Mathletics
New York Program of Studies
Skill Quests

Grades 1 – 2
January, 2023

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Grade 1

1 Operations & Algebraic Thinking

1.1 Represent and solve problems involving addition and subtraction

Outcome	Quests	Content
Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions	Add & subtract within 20, word problems	Creating addition & subtraction word problems
Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20.	Add 3 single-digit numbers	Adding 3 single-digit numbers

1.2 Understand and apply properties of operations and the relationship between addition and subtraction

Outcome	Quests	Content
Apply properties of operations as strategies to add and subtract.	Apply properties to add & subtract	Using the commutative property of addition

1.3 Add and subtract within 20

Outcome	Quests	Content
Relate counting to addition and subtraction.	Relate counting to adding & subtracting	Relating counting to adding & subtracting
Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten; decomposing a number leading to a ten; using the relationship between addition and	Add & subtract within 20	Adding & subtracting within 10 fluently
		Subtracting numbers within 20
		Adding & subtracting zero within 20
		Adding doubles to 20
		Adding by making 10

Outcome	Quests	Content
subtraction; and creating equivalent but easier or known sums.		Subtracting using doubles
		Adding & subtracting with fact families

1.4 Work with addition and subtraction equations

Outcome	Quests	Content
Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false.	Recognize equality & inequality	Recognizing equality & inequality
Determine the unknown whole number in an addition or subtraction equation with the unknown in all positions.	Find the unknown number in an equation	Finding the unknown: addition/subtraction equation

1.5 Extend the counting sequence

Outcome	Quests	Content
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.	Count within 100	Counting within 100
	Read & write 2-digit numerals	Reading & writing 2-digit numerals
	Represent 2-digit objects as numerals	Representing 2-digit objects as numerals

1.6 Understand place value

Outcome	Quests	Content
Understand that the two digits of a two-digit number represent amounts of tens and ones.	Understand tens & ones	Counting in groups of ten
		Understanding tens & ones
Understanding tens & ones	Understanding tens & ones	Understanding tens & ones

1.7 Use place value understanding and properties of operations to add & subtract

Outcome	Quests	Content
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.	Add within 100	Adding a 2-digit number & a 1-digit number, models Adding a 2-digit number & a 1-digit number Adding a 2-digit number & a multiple of 10
Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.	Find 10 more or 10 less	Finding 10 more or 10 less

2 Measurement & Data

2.1 Measure lengths indirectly and by iterating length units

Outcome	Quests	Content
Order three objects by length; compare the lengths of two objects indirectly by using a third object.	Order & compare objects by length	Comparing & ordering lengths
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."	Express the length of an object	Expressing the length of an object

2.2 Tell and write time

Outcome	Quests	Content
Tell and write time in hours and half-hours using analog and digital clocks.	Tell time	Telling time with analog clocks
		Telling time with digital clocks

2.3 Represent and interpret data

Outcome	Quests	Content
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.	Organize, represent & interpret data	Introducing & reading data in tables
		Representing data in graphs
		Interpreting tally charts & picture graphs

3 Geometry

3.1 Reason with shapes and their attributes

Outcome	Quests	Content
Distinguish between defining attributes versus non-defining attributes for a wide variety of shapes. Build and/or draw shapes to possess defining attributes.	Sort shapes based on attributes	Sorting shapes based on attributes
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.	Composite shapes: 2D & 3D	Composite shapes: 2D & 3D

Grade 2

1 Operations & Algebraic Thinking

1.1 Represent and solve problems involving addition and subtraction

Outcome	Quests	Content
Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions.	Add & subtract within 100, word problems	Creating addition & subtraction word problems

1.2 Add and subtract within 20

Outcome	Quests	Content
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.	Add & subtract within 20	Fluently adding & subtracting within 20
		Adding & subtracting two 1-digit numbers

1.3 Work with equal groups of objects to gain foundations for multiplication

Outcome	Quests	Content
Determine whether a group of objects (up to 20) has an odd or even number of members. Write an equation to express an even number as a sum of two equal addends.	Odd & even numbers	Odd & even numbers up to 20
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	Connect addition & arrays	Connecting addition & arrays

equation to express the total as a sum of equal addends.		

2 Number & Operations in Base Ten

2.1 Understand place value

Outcome	Quests	Content
Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones.	Understand hundreds, tens & ones	Understanding hundreds, tens & ones
Count within 1000; skip-count by 5s, 10s, and 100s.	Skip-count within 1000	Skip-counting by 10s
		Skip-counting by 5s
		Skip-counting by 100s
		Counting within 1000
Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.	Read & write numbers to 1000	Reading & writing numbers to 1000
Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.	Compare 3-digit numbers	Comparing 3-digit numbers

2.2 Use place value understanding and properties of operations to add and subtract

Outcome	Quests	Content
Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	Add & subtract within 100	Using strategies to add & subtract within 100
		Adding & subtracting using a 100 chart
Add up to four two-digit numbers using strategies based on place value and properties of operations.	Add 2-digit numbers, strategies	Adding 2-digit numbers, strategies
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. Understand that in adding or subtracting up to three-digit numbers, one adds or	Add & subtract within 1000	Adding within 1000
		Subtracting within 1000

subtracts hundreds and hundreds, tens and tens, ones and ones, and sometimes it is necessary to compose or decompose tens or hundreds.		
Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.	Add & subtract 10 or 100 mentally	Adding & subtracting 10 or 100 mentally

3 Measurement & Data

3.1 Measure and estimate lengths in standard units

Outcome	Quests	Content
Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	Select units of measure: m, cm	Selecting units of measure: m, cm

3.2 Relate addition and subtraction to length

Outcome	Quests	Content
Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units.	Addition & subtraction length problems	Solving addition & subtraction length problems

3.3 Works with time and money

Outcome	Quests	Content
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.	Tell time	Telling time to the quarter hour, analog & digital
		Telling time to 5 minutes, analog & digital
		Using am & pm notation
Count a mixed collection of coins whose sum is less than or equal to one dollar. Solve real world and mathematical problems within one dollar involving quarters, dimes, nickels, and pennies, using the ¢ (cent) symbol appropriately.	Money	Recognizing bills & coins
		Solving money word problems

3.4 Represent and interpret data

Outcome	Quests	Content
Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.	Introduction to line plots	Reading line plots
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 bar graph.	Picture graphs & bar graphs	Picture graphs
		Bar graphs

4 Geometry

4.1 Reason with shapes and their attributes

Outcome	Quests	Content
Classify two-dimensional figures as polygons or non-polygons.	Recognize & identify shapes	Identifying & sorting shapes
		Identifying quadrilaterals
		Identifying pentagons
		Identifying hexagons
		Identifying cubes

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