

Chambersburg Area School District Mathematic Curriculum

Grade Kindergarten

Course Summary: *Kindergarten mathematics is about (1) representing, relating, and operating on whole numbers, initially with sets of objects; and (2) describing shapes and space. More learning time in Kindergarten should be devoted to number than to other topics.*

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: Numbers to 10
Time Frame/Pacing	43 Days Can consolidate lessons 1 & 2 if students are able to recognize subtle differences in attributes of objects.
Big Ideas	Mathematical relationships among numbers can be represented, compared, and communicated.
Unit Essential Questions	What are numbers? What is counting and how can it be used? What is base 10 and how can it be used? Can you identify and describe 2-dimensional and 3-dimensional shapes? How do you analyze, compare, create, and compose 2-dimensional and 3-dimensional shapes?
PA Core Standards	CC.2.1.K.A.1 Know number names and write and recite the count sequence. C.C.2.1.K.A.2 Apply one-to one correspondence to count the number of objects. CC.2.1.K.A.2 Apply one-to one correspondence to count the number of objects. CC.2.2.K.A.1 Extend the concepts of putting together and taking apart to add and subtract within 10. CC.2.4.K.A.4 Classify objects and count the number of objects in each category
Learning Objectives (Concepts Taught)	Students will learn... - To classify and categorize objects. - The way each number from 0-10 relates to five. - The concept of 1 more and 1 less.
Performance Objectives (Skills Demonstrated)	Students will be able to... - Analyze and find objects that are similar and/or the same. - Classify to make categories and count - Sort, decompose and find hidden partners for #s 0-10. - Answer “how many” questions for #s 0-10 - Write and order #s 0-10 Arrange, analyze, and draw sequences of quantities to represent 1 more and 1 less for #s 0-10
Key Vocabulary:	New or Recently Introduced Terms - exactly the same, not exactly the same, and the same - match

	• sort • how many? • counting path • zero • 5-group • number path • 1 less hidden partners number story number sentence ($3 = 2 + 1$) rows and columns 1 more
Assessments	Mid-module assessment End of module assessment
Resources and Differentiation Tools	Primary Resources: • Eureka Module 1 • KinderCorner Units 1-4 Other Resources: • www.Engageny.org • www.zearn.org • Activity: One More/One Less - The Napping House ELL Overlay for Speaking and Writing in Kindergarten Mathematics ELL Overlay for Listening and Reading in Kindergarten Mathematics
Authentic Examples (real-world tasks)	• All application problems • Lesson 3& 5 – classifying real-world objects
Visual Representations & Strategies	• Five-dot mat • Five-frame and ten-frame cards • Left hand and two hands math • Rekenrek Number path Five-group cards Materials for counting and sorting
Writing in Math	Number Writing for #0-10: • Student Edition Pages. 27, 30, 37, 47, 53, 61, 68, 75 (#0-10) • p. 84 (#1-5) and p. 86 (#6-10)
Grade Level DOK Examples	Kindergarten DOK Math Samples

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Unit of Study	Unit 2: Two-dimensional and Three-dimensional shapes
Time Frame/Pacing	12 Days If pacing is an issue, consider omitting lessons 5 and 8.
Big Ideas	Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization.
Unit Essential Questions	Can you identify and describe 2-dimensional and 3-dimensional shapes? How do you analyze, compare, create, and compose 2-dimensional and 3-dimensional shapes?
PA Core Standards	CC.2.4.K.A.4 Classify objects and count the number of objects in each category. CC.2.3.K.A.1 Identify and describe two- and three-dimensional shapes. CC.2.3.K.A.2 Analyze, compare, create, and compose two- and three-dimensional shapes.
Learning Objectives (Concepts Taught)	Students will learn to... - Describe and identify 2-dimensional shapes (square, circles, triangles, rectangles, and hexagons) - Describe and identify 3-dimensional shapes (cubes, cones, cylinders, and spheres) - Classify shapes based on characteristics
Performance Objectives (Skills Demonstrated)	Students will be able to... - Find and describe 2-dimensional and 3-dimensional shapes - Classify shapes based on characteristics - Name 2-dimensional and 3-dimensional shapes - Identify and sort 2-dimensional and 3-dimensional shapes - Describe the relative positions of objects using appropriate terms. (e.g., above, below, beside, in front, behind, next to)
Key Vocabulary:	New or Recently Introduced Terms Above hexagon Below rectangle Beside solid in front of sphere next to square behind triangle circle face cone flat

	cube cylinder Familiar Terms and Symbols Match and sort
Assessments	End of Module Assessment
Resources and Differentiation Tools	Primary Resources: • Eureka Module 2 • KinderCorner Units 5-8 Other Resources: • www.Engageny.org • www.zearn.org • Activity: Shape Identification - Shape Sequence Search • Activity: Identifying Shapes in the Real World - Organizing Our Blocks • Activity: Recognizing and Identifying Shapes - Shapes in our School ELL Overlay for Speaking and Writing in Kindergarten Mathematics ELL Overlay for Listening and Reading in Kindergarten Mathematics
Authentic Examples (real-world tasks)	• All application problems • Lesson 4 - Students are sent on a shape hunt to find real world objects that have familiar shapes learned in the lesson (lesson 4) • Lesson 7 - Students are led to sort real world objects based on their shape
Visual Representations & Strategies	• Three-dimensional shapes: cone, sphere, cylinder and cube • Two-dimensional shapes: circle, hexagon, rectangle, square, and triangle
Writing in Math	Drawing Shapes: Student Pages. 5, 6, and 9
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Unit of Study	Unit 3: Comparison of Length, Weight, Capacity, and Numbers to 10
Time Frame/Pacing	38 days - Consider omitting lessons 7, 14-16. See pages 3 & 4 in Module Overview. - Consider consolidating lessons 8 & 9, 13-15. See pages 3 & 4 in Module Overview
Big Ideas	Measurement attributes can be quantified and estimated using customary and non-customary units of measure.
Unit Essential Questions	How and why do we measure things? How can objects be classified? What are numbers? What is counting and how can it be used? What is base 10 and how can it be used?
PA Core Standards	CC.2.1.K.A.3 Apply the concept of magnitude to compare numbers and quantities. CC.2.4.K.A.1 Describe and compare attributes of length, area, weight, and capacity of everyday objects.
Learning Objectives (Concepts Taught)	Students will learn... - The attributes of length, height, capacity and weight. - How to compare lengths, heights, capacities and weights - To use appropriate vocabulary to compare 2 quantities, such as “more than”, “less than”, etc.
Performance Objectives (Skills Demonstrated)	Students will be able to... - Compare lengths, heights, weights and capacity of objects using appropriate vocabulary - Identify, create, and compare sets of objects within 10
Key Vocabulary:	New or Recently Introduced Terms - Balance scale - Capacity - Compare - Endpoint - Enough/not enough - Heavier than/lighter than - Height Familiar Terms - Match length longer than/shorter than more than/fewer than/ less than taller than/shorter than the same as weight Numbers 1-10

Assessments	Mid-module assessment End of module assessment
Resources and Differentiation Tools	Primary Resources: • Eureka Module 3 • KinderCorner units 5-8 Other Resources: • www.Engageny.org • www.zearn.org • Activity: Comparing quantities of objects- Comparing Quantities • Activity: Comparing lengths- Comparing Lengths ELL Overlay for Speaking and Writing in Kindergarten Mathematics ELL Overlay for Listening and Reading in Kindergarten Mathematics
Authentic Examples (real-world tasks)	• All application problems • Lessons 6 & 7 – measure length of objects with real-world tools • Lessons 8-12 - compare weights of real world objects • Lessons 13-15 – exploring capacity of real world objects
Visual Representations & Strategies	• Balance scales • Centimeter cubes • Clay • Linking cubes • Containers for measurement of capacity
Writing in Math	Lessons from Student Edition pages- Lesson 20: Problem Set p. 56 ; <i>Relate more and less to length</i> Lesson 23: Problem Set p. 67; <i>Reason and identify and make a set that has one more</i> Lesson 25 Problem Set p. 70; <i>Reason and identify and make a set that has one less</i> Lesson Problem Set p. 73; <i>State which quantity has more.</i> Lesson 31 Problem Set pp. 89-90 in Student Pages; <i>Representing shapes given criteria</i>
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Unit of Study	Unit 4: Number Pairs, Addition and Subtraction to 10	
Time Frame/Pacing	47 Days - Consider consolidating the word problems in lessons 16 & 17. See page 3 in Module Overview. - Consider consolidating within lessons 29, 30, 35, and 36 if students have developed automaticity in drawing and counting in 5-group formation. See page 3 in Module Overview.	
Big Ideas	Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.	
Unit Essential Questions	What is addition? What is subtraction? How do you solve problems using addition and subtraction?	
PA Core Standards	CC.2.2.K.A.1 Extend the concepts of putting together and taking apart to add and subtract within 10.	
Learning Objectives (Concepts Taught)	Students will learn... - That numbers are composed of smaller numbers and can be decomposed into parts. - How to represent the composition and decomposition of numbers - Patterns for adding 0 and 1 and making 10	
Performance Objectives (Skills Demonstrated)	Students will be able to... - Compose and decompose numbers to 10, using fingers, sets, linking cubes, and/or number bonds - Represent addition and subtraction story problems using objects, drawings, expressions and equations - Add or subtract 0 to get the same number - Add 1 to numbers 1-9 to see the pattern of the next number - Find the number that makes 10 for numbers 1-9	
Key Vocabulary:	New or Recently Introduced Terms - Addition - Addition and Subtraction Sentences - Make 10 - Minus - Number bond - Number pairs or partners Familiar Terms	

	• 5-group • Equals • Hidden partners • Number sentence number story numbers 0-10 plus
Assessments	Mid-module assessment End of module assessment
Resources and Differentiation Tools	Primary Resources: • Eureka Module 4 • KinderCorner Units 9-12 ELL Overlay for Kindergarten Mathematics Other Resources: • www.Engageny.org • • www.zearn.org • Activity: Adding/Subtracting to 10 Adding/Subtracting to 10 • Activity: Adding/Subtracting to 10 Ten Flashing Fireflies • Activity: Adding/Subtracting to 5 My Book of Five ELL Overlay for Speaking and Writing in Kindergarten Mathematics ELL Overlay for Listening and Reading in Kindergarten Mathematics
Authentic Examples (real-world tasks)	All application problems • Culminating task – teaching others how to compose and decompose numbers and represent through manipulatives and drawings. Students teach the class what they’ve learned. (lesson 41) • Throughout Module 4 students are given real world word problems to represent pictorially
Visual Representations & Strategies	• 5-group dot cards • Hula hoops • Linking cubes Number bonds Number towers Sets of objects Showing fingers the math way Number paths
Writing in Math	Lesson 30: Problem Set, Student p. 95 (student edition) - <i>Writing Number Sentences</i>
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Unit of Study	Unit 5: Numbers 10-20 and Counting to 100	
Time Frame/Pacing	30 Days Lesson 19 is exploratory in nature and addresses some standards beyond the level of Kindergarten. If pacing is an issue, consider omitting this lesson.	
Big Ideas	Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.	
Unit Essential Questions	What are numbers? What is counting and how can it be used? What is base 10 and how can it be used?	
PA Core Standards	CC.2.1.K.A.1 Know number names and write and recite the count sequence. CC.2.1.K.A.2 Apply one-to one correspondence to count the number of objects. CC.2.1.K.B.1 Use place value to compose and decompose numbers within 19.	
Learning Objectives (Concepts Taught)	Students will learn... - Number patterns to 100 - That teen numbers are composed of a ten and some ones - How to count objects composed of a ten and some ones	
Performance Objectives (Skills Demonstrated)	Students will be able to... - Count a ten and some ones to count a set of objects within 19 - Model, represent and write numbers to 20 - Count to 100	
Key Vocabulary:	New or Recently Introduced Terms 10 and ____ 10 ones and some ones 10 plus - Hide zero cards Familiar Terms 10-frame 5-group - Circle 10 ones - Circular count - Count 10 ones - Linear count	
Assessments	regular counting by 10s to 100 Say 10 counting by 10s to 100 teen numbers Regular counting by 1s from 11-20 Number tower part, whole, total Say Ten counting scatter count Dot path, empty path, number path Number bond	

Resources and Differentiation Tools	Primary Resources: • Eureka Module 5 • KinderCorner Units 13-16 Other Resources: • www.Engageny.org • www.zearn.org • Activity: Counting from any number- Number Line Up If students are struggling with writing numbers 21-100, consider completing the verbal counting activities in the lessons that prepare them for numeral writing to 100 ELL Overlay for Speaking and Writing in Kindergarten Mathematics ELL Overlay for Listening and Reading in Kindergarten Mathematics		
Authentic Examples (real-world tasks)	• All application problems • Culminating task – teaching others how to compose and decompose numbers and represent through manipulatives and drawings. Students teach the class what they’ve learned. (lesson 41)		
Visual Representations & Strategies	<table border="0"> <tr> <td> • 50 sticks or straws for each group of 2 • Student-made rekenrek • 1 egg carton to represent 10 frame • Hide zero cards </td><td> - single and double 10-frames - linking cubes - attribute - Objects to put in egg carton </td></tr> </table>	• 50 sticks or straws for each group of 2 • Student-made rekenrek • 1 egg carton to represent 10 frame • Hide zero cards	- single and double 10-frames - linking cubes - attribute - Objects to put in egg carton
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Writing in Math	Use Lesson 23 Homework pp. 71-72 from Student Edition as writing assignment; <i>Reasoning About and Representing Situations</i>		
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Unit of Study	Unit 6: Analyzing, Comparing, and Composing Shapes												
Time Frame/Pacing	10 Days Parts of lessons 1, 4, 5, & 6 can be omitted. See page 3 in the Module Overview												
Big Ideas	Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization.												
Unit Essential Questions	Can you identify and describe two-dimensional and three-dimensional shapes? How do you analyze, compare, create, and compose two-dimensional and three-dimensional shapes?												
PA Core Standards	CC.2.1.K.A.2 Apply one-to one correspondence to count the number of objects. CC.2.3.K.A.2 Analyze, compare, create, and compose two- and three-dimensional shapes.												
Learning Objectives (Concepts Taught)	Students will learn... That shapes can be composed of other shapes, just as larger numbers are composed of smaller numbers.												
Performance Objectives (Skills Demonstrated)	Students will be able to... - Use simple shapes to create larger shapes - Decompose flat shapes into 2 or more shapes												
Key Vocabulary:	New or Recently Introduced Terms N/a Familiar Terms <table border="0"> <tr> <td>• Position words</td><td>hexagon</td></tr> <tr> <td>• Circle</td><td>rectangle</td></tr> <tr> <td>• Cone</td><td>solid</td></tr> <tr> <td>• Cube</td><td>sphere</td></tr> <tr> <td>• Cylinder</td><td>square</td></tr> <tr> <td>• Face</td><td>triangle</td></tr> </table> flat	• Position words	hexagon	• Circle	rectangle	• Cone	solid	• Cube	sphere	• Cylinder	square	• Face	triangle
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• Cube	sphere												
• Cylinder	square												
• Face	triangle												
Assessments	End of module assessment												
Resources and Differentiation Tools	Primary Resources: - Eureka Module 6 - KinderCorner Units 13-16 Other Resources: www.Engageny.org www.zearn.org												

	Activity – Level A: Filling large shape with smaller shapes- Between the Lines ELL Overlay for Speaking and Writing in Kindergarten Mathematics ELL Overlay for Listening and Reading in Kindergarten Mathematics
Authentic Examples (real-world tasks)	- All application problems - Lesson 3: Building a cube
Visual Representations & Strategies	- pattern block activity cards - three-dimensional shapes - two-dimensional shapes
Writing in Math	Lesson 8 Recording Sheet, Student Pages 28 - 30 (student edition)
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The following link takes you to the academic vocabulary list.

[General Academic Vocabulary](#)