

# Mathletics

## Pennsylvania Core Standards

### Activities (Courses) and Skill Quests



**Grades K-2**

August, 2025

**Mathletics**

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Pennsylvania Core Standards  
Activities (Courses) & Skill Quests  
August, 2025

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# Kindergarten

## 2.1.K Number and Operations

### A. Counting and cardinality

| CC.2.1.K.A.1   |                                 |
|--|---------------------------------|
| Know number names and write and recite the count sequence. |                                 |
| Course Topics  | Activities                      |
| Counting & Cardinality - up to 20                          | Before, After and Between to 20 |
|  | Counting up to 20               |
|  | Order Numbers to 10             |
|  | Order Numbers to 20             |
|  | Matching Numbers to 10          |
|  | Matching Numbers to 20          |
| Counting & Cardinality                                     | 1 to 30                         |
|  | Reading Numbers to 30           |
|  | Count by Tens                   |
|  | Counting Forward                |
|  | Going Up                        |

| CC.2.1.K.A.2  |                 |
|---|-----------------|
| Apply one-to-one correspondence to count the number of objects. |                 |
| Course Topics   | Activities      |
| Counting & Cardinality - up to 20                               | Dot Display     |
|   | How Many Dots?  |
|   | Concept of Zero |
|   | Count to 5      |

| CC.2.1.K.A.3   |                              |
|--|------------------------------|
| Apply the concept of magnitude to compare numbers and quantities |                              |
| Course Topics  | Activities                   |
| Counting & Cardinality - up to 20                                | Picture Graphs: More or Less |
|  | More, Less or the Same to 10 |
|  | More, Less or the Same to 20 |

### B. Numbers & Operations in Base Ten

| CC.2.1.K.B.1  |                     |
|---|---------------------|
| Use place value to compose and decompose numbers within 19. |                     |
| Course Topics   | Activities          |
| Number & Operations in Base Ten                             | Making Teen Numbers |
|   | Make Numbers Count  |

## 2.2.K. Algebraic Concepts

### A. Operations and Algebraic Thinking

| CC.2.2.K.A.1  |                            |
|---|----------------------------|
| Extend the concepts of putting together and taking apart to add and subtract within 10. |                            |
| Course Topics   | Activities                 |
| Operations & Algebraic Thinking   | Model Addition             |
|   | Model Subtraction          |
|   | Adding to 5                |
|   | Subtracting From 5         |
|   | Adding to Ten              |
|   | All about Ten              |
|   | Subtracting from Ten       |
|   | Adding to Make 5 and 10    |
|   | Adding to 10 Word Problems |

## 2.3.K. Geometry

### A. Geometry

| CC.2.3.K.A.1   |                       |
|--|-----------------------|
| Identify and describe two- and three-dimensional shapes. |                       |
| Course Topics  | Activities            |
| Geometry   | Collect the Shapes    |
|  | Collect Simple Shapes |
|  | Match the Solid 1     |

| CC.2.3.K.A.2   |                          |
|--|--------------------------|
| Analyze, compare, create, and compose two- and three-dimensional shapes. |                          |
| Course Topics  | Activities               |
| Geometry   | Where is it?             |
|  | Left or Right?           |
|  | Count Sides and Corners  |
|  | Relate Shapes and Solids |

## 2.4.K. Measurement, Data, and Probability

### A. Measurement and data

| CC.2.4.K.A.1   |                   |
|--|-------------------|
| Describe and compare attributes of length, area, weight, and capacity of everyday objects. |                   |
| Course Topics  | Activities        |
| Measurement & Data   | Everyday Length   |
|  | Everyday Mass     |
|  | Hot or Cold?      |
|  | How Full?         |
|  | Compare Length    |
|  | Which Holds More? |

| <b>CC.2.4.K.A.4</b><br>Classify objects and count the number of objects in each category. |                    |
|---|--------------------|
| Course Topics   | Activities         |
| Measurement & Data  | Sort It            |
|   | Same and Different |

# Grade 1

## 2.1.1 Numbers and Operations

### B. Numbers & Operations in Base Ten

| <b>CC.2.1.1.B.1</b>   |  |
|---|--|
| Extend the counting sequence to read and write numerals to represent objects. |  |
| Course Topics   | Activities                               |
| Numbers & Operations in Base Ten  | Make Big Numbers Count                   |
|   | Counting Forward                         |
|   | Going Up                                 |
|   | Before, After & Between to 100           |
| Topics  | Skill Quests                             |
| Count within 100  | Counting within 100                      |
|   | Reading & writing 2-digit numerals       |
|   | Representing 2-digit objects as numerals |

| <b>CC.2.1.1.B.2</b>  |                           |
|--|---------------------------|
| Use place-value concepts to represent amounts of tens and ones and to compare two digit numbers. |                           |
| Course Topics  | Activities                |
| Numbers & Operations in Base Ten   | Place Value 1             |
|  | Making Teen Numbers       |
|  | Making Numbers Count      |
|  | Compare Numbers to 20     |
|  | Compare Numbers to 50     |
|  | Compare Numbers to 100    |
|  | Greater or Less to 100    |
| Topics   | Skill Quests              |
| Understand tens & ones   | Understanding tens & ones |

| <b>CC.2.1.1.B.3</b>   |  |
|---|--|
| Use place-value concepts and properties of operations to add and subtract within 100. |  |
| Course Topics   | Activities   |
| Numbers & Operations in Base Ten  | Addition Properties                                |
|   | Commutative Property of Addition                   |
|   | Adding In Any Order                                |
|   | Complements to 10, 20, 50                          |
|   | Complements to 50 and 100                          |
|   | Columns that Add                                   |
|   | Add Numbers: Regroup a Ten                         |
|   | Additive Addition                                  |
|   | Simple Subtraction                                 |
|   | Subtract Tens                                      |
|   |  |
| Topics  | Skill Quests                                       |
| Compare 2-digit numbers   | Comparing 2-digit numbers                          |
| 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 |
| Find 10 more or 10 less | Finding 10 more or 10 less                 |

## 2.2.1 Algebraic Concepts

### A. Operations and Algebraic Thinking

| CC.2.2.1.A.1   |   |
|--|---|
| Represent and solve problems involving addition and subtraction within 20. |   |
| Course Topics  | Activities                                    |
| Operations and Algebraic Thinking  | Add and Subtract Using Graphs                 |
|  | Add and Subtract Problems                     |
|  | Adding to 10 Word Problems                    |
|  | Problems: Add and Subtract                    |
|  | Word Problems: Add and Subtract               |
|  | Adding to Ten                                 |
|  | Subtracting from Ten                          |
|  | Subtracting from 20                           |
|  | Doubles and Near Doubles                      |
| Topics   | Skill Quests                                  |
| Add & subtract within 20, word problems                                    | Creating addition & subtraction word problems |
| Add 3 single-digit numbers   | Adding 3 single-digit numbers                 |

| CC.2.2.1.A.2   |  |
|--|--|
| Understand and apply properties of operations and the relationship between addition and subtraction. |  |
| Course Topics  | Activities   |
| Operations and Algebraic Thinking  | Add Three 1-Digit Numbers                          |
|  | Add 3 Single Digit Numbers                         |
|  | Add 3 Numbers Using Bonds to 10                    |
|  | Fact Families: Add and Subtract                    |
|  | All about Twenty                                   |
|  | Related Facts 1                                    |
|  | Missing Numbers                                    |
| Topics   | Skill Quests                                       |
| Apply properties to add & subtract   | Using the commutative property of addition         |
| Relate counting to adding & subtracting  | Relating counting to adding & subtracting          |
| 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            |
| Recognize equality & inequality  | Recognizing equality & inequality                  |
| Find the unknown number in an equation   | Finding the unknown: addition/subtraction equation |



## 2.3.1 Geometry

### A. Geometry

| CC.2.3.1.A.1<br>Compose and distinguish between two- and three-dimensional shapes based on their attributes. |                                    |
|--|------------------------------------|
| Course Topics  | Activities                         |
| Geometry   | Collect Simple Shapes              |
|  | Collect the Shapes                 |
|  | Collect More Shapes                |
|  | Count Sides and Corners            |
|  | Collect the Objects 2              |
|  | Match the Solid 2                  |
| Topics   | Skill Quests                       |
| Sort shapes based on attributes  | Sorting shapes based on attributes |
| Composite shapes: 2-D & 3-D  | Composite shapes: 2-D & 3-D        |

| CC.2.3.1.A.2<br>Use the understanding of fractions to partition shapes into halves and quarters. |                     |
|--|---------------------|
| Course Topics  | Activities          |
| Geometry   | Halves              |
|  | Halves and Quarters |
| Topics   | Skill Quests        |
| Teacher directed   |                     |

## 2.4.1 Measurement, Data, and Probability

### A. Measurement and Data

| CC.2.4.1.A.1<br>Order lengths and measure them both indirectly and by repeating length units. |                                    |
|---|------------------------------------|
| Course Topics   | Activities                         |
| Measurement & Data  | Compare Length 1                   |
|   | Comparing Length                   |
|   | Everyday Length                    |
|   | Measuring Length with Blocks       |
| Topics  | Skill Quests                       |
| Order & compare objects by length   | Comparing & ordering lengths       |
| Express the length of an object   | Expressing the length of an object |

| CC.2.4.1.A.2<br>Tell and write time to the nearest half hour using both analog and digital clocks. |                                  |
|--|----------------------------------|
| Course Topics  | Activities                       |
| Measurement & Data   | Set Time to the Hour             |
|  | Set Time to the Half Hour        |
| Topics   | Skill Quests                     |
| Tell time  | Telling time with analog clocks  |
|  | Telling time with digital clocks |

| <b>CC.2.4.1.A.4</b><br>Represent and interpret data using tables/charts. |  |
|--|--|
| Course Topics  | Activities                                 |
| Measurement & Data   | Picture Graphs: Who has the Goods?         |
|  | Picture Graphs                             |
|  | Sorting Data                               |
|  | Read Graphs                                |
| Topics   | Skill Quests                               |
| Organize, represent & interpret data                                     | Introducing & reading data in tables       |
|  | Representing data in graphs                |
|  | Interpreting tally charts & picture graphs |

# Grade 2

## 2.1.2 Numbers and Operations

### B. Numbers & Operations in Base Ten

| CC.2.1.2.B.1   |                                     |
|--|-------------------------------------|
| Use place-value concepts to represent amounts of tens and ones and to compare three-digit numbers. |                                     |
| Course Topics  | Activities                          |
| Numbers & Operations in Base Ten<br>1-2  | Model Numbers                       |
|  | Understanding Place Value 1         |
|  | Place Value 2                       |
|  | Place Value Partitioning            |
|  | Which is Bigger?                    |
|  | Which is Smaller?                   |
| Topics   | Skill Quests                        |
| Understand hundreds, tens & ones   | Understanding hundreds, tens & ones |
| Compare 3-digit numbers  | Comparing 3-digit numbers           |

| CC.2.1.2.B.2   |                                   |
|--|-----------------------------------|
| Use place-value concepts to read, write, and skip count to 1000. |                                   |
| Course Topics  | Activities                        |
| Numbers & Operations in Base Ten<br>1-2                          | Count by Fives                    |
|  | Count by Tens                     |
|  | Count by 2s, 5s and 10s           |
| Topics   | Skill Quests                      |
| Skip-count within 1000   | Skip-counting by 10s              |
|  | Skip-counting by 5s               |
|  | Skip-counting by 100s             |
|  | Counting within 1000              |
| Read & write numbers to 1000                                     | Reading & writing numbers to 1000 |

| CC.2.1.2.B.3  |   |
|---|---|
| Use place-value understanding and properties of operations to add and subtract within 1000. |   |
| Course Topics   | Activities                              |
| Numbers & Operations in Base Ten 3  | Add 3 Numbers: Bonds to 100             |
|   | Add 3 Numbers: Bonds to Multiples of 10 |
|   | Columns that Add                        |
|   | Add Two 2-Digit Numbers                 |
|   | Add Two 2-Digit Numbers: Regroup        |
|   | Add 3-Digit Numbers                     |
|   | Add 3-Digit Numbers: Regroup            |
|   | Columns that Subtract                   |
|   | 2-Digit Differences                     |
|   | 2-Digit Differences: Regroup            |
|   | 3-Digit Differences                     |
|   | 3-Digit Differences with Zeros          |
|   | 3-Digit Differences: 1 Regrouping       |
|   | 3-Digit Differences: 2 Regroupings      |

| Topics                            | Skill Quests                                  |
|-----------------------------------|---|
| Add & subtract within 100         | Using strategies to add & subtract within 100 |
|                                   | Adding & subtracting using a 100 chart        |
| Add 2-digit numbers, strategies   | Adding 2-digit numbers, strategies            |
| Add & subtract within 1000        | Adding within 1000                            |
|                                   | Subtracting within 1000                       |
| Add & subtract 10 or 100 mentally | Adding & subtracting 10 or 100 mentally       |

## 2.2.2 Algebraic Concepts

### A. Operations and Algebraic Thinking

| CC.2.2.2.A.1<br>Represent and solve problems involving addition and subtraction within 100. |   |
|---|---|
| Course Topics   | Activities                                    |
| Operations and Algebraic Thinking   | Bar Model Problems 1                          |
|   | Bar Model Problems 2                          |
|   | Complements to 50 and 100                     |
|   | Problems: Add and Subtract                    |
|   | Add and Subtract Problems                     |
| Topics  | Skill Quests                                  |
| Add & subtract within 100, word problems  | Creating addition & subtraction word problems |

| CC.2.2.2.A.2<br>Use mental strategies to add and subtract within 20. |  |
|--|--|
| Course Topics  | Activities                               |
| Operations and Algebraic Thinking                                    | Addition                                 |
|  | Addition Facts                           |
|  | Subtraction Facts to 18                  |
|  | Simple Subtraction                       |
|  | Additive Addition                        |
|  | Fact Families: Add and Subtract          |
|  | Add 3 Numbers Using Bonds to 10          |
|  | Doubles and Near Doubles                 |
| Topics   | Skill Quests                             |
| Add & subtract within 20   | Fluently adding & subtracting within 20  |
|  | Adding & subtracting two 1-digit numbers |

| CC.2.2.2.A.3<br>Work with equal groups of objects to gain foundations for multiplication. |                 |
|---|-----------------|
| Course Topics   | Activities      |
| Operations and Algebraic Thinking   | Odd or Even     |
|   | Groups of Two   |
|   | Groups of Three |
|   | Groups of Four  |
|   | Groups of Five  |
| Topics  | Skill Quests    |

|                           |                              |
|---------------------------|------------------------------|
| Odd & even numbers        | Odd & even numbers up to 20  |
| Connect addition & arrays | Connecting addition & arrays |

## 2.3.2 Geometry

### A. Geometry

| CC.2.3.2.A.1  |                              |
|---|------------------------------|
| Analyze and draw two- and three-dimensional shapes having specified attributes. |                              |
| Course Topics   | Activities                   |
| Geometry  | How Many Faces?              |
|   | How many Edges?              |
|   | How many Corners?            |
|   | Count Sides and Corners      |
|   | Collect Simple Shapes        |
|   | Collect More Shapes          |
| Topics  | Skill Quests                 |
| Recognize & identify shapes   | Identifying & sorting shapes |
|   | Identifying quadrilaterals   |
|   | Identifying pentagons        |
|   | Identifying hexagons         |
|   | Identifying cubes            |

| CC.2.3.2.A.2  |                     |
|---|---------------------|
| Use the understanding of fractions to partition shapes into halves, quarters, and thirds. |                     |
| Course Topics   | Activities          |
| Geometry  | Shade Fractions     |
|   | Halves              |
|   | Halves and Quarters |
| Topics  | Skill Quests        |
| Teacher directed  |                     |

## 2.4.2 Measurement, Data, and Probability

### A. Measurement and Data

| CC.2.4.2.A.1  |                                   |
|---|-----------------------------------|
| Measure and estimate lengths in standard units using appropriate tools. |                                   |
| Course Topics   | Activities                        |
| Measurement & Data  | Measuring Length                  |
|   | How Long Is That (Customary)?     |
|   | Measure to the Nearest Half Inch  |
|   | Inches, Feet, Yards               |
| Topics  | Skill Quests                      |
| Select units of measure: m, cm  | Selecting units of measure: m, cm |

| CC.2.4.2.A.2  |
|---|
| Tell and write time to the nearest five minutes using both analog and digital clocks. |

| Course Topics      | Activities   |
|--------------------|--|
| Measurement & Data | Five Minute Times                                  |
| Topics             | Skill Quests                                       |
| Tell time          | Telling time to the quarter hour, analog & digital |
|                    | Telling time to 5 minutes, analog & digital        |
|                    | Using a.m. & p.m. notation                         |

| CC.2.4.2.A.3  |                                 |
|---|---------------------------------|
| Solve problems and make change using coins and paper currency with appropriate symbols. |                                 |
| Course Topics   | Activities                      |
| Measurement & Data  | How Much Money? (USD)           |
|   | Money - Totaling (USD)          |
|   | Making Change (USD)             |
|   | Choosing the Fewest Coins (USD) |
|   | Who's got the Money?            |
| Topics  | Skill Quests                    |
| Money   | Recognizing bills & coins       |
|   | Solving money word problems     |

| CC.2.4.2.A.4   |                                   |
|--|-----------------------------------|
| Represent and interpret data using line plots, picture graphs, and bar graphs. |                                   |
| Course Topics  | Activities                        |
| Measurement & Data   | Line Plots                        |
|  | Picture Graphs: single-unit scale |
|  | Bar Graphs 1                      |
|  | Bar Graphs 2                      |
| Topics   | Skill Quests                      |
| Picture graphs & bar graphs  | Picture graphs                    |
|  | Bar graphs                        |
| Introduction to line plots   | Reading line plots                |

| CC.2.4.2.A.6  |  |
|---|--|
| Extend the concepts of addition and subtraction to problems involving length. |  |
| Course Topics   | Activities                                     |
| Teacher directed  |  |
| Topics  | Skill Quests                                   |
| Addition & subtraction length problems  | Solving addition & subtraction length problems |



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