

Mathletics

Pennsylvania Program of Studies

Skill Quests



Grades 1 – 2

January, 2023

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Grade 1

1 Algebraic Concepts

1.1 Operations and Algebraic Thinking

Outcome	Quests	Content
Represent and solve problems involving addition and subtraction within 20.	Add & subtract within 20, word problems	Creating addition & subtraction word problems
Represent and solve problems involving addition and subtraction within 20.	Add 3 single-digit numbers	Adding 3 single-digit numbers
Understand and apply properties of operations and the relationship between addition and subtraction.	Apply properties to add & subtract	Using the commutative property of addition
Understand and apply properties of operations and the relationship between addition and subtraction.	Relate counting to adding & subtracting	Relating counting to adding & subtracting
Understand and apply properties of operations and the relationship between addition and subtraction.	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
		Subtracting using doubles
		Adding & subtracting with fact families
Understand and apply properties of operations and the relationship between addition and subtraction.	Recognize equality & inequality	Recognizing equality & inequality
Understand and apply properties of operations and the relationship between addition and subtraction.	Find the unknown number in an equation	Finding the unknown: addition/subtraction equation

2 Number and Operations

2.1 Numbers & Operations in Base Ten

Outcome	Quests	Content
Extend the counting sequence to read and write numerals to represent objects.	Count within 100	Counting within 100
		Reading & writing 2-digit numerals
		Representing 2-digit objects as numerals
Use place-value concepts to represent amounts of tens and ones and to compare two digit numbers.	Understand tens & ones	Understanding tens & ones
Use place-value concepts and properties of operations to add and subtract within 100.	Compare 2-digit numbers	Comparing 2-digit numbers
Use place-value concepts and properties of operations to add and subtract within 100.	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
Use place-value concepts and properties of operations to add and subtract within 100.	Find 10 more or 10 less	Finding 10 more or 10 less

3 Measurement, Data, and Probability

3.1 Measurement and Data

Outcome	Quests	Content
Order lengths and measure them both indirectly and by repeating length units.	Order & compare objects by length	Comparing & ordering lengths
Order lengths and measure them both indirectly and by repeating length units.	Express the length of an object	Expressing the length of an object
Tell and write time to the nearest half hour using both analog and digital clocks.	Tell time	Telling time with analog clocks
		Telling time with digital clocks
Represent and interpret data using tables/charts.	Organize, represent & interpret data	Introducing & reading data in tables
		Representing data in graphs
		Interpreting tally charts & picture graphs

4 Geometry

4.1 Geometry

Outcome	Quests	Content
Compose and distinguish between two- and three- dimensional shapes based on their attributes.	Sort shapes based on attributes	Sorting shapes based on attributes
Compose and distinguish between two- and three- dimensional shapes based on their attributes.	Composite shapes: 2D & 3D	Composite shapes: 2D & 3D

Grade 2

1 Algebraic Concepts

1.1 Operations and Algebraic Thinking

Outcome	Quests	Content
Represent and solve problems involving addition and subtraction within 100.	Add & subtract within 100, word problems	Creating addition & subtraction word problems
Use mental strategies to add and subtract within 20.	Add & subtract within 20	Fluently adding & subtracting within 20
		Adding & subtracting two 1-digit numbers
Work with equal groups of objects to gain foundations for multiplication.	Odd & even numbers	Odd & even numbers up to 20
Work with equal groups of objects to gain foundations for multiplication.	Connect addition & arrays	Connecting addition & arrays

2 Number and Operations

2.1 Numbers & Operations in Base Ten

Outcome	Quests	Content
Use place-value concepts to represent amounts of tens and ones and to compare three digit numbers.	Understand hundreds, tens & ones	Understanding hundreds, tens & ones
Use place-value concepts to read, write, and skip count to 1000.	Skip-count within 1000	Skip-counting by 10s
		Skip-counting by 5s
		Skip-counting by 100s
		Counting within 1000
Use place-value concepts to read, write, and skip count to 1000.	Read & write numbers to 1000	Reading & writing numbers to 1000
Use place-value concepts to represent amounts of tens and ones and to compare three digit numbers.	Compare 3-digit numbers	Comparing 3-digit numbers
Use place-value understanding and properties of operations to add and subtract within 1000.	Add & subtract within 100	Using strategies to add & subtract within 100
		Adding & subtracting using a 100 chart
Use place-value understanding and properties of operations to add and subtract within 1000.	Add 2-digit numbers, strategies	Adding 2-digit numbers, strategies
Use place-value understanding and properties of operations to add and subtract within 1000.	Add & subtract within 1000	Adding within 1000
		Subtracting within 1000
Use place-value understanding and properties of operations to add and subtract within 1000.	Add & subtract 10 or 100 mentally	Adding & subtracting 10 or 100 mentally

3 Measurement, Data, and Probability

3.1 Measurement and Data

Outcome	Quests	Content
Measure and estimate lengths in standard units using appropriate tools.	Select units of measure: m, cm	Selecting units of measure: m, cm
Extend the concepts of addition and subtraction to problems involving length.	Addition & subtraction length problems	Solving addition & subtraction length problems
Tell and write time to the nearest five minutes using both analog and digital clocks.	Tell time	Telling time to the quarter hour, analog & digital
		Telling time to 5 minutes, analog & digital
		Using a.m. & p.m. notation
Solve problems and make change using coins and paper currency with appropriate symbols.	Money	Recognizing bills & coins
		Solving money word problems
Represent and interpret data using line plots, picture graphs, and bar graphs.	Introduction to line plots	Reading line plots
Represent and interpret data using line plots, picture graphs, and bar graphs.	Picture graphs & bar graphs	Picture graphs
		Bar graphs

4 Geometry

4.1 Geometry

Outcome	Quests	Content
Analyze and draw two- and three-dimensional shapes having specified attributes.	Recognize & identify shapes	Identifying & sorting shapes
		Identifying quadrilaterals
		Identifying pentagons
		Identifying hexagons
		Identifying cubes



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