	Sara Helps Out | Using One-to-One Correspondence to Determine a Quantity	NY-K.CC.4, NY-K.CC.4a, NY-K.CC.5a, NY-K.CC.5b, NY-K.G.6, MP6, MP7
1.14	Counting in the Cafeteria | Developing an Understanding of Cardinality and Conservation	NY-K.CC.1, NY-K.CC.4, NY-K.CC.4b, NY-K.CC.5a, NY-K.G.6, MP3, MP7
1.15	Charlie Helps Coach Kelley | Using Strategies to Keep Track When Counting	NY-K.CC.1, NY-K.CC.4a, NY-K.CC.5a, MP6, MP7
1.16	Ms. Khan's Book Baggies | Using Math Tools to Keep Track When Counting	NY-K.CC.4a, NY-K.CC.5a, MP5, MP6
1.17	Principal Mack's Problem | Different Ways to Represent Quantity	NY-K.CC.4, NY-K.CC.5a, MP2, MP5
1.18	Sharing More About You | Asking and Answering "How many?" Questions	NY-K.CC.4, NY-K.CC.5a, MP4, MP5
	End-of-Unit Interview Checklist	NY-K.CC.1, NY-K.CC.4, NY-K.CC.5, MP7, MP8

Unit 2 Numbers 1-10

Sub-Unit 1 Counting and Comparing Objects

2.01	Investigate | Cafeteria Math	**Building Toward NY-K.CC.5a,** MP1, MP4
2.02	Fingers as Math Tools | Representing Numbers With Fingers	**NY-K.CC.1, NY-K.CC.3, NY-K.CC.4,** MP2, MP7, MP8
2.03	Moving and Grooving | Counting the Same Group of Objects in Different Arrangements	**NY-K.CC.4, NY-K.CC.4b, NY-K.CC.5a,** MP2, MP8
2.04	More, Fewer, or the Same | Comparing Quantities in 2 Groups	**NY-K.CC.4, NY-K.CC.5a, NY-K.CC.6,** MP6, MP7
2.05	Fingers and Counters | Making Groups With More, Fewer, or the Same Number of Objects	**NY-K.CC.4, NY-K.CC.5a, NY-K.CC.6,** MP3, MP7, MP8
2.06	Comparing Words | Producing Comparison Statements About 2 Groups of Objects	**NY-K.CC.5a, NY-K.CC.6,** MP6, MP7
	Sub-Unit Quiz	**NY-K.CC.4, NY-K.CC.5a, NY-K.CC.6,** MP6, MP7

Sub-Unit 2 Counting and Comparing Images

2.07	Seats at the Table | Counting and Keeping Track of Images	**NY-K.CC.4b, NY-K.CC.5a,** MP6, MP8
2.08	Preparing the Tables | Matching One-to-One to Compare Groups of Images	**NY-K.CC.5a, NY-K.CC.6,** MP7
2.09	Fingers and 5-Frames | Comparing Groups of Images	**NY-K.CC.4, NY-K.CC.5a, NY-K.CC.6,** MP7
2.10	Forest Friends | Determining Which Group Has More or Fewer Images	**NY-K.CC.5a, NY-K.CC.6,** MP7, MP8
2.11	Drawing Groups | Drawing Groups With More, Fewer, or the Same Number of Images	**NY-K.CC.5a, NY-K.CC.6,** MP7, MP8
	Sub-Unit Quiz	**NY-K.CC.5a, NY-K.CC.6,** MP6, MP7

Sub-Unit 3 Connecting Quantities and Numbers

2.12	Which Number Is It? | Using Written Numerals to Tell How Many Objects	**NY-K.CC.3, NY-K.CC.5a,** MP2
2.13	That Number Looks Different | Using Written Numerals to Tell How Many Images	**NY-K.CC.3, NY-K.CC.4, NY-K.CC.4b, NY-K.CC.5a,** MP2, MP3, MP7
2.14	Showing Numbers | Representing Written Numerals With Groups of Objects	**NY-K.CC.4b, NY-K.CC.5b, NY-K.OA.1,** MP2, MP7
2.15	Drawing Numbers | Representing Written Numerals With Groups of Images	**NY-K.CC.3, NY-K.CC.4b, NY-K.CC.5b, Building Toward NY-K.CC.7,** MP2, MP7
2.16	How Many? | Showing Quantities in Different Ways	**NY-K.CC.3, NY-K.CC.4b, NY-K.CC.5a, NY-K.CC.5b,** MP2, MP7
	Sub-Unit Quiz	**NY-K.CC.3, NY-K.CC.4, NY-K.CC.4b, NY-K.CC.5a, NY-K.CC.5b,** MP2, MP7

Sub-Unit 4 Comparing Numbers

2.17	Cooking Tools | Arranging Groups and Numbers in Ascending or Descending Order	**NY-K.CC.4, NY-K.CC.5b, Building Toward NY-K.CC.4c,** MP6, MP7
2.18	What's Missing? | Finding 1 More and 1 Less Than a Given Number	**NY-K.CC.1, NY-K.CC.4c, NY-K.CC.6,** MP7, MP8
2.19	Numbers, Lots of Ways | Representing and Comparing Quantities	**NY-K.CC.3, NY-K.CC.5b, NY-K.CC.6, NY-K.CC.7,** MP3, MP7
2.20	Two Ways to Compare | Comparing Written Numerals and Groups of Images	**NY-K.CC.1, NY-K.CC.6, NY-K.CC.7,** MP3, MP7
2.21	More or Less | Comparing 2 Written Numerals	**NY-K.CC.4c, NY-K.CC.6, NY-K.CC.7,** MP7
2.22	Selling Smoothies | Writing and Comparing Numerals	**NY-K.CC.3, NY-K.CC.5a, NY-K.CC.5b, NY-K.CC.7,** MP2, MP3
2.23	Describing Order | Understanding Ordinal Numbers	**NY-K.CC.4d,** MP6
	End-of-Unit Assessment	**NY-K.CC.3, NY-K.CC.4, NY-K.CC.4c, NY-K.CC.5a, NY-K.CC.5b, NY-K.CC.6, NY-K.CC.7,** MP2, MP7. MP8

Unit 3 Flat Shapes All Around Us

Sub-Unit 1 Exploring Shapes in Our Community

3.01	Investigate | Shapes in Our Communities	**Building Toward NY-K.G.1, NY-K.G.2, NY-K.G.3,** MP1, MP3, MP7
3.02	What We Know About Shapes | Developing Language to Describe Shapes	**NY-K.G.4,** MP7
3.03	Which Shapes Match? | Matching Shapes of Different Sizes and Orientations	**NY-K.G.4,** MP7
3.04	Comparing Shapes | Describing and Comparing Shapes	**NY-K.G.4,** MP6, MP7
3.05	So Much Sorting | Sorting Images of Objects and Shapes	**NY-K.CC.1, NY-K.MD.3, NY-K.CC.4, NY-K.CC.4a, NY-K.CC.4b, NY-K.CC.4c, NY-K.G.4,** MP3, MP7
3.06	What's That Shape Called? | Identifying Circles and Triangles	**NY-K.G.2, NY-K.CC.5, NY-K.G.4, NY-K.MD.3,** MP3, MP6
3.07	Another Shape | Identifying Rectangles and Comparing Their Lengths	**NY-K.MD.3, NY-K.MD.1, NY-K.MD.2, NY-K.G.2, NY-K.G.4,** MP3, MP6
3.08	Building Shapes With Straws | Building Shapes and Comparing Side Lengths	**NY-K.CC.1, NY-K.G.2, NY-K.G.5, NY-K.MD.1, NY-K.MD.2, NY-K.MD.3,** MP6
3.09	Polytopia's Annual Kite Festival | Sorting Shapes Into Subcategories	**NY-K.G.2, NY-K.G.4, NY-K.G.5,** MP6
3.10	Points and Lines | Drawing Shapes and Describing Their Attributes	**NY-K.G.1, NY-K.G.2, NY-K.G.4, NY-K.G.5,** MP4
3.11	Shapes Are Everywhere | Describing and Naming Shapes in the Environment	**NY-K.G.1, NY-K.G.2, NY-K.G.4, NY-K.G.5,** MP7
	Sub-Unit Quiz	**NY-K.G.2, NY-K.G.4,** MP7

Sub-Unit 2 Putting Shapes Together

3.12	Putting Shapes Together | Composing Simple Shapes to Form Larger Shapes	**NY-K.CC.5, NY-K.CC.6, NY-K.CC.7, NY-K.G.2, NY-K.G.6,** MP7
3.13	Pieces of a Puzzle | Using Geometric Motions to Compose Shapes	**NY-K.CC.3, NY-K.CC.5, NY-K.G.2, NY-K.G.6,** MP1, MP3
3.14	Different Designs | Forming Larger Shapes in Different Ways	**NY-K.CC.3, NY-K.CC.5, NY-K.G.4, NY-K.G.6,** MP6
3.15	Thinking About Location | Using Positional Words to Describe the Location of Shapes	**NY-K.G.1, NY-K.G.6,** MP4
3.16	Quilts From Around the World | Exploring Shapes in Art	**NY-K.G.1, NY-K.G.2, NY-K.G.4, NY-K.G.5, NY-K.G.6,** MP4, MP6
3.17	Patterns | Duplicating, Extending, and Creating Patterns	**NY-K.OA.6,** MP3, MP7
	End-of-Unit Assessment	**NY-K.G.1, NY-K.G.2, NY-K.G.4, NY-K.MD.2,** MP4, MP6, MP7

Unit 4 Understanding Addition and Subtraction

Sub-Unit 1 Counting to Add and Subtract

4.01	Investigate | Casey's Town	**Building Toward NY-K.OA.2a, NY-K.OA.2b,** MP1, MP4
4.02	How Many Objects? | Counting to Determine the Total of 2 Groups of Objects	**NY-K.CC.5a, NY-K.CC.5b, NY-K.OA.1,** MP2, MP,7
4.03	How Many Objects in Pictures? | Counting to Determine the Total of 2 Groups of Images	**NY-K.CC.3, NY-K.CC.5a, NY-K.CC.5b, NY-K.OA.1, NY-K.OA.2,** MP7, MP8
4.04	How Will You Count? | Counting Organized and Scattered Groups of Objects and Images	**NY-K.CC.1, NY-K.CC.5a, NY-K.OA.1, NY-K.OA.2a, NY-K.OA.2b,** MP5, MP7
4.05	What Does It Mean to Add? | Representing Addition With Objects	**NY-K.CC.2, NY-K.CC.5a, NY-K.OA.1, NY-K.OA.2a,** MP7, MP8
4.06	What Does It Mean to Subtract? | Representing Subtraction With Objects	**NY-K.CC.5, NY-K.OA.1, NY-K.OA.2a, NY-K.OA.5,** MP6, MP7
4.07	The Bus Depot | Adding and Subtracting in the World	**NY-K.OA.1, NY-K.OA.2a, NY-K.OA.2b, NY-K.CC.5a,** MP2, MP4
	Sub-Unit Quiz	**NY-K.OA.1, NY-K.CC.5a,** MP6, MP7

Sub-Unit 2 Representing and Solving Story Problems

4.08	Math Stories | Representing Addition and Subtraction Math Stories	**NY-K.OA.1, NY-K.OA.2a, NY-K.OA.2b,** MP2, MP6, MP7
4.09	A Trip to the Grocery Store | Using Objects to Represent Math Stories	**NY-K.OA.1, NY-K.OA.2a, NY-K.OA.2b,** MP1, MP2
4.10	More Grocery Store Stories | Solving Story Problems	**NY-K.OA.1, NY-K.OA.2a, NY-K.OA.2b,** MP2, MP8
4.11	The Mail Carrier | Making Predictions About the Unknown Quantity in a Story Problem	**NY-K.OA.1, NY-K.OA.2b,** MP2, MP7
4.12	One Story, Two Drawings | Comparing the Organization of Story Problem Drawings	**NY-K.CC.3, NY-K.OA.1, NY-K.OA.2b,** MP2, MP5
4.13	Trash Day | Drawing to Show Story Problems and the Concept of Zero	**NY-K.CC.1, NY-K.CC.3, NY-K.OA.1, NY-K.OA.2b,** MP2, MP3
4.14	Our Story Problems | Creating and Solving Addition and Subtraction Story Problems	**NY-K.OA.1, NY-K.OA.2b,** MP2, MP7
	Sub-Unit Quiz	**NY-K.OA.2b,** MP2

Sub-Unit 3 Addition and Subtraction Expressions

4.15	Exploring Expressions? | Introducing Expressions	**NY-K.OA.1, NY-K.OA.2b,** MP2, MP3, MP7
4.16	Expressions and Story Problems | Using Expressions to Represent Story Problems	**NY-K.OA.1,** MP2, MP7
4.17	Expressions and Drawings | Connecting Expressions and Drawings	**NY-K.OA.1,** MP2, MP7
4.18	What Is the Value? | Finding the Values of Expressions	**NY-K.OA.1, NY-K.OA.2a, NY-K.OA.5, NY-K.CC.4c,** MP7, MP8
4.19	Will the Number Change? | Adding and Subtracting 0 and 1	**NY-K.OA.1,** MP2, MP4, MP7
4.20	Show and Tell | Telling Story Problems to Match Expressions	**NY-K.CC1, NY-K.CC.2, NY-K.OA.1, NY-K.OA.2a, NY-K.OA.2b,** MP2, MP6, MP7
	End-of-Unit Assessment	**NY-K.OA.1, NY-K.OA.2a, NY-K.OA.2b, NY-K.CC.5a,** MP2, MP6, MP7

Unit 5 Make and Break Apart Numbers Within 10

Sub-Unit 1 Making and Breaking Apart Numbers Within 9

5.01	Investigate | Mystery Number	NY-K.OA.3, MP1, MP6
5.02	Making and Breaking Apart Numbers | Composing and Decomposing Numbers	NY-K.OA.3, NY-K.OA.5, MP2, MP6, MP7
5.03	Snapping Cubes | Decomposing a Number	NY-K.OA.3, MP6
5.04	Equations and Drawings | Connecting Equations and Drawings	NY-K.OA.3, MP7, MP8
5.05	Find as Many as You Can | Looking for Patterns in Decompositions	NY-K.OA.3, MP2, MP7
	Sub-Unit Quiz	NY-K.OA.3, MP2, MP6, MP7

Sub-Unit 2 More Types of Story Problems

5.06	At the Playground | Making Sense of *Both Addends Unknown* Math Stories	NY-K.OA.1, NY-K.OA.3, MP2
5.07	In the Cafeteria | Solving *Both Addends Unknown* Story Problems	NY-K.OA.1, NY- K.OA.2a, NY-K.OA.2b, NY-K.OA.3, MP2, MP4, MP7
5.08	In the Library | Finding Multiple Solutions to *Both Addends Unknown* Story Problems	NY-K.OA.3, NY-K.OA.1. NY-K.OA.2a, NY-K.OA.2b, MP2, MP4, MP7
5.09	In the School Office | Solving *Put Together/Take Apart, Total Unknown* Story Problems	NY-K.OA.1, NY-K.OA.2a, NY-K.OA.2b, NY-K.OA.3, MP2, MP3, MP6
5.10	In the Teachers' Lounge | Solving Different Story Problems	NY-K.OA.1, NY- K.OA.2a, NY-K.OA.2b, NY-K.OA.3, MP1, MP2
	Sub-Unit Quiz	NY-K.OA.1, NY-K.OA.2a, NY-K.OA.2b, MP2

Sub-Unit 3 Making and Breaking Apart 10

5.11	Harry Is Home | Representing Numbers on a 10-Frame	NY-K.CC.5a, NY-K.CC.5b, NY-K.CC.4, MP7, MP8
5.12	Equations That Show 10 | Matching Equations to Different Representations of 10	NY-K.OA.1, NY-K.OA.3, MP2, MP7
5.13	Harry's Hamster Wheel | Finding Pairs That Make 10	NY-K.OA.3, NY-K.OA.4, MP7, MP8
5.14	Harry's Supplies | Relating Compositions and Decompositions of 10 to Equations	NY-K.OA.3, NY-K.OA.4, MP5, MP7, MP8
5.15	Showing What We Know About 10 | Decomposing 10 in More Than 1 Way	NY-K.OA.3, NY-K.OA.4, MP5, MP7
	End-of-Unit Assessment	NY-K.OA.1, NY-K.OA.2a, NY-K.OA.2b, NY-K.OA.3, NY-K.OA.4, MP2, MP6, MP7

Unit 6 Numbers 0-20

Sub-Unit 1 Counting Teen Numbers

Building Toward NY-K.NBT.1, MP1, MP2, MP7

6.01	Investigate | Packing Snacks	NY-K.CC.1, NY-K.CC.2, NY-K.CC.5a, MP5, MP6
6.02	Getting Ready for the Game | Counting Larger Groups of Objects	NY-K.CC.4b, NY-K.CC.5a, MP6, MP8
6.03	How Many on the Field? | Keeping Track of Rearranged Objects	NY-K.CC.5b, MP7
6.04	Jersey Numbers | Representing Teen Numbers on Fingers and 10-frames	NY-K.CC.5a, MP7
6.05	Written Numbers | Matching Fingers and 10-frames to Written Numbers	NY-K.CC.3, NY-K.CC.4a, NY-K.CC.4b, NY-K.CC.5a, MP6, MP7
6.06	People at the Park | Counting Larger Groups of Images	NY-K.CC.3, NY-K.CC.4a, NY-K.CC.4b, NY-K.CC.5a, MP6, MP7
	Sub-Unit Quiz	NY-K.CC.3, NY-K.CC.4a, NY-K.CC.4b, NY-K.CC.5a, NY-K.CC.5b, MP6, MP7

Sub-Unit 2 Ones and Some More

6.07	After the Game | Using the 10 + *n* Structure to Compose Teen Numbers	NY-K.CC.3, NY-K.CC.5a, NY-K.CC.5b, NY-K.NBT.1, MP7, MP8
6.08	Group Photos | Decomposing Teen Numbers Into 10 Ones and Some More Ones	NY-K.CC.5a, NY-K.NBT.1, MP7, MP8
6.09	Teen Numbers and Equations | Matching and Ordering Representations of Teen Numbers	NY-K.CC.1, NY-K.CC.2, NY-K.CC.3, NY-K.NBT.1, MP7, MP8
6.10	Making Equations True | Determining the Missing Parts or Total in Equations	NY-K.CC.3, NY-K.NBT.1, MP2, MP5, MP8
6.11	Organizing Jerseys | Ordering, Writing, and Matching Representations of Numbers 0–20	NY-K.CC.1, NY-K.CC.3, NY-K.NBT.1, MP7, MP8
6.12	Exploring Coins | Pennies, Nickels, Dimes, and Quarters	NY-K.MD.4, MP6
	End-of-Unit Assessment	NY-K.CC.3, NY-K.CC.5a, NY-K.CC.5b NY-K.NBT.1, MP6, MP7, MP8

Unit 7 Solid Shapes All Around Us

Sub-Unit 1 Exploring Solid Shapes

7.01	Flat and Solid Shapes | Creating and Comparing Shapes	NY-K.MD.3, NY-K.G.5, NY-K.G.3, MP7
7.02	Solid Shapes Around Us | Recognizing and Building Solid Shapes	NY-K.G.1, NY-K.G.2, NY-K.G.4, NY-K.G.5, MP4, MP7
7.03	Heavier or Lighter? | Comparing the Weights of Two Objects	NY-K.MD.1, NY-K.MD.2, MP6
7.04	Which Can Hold More? | Comparing the Capacities of Two Objects	NY-K.MD.1, NY-K.MD.2, MP1, MP5
7.05	How Are They Alike and Different? | Comparing and Sorting Solid Shapes	NY-K.G.4, NY-K.MD.3, NY-K.OA.5, MP3, MP6
7.06	What I Know About Shapes | Identifying Solid Shapes	NY-K.G.2, NY-K.G.4, NY-K.G.5, MP3, MP6
7.07	I Can Make Shapes | Creating and Describing Solid Shapes	NY-K.G.4, NY-K.G.5, NY-K.MD.2, MP7
7.08	Putting Shapes Together | Using Solid Shapes to Form Larger Shapes	NY-K.G.1, NY-K.G.2, NY-K.G.3, NY-K.G.6, NY-K.OA.5, MP6
	Sub-Unit Quiz	NY-K.G.2, NY-K.G.4, NY-K.MD.2, NY-K.MD.3, MP7, MP8

Sub-Unit 2 Adding and Subtracting With Shapes

7.09	The Tallest Tower | Building and Counting Solid Shapes	NY-K.CC.5a, NY-K.G.4, NY-K.G.6, NY-K.OA.5, MP5
7.10	More, Fewer, or the Same? | Comparing Shape Quantities	NY-K.CC.1, NY-K.CC.6, NY-K.G.4, NY-K.G.6, MP2
7.11	That Makes 10 | Composing 10 in Different Ways	NY-K.OA.2a, NY-K.OA.2b, NY-K.OA.3, NY-K.OA.4, MP2, MP5
7.12	Make a Match | Matching Equations to Composite Shapes	NY-K.G.6, NY-K.OA.1, MP2
7.13	Story Problems About Shapes | Solving Problems and Identifying Matching Equations	NY-K.OA.1, NY-K.OA.2a, NY-K.OA.2b, MP2
7.14	Subtracting Shapes | Telling and Solving Subtraction Problems	NY-K.OA.1, NY-K.OA.2a, NY-K.OA.2b, NY-K.OA.3, MP2, MP5
7.15	Shape Robots | Telling and Solving Story Problems About Robots	NY-K.G.5, NY-K.OA.1, NY-K.OA.2a, NY-K.G.2b, MP2, MP4
	End-of-Unit Assessment	NY-K.CC.4, NY-K.G.1, NY-K.G.3, NY-K.G.4, NY-K.MD.2, NY-K.OA.2a, NY-K.OA.2b, MP1, MP6, MP7

New York State Next Generation Mathematics Learning Standards, Correlated to Amplify Desmos Math, Grade 1

The following shows the alignment of Amplify Desmos Math to the New York State Next Generation Mathematics Learning Standards for Grade 1.

NY-1.OA	Operations and Algebraic Thinking	Lesson(s)
Represent and solve problems involving addition and subtraction.		
NY-1.OA.1	Use addition and subtraction within 20 to solve one step word problems involving situations of adding to, taking from, putting together, taking apart, and/or comparing, with unknowns in all positions.	1.06, 1.08, 1.10, 2.02, 2.03, 2.04, 2.05, 2.06, 2.07, 2.08, 2.09, 2.10, 2.11, 2.12, 2.13, 2.14, 2.15, 2.16, 2.17, 2.18, 2.19, 2.20, 3.06, 3.07, 3.08, 3.09, 3.12, 3.14, 3.17, 3.18, 3.19, 3.20, 6.11, 6.12, 6.14, 6.15
NY-1.OA.2	Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20.	3.10, 3.15, 3.20, 6.10
Understand and apply properties of operations and the relationship between addition and subtraction.		
NY-1.OA.3	Apply properties of operations as strategies to add and subtract.	2.07, 3.10, 3.11, 3.12, 3.13, 3.14, 3.15, 3.17
NY-1.OA.4	Understand subtraction as an unknown-addend problem within 20.	2.09, 2.11, 2.15, 2.19, 3.04, 3.17, 3.18, 3.19, 3.20, 6.10, 6.11, 6.13
Add and subtract within 20.		
NY-1.OA.5	Relate counting to addition and subtraction.	1.05, 1.07, 1.08, 1.11, 1.12, 1.13, 1.15, 2.05, 3.17, 4.04
NY-1.OA.6a	Add and subtract within 20. Use strategies such as: • counting on; • making ten; • decomposing a number leading to a ten; • using the relationship between addition and subtraction; and • creating equivalent but easier or known sums.	1.07, 1.08, 1.09, 1.10, 1.11, 1.12, 1.15, 2.02, 2.03, 2.04, 2.05, 2.06, 2.08, 2.10, 2.11, 2.14, 2.15, 2.16, 2.17, 2.18, 2.19, 3.01, 3.02, 3.03, 3.04, 3.06, 3.07, 3.08, 3.09, 3.10, 3.11, 3.12, 3.13, 3.14, 3.15, 3.17, 3.18, 3.19, 3.20, 4.13, 4.22, 5.07, 6.11, 6.12, 6.14
NY-1.OA.6b	Fluently add and subtract within 10.	2.02, 2.07, 2.10
Work with addition and subtraction equations.		
NY-1.OA.7	Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false.	1.09, 1.14, 2.02, 2.04, 2.06, 2.11, 2.15, 3.03, 3.08, 3.13, 4.06, 6.13, 6.15
NY-1.OA.8	Determine the unknown whole number in an addition or subtraction equation with the unknown in all positions.	3.04, 3.06, 3.07, 3.08, 3.09, 3.16, 3.17, 3.20, 5.02, 5.11, 6.14

NY-1.NBT	Number and Operations in Base Ten	Lesson(s)
Extend the counting sequence.		
NY-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.	1.06, 2.13, 2.18, 3.09, 4.02, 4.03, 4.07, 4.08, 4.09, 4.10, 4.11, 4.13, 4.14, 4.15, 4.16, 4.17, 4.18, 4.19, 4.21, 4.22, 5.03, 5.12, 6.07, 6.08, 6.09
Understand place value.		
NY-1.NBT.2	Understand that the two digits of a two-digit number represent amounts of tens and ones.	4.08, 4.09, 4.10, 4.11, 4.12, 4.13, 4.14, 4.20, 4.21
NY-1.NBT.2a	Understand 10 can be thought of as a bundle of ten ones, called a "ten".	3.05, 3.06, 3.07
NY-1.NBT.2b	Understand the numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.	3.05, 3.06, 3.07
NY-1.NBT.2c	Understand 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).	4.03, 4.04, 4.05, 4.06, 4.07
NY-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 <.	4.14, 4.15, 4.16, 4.17, 4.18, 4.19, 4.22, 7.07
Use place value understanding and properties of operations to add and subtract.		
NY-1.NBT.4	Add within 100, including • a two-digit number and a one-digit number, • a two-digit number and a multiple of 10. Use concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones, and sometimes it is necessary to compose a ten. Relate the strategy to a written representation and explain the reasoning used.	4.04, 4.05, 4.06, 4.12, 4.18, 5.02, 5.03, 5.04, 5.05, 5.06, 5.07, 5.08, 5.09, 5.10, 5.11, 5.12, 5.13, 5.14, 6.03
NY-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.	4.13, 4.15, 4.16
NY-1.NBT.6	Subtract multiples of 10 from multiples of 10 in the range 10-90 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 used to a written representation and explain the reasoning.	4.04, 4.05, 4.06

NY-1.MD	Measurement and Data	Lesson(s)
Measure lengths indirectly and by iterating length units.		
NY-1.MD.1	Order three objects by length; compare the lengths of two objects indirectly by using a third object.	6.02, 6.03
NY-1.MD.2	Measure the length of an object using same-size “length units” placed end to end with no gaps or overlaps. Express the length of an object as a whole number of “length units.”	6.04, 6.05, 6.06, 6.07, 6.08, 6.09, 6.10

Tell and write time and money.		
NY-1.MD.3a	Tell and write time in hours and half-hours using analog and digital clocks.	7.12, 7.13, 7.14, 7.15, 7.16
NY-1.MD.3b	Recognize and identify coins (penny, nickel, dime, and quarter) and their value and use the cent symbol (¢) appropriately.	5.15, 5.16
NY-1.MD.3c	Count a mixed collection of dimes and pennies and determine the cent value (total not to exceed 100 cents).	5.15, 5.16
Represent and interpret data.		
NY-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.	1.02, 1.03, 1.04, 1.13, 1.14, 1.15, 2.15, 2.16, 5.14, 6.10, 6.15
NY-1.G	**Geometry**	**Lesson(s)**
Reason with shapes and their attributes.		
NY-1.G.1	Distinguish between defining attributes versus non-defining attributes for a wide variety of shapes. Build and/or draw shapes to possess defining attributes.	7.03, 7.04, 7.05, 7.06
NY-1.G.2	Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or 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	7.02, 7.07
NY-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 of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.	7.08, 7.09, 7.10, 7.11

The Standards for Mathematical Practice, Grade 1

The following shows sample citations of the alignment between Amplify Desmos Math, Grade 1 and the Standards for Mathematical Practice. Each Standard for Mathematical Practice is addressed throughout the grade.

MP1 Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

1.01, 2.01, 2.04, 2.08, 2.12, 2.20, 3.01, 3.10, 3.20, 4.01, 5.01, 6.01, 6.03

MP2 Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

1.05, 1.06, 1.10, 1.13, 1.14, 1.15, 2.01, 2.05, 2.07, 2.08, 2.09, 2.10, 2.13, 2.14, 2.15, 2.16, 2.17, 2.18, 2.19, 2.20, 3.07, 3.14, 3.17, 3.18, 4.03, 4.09, 4.10, 4.21, 5.01, 5.02, 5.03, 5.05, 5.14, 6.05, 6.10, 6.11, 6.12, 6.13, 6.14, 6.15

MP3 Construct viable arguments and critique the reasoning of others.

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

1.03, 1.14, 1.15, 2.02, 2.04, 2.06, 2.07, 2.09, 2.11, 2.15, 2.16, 3.02, 3.03, 3.05, 3.08, 3.20, 4.03, 4.06, 4.08, 4.09, 4.10, 4.15, 4.16, 4.17, 4.18, 4.19, 4.20, 4.21, 5.02, 5.14, 5.15, 5.16, 6.05, 6.12, 6.13, 6.15, 7.03, 7.04, 7.05, 7.06, 7.11

MP4 Model with mathematics.

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.	1.02, 1.04, 1.05, 1.06, 1.10, 1.13, 1.14, 2.01, 2.03, 2.13, 2.16, 2.18, 2.19, 3.19, 4.12, 4.17, 5.04, 5.10, 6.14

MP5 Use appropriate tools strategically.

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.	1.02, 1.08, 5.06, 5.07, 6.08, 6.12, 7.05

MP6 Attend to precision.

Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.	1.01, 1.03, 1.04, 2.10, 3.05, 3.14, 3.20, 4.09, 4.11, 4.14, 4.16, 4.17, 4.18, 4.19, 4.20, 5.03, 5.04, 5.09, 5.11, 5.13, 5.14, 5.15, 6.01, 6.02, 6.03, 6.04, 6.05, 6.06, 6.07, 6.08, 6.09, 6.15, 7.01, 7.02, 7.03, 7.04, 7.06, 7.09, 7.10, 7.12, 7.13, 7.14, 7.15, 7.16

MP7 Look for and make use of structure.

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well-remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.

1.01, 1.05, 1.06, 1.07, 1.08, 1.09, 1.10, 1.11, 1.12, 1.14, 1.15, 2.02, 2.03, 2.04, 2.05, 2.06, 2.07, 2.08, 2.09, 2.10, 2.11, 2.13, 2.14, 2.15, 2.16, 2.17, 2.18, 2.19, 3.01, 3.02, 3.03, 3.04, 3.05, 3.06, 3.07, 3.08, 3.09, 3.10, 3.11, 3.12, 3.13, 3.14, 3.15, 3.16, 3.17, 3.18, 3.19, 3.20, 4.01, 4.02, 4.03, 4.04, 4.05, 4.06, 4.07, 4.08, 4.09, 4.10, 4.11, 4.12, 4.13, 4.14, 4.15, 4.16, 4.17, 4.18, 4.19, 4.20, 4.21, 4.22, 5.01, 5.02, 5.03, 5.04, 5.05, 5.06, 5.07, 5.08, 5.09, 5.10, 5.11, 5.12, 5.13, 5.16, 6.03, 6.06, 6.07, 6.08, 6.09, 6.10, 6.11, 6.12, 6.13, 6.14, 6.15, 7.01, 7.02, 7.05, 7.08, 7.09, 7.12, 7.13, 7.14, 7.15, 7.16

MP8 Look for and express regularity in repeated reasoning.

Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

1.07, 1.08, 1.10, 1.11, 1.12, 2.03, 2.09, 2.10, 2.11, 2.17, 3.01, 3.02, 3.04, 3.06, 3.07, 3.08, 3.09, 3.11, 3.13, 3.14, 3.15, 3.16, 3.18, 3.19, 4.01, 4.03, 4.04, 4.05, 4.06, 4.07, 4.10, 4.11, 4.12, 4.13, 4.14, 4.15, 4.16, 4.18, 4.20, 4.21, 4.22, 5.01, 5.02, 5.04, 5.07, 5.08, 5.09, 5.13, 6.03, 6.09, 6.11, 6.14, 7.07, 7.08, 7.11

Unit 1 Adding, Subtracting, and Working With Data

	Pre-Unit Check	NY-K.CC.3, NY-K.CC.5a
	Sub-Unit 1 Showing Your Data	
1.01	Investigate | Our Math Tools	**Building Toward NY-1.MD.4,** MP1, MP6, MP7
1.02	Shapes Ying Saw | Sorting and Representing Shapes	**NY-1.MD.4,** MP4, MP5
1.03	What Is Your Favorite Sea Animal? | Representing and Organizing Data	**NY-1.MD.4,** MP3, MP6
1.04	Show Us Your Data | Comparing Data Representations	**NY-1.MD.4,** MP4, MP6
1.05	Aquarium Addition | Writing Addition Expressions to Represent the Total Amount in 2 Groups	**NY-1.OA.5,** MP2, MP4
	Sub-Unit Quiz	**NY-1.MD.4,** MP2, MP4
	Sub-Unit 2 Adding and Subtracting Within 10	
1.06	At the Aquarium | Matching Addition Story Problems and Expressions	**NY-1.OA.1, NY-1.NBT.1,** MP2, MP4
1.07	What's the Sum? | Adding 1	**NY-1.OA.5, NY-1.OA.6a, NY-1.OA.6b,** MP7
1.08	Buying Antiques | Adding 1 and 2	**NY-1.OA.5, NY-1.OA.1, NY-1.OA.6a, NY-1.OA.6b,** MP7, MP8
1.09	Ying and Zora's Map | Finding Equal Values	**NY-1.OA.7, NY-1.OA.6a,** MP3, MP7
1.10	Packing for a Picnic | Matching Subtraction Story Problems and Expressions	**NY-1.OA.1, NY-1.OA.6a, NY-1.OA.6b,** MP2, MP4
1.11	What's the Difference? | Subtracting 1	**NY-1.OA.5, NY-1.OA.6a,** MP7
1.12	Leaping Lily Pads! | Relating Counting to Adding and Subtracting	**NY-1.OA.5, NY-1.OA.6a,** MP5, MP7, MP8
	Sub-Unit Quiz	**NY-1.OA.5, NY-1.OA.6a, NY-1.OA.6b,** MP8
	Sub-Unit 3 What Does the Data Tell Us?	
1.13	Data About the Fair | Interpreting and Representing Data as Addition Equations	**NY-1.MD.4, NY-1.OA.5,** MP2, MP4
1.14	What Can We Say About the Data? | Analyzing and Writing Statements About Data Representations	**NY-1.MD.4, NY-1.OA.5, NY-1.OA.6b, NY-1.OA.7,** MP2, MP3, MP4
1.15	Can You Answer It? | Determining Whether Questions Can Be Answered Using the Given Data	**NY-1.OA.5, NY-1.OA.6b, NY-1.MD.4,** MP2, MP3
	End-of-Unit Assessment	**NY-1.OA.5, NY-1.OA.6a, NY-1.OA.6b, NY-1.OA.7, NY-1.MD.4,** MP2, MP4, MP7, MP8

Unit 2 Addition and Subtraction Story Problems

	Pre-Unit Check	**NY-1.OA.2,** MP2
Sub-Unit 1	Story Problems in Maui	
2.01	Investigate | Let's Grow!	**Building toward NY-1.OA.1,** MP1 , MP2, MP4
2.02	Tutu's Garden in Maui | Representing *Add To and Take From, Result Unknown* Story Problems	**NY-1.OA.1, NY-1.OA.6a, NY-1.OA.6b, NY-1.OA.7,** MP3, MP7
2.03	The Kalo Plants | Solving Story Problems and Representing Them With Equations	**NY-1.OA.1, NY-1.OA.6a, NY-1.OA.6b, NY-1.OA.5, NY-1.OA.8,** MP4 , MP7, MP8
2.04	Replanting Huli | Representing and Solving *Add To, Change Unknown* Story Problems	**NY-1.OA.1, NY-1.OA.6b, NY-1.OA.7,** MP1 , MP3, MP7
2.05	A Community Working Together | Connecting Equations With Unknown Amounts to Add To Story Problems	**NY-1.OA.1, NY-1.OA.5, NY-1.OA.6a, NY-1.OA.6b,** MP2, MP7
2.06	Helping Others | Making Sense of Story Problems That Describe an Amount That Changes	**NY-1.OA.1, NY-1.OA.6a, NY-1.OA.6b, NY-1.OA.7,** MP3, MP7
	Sub-Unit Quiz	**NY-1.OA.1, NY-1.OA.6a, NY-1.OA.6b,** MP2
Sub-Unit 2	Story Problems in the Garden	
2.07	So Many Worms! | Representing and Solving *Put Together/Take Apart, Total Unknown* Story Problems	**NY-1.OA.1, NY-1.OA.3, NY-1.OA.6b,** MP2, MP3, MP7
2.08	What Should We Plant? | Comparing *One Addend Unknown* and *Total Unknown* Story Problems	**NY-1.OA.1, NY-1.OA.6a, NY-1.OA.6b,** MP1, MP2, MP7
2.09	Organizing Supplies | Adding or Subtracting to Find an Unknown Addend	**NY-1.OA.1, NY-1.OA.4,** MP2, MP3, MP7, MP8
2.10	Max's Muffins | Representing Story Problems So Others Can Understand	**NY-1.OA.1, NY-1.OA.6a, NY-1.OA.6b,** MP2, MP6, MP7, MP8
2.11	Which Seed Is Which? | Noticing Patterns in Equations for Story Problems With Both Addends Unknown	**NY-1.OA.1, NY-1.OA.4, NY-1.OA.6a, NY-1.OA.6b, NY-1.OA.7,** MP3, MP7, MP8
	Sub-Unit Quiz	**NY-1.OA.1, NY-1.OA.6a, NY-1.OA.6b,** MP2
Sub-Unit 3	Story Problems With Data	
2.12	Making Them Equal | Adding or Subtracting to Make 2 Amounts Equal	**NY-1.OA.1,** MP1
2.13	Gardening Supplies | Representing and Solving *Compare, Difference Unknown* Story Problems	**NY-1.OA.1, NY-1.NBT.1,** MP2, MP4, MP7
2.14	How Many More? How Many Fewer? | Interpreting Representations to Solve *Compare, Difference Unknown* Problems	**NY-1.OA.1, NY-1.OA.6a,** MP2, MP7
2.15	Different Amounts of Sunlight | Representing *Compare* Problems With Addition and Subtraction Equations	**NY-1.OA.1, NY-1.OA.4, NY-1.OA.6a, NY-1.OA.6b, NY-1.OA.7, NY-1.MD.4,** MP2, MP3, MP7
2.16	Ms. Perez's Survey Data | Interpreting Data and Solving Story Problems	**NY-1.OA.1, NY-1.OA.6a, NY-1.OA.6b, NY-1.MD.4,** MP2,MP3, MP4, MP7
	Sub-Unit Quiz	**NY-1.OA.1, NY-1.OA.6a, NY-1.OA.6b, NY-1.MD.4,** MP2
Sub-Unit 4	All Kinds of Story Problems	
2.17	Time to Harvest! | Making Sense of and Solving Different Types of Story Problems	**NY-1.OA.1, NY-1.OA.6a, NY-1.OA.6b,** MP2, MP7, MP8
2.18	Which Problem? | Representing and Solving Story Problems With Different Questions	**NY-1.OA.1, NY-1.OA.6a, NY-1.OA.6b, NY-1.NBT.1,** MP2, MP4, MP7
2.19	A Problem in the Garden | Representing and Solving Story Problems in Different Ways	**NY-1.OA.1, NY-1.OA.4, NY-1.OA.6a, NY-1.OA.6b,** MP2, MP4, MP7
2.20	Garden Visitors | Reflecting on Ways to Make Sense of Story Problems	**NY-1.OA.1,** MP1, MP2
	End-of-Unit Assessment	**NY-1.OA.1, NY-1.OA.6a, NY-1.OA.6b, NY1.OA.4, NY-1.MD.4,** MP2, MP4, MP7

Unit 3 Adding and Subtracting Within 20

	Pre-Unit Check	NY-1.OA.6a, MP7

Sub-Unit 1 Addition and Subtraction Within 10

3.01	Investigate | Singers at the Recital	NY-1.OA.6a, MP1, MP7, MP8
3.02	Patterns With Addition | Exploring Relationships Between Addends and Sums	NY-1.OA.6a, MP3, MP7, MP8
3.03	Patterns With Subtraction | Exploring Relationships Between Subtrahends and Differences	NY-1.OA.6a, NY-1.OA.7, MP3, MP7
3.04	Organizing Photos | Using Addition to Find Differences	NY-1.OA.1, NY-1.OA.4, NY-1.OA.6a, NY-1.OA.8, MP2, MP7, MP8
	Sub-Unit Quiz	NY-1.OA.6a, NY-1.OA.3, NY-1.OA.4, NY-1.OA.8, MP7, MP8

Sub-Unit 2 Exploring Teen Numbers

3.05	Same Number, Different Ways | Representing Teen Numbers in More Than One Way	NY-1.NBT.2a, NY-1.NBT.2b, MP3, MP6, MP7
3.06	Decorating the Scrapbook | Solving *Add To, Start Unknown* Story Problems	NY-1.OA.1, NY-1.OA.6a, NY-1.NBT.2a, NY-1.NBT.2b, MP2, MP7, MP8
3.07	Writing Equations With Teen Numbers | Representing Teen Numbers as Equations With 10 and Some Ones	NY-1.NBT.2b, NY-1.NBT.2a, NY-1.OA.6a, NY-1.OA.8, MP7, MP8
3.08	Harmonica Practice | Adding Ones to a Teen Number	NY-1.OA.6a, NY-1.OA.1, NY-1.OA.7, NY-1.OA.8, MP3, MP7, MP8
3.09	Earning Money | Subtracting Ones From a Teen Number	NY-1.OA.8, NY-1.OA.1, NY-1.OA.6a, NY-1.NBT.1, MP7, MP8
	Sub-Unit Quiz	NY-1.OA.6a, NY-1.OA.7, NY-1.OA.1, NY-1.NBT.2a, NY-1.NBT.2b, MP2, MP7, MP8

Sub-Unit 3 Addition Within 20

3.10	Family Photos | Solving Story Problems With Three Addends	NY-1.OA.2, NY-1.OA.3, NY-1.OA.6a, MP1, MP7
3.11	Do They Have the Same Value? | Making Ten to Match Two- and Three-Addend Expressions	NY-1.OA.3, NY-1.OA.6a, MP7, MP8
3.12	A Ten Can Help | Making Ten to Solve Story Problems Within 20	NY-1.OA.3, NY-1.OA.1, NY-1.OA.6a, MP2, MP7
3.13	Matching Expressions | Finding Expressions With the Same Value as 10 + *n* Expressions	NY-1.OA.3, NY-1.OA.6a, NY-1.OA.7, MP3, MP7, MP8
3.14	Imagining an Addend | Using Known Facts to Find Unknown Sums	NY-1.OA.3, NY-1.OA.1, NY-1.OA.6a, MP2, MP6, MP7, MP8
3.15	Ways to Add | Decomposing Addends in Different Ways to Add Within 20	NY-1.OA.3, NY-1.OA.6a, NY-1.OA.2, MP2, MP7, MP8
	Sub-Unit Quiz	NY-1.OA.6a, NY-1.OA.3, NY-1.OA.7, NY-1.OA.2, NY-1.OA.1, MP2, MP3, MP8

Sub-Unit 4 Subtraction Within 20

3.16	Kenny's Stickers | Subtracting Within 20	NY-1.OA.1, NY-1.OA.6a, MP4, MP7, MP8
3.17	Photos of Kenny | Choosing Strategies for Solving Story Problems	NY-1.OA.4, NY-1.OA.1, NY-1.OA.6a, MP2, MP7
3.18	What's the Same? | Introducing *Take From, Change Unknown* Story Problems	NY-1.OA.1, NY-1.OA.4, NY-1.OA.6a, MP4, MP7, MP8
3.19	Harmonica Songs | Connecting *Add To and Take From, Change Unknown* Story Problems	NY-1.OA.1, NY-1.OA.4, NY-1.OA.6a, MP2, MP3, MP6
	End-of-Unit Assessment	NY-1.OA.6a, NY-1.OA.4, NY-1.OA.1, MP2, MP7, MP8

Unit 4 Numbers to 99

	Pre-Unit Check	NY-1.NBT.2, MP7

Sub-Unit 1 Units of Ten

4.01	Investigate | Game Points	Building toward NY-1.NBT.1, MP1, MP7, MP8
4.02	Meeting Yara | Organizing and Counting Collections in Groups of 10	NY-1.NBT.1, MP7
4.03	It's a Match | Matching Different Representations of the Same Multiple of 10	NY-1.NBT.2c, NY-1.NBT.1, MP2, MP3, MP7, MP8
4.04	How Many Cubes? | Adding and Subtracting a Ten	NY-1.OA.5, NY-1.NBT.2c, NY-1.NBT.4, NY-1.NBT.6, MP7, MP8
4.05	Boris's Thimbles | Adding and Subtracting Multiples of 10	NY-1.NBT.4, NY-1.NBT.2c, NY-1.NBT.6, MP7, MP8
4.06	How Many Tens? | Adding and Subtracting Multiples of 10 and Representing Sums and Differences with Equations	NY-1.NBT.6, NY-1.NBT.2c, NY-1.NBT.4, NY-1.OA.7, MP3, MP7, MP8
	Sub-Unit Quiz	NY-1.NBT.2c, NY-1.NBT.4, NY-1.NBT.6, MP7

Sub-Unit 2 Tens and Ones

4.07	Meeting Prashant | Organizing and Counting a Collection in Tens and Remaining Ones	NY-1.NBT.1, NY-1.NBT.2c, MP7, MP8
4.08	Curioso Collections | Representing Two-Digit Numbers With Tens and Ones	NY-1.NBT.2, NY-1.NBT.1, MP3, MP7
4.09	Do They Show the Same Number? | Interpreting Representations of Two-Digit Numbers	NY-1.NBT.2, NY-1.NBT.1, MP2, MP3, MP6, MP7
4.10	Curioso Customers | Representing and Identifying Two-Digit Numbers	NY-1.NBT.1, NY-1.NBT.2, MP2, MP3, MP7, MP8
4.11	Connecting With Collectors | Writing Two-Digit Numbers to Match Different Base-Ten Representations	NY-1.NBT.1, NY-1.NBT.2, MP6, MP7, MP8
4.12	Steph's New Curioso Cards | Adding Multiples of 10 and Two-Digit Numbers	NY-1.NBT.4, NY-1.NBT.2, MP4, MP7, MP8
4.13	I See a Pattern | Finding 10 More and 10 Less Than a Two-Digit Number	NY-1.NBT.5, NY-1.NBT.1, NY-1.NBT.2, NY-1.OA.6a, MP7, MP8
	Sub-Unit Quiz	NY-1.NBT.1, NY-1.NBT.2, NY-1.NBT.4, NY-1.NBT.5, MP7, MP8

Sub-Unit 3 Comparing Numbers to 99

4.14	Steph's Growing Collection | Comparing Two-Digit Numbers Using Greater Than and Less Than	NY-1.NBT.3, NY-1.NBT.1, NY-1.NBT.2, MP6, MP7, MP8
4.15	Greater Than, Less Than | Making Conjectures About Comparing Two-Digit Numbers	NY-1.NBT.3, NY-1.NBT.1, NY-1.NBT.5, MP3, MP7, MP8
4.16	Mystery Symbols | Exploring Comparison Symbols	NY-1.NBT.3, NY-1.NBT.1, NY-1.NBT.5, MP3, MP6, MP7, MP8
4.17	Floating Islands | Using Comparison Symbols to Make True Statements	NY-1.NBT.1, NY-1.NBT.3, MP3, MP4, MP6, MP7
4.18	Steph's Friends | Writing 2 Different Comparison Statements About the Same Numbers	NY-1.NBT.3, NY-1.NBT.1, NY-1.NBT.4, MP3, MP6, MP7, MP8
4.19	A Trip to the Flea Market | Comparing and Ordering One- and Two-Digit Numbers	NY-1.NBT.3, NY-1.NBT.1, MP3, MP6, MP7
	Sub-Unit Quiz	NY-1.NBT.3 MP6, MP7

Sub-Unit 4 Different Ways to Make a Number

4.20	Kat's Football Cards | Representing Two-Digit Numbers With Different Amounts of Tens and Ones	NY-1.NBT.2, MP3, MP6, MP7, MP8
4.21	Collectors Everywhere! | Interpreting Different Representations of the Same Two-Digit Number	NY-1.NBT.2, NY-1.NBT.1, MP2, MP3, MP7, MP8
4.22	Collection Showcase! | Comparing Two-Digit Numbers Represented in Different Ways	NY-1.NBT.3, NY-1.OA.6a, NY-1.NBT.1, MP7, MP8
	End-of-Unit Assessment	NY-1.NBT.1, NY-1.NBT.2, NY-1.NBT.3, NY-1.NBT.4, NY-1.NBT.5, NY-1.NBT.6, MP4, MP6, MP7, MP8

Unit 5 Adding Within 100

	Pre-Unit Check	**NY-1.OA.6a NY-1.NBT.4 NY-1.NBT.5 ,** MP7, MP8

Sub-Unit 1 Adding Without Making a Ten

5.01	Investigate | Squashes at the Playground	**Building toward NY-1.NBT.4,** MP1, MP2, MP8
5.02	Gathering Buckets | Adding an Amount of Tens or Ones to a Two-Digit Number	**NY-1.OA.8, NY-1.NBT.4,** MP2, MP6, MP7
5.03	Town Helpers | Adding 2 Two-Digit Numbers Without Composing a Ten	**NY-1.NBT.1, NY-1.NBT.4,** MP2, MP6, MP7
5.04	Making Squash Butter | Using Equations and Drawings to Represent Strategies for Finding Sums	**NY-1.NBT.4,** MP4, MP6, MP7, MP8
	Sub-Unit Quiz	**NY-1.NBT.4, NY-1.OA.8,** MP7

Sub-Unit 2 Making a Ten: Adding One- and Two-digit Numbers

5.05	Appreciating the Helpers | Composing a Ten When Adding	**NY-1.NBT.4,** MP2, MP7
5.06	Exploring a New Math Tool | Using a Tens and Ones Mat to Compose a Ten When Adding	**NY-1.NBT.4,** MP5, MP7
5.07	Using What You Know | Decomposing an Addend to Make a Ten	**NY-1.OA.6a, NY-1.NBT.4,** MP5, MP7, MP8
5.08	Special Deliveries | Recognizing if a Ten Will Be Composed Before Adding	**NY-1.NBT.4,** MP7, MP8
	Sub-Unit Quiz	**NY-1.NBT.4, NY-1.OA.8,** MP7

Sub-Unit 3 Making a Ten: Adding Within 100

5.09	Decorating for the Festival | Composing a Ten When Adding 2 Two-Digit Numbers	**NY-1.NBT.4,** MP6, MP7, MP8
5.10	Sending Invitations | Thinking About the Tens in Sums When Adding 2 Two-Digit Numbers	**NY-1.NBT.4,** MP4, MP7
5.11	Thinking About the Sum | Identifying the Amount of Tens in Sums Before Solving	**NY-1.OA.8, NY-1.NBT.4,** MP6, MP7
5.12	Last Minute Preparations | Decomposing Addends to Add by Place and Make a Ten	**NY-1.NBT.1, NY-1.NBT.4,** MP7, MP8
5.13	Wazzle-Squash Festival | Using Compensation to Add Within 100	**NY-1.NBT.4,** MP6, MP7, MP8
5.14	Wazzle-Squash Data | Using Addition Within 100 to Interpret Data	**NY-1.NBT.4, NY-1.MD.4,** MP2, MP3, MP6
5.15	Money, Money | Finding the Value of a Collection of Coins	**NY-1.MD.3b,** MP3, MP6
5.16	Dimes and Pennies | Recognizing and Identifying Coins and Their Value	**NY-1.MD.3b,** MP3, MP7
	End-of-Unit Assessment	**NY-1.NBT.4, NY-1.MD.4, NY-1.OA.8, NY-1.MD.3b,** MP7

Unit 6 Measuring Lengths of Up to 120 Length Units

Pre-Unit Check	**NY-K.MD.1,** MP6

Sub-Unit 1 From Comparing to Measuring Length

6.01 Investigate | Sean's Block Tower	**Building Toward NY-1.MD.1,** MP1, MP6
6.02 Arts and Crafts | Comparing the Lengths of Objects Directly and Indirectly	**NY-1.MD.1,** MP6
6.03 A Very Muddy Competition | Using a Third Object to Indirectly Compare the Lengths of Two Objects	**NY-1.NBT.4, NY-1.MD.1,** MP1, MP6, MP7, MP8
6.04 Library Books | Measuring Length With Nonstandard Length Units	**NY-1.MD.2,** MP6
6.05 Packing a Picnic | Measuring Length Without Gaps or Overlaps Using Nonstandard Units	**NY-1.MD.2,** MP2, MP3, MP6
6.06 Off to the Bird Sanctuary! | Measuring the Same Object With Different Non Standard Length Units	**NY-1.MD.2,** MP6, MP7
Sub-Unit Quiz	**NY-1.MD.1, NY-1.MD.2,** MP6

Sub-Unit 2 Measuring Lengths Up to 120 Length Units

6.07 From Wing Tip to Wing Tip | Measuring Lengths Up to 120 Length Units	**NY-1.NBT.1, NY-1.MD.2,** MP6, MP7
6.08 Measuring More Wingspans | Using Tens Rods to Measure Lengths Up to 120 Length Units	**NY-1.NBT.1, NY-1.MD.2,** MP5, MP6, MP7
6.09 From Head to Claw | Writing and Interpreting Lengths Between 100 and 120 Length Units	**NY-1.NBT.1, NY-1.MD.2,** MP6, MP7, MP8
Sub-Unit Quiz	**NY-1.NBT.1, NY-1.MD.2,** MP6, MP7

Sub-Unit 3 All Kinds of Story Problems

6.10 A Bird-friendly Backyard | Using Addition and Subtraction to Solve Story Problems About Lengths	**NY-1.OA.4, NY-1.OA.2, NY-1.MD.2, NY-1.MD.4,** MP2, MP7
6.11 Fascinated With Footprints | Solving *Compare* Story Problems With Unknowns in All Positions	**NY-1.OA.1, NY-1.OA.4, NY-1.OA.6a,** MP2, MP7, MP8
6.12 Sharing Is Fun | Solving *Take From* Story Problems With Unknowns in All Positions	**NY-1.OA.1, NY-1.OA.6a,** MP2, MP3, MP5, MP7
6.13 Addition or Subtraction? | Identifying 2 Equations That Represent the Same Story Problem	**NY-1.OA.4, NY-1.OA.7,** MP2, MP3, MP7
6.14 All Types of Problems | Finding Unknown Amounts in All Positions	**NY-1.OA.1, NY-1.OA.6a, NY-1.OA.8,** MP2, MP4, MP7, MP8
6.15 Keeping Score | Representing and Solving Story Problems About Data	**NY-1.OA.1, NY-1.MD.4, NY-1.OA.7,** MP2, MP3, MP6, MP7
End-of-Unit Assessment	**NY-1.MD.1, NY-1.MD.2, NY-1.MD.4, NY-1.OA.1, NY-1.OA.2, NY-1.OA.4, NY-1.OA.8, NY-1.OA.6a, NY-1.OA.6b, NY-1.NBT.1,** MP2, MP3, MP6, MP7

Unit 7 Geometry and Time

	Pre-Unit Check	**NY-K.G.1, NY-K.G.2,** MP6, MP7
	Sub-Unit 1 Flat and Solid Shapes	
7.01	Investigate | Solid Shape Hunt	**Building Toward NY-1.G.1,** MP6, MP7
7.02	Building With Nonna and Pia | Composing Three-Dimensional Shapes	**NY-1.G.2,** MP6, MP7
7.03	What Shapes Go With The Spotlight Shape? | Sorting Two-Dimensional Shapes by Their Attributes	**NY-1.G.1,** MP3, MP6
7.04	Drawing Flat Shapes | Drawing and Describing the attributes of Rectangles and Triangles	**NY-1.G.1,** MP3, MP6
7.05	Some Triangles, All Triangles | Identifying the Attributes of Rectangles	**NY-1.G.1,** MP3, MP6
7.06	Some Rectangles, All Rectangles | Identifying the Attributes of Rectangles	**NY-1.G.1,** MP3, MP6
7.07	Making Shapes From Flat Shapes | Composing Two-Dimensional Shapes	**NY-1.NBT.3, NY-1.G.2,** MP8
	Sub-Unit Quiz	**NY-1.G.1,** MP6, MP7, MP8
	Sub-Unit 2 Halves and Quarters	
7.08	Parts of Shapes | Partitioning Circles, Squares and Rectangles into Fourths	**NY-1.G.3,** MP7, MP8
7.09	Splitting Shapes into Equal Parts | Partitioning Circles, Squares and Rectangles into Halves	**NY-1.G.3,** MP6, MP7
7.10	One of the Parts, All of the Parts | Describing One Part as a Half or a Fourth	**NY-1.G.3,** MP6
7.11	A Bigger Part | Comparing the Size of a Fourth and a Half	**NY-1.G.3,** MP3, MP8
	Sub-Unit Quiz	**NY-1.G.3,** MP3, MP6
	Sub-Unit 3 Tell Time in Hours and Half Hours	
7.12	It's Time for Clocks | Telling and Writing Time to the Hour	**NY-1.MD.3a,** MP6, MP7
7.13	Half Past | Using the Hour Hand to Tell Time to the Half Hour	**NY-1.MD.3a,** MP6, MP7
7.14	The Minute Hand | Telling Time to the Hour and Half Hour with Both Hands	**NY-1.MD.3a,** MP6, MP7
7.15	Writing Times | Writing Time to the Hour and Half Hour	**NY-1.MD.3a,** MP6, MP7
7.16	What Can We Ask About Clocks? | Describing the Time Shown on Clocks	**NY-1.MD.3a,** MP6, MP7
	End-of-Unit Assessment	**NY-1.G.1, NY-1.G.3, NY-1.MD.3a,** MP3, MP6, MP7, MP8

New York State Next Generation Mathematics Learning Standards, Correlated to Amplify Desmos Math Grade 2

The following shows the alignment of Amplify Desmos Math to the New York State Next Generation Mathematics Learning Standards for Grade 2.

NY-2.OA	Operations and Algebraic Thinking	Lesson(s)
Represent and solve problems involving addition and subtraction.		
NY-2.OA.1a	Use addition and subtraction within 100 to solve one-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions.	1.15, 1.16, 2.06, 2.07, 2.11, 2.13, 2.14, 2.15, 2.16, 2.17, 2.18, 2.19, 4.10, 4.11, 4.12, 4.13
NY-2.OA.1b	Use addition and subtraction within 100 to develop an understanding of solving two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions.	2.19, 2.20, 2.21, 2.22, 4.13
Add and subtract within 20.		
NY-2.OA.2a	Fluently add and subtract within 20 using mental strategies. Strategies could include: • counting on; • making ten; • decomposing a number leading to a ten; • using the relationship between addition and subtraction; and • creating equivalent but easier or known sums.	1.05, 1.06, 1.11, 1.13, 2.07, 3.03, 3.14, 3.15, 8.11, 8.12
NY-2.OA.2b	Know from memory all sums within 20 of two one-digit numbers.	1.05, 1.06, 1.11, 1.13, 3.03, 3.14, 3.15, 8.05, 8.06, 8.07, 8.08, 8.09, 8.10, 8.11
Work with equal groups of objects to gain foundations for multiplication.		
NY-2.OA.3a	Determine whether a group of objects (up to 20) has an odd or even number of members.	8.03, 8.04, 8.05, 8.06, 8.07, 8.09
NY-2.OA.3b	Write an equation to express an even number as a sum of two equal addends.	8.01, 8.02, 8.03, 8.04, 8.05, 8.06, 8.07, 8.09
NY-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.	8.08, 8.09, 8.10, 8.11, 8.12, 8.13
NY-2.NBT	**Number and Operations in Base Ten**	**Lesson(s)**
Understand place value.		
NY-2.NBT.1	Understand that the digits of a three-digit number represent amounts of hundreds, tens, and ones.	5.04, 5.05, 5.06, 5.08, 5.10, 5.11, 5.12, 7.07, 7.08, 7.11, 7.12, 7.13
NY-2.NBT.1a	Understand 100 can be thought of as a bundle of ten tens, called a “hundred.”	5.02, 5.03, 5.09

NY-2.NBT.1b	Understand 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).	5.03
NY-2.NBT.2	Count within 1000; skip-count by 5s, 10s, and 100s.	4.03, 4.04, 4.06, 4.07, 5.01, 5.02, 5.03, 5.04, 6.10, 6.11, 6.13, 6.14, 7.02, 7.09, 8.07
NY-2.NBT.3	Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.	5.05, 5.06, 5.07, 5.08, 5.12
NY-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.	5.09, 5.10, 5.11, 5.12
Use place value understanding and properties of operations to add and subtract.		
NY-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.	1.15, 1.16, 2.03, 2.04, 2.05, 2.06, 2.07, 2.08, 2.09, 2.10, 2.11, 2.12, 2.13, 2.14, 2.15, 2.16, 2.17, 2.19, 2.20, 2.21, 3.03, 3.06, 3.10, 3.11, 3.12, 3.14, 3.15, 4.05, 4.07, 4.08, 4.09, 4.10, 4.11, 4.12, 4.13, 5.04, 5.09, 5.10, 7.04, 8.11
NY-2.NBT.6	Add up to four two-digit numbers using strategies based on place value and properties of operations.	2.03, 2.05, 2.06, 2.22, 7.16
NY-2.NBT.7a	Add and subtract within 1000, 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 representation.	7.03, 7.04, 7.05, 7.06, 7.07, 7.08, 7.10, 7.11, 7.12, 7.13, 7.14, 7.15, 7.16, 7.17, 7.18, 7.19
NY-2.NBT.7b	Understand that in adding or subtracting up to three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones, and sometimes it is necessary to compose or decompose tens or hundreds.	7.01, 7.03, 7.04, 7.05, 7.06, 7.07, 7.08, 7.10, 7.11, 7.12, 7.13, 7.14, 7.15, 7.16, 7.17, 7.18, 7.19
NY-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.	7.02, 7.09
NY-2.NBT.9	Explain why addition and subtraction strategies work, using place value and the properties of operations.	2.08, 2.09, 2.10, 7.07, 7.08, 7.14, 7.15, 7.16, 7.17, 7.18
NY-2.MD	**Measurement and Data**	**Lesson(s)**
Measure and estimate lengths in standard units.		
NY-2.MD.1	Measure the length of an object to the nearest whole by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	3.02, 3.03, 3.04, 3.05, 3.07, 3.08, 3.09, 3.10, 3.14, 3.15, 6.05, 6.06
NY-2.MD.2	Measure the length of an object twice, using different "length units" for the two measurements; describe how the two measurements relate to the size of the unit chosen.	3.01, 3.05, 3.09
NY-2.MD.3	Estimate lengths using units of inches, feet, centimeters, and meters.	3.04, 3.07, 3.08, 3.09

NY-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."	3.02, 3.03
Relate addition and subtraction to length.		
NY-2.MD.5	Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units.	3.06, 3.11, 3.12, 4.10, 4.11
NY-2.MD.6	Represent whole numbers as lengths from 0 on a number line with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line.	4.02, 4.03, 4.04, 4.05, 4.06, 4.07, 4.08, 4.09, 4.10, 4.11, 4.12, 4.13, 5.11
Work with time and money.		
NY-2.MD.7	Tell and write time from analog and digital clocks in five minute increments, using a.m. and p.m. Develop an understanding of common terms, such as, but not limited to, *quarter past, half past,* and *quarter to.*	6.12, 6.13, 6.14, 6.15
NY-2.MD.8a	Count a mixed collection of coins whose sum is less than or equal to one dollar.	2.01, 2.03, 2.04, 2.05, 2.06
NY-2.MD.8b	Solve real world and mathematical problems within one dollar involving quarters, dimes, nickels, and pennies, using the ¢ (cent) symbol appropriately.	2.06, 2.13, 2.15, 2.16, 2.22
Represent and interpret data.		
NY-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. Present the measurement data in a line plot, where the horizontal scale is marked off in whole-number units.	3.13, 3.14, 3.15
NY-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 compare problems using information presented in a picture graph or a bar graph.	1.08, 1.09, 1.10, 1.11, 1.12, 1.13
NY-2.G	**Geometry**	**Lesson(s)**
Measure and estimate lengths in standard units.		
NY-2.G.1	Classify two-dimensional figures as polygons or non-polygons	6.02, 6.03, 6.04, 6.05, 6.06, 6.07
NY-2.G.2	Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	8.12, 8.13
NY-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. Describe the whole as *two halves, three thirds, four fourths.* Recognize that equal shares of identical wholes need not have the same shape.	6.08, 6.09, 6.10, 6.11

The Standards for Mathematical Practice, Grade 2

The following shows sample citations of the alignment between Amplify Desmos Math, Grade 2 and the Standards for Mathematical Practice. Each Standard for Mathematical Practice is addressed throughout the grade.

MP1 Make sense of problems and persevere in solving them.	Lesson(s)
Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.	1.01, 1.15, 1.16, 2.01, 2.02, 2.05, 2.06, 2.12, 2.14, 2.15, 2.18, 2.19, 3.01, 3.06, 4.01, 4.13, 5.01, 5.10, 6.01, 6.05, 7.01, 7.16, 8.01
MP2 Reason abstractly and quantitatively.	
Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.	1.01, 1.04, 1.05, 1.08, 1.09, 1.10, 1.11, 1.13, 1.14, 1.15, 1.16, 2.02, 2.04, 2.13, 2.14, 2.15, 2.16, 2.17, 2.19, 2.20, 2.22, 3.03, 3.06, 3.11, 3.12, 3.13, 3.15, 4.07, 4.09, 4.10, 4.11, 4.12, 7.01, 8.04, 8.10
MP3 Construct viable arguments and critique the reasoning of others.	
Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.	1.04, 2.09, 2.13, 2.20, 3.04, 3.08, 3.11, 3.12, 4.05, 4.11, 5.07, 5.08, 5.09, 5.12, 6.03, 6.04, 6.06, 6.09, 6.10, 6.15, 7.04, 7.05, 7.06, 7.07, 7.11, 7.12, 7.14

MP4 Model with mathematics.	Lesson(s)
Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.	1.08, 1.12, 2.06, 2.13, 2.16, 2.17, 2.21, 2.22, 3.11, 4.12, 4.13
MP5 Use appropriate tools strategically.	
Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.	1.07, 3.01, 3.02, 3.05, 3.09
MP6 Attend to precision.	
Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.	1.09, 1.10, 1.11, 1.13, 2.22, 3.01, 3.02, 3.12, 3.13, 3.15, 4.01, 4.02, 4.03, 4.06, 4.08, 5.05, 5.07, 5.08, 5.12, 6.01, 6.02, 6.03, 6.04, 6.05, 6.06, 6.07, 6.08, 6.09, 6.15, 7.08, 7.11, 7.12, 8.02, 8.08, 8.09

MP7 Look for and make use of structure.	Lesson(s)
Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as *5 minus a positive number times a square* and use that to realize that its value cannot be more than 5 for any real numbers x and y.	1.01, 1.02, 1.03, 1.04, 1.05, 1.06, 1.08, 1.11, 1.14, 1.15, 1.16, 2.01, 2.03, 2.04, 2.05, 2.06, 2.07, 2.08, 2.09, 2.10, 2.11, 2.12, 2.14, 2.15, 2.16, 2.17, 2.18, 2.19, 2.20, 2.21, 3.03, 3.04, 3.05, 3.06, 3.07, 3.08, 3.09, 3.10, 3.11, 3.12, 3.14, 3.15, 4.01, 4.02, 4.03, 4.04, 4.05, 4.06, 4.07, 4.08, 4.09, 4.10, 4.11, 4.12, 4.13, 5.01, 5.02, 5.03, 5.04, 5.05, 5.06, 5.07, 5.08, 5.09, 5.10, 5.11, 5.12, 6.01, 6.05, 6.06, 6.07, 6.09, 6.12, 6.14, 6.15, 6.16, 7.01, 7.02, 7.03, 7.04, 7.05, 7.06, 7.07, 7.08, 7.09, 7.10, 7.11, 7.12, 7.13, 7.14, 7.15, 7.16, 7.17, 7.18, 7.19, 8.01, 8.02, 8.03, 8.04, 8.05, 8.06, 8.07, 8.08, 8.09, 8.10, 8.11, 8.12, 8.13
MP8 Look for and express regularity in repeated reasoning.	
Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.	1.01, 1.05, 1.06, 2.01, 2.02, 2.03, 2.05, 2.06, 2.07, 2.08, 2.09, 2.10, 2.11, 2.15, 2.18, 2.21, 3.03, 3.05, 3.06, 3.10, 3.15, 4.04, 4.05, 4.10, 4.12, 5.01, 5.02, 5.03, 5.04, 5.09, 5.10, 5.12, 6.05, 6.10, 6.11, 6.13, 6.14, 7.02, 7.03, 7.04, 7.09, 7.10, 7.15, 7.16, 7.17, 7.18, 8.01, 8.03, 8.05, 8.06, 8.07, 8.11, 8.12

Unit 1 Working With Data and Solving Comparison Problems

	Pre-Unit Check	NY-1.OA.6b, NY-1.OA.7

Sub-Unit 1 Adding and Subtracting

1.01	Investigate | A Pattern Puzzle	Building Toward NY-2.OA.2a, MP2, MP7
1.02	Exploring Within 10 | Strengthening Fluency With Adding and Subtracting Within 10	Building Toward NY-2.OA.2a, MP1, MP2, MP7, MP8
1.03	Ways to Make 10 | Finding Different Ways to Make 10 Using Addition	Building Toward NY-2.OA.2a, MP7
1.04	A Tower of 10 | Relating Tape Diagrams, Equations, and Addition and Subtraction Within 10	Building Toward NY-2.OA.2a, MP7
1.05	What's Missing? | Finding Missing Numbers in Equations Within 20	NY-2.OA.2a, NY-2.OA.2b, MP2, MP3, MP7
1.06	Have It Your Way | Strategies for Adding Within 20	NY-2.OA.2a, NY-2.OA.2b, MP7, MP8
	Sub-Unit Quiz	NY-1.MD.4, NY-2.NBT.5, NY-2.OA.2a, NY-2.OA.2b, MP6, MP7

Sub-Unit 2 Ways to Represent Data

1.07	How We Get to School | Collecting and Representing Data	Building Toward NY-2.MD.10, MP5
1.08	A Class Pet | Interpreting Picture Graphs	NY-2.MD.10, MP2, MP4, MP7
1.09	Data About Mr. Roy's Class | Interpreting Bar Graphs	NY-2.MD.10, MP2, MP6
1.10	Representing Data in Graphs | Drawing Picture Graphs and Bar Graphs	NY-2.MD.10, MP2, MP6
1.11	Questions About Data | Asking and Answering Questions Using Graphs	NY-2.MD.10, NY-2.OA.2a, NY-2.OA.2b, MP2, MP6, MP7
1.12	Class Surveys | Designing a Survey and Collecting and Representing the Data	NY-2.MD.10, MP4
	Sub-Unit Quiz	NY-2.MD.10, MP7

Sub-Unit 3 Solving Problems About Comparing

1.13	Representing Data With Benita | Representing and Solving Story Problems About Data	NY-2.MD.10, NY-2.OA.2a, NY-2.OA.2b, MP2, MP6
1.14	Awesome Aquariums | Interpreting and Representing Comparisons With Tape Diagrams	Building Toward NY-2.OA.1a, MP2, MP7
1.15	Comparing at the Beach | Relating Compare Problems, Tape Diagrams, and Equations	NY-2.OA.1a, NY-2.NBT.5, MP1, MP2, MP7
1.16	Comparing at the Library | Solving Compare Problems	NY-2.OA.1a, NY-2.NBT.5, MP1, MP2, MP7
	End-of-Unit Assessment	NY-2.MD.10, NY-2.NBT.5, NY-2.OA.1a, NY-2.OA.2a, NY-2.OA.2b, MP3, MP4

Unit 2 Adding and Subtracting Within 100

	Pre-Unit Check	NY-1.OA.6a, NY-1.OA.8, MP7, MP8

Sub-Unit 1 The Value of Money

2.01	Investigate | Activities at the Block Party	Building Toward NY-2.MD.8a, NY-2.NBT.5, MP1, MP7, MP8
2.02	Discovering Coins (Part 1) | Naming and Finding the Value of Groups of Pennies, Nickels, or Dimes	Building Toward NY-2.MD.8a , MP1, MP2, MP8
2.03	How Much Money? | Exploring Strategies for Finding the Values of Groups of Mixed Coins	NY-2.MD.8a, NY-2.NBT.5, NY-2.NBT.6, MP7, MP8
2.04	Discovering Coins (Part 2) | Finding the Value of Groups of Mixed Coins Including Quarters	NY-2.MD.8a, NY-2.NBT.5, MP2, MP7
2.05	The Toy Stand | Finding Different Combinations of Coins That Make 1 Dollar and Other Values	NY-2.MD.8a, NY-2.NBT.5, NY-2.NBT.6, MP1, MP7, MP8
2.06	The Craft Stand at the Block Party | Representing and Solving Story Problems Involving Money	NY-2.MD.8a, NY-2.MD.8b, NY-2.NBT.5, NY-2.NBT.6, NY 2.OA.1a, MP1,MP4, MP7, MP8
	Sub-Unit Quiz	NY-2.MD.8a, MP4

Sub-Unit 2 Subtracting Within 100

2.07	Subtracting Your Way | Using Base-Ten Blocks and Connecting Cubes to Represent Subtraction Strategies	NY-2.NBT.5, NY-2.OA.1a, NY-2.OA.2a, MP7, MP8
2.08	Hungry for Honey Cakes | Decomposing a Ten to Subtract	NY-2.NBT.5, NY-2.NBT.9, MP7, MP8
2.09	What's the Difference? | Subtracting Two-Digit Numbers From Two-Digit Numbers With Decomposing	NY-2.NBT.5, NY-2.NBT.9, MP3, MP7, MP8
2.10	What's Your First Move? | Exploring Different Strategies and Representations for Subtracting	NY-2.NBT.5, NY-2.NBT.9, MP7, MP8
2.11	Subtraction Choices | Evaluating Expressions to Choose Subtraction Strategies	NY-2.NBT.5, NY-2.OA.1a , MP7, MP8
2.12	Solve the Puzzle | Adding and Subtracting Within 100	NY-2.NBT.5 , MP1, MP7
	Sub-Unit Quiz	NY-2.NBT.5

Sub-Unit 3 Adding and Subtracting to Compare

2.13	Community Comparisons | Solving Compare Problems by Adding or Subtracting Within 100	NY-2.OA.1a, NY-2.NBT.5, NY-2.MD.8b, MP2, MP3, MP4
2.14	Comparing With Kyle | Interpreting Problems That Require Addition but Use the Word *Fewer*	NY-2.OA.1a, NY-2.NBT.5, MP1, MP2, MP7
2.15	Library Comparisons | Interpreting Compare, Smaller Unknown Problems Using *More*	NY-2.OA.1a, NY-2.NBT.5, NY-2.MD.8b, MP1, MP2, MP7, MP8
2.16	Problem Palooza | Solving Compare Story Problems and Comparing Strategies	NY-2.OA.1a, NY-2.NBT.5, NY-2.MD.8b, MP2, MP4, MP7
	Sub-Unit Quiz	NY-2.OA.1a, NY-2.NBT.5, MP2

Sub-Unit 4 Solving One- and Two-Step Story Problems

2.17	Brace Yourselves | Relating *Put Together/Take Apart* Story Problems and Tape Diagrams	NY-2.OA.1a, NY-2.NBT.5, MP2, MP4, MP7
2.18	Unity in the Community | Developing Questions About Stories With 3 Known Values	NY-2.OA.1a, MP1, MP7, MP8
2.19	Mrs. Hernández's Farm | Introducing Two-Step Story Problems	NY-2.OA.1a, NY-2.OA.1b, NY-2.NBT.5, MP1, MP2, MP7
2.20	Even Heroes Have Problems | Analyzing and Solving Two-Step Story Problems	NY-2.OA.1b, NY-2.NBT.5, MP2, MP3, MP7
2.21	Solving It Your Way | Solving Two-Step Story Problems and Comparing Strategies	NY-2.OA.1b, NY-2.NBT.5, MP4, MP7, MP8
2.22	Story Problems Galore | Matching and Writing Equations for Two-Step Story Problems	NY-2.OA.1b, NY-2.NBT.5, NY-2.NBT.6, NY-2.MD.8b, MP2, MP4, MP6
	End-of-Unit Assessment	NY-2.NBT.5, NY-2.MD.8a, NY-2.MD.8b, NY-2.OA.1a, NY-2.OA.1b, MP1, MP3. MP4, MP8

Unit 3 Measuring Length

	Pre-Unit Check	NY-1.MD.1, NY-1.MD.2, MP6, MP7

Sub-Unit 1 Measuring in Standard Units

3.01	Investigate | Orson's Costumes	Building Toward NY-2.MD.1, NY-2.MD.2, MP5
3.02	Which Tool Will You Use? | Measuring Length With Base-Ten Units and Tens Rods	NY-2.MD.1, NY-2.MD.4, MP5, MP6
3.03	What's the Difference? | Comparing Measuring Tools and the Lengths of Objects	NY-2.MD.1, NY-2.MD.4, NY-2.OA.2a, NY-2.OA.2b, NY-2.NBT.5, MP2, MP7, MP8
3.04	About How Long Is It? | Making Length Estimations	NY-2.MD.1, NY-2.MD-3, MP3, MP7
3.05	A New Length Unit | Measuring Length in Centimeters and Meters	NY-2.MD.1, NY-2.MD.2, MP5, MP7, MP8
3.06	Lengths of Jungle Animals | Solving One- and Two-Step Compare Problems About Length	NY-2.NBT.5, NY-2.MD.5, MP1, MP2, MP7, MP8
	Sub-Unit Quiz	NY-2.MD.1, NY-2.MD.3, NY-2.MD.4, NY-2.MD.5, NY-2.NBT.5, MP2, MP6, MP7

Sub-Unit 2 Measuring in Inches and Feet

3.07	It's Customary | Measuring in Inches	NY-2.MD.1, NY-2.MD.3, MP7
3.08	How Many Inches? | Estimating in Inches	NY-2.MD.1, NY-2.MD.3, MP3, MP7
3.09	Another New Length Unit | Measuring in Inches and Feet	NY-2.MD.3, NY-2.MD.1, NY-2.MD.2, MP5, MP7
3.10	Desperate Times, Desperate Measures | Measuring Lengths of Objects Without Starting at 0	NY-2.NBT.5, NY-2.MD.1, MP7, MP8
3.11	Almost Showtime | Solving More One- and Two-Step Story Problems About Length	NY-2.MD.5, NY-2.NBT.5, MP2, MP4
3.12	Measurement Mishaps | Solving and Representing Two-Step Story Problems With Equations	NY-2.MD.5, NY-2.NBT.5, MP2, MP6
	Sub-Unit Quiz	NY-2.MD.1, NY-2.MD.3, NY-2.MD.5, NY-2.NBT.5, MP2, MP6, MP7

Sub-Unit 3 Creating Line Plots

3.13	Messy Measurements | Introducing the Line Plot	NY-2.MD.9, MP7
3.14	Bracelets and Wristbands | Generating Measurement Data and Creating Line Plots	NY-2.MD.1, NY-2.MD.9, NY-2.OA.2a, NY-2.OA.2b, NY-2.NBT.5, MP7
3.15	Choosing a Bookshelf | Interpreting Measurement Data	NY-2.MD.1, NY-2.MD.9, NY-2.OA.2a, NY-2.OA.2b, NY-2.NBT.5, MP2, MP6, MP7
	End-of-Unit Assessment	NY-2.MD.1, NY-2.MD.2, NY-2.MD.3, NY-2.MD.4, NY-2.MD.5, NY-2.MD.9, NY-2.NBT.5, MP2, MP3, MP6, MP7

Unit 4 Addition and Subtraction on the Number Line

Pre-Unit Check NY-1.OA.8, NY-1.NBT.3, NY-2.OA.1a, MP2, MP4, MP7

Sub-Unit 1 The Structure of the Number Line

4.01 Investigate | Where Am I? ..... Building Toward NY-2.MD.6, MP1, MP6, MP7

4.02 Distance From Sid | Introducing the Number Line NY-2.MD.6, MP6, MP,7

4.03 What's That Number? | Locating Numbers on the Number Line NY-2.MD.6, NY-2.NBT.2, MP7

4.04 Greater Than, Less Than, or Equal to | Comparing Numbers Using the Number Line NY-2.MD.6, NY-2.NBT.2, MP7, MP8

4.05 In Full Bloom | Estimating Numbers by Their Location on the Number Line NY-2.MB.6, NY-2.NBT.5, MP3, MP7

Sub-Unit Quiz NY-2.MD.6, NY-2.NBT.2, MP6, MP7

Sub-Unit 2 Adding and Subtracting on the Number Line

4.06 Don't Let the Bug Get Away! | Representing Counting on the Number Line NY-2.NBT.2, NY-2.MD.6, MP6, MP7

4.07 Jump Around | Adding and Subtracting on the Number Line NY-2.MD.6, NY-2.NBT.5, NY-2.NBT.2, MP2, MP7

4.08 Arrows Forward and Back | Representing Equations on the Number Line NY-2.MD.6, NY-2.NBT.5, MP6, MP7

4.09 A Hop, Skip, and a Jump Away | Representing Addition Strategies on the Number Line NY-2.MD.6, NY-2.NBT.5, MP2, MP7

4.10 The Space Between | Representing Subtraction Strategies on the Number Line NY-2.NBT.5, NY-2.OA.1a, NY-2.MD.5, NY-2.MD.6, MP2, MP7

4.11 Showing Strategies | Representing Unknown Values From Story Problems on Number Lines NY-2.MD.5, NY-2.NBT.5, NY-2.OA.1a, NY-2.MD.6, MP2, MP7

4.12 Where Are the Tick Marks? | Matching and Representing Story Problems on an Open Number Line NY-2.OA.1a, NY-2.MD.6, NY-2.NBT.5, MP2, MP4, MP7

4.13 Friends of Seeds | Representing Two-Step Story Problems on Open Number Lines NY-2.OA.1a, NY-2.OA.1b, NY-2.MD.6, NY-2.NBT.5, MP1, MP4, MP7

End-of-Unit Assessment NY-2.MD.6, NY-2.MD.5, NY-2.OA.1a, MP2, MP4, MP6, MP7

Unit 5 Numbers to 1,000

Pre-Unit Check — NY-1.NBT.1, NY-1.NBT.2, NY-1.NBT.3, MP7

Sub-Unit 1 The Value of Three Digits

5.01 Investigate | A Mistake in Mom's Office — Building Toward NY-2.NBT.1a, NY-2.NBT.2, MP1, MP7, MP8

5.02 What Makes a Hundred? | Composing a Hundred With Tens and Ones — NY-2.NBT.1a, NY-2.NBT.2, MP7, MP8

5.03 Looking for Patterns | Representing Three-Digit Numbers with Tens and Hundreds — NY-2.NBT.1b, NY-2.NBT.1a, NY-2.NBT.2, MP7, MP8

5.04 What's the Value? | Composing Hundreds and Tens to Represent Three-Digit Numbers — NY-2.NBT.1b, NY-2.NBT.1a, NY-2.NBT.2, NY-2.NBT.5, MP7, MP8

5.05 Guess the Number | Identifying and Writing Three-Digit Numbers — NY-2.NBT.3, NY-2.NBT.1, MP6, MP7

5.06 A New Representation | Representing Three-Digit Numbers in Expanded Form — NY-2.NBT.3, NY-2.NBT.1, MP7

5.07 What's Your Name? | Identifying Number Names and Writing Numbers in Words — NY-2.NBT.3, MP3, MP6, MP7

5.08 All the Ways! | Representing Three-Digit Numbers in Different Forms — NY-2.NBT.3, NY-2.NBT.1, MP3, MP6, MP7

Sub-Unit Quiz — NY-2.NBT.1, NY-2.NBT.2, NY-2.NBT.3, MP6, MP7

Sub-Unit 2 Compare and Order Numbers Within 1,000

5.09 Helping in the Mailroom | Comparing Three-Digit Numbers — NY-2.NBT.4, NY-2.NBT.1a, NY-2.NBT.5, MP3, MP7, MP8

5.10 Down to the Digit | Comparing Three-Digit Numbers — NY-2.NBT.4, NY-2.NBT.1, NY-2.NBT.5, MP1, MP7, MP8

5.11 Where Should Ms. Morales Go? | Representing Comparisons on a Number Line — NY-2.MD.6, NY-2.NBT.1, NY-2.NBT.4, MP7

5.12 Ms. Morales's Mail Route | Ordering Numbers from Least to Greatest and Greatest to Least — NY-2.NBT.4, NY-2.NBT.1, NY-2.NBT.3, MP3, MP6, MP7, MP8

End-of-Unit Assessment — NY-2.NBT.1, NY-2.NBT.2, NY-2.NBT.3, NY-2.NBT.4, NY-2.MD.6, MP7, MP8

Unit 6 Geometry and Time

Pre-Unit Check — NY-1.G.1

Sub-Unit 1 Attributes of Shapes

6.01 Investigate | We're Going On A Shape Hunt! — **Building Toward NY-2.G.1,** MP1, MP6, MP7
6.02 What Shape Is This? | Identifying and Sorting Shapes — **NY-2.G.1,** MP3, MP6
6.03 Artists Like Arjun | Drawing Shapes — **NY-2.G.1** , MP3, MP6
6.04 Different Shapes, Same Attributes | Comparing Shape Attributes — **NY-2.G.1** , MP3, MP6
6.05 Measure It, Draw It | Measuring Side Lengths of Shapes — **NY-2.G.1, NY-2.MD.1,** MP1, MP6, MP7, MP8
6.06 More to Measure | Measuring Three Dimensions — **NY-2.G.1, NY-2.MD.1,** MP3, MP6, MP7
6.07 Exploring a New Dimension | Identifying Three-dimensional Shapes — **NY-2.G.1** , MP6, MP7

Sub-Unit Quiz — **NY-2.G.1** , MP6, MP7

Sub-Unit 2 Halves, Thirds, and Fourths

6.08 Let's Share! | Comparing Halves, Fourths, and Thirds — **NY-2.G.3,** MP3, MP6, MP7
6.09 Plenty to Go Around | Identifying Halves, Fourths, and Thirds — **NY-2.G.3,** MP3, MP6, MP7
6.10 The More, the Merrier | Creating Equal Parts in Multiple Ways — **NY-2.G.3, NY-2.NBT.2,** MP3, MP8
6.11 Sharing the Whole Thing | Naming Parts of a Whole — **NY-2.G.3, NY-2.NBT.2**, MP8

Sub-Unit Quiz — **NY-2.G.3,** MP3, MP6, MP7

Sub-Unit 3 Time on the Clock

6.12 What Time Is It? | Telling Time With Halves and Quarters — **NY-2.MD.7,** MP7
6.13 Hop Around the Clock, Part 1 | Telling Time in 5-Minute Increments — **NY-2.MD.7, NY-2.NBT.2**, MP8
6.14 Hop Around the Clock, Part 2 | Counting by 5 to Tell Time — **NY-2.MD.7, NY-2.NBT.2**, MP7, MP8
6.15 Is It a.m. or p.m.? | Strategies for Telling Time — **NY-2.MD.7,** MP3, MP6, MP8
6.16 Exploring Calendars | Different Units of Time on a Calendar — MP7

End-of-Unit Assessment — **NY-2.G.1, NY-2.G.3, NY-2.MD.7,** MP1, MP6, MP7

Unit 7 Adding and Subtracting Within 1,000

	Pre-Unit Check	**NY-2.NBT.1, NY-2.NBT.3, NY-2.NBT.5**, MP7, MP8

Sub-Unit 1 Adding Within 1,000 Using Place Value Strategies

7.01	Rebuilding the River Rock Bridge | How many purple and green rocks should be used to rebuild the bridge?	**Building Toward NY-2.NBT.7a, NY-2.NBT.7b**, MP1, MP2, MP7
7.02	Skunk's Baskets of Berries | Using Patterns to Add Multiples of 10 and 100 to Three-digit Numbers	**NY-2.NBT.2, NY-2.NBT.8**, MP7, MP8
7.03	There's Something About Berries | Adding Numbers Within 1,000 Without Composing	**NY-2.NBT.7a, NY-2.NBT.7b**, MP7, MP8
7.04	Baking With Skunk | Composing a Ten When Adding Within 1,000	**NY-2.NBT.5, NY-2.NBT.7a, NY-2.NBT.7b**, MP3, MP7, MP8
7.05	Beaver's Sculpture Garden | Composing a Hundred When Adding Within 1,000	**NY-2.NBT.7a, NY-2.NBT.7b**, MP3, MP7
7.06	Sorting Addition Expressions | Composing a Ten and a Hundred When Adding Within 1,000	**NY-2.NBT.7a, NY-2.NBT.7b**, MP3, MP7
7.07	Working With Others | Adding Within 1,000 Using Equations	**NY-2.NBT.1, NY-2.NBT.7a, NY-2.NBT.7b, NY-2.NBT.9**, MP3, MP7
7.08	Asking for Help | Representing Addition Strategies	**NY-2.NBT.1, NY-2.NBT.7a, NY-2.NBT.7b, NY-2.NBT.9**, MP6, MP7
	Sub-Unit Quiz	**NY-2.NBT.A.2, NY-2.NBT.7a, NY-2.NBT.7b, NY-2.NBT.8**, MP7, MP8

Sub-Unit 2 Subtracting Within 1,000 Using Place Value Strategies

7.09	Eli's Colorful Quills | Using Patterns to Subtract Multiples of 10 and 100 From Three-digit Numbers	**NY-2.NBT.2, NY-2.NBT.8**, MP7, MP8
7.10	Counting Quills | Subtracting Numbers Within 1,000 Without Decomposing	**NY-2.NBT.7a, NY-2.NBT.7b**, MP7, MP8
7.11	How Many Leaves? | Decomposing a Ten When Subtracting Within 1,000	**NY-2.NBT.1, NY-2.NBT.7a, NY-2.NBT.7b**, MP3, MP6, MP7
7.12	Bea's Journey | Decomposing a Hundred When Subtracting Within 1,000	**NY-2.NBT.1, NY-2.NBT.7a, NY-2.NBT.7b**, MP3, MP6, MP7
7.13	Frog's Funplex | Decomposing a Ten and a Hundred When Subtracting Within 1,000	**NY-2.NBT.1, NY-2.NBT.7a, NY-2.NBT.7b**, MP7
7.14	Pond Games | Exploring Different Ways to Decompose When Subtracting	**NY-2.NBT.7a, NY-2.NBT.7b, NY-2.NBT.9**, MP3, MP7
7.15	Sharing Ideas | Representing Subtraction Strategies	**NY-2.NBT.7a, NY-2.NBT.7b, NY-2.NBT.9**, MP7, MP8
	Sub-Unit Quiz	**NY-2.NBT.1, NY-2.NBT.2, NY-2.NBT.7a, NY-2.NBT.7b, NY-2.NBT.8**, MP7

Sub-Unit 3 Choosing Strategies to Add and Subtract Within 1,000

7.16	Replacing Eli's Quills | Adding Up to 4 Two-digit Numbers	**NY-2.NBT.7a, NY-2.NBT.7b, NY-2.NBT.9**, MP1, MP7, MP8
7.17	Bea's Beads | Choosing Strategies to Add Within 1,000	**NY-2.NBT.7a, NY-2.NBT.7b, NY-2.NBT.9**, MP7, MP8
7.18	Bye-bye Beads | Choosing Strategies to Subtract Within 1,000	**NY-2.NBT.7a, NY-2.NBT.7b, NY-2.NBT.9**, MP7, MP8
7.19	Don't Forget to Double Check, Bea! | Making Estimates and Assessing Answers	**NY-2.NBT.7a, NY-2.NBT.7b**, MP7, MP8
	End-of-Unit Assessment	**NY-2.NBT.2, NY-2.NBT.6, NY-2.NBT.7a, NY-2.NBT.7b, NY-2.NBT.8**, MP7, MP8

Unit 8 Equal Groups

Pre-Unit Check NY-1.NBT.2b, NY-1.OA.7, MP7, MP8

Sub-Unit 1 Odd and Even

8.01 Organizing Teams | How do arrangements show equal groups within numbers? ..... Building Toward NY-2.OA.3a, MP1, MP7, MP8
8.02 Can You Share? | Splitting Amounts of Objects Into 2 Equal Groups NY-2.OA.3a, MP6, MP7
8.03 Everybody, Find A Partner! | Splitting Amounts of Objects Into Groups of 2 ..... NY-2.OA.3a, MP7, MP8
8.04 Is It Even or Odd? | Determining Whether a Number is Even or Odd NY-2.OA.3a, MP2, MP7
8.05 Can They Play? | Justifying Whether a Number is Even or Odd NY-2.OA.3b, NY-2.OA.2b, MP7, MP8
8.06 Pointing Out Patterns | Recognizing Patterns in Sums of Odd and Even Numbers NY-2.OA.3b, NY-2.OA.2b, MP7, MP8
8.07 Playing Hopscotch | Recognizing Odd and Even Patterns When Skip Counting NY-2.NBT.2, NY-2.OA.2b, NY-2.OA.3a, MP7, MP8

Sub-Unit Quiz NY-2.OA.2b, NY-2.OA.3a, NY-2.OA.3b, MP7, MP8

Sub-Unit 2 Rectangular Arrays

8.08 Arranging With Abby | Identifying and Describing Arrays NY-2.OA.2b, NY-2.OA.4, MP7, MP8
8.09 Trading Card Challenge | Identifying, Describing, and Creating Arrays NY-2.OA.4, NY-2.OA.2b, NY-2.OA.3a, MP6, MP7
8.10 Arrays Around the House | Representing the Number of Objects in an Array With Equations NY-2.OA.4, NY-2.OA.2b, MP2, MP7
8.11 Clementine Court Community Day | Reasoning About Equations That Represent Arrays NY-2.OA.4, NY-2.NBT.5, NY-2.OA.2a, NY-2.OA.2b, MP7, MP8
8.12 Arrays and Rectangles | Making Rectangular Arrays With Equal-sized Squares NY-2.G.2, NY-2.OA.2a, NY-2.OA.4, MP7, MP8
8.13 Clementine Court Cuts a Rug | Splitting Rectangles Into Equal-sized Squares NY-2.G.2, NY-2.OA.4, MP7, MP8

End-of-Unit Assessment NY-2.G.2, NY-2.OA.2a, NY-2.OA.2b, NY-2.OA.4, MP7, MP8

New York State Next Generation Mathematics Learning Standards, Correlated to Amplify Desmos Math, Grade 3

The following shows the alignment of Amplify Desmos Math to the New York State Next Generation Mathematics Learning Standards for Grade 3.

NY-3.OA	Operations and Algebraic Thinking	Lesson(s)
Represent and solve problems involving multiplication and division.		
NY-3.OA.1	Interpret products of whole numbers.	1.02, 1.04, 1.06, 1.07, 1.08, 1.09, 1.10, 3.19, 3.20
NY-3.OA.2	Interpret whole-number quotients of whole numbers.	4.02, 4.03, 4.04, 4.05, 4.06, 4.16, 4.18
NY-3.OA.3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.	1.05, 1.06, 1.10, 1.11, 2.09, 2.12, 4.03, 4.04, 4.06, 4.12, 4.13, 4.16, 4.17, 4.19, 6.15, 6.16
NY-3.OA.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers.	1.05, 1.06, 1.07
Understand properties of multiplication and the relationship between multiplication and division.		
NY-3.OA.5	Apply properties of operations as strategies to multiply and divide.	1.09, 2.06, 2.07, 2.08, 2.09, 2.13, 3.14, 3.17, 4.12, 4.13, 4.14, 4.15, 4.17, 4.18, 4.19, 5.10
NY-3.OA.6	Understand division as an unknown-factor problem.	4.05, 4.06, 4.07, 6.15
Multiply and divide within 100.		
NY-3.OA.7a	Fluently solve single-digit multiplication and related divisions, using strategies such as the relationship between multiplication and division or properties of operations.	1.06, 1.07, 1.10, 1.11, 4.07, 4.08, 4.10, 6.09, 6.16, 7.09, 7.11
NY-3.OA.7b	Know from memory all products of two one-digit numbers.	1.06, 1.07, 1.10, 1.11, 2.11
Solve problems involving the four operations, and identify and extend patterns in arithmetic.		
NY-3.OA.8	Solve two-step word problems posed with whole numbers and having whole-number answers using the four operations.	3.18, 3.19, 3.20, 3.21, 3.22, 4.15, 4.20, 7.09
NY-3.OA.8a	Represent these problems using equations or expressions with a letter standing for the unknown quantity.	3.20, 4.15, 4.20, 7.09
NY-3.OA.8b	Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	3.21, 3.22, 4.15, 4.20, 7.09
NY-3.OA.9	Identify and extend arithmetic patterns (including patterns in the addition table or multiplication table).	3.02, 3.17, 3.18, 4.08

NY-3.NBT	Number and Operations in Base Ten	Lesson(s)
Use place value understanding and properties of operations to perform multi-digit arithmetic.		
NY-3.NBT.1	Use place value understanding to round whole numbers to the nearest 10 or 100.	3.13, 3.14, 3.15, 3.16
NY-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 addition and subtraction.	3.03, 3.04, 3.05, 3.06, 3.07, 3.08, 3.09, 3.10, 3.11, 3.12, 3.13, 3.14, 7.07
NY-3.NBT.3	Multiply one-digit whole numbers by multiples of 10 in the range 10-90 using strategies based on place value and properties of operations.	4.06, 4.11, 4.15, 4.18, 7.02
NY-3.NBT.4a	Understand that the digits of a four-digit number represent amounts of thousands, hundreds, tens, and ones.	3.23
NY-3.NBT.4b	Read and write four-digit numbers using base-ten numerals, number names, and expanded form.	3.23
NY-3.NF	**Number and Operations — Fractions**	**Lesson(s)**
Develop understanding of fractions as numbers.		
NY-3.NF.1	Understand a unit fraction, $1/b$, is the quantity formed by 1 part when a whole is partitioned into b equal parts. Understand a fraction a/b as the quantity formed by a parts of size $1/b$.	5.02, 5.03, 5.03, 5.04, 5.06
NY-3.NF.2	Understand a fraction as a number on the number line; represent fractions on a number line.	5.06, 5.07, 5.08, 6.09
NY-3.NF.2a	Represent a fraction $1/b$ on a number line 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 starting at 0 locates the number $1/b$ on the number line.	5.05
NY-3.NF.2b	Represent a fraction a/b on a number line by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.	5.06
NY-3.NF.3	Explain equivalence of fractions and compare fractions by reasoning about their size.	5.07, 5.13, 5.14, 5.15
NY-3.NF.3a	Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.	5.09, 5.10, 5.11
NY-3.NF.3b	Recognize and generate equivalent fractions. Explain why the fractions are equivalent.	5.10, 5.11, 6.04, 7.12
NY-3.NF.3c	Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.	5.07, 5.08, 5.12, 6.02
NY-3.NF.3d	Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons rely on the two fractions referring to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions.	5.13, 5.14, 5.15

NY-3.MD	Measurement and Data	Lesson(s)
Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.		
NY-3.MD.1	Tell and write time to the nearest minute and measure time intervals in minutes. Solve one-step word problems involving addition and subtraction of time intervals in minutes.	6.10, 6.11, 6.12, 6.13, 6.16
NY-3.MD.2a	Measure and estimate liquid volumes and masses of objects using grams (g), kilograms (kg), and liters (l).	6.07, 6.08, 6.09
NY-3.MD.2b	Add, subtract, multiply, or divide to solve one-step word problems involving masses or liquid volumes that are given in the same units.	6.14, 6.15, 6.16
Represent and interpret data.		
NY-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 a scaled picture graph or a scaled bar graph.	1.14, 1.15, 1.16, 1.17, 1.18
NY-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.	6.01, 6.02, 6.03, 6.04, 6.05, 6.06
Geometric measurement: understand concepts of area and relate area to multiplication and to addition.		
NY-3.MD.5	Recognize area as an attribute of plane figures and understand concepts of area measurement.	2.02, 2.03, 2.05, 7.10
NY-3.MD.5a	Recognize a square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.	2.03
NY-3.MD.5b	Recognize 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.	2.03
NY-3.MD.6	Measure areas by counting unit squares.	2.03, 2.04, 2.05
NY-3.MD.7	Relate area to the operations of multiplication and addition.	2.07, 2.08, 2.10, 2.11, 2.12, 2.13, 4.10, 4.13
NY-3.MD.7a	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.	2.06, 2.07, 2.13
NY-3.MD.7b	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.	2.06, 2.07, 2.08, 2.09, 2.13
NY-3.MD.7c	Use tiling to show in a concrete case that the area of a rectangle with whole-number side length a and side length $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.	4.10, 4.13
NY-3.MD.7d	Recognize area as additive. Find areas of figures composed of non-overlapping rectangles, and apply this technique to solve real world problems.	2.10, 2.11, 2.12

Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.		
NY-3.MD.8a	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths or finding one unknown side length given the perimeter and other side lengths.	7.06, 7.07, 7.08, 7.09, 7.11, 7.12
NY-3.MD.8b	Identify rectangles with the same perimeter and different areas or with the same area and different perimeters.	7.10, 7.11, 7.12
NY-3.G	**Geometry**	**Lesson(s)**
Reason with shapes and their attributes.		
NY-3.G.1	Recognize and classify polygons based on the number of sides and vertices (triangles, quadrilaterals, pentagons, and hexagons). Identify shapes that do not belong to one of the given subcategories.	7.01, 7.03, 7.04, 7.05, 7.08
NY-3.G.2	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.	5.02

The Standards for Mathematical Practice, Grade 3

The following shows sample citations of the alignment between Amplify Desmos Math, Grade 3 and the Standards for Mathematical Practice. Each Standard for Mathematical Practice is addressed throughout the grade.

MP1 Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

1.01, 1.03, 1.04, 1.05, 1.10, 1.11, 1.13, 1.17, 1.18, 2.01, 2.02, 2.07, 2.09, 2.11, 2.13, 3.01, 3.04, 3.05, 3.08, 3.09, 3.10, 3.14, 3.20, 3.21, 4.01, 4.03, 4.04, 4.06, 4.13, 4.15, 4.16, 4.17, 4.18, 4.19, 4.20, 5.01, 6.01, 6.08, 6.12, 7.07, 7.08, 7.09, 7.10, 7.12

MP2 Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

1.01, 1.02, 1.03, 1.04, 1.05, 1.06, 1.07, 1.10, 1.12, 1.13, 1.14, 1.17, 2.04, 2.05, 2.06, 2.07, 3.01, 3.03, 3.05, 3.09, 3.20, 3.22, 4.01, 4.02, 4.04, 4.05, 4.06, 4.10, 4.12, 4.13, 4.15, 4.17, 4.20, 5.11, 5.13, 6.01, 6.05, 6.12, 6.14, 6.15, 6.16, 7.06, 7.09, 7.10

MP3 Construct viable arguments and critique the reasoning of others.

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

1.07, 1.15, 1.16, 2.01, 2.02, 2.04, 2.05, 2.07, 2.11, 2.12, 3.04, 3.06, 3.11, 3.12, 3.13, 3.19, 4.06, 4.12, 4.15, 4.18, 5.02, 5.07, 6.01, 6.09, 6.13, 6.15, 7.03, 7.04, 7.06, 7.07, 7.08, 7.10

MP4 Model with mathematics.

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

1.06, 1.11, 1.16, 2.04, 2.09, 2.13, 3.01, 3.20, 3.21, 3.22, 4.03, 4.05, 4.17, 5.04, 6.02, 6.13, 6.15, 7.12

MP5 Use appropriate tools strategically.

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

2.01, 2.08, 3.03, 3.08, 3.09, 3.11, 3.14, 3.19, 3.20, 4.11, 4.16, 6.02, 7.07

MP6 Attend to precision.

Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

1.01, 1.03, 1.07, 1.08, 1.14, 1.15, 1.16, 1.17, 2.02, 2.03, 2.05, 2.08, 2.10, 3.04, 3.06, 3.07, 3.10, 3.11, 3.12, 3.13, 3.13, 3.14, 3.15, 3.19, 3.22, 4.02, 5.01, 5.02, 5.05, 5.06, 5.09, 6.01, 6.02, 6.03, 6.04, 6.06, 6.10, 6.11, 7.01, 7.02, 7.03, 7.04, 7.05, 7.06

MP7 Look for and make use of structure.

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well-remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.

1.03, 1.04, 1.05, 1.06, 1.07, 1.09, 1.13, 1.14, 1.15, 1.17, 1.18, 2.03, 2.05, 2.06, 2.07, 2.08, 2.09, 2.10, 2.11, 2.12, 3.03, 3.04, 3.05, 3.07, 3.08, 3.09, 3.10, 3.11, 3.12, 3.13, 3.14, 3.13, 3.14, 3.15, 3.16, 3.19, 3.23, 4.01, 4.03, 4.04, 4.05, 4.07, 4.08, 4.10, 4.11, 4.12, 4.14, 4.15, 4.17, 4.18, 4.19, 5.01, 5.02, 5.03, 5.04, 5.05, 5.06, 5.07, 5.08, 5.09, 5.10, 5.12, 5.13, 5.14, 5.15, 6.02, 6.04, 6.05, 6.06, 6.07, 6.09, 6.10, 6.11, 6.13, 6.14, 6.16, 7.01, 7.02, 7.03, 7.04, 7.05, 7.06, 7.07, 7.08, 7.09, 7.11

MP8 Look for and express regularity in repeated reasoning.

Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

1.06, 1.07, 1.08, 1.09, 1.11, 1.13, 1.18, 2.09, 3.03, 3.05, 3.07, 3.08, 3.09, 3.10, 3.13, 3.14, 3.14, 3.16, 4.03, 4.04, 4.05, 4.07, 4.14, 4.17, 4.19, 5.04, 5.07, 5.08, 5.10, 5.12, 5.14, 5.15, 6.07, 6.09, 6.13, 6.16, 7.02, 7.11

Unit 1 Introducing Multiplication

	Pre-Unit Check	**NY-2.OA.4,** MP7

Sub-Unit 1 Introduction to Multiplication

1.01	Investigate: Finding Equal Groups | Where do you see equal groups around our school community?	**Building toward NY-3.OA.1,** MP1, MP2, MP6
1.02	Equal Groups | Introducing Multiplication	**NY-3.OA.1,** MP2, MP4, MP7, MP8
1.03	More Equal Groups | Representing Situations With Drawings and Diagrams	**NY-3.OA.1,** MP1, MP2, MP7
1.04	Book Clubs | Making Sense of Multiplication Problems	**NY-3.OA.1, NY-3.OA.3,** MP1, MP2, MP7
1.05	Choosing Your Own Strategy | Solving Multiplication Problems	**NY-3.OA.3, NY-3.OA.4, NY-3.OA.7a,** MP1, MP2, MP7, MP8
1.06	What's Missing? | Relating Representations to Equations With Unknown Values	**NY-3.OA.4, NY-3.OA.1, NY-3.OA.3, NY-3.OA.7a,** MP2, MP4, MP7, MP8
1.07	As a Matter of Fact | Building Flexibility, Efficiency, and Accuracy With Multiplication Facts	**NY-3.OA.1, NY-3.OA.4, NY-3.OA.7a, NY-3.OA.7b,** MP2, MP3, MP6, MP7, MP8
	Sub-Unit Quiz	**NY-3.OA.1, NY-3.OA.3,** MP6, MP7

Sub-Unit 2 Arrays

1.08	Searching for Arrays | Finding, Drawing, and Describing Arrays	**NY-3.OA.1,** MP6, MP7, MP8
1.09	Arrays of Flavor | Exploring the Commutative Property of Multiplication	**NY-3.OA.1, NY-3.OA.5,** MP7, MP8
1.10	Organizing Art Supplies | Solving Problems With Arrays	**NY-3.OA.3, NY-3.OA.1, NY-3.OA.7a, NY-3.OA.7b,** MP1, MP2, MP7, MP8
1.11	A Community Reading Event | Different Representations of Multiplication	**NY-3.OA.3, NY-3.OA.7a, NY-3.OA.7b,** MP1, MP4, MP7, MP8
	Sub-Unit Quiz	**NY-3.OA.1, NY-3.OA.3, NY-3.OA.4,** MP2, MP4, MP7

Sub-Unit 3 Data on Scaled Graphs

1.12	Library Surveys | Drawing and Interpreting Picture Graphs and Bar Graphs	**Building Toward NY-3.MD.3,** MP2
1.13	School Surveys | Reading Scaled Picture Graphs	**Building Toward NY-3.MD.3,** MP1, MP2, MP7, MP8
1.14	Which Character Are You? | Creating a Scaled Picture Graph	**NY-3.MD.3,** MP2, MP6, MP7
1.15	Puppy Pile | Representing Data on Scaled Bar Graphs	**NY-3.MD.3,** MP3, MP6, MP7
1.16	2, 5, or 10? | Choosing a Scale	**NY-3.MD.3,** MP3, MP4, MP6, MP7
1.17	Raising the Bar | Answering Questions About Scaled Bar Graphs	**NY-3.MD.3,** MP1, MP2, MP6, MP7
1.18	Favorite Season | Answering Questions About Scaled Bar Graphs	**NY-3.MD.3,** MP1, MP7, MP8
	End-of-Unit Assessment	**NY-3.MD.3, NY-3.OA.1, NY-3.OA.3, NY-3.OA.4,** MP2, MP3, MP4, MP6, MP7

Unit 2 Area and Multiplication

Pre-Unit Check — NY-2.MD.2, MP5

Sub-Unit 1 Concepts of Area Measurement

2.01 Investigate | Comparing Rugs — Building Toward NY-3.MD.5, MP1, MP3, MP5

2.02 Which Covers More Space? | Developing the Concept of Area — NY-3.MD.5, MP1, MP3, MP6

2.03 Tiling Figures | Using Square Tiles to Determine the Area of Rectangles — NY-3.MD.6, NY-3.MD.5, NY-3.MD.5a, NY-3.MD.5b, MP2, MP3, MP6, MP7

2.04 Area Hunt | Understanding and Estimating With Different-Sized Square Units — NY-3.MD.6, MP2, MP3, MP4

2.05 Rectangles and Arrays | Determining Area of Rectangles by Counting Square Units — NY-3.MD.6, NY-3.MD.5, MP2, MP3, MP6, MP7

Sub-Unit Quiz — NY-3.MD.5a, NY-3.MD.5b, NY-3.MD.7a, MP3, MP6

Sub-Unit 2 Relating Area to Multiplication

2.06 Rectangular Rugs | Relating Multiplication Expressions to Tiled Rectangles — NY-3.OA.5, NY-3.MD.7a, NY-3.MD.7b, MP2, MP7

2.07 Toying With Tiles | Determining the Area of Rectangles Without a Grid — NY-3.OA.5, NY-3.MD.7a, NY-3.MD.7b, MP1, MP2, MP3, MP7

2.08 Using a Ruler | Measuring Side Lengths to Determine Area of Rectangles — NY-3.OA.5, NY-3.MD.7b, MP5, MP6, MP7

2.09 Painting and Planting With Cheri | Solving Area Problems With Missing Side Lengths — NY-3.OA.5, NY-3.OA.3, NY-3.MD.7b, MP1, MP4, MP7, MP8

Sub-Unit Quiz — NY-3.MD.7a, NY-3.MD.7b, MP2, MP6, MP7

Sub-Unit 3 Determining the Area of Figures Composed of Rectangles

2.10 A Missing Puzzle Piece | Determining the Area of Figures Made of Rectangles — NY-3.MD.7, NY-3.MD.7d, MP6, MP7

2.11 Painting Cheri's House | Calculating the Area of Figures Using Multiplication and Addition — NY-3.OA.7b, NY-3.MD.7d, MP1, MP2, MP3, MP7

2.12 What Do We Need to Know? | Determining the Area of Figures With Unknown Side Lengths — NY-3.OA.3, NY-3.MD.7d, MP3, MP7

2.13 Designing a Putting Green | Applying an Understanding of Area to Solve Real-World Problems — NY-3.OA.3, NY-3.MD.7d, NY-3.MD.5, NY-3.MD.6, MP1, MP4

End-of-Unit Assessment — NY-3.MD.5, NY-3.MD.5b, NY-3.MD.6, NY-3.MD.7b, NY-3.MD.7d, NY-3.OA.7b, MP2, MP3, MP6, MP7

Unit 3 Wrapping Up Addition and Subtraction Within 1,000

	Pre-Unit Check	**NY-3.NBT.2,** MP1, MP2, MP5

Sub-Unit 1 Adding Within 1,000

3.01	Creating a Photo Gallery | How Many Ways Can You Represent 999?	**Building Toward NY-3.NBT.2,** MP1, MP2, MP4
3.02	Adding Your Way | Using Familiar Strategies to Add	**NY-3.NBT.2,** MP1, MP3, MP5, MP6
3.03	What Is an Algorithm? | Introducing the Expanded Form and Partial Sums Algorithms	**NY-3.NBT.2,** MP1, MP2, MP7, MP8
3.04	Using Fewer Digits | Adding With the Standard Algorithm	**NY-3.NBT.2,** MP3, MP6
3.05	A New Type of Addition Problem | Composing More Than One Unit to Add	**NY-3.NBT.2,** MP6, MP7, MP8
3.06	Adding Strategically | Choosing an Addition Strategy Based on the Numbers to Add	**NY-3.NBT.2,** MP1, MP5, MP7, MP8
	Sub-Unit Quiz	**NY-3.NBT.2,** MP1, MP2, MP5

Sub-Unit 2 Subtracting Within 1,000

3.07	Subtracting Your Way | Subtraction Using Familiar Strategies	**NY-3.NBT.2,** MP1, MP2, MP5
3.08	Subtracting With An Algorithm | Introducing the Expanded Form Subtraction Algorithm	**NY-3.NBT.2,** MP1, MP6
3.09	A New Algorithm | Relating the Expanded Form Algorithm to the Standard Form Algorithm	**NY-3.NBT.2,** MP6
3.10	Taking It Step by Step | Analyzing Subtraction Algorithms	**NY-3.NBT.2,** MP1, MP6
3.11	Subtracting From Zero? | Decomposing with Zeros with Subtraction Algorithms	**NY-3.NBT.2,** MP3, MP6
3.12	Subtracting Strategically | Choosing a Subtraction Strategy Based on the Numbers to Subtract	**NY-3.NBT.2,** MP1, MP5, MP7
	Sub-Unit Quiz	**NY-3.NBT.2,** MP1, MP2, MP5

Sub-Unit 3 Rounding Within 1,000

3.13	Nearest on a Number Line | Preparing for Rounding by Identifying the Nearest Multiple of 10 or 100	**NY-3.NBT.2,** MP6, MP7
3.14	Roundabout! | Rounding to the Nearest Ten and Nearest Hundred	**NY-3.NBT.1,** MP7, MP8
3.15	What's the Goal? | Rounding to the Nearest Ten and Hundred to Estimate	**NY-3.NBT.1,** MP6, MP7
3.16	Mystery Numbers | Determining a Number Based on Its Rounded Value	**NY-3.NBT.1,** MP6, MP7, MP8
	Sub-Unit Quiz	**NY-3.NBT.1,** MP3, MP6, MP7, MP8

Sub-Unit 4 Solving Two-Step Problems

3.17	What Patterns Do You See? | Exploring Patterns in Addition and Multiplication Tables	**NY-3.NBT.1,** MP7
3.18	Does It Make Sense? | Checking Reasonableness Through Rounding	**NY-3.OA.8, NY-3.OA.8b,** MP1, MP3
3.19	Rep-re-sent! | Connecting Tape Diagrams and Equations to Situations	**NY-3.OA.1, NY-3.OA.8, NY-3.OA.8a,** MP2, MP3
3.20	Representing Information | Representing Situations with Diagrams and Equations	**NY-3.OA.1, NY-3.OA.8,** MP1, MP2, MP4
3.21	What Else Did Max Photograph? | Creating Two-Step Problems	**NY-3.OA.1, NY-3.OA.8,** MP1, MP4
3.22	Expanded Form | Understanding the Structure of Four-Digit Numbers	**NY-3.NBT.4a, NY-3.NBT.4b,** MP6, MP7
	End-of-Unit Assessment	**NY-3.NBT.1, NY-3.NBT.2, NY-3.OA.8,** MP1, MP2, MP5, MP6

Unit 4 Relating Multiplication to Division

Pre-Unit Check — NY-3.MD.5, NY-3.MD.7, NY-3.OA.1, MP1, MP2, MP6

Sub-Unit 1 What Is Division?

4.01 Investigate: Packing Up Peppers | How Can Mateo's Peppers be Packed Equally into Boxes? — Building Toward NY-3.OA.2, MP1, MP2, MP7

4.02 Representing Division | Representing Partitive and Quotitive Division Situations — NY-3.OA.2, MP2, MP4, MP6

4.03 Family Dinner | Interpreting, Representing, and Solving Division Problems — NY-3.OA.2, NY-3.OA.3, MP1, MP4, MP7, MP8

4.04 Representing and Solving | Representing and Solving Division Problems — NY-3.OA.3, NY-3.OA.2, MP1, MP2, MP7, MP8

Sub-Unit Quiz — NY-3.OA.2, MP1, MP2, MP6

Sub-Unit 2 Relating Multiplication and Division

4.05 It's Chili in Here! | Recognizing Division as an Unknown Factor Problem — NY-3.OA.6, NY-3.OA.2, MP2, MP4

4.06 Division and Multiplication Equations | Using Multiplication and Division to Solve Problems — NY-3.OA.2, NY-3.OA.6, NY-3.OA.3, NY-3.NBT.3, MP1, MP2, MP3

4.07 Relating Quotients to Familiar Products | Using Familiar Facts to Identify Unknown Factors — NY-3.OA.7a, NY-3.OA.6, MP7, MP8

4.08 Patterns in Multiplication | Exploring Patterns in Multiplication Tables — NY-3.OA.7a, NY-3.OA.9, MP7

Sub-Unit Quiz — NY-3.OA.6, MP1, MP2, MP7

Sub-Unit 3 Multiplying Larger Numbers

4.09 Exploring Multiplication Strategies | Representing Multiplication on Gridded Rectangles — NY-3.OA.7a, NY-3.MD.7, NY-3.MD.7c, MP1, MP2, MP7

4.10 How Do You Split It? | Making Equal Groups of Rectangles to Determine the Area — NY-3.OA.7a, NY-3.MD.7, NY-3.MD.7c, MP2, MP3, MP6, MP7

4.11 Groups of Groups of 10 | Multiplying a One-Digit Number by Multiples of Ten — NY-3.NBT.3, MP5, MP7

4.12 Multiplying Teen Numbers | Multiplying a One-Digit Number by a Teen Number — NY-3.OA.5, NY-3.OA.3, MP8

4.13 Problems Around the Farm | Solving Multiplication Problems Involving Teen Numbers — NY-3.OA.3, NY-3.OA.5, NY-3.MD.7, NY-3.MD.7c, MP1, MP2

4.14 Multiplying Numbers Greater Than 20 | Applying Strategies to Multiply Larger Numbers — NY-3.OA.5, MP7, MP8

4.15 Planting Pepper Seeds | Representing and Solving Two-Step Story Problems — NY-3.OA.5, NY-3.NBT.3, NY-3.OA.8, NY-3.OA.8a, MP1, MP2

Sub-Unit Quiz — NY-3.MD.7c, NY-3.NBT.3, NY-3.OA.5, MP2, MP7

Sub-Unit 4 Dividing Larger Numbers

4.16 Setting up the Birthday Party | Division With Greater Numbers — NY-3.OA.2, NY-3.OA.3, MP1, MP5

4.17 Looking at the Numbers | Choosing Division Strategies — NY-3.OA.5, NY-3.OA.3, MP1, MP4, MP8

4.18 Lots and Lots of Groups | Comparing Representations to Divide — NY-3.OA.5, NY-3.OA.2, NY-3.NBT.3, MP1, MP7

4.19 Be Flexible! | Developing Efficient Strategies for Dividing Within 100 — NY-3.OA.5, NY-3.OA.3, MP1, MP7

4.20 Peppers and Apples, Oh My! | Representing and Solving Problems With All Four Operations — NY-3.OA.8, NY-3.OA.8a, NY-3.OA.8b, MP1, MP2

End-of-Unit Assessment — NY-3.OA.7, NY-3.OA.2, NY-3.OA.3, NY-3.OA.6, MP1, MP2, MP4, MP5, MP6

Unit 5 Fractions as Numbers

	Pre-Unit Check	NY-2.G.3, MP6, MP7

Sub-Unit 1 Introduction to Fractions

5.01	Investigate | Making Parts and Wholes	Building toward NY-3.NF.1, MP1, MP6, MP7
5.02	What is a Fraction? | Introduction to Fractions	NY-3.NF.1, NY-3.G.2, MP3, MP6, MP7
5.03	One Part Wonder | Introduction to Unit Fractions	NY-3.NF.1, NY.3.G.2, MP7
5.04	More Parts, More Wholes | Introduction to Non-Unit Fractions	NY-3.NF.1, MP6, MP7, MP8
5.05	What Parts? How Many Parts? | Representing Non-unit Fractions	NY-3.NF.1, MP1, MP7
	Sub-Unit Quiz	NY-3.NF.1, MP6, MP7

Sub-Unit 2 Fractions on the Number Line

5.06	To the Number Line | Fractions Less Than 1 on the Number Line	NY-3.NF.1, MP1, MP7
5.07	Fractions on the Number Line | Representing Fractions Less Than 1 and Greater Than 1 on the Number Line	NY-3.NF.2b, NY-3.NF.2, NY-3.NF.2a, MP3, MP6
5.08	One Value, More Than One Name | Fractions Equal to Whole Numbers	NY-3.NF.2, NY-3.NF.2a, NY-3.NF.2b, NY-3.NF.3c, MP3, MP6, MP7
5.09	Location, Location, Location | Using the Number Line and Fractions Flexibly	NY-3.NF.2, NY-3.NF.3c, NY-3.NF.3, MP6, MP7
	Sub-Unit Quiz	NY-3.NF.2a, NY-3.NF.2b, MP6, MP7

Sub-Unit 3 Equivalent Fractions

5.10	Equivalent Fractions | Identifying Equivalent Fractions	NY-3.NF.2, NY-3.NF.3c, MP7, MP8
5.11	Generating Equivalent Fractions | Generating Equivalent Fractions	NY-3.NF.3a, NY-3.NF.3b, MP2
5.12	Equivalent Fractions on a Number Line | Equivalent Fractions on a Number Line	NY-3.NF.3a, NY-3.NF.3b, NY-3.OA.5, MP7, MP8
5.13	Whole Numbers and Fractions | Expressing Whole Numbers as Fractions	NY-3.NF.3c, MP2, MP3, MP7
5.14	A New Denominator | Expressing Whole Numbers as Fractions with a Denominator of 1	NY-3.NF.3d, NY-3.NF.3, MP6, MP7, MP8
	Sub-Unit Quiz	NY-3.NF.3a, NY-3.NF.3b, 1NY-3.NF.3c, MP7

Sub-Unit 4 Fraction Comparisons

5.15	Seems About Right | Comparing Unit Fractions	NY-3.NF.3d, NY-3.NF.3, MP3, MP7, MP8
5.16	Same Number of Parts | Comparing Fractions With the Same Numerator	NY-3.NF.3d, NY-3.NF.3, MP7, MP8
5.17	Same-Sized Parts | Comparing Fractions With the Same Denominator	NY-3.NF.3d, NY-3.NF.3, MP7, MP8
	End-of-Unit Assessment	NY-3.G.2, NY- 3.NF.1, NY- 3.NF.2a, NY-3.NF.2b, NY-3.NF.3a, NY- 3.NF.3b, NY-3.NF.3c, NY-3.NF.3d, MP6, MP7

Unit 6 Measuring Length, Time, Liquid Volume, and Weight

Pre-Unit Check — NY-2.MD.1, NY-2.MD.7, NY-2.MD.9, NY-3.NBT.2, NY-3.OA.1, NY-3.OA.2, MP1, MP6, MP7

Sub-Unit 1 Measurement Data on Line Plots

6.01 Investigation | Egg-cellent Pick — NY-3.MD.4, MP1, MP2, MP3

6.02 How Long Is It? | Measuring in Halves of an Inch — NY-3.MD.4, NY-3.NF.3c, MP4, MP5, MP6, MP7

6.03 More Precise Measurements | Measuring in Fourths of an Inch — NY-3.MD.4, NY-3.NF.3c, MP2, MP3, MP6

6.04 Same Lengths, Different Names | Measuring in Halves and Fourths of an Inch — NY-3.MD.4, NY-3.NF.3b, MP6, MP7

6.05 Making Sense of Data | Interpreting Data on Line Plots — NY-3.MD.4, MP2, MP7

6.06 Let's Make a Line Plot | Generating and Displaying Measurement Data on a Line Plot — NY-3.MD.4, MP6, MP7, MP8

Sub-Unit Quiz — NY-3.MD.4, MP6, MP7

Sub-Unit 2 Weight and Liquid Volume

6.07 Estimating and Measuring Weight | Estimating and Measuring Weight in Grams and Kilograms — NY-3.MD.2a, MP7, MP8

6.08 Measuring Liquids | Introducing Liquid Volume — NY-3.MD.2a, MP1

6.09 How Much Liquid Does It Hold? | Estimating and Measuring Liquid Volume in Liters — NY-3.MD.2a, NY-3.NF.2, NY-3.OA.7a, MP3, MP7, MP8

Sub-Unit Quiz — NY-3.MD.2a, MP7, MP8

Sub-Unit 3 Problems Involving Time

6.10 What Time Is It? | Telling and Writing Time to the Minute — NY-3.MD.1, MP6, MP7

6.11 Chicken Time | Representing and Solving Problems Involving Start and End Times — NY-3.MD.1, MP6, MP7

6.12 All Kinds of Time | Solving Elapsed Time Problems — NY-3.MD.1, MP1, MP2

6.13 Swapping Time Problems | Writing and Solving Time Problems — NY-3.MD.1, MP3, MP4

Sub-Unit Quiz — NY-3.MD.1, MP1, MP2, MP6, MP7

Sub-Unit 4 Measurement Problems in Context

6.14 Fair Questions | Making Sense of and Representing Measurement Situations — NY-3.MD.2b, MP2, MP7, MP8

6.15 All the Proof You'll Need | Representing Problems and Justifying the Operation Used to Solve Them — NY-3.MD.2b, NY-3.OA.3, NY-3.OA.6, MP2, MP3, MP4, MP7

6.16 For Good Measure | Solving Problems Using All Four Operations — NY-3.OA.3, NY-3.MD.1, NY-3.MD.2b, MP2, MP7, MP8

End-of-Unit Assessment — NY-3.MD.4, NY-3.MD.2a, NY-3.MD.2b, NY-3.MD.1, MP1, MP2, MP4, MP6, MP7, MP8

Unit 7 Two-Dimensional Shapes and Perimeter

	Pre-Unit Check	**NY-2.G.1,** MP6
Sub-Unit 1	Reasoning With Shapes	
7.01	Investigate | Sorting Shapes	**NY-3.G.1,** MP6, MP7
7.02	Attributes That Define Shapes | Determining What Attributes Different Shapes Have in Common	**NY-3.NBT.3, NY-3.G.1,** MP3, MP6, MP7
7.03	Rectangles, Squares, and Rhombuses | Exploring Special Types of Quadrilaterals	**NY-3.G.1,** MP3, MP6, MP7
7.04	More Quadrilaterals | Using Attributes to Draw and Categorize Quadrilaterals	**NY-3.G.1,** MP3, MP6, MP7
7.05	Wax Prints | Applying Quadrilaterals and Other Shapes to Design a Pattern	**NY-3.G.1,** MP6, MP7
	Sub-Unit Quiz	**NY-3.G.1, NY-3.OA.5,** MP7
Sub-Unit 2	What Is Perimeter?	
7.06	Distance Around Shapes | Recognizing Perimeter	**NY-3.MD.8a,** MP2, MP3, MP6, MP7
7.07	Different Shapes, Same Perimeter? | Exploring Whether Different Shapes can Have the Same Perimeter	**NY-3.MD.8a, NY-3.NBT.2,** MP1, MP3, MP5, MP7
7.08	Perimeters of Different Shapes | Determining the Perimeter of Shapes Using Attributes	**NY-3.MD.8a, NY-3.G.1,** MP1, MP3, MP7
7.09	Solving Perimeter Problems | Using Equations to Solve Real-World and Mathematical Problems Involving Perimeter	**NY-3.MD.8a, NY-3.OA.7a, NY-3.OA.8, NY-3.OA.8a,** MP1, MP2, MP7, MP8
	Sub-Unit Quiz	**NY-3.MD.8a, NY-3.G.1 ,** MP2, MP7
Sub-Unit 3	Expounding on Perimeter	
7.10	Relating Perimeter and Area | Recognizing the Relationship Between Perimeter and Area	**NY-3.MD.8b, NY-3.MD.5,** MP1, MP2, MP3
7.11	Perimeters and Areas | Exploring Rectangles With the Same Perimeter or Same Area	**NY-3.MD.8a, NY-3.MD.8b, NY-3.OA.7a,** MP7, MP8
7.12	Designing an Ice Maze | Applying Area and Perimeter to Make and Defend Design Decisions	**NY-3.MD.8a, NY-3.MD.8b, NY-3.NF.3b,** MP1, MP4
	End-of-Unit Assessment	**NY-3.G.1, NY-3.MD.8a, NY-3.MD.8b,** MP3, MP6, MP7

New York State Next Generation Mathematics Learning Standards, Correlated to Amplify Desmos Math Grade 4

The following shows the alignment of Amplify Desmos Math to the New York State Next Generation Mathematics Learning Standards for Grade 4.

NY-4.OA	Operations and Algebraic Thinking	Lesson(s)
Use the four operations with whole numbers to solve problems.		
NY-4.OA.1	Interpret a multiplication equation as a comparison. Represent verbal statements of multiplicative comparisons as multiplication equations.	5.01, 5.03, 5.04, 5.05, 5.06, 5.07
NY-4.OA.2	Multiply or divide to solve word problems involving multiplicative comparison, distinguishing multiplicative comparison from additive comparison. Use drawings and equations with a symbol for the unknown number to represent the problem.	5.02, 5.03, 5.04, 5.05, 5.06, 5.07, 5.10, 5.11, 5.12
NY-4.OA.3	Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted.	5.06, 5.07, 5.13, 5.14, 5.15, 5.16, 6.16, 6.19, 6.20, 6.21, 6.22, 6.23
NY-4.OA.3a	Represent these problems using equations or expressions with a letter standing for the unknown quantity.	5.06, 5.07, 6.16, 6.19, 6.20, 6.21, 6.22, 6.23
NY-4.OA.3b	Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	5.06, 5.13, 5.14, 5.15, 5.16, 6.16, 6.20, 6.21, 6.23
Gain familiarity with factors and multiples.		
NY-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 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.	1.04, 1.05, 1.06, 1.07, 1.09, 1.10, 1.11, 1.12
Generate and analyze patterns.		
NY-4.OA.5	Generate a number or shape pattern that follows a given rule. Identify and informally explain apparent features of the pattern that were not explicit in the rule itself.	1.01, 1.02, 1.03, 1.04
NY-4.NBT	**Number and Operations in Base Ten**	**Lesson(s)**
Generalize place value understanding for multi-digit whole numbers.		
NY-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.	4.08, 4.09, 4.10, 4.11, 5.08
NY-4.NBT.2a	Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form.	4.09, 4.10, 4.12, 4.13, 4.19, 4.21
NY-4.NBT.2b	Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	4.09, 4.10, 4.12, 4.13, 4.19, 4.21, 5.17
NY-4.NBT.3	Use place value understanding to round multi-digit whole numbers to any place.	4.14, 4.15, 4.16
Use place value understanding and properties of operations to perform multi-digit arithmetic.		
NY-4.NBT.4	Fluently add and subtract multi-digit whole numbers using a standard algorithm.	4.16, 6.23, 7.02

NY-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.	2.08, 2.14, 5.07, 5.09, 5.17, 6.01, 6.02, 6.03, 6.04, 6.05, 6.06, 6.07, 6.08, 6.09, 6.10, 6.20, 6.21, 6.22, 6.23, 7.02
NY-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.	1.10, 5.07, 6.11, 6.12, 6.13, 6.14, 6.15, 6.16, 6.17, 6.18, 6.19, 6.20, 6.21, 6.23
NY-4.NF	**Number and Operations — Fractions**	**Lesson(s)**
Extend understanding of fraction equivalence and ordering.		
NY-4.NF.1	Explain why a fraction a/b is equivalent to a fraction $(a \times n)/(b \times n)$ 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.	2.05, 2.06, 2.07, 2.08, 2.09, 2.10, 2.12, 2.13, 2.14, 2.15, 3.13
NY-4.NF.2	Compare two fractions with different numerators and different denominators. 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.	2.01, 2.02, 2.03, 2.04, 2.11, 2.12, 2.13, 2.14, 2.15
Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.		
NY-4.NF.3	Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.	3.01, 3.03
NY-4.NF.3a	Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	3.01, 3.02, 3.03, 3.04
NY-4.NF.3b	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.	3.02, 3.07
NY-4.NF.3c	Add and subtract mixed numbers with like denominators.	3.05, 3.06, 3.07
NY-4.NF.3d	Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.	3.02, 3.04, 3.05, 3.06, 3.07
NY-4.NF.4	Apply and extend previous understandings of multiplication to multiply a whole number by a fraction.	3.08, 3.09, 3.10, 3.12
NY-4.NF.4a	Understand a fraction a/b as a multiple of $1/b$.	3.09, 3.11
NY-4.NF.4b	Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a whole number by a fraction.	3.10, 3.11, 3.12
NY-4.NF.4c	Solve word problems involving multiplication of a whole number by a fraction.	3.09, 3.12, 3.16, 5.11
Understand decimal notation for fractions, and compare decimal fractions.		
NY-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.	3.13, 3.14, 3.15, 4.04, 4.05, 4.06, 4.07
NY-4.NF.6	Use decimal notation for fractions with denominators 10 or 100.	4.02, 4.03, 4.04, 4.06

NY-4.NF.7	Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions.	4.05, 4.06, 4.07
NY-4.MD	**Measurement and Data**	**Lesson(s)**
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.		
NY-4.MD.1	Know relative sizes of measurement units: ft., in.; km, m, cm. Know the conversion factor and use it to convert measurements in a larger unit in terms of a smaller unit: ft., in.; km, m, cm; hr., min., sec. Given the conversion factor, convert all other measurements within a single system of measurement from a larger unit to a smaller unit. Record measurement equivalents in a two-column table.	5.08, 5.09, 5.10, 5.13, 5.14, 5.15, 5.16, 5.17
NY-4.MD.2	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money.	5.09, 5.10, 5.11, 5.12, 5.13, 5.14, 5.15, 5.16
NY-4.MD.2a	Solve problems involving fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.	5.12, 5.13, 5.14, 5.15, 5.16
NY-4.MD.2b	Represent measurement quantities using diagrams that feature a measurement scale, such as number lines.	3.15, 5.05, 5.08
Represent and interpret data.		
NY-4.MD.4	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 information presented in line plots.	3.15, 3.16
Geometric measurement: understand concepts of angle and measure angles.		
NY-4.MD.5	Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.	7.05, 7.06, 7.16, 7.20
NY-4.MD.5a	Recognize 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 angles.	7.07, 7.08
NY-4.MD.5b	Recognize an angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees.	7.08, 7.20
NY-4.MD.6	Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	7.08, 7.09, 7.10, 7.11
NY-4.MD.7	Recognize angle measure as additive. 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. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems.	7.07, 7.12, 7.19
NY-4.G	**Geometry**	**Lesson(s)**
Draw and identify lines and angles, and classify shapes by properties of their lines and angles.		
NY-4.G.1	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	7.01, 7.02, 7.03, 7.04, 7.05, 7.09, 7.10, 7.11, 7.13, 7.14, 7.18
NY-4.G.2a	Identify and name triangles based on angle size (right, obtuse, acute).	7.13, 7.14, 7.15, 7.20

NY-4.G.2b	Identify and name all quadrilaterals with 2 pairs of parallel sides as parallelograms.	7.13, 7.16
NY-4.G.2c	Identify and name all quadrilaterals with four right angles as rectangles.	7.13, 7.16
NY-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.	7.16, 7.17, 7.18, 7.19

The Standards for Mathematical Practice, Grade 4

The following shows sample citations of the alignment between Amplify Desmos Math, Grade 4 and the Standards for Mathematical Practice. Each Standard for Mathematical Practice is addressed throughout the grade.

MP1 Make sense of problems and persevere in solving them.	Lesson(s)
Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.	1.01, 1.09, 2.01, 2.05, 2.12, 2.13, 2.15, 3.01, 3.02, 3.03, 3.06, 4.01, 4.06, 4.08, 4.17, 5.01, 5.07, 5.13, 5.15, 6.01, 6.02, 6.11, 6.13, 6.14, 6.17, 6.18, 6.19, 6.20, 6.21, 7.11
MP2 Reason abstractly and quantitatively.	
Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.	1.06, 1.09, 2.13, 3.01, 3.04, 3.07, 3.08, 3.09, 3.10, 3.12, 3.13, 3.15, 3.16, 4.02, 4.03, 4.04, 4.08, 4.09, 4.11, 4.15, 4.18, 4.20, 4.21, 5.03, 5.05, 5.06, 5.10, 5.13, 5.14, 5.15, 5.16, 6.01, 6.02, 6.03, 6.04, 6.05, 6.06, 6.11, 6.12, 6.18
MP3 Construct viable arguments and critique the reasoning of others.	
Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.	1.01, 1.03, 1.07, 1.09, 1.10, 2.04, 2.06, 2.07, 2.08, 2.10, 2.11, 2.12, 2.13, 2.15, 3.05, 3.06, 3.07, 3.09, 3.10, 3.12, 4.04, 4.05, 4.06, 4.11, 4.12, 4.13, 4.17, 4.18, 4.20, 5.06, 5.07, 5.08, 5.09, 5.10, 5.13, 5.14, 5.15, 6.03, 6.04, 6.05, 6.07, 6.08, 6.12, 6.16, 6.18, 6.20, 6.21, 7.05, 7.18

MP4 Model with mathematics.	Lesson(s)
Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.	3.04, 4.21, 5.02, 5.03, 6.12
MP5 Use appropriate tools strategically.	
Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.	4.05, 4.15, 7.01, 7.05, 7.08, 7.10
MP6 Attend to precision.	
Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.	1.03, 1.10, 1.12, 2.01, 2.04, 2.05, 2.08, 2.12, 2.15, 3.05, 3.06, 3.07, 3.09, 3.15, 3.16, 4.06, 4.12, 4.16, 4.18, 4.21, 5.01, 5.06, 5.11, 5.14, 5.17, 6.03, 6.05, 6.10, 6.14, 6.19, 6.21, 7.01, 7.02, 7.04, 7.06, 7.09, 7.10, 7.13, 7.14, 7.17

MP7 Look for and make use of structure.	Lesson(s)
Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as *5 minus a positive number times a square* and use that to realize that its value cannot be more than 5 for any real numbers x and y.	1.01, 1.02, 1.03, 1.04, 1.05, 1.06, 1.07, 1.08, 1.10, 1.11, 1.12, 2.01, 2.02, 2.03, 2.04, 2.05, 2.06, 2.08, 2.10, 2.13, 2.14, 2.15, 3.01, 3.02, 3.03, 3.04, 3.05, 3.07, 3.08, 3.11, 3.12, 3.13, 3.14, 4.01, 4.02, 4.03, 4.04, 4.05, 4.06, 4.07, 4.09, 4.10, 4.11, 4.12, 4.13, 4.14, 4.15, 4.16, 4.19, 4.20, 5.01, 5.02, 5.04, 5.05, 5.07, 5.08, 5.09, 5.10, 5.12, 5.16, 5.17, 6.02, 6.04, 6.05, 6.07, 6.08, 6.09, 6.10, 6.13, 6.14, 6.15, 6.16, 6.20, 6.22, 6.23, 7.01, 7.02, 7.05, 7.06, 7.07, 7.09, 7.10, 7.14, 7.18, 7.20
MP8 Look for and express regularity in repeated reasoning.	
Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.	1.04, 1.08, 1.10, 1.11, 2.02, 2.06, 2.07, 2.08, 2.09, 2.11, 2.14, 3.05, 3.10, 3.14, 4.07, 4.15, 4.19, 5.04, 5.05, 5.08, 5.09, 5.11, 5.12, 5.17, 6.01, 6.02, 6.07, 6.09, 6.10, 6.13, 6.14, 7.14

Unit 1 Factors and Multiples

Pre-Unit Check NY-2.NBT.2, NY-3.MD.6, MP7

Sub-Unit 1 Patterns, Factors, and Multiples

1.01 Investigate | Quilt Patterns NY-4.OA.5, MP1, MP3, MP7

1.02 How Does It Grow? | Analyzing, Extending, and Generating Visual Patterns NY-4.OA.5, MP7

1.03 Numbers Rule! | Analyzing and Generating Number Patterns NY-4.OA.5, MP3, MP6, MP7

1.04 What Do They Have in Common? | Exploring Multiples NY-4.OA.5, NY-4.OA.4, MP7, MP8

1.05 Building Rectangles | Determining Multiples of One-Digit Numbers NY-4.OA.4, MP7

1.06 How Many Rectangles? | Determining Factor Pairs NY-4.OA.4, MP2, MP7

1.07 How Many Factors? | Introducing Prime and Composite Numbers NY-4.OA.4, MP3, MP7

1.08 Which Products Do You Know? | Checking Multiplication Fluency ..... Building Toward NY-4.NBT.5, MP7, MP8

Sub-Unit Quiz NY-4.OA.4, NY-4.OA.5, MP7

Sub-Unit 2 Using Factors and Multiples

1.09 Hamster Homes | Real-World Problems Involving Factors and Multiples NY-4.OA.4, MP1, MP2, MP3

1.10 Factor or Multiple? | Relating and Describing Factors and Multiples NY-4.OA.4, NY-4.NBT.6, MP3, MP6, MP7, MP8

1.11 Mystery Numbers | Using Factors and Multiples to Describe and Identify Numbers NY-4.OA.4, MP7, MP8

1.12 A Number Game | Applying Factors, Multiples, and Prime and Composite Numbers NY-4.OA.4, MP6, MP7

End-of-Unit Assessment NY-4.OA.4, NY-4.OA.5, MP7

Unit 2 Fraction Equivalence and Comparison

Pre-Unit Check NY-3.NF.1, NY-3.NF.2a, NY-3.NF.2b, MP7

Sub-Unit 1 Size and Location of Fractions

2.01 Investigate | Building Your Own Number Line ..... Building Toward NY-4.NF.1, NY-4.NF.2, MP1, MP6, MP7

2.02 Fraction Strips | Explaining Relationships Between Unit Fractions ..... Building Toward NY-4.NF.1, NY-4.NF.2, MP7, MP8

2.03 Chop It | Locating Fractions Less Than 1 on Number Lines ..... Building Toward NY-4.NF.1, NY-4.NF.2, MP7

2.04 All Kinds of Fractions | Representing Fractions Greater Than or Less Than 1 ..... Building Toward NY-4.NF.1, NY-4.NF.2, MP3, MP6, MP7

Sub-Unit Quiz 4.NF.A, MP7

Sub-Unit 2 Equivalent Fractions

2.05 How Far Did Ingrid Run? | Finding Equivalent Fractions Using Fraction Strips NY-4.NF.1, MP1, MP6, MP7

2.06 Can You Find Two? | Generating More Than 1 Equivalent Fraction NY-4.NF.1, MP3, MP7, MP8

2.07 At the Same Point | Determining Equivalent Fractions Using Number Lines NY-4.NF.1, MP3, MP8

2.08 How Do You Know? (Part 1) | Justifying Fraction Equivalence NY-4.NF.1, NY-4.NBT.5, MP3, MP6, MP7, MP8

2.09 How Do You Know? (Part 2) | Generalizing About Equivalent Fractions NY-4.NF.1, MP8

2.10 Equivalent Distances | Generating Equivalent Fractions Using Common Factors and Multiples NY-4.NF.1, MP3, MP7

Sub-Unit Quiz NY-4.NF.1, MP3, MP6, MP7

Sub-Unit 2 Fraction Comparison

2.11 Which Is Greater? | Comparing Fractions With the Same Numerator or Denominator NY-4.NF.2, MP3, MP8

2.12 Pairs to Compare | Using Equivalent Fractions to Compare (Part 1) NY-4.NF.2, NY-4.NF.1, MP1, MP3, MP6

2.13 Comparing Distances | Using Equivalent Fractions to Compare (Part 2) NY-4.NF.2, NY-4.NF.1, MP1, MP2, MP3, MP7

2.14 Getting in Order | Using Strategies to Compare and Order Fractions NY-4.NF.2, NY-4.NBT.5, NY-4.NF.1, MP7, MP8

2.15 All in Order | Ordering Larger Sets of Fractions NY-4.NF.2, NY-4.NF.1, MP1, MP3, MP6, MP7

End-of-Unit Assessment NY-4.NF.2, NY-4.NF.1, MP3, MP6, MP7

Unit 3 Extending Operations to Fractions

Pre-Unit Check	NY-3.NF.1, NY-3.NF.2b, MP7

Sub-Unit 1 Adding and Subtraction of Fractions

3.01 Investigate | Making a Whole	Building Toward NY-4.NF.3b, NY-4.NF.3a, MP1, MP2, MP7
3.02 Pizza Problems | Solving Problems Involving Fractions	NY-4.NF.3b, NY-4.NF.3a, NY-4.NF.3d, MP1, MP7
3.03 Math Pizzeria | Composing and Decomposing Fractions and Mixed Numbers	NY-4.NF.3a, MP7, MP8
3.04 Water, Ribbons, and Plants | Using Visual Models and Equations to Solve Real-World Problems with Fractions	NY-4.NF.3a, NY-4.NF.3d, MP2, MP4, MP7
3.05 On the Number Line | Estimating and Using Number Lines With Adding and Subtracting Fractions	NY-4.NF.3c, NY-4.NF.3d, MP1
3.06 All Kinds of Numbers | Adding and Subtracting Fractions, Whole Numbers, and Mixed Numbers	NY-4.NF.3d, NY-4.NF.3c, MP2, MP7
3.07 Bookshelf Fractions | Using Fraction Decomposition to Add and Subtract	NY-4.NF.3b, NY-4.NF.3c, NY-4.NF.3d, MP1, MP7, MP8
Sub-Unit Quiz	NY-4.NF.3a, NY-4.NF.3b, NY-4.NF.3c, MP6, MP7

Sub-Unit 2 Multiplication With Fractions

3.08 Fractions Different Ways | Relating Descriptions, Diagrams, and Expressions Representing Groups of Fractions	NY-4.NF.4, MP2, MP7
3.09 Equal Groups of Fractions | Using Diagrams and Expressions to Multiply Fractions	NY-4.NF.4, NY-4.NF.4a, NY-4.NF.4c, MP2
3.10 Fractions in the Soil | Multiplying Numerators by Whole Numbers to Reason About the Number of Parts	NY-4.NF.4b, NY-4.NF.4, MP2, MP3, MP8
3.11 Ronnie the Roly Poly | Representing Equivalent Multiplication Expressions	NY-4.NF.4a, NY-4.NF.4b, MP7
3.12 Making Banana Bread | Applying Multiplication of Fractions to Real-World Problems	NY-4.NF.4, NY-4.NF.4b, NY-4.NF.4c, MP2, MP3, MP7
Sub-Unit Quiz	NY-4.NF.4a, NY-4.NF.4b, MP6, MP7

Sub-Unit 3 Working With Tenths, Hundredths, and Line Plots

3.13 Tenths and Hundredths, Together | Using Equivalent Fractions to Add Tenths and Hundredths	NY-4.NF.1, NY-4.NF.5, MP2, MP7
3.14 What's Missing? | Adding Tenths and Hundredths With Missing Sums and Addends	NY-4.NF.5, MP7, MP8
3.15 Plotting the Data | Fractional Measurements on Line Plots	NY-4.NF.5, MP6
3.16 Farm Fresh | Solving Problems Involving Measurement Data on Line Plots	NY-4.NF.4, NY-4.NF.3c, MP2, MP6
End-of-Unit Assessment	NY-4.NF.2, NY-4.NF.3a, NY-4.NF.3b, NY-4.NF.3c, NY-4.NF.4a, NY-4.NF.4b, NY-4.NF.5, NY-4.NF.4, MP2, MP6, MP7

Unit 4 From Hundredths to Hundred Thousands

	Pre-Unit Check	**NY-4.NF.5,** MP7
Sub-Unit 1	Place Value Relationships Through 1,000,000	
4.01	Investigate Different Units | When is a Ten Not a Ten?	**Building Toward NY-4.NBT.1,** MP1, MP7
4.02	A New Way to Write Tenths | Decimals to Tenths	**NY-4.NF.6 ,** MP2, MP7
4.03	A New Way to Write Hundredths | Extending Decimals to Hundredths	**NY-4.NF.6 ,** MP2, MP7
4.04	Are They Equivalent? | Identifying Equivalent Decimals	**NY-4.NF.5, NY-4.NF.6,** MP3, MP5, MP7
4.05	How Can You Compare? | Comparing Decimals	**NY-4.NF.7, NY-4.NF.6, NY-4.NF.5,** MP1, MP3, MP6, MP7
4.06	Compare, Then Order | Comparing and Ordering Decimals	**NY-4.NF.5 NY-4.NF.7,** MP7, MP8
4.07	Ordering Turtle Weights | Comparing and Ordering Decimals and Fractions	**NY-4.NF.6, NY-4.NF.7,** MP7
	Sub-Unit Quiz	
Sub-Unit 2	Place Value Relationships Through 1,000,000	
4.08	Beyond 1,000 | Numbers Greater Than 1,000	**NY-4.NBT.1,** MP1, MP2
4.09	Numbers Into the 100,000s | Working With Numbers Into the 100,000s in Standard Form and Expanded Form	**NY-4.NBT.1, NY-4.NBT.2a, NY-4.NBT.2b,** MP2, MP7
4.10	Same Digit, Different Value | Using Expanded Form to Describe the Relationship Between Digits	**NY-4.NBT.1, NY-4.NBT.2a, NY-4.NBT.2b,** MP6, MP7
4.11	Ten Times as Much | Exploring the Relationship Between Digits	**NY-4.NBT.1,** MP2, MP3, MP7
	Sub-Unit Quiz	**NY-4.NBT.1, NY-4.NBT.2a, NY-4.NBT.2b,** MP6, MP7
Sub-Unit 3	Comparing and Rounding Multi-digit Numbers	
4.12	Which Is Greater? | Comparing Multi-Digit Numbers	**NY-4.NBT.2a, NY-4.NBT.2b,** MP3, MP6, MP7
4.13	Greatest and Least | Determining the Least and Greatest Multi-Digit Numbers	**NY-4.NBT.2a, NY-4.NBT.2b,** MP7
4.14	Where to Round to? | Rounding Numbers to the Nearest Multiple	**NY-4.NBT.3,** MP7
4.15	Estimating and Rounding | Rounding Multi-Digit Numbers	**NY-4.NBT.3,** MP3, MP7, MP8
	Sub-Unit Quiz	**NY-4.NBT.2a, NY-4.NBT.2b, NY-4.NBT.3,** MP7
Sub-Unit 4	Adding and Subtracting Within 1,000,000	
4.16	Does It Make Sense? | Evaluating Multi-Digit Addition Expressions	**NY-4.NBT.3, NY-4.NBT.4,** MP6, MP7
4.17	Adding It Up | Adding Multi-Digit Numbers With Composition	**NY-4.NBT.4,** MP1, MP3, MP7
4.18	What's the Difference? | Standard Algorithm to Subtract Multi-Digit Numbers	**NY-4.NBT.4,** MP2, MP3, MP6, MP7
4.19	Subtracting Across Zeros | Subtracting With Zeros Using the Standard Algorithm	**NY-4.NBT.2a, NY-4.NBT.2b, NY-4.NBT.4,** MP7, MP8
4.20	Putting It Together | Solving Addition and Subtraction Problems	**NY-4.NBT.4,** MP2, MP7
4.21	Analyzing Sea Turtle Data | Solving Multi-Step Problems With All Four Operations	**NY-4.NBT.2a, NY-4.NBT.2b, NY-4.NBT.4,** MP2, MP4, MP6
	End-of-Unit Assessment	**NY-4.NBT.2a, NY-4.NBT.2b, NY-4.NBT.3, NY-4.NBT.4, NY-4.NF.5, NY-4.NF.6, NY-4.NF.7,** MP6, MP7

Unit 5 Multiplicative Comparison and Measurement

Pre-Unit Check	NY-3.OA.1, NY-3.OA.3 , MP4, MP7

Sub-Unit 1 Multiplicative Comparison

5.01 Investigate | Designing a System of Measurement	Building Toward NY-4.MD.1, NY-4.OA.1, MP1, MP6, MP7
5.02 Times as Many | Exploring Multiplicative Comparison Relationships	Building Toward NY-4.OA.1, NY-4.OA.2, MP4, MP7
5.03 Representing "Times as Many" | Interpreting Representations of Multiplicative Comparison	NY-4.OA.1, NY-4.OA.2, MP2, MP4
5.04 Going Swimming | Solving Multiplicative Comparison Problems	NY-4.OA.1, NY-4.OA.2, MP7, MP8
5.05 Swimming Laps | Solving Multiplicative Comparison Problems With Larger Numbers	NY-4.OA.1, NY-4.OA.2, NY-4.MD.2b, MP2, MP7, MP8
5.06 Swim Club Equipment | Two-step Comparison Problems	NY-4.OA.1, NY-4.OA.2, NY-4.OA.3, NY-4.OA.3a, NY-4.OA.3b, MP2, MP3, MP6
5.07 Create Your Own Problem | Creating Comparison Problems	NY-4.OA.1, NY-4.OA.2, NY-4.OA.3, NY-4.OA.3a, NY-4.NBT.5, NY-4.NBT.6, MP1, MP3, MP7
Sub-Unit Quiz	NY-4.OA.1, NY-4.OA.2, MP1, MP4, MP6

Sub-Unit 2 Converting Length Measurements

5.08 How Long Is a Meter? | Determining the Relationship Between Meters and Centimeters	NY-4.MD.1, NY-4.NBT.1, NY-4.MD.2b, MP3, MP7, MP8
5.09 How Long Is a Kilometer? | Determining the Relationship Between Kilometers and Meters	NY-4.MD.1, NY-4.MD.2, NY-4.NBT.5, MP3, MP7, MP8
5.10 How Far Do They Go? | Converting Measurements in Kilometers, Meters, and Centimeters	NY-4.MD.1, NY-4.MD.2, NY-4.OA.2, M3, MP6, MP7
5.11 Who Threw the Farthest? | Converting Yards, Feet, and Inches	NY-4.MD.2, NY-4.NF.4c, NY-4.OA.2, MP6, MP8
5.12 Perimeters at the Community Center | Determining Perimeters With Missing Side Lengths	NY-4.MD.2, NY-4.MD.2a, NY-4.MD.3, NY-4.OA.2, MP3, MP7, MP8
Sub-Unit Quiz	NY-4.MD.1, NY-4.MD.2, NY-4.MD.3, MP1, MP6, MP7

Sub-Unit 3 Problem Solving With Measurement

5.13 Paint Can Mystery | Solving Problems With Liters and Milliliters	NY-4.MD.1, NY-4.MD.2, NY-4.MD.2a, NY-4.OA.3, NY-4.OA.3b, MP1, MP2, MP3
5.14 Animal Riddles | Solving Problems With Grams and Kilograms	NY-4.MD.1, NY-4.MD.2, NY-4.MD.2a, NY-4.OA.3, NY-4.OA.3b, MP2, MP3, MP6
5.15 Cooking Class | CSolving Problems With Pounds and Ounces	NY-4.MD.1, NY-4.MD.2, NY-4.MD.2a, NY-4.OA.3, NY-4.OA.3b, MP1, MP2, MP3
5.16 How Much Time Does It Take? | Solving Problems With Hours, Minutes, and Seconds	NY-4.MD.1, NY-4.MD.2, NY-4.MD.2a, NY-4.OA.3, NY-4.OA.3b, MP2, MP7
5.17 Would You Rather? | Comparing Measurement Units	NY-4.MD.1, NY-4.NBT.5, NY-4.NBT.2b, MP6, MP7, MP8
End-of-Unit Assessment	NY-4.MD.1, NY-4.MD.2, NY-4.MD.2a NY-4.NBT.5, NY-4.OA.1, NY-4.OA.2, MP4, MP6

Unit 6 Multiplying and Dividing Multi-Digit Numbers

	Pre-Unit Check	NY-1.OA.C.6, NY-1.NBT.C.4, NY-1.OA.D.7

Sub-Unit 1 Multi-Digit Multiplication

6.01	Investigate | Packing Lei	**NY-4.NBT.5,** MP1, MP2, MP8
6.02	Counting Flowers for Lei | Strategies to Represent Multiplication	**NY-4.NBT.5,** MP1, MP2, MP7, MP8
6.03	A Lei Making Workshop | Representing Multiplication With Area Diagrams	**NY-4.NBT.5,** MP2, MP3, MP6
6.04	A Reasonable Answer | Determining if a Product is Reasonable Using Estimation	**NY-4.NBT.5,** MP2, MP3, MP7
6.05	The Same Thing, 3 Ways | Using Partial Products to Multiply	**NY-4.NBT.5,** MP2, MP3, MP6, MP7
6.06	Growing Flowers for the Lei | Multiplying 2 Two-digit Numbers	**NY-4.NBT.5, NY-4.MD.3,** MP2
6.07	Decomposing and Partial Products | Using an Area Diagram to Decompose and Determine Partial Products	**NY-4.NBT.5,** MP3, MP7, MP8
6.08	Expressions and Partial Products | Multiplying 2 Two-Digit Numbers Using Partial Products	**NY-4.NBT.5,** MP3, MP7
6.09	How Many Supplies? | Multiplying Multi-digit Numbers	**NY-4.NBT.5,** MP7, MP8
6.10	The Standard Algorithm | Multiplying Using the Standard Algorithm	**NY-4.NBT.5,** MP6, MP7, MP8
	Sub-Unit Quiz	

Sub-Unit 2 Multi-Digit Division

6.11	Lei for a Celebration | Division Situations Involving Equal-sized Groups	**NY-4.NBT.6,** MP1, MP2
6.12	Lei Shop Murals | Division Situations Involving Area	**NY-4.NBT.6, NY-4.MD.3,** MP2, MP3, MP4
6.13	Different Ways to Record | Dividing with Partial Quotients	**NY-4.NBT.6,** MP1, MP7, MP8
6.14	Lei Shop Orders | Using Strategies to Divide	**NY-4.NBT.6,** MP1, MP6, MP7, MP8
6.15	Envision the Division | Analyzing Partial Quotients	**NY-4.NBT.6,** MP7
6.16	Boxes for Leis | Estimating Quotients	**NY-4.NBT.6, NY-4.OA.3b, NY-4.OA.3, NY-4.OA.3a,** MP3, MP7
6.17	Lei Shop Problems | Creating and Solving Division Problems	**NY-4.NBT.6,** MP1
	Sub-Unit Quiz	

Sub-Unit 3 Remainders and Problem Solving

6.18	Shipping Lei | Solving Division Problems With Remainders	**NY-4.NBT.6,** MP1, MP2, MP3
6.19	Leftover Players | Interpreting Remainders in Division Problems	**NY-4.OA.3, NY-4.OA.3b, NY-4.OA.3a, NY-4.NBT.6,** MP1, MP6
6.20	How Many Buses? | Interpreting Values in Situations	**NY-4.OA.3, NY-4.OA.3a, NY-4.OA.3b, NY-4.NBT.5, NY-4.NBT.6,** MP1, MP3, MP7
6.21	Shipping Supplies | Different Ways to Solve Problems	**NY-4.OA.3, NY-4.OA.3a, NY-4.OA.3b, NY-4.NBT.5, NY-4.NBT.6,** MP1, MP3, MP6
6.22	Celebration Banner | Problems about Perimeter and Area	**NY-4.MD.3, NY-4.NBT.5, NY-4.OA.3, NY-4.OA.3a, NY-4.OA.3b,** MP7
6.23	Large Lei Orders | Solving Real-World Problems	**NY-4.OA.3, NY-4.OA.3a,NY-4.OA.3b, NY-4.NBT.6, NY-4.NBT.5, NY-4.NBT.4,** MP7
	End-of-Unit Assessment	**NY-4.NBT.4, NY-4.NBT.5, NY-4.NBT.6, NY-4.OA.3, NY-4.OA.3a, NY-4.OA.3b,** MP5, MP6, MP7

Unit 7 Angles and Properties of Shapes

	Pre-Unit Check	NY-2.G.1, MP6

Sub-Unit 1 Points, Lines, Segments, and Rays

7.01	Investigate | Do you see what I see?	NY-4.G.1, MP6, MP7
7.02	Points, Lines, Segments, and Rays | Drawing and Describing Geometric Figures Composed of Points, Lines, Segments, and Rays	NY-4.G.1, NY-4.NBT.4, NY-4.NBT.5 , MP6, MP7
7.03	Two or More Lines | Identifying and Drawing Parallel and Intersecting Lines	NY-4.G.1, MP3, MP6, MP7
7.04	Points and Lines Everywhere | Drawing Figures With Parallel and Intersecting Lines and Line Segments	NY-4.G.1, MP6, MP7
	Sub-Unit Quiz	NY-4.G.1, MP6, MP7

Sub-Unit 2 Angles and Angle Measurement

7.05	Comparing and Describing Angles | Recognizing Angles as Geometric Shapes	NY-4.G.1, NY-4.MD.5, MP3, MP5, MP7
7.06	Using Rotation to Describe and Compare Angles | Understanding Concepts of Angle Measurement	NY-4.MD.5, MP6, MP7
7.07	The Size of Degrees in Angles | Exploring a Standard Unit of Measure to Describe the Size of Angles	NY-4.MD.5a, NY-4.MD.7, MP7
7.08	Using a Protractor to Measure Angles | Recognizing Degrees as a Unit of Angle Measurement	NY-4.MD.5a, NY-4.MD.5b, NY-4.MD.6, MP3, MP6, MP7
7.09	Types of Angles | Identifying Acute, Obtuse, Right, and Straight Angles	NY-4.G.1, NY-4.MD.6, MP6, MP7
7.10	Drawing and Estimating Angles | Using a Protractor to Draw Angles of Specified Measures	NY-4.G.1, NY-4.MD.6, MP6, MP7
7.11	Measuring and Identifying Angles | Measuring Angles in Geometric Figures	NY-4.G.1, NY-4.G.2, NY-4.MD.6, MP1, MP6, MP7, MP8
7.12	Composing and Decomposing Angles | Determining Unknown Angle Measurements	NY-4.MD.7, MP7, MP8
	Sub-Unit Quiz	NY-4.G.1, NY-4.MD.5a, NY-4.MD.5b, NY-4.MD.6, NY-4.MD.7, MP6, MP7

Sub-Unit 3 Attributes of Shapes

7.13	Different Ways to Look at Figures | Comparing Two-dimensional Shapes by Their Attributes	NY-4.G.1, NY-4.G.2a, NY-4.G.2b, NY-4.G.2c, MP6
7.14	One Way to Look at Triangles | Analyzing and Sorting Triangles Based on Their Angles	NY-4.G.1, NY-4.G.2a, MP6, MP7, MP8
7.15	Another Way to Look at Triangles | Analyzing and Sorting Triangles Based on Their Sides	NY-4.G.2a, MP7, MP8
7.16	Many Ways to Look at Quadrilaterals | Sorting and Identifying Quadrilaterals by Their Attributes	NY-4.G.3, NY-4.G.2b, NY-4.G.2c, NY-4.MD.5, MP3, MP6, MP7
7.17	Symmetry in Figures (Part 1) | Identifying Figures With Line Symmetry	NY-4.G.3, MP6
7.18	Symmetry in Figures (Part 2) | Identifying Whether a Given Line Is a Line of Symmetry	NY-4.G.1, NY-4.G.3, MP7
7.19	Angle Measurement and Symmetry (optional) | Determining Unknown Angle and Side Length Measurements	NY-4.G.3, NY-4.MD.7, MP1, MP5, MP7
7.20	Kayla's Treasure | Applying Angles to Solve Real-world and Mathematical Problems	NY-4.G.2a, NY-4.G.3, NY-4.MD.5, NY-4.MD.5b, MP7
	End-of-Unit Assessment	NY-4.G.2a, NY-4.G.2b, NY-4.G.2c, NY-4.G.3, MP7

New York State Next Generation Mathematics Learning Standards, Correlated to Amplify Desmos Math, Grade 5

The following shows the alignment of Amplify Desmos Math to the New York State Next Generation Mathematics Learning Standards for Grade 5.

NY-5.OA	Operations and Algebraic Thinking	Lesson(s)
Write and interpret numerical expressions.		
NY-5.OA.1	Apply the order of operations to evaluate numerical expressions.	1.12, 4.09, 4.17, 4.19
NY-5.OA.2	Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.	1.05, 1.06, 1.11, 1.12, 1.13, 2.02, 2.06, 2.07, 2.08, 4.03, 4.04, 4.18, 5.14, 5.15, 5.16, 5.18, 5.23
Analyze patterns and relationships.		
NY-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.	7.10, 7.11, 7.12
NY-5.NBT	**Number and Operations in Base Ten**	**Lesson(s)**
Understand the place value system.		
NY-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.	5.01, 5.03, 5.04, 5.17, 5.18, 6.04, 6.05
NY-5.NBT.2	Use whole-number exponents to denote powers of 10. 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.	6.01, 6.02, 6.03, 6.05, 6.06, 6.07, 6.08, 6.09
NY-5.NBT.3	Read, write, and compare decimals to thousandths.	5.02, 5.05, 5.06, 5.07, 5.08
NY-5.NBT.3a	Read and write decimals to thousandths using base-ten numerals, number names, and expanded form.	5.03, 5.04
NY-5.NBT.3b	Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	5.06
NY-5.NBT.4	Use place value understanding to round decimals to any place.	5.07, 5.08
Perform operations with multi-digit whole numbers and with decimals to hundredths.		
NY-5.NBT.5	Fluently multiply multi-digit whole numbers using a standard algorithm.	4.05, 4.06, 4.07, 4.08, 4.09, 4.14, 4.17
NY-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.	4.11, 4.12, 4.13, 4.14, 4.15, 4.16, 4.17, 4.17

NY-5.NBT.7	Using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between operations: • add and subtract decimals to hundredths; • multiply and divide decimals to hundredths. Relate the strategy to a written method and explain the reasoning used.	5.09, 5.10, 5.11, 5.12, 5.13, 5.14, 5.15, 5.16, 5.17, 5.18, 5.19, 5.20, 5.21, 5.22, 5.23, 5.24, 5.25
NY-5.NF	**Number and Operations — Fractions**	**Lesson(s)**
Use equivalent fractions as a strategy to add and subtract fractions.		
NY-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 to produce an equivalent sum or difference of fractions with like denominators.	6.13, 6.14, 6.15, 6.16, 6.17, 6.18
NY-5.NF.2	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators.	6.13, 6.14, 6.15, 6.16, 6.17, 6.18, 6.20
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.		
NY-5.NF.3	Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$).	2.02, 2.03, 2.04, 2.05, 2.06, 2.07, 4.15, 4.17
NY-5.NF.4	Apply and extend previous understandings of multiplication to multiply a fraction by a whole number or a fraction.	2.07, 2.08, 2.09, 2.10, 2.11, 2.12, 2.13, 2.15, 3.02, 3.06, 3.07, 3.08
NY-5.NF.4a	Interpret the product $a/b \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$.	2.08, 3.02, 3.03, 3.04, 3.06, 3.07, 3.08
NY-5.NF.4b	Find the area of a rectangle with fractional side lengths by tiling it with rectangles 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.	2.09, 2.10, 2.11, 2.12, 2.13, 3.03, 3.05, 3.06
NY-5.NF.5	Interpret multiplication as scaling (resizing).	3.09, 3.10, 5.15, 5.16
NY-5.NF.5a	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.	3.09, 3.10, 5.15, 5.16
NY-5.NF.5b	Explain why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case). Explain why multiplying a given number by a fraction less than 1 results in a product smaller than the given number. Relate the principle of fraction equivalence $a/b = a/b \times n/n$ to the effect of multiplying a/b by 1.	3.09, 3.10
NY-5.NF.6	Solve real world problems involving multiplication of fractions and mixed numbers.	2.14, 3.02, 3.03, 3.04, 3.05, 3.06, 3.14, 3.15
NY-5.NF.7	Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.	3.11, 3.12, 3.13, 3.14, 3.15
NY-5.NF.7a	Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.	3.11, 3.13
NY-5.NF.7b	Interpret division of a whole number by a unit fraction, and compute such quotients.	3.12, 3.13
NY-5.NF.7c	Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions.	3.11, 3.12, 3.13

NY-5.MD	Measurement and Data	Lesson(s)
Convert like measurement units within a given measurement system.		
NY-5.MD.1	Convert among different-sized standard measurement units within a given measurement system when the conversion factor is given. Use these conversions in solving multi-step, real world problems.	6.06, 6.07, 6.08, 6.09, 6.10, 6.11
Represent and interpret data.		
NY-5.MD.2	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots.	6.19, 6.20
Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.		
NY-5.MD.3	Recognize volume as an attribute of solid figures and understand concepts of volume measurement.	1.02, 1.03, 1.05, 1.06
NY-5.MD.3a	Recognize that a cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.	1.02, 1.06
NY-5.MD.3b	Recognize that 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.	1.05, 1.06
NY-5.MD.4	Measure volumes by counting unit cubes, using cubic cm, cubic in., cubic ft., and improvised units.	1.02, 1.03, 1.04, 1.07, 1.08, 1.09
NY-5.MD.5	Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.	1.05, 1.06, 1.08, 1.09, 1.10, 1.11, 1.12, 1.13, 1.14
NY-5.MD.5a	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.	1.05, 1.06, 1.14
NY-5.MD.5b	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.	1.06, 1.08
NY-5.MD.5c	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.	1.09, 1.10, 1.11, 1.12, 1.13, 1.14

NY-5.G	Geometry	Lesson(s)
Graph points on the coordinate plane to solve real-world and mathematical problems.		
NY-5.G.1	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 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond.	7.06, 7.07, 7.09
NY-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.	7.08, 7.09, 7.10, 7.11, 7.12

Classify two-dimensional figures into categories based on their properties.		
NY-5.G.3	Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.	7.01, 7.02, 7.03, 7.04, 7.05
NY-5.G.4	Classify two-dimensional figures in a hierarchy based on properties.	7.04, 7.05, 7.08

The Standards for Mathematical Practice, Grade 5

The following shows sample citations of the alignment between Amplify Desmos Math, Grade 5 and the Standards for Mathematical Practice. Each Standard for Mathematical Practice is addressed throughout the grade.

MP1 Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

1.01, 2.01, 3.01, 3.09, 3.15, 4.01, 4.02, 4.10, 4.20, 4.21, 5.01, 5.04, 5.09, 5.13, 5.19, 5.21, 5.23, 5.25, 6.08, 6.11, 6.12, 6.17, 6.19, 6.20, 7.03

MP2 Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

1.02, 1.04, 1.05, 1.12, 1.13, 1.14, 2.01, 2.02, 2.03, 2.04, 2.06, 2.07, 2.08, 2.09, 2.10, 2.11, 2.12, 2.13, 3.01, 3.02, 3.03, 3.04, 3.05, 3.06, 3.07, 3.11, 3.12, 3.13, 3.14, 3.15, 4.01, 4.10, 4.14, 4.15, 4.17, 4.17, 4.18, 4.19, 5.04, 5.08, 5.14, 5.15, 5.16, 5.18, 5.19, 5.20, 5.23, 6.03, 6.04, 6.05, 6.06, 6.07, 6.08, 6.09, 6.10, 6.11, 6.13, 6.15, 6.16, 6.17, 6.18, 7.09, 7.11, 7.12

MP3 Construct viable arguments and critique the reasoning of others.

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

1.02, 1.03, 1.04, 1.07, 1.10, 1.11, 2.03, 2.07, 2.09, 2.10, 2.11, 2.12, 3.03, 3.05, 3.06, 3.07, 3.10, 3.13, 4.01, 4.02, 4.03, 4.09, 4.12, 4.13, 4.14, 4.15, 4.16, 4.18, 5.04, 5.06, 5.07, 5.10, 5.12, 5.17, 5.18, 5.19, 5.23, 6.03, 6.04, 6.14, 6.15, 6.16, 7.03, 7.05

MP4 Model with mathematics.

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

2.01, 2.04, 2.14, 3.02, 3.04, 3.05, 3.09, 3.14, 4.02, 4.17, 4.20, 4.21, 5.09, 5.25

MP5 Use appropriate tools strategically.

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

1.01, 4.09, 5.07, 5.22, 6.12, 7.01, 7.08

MP6 Attend to precision.

Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

1.02, 1.03, 1.05, 1.06, 1.07, 1.08, 1.09, 2.05, 2.09, 2.10, 2.12, 3.01, 3.03, 3.06, 4.02, 4.03, 4.05, 4.06, 4.07, 4.09, 5.01, 5.02, 5.05, 5.07, 5.10, 5.11, 5.12, 5.18, 5.24, 7.02, 7.03, 7.04, 7.05, 7.06

MP7 Look for and make use of structure.

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7 × 8 equals the well-remembered 7 × 5 + 7 × 3, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2 × 7 and the 9 as 2 + 7. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.

1.03, 1.04, 1.05, 1.06, 1.08, 1.09, 1.10, 1.11, 1.12, 1.13, 1.14, 2.02, 2.03, 2.04, 2.05, 2.06, 2.07, 2.08, 2.09, 2.10, 2.11, 2.12, 2.13, 2.14, 2.15, 3.03, 3.04, 3.05, 3.06, 3.07, 3.08, 3.09, 3.10, 3.11, 3.12, 3.13, 3.14, 3.15, 4.03, 4.04, 4.05, 4.06, 4.07, 4.08, 4.10, 4.11, 4.12, 4.13, 4.18, 4.19, 4.20, 5.01, 5.02, 5.03, 5.05, 5.06, 5.07, 5.08, 5.09, 5.10, 5.11, 5.12, 5.13, 5.14, 5.15, 5.16, 5.17, 5.18, 5.20, 5.21, 5.22, 5.23, 5.24, 6.02, 6.03, 6.04, 6.05, 6.06, 6.07, 6.09, 6.10, 6.11, 6.13, 6.14, 6.15, 6.16, 6.17, 6.18, 6.19, 6.20, 7.01, 7.02, 7.04, 7.05, 7.06, 7.07, 7.08, 7.09, 7.10

MP8 Look for and express regularity in repeated reasoning.

Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

1.06, 2.05, 2.06, 2.13, 2.14, 3.04, 3.10, 3.14, 3.15, 4.04, 4.06, 4.07, 4.10, 4.12, 4.19, 4.20, 5.11, 5.15, 5.21, 5.22, 5.24, 6.05, 7.04, 7.10

Unit 1 Volume

Pre-Unit Check	NY-3.MD.5b, MP7

Sub-Unit 1 Unit Cubes and Volume

1.01 Investigate | Filling Containers	Building Toward NY-5.MD.3, MP1, MP5
1.02 Which Is Largest? | Defining Volume	NY-5.MD.3, NY-5.MD.3a, NY-5.MD.4, MP2, MP3, MP6
1.03 Cube Figures | Developing Strategies to Determine Volume	NY-5.MD.4, NY-5.MD.3, MP3, MP6, MP7
1.04 Stacking Garbage | Using the Structure of Rectangular Prisms to Determine Volume	NY-5.MD.4, MP2, MP3, MP7
Sub-Unit Quiz	NY-4.MD.1, NY-5.MD.3, MP6, MP7

Sub-Unit 2 Calculating Volume of Rectangular Prisms

1.05 Trash to Treasure | Using Multiplication to Calculate Volume	NY-5.MD.5a, NY-5.MD.3b, NY-5.OA.2, MP2, MP6, MP7
1.06 Volume of Rectangular Prisms | Generalizing How to Determine the Volume of Any Rectangular Prism	NY-5.MD.5b, NY-5.MD.3a, NY-5.MD.3b, NY-5.MD.5a, NY-5.OA.2, MP6, MP7, MP8
1.07 Packing the Barge | Measuring Volume With Different Units	NY-5.MD.4, MP3, MP6
1.08 Shipping Out Trash | Applying Volume Concepts to Solve Problems	NY-5.MD.5b, NY-5.MD.4, MP6, MP7
Sub-Unit Quiz	NY-5.MD.5a, NY-5.MD.5b, NY-5.OA.2, MP6, MP7

Sub-Unit 3 Volume of Solid Figures

1.09 Putting It Together | Determining Volume of Figures Made of Prisms	NY-5.MD.5c, NY-5.MD.4, MP6, MP7
1.10 Figures Made of Prisms | Determining Volume of Figures in Different Ways	NY-5.MD.5c, MP3, MP7
1.11 Where Are the Prisms? | Determining Volume Using Edge Lengths	NY-5.MD.5c, NY-5.OA.2, MP3, MP7
1.12 What's the Edge Length? | Determining Volume When Edge Lengths Are Unknown	NY-5.MD.5c, NY-5.OA.1, NY-5.OA.2, MP2, MP7
1.13 Express Yourself | Representing the Volume of a Figure in Different Ways	NY-5.MD.5c, NY-5.OA.2, MP2, MP7
1.14 Lesson Learned | Solving Real-World Problems Involving Volume	NY-5.MD.5c, NY-5.MD.5a, MP2, MP7
End-of-Unit Assessment	NY-5.MD.5a, NY-5.MD.5b, NY-5.MD.4, NY-5.MD.5c, NY-5.OA.2, MP6, MP7

Unit 2 Fractions as Quotients and Fraction Multiplication

Pre-Unit Check	NY-3.NF.1, NY-4.NF.4a, MP7

Sub-Unit 1 Fractions as Quotients

2.01 Investigate | How Many Sandwiches?	Building towards NY-5.NF.3, MP1, MP2, MP4
2.02 Sharing More Sandwiches | Representing Sharing Story Problems With Fractional Quotients	NY-5.NF.3, NY-5.OA.2, MP2, MP7
2.03 Dance Breaks | Relating Division Expressions and Fractions as Quotients	NY-5.NF.3, MP2, MP3, MP7
2.04 Division Story Problems | Writing and Solving Story Problems	NY-5.NF.3, MP2, MP4, MP7
2.05 Making Generalizations | Relating Division and Fractions	NY-5.NF.3, MP6, MP7, MP8
Sub-Unit Quiz	NY-5.NF.4, NY-5.NF.4b, NY-5.NF.6, MP2, MP7

Sub-Unit 2 Fractions of Whole Numbers

2.06 Sharing Stories | Relating Division and Multiplication	NY-5.NF.3, NY-5.OA.2, MP2, MP7, MP8
2.07 Making Matches | Relating Expressions and Equations to the Same Diagrams	NY-5.NF.3, NY-5.NF.4, NY-5.OA.2, MP2, MP7
2.08 Multiplying With Non-Unit Fractions | Determining Products of Whole Numbers and Non-Unit Fractions	NY-5.NF.4, NY-5.NF.4a, NY-5.OA.2, MP2, MP7
Sub-Unit Quiz	NY-5.NF.4a, NY-5.NF.4b, NY-5.NF.6, MP3, MP6, MP7

Sub-Unit 3 Area and Fractional Side Lengths

2.09 What's the Area? (Part 1) | Relating Area to Multiplication With Unit Fractions	NY-5.NF.4, NY-5.NF.4b, MP2, MP3, MP6, MP7
2.10 What's the Area? (Part 2) | Relating Area to Multiplication With Non-Unit Fractions	NY-5.NF.4, NY-5.NF.4b, MP2, MP3, MP6, MP7
2.11 Tile This | Relating Area to Multiplication With Fractions Greater Than 1	NY-5.NF.4, NY-5.NF.4b, MP2, MP3, MP7
2.12 Different Ways to Determine the Area | Determining Area With Decomposing and Composing Strategies	NY-5.NF.4, NY-5.NF.4b, MP2, MP3, MP6, MP7
2.13 Vegetable and Flower Gardens | Using the Distributive Property to Determine the Area With Mixed Numbers	NY-5.NF.4, NY-5.NF.4b, MP2, MP7, MP8
2.14 Homegrown Veggies | Multiplying Whole Numbers by Fractions and Mixed Numbers.	NY-5.NF.6, MP4, MP7, MP8
2.15 Bamboozled | Estimating and Multiplying Whole Numbers by Fractions	NY-5.NF.4, MP7
End-of-Unit Assessment	NY-5.NF.3, NY-5.NF.4a, NY-5.NF.4b, NY-5.NF.6, NY-5.OA.2, MP3, MP4, MP6, MP7

Unit 3 Multiplying and Dividing Fractions

	Pre-Unit Check	**NY-4.NF.4b, NY-4.NF.4c, NY-3.MD.7d,** MP2, MP6, MP7

Sub-Unit 1 Fraction Multiplication

3.01	Investigate | Folding Paper	**Building toward NY-5.NF.4,** MP1, MP2, MP6
3.02	Parts of Parts | Representing Fractions of Fractions and Mixed Numbers	**NY-5.NF.4a, NY-5.NF.4, NY-5.NF.6,** MP2, MP4
3.03	One Part of One Part | Determining Products of Unit Fractions	**NY-5.NF.4a, NY-5.NF.4b, NY-5.NF.6,** MP2, MP3, MP6, MP7
3.04	Making Food | Determining Products of Unit Fractions With Non-Unit Fractions or Mixed Numbers	**NY-5.NF.4a, NY-5.NF.6,** MP2, MP4, MP7, MP8
3.05	Installing Turf | Multiplying 2 Non-Unit Fractions or a Unit Fraction and a Mixed Number	**NY-5.NF.4b, NY-5.NF.6,** MP2, MP3, MP4, MP7
3.06	Rows and Columns | Representing Shaded Regions with Equations and Expressions	**NY-5.NF.4, NY-5.NF.4a, NY-5.NF.4b, NY-5.NF.6,** MP2, MP3, MP6, MP7
3.07	Messy Multiplication | Generalizing Fraction Multiplication	**NY-5.NF.4, NY-5.NF.4a,** MP2, MP3, MP7
3.08	Applying Fraction Multiplication | Multiplying with Fractions and Mixed Numbers	**NY-5.NF.4, NY-5.NF.4a,** MP7
3.09	Chores at Animal Haven | Comparing Products	**NY-5.NF.5, NY-5.NF.5a, NY-5.NF.5b,** MP1, MP4, MP7
3.10	The Re-size-inator | Generalizations About Resizing	**NY-5.NF.5, NY-5.NF.5a, NY-5.NF.5b,** MP3, MP7, MP8
	Sub-Unit Quiz	**NY-5.NF.4a, NY-5.NF.4b,** MP2, MP4, MP7

Sub-Unit 4 Fraction Division

3.11	Sharing Cat Food | Representing Dividing Unit Fractions With Diagrams and Equations	**NY-5.NF.7a, NY-5.NF.7c,** MP2, MP7
3.12	Hungry, Hungry Puppies | Dividing Whole Numbers by Unit Fractions With Diagrams and Equations	**NY-5.NF.7b, NY-5.NF.7c,** MP2, MP7
3.13	What's the Story? | Relating Story Problems To Expressions With Whole Numbers and Unit Fractions	**NY-5.NF.7a, NY-5.NF.7b, NY-5.NF.7c,** MP2, MP3, MP7
3.14	Reasoning About Relationships | Relating Multiplication and Division with Unit Fractions	**NY-5.NF.6, NY-5.NF.7, NY-NF.7c,** MP2, MP4, MP7, MP8
3.15	Life at Animal Haven | Writing and Solving Multiplication and Division Story Problems	**NY-5.NF.6, NY-NF.7c,** MP1, MP2, MP7, MP8
	End-of-Unit Assessment	**NY-5.NF.4a, NY-5.NF.4b, NY-5.NF.7a, NY-5.NF.7b, NY-5.NF.4, NY-5.NF.6,** MP4, MP6, MP7

Unit 4 Wrapping Up Multiplication and Division With Multi-Digit Numbers

	Pre-Unit Check	**NY-4.NBT.5,** MP6
Sub-Unit 1	Multi-Digit Multiplication Using the Standard Algorithm	
4.01	Investigate: Estimation Station | How can you get as close as possible to a target product?	**Building Toward NY-5.NBT.5,** MP1, MP2, MP3
4.02	Answering Andrea's Questions | Estimating and Determining Products of Multi-Digit Numbers	**Building Toward NY-5.NBT.5,** MP1, MP3, MP4, MP6
4.03	Buckets of Fun | Representing Values of Expressions Involving Multi-Digit Factors	**NY-5.OA.2,** MP3, MP6, MP7
4.04	Sticky Notes Everywhere | Determining Products Using a Partial Products Algorithm	**NY-5.OA.2,** MP7
4.05	How Do They Compare? | Determining Products Using the Standard Algorithm With No Composing	**NY-5.NBT.5,** MP6, MP7
4.06	Where Are the Composed Units? | Determining Products Using the Standard Algorithm With Composing	**NY-5.NBT.5,** MP6, MP7, MP8
4.07	Composed Units Everywhere | Determining Products Using the Standard Algorithm	**NY-5.NBT.5,** MP6, MP7, MP8
4.08	Another Recording Method | Composing Units Above the Factors in the Standard Algorithm	**NY-5.NBT.5,** MP7
4.09	Strategically Choosing Your Method | Multi-Digit Multiplication Fluency	**NY-5.NBT.5, NY-5.OA.1,** MP3, MP5, MP6
	Sub-Unit Quiz	**NY-5.NBT.5,** MP6
Sub-Unit 2	Multi-Digit Division Using Partial Quotients	
4.10	Whose Quotient Is It Anyway? | Dividing Multi-Digit Dividends By One-Digit Divisors	**Building toward NY-5.NBT.6,** MP1, MP2, MP7, MP8
4.11	What Do You Think? | Dividing Three- and Four-digit Dividends by Two-Digit Divisors	**NY-5.NBT.6,** MP7
4.12	Strategy Extravaganza | Strategizing Partial Quotients With Three-Digit Quotients	**NY-5.NBT.6,** MP3, MP7, MP8
4.13	Carnival Dunk Tank | Determining One Partial Quotient For Each Place Value	**NY-5.NBT.6,** MP7
4.14	Which Room Works Best? | Determining Quotients in Area and Volume Contexts	**NY-5.NBT.6, NY-5.NBT.5,** MP2, MP3
4.15	Sharing Brownies | Representing Quotients as Mixed Numbers	**NY-5.NBT.6, NY-5.NF.3,** MP2
4.16	Pushing For Precision | Checking For Accuracy	**NY-5.NBT.6,** MP3, MP6, MP7
	Sub-Unit Quiz	**NY-5.NBT.6, NY-5.NF.3,** MP6
Sub-Unit 3	Applying Multiplication and Division Concepts	
4.17	Super-Sized Equations | Solving Multi-Step Story Problems Involving Multiplication and Division	**NY-5.OA.1, NY-5.NBT.6, NY-5.NBT.5,** MP2
4.18	Game, Set, Match! | Using Reasoning, Without Evaluating, to Compare Expressions	**NY-5.OA.2,** MP2, MP3, MP7
4.19	Prime After Prime (Optional) | Representing Products With Prime Factors	**NY-5.OA.1,** MP2, MP7, MP8
	End-of-Unit Assessment	**NY-5.NBT.5, NY-5.NBT.6, 5.NBT.A.1, NY-5.OA.1, NY-5.OA.2, NY-5.MD.5,** MP2, MP6, MP7

Unit 5 Place Value Patterns and Decimal Operations

	Pre-Unit Check	**NY-5.NF.4a, NY- 4.NBT.2b,** MP7
	Sub-Unit 1 Numbers to Thousandths	
5.01	Investigate | Numbers Between Numbers	**NY-5.NBT.1, NY-4.NF.6,** MP1, MP6, MP7
5.02	What Is One Thousandth? | Making Sense of Thousandths	**NY-5.NBT.1, Building Towards NY-5.NBT.3,** MP6, MP7
5.03	Place Value Patterns | Explaining the Multiplicative Relationship Between Place Values	**NY-5.NBT.1, NY-5.NBT.3a,** MP7
5.04	Say What? | Thousandths in Expanded Form	**NY-5.NBT.3a,** MP1, MP2, MP3
5.05	Where Do the Decimals Go? | Locating Decimals on Number lines	**NY-5.NBT.3,NY-5.NBT.3b, NY-5.NBT.4,** MP6, MP7
5.06	Selling Collectibles | Comparing Decimals to the Thousandths	**NY-5.NBT.3b, NY-5.NBT.3,** MP3, MP7
5.07	Rounding Decimals | Rounding Decimals to the Hundredths	**NY-5.NBT.4, NY-5.NBT.3,** MP3, MP5, MP6, MP7
5.08	Rounding Races | Rounding Decimals to the Hundredths in Context	**NY-5.NBT.4, NY-5.NBT.3,** MP2, MP7
	Sub-Unit Quiz	**NY-5.NBT.3a, NY-5.NBT.3b, NY-5.NBT.4,** MP6, MP7
	Sub-Unit 2 Add and Subtract Decimals	
5.09	Explore, Part 1 | Making Sense of Decimal Addition and Subtraction	**NY-5.NBT.7,** MP1, MP4, MP7
5.10	Adding Decimals | Using Different Strategies to Add Decimals	**NY-5.NBT.7,** MP3, MP6, MP7
5.11	Subtracting Decimals | Using Different Strategies to Subtract Decimals	**NY-5.NBT.7,** MP6, MP7, MP8
5.12	Sums and Differences | Using the Standard Algorithm to Add and Subtract Decimals	**NY-5.NBT.7,** MP3, MP6, MP7
5.13	Making Scarves | Solving Real-World, Multi-Step Problems With Addition and Subtraction of Decimals	**NY-5.NBT.7,** MP1, MP7
	Sub-Unit Quiz	**NY-5.NBT.7, NY-5.NF.4a ,** MP1, MP6
	Sub-Unit 3 Multiply Decimals	
5.14	Explore, Part 2 | Making Sense of Decimal Multiplication	**NY-5.NBT.7, NY-5.OA.2,** MP2, MP7
5.15	Comic Book Advertisements | Multiplying Whole Numbers With Decimals	**NY-5.NBT.7, NY-5.NF.5, NY-5.NF.5a, NY-5.OA.2,** MP2, MP7, MP8
5.16	Is it True? | Representing Decimal Multiplication With Properties	**NY-5.NBT.7, NY-5.NF.5, NY-5.NF.5a, NY-5.OA.2,** MP2, MP7
5.17	Which Size Is It? | Multiplying Two Decimals	**NY-5.NBT.7, NY-5.NBT.1 ,**MP3, MP7
5.18	What Is the Relationship? | Using Whole Number Multiplication to Multiply Decimals	**NY-5.NBT.1, NY-5.NBT.7, NY-5.OA.2,** MP2, MP3, MP6, MP7
5.19	Planning a Comic Book | Using Decimal Operations to Solve Real-World, Multi-Step Problems	**NY-5.NBT.7,** MP1, MP2, MP3
	Sub-Unit Quiz	**NY-5.NBT.7,** MP6, MP7, MP8
	Sub-Unit 4 Divide Decimals	
5.20	Explore, Part 3 | Making Sense of Decimal Division	**NY-5.NBT.7,** MP2, MP7
5.21	Puzzle Pieces Everywhere | Dividing Whole Numbers by Decimals	**NY-5.NBT.7,** MP1, MP7, MP8
5.22	Decimal Dividends | Dividing Decimals by Whole Numbers	**NY-5.NBT.7,** MP5, MP7, MP8
5.23	Division Medley | Reasoning About Quotients	**NY-5.NBT.7, NY-5.OA.2,** MP1, MP2, MP3, MP7
5.24	Decimal Dividends and Divisors | Dividing Decimals by 1 Tenth and 1 Hundredth	**NY-5.NBT.7,** MP6, MP7, MP8
5.25	Watch and Learn | Applying Decimal Division	**NY-5.NBT.7,** MP1, MP4
	End-of-Unit Assessment	**NY-5.NBT.3b, NY-5.NBT.4, NY-5.NBT.1, NY-5.NBT.7,** MP1, MP4, MP6, MP7

Unit 6 More Decimal and Fraction Operations

	Pre-Unit Check	

Sub-Unit 1 Powers of 10

6.01	Investigate | Really Large Numbers	**Building Towards: NY-5.NBT.1, NY-5.NBT.2**
6.02	Monarch Butterflies | Representing Powers of 10 with Exponents	**NY-5.NBT.2,** MP7
6.03	Mystery Equations | Multiplying Whole Numbers by Powers of 10	**NY-5.NBT.2,** MP2, MP3, MP7
6.04	Place Value Patterns | Explain the Multiplicative Relationship Between Place Values	**NY-5.NBT.1,** MP2, MP3, MP7
6.05	Multiplying and Dividing by Powers of 10 | Explain the Placement of Decimal Points When Multiplying or Dividing by Powers of 10	**NY-5.NBT.1, NY-5.NBT.2,** MP2, MP7, MP8
	Sub-Unit Quiz	

Sub-Unit 2 Measurement Conversions

6.06	Traveling Butterflies | Metric Conversions	**NY-5.NBT.2, NY-5.MD.1,** MP2, MP7
6.07	Milkweed Seeds | Comparing Metric Units	**NY-5.MD.1, NY-5.NBT.2,** MP2, MP7
6.08	Butterfly Feeders | Multi-step Conversion Problems: Metric Units	**NY-5.MD.1, NY-5.NBT.2,** MP1, MP2
6.09	Butterfly Garden | Multi-step Conversion Problems: Customary Length	**NY-5.MD.1, NY-5.NBT.2,** MP2, MP7
6.10	Taking Care of the Butterfly Garden | Multi-step Conversion Problems: Customary Volume	**NY-5.MD.1,** MP2, MP7
6.11	Butterflies and Bison | Customary Conversions	**NY-5.MD.1,** MP1, MP2, MP7
	Sub-Unit Quiz	

Sub-Unit 3 Add and Subtract Fractions With Unlike Denominators

6.12	Different Denominators Equal to 1 | Composing a 1 With Different Size Parts	**Building Towards NY-5.NF.1,** MP1, MP5
6.13	Add and Subtract Fractions | Adding and Subtracting Fractions with Unlike Denominators, Part 1	**NY-5.NF.1, NY-5.NF.2,** MP2, MP7
6.14	All Sorts of Denominators | Adding and Subtracting Fractions With Unlike Denominators, Part 2	**NY-5.NF.1,** MP3, MP7
6.15	Tracking Butterflies | Adding Mixed Numbers With Unlike Denominators	**NY-5.NF.1, NY-5.NF.2,** MP2, MP3, MP7
6.16	Butterfly Wings | Subtracting Mixed Numbers With Unlike Denominators	**NY-5.NF.1, NY-5.NF.2,** MP2, MP3, MP7
6.17	Choosing Strategies | Adding and Subtracting Mixed Numbers	**NY-5.NF.1, NY-5.NF.2,** MP1, MP2, MP7
6.18	Missing Values | Determine Missing Values to Make Equations With Mixed Numbers True	**NY-5.NF.1, NY-5.NF.2,** MP2, MP7
6.19	Butterfly Feeder Stands | Representing Fractions on a Line Plot	**NY-5.MD.2,** MP1, MP7
6.20	Homemade Nectar | Problem Solving With Line Plots	**NY-5.MD.2, NY-5.NF.2,** MP1, MP7
	End-of-Unit Assessment	

Unit 7 Shapes on the Coordinate Plane

Pre-Unit Check NY-4.G.2, MP7

Sub-Unit 1 Hierarchies of Shapes

7.01 Investigate | Sorting Objects NY-5.G.3, MP5, MP7

7.02 Sorting Quadrilaterals | Describing and Identifying Quadrilaterals Using Attributes NY-5.G.3, MP6, MP7

7.03 Identifying Quadrilaterals | Using Attributes to Define Trapezoids, Kites, and Other Quadrilaterals NY-5.G.3, MP1, MP3, MP6

7.04 Using the Hierarchy of Quadrilaterals | Classifying Quadrilaterals Based on Angles, Side Lengths, and Parallel Sides NY-5.G.3, NY-5.G.4, MP6, MP7, MP8

7.05 Which One Doesn't Belong? | Using the Attributes of Quadrilaterals to Design an Activity NY-5.G.3, NY-5.G.4, MP3, MP6, MP7

Sub-Unit Quiz NY-5.G.3, NY-5.G.4, MP7

Sub-Unit 2 The Coordinate Plane

7.06 Creating a Coordinate System | Describing the Location of Points in Two-Dimensional Space NY-5.G.1, MP6, MP7

7.07 Bullseye! | Points on the Coordinate Plane NY-5.G.1, MP7

7.08 Plotting Points Without a Grid | Applying the Structure of the Coordinate Plane NY-5.G.2, NY-5.G.4, MP5, MP7

7.09 Representing Problems on the Coordinate Plane | Using the Coordinate Plane to Interpret Real-World Problems NY-5.G.1, NY-5.G.2, MP2, MP7

Sub-Unit Quiz NY-5.G.1, NY-5.G.2, MP7

Sub-Unit 3 Numerical Patterns

7.10 Generating Patterns | Exploring Mathematical Rules NY-5.G.2, NY-5.OA.3, MP7, MP8

7.11 Representing Relationships | Comparing Different Ways to Describe Patterns NY-5.G.2, NY-5.OA.3, MP2

7.12 Interpreting Graphs of Relationships | Describing Relationships Between Patterns Using Graphs NY-5.G.2, NY-5.OA.3, MP2

End-of-Unit Assessment ..... NY-5.G.1, NY- 5.G.3, NY-5.G.4, NY-5.OA.3, MP2, MP6, MP7