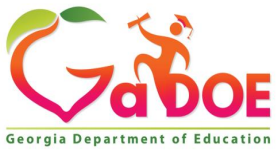Georgia Department of Education

Georgia's K-12 Mathematics Standards Curriculum Map

Implementation beginning Fall 2023

KINDERGARTEN

KINDERGARTEN MATHEMATICS CURRICULUM MAP

Georgia's K-12 Mathematics Standards
Kindergarten

Semester 1				Semester 2			
Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	**Unit 6**	**Unit 7**	**Unit 8**
Numerical Reasoning: Wondering About My World and Investigating to Find Answers	Geometric & Spatial Reasoning: 2-D Shapes in My World	Numerical Reasoning: How Many? (Numbers Up to 20)	Numerical Reasoning: Understanding and Using Addition and Subtraction in My Life	Numerical Reasoning: Using Numbers within 20	Geometric & Spatial Reasoning: 3-D Shapes in My World	Measurement & Data Reasoning: Using Numbers and Data to Make Sense of My World	Culminating Capstone Unit
Interdisciplinary Connection	Interdisciplinary Connection	Interdisciplinary Connection	Interdisciplinary Connection	Interdisciplinary Connection	Interdisciplinary Connection	Interdisciplinary Connection	
4 - 5 weeks	**3 - 4 weeks**	**5 - 6 weeks**	**7 - 8 weeks**	**5 - 6 weeks**	**3 - 4 weeks**	**4 - 5 weeks**	**2 - 3 weeks**
K.NR.1 K.NR.2 K.NR.4 K.MDR.7 K.MP.1-8	K.GSR.8 K.MDR.7 K.PAR.6 K.MP.1-8	K.NR.1 K.NR.2 K.NR.4 K.MP.1-8	K.NR.5 K.PAR.6 K.MDR.7 K.MP.1-8	K.NR.2 K.NR.3 K.MP.1-8	K.GSR.8 K.MDR.7 K.MP.1-8	K.NR.3 K.NR.5 K.PAR.6 K.MDR.7 K.MP.1-8	ALL STANDARDS K.MP.1-8

Ongoing interdisciplinary learning to impact the community and to explain real-life phenomena

The concepts in each unit are presented based on a logical, mathematical progression. Each unique unit in sequence builds upon the previous unit.

The Framework for Statistical Reasoning, Mathematical Modeling Framework, and the K-12 Mathematical Practices should be taught throughout the units.

Mathematical Practices (K.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

Key for Course Standards: MP: Mathematical Practices, NR: Numerical Reasoning, PAR: Patterning & Algebraic Reasoning, GSR: Geometric & Spatial Reasoning, MDR: Measurement & Data Reasoning

KINDERGARTEN

Year-At-A-Glance			
Semester 1			
Pacing Suggestion	**Unit Description**	**Content Standards**	**Learning Objectives**
4 - 5 weeks	**Unit 1: Wondering About My World and Investigating to Find Answers** *(Introduction to Project-Based Learning)* *In this unit, students will explore how numbers up to 10 are used to explain the quantity of objects in their world. Through multiple opportunities to count various objects, they will identify written numerals to represent a given set of objects up to 10. Students will begin learning to rote count to 100 forward and backward from 20. Based on their curiosity and interests, students will generate questions to investigate situations. They will collect data to answer the questions they generated and represent and explain their data. (See* Framework for Statistical Reasoning*.)*	K.NR.1 K.NR.2 K.NR.4 K.MDR.7 K.MP.1-8	K.NR.1.1 (within 10) K.NR.1.2 (within 10) K.NR.2.1 K.NR.4.1 (within 10) K.MDR.7.3
3 - 4 weeks	**Unit 2: 2-D Shapes in My World** *Students will observe shapes in their environment and describe the shapes based on the number of sides, vertices, and other attributes. They will identify basic two-dimensional shapes (squares, circles, triangles, rectangles, hexagons, and octagons) and form larger shapes by putting two or more basic shapes together. They will explain the location of shapes by saying where a shape is in relation to another shape. Students will identify a pattern created by shapes and extend the pattern. They will observe, describe, and compare the measurable attributes of objects and sort objects into categories by an attribute.*	K.GSR.8 K.MDR.7 K.PAR.6 K.MP.1-8	K.GSR.8.1 K.GSR.8.2 K.GSR.8.3 K.GSR.8.4 K.MDR.7.2 K.PAR.6.1
5 - 6 weeks	**Unit 3: How Many? (Numbers Up to 20)** *In this unit, students will extend the work with numbers and quantities as they explore and count sets of objects up to 20. They will begin to explore sets up to 20 as they see the numbers as 10 and some more. They will use numerals 0 - 20 to represent the number of objects and be able to count out a given number of objects. Students will compare two sets of objects using the phrases "greater than," "less than", or "the same as." When given a number 1-20, they will be able to say the number that is one more than or one less than the number. They will count forward to 100 by ones, and backward from 20. In order to see the sequence in counting by tens, students will count to 50 by tens. Students will identify pennies, nickels, and dimes and know their value. They will ask questions and answer them as they explore coins.*	K.NR.1 K.NR.2 K.NR.4 K.MDR.7 K.MP.1-8	K.NR.1.1 K.NR.1.2 K.NR.1.3 K.NR.1.4 K.NR.2.1 K.NR.4.1 K.NR.4.2 K.MDR.7.3
4 - 5 weeks	**Unit 4: Understanding and Using Addition and Subtraction in My Life** *Students will explore the operations of addition and subtraction and use addition and subtraction to solve problems within 10 from real-life where the result or total is unknown. They will represent the situations in various ways using objects, fingers, drawings, expressions, or equations. Students will solve problems they create by generating questions and gathering information. Students will use a variety of strategies to solve addition and subtraction problems within 10. Students will identify and describe patterns with addition of numbers. Students will identify and extend patterns with numbers and shapes. As they have conversations about their days, they will describe patterns related to time from real-life (yesterday, today, tomorrow).*	K.NR.5 K.PAR.6 K.MDR.7 K.MP.1-8	K.NR.5.1 K.NR.5.2 K.NR.5.3 K.NR.5.4 K.PAR.6.1 K.PAR.6.2 K.MDR.7.3

Mathematical Practices (K.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

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Year-At-A-Glance
Semester 2

Pacing Suggestion	Unit Description	Content Standards	Learning Objectives	
3 - 4 weeks	**Unit 4: Understanding and Using Addition and Subtraction in My Life** *(Continued from Semester 1)* *In this unit, students will explore the operations of addition and subtraction and use addition and subtraction to solve problems within 10 from real-life where the result or total is unknown. They will represent the situations in various ways using objects, fingers, drawings, expressions or equations. Students will solve problems they create by generating questions and gathering information. Students will use a variety of strategies to solve addition and subtraction problems within 10. Students will identify and describe patterns with addition of numbers. Students will identify and extend patterns with numbers and shapes. As they have conversations about their days, they will describe patterns related to time from real-life (yesterday, today, tomorrow).*	K.NR.5 K.PAR.6 K.MDR.7 K.MP.1-8	K.NR.5.1 K.NR.5.2 K.NR.5.3 K.NR.5.4 K.PAR.6.1 K.PAR.6.2 K.MDR.7.3	
5 - 6 weeks	**Unit 5: Using Numbers within 20** *In this unit, students will continue to explore numbers and develop understanding of numbers (number sense). They will use place value as they compose (put together) and decompose (break apart) numbers into ten and some more. Students will represent the numbers as ten and some more using objects and drawings. They will count to 100 by tens and ones and count backward from 20 by ones.*	K.NR.3 K.NRR.2 K.MP.1-8	K.NR.3.1 K.NR.2.1 K.NR.2.2	
3 - 4 weeks	**Unit 6: 3-D Shapes in My World** *In this unit, students will revisit shapes in their environment and identify three-dimensional shapes (cubes, cones, cylinders, and spheres) in their environment. Students will explore and compare two-dimensional shapes and three-dimensional shapes in various sizes and orientations. They will describe how shapes are similar and different. They will order common objects based on measurable attributes and sort objects by an attribute. Students will generate statistical questions about shapes in their world and collect, represent, analyze, and explain their findings. (See Framework for Statistical Reasoning.)*	K.GSR.8 K.MDR.7 K.MP.1-8	K.GSR.8.1 K.GSR.8.2 K.GSR.8.3 K.GSR.8.4 K.MDR.7.1 K.MDR.7.2 K.MDR.7.3	
4 - 5 weeks	**Unit 7: Using Numbers and Data to Make Sense of My World** *In this unit, students will further investigate place value and solve addition and subtraction problems in the real-world. They will explain patterns they see and have additional experiences in creating, extending, and describing patterns with numbers and shapes. Students will describe patterns related to the passage of time in their lives (yesterday, today, and tomorrow). Based on their interests and curiosity, they will create investigative statistical questions, collect data, analyze the data, and explain the data to answer their questions. (See Framework for Statistical Reasoning.)*	K.NR.3 K.NR.5 K.PAR.6 K.MDR.7 K.MP.1-8	K.NR.3.1 K.NR.5.1 K.NR.5.2 K.NR.5.3	K.NR.5.4 K.PAR.6.1 KPAR.6.2 K.MDR.7.3
2 - 3 weeks	**Unit 8: Culminating Capstone Unit** *(applying concepts in real-life contexts through a culminating interdisciplinary unit)* *The capstone unit applies content that has already been learned in previous interdisciplinary PBLs and units throughout the school year. The capstone unit is an interdisciplinary unit that allows students to create a presentation, report, or demonstration that could include their models used to answer an overarching driving question. (e.g., Students can present their solution(s), findings, project, or answer to the driving question to a larger audience during the culminating capstone unit.)*	ALL STANDARDS	ALL ASSOCIATED LEARNING OBJECTIVES	

Mathematical Practices (K.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

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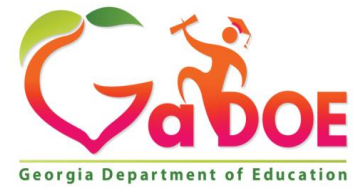
Semester 1
Unit 1: Wondering About My World and Investigating to Find Answers (4 - 5 weeks)
Big Ideas: Numerical Reasoning and Measurement & Data Reasoning

Standards Addressed in this Unit:

K.NR.1 Demonstrate and explain the relationship between numbers and quantities up to 20; connect counting to cardinality (the last number counted represents the total quantity in a set).

K.NR.2 Use count sequences within 100 to count forward and backward in sequence.

K.NR.4 Identify, write, represent, and compare numbers up to 20.

K.MDR.7: Observe, describe, and compare the physical and measurable attributes of objects.
Note: Though K.NR.1 and K.NR.4 go to 20, the emphasis will be up to or within 10 for Unit 1.

Suggested Clusters of Concepts (Learning Objectives)

K.NR.1.1 Count up to 20 objects in a variety of structured arrangements and up to 10 objects in a scattered arrangement.

K.NR.1.2 When counting objects, explain that the last number counted represents the total quantity in a set (cardinality), regardless of the arrangement and order.

K.NR.2.1 Count forward to 100 by tens and ones and backward from 20 by ones.

K.NR.4.1 Identify written numerals 0- 20 and represent a number of objects with a written numeral 0- 20 (with 0 representing a count of no objects).
Note: For K.4.1 students will only identify written numerals within 10 and are not expected to write them at this time of the year.

K.MDR.7.3 Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.

Mathematical Practices (K.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

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Unit 2: Shapes in My World (2 - D Shapes) (3 - 4 weeks)
Big Ideas: Geometric & Spatial Reasoning, Measurement & Data Reasoning, and Patterning & Algebraic Reasoning

Standards Addressed in this Unit:

K.GSR.8: Identify, describe, and compare basic shapes encountered in the environment, and form two-dimensional shapes and three-dimensional figures.

K.MDR.7: Observe, describe, and compare the physical and measurable attributes of objects.

K.PAR.6: Explain, extend, and create repeating patterns with a repetition, not exceeding 4 and describe patterns involving the passage of time.

Suggested Clusters of Concepts (Learning Objectives)

K.GSR.8.1 Identify, sort, classify, analyze, and compare two-dimensional shapes and three-dimensional figures, in different sizes and orientations, using informal language to describe their similarities, differences, number of sides and vertices, and other attributes.

K.GSR.8.2 Describe the relative location of an object using positional words.

K.GSR.8.3 Use basic shapes to represent specific shapes found in the environment by creating models and drawings.

K.GSR.8.4 Use two or more basic shapes to form larger shapes.

K.MDR.7.2 Classify and sort up to ten objects into categories by an attribute; count the number of objects in each category and sort the categories by count.

K.PAR.6.1 Create, extend, and describe repeating patterns with numbers and shapes, and explain the rationale for the pattern.

Mathematical Practices (K.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

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Unit 3: How Many? Numbers Up to Twenty (5 - 6 weeks)
Big Idea: Numerical Reasoning

Standards Addressed in this Unit:

K.NR.1 Demonstrate and explain the relationship between numbers and quantities up to 20; connect counting to cardinality (the last number counted represents the total quantity in a set).

K.NR.2 Use count sequences within 100 to count forward and backward in sequence.

K.NR.3 Use place value understanding to compose and decompose numbers from 11–19.

K.NR.4 Identify, write, represent, and compare numbers up to 20.

Suggested Clusters of Concepts (Learning Objectives)

K.NR.1.1 Count up to 20 objects in a variety of structured arrangements and up to 10 objects in a scattered arrangement.

K.NR.1.2 When counting objects, explain that the last number counted represents the total quantity in a set (cardinality), regardless of the arrangement and order.

K.NR.1.3 Given a number from 1-20, identify the number that is one more or one less.

K.NR.3.1 Describe numbers from 11 to 19 by composing (putting together) and decomposing (breaking apart) the numbers into ten ones and some more ones.

K.NR.4.1 Identify written numerals 0-20 and represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

K.NR.4.2 Compare two sets of up to 10 objects and identify whether the number of objects in one group is more or less than the other group, using the words "greater than," "less than," or "the same as".

Note: Symbols for "greater than," "less than," or "the same as" will be introduced appropriately in first grade and are not an expectation in kindergarten.

K.NR.1.4 Identify pennies, nickels, and dimes and know their name and value.

K.NR.2.1 Count forward to 100 by tens and ones and backward from 20 by ones.

Mathematical Practices (K.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

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Unit 4: Understanding and Using Addition and Subtraction in My Life (4 - 5 weeks)

Big Ideas: Numerical Reasoning, Patterning & Algebraic Reasoning, and Measurement & Data Reasoning

Standards Addressed in this Unit:

K.NR.5 Explain the concepts of addition, subtraction, and equality and use these concepts to solve real-life problems within 10.

K.PAR.6 Explain, extend, and create repeating patterns with a repetition, not exceeding 4 and describe patterns involving the passage of time.

K.MDR.7 Observe, describe, and compare the physical and measurable attributes of objects.

Note: Exposure to equations is expected, but mastery of equations is not required.

Suggested Clusters of Concepts (Learning Objectives)

K.NR.5.1 Compose (put together) and decompose (break apart) numbers up to 10 using objects and drawings.

K.NR.5.2 Represent addition and subtraction within 10 from a given context using a variety of representations and strategies.

K.NR.5.3 Use a variety of strategies to solve addition and subtraction problems within 10.

K.NR.5.4 Fluently add and subtract within 5 using a variety of strategies to solve practical, mathematical problems.
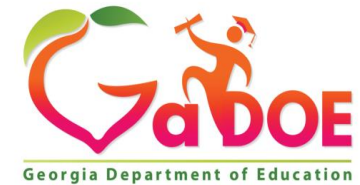
K.MDR.7.3 Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.

K.PAR.6.1 Create, extend, and describe repeating patterns with numbers and shapes, and explain the rationale for the pattern.

K.PAR.6.2 Describe patterns involving the passage of time using words and phrases related to actual events.

Mathematical Practices (K.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

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Semester 2

Unit 4 (continued): Understanding and Using Addition and Subtraction in My Life (3 - 4 weeks)

Big Ideas: Numerical Reasoning, Patterning & Algebraic Reasoning, and Measurement & Data Reasoning

Standards Addressed in this Unit:

K.NR.5 Explain the concepts of addition, subtraction, and equality and use these concepts to solve real-life problems within 10.

K.PAR.6 Explain the concepts of addition, subtraction, and equality and use these concepts to solve real-life problems within 10.

K.MDR.7 Observe, describe, and compare the physical and measurable attributes of objects.

Note: Exposure to equations is expected, but mastery of equations is not required in kindergarten.

Suggested Clusters of Concepts (Learning Objectives)

K.NR.5.1 Compose (put together) and decompose (break apart) numbers up to 10 using objects and drawings.

K.NR.5.2 Represent addition and subtraction within 10 from a given context using a variety of representations and strategies.

K.NR.5.3 Use a variety of strategies to solve addition and subtraction problems within 10.

K.MDR.7.3 Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.

K.PAR.6.1 Create, extend, and describe repeating patterns with numbers and shapes, and explain the rationale for the pattern.

K.PAR.6.2 Describe patterns involving the passage of time using words and phrases related to actual events.

Mathematical Practices (K.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.
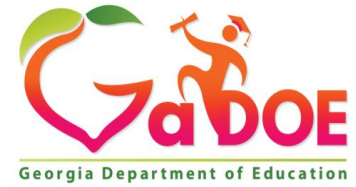
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Unit 5: Using Numbers Within 20 (5 - 6 weeks)
Big Idea: Numerical Reasoning
Standards Addressed in this Unit: *K.NR.3: Use place value understanding to compose and decompose numbers from 11–19.* *K.NR.2 Use count sequences within 100 to count forward and backward in sequence.*
Suggested Clusters of Concepts (Learning Objectives)
K.NR.3.1 Describe numbers from 11 to 19 by composing (putting together) and decomposing (breaking apart) the numbers into ten ones and some more ones.
K.NR.2.1 Count forward to 100 by tens and ones and backward from 20 by ones.
K.NR.2.2 Count forward beginning from any number within 100 and count backward from any number within 20.

Mathematical Practices (K.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

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Unit 6: 3-D Shapes in My World (3 - 4 weeks)
Big Ideas: Geometric & Spatial Reasoning and Measurement & Data Reasoning

Standards Addressed in this Unit:
K.GSR.8: Identify, describe, and compare basic shapes encountered in the environment, and form two-dimensional shapes and three-dimensional figures.
K.MDR.7: Observe, describe, and compare the physical and measurable attributes of objects.

| *Suggested Clusters of Concepts (Learning Objectives)* |
| --- |
| K.GSR.8.1 Identify, sort, classify, analyze, and compare two-dimensional shapes and three-dimensional figures, in different sizes and orientations, using informal language to describe their similarities, differences, number of sides and vertices, and other attributes. |
| K.GSR.8.2 Describe the relative location of an object using positional words. |
| K.GSR.8.3 Use basic shapes to represent specific shapes found in the environment by creating models and drawings. |
| K.GSR.8.4 Use two or more basic shapes to form larger shapes. |
| K.MDR.7.1 Directly compare, describe, and order common objects, using measurable attributes (length, height, width, or weight) and describe the difference. |
| K.MDR.7.2 Classify and sort up to ten objects into categories by an attribute; count the number of objects in each category and sort the categories by count. |
| K.MDR.7.3 Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life. |

Mathematical Practices (K.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.
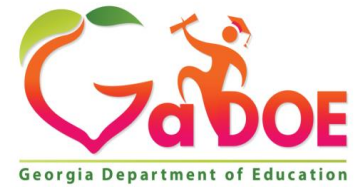
Unit 7: Using Numbers and Data to Make Sense of My World (4 - 5 weeks)

Big Ideas: Numerical Reasoning, Patterning & Algebraic Reasoning, and Measurement & Data Reasoning

Standards Addressed in this Unit:

K.NR.5 Explain the concepts of addition, subtraction, and equality and use these concepts to solve real-life problems within 10.

K.PAR.6 Explain the concepts of addition, subtraction, and equality and use these concepts to solve real-life problems within 10.

K.MDR.7: Observe, describe, and compare the physical and measurable attributes of objects.

Suggested Clusters of Concepts (Learning Objectives)

K.NR.3.1 Describe numbers from 11 to 19 by composing (putting together) and decomposing (breaking apart) the numbers into ten ones and some more ones.

K.NR.5.1 Compose (put together) and decompose (break apart) numbers up to 10 using objects and drawings.

K.NR.5.2 Represent addition and subtraction within 10 from a given context using a variety of representations and strategies.

K.NR.5.3 Use a variety of strategies to solve addition and subtraction problems within 10.

K.NR.5.4 Fluently add and subtract within 5 using a variety of strategies to solve practical, mathematical problems.

K.MDR.7.3 Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.

K.PAR.6.1 Create, extend, and describe repeating patterns with numbers and shapes, and explain the rationale for the pattern.

K.PAR.6.2 Describe patterns involving the passage of time using words and phrases related to actual events.

Mathematical Practices (K.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

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Unit 8: Culminating Capstone Unit (2 - 3 weeks)
(applying concepts in real-life contexts through a culminating interdisciplinary unit)

ALL Standards Addressed in this Unit

The capstone unit applies content that has already been learned in previous interdisciplinary PBLs and units throughout the school year. The capstone unit is an interdisciplinary unit that allows students to create a presentation, report, or demonstration that could include their models used to answer an overarching driving question. (e.g., Students can present their solution(s), findings, project, or answer to the driving question to a larger audience during the culminating capstone unit.)

Mathematical Practices (K.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.