

Chambersburg Area School District Mathematics Curriculum

Grade 1

Course Summary: *Grade 1 mathematics is about (1) developing understanding of addition, subtraction, and strategies for addition and subtraction within 20; (2) developing understanding of whole number relationships and place value, including grouping in tens and ones; (3) developing understanding of linear measurement and measuring lengths as iterating length units; and (4) reasoning about attributes of, and composing and decomposing geometric shapes.*

Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and makes sense of regularity in repeated reasoning.

Unit of Study	Unit 1: Sums and Differences to 10
Time Frame/Pacing	45 Days - Can consolidate Lessons 22 and 23 into one lesson and omit the problem sets - Can consolidate Topics G and H (refer to page 4 in Module 1)
Big Ideas	Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.
Unit Essential Questions	- What are the different ways to count, starting at any number? - How are relationships represented mathematically? - How can expressions, equations, and inequalities be used to quantify, solve, model and/or analyze mathematical situations?
PA Core Standards	CC.2.2.1.A.1: Represent and solve problems involving addition and subtraction within 20 CC.2.2.1.A.2: Understand and apply properties of operations and the relationship between addition and subtraction
Learning Objectives (Concepts Taught)	- Understand the meaning of addition and subtraction (primarily within the context of word problems) - Build fluency skills with addition and subtraction facts
Performance Objectives (Skills Demonstrated)	- Represent and solve problems involving addition and subtraction - Extend the counting sequence - Use place value understanding and properties of operations to add and subtract
Key Vocabulary	New or Recently Introduced Terms count on, expression, addend, doubles, doubles plus one, symbols for greater than ($>$) and less than ($<$), skip counting, Familiar Terms and Symbols part, total, whole, label, addition sign, equal sign, subtraction sign, equation, number sentence, number bond, five group, place value, greater than ($>$), less than($<$), ones, tens
Assessments	- Mid module assessment - End of module assessment - Exit ticket for each lesson
Resources and Differentiation Tools	- Eureka Module 1 - Zearn (Mission 1) www.zearn.org - Number talks

	• www.engageny.org • Pg 159 last bullet • Problem of the Month • How many are hiding? • Illustrative Mathematics Tasks Operations and Algebraic Thinking • ELL Overlay for Listening and Reading Grades 1 and 2 Mathematics • ELL Overlay for Speaking and Writing for Grades 1 and 2 Mathematics
Authentic Examples (real-world tasks)	• Application problems • Pg 24 egg carton activity • Pg 80 DOK 2 • Pg 146 Concept Development
Visual Representations & Strategies	• Number bonds • Addition chart • Rekenrek • Counters • Number path • Five group cards • Hide zero cards
Writing in Math	Lesson 5, Student Debrief (p. 53 Teacher Edition), Objective: See and describe numbers of objects using 1 more within 5-group configurations. Use bulleted item #6 as a written reflection. Using what you learned today, what is 1 more than 13? How do you know? Module 1 Mid-Module Assessment Task #4: Sums and Differences to Ten (p. 300 Teacher Edition). Module 1 End-of-Module Assessment Task #1: Sums and Differences to Ten (p. 488 Teacher Edition).
Culturally Responsive Activities	• https://www.engageny.org/resource/grade-1-mathematics-module-1 (see the various language resources under “Downloadable Resources”) • Learning to Think Mathematically with the Rekenrek See Chapter 1 for background information on the rekenrek, Chapter 3 Lessons 1 - 11, and Chapter 4. • Making Mathematics Culturally Relevant See page 3 for number words and number writing to 10 in different cultures and languages.
Grade Level DOK Samples	Grade 1 Math DOK Samples

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Unit of Study	Unit 2: Introduction to Place Value
Time Frame/Pacing	35 Days Possible omission of Lessons 5, 9, 11, 21 (see page 4 in Module 2)
Big Ideas	Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations. Mathematical relationships among numbers can be represented, compared, and communicated.
Unit Essential Questions	- How do we solve problems using addition and subtraction? - How are relationships represented mathematically? - How can expressions, equations, and inequalities be used to quantify, solve, model and/or analyze mathematical situations? - How is mathematics used to quantify, compare, represent, and model numbers?
PA Core Standards	CC.2.2.1.A.1: Represent and solve problems involving addition and subtraction within 20
Learning Objectives (Concepts Taught)	- Learn how to add and subtract across 10 with word problems and equations - Understand place value by learning how to group 10 ones as a single unit
Performance Objectives (Skills Demonstrated)	- Represent and solve problems involving addition and subtraction - Apply properties of operations and the relationship between addition and subtraction - Add and subtract within 20
Key Vocabulary	New or Recently Introduced Terms A ten, ones Familiar Terms and Symbols Five group, add, equals, number bonds, partners to 10, subtract, teen numbers
Assessments	- Mid module assessment - End of module assessment - Exit ticket for each lesson
Resources and Differentiation Tools	- Eureka Module 2 - Zearn (Mission 2) www.zearn.org

	• Parts unknown story problems • Lego Factory • Shut the Box • Number talks • Ten frames • Hundred charts ELL Overlay for Listening and Reading Grades 1 and 2 Mathematics ELL Overlay for Speaking and Writing for Grades 1 and 2 Mathematics
Authentic Examples (real-world tasks)	• Application problems
Visual Representations & Strategies	• Five group cards • Five group rows • Five group columns • Hide zero cards • Number bonds • Number path • Rekenrek
Writing in Math	Lesson 11, Problem Set #3 and #4: Share and critique peer solution strategies for put together with total unknown word problems.. Students write a statement for each question. (p. 129 Teacher Edition) Mid-Module Assessment Task #5: Introduction to Place Value Through Addition and Subtraction Within 20. Students use words, math drawings, and numbers. (p. 136 Teacher Edition) Lesson 27 Exit Ticket #3: Solve addition and subtraction problems decomposing and composing teen numbers as 1 ten and some ones. Students write a number sentence and a statement that matches the story (p. 338 Teacher Edition).
Culturally Responsive Activities	• https://www.engageny.org/resource/grade-1-mathematics-module-2 (see the various language resources under “Downloadable Resources”) • Learning to Think Mathematically with the Rekenrek See Chapter 1 for background information on the rekenrek, Chapter 3, and Chapter 4. • Making Mathematics Culturally Relevant See page 3 for number words and number writing to 20 in different cultures and languages.
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Unit of Study	Unit 3: Ordering and Comparing Length Measurements as Numbers
Time Frame/Pacing	15 Days - Lessons 2, 4, 6, 9 are the most essential in Module 3 - Consider moving Lessons 10-13 to another time in the day (Science, Morning Routine, etc) See page 3 in Module 3
Big Ideas	- Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools. - Measurement attributes can be quantified and estimated using customary and non-customary units of measure. - Data can be modeled and used to make inferences.
Unit Essential Questions	- Why does what we measure influence how we measure? - What makes a tool and/or strategy appropriate for a given task? - In what ways are the mathematical attributes of objects or processes measured, calculated, and/or interpreted? - How does the type of data influence the choice of display?
PA Core Standards	CC.2.2.1.A.1: Represent and solve problems involving addition and subtraction within 20 CC.2.4.1.A.1: Order lengths and measure them both indirectly and by repeating length units. CC.2.4.1.A.4: Represent and interpret data using tables/charts
Learning Objectives (Concepts Taught)	- Learn how to measure and compare lengths indirectly and by iterating length units - Learn how to draw conclusions, interpret data, and represent data in various ways
Performance Objectives (Skills Demonstrated)	- Represent and solve problems involving addition and subtraction - Apply properties of operations and the relationship between addition and subtraction - Add and subtract within 20 - Measure lengths indirectly and by iterating length units - Represent and interpret data
Key Vocabulary	New or Recently Introduced Terms

	Centimeter, centimeter cube, centimeter ruler, data, endpoint, height, length unit, poll, table or graph Familiar Terms and Symbols Less than, longer than/taller than, more than, shorter than, tally marks
Assessments	• End of module assessment • Exit ticket for each lesson
Resources and Differentiation Tools	• Eureka Module 3 • Zearn (Mission 3) www.zearn.org • Number talks • www.engageny.org • Measuring Mammals • Illustrative Mathematics Tasks Measurement and Data activities ELL Overlay for Listening and Reading Grades 1 and 2 Mathematics ELL Overlay for Speaking and Writing for Grades 1 and 2 Mathematics
Authentic Examples (real-world tasks)	• Application problems- Example: : Kingston’s Class takes a trip to the zoo (p. 160 teacher edition).
Visual Representations & Strategies	• Centimeter cubes • Centimeter rulers • Non-standard units • String lengths of about 25 centimeters • Tally marks
Writing in Math	End-of Module Assessment Task #3: Ordering and Comparing Length Measurements as Numbers. Students explain their thinking with two reasons (p. 183 Teacher Edition).
Culturally Responsive Activities	• https://www.engageny.org/resource/grade-1-mathematics-module-3 (see the various language resources under “Downloadable Resources”)
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Unit of Study	Unit 4: Place Value, Comparison, Addition and Subtraction to 40
Time Frame/Pacing	35 Days Pacing Notes: None
Big Ideas	Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.
Unit Essential Questions	- How are relationships represented mathematically? - How can expressions, equations, and inequalities be used to quantify, solve, model and/or analyze mathematical situations?
PA Core Standards	CC.2.2.1.A.2: Understand and apply properties of operations and the relationship between addition and subtraction
Learning Objectives (Concepts Taught)	Build on the understanding of place value by adding and subtracting within 40
Performance Objectives (Skills Demonstrated)	Add and subtract by establishing a ten as a unit such as $28+5$ is $28+2$ and then add 3 more.
Key Vocabulary	New or Recently Introduced Terms Greater than ($>$), less than ($<$), place value Familiar Terms and Symbols Equal ($=$), numerals, ones, tens
Assessments	- Mid module assessment - End of module assessment - Exit ticket for each lesson
Resources and Differentiation Tools	- Eureka Module 4 - Zearn (Mission 4) www.zeam.org - Number talks www.engageny.org Base Ten lesson - Illustrative Mathematics tasks Numbers and Operations in Base Ten

	ELL Overlay for Listening and Reading Grades 1 and 2 Mathematics ELL Overlay for Speaking and Writing for Grades 1 and 2 Mathematics
Authentic Examples (real-world tasks)	• Application problems
Visual Representations & Strategies	• Arrow notation • Comparison symbols • Dime • Hide zero cards • Hundred chart • Number bond • Pennies • Place value chart • Quick ten • Rekenrek • Tape diagram
Writing in Math	*Student debriefs in each lesson provide opportunity for discussion that supports writing activities Mid-Module Assessment Task #8: Place Value, Comparison, Addition and Subtraction to 40. Students explain their thinking about tens and ones (p. 169 teacher edition). End-of-Module Assessment Task #3a: Place Value, Comparison, Addition and Subtraction to 40. Students explain their thinking. (p. 382 Teacher Edition).
Culturally Responsive Activities	• https://www.engageny.org/resource/grade-1-mathematics-module-4 (see the various language resources under “Downloadable Resources”) • Making Mathematics Culturally Relevant See page 3 for number words and number writing to 40 in different cultures and languages. ELL Overlay for Listening and Reading Grades 1 and 2 Mathematics ELL Overlay for Speaking and Writing for Grades 1 and 2 Mathematics
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Unit of Study	Unit 5: Identifying, Composing and Partitioning Shapes
Time Frame/Pacing	15 Days Pacing Notes: None
Big Ideas	- Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization. - Measurement attributes can be quantified and estimated using customary and non-customary units of measure.
Unit Essential Questions	- How are spatial relationships, including shape and dimension, used to draw, construct, model, and represent real situations or solve problems? - How can the application of the attributes of geometric shapes support mathematical reasoning and problem solving? - How can geometric properties and theorems be used to describe, model, and analyze situations?
PA Core Standards	CC.2.3.1.A.1: Compose and distinguish between two and three dimensional shapes based on their attributes CC.2.2.1.A.2: Understand and apply properties of operations and the relationship between addition and subtraction CC.2.2.1.A.1: Represent and solve problems involving addition and subtraction within 20
Learning Objectives (Concepts Taught)	- Practice addition and subtraction within 40 - Reason with shapes and their attributes - Learn how to tell and write time in hour and half hour increments - Learn names and values of coins
Performance Objectives (Skills Demonstrated)	- Tell and write time to the hour and half hour, using analog and digital clocks - Build and draw shapes with defining attributes - Partition circles and rectangles into equal shares - Identify coins by their name and value
Key Vocabulary	New or Recently Introduced Terms

	Attributes, composite shape, digital clock, face, fourth of, fourths, half hour, half of, halves, half past, hour, hour hand, minute, minute hand, o'clock, quarter of, three dimensional shapes (cone, rectangular prism), two dimensional shapes (half circle, quarter circle, rhombus, trapezoid) Familiar Terms and Symbols Clock, circle, cube, cylinder, hexagon, rectangle, sphere, square, triangle
Assessments	• End of module assessment • Exit ticket for each lesson
Resources and Differentiation Tools	• Eureka Module 5 • Zearn (Mission 5) www.zearn.org • www.engageny.org • Sliced Up act 3 activity • Once Upon a Time • Between the Lines • Problem of the Month • Illustrative Mathematics Tasks Geometry activities ELL Overlay for Listening and Reading Grades 1 and 2 Mathematics ELL Overlay for Speaking and Writing for Grades 1 and 2 Mathematics
Authentic Examples (real-world tasks)	• Application problems
Visual Representations & Strategies	Lesson 9 Exit Ticket #2: Partition shapes and identify halves and quarters of circles and rectangles. Students use the models provided of circles to explain their answers (p. 131 teacher edition). End-of Module Assessment Task #2: Identifying, Composing, and Partitioning Shapes. Students explain why the shape is NOT a triangle (p. 183 teacher edition). Pattern blocks • Square tiles • Straws • Student clocks • 3D shape models • Geoboards
Writing in Math	End-of-Module Assessment Task #2: Identifying, Composing, and Partitioning Shapes. Students explain why the shape is not a triangle (p. 183 teacher edition).
Culturally Responsive Activities	• https://www.engageny.org/resource/grade-1-mathematics-module-5 (see the various language resources under “Downloadable Resources”) • Pg 113 sicilian pizza • One Moment Around the World What time is it in different parts of the world? Includes military time • History of Time and its Facts History of clocks
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Unit of Study	Unit 6: Place Value, Comparison, Addition and Subtraction to 100
Time Frame/Pacing	35 Days
Big Ideas	- See page 3 - Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations. - Measurement attributes can be quantified and estimated using customary and non-customary units of measure
Unit Essential Questions	- How are relationships represented mathematically? - How can expressions, equations, and inequalities be used to quantify, solve, model and/or analyze mathematical situations?
PA Core Standards	CC.2.2.1.A.2: Understand and apply properties of operations and the relationship between addition and subtraction CC.2.2.1.A.1: Represent and solve problems involving addition and subtraction within 20
Learning Objectives (Concepts Taught)	- Adding and subtracting within 100 by building off the place value understanding and mental math strategies that were introduced in earlier modules. - Explore by using simple examples and the familiar units of 10 made out of linking cubes, bundles, and drawings. - Use place value understanding and properties of operations to add and subtract
Performance Objectives (Skills Demonstrated)	- Represent and solve problems involving addition and subtraction - Extend the counting sequence - Count to 120 and represent any number within that range with a numeral. - Tell and write time and money
Key Vocabulary	New or Recently Introduced Terms Dime, nickel, penny, quarter Familiar Terms and Symbols <, >, = (less than, greater than, equal to)
Assessments	- Mid module assessment - End of module assessment

	Exit ticket for each lesson
Resources and Differentiation Tools	- Eureka Module 6 - Zearn (Mission 6) www.zearn.org www.engageny.org Cookie Monster Pringle Ringle The Juggler Graham Cracker Bright Idea Snack Machine - Illustrative Mathematics Tasks Numbers and Operations Base Ten Activities ELL Overlay for Listening and Reading Grades 1 and 2 Mathematics ELL Overlay for Speaking and Writing for Grades 1 and 2 Mathematics
Authentic Examples (real-world tasks)	Application problems
Visual Representations & Strategies	- Unifix cubes 100 bead Rekenrek - Tape diagram 100 Chart - Arrow notation
Writing in Math	End-of-Module Assessment Task #4: Place Value, Comparison, Addition and Subtraction to 100 Students explain their thinking (p. 343 teacher edition).
Culturally Responsive Activities	https://www.engageny.org/resource/grade-1-mathematics-module-6 (see the various language resources under “Downloadable Resources”) Making Mathematics Culturally Relevant See page 3 for number words and number writing to 100 in different cultures and languages.
Grade Level DOK Examples	Grade 1 Math DOK Samples

The following link takes you to the academic vocabulary list.

[General Academic Vocabulary](#)