Spark Education

2023-2024

Offline Spark Math Program

L1 Syllabus

Spark Math Program L1 Syllabus

Spark Education

Suitable for

Kindergarten students in the United States

Class Format

Impactful and fun small group classes

Course Content

- School syllabus
- Higher-order thinking questions in examinations
- Calculation strategies

Program Aims

- Solve key and difficult concepts and skills in school syllabus
- Develop children's interest in mathematics, develop higher-order thinking skills and enhance learning competitiveness
- By expanding concepts and depth both in and out of the classroom, we aim to enhance children's independent thinking abilities and cultivate their problem-solving skills in real-life situations

Heuristics

Act It Out	Before and After
Draw a Diagram	Form an Equation
Guess and Check	Look for a Pattern
Make a List	Make a Supposition
Restate the Problem	Simplify the Questions
Solve Part of the Problem	Work Backwards

Thinking Skills

Observation	Inquiry
Numeracy	Transfer
Logical Thinking	Reading Comprehension
Spatial Visualization	Expressive Language

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September

Module	Lesson
Computational Thinking	Simple Picture Graphs
	Sorting and Classifying
Numbers and Operations	Comparing Quantities I
	Comparing Quantities II
Revision Test	

Spark Math Program L1 Syllabus

September

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1

Module	Lesson
Computational Thinking	Simple Picture Graphs

Key Concepts and Skills

- Read and interpret data in picture graphs
- Draw picture graphs to represent data

2

Module	Lesson
Computational Thinking	Sorting and Classifying

Key Concepts and Skills

- Sort and classify objects by different attributes

3

Module	Lesson
Numbers and Operations	Comparing Quantities I

Key Concepts and Skills

- Use ten frames to count and represent numbers
- Count to tell the number of objects in a given set

4

Module	Lesson
Numbers and Operations	Comparing Quantities II

Key Concepts and Skills

- Use ten frames to compare numbers (more than or fewer than)

Revision Test

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October

Module	Lesson
Numbers and Operations	Number Bonds of 8, 9, and 10
Computational Thinking	Spatial Reasoning: Clear the Path
Computational Thinking	Comparing Length
	Measuring Length
Revision Test	

Spark Math Program L1 Syllabus

October

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1

Module	Lesson
Numbers and Operations	Number Bonds of 8, 9, and 10

Key Concepts and Skills	
	• Recognize number bonds • Write number bonds for numbers up to 10

2

Module	Lesson
Computational Thinking	Spatial Reasoning: Clear the Path

Key Concepts and Skills	
	• Observe relationships among obstacles • Recognize directions left, right, up and down • Use working backwards to find sequences of moves

3

Module	Lesson
Computational Thinking	Comparing Length

Key Concepts and Skills	
	• Use comparative and superlative terms to compare lengths • Compare the lengths of objects in non-standard units

4

Module	Lesson
Computational Thinking	Measuring Length

Key Concepts and Skills	
	• Measure the lengths of objects in non-standard units

Revision Test

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November

Module	Lesson
Computational Thinking	Comparing Mass I
	Comparing Mass II
Numbers and Operations	Addition Using Number Lines
	Subtraction Using Number Lines
Revision Test	

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November

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1

Module	Lesson
Computational Thinking	Comparing Mass I

Key Concepts and Skills	
	• Compare mass of objects using balance scales

2

Module	Lesson
Computational Thinking	Comparing Mass II

Key Concepts and Skills	
	• Compare mass of objects using balance scales

3

Module	Lesson
Numbers and Operations	Addition Using Number Lines

Key Concepts and Skills	
	• Use number lines to represent and compare numbers • Use number lines to illustrate the concepts of addition and subtraction

4

Module	Lesson
Numbers and Operations	Subtraction Using Number Lines

Key Concepts and Skills	
	• Use number lines to represent and compare numbers • Use number lines to illustrate the concepts of addition and subtraction

Revision Test

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December

Module	Lesson
Numbers and Operations	Addition and Subtraction Within 10
	Comparing Numbers

Revision Test

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December

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1 Module	Lesson
Numbers and Operations	Addition and Subtraction Within 10
Key Concepts and Skills	• Adding and subtracting within 10 using number line

2 Module	Lesson
Numbers and Operations	Comparing Numbers
Key Concepts and Skills	• Identify the greater number, the smaller number and the difference to compare numbers • Draw a diagram and use one-to-one correspondence to find the difference • Solve word problems involving 'more than' and 'fewer than'

Revision Test

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February

Module	Lesson
Numbers and Operations	Making Numbers Equal
Word Problems	Making Addition and Subtraction Stories
Computational Thinking	4×4 Sudoku
Geometry	Shape Puzzles I
Revision Test	

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February

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1

Module	Lesson
Word Problems	Making Numbers Equal

Key Concepts and Skills

- Draw a diagram and use one-to-one correspondence to find the difference
- Solve word problems involving 'more than' and 'fewer than'
- Share the difference equally according to the number of equal groups required

2

Module	Lesson
Word Problems	Making Addition and Subtraction Stories

Key Concepts and Skills

- Write addition and subtraction number sentences
- Identify the whole to find parts and vice versa

3

Module	Lesson
Computational Thinking	4x4 Sudoku

Key Concepts and Skills

- Learn and understand the rules of Sudoku puzzles
- Solve 4×4 Sudoku puzzles using various methods

4

Module	Lesson
Geometry	Shape Puzzles I

Key Concepts and Skills

- Identify and describe 2D shapes

Revision Test

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March

Module	Lesson
Geometry	Shape Puzzles II
Numbers and Operations	Numbers to 50
	Addition and Subtraction Without Regrouping
Computational Thinking	Repeating Patterns
Revision Test	

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March

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1

Module	Lesson
Geometry	Shape Puzzles II

Key Concepts and Skills	
	• Form figures with various 2D shapes

2

Module	Lesson
Numbers and Operations	Numbers to 50

Key Concepts and Skills	
	• Recognize number notation and the respective value of each digit for numbers up to 50 • Tell numbers by making a group of ten and counting on from 10 or making groups of ten and counting tens and ones

3

Module	Lesson
Numbers and Operations	Addition and Subtraction Without Regrouping

Key Concepts and Skills	
	• Add or subtract without regrouping for numbers up to 20

4

Module	Lesson
Computational Thinking	Repeating Patterns

Key Concepts and Skills	
	• Identify and complete simple patterns

Revision Test

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April

Module	Lesson
Computational Thinking	Growing or Shrinking Patterns
Geometry	Tangrams
Algebraic Thinking	Inequalities
Geometry	Overlapping Puzzles
Revision Test	

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April

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1

Module	Lesson
Computational Thinking	Growing or Shrinking Patterns

Key Concepts and Skills	
	• Observe the incremental or decremental changes in a pattern

2

Module	Lesson
Geometry	Tangrams

Key Concepts and Skills	
	• Form figures of animals and objects using 2D shapes

3

Module	Lesson
Algebraic Thinking	Inequalities

Key Concepts and Skills	
	• Relate the symbols '<' or '>' to the concepts of greater than and smaller than

4

Module	Lesson
Computational Thinking	Overlapping Puzzles

Key Concepts and Skills	
	• Identify the order in which shapes are overlapped • Overlap shapes to make a given figure

Revision Test

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May

Module	Lesson
Word Problems	Positions in a Queue
Numbers and Operations	Addition With Regrouping
	Subtraction With Regrouping
Geometry	Solid Figures

Revision Test

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May

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1

Module	Lesson
Word Problems	Positions in a Queue

Key Concepts and Skills

- Name and order objects from 1st to 10th
- Identify the positions of objects using ordinal numbers
- Solve word problems involving cardinal and ordinal numbers

2

Module	Lesson
Numbers and Operations	Addition With Regrouping

Key Concepts and Skills

- Addition with regrouping for numbers up to 20

3

Module	Lesson
Numbers and Operations	Subtraction With Regrouping

Key Concepts and Skills

- Subtraction with regrouping for numbers up to 20

4

Module	Lesson
Geometry	Solid Figures

Key Concepts and Skills

- Count the number of cubes in a given figure

Revision Test