



KINDERGARTEN MATH

Approved by KSD Board of Education: May 19, 2025

Course Description:

In Kindergarten, instructional time should focus on two critical areas: (1) representing, relating, and operating on whole numbers, initially with sets of objects; (2) describing shapes and space. More learning time in Kindergarten should be devoted to number than to other topics.

Grade Level: Kindergarten

Unit Scope and Sequence

Unit 1: Math In Our World

Unit 2: Numbers 1-10

Unit 3: Flat Shapes All Around Us

Unit 4: Understanding Addition and Subtraction

Unit 5: Make and Break Apart Numbers within 10

Unit 6: Numbers 0-20

Unit 7: Solid Shapes All Around Us

Course Enduring Understandings:

- There are many ways to represent a number.
- Shapes are everywhere in the real world.

Course Essential Questions:

- What are different ways we can represent a number?
- How can we describe shapes?

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Unit 1: Math In Our World

Students consider what it means to do math, explore and use math tools, and recognize quantities in the world.

Unit Essential Learning Targets	
<i>Enduring Understandings</i>	<i>Essential Questions</i>
• We can count objects to find out how many there are. • Math tools can be used to show how many. • Math is everywhere.	• What are math tools and how do you use them? • How do you figure out and show how many?
<i>Students must know:</i>	<i>Students must be able to:</i>
• Vocabulary ◦ Same • One-to-One Correspondence • Number Conservation • Math Tools ◦ Counters ◦ Cubes ◦ Pattern Blocks ◦ Fingers ◦ 5-frames ◦ 10-frames • The last number you say when counting tells how many there are (cardinality).	• Explore and use math tools. • Share mathematical ideas with a partner. • Subitize groups of up to 4 objects and images. • Answer “are there enough?” questions about groups of up to 10 objects. • Determine the quantity of a group of up to 10 objects. • Represent the quantity of a group of up to 10 objects. • Connect rote counting to cardinality.

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Unit 1: Math In Our World

Missouri Learning Standards

Priority Standards

- Say the number names when counting objects, in the standard order, pairing each object with one and only one number name and each number name with one and only one object. (K.NS.B.5)
- Demonstrate that a number can be used to represent “how many” are in a set. (K.NS.B.9)

Supporting Standards

- Count to 100 by ones and tens. (K.NS.A.1)
- Demonstrate that the last number name said tells the number of objects counted and the number of objects is the same regardless of their arrangement or the order in which they were counted. (K.NS.B.6)
- Demonstrate that each successive number name refers to a quantity that is one larger than the previous number. (K.NS.B.7)
- Compare two numerals, between 1 and 10, and determine which is more than or less than the other. (K.NS.C.11)

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Unit 2: Numbers 1-10

Students determine, represent, and compare quantities up to 10 and write numerals.

Unit Essential Learning Targets	
<i>Enduring Understandings</i>	<i>Essential Questions</i>
• We can count to compare quantities. • There are patterns in the order of numbers. • We can use math tools to show how many. • Groups can look different and still show the same number.	• How does knowing different ways to figure out how many are in a group help you compare 2 groups of objects? • What are the different ways you can show a number? • How can you use what you know about numbers and counting to compare written numbers?
<i>Students must know:</i>	<i>Students must be able to:</i>
• Vocabulary ○ One ○ Two ○ Three ○ Four ○ Five ○ Six ○ Seven ○ Eight ○ Nine ○ Ten ○ Fewer ○ Less ○ More ○ Written Number	• Connect quantities of objects with spoken number words up to 10. • Determine, represent, and compare the quantities of groups of up to 10 objects. • Connect quantities of objects and images with written numerals up to 10. • Understand the relationship between number and quantity. • Compare written numerals from 1 to 10. • Write numbers 0-10.

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Unit 2: Numbers 1-10

Missouri Learning Standards

Priority Standards

- Say the number names when counting objects, in the standard order, pairing each object with one and only one number name and each number name with one and only one object. (K.NS.B.5)
- Demonstrate that a number can be used to represent “how many” are in a set. (K.NS.B.9)
- Compare two or more sets of objects and identify which set is equal to, more than or less than the other. (K.NS.C.10)

Supporting Standards

- Count to 100 by ones and tens. (K.NS.A.1)
- Count forward beginning from a given number between 1 and 20. (K.NS.A.2)
- Read and write numerals and represent a number of objects from 0 to 20. (K.NS.A.4)
- Demonstrate that the last number name said tells the number of objects counted and the number of objects is the same regardless of their arrangement or the order in which they were counted. (K.NS.B.6)
- Demonstrate that each successive number name refers to a quantity that is one larger than the previous number. (K.NS.B.7)
- Compare two numerals, between 1 and 10, and determine which is more than or less than the other. (K.NS.C.11)

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Unit 3: Flat Shapes All Around Us

Students will develop geometric concepts and language while describing, sorting, comparing, and composing two-dimensional shapes.

Unit Essential Learning Targets	
<i>Enduring Understandings</i>	<i>Essential Questions</i>
• We can sort objects by what they have in common. • We can use small shapes to create bigger shapes.	• How can we describe and compare shapes? • How can small shapes be put together to make larger shapes?
<i>Students must know:</i>	<i>Students must be able to:</i>
• The measurable attributes of an object. • Orientation or size does not matter when recognizing shapes in understanding attributes. • Vocabulary ○ Above ○ Behind ○ Below ○ Beside ○ Between ○ In Front of ○ Next to ○ Circle ○ Triangle ○ Corner ○ Side ○ Curved ○ Straight ○ Hexagon ○ Longer ○ Rectangle ○ Shorter ○ Sort ○ Square ○ Attribute	• Describe, sort, and compare two-dimensional shapes. • Identify squares, circles, triangles, rectangles, and hexagons. • Draw and build two-dimensional shapes. • Compose simple shapes to form larger shapes. • Describe the location of shapes using positional words.

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Unit 3: Flat Shapes All Around Us

Missouri Learning Standards

Priority Standards

- Say the number names when counting objects, in the standard order, pairing each object with one and only one number name and each number name with one and only one object. (K.NS.B.5)
- Demonstrate that a number can be used to represent “how many” are in a set. (K.NS.B.9)
- Compare two or more sets of objects and identify which set is equal to, more than or less than the other. (K.NS.C.10)
- Compare the measurable attributes of two objects. (K.GM.A.2)
- Identify shapes and describe objects in the environment using names of shapes, recognizing the name stays the same regardless of orientation or size. (K.GM.C.6)
- Identify and describe the attribute of shapes and use the attributes to sort a collection of shapes. (K.GM.C.8)
- Draw or model simple two-dimensional shapes. (K.GM.C.9)
- Compose simple shapes to form larger shapes using manipulatives. (K.GM.C.10)

Supporting Standards

- Count to 100 by ones and tens. (K.NS.A.1)
- Count forward beginning from a given number between 1 and 20. (K.NS.A.2)
- Read and write numerals and represent a number of objects from 0 to 20. (K.NS.A.4)
- Demonstrate that the last number name said tells the number of objects counted and the number of objects is the same regardless of their arrangement or the order in which they were counted. (K.NS.B.7)
- Demonstrate that each successive number name refers to a quantity that is one larger than the previous number. (K.NS.B.6)
- Compare two numerals, between 1 and 10, and determine which is more than or less than the other. (K.NS.C.11)
- Describe several measurable attributes of objects. (K.GM.A.1)
- Describe the relative positions of objects in space. (K.GM.C.7)

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Unit 4: Understanding Addition and Subtraction

Students will develop an understanding of addition and subtraction and represent and solve story problems.

Unit Essential Learning Targets	
<i>Enduring Understandings</i>	<i>Essential Questions</i>
• Addition and subtraction are used to represent and solve many different kinds of problems. • We can count to tell the number of objects.	• What does it mean to add and subtract? • How can we show and solve story problems about adding and subtracting? • How do expressions show adding, subtracting, and story problems?
<i>Students must know:</i>	<i>Students must be able to:</i>
• Vocabulary ○ Add ○ Expression ○ Subtract ○ Total ○ Zero	• Understand addition as putting together and subtraction as taking from. • Represent and solve <i>Add To, Result Unknown</i>, and <i>Take From, Result Unknown</i> story problems within 10. • Determine the values of addition and subtraction expressions within 10. • Relate addition and subtraction. • When given a number from 1 to 9, determine the missing number needed to make a 10. • Decompose (compose) numbers within ten using methods, e.g., manipulatives, drawings, rekenreks, number paths, and record each result using a drawing or expression. • Count all. • Count on. • Organize objects to count them. • Use objects to show what is happening in a math story. • Retell a story problem. • Use simple drawings to show what is happening in a math story. • Match an expression to a story problem. • Match a story problem to an expression.

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Unit 4: Understanding Addition and Subtraction

Missouri Learning Standards

Priority Standards

- Represent addition and subtraction within 10. (K.RA.A.1)
- Demonstrate fluency for addition and subtraction within 5. (K.RA.A.2)
- Decompose numbers less than or equal to 10 in more than one way. (K.RA.A.3)
- Make 10 for any number from 1 to 9. (K.RA.A.4)
- Say the number names when counting objects, in the standard order, pairing each object with one and only one number name and each number name with one and only one object. (K.NS.B.5)
- Recognize, without counting, the quantity of groups up to 5 objects arranged in common patterns. (K.NS.B.8)
- Demonstrate that a number can be used to represent “how many” are in a set. (K.NS.B.9)

Supporting Standards

- Count to 100 by ones and tens. (K.NS.A.1)
- Count forward beginning from a given number between 1 and 20. (K.NS.A.2)
- Read and write numerals and represent a number of objects from 0 to 20. (K.NS.A.4)
- Demonstrate that the last number name said tells the number of objects counted and the number of objects is the same regardless of their arrangement or the order in which they were counted. (K.NS.B.6)
- Demonstrate that each successive number name refers to a quantity that is one larger than the previous number. (K.NS.B.7)

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Unit 5: Make and Break Apart Numbers Within 10

Students compose and decompose numbers within 10 and represent and solve story problems.

Unit Essential Learning Targets	
<i>Enduring Understandings</i>	<i>Essential Questions</i>
- Numbers can be broken into smaller groups in different ways. - Composing means putting together. - Decomposing means taking apart.	- How can we put together and break apart numbers? - How can we solve story problems about adding? - How can equations show the parts that make a number?
<i>Students must know:</i>	<i>Students must be able to:</i>
- Vocabulary - Equation - Add - Expression - Total	- Compose and decompose numbers up to 10 in more than 1 way. - Represent decompositions with drawings, expressions, and equations. - Solve <i>Put Together/Take Apart, Total Unknown; Put Together/Take Apart Both Addends Unknown; Add To, Result Unknown; and Take From Result Unknown</i> story problems. - For any number of 1 to 9, find the number that makes 10 when added to the given number. - Write an equation to represent a story problem. - Notice and describe patterns in compositions of 10.

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Unit 5: Make and Break Apart Numbers Within 10

Missouri Learning Standards

Priority Standards

- Recognize, without counting, the quantity of groups up to 5 objects arranged in common patterns. (K.NS.B.8)
- Demonstrate that a number can be used to represent “how many” are in a set. (K.NS.B.9)
- Represent addition and subtraction within 10. (K.RA.A.1)
- Make 10 for any number from 1 to 9. (K.RA.A.4)

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Unit 6: Numbers 0-20

Students count and represent groups of objects or images within 20 and recognize the $10 + n$ structure of teen numbers.

Unit Essential Learning Targets	
<i>Enduring Understandings</i>	<i>Essential Questions</i>
- Numbers represent quantities. - Numbers are ordered sequentially. - There are many ways to represent a number.	- How can you use what you know about counting to figure out how many are in groups of up to 20 objects or pictures? - What are the different ways you can show a teen number? - How can you use what you know about counting to order and write numbers?
<i>Students must know:</i>	<i>Students must be able to:</i>
- Vocabulary - Eleven - Twelve - Thirteen - Fourteen - Fifteen - Sixteen - Seventeen - Eighteen - Nineteen - Twenty - Teen Number - Equation - Expression - Teen numbers can all be broken apart into 10 and some more.	- Determine the quantities of groups of up to 20 objects or images shown in different arrangements. - Represent quantities up to 20 with fingers, 10-frames, and written numerals. - Compose and decompose numbers 11-19 using 10 ones and some more ones. - Represent compositions and decompositions of numbers 11-19 using expressions and equations. - Order and write numbers 0-20. - Match written numerals with groups of 11-19 images. - Match expressions to decompositions of teen numbers shown on 10-frames. - Notice and use patterns in teen numbers.

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Unit 6: Numbers 0-20

Missouri Learning Standards

Priority Standards

- Demonstrate that a number can be used to represent “how many” are in a set. (K.NS.B.9)
- Compose and decompose numbers from 11 to 19 into sets of tens with additional ones. (K.NBT.A.1)

Supporting Standards

- Demonstrate that the last number name said tells the number of objects counted and the number of objects is the same regardless of their arrangement or the order in which they were counted. (K.NS.B.6)
- Count to 100 by ones and tens. (K.NS.A.1)
- Count forward beginning from a given number between 1 and 20. (K.NS.A.2)
- Read and write numerals and represent a number of objects from 0 to 20. (K.NS.A.4)

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Unit 7: Solid Shapes All Around Us

Students describe, sort, compare, and compose three-dimensional shapes and revisit counting, addition, and subtraction.

Unit Essential Learning Targets	
<i>Enduring Understandings</i>	<i>Essential Questions</i>
• Shape is the outline of an object. • Shapes are everywhere in the real world.	• How can we distinguish between flat shapes and solid shapes? • How can we describe and compare solid shapes? • How can solid shapes be put together to make larger shapes?
<i>Students must know:</i>	<i>Students must be able to:</i>
• Vocabulary ○ Cone ○ Cube ○ Cylinder ○ Sphere ○ Face ○ Flat Shape ○ Solid Shape ○ Heavier ○ Lighter ○ Prism ○ Shorter ○ Taller	• Describe, compare, and compose three-dimensional shapes. • Compare the weights and capacities of objects. • Count, compare, and compose quantities. • Solve story problems involving shapes. • Compare shapes by naming what is alike and different between them.

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Unit 7: Solid Shapes All Around Us

Missouri Learning Standards

Priority Standards

- Recognize, without counting, the quantity of groups up to 5 objects arranged in common patterns. (K.NS.B.8)
- Demonstrate that a number can be used to represent “how many” are in a set. (K.NS.B.9)
- Compare two or more sets of objects and identify which set is equal to, more than or less than the other. (K.NS.C.10)
- Represent addition and subtraction within 10. (K.RA.A.1)
- Demonstrate fluency for addition and subtraction within 5. (K.RA.A.2)
- Compare the measurable attributes of two objects. (K.GM.A.2)
- Identify shapes and describe objects in the environment using names of shapes, recognizing the name stays the same regardless of orientation or size. (K.GM.C.6)
- Identify and describe the attribute of shapes, and use the attributes to sort a collection of shapes. (K.GM.C.8)
- Draw or model simple two-dimensional shapes. (K.GM.C.9)
- Compose simple shapes to form larger shapes using manipulatives. (K.GM.C.10)
- Compare category counts using appropriate language. (K.DS.A.2)

Supporting Standards

- Count to 100 by ones and tens. (K.NS.A.1)
- Describe several measurable attributes of objects. (K.GM.A.1)