Moonachie School District Mathematics Curriculum: Kindergarten

Born On & Board Approved: August 27, 2024
Re-Adoption: August 26, 2025

The following maps outline the New Jersey Student Learning Standards for Kindergarten mathematics determined by the State Standards Initiative. Below is a list of assessment tools that are recommended for tracking student progress in these areas. In addition, resources that can be used in conjunction with instruction of these standards are provided but not limited to the list below.

Assessment:

Formative Assessment
Open-Ended Problems
Self-Assessment
Teacher Observation
Benchmark Assessment
Homework Review
Summative Assessment
Class-Work Review
Project-Based Assessment
Timed Drills
End of Year Assessment
Math Software (Envision 2020)
Group & Cooperative Work

Resources:

Counters (variety)
Flashcards
Work mats
Math Word Wall
Connecting Cubes
Number Line
Work Mats
Computer Software
Interactive White Board
Center Games
Concrete Objects
Workbooks
Mini White Boards
Manipulatives
Math/Pocket Charts
Ten Frame
Craft Sticks
Blocks
Calendar
100 Chart
Math Songs/Poems
Pattern Blocks
Measurement Tools
Tangrams
Geometric Shapes
Three Dimensional Shapes
Attribute Blocks

Websites:

www.ixl.com_
www.aplusmath.com
www.brainpop.com
www.brainpopjr.com
www.funbrain.com
www.mathplayground.com
www.sheppardssoftware.com
www.songsforteaching.com
www.abcya.com
www.Envision 2020.com
www.superteacherworksheets.com
www.commoncoresheets.com
www.fun4thebrain.com
www.math-play.com
www.smartexchange.com
http://www.k-5mathteachingresources.com
www.xtramath.com
www.mrnussbaum.com
www.learnzillion.com
www.k6.thinkcentral.com
www. interactivesites.weebly.com/math.html

References:

http://www.state.nj.us/education/aps/cccs/math/
NJ Technology Standards**:** http://www.state.nj.us/education/cccs/2014/tech/8.pdf
NJ Career Ready Practices: http://www.state.nj.us/education/aps/cccs/career/
http://www.state.nj.us/education/cccs/frameworks/math/

Standards for Mathematical Practice
MP. 1 - Make Sense of problems and persevere in solving them.
MP. 2 - Reason Abstractly and Quantitatively
Mp. 3 - Construct Viable Arguments and Critique the Reasoning of Others
MP. 4 - Model with Mathematics
MP. 5 - Use Appropriate Tools Strategically
MP. 6 - Attend to Precision
MP. 7 - Look for and make use of Structure
MP. 8 - Look for and Express Regularity in Repeated Reasoning

MATHEMATICS: KINDERGARTEN DOMAIN: COUNTING AND CARDINALITY	
Cluster Heading **K.CC.A: Know number names and the count sequence.**	
Performance Indicators	
K.CC.A.1: Count to 100 by ones and by tens. K.CC.A.2: Count forward beginning from a given number within the known sequence (instead of having to begin at 1). K.CC.A.3: Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).	
Key Vocabulary: Ones, Tens, Hundreds, Sequence, Numeral	
Envision Topic and Length of Time: Topics 1-4, Topic 11 - 63 Days	
Student Learning Objectives	**Suggested Tasks/Activities**
Students will be able to: - Identify number names and the count sequence up to 100 and by 10s. - Count sequentially forward by a given number other than one (1) - Write numbers 0 to 20 numerically and visually.	- Show and Tell to review and preview new vocabulary. - Use linking cubes and tens frames to count and model up to 20. - Students will listen to various read alouds to count and model numbers up to 20. - Students can arrange linking cubes into groups to allow for quicker counting. - Students can use a floor number path to count in sequence and place missing numbers. - Students will listen to the story One Hundred Is a Family and count along with the narrator. Students can draw their family and count them. - Read stories, Centipede's 100 Shoes and Kindergarten Count To 100. - Students can count on a hundred chart up to 100 and fill in missing numbers. - Color groups of tens or ones on a hundred chart. - Students can use number strips to look for patterns. - Students can count to 100 and clap at the decade number. - Circle groups of ten or color groups of tens using pictures. - Counting to 100 videos
Cluster Heading **K.CC.B: Count to tell the number of objects.**	
Performance Indicators	
K.CC.B.4: Understand the relationship between numbers and quantities; connect counting to cardinality.	

K.CC.B.4.a: When counting objects, say the number names 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.CC.B.4.b: Understand that the last number name says the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
K.CC.B.4.c: Understand that each successive number name refers to a quantity that is one larger.
K.CC.B.5:Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

Key Vocabulary: Count, Circle, Scatter, Sequence, Pair, Number Names up to 20

Resources/Materials: Counters, Tens Frames, Linking Cubes, Vocabulary Flash Cards

Student Learning Objectives	Suggested Tasks/Activities
Students will be able to: - Understand the relationship between numbers and quantities by connecting counting to cardinality. - When counting objects, articulate number names in the standard order, pairing each object with a unique number name, and each number name with a single object. - Recognize that the last number name said indicates the total objects counted, regardless of their arrangement or the counting order. - Understand that each successive number name denotes a quantity one larger. - Practice counting to answer "how many?" questions for up to 20 items in various arrangements, such as a line,	- Review and preview vocabulary. - Act out the number by clapping. - Look at small groups of objects and turn and talk to a partner to say how many objects there are. - Listen to the read aloud, Brown Bear, Brown Bear What Do You See? The teacher will allow time for students to count groups of objects. - Listen to the read aloud, Pete the Cat and His Four Groovy Buttons then count and act out the story. - Listen to the read aloud, Five Little Ducks and count the ducks on the page. - Listen to the read aloud, The Noisy Counting Book and count and write the numbers on a dry erase board each time a new number is introduced. - Listen to the read aloud, Froggy Bakes A Cake. The teacher will have the students count the items that froggy uses for his recipe. - Play a roll and name game. Roll the dice and say the number. - Count objects in a group and sky write the number. - Use a five or ten frame to model and count objects. - Use linking cubes and add one cube as you count one number larger. - Use counters to make shapes and count how many they used. - Listen to counting songs and have students sing along.

rectangular array, or circle, or up to 10 items in a scattered configuration given a number from 1 to 20, count out that exact number of objects.	

Cluster Heading
K.CC.C: Compare numbers.

Performance Indicators

K.CC.C.6: Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. (Clarification: Include groups with up to ten objects.)
K.CC.C.7:Compare two numbers between 1 and 10 presented as written numerals.

Key Vocabulary: Compare, Greater Than, Less Than, Equal To, Numeral, Identifying

Resources/Materials: Counters, Tens Frames, Linking Cubes, Dry Erase Board, Dry Erase Markers, Word Wall, Drawing Paper, Objects of choice: Socks, cups, pencils, etc.

Student Learning Objectives	Suggested Tasks/Activities
Students will be able to: - Compare numbers as greater than, less than, or equal to using groups of objects. - Compare two written numerals between 1 and 10 .	- Review and preview new vocabulary words. - Look at two groups of linking cubes and determine if they have equal amounts. Compare amounts by looking, counting and using the cubes to build a tower. - Choose number cards and build the numeral with linking cubes. Then build a second tower equal to the first. Build a tower greater than or a tower less than. - Match two collections of items with the same number. Ex, two socks and two shoes. - Sort high frequency words by counting and comparing the number of letters in each word. - Compare groups of objects, counters or numbers in a tens frame and state which group has more or less. - Write a number on a dry erase board, then hold them up and compare their number with a partner. Determine who is greater than or less using vocabulary words. - Draw models of two different numbers and then draw connecting lines to compare those models. - Students can compare classroom weather data gathered from morning meetings. - Read, Bear Counts and draw equal amounts of living things from the story.

	- Read, Monster Musical Chairs. The teacher will bring to their attention how there is one less chair in each section. - Read, Ten Apples Up On Top. Stack apples and compare them to a partner's pile.

MATHEMATICS: KINDERGARTEN DOMAIN: DATA LITERACY	
Cluster Heading K.DL.A: Classify objects and count the number of objects in each category.	
Performance Indicators	
K.DL.A.1: Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (Clarification: Limit category counts to be less than or equal to 10)	
Key Vocabulary: Classify, Object, Category, Count, Sort by count	
Envision Topic and Length of Time: Topic 5 - 10 days	
Student Learning Objectives	**Suggested Tasks/Activities**
Students will be able to - Categorize the objects into specific groups, determine the quantity of objects in each group, and arrange the groups based on the count. (Please ensure that the number of groups does not exceed 10).	- Sorting shapes activities - Choral counting - Sorting mats

MATHEMATICS: KINDERGARTEN DOMAIN: OPERATIONS AND ALGEBRAIC THINKING
Cluster Heading K.OA.A: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.
Performance Indicators
K.OA.A.1: Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.

K.OA.A.2: Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

K.OA.A.3: Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation. (e.g., 5 = 2 + 3 and 5 = 4 + 1).

K.OA.A.4: For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

K.OA.A.5: Demonstrate accuracy and efficiency for addition and subtraction within 5.

Key Vocabulary: Add, Subtract, Plus, Minus, Equal, Part, Whole, Number Sentence

Envision Topic and Length of Time: Topics 6 - 8 - 45 days

Student Learning Objectives	Suggested Tasks/Activities
Students will be able to: - Show how to add and subtract numbers from 1 to 10 using different techniques (ie.using objects, counting on fingers, visualizing in mind, drawing, clapping out and acting out) - Solve word problems using addition and subtraction within a range of 10, using objects or drawings to represent the problem visually. - Break down numbers less than or equal to 10 into pairs using objects or drawings, and record each breakdown with a drawing or equation. For example, 5 can be broken down as 2 + 3 or 4 + 1. - Determine the value that, when combined with any number between 1 and 9, yields a total of 10. Utilize objects or illustrations to ascertain the	- Review and preview vocabulary words by playing a math game. - Act out two groups being joined together using key vocabulary words. - Use counters to act out counting stories. - Draw their own story problems and write a number sentence to match. - Use groups of objects to act out a story and write an addition sentence to match. - Play bean bag toss to create addition sentences by adding the number of bean bags that are in the hoop and out of the hoop. - Use a set of objects (cups, linking cubes) to separate to show part-part and the whole. - Use two colors to the parts that make a whole. - Use a number line to show addition or subtraction equations. - Read, Doggies, and make number bonds to represent the number of dogs on each page. - Act out one group being taken away from a whole using key vocabulary words. - Use linking cubes and/or counters to act out a subtraction story. - Cross out counters on a tens frame and write the complete number sentence on a white board. - Draw a group of objects and cross out an amount. Write the number sentence. - Read Elevator Magic and draw a building with ten stories, label the picture and count down the stories to subtract and state the floor they landed on. Then write a number sentence to match the picture. - Listen to songs about adding and subtracting

solution and document it using either a drawing or an equation. - Demonstrate accuracy and efficiency when conducting addition and subtraction calculations within the numerical range of 1 to 5.	

MATHEMATICS: KINDERGARTEN **DOMAIN: NUMBER AND OPERATION IN BASE TEN**	
Cluster Heading **K.NBT.A: Work with numbers 11–19 to gain foundations for place value.**	
Performance Indicators	
K.NBT.A.1 Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18= 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	
Key Vocabulary: Tens, Ones, Dozen, Number words from 11-19, Decompose, Breakdown	
Envision Topic and Length of Time: Topics 9 - 10 - 27 days	
Student Learning Objectives	**Suggested Tasks/Activities**
Students will be able to: - Create and break down numbers 11-19 by using ten ones and some extra ones. - Document each breakdown or composition with a picture or equation. (ie., 18 can be written as 10 + 8. These numbers are made up of ten ones and 1-9 more ones).	- Review and preview vocabulary words with a math game. - Clap for a tens frame and pat their laps for additional numbers. - Use linking cubes to count and model a tens group and more ones. - Use linking cubes, a ten frame and a five frames to count and model. - Use a tens frame to tell how many in a group and then write a number sentence. - Circle groups of ten and count more to make addition equations. - Read, How Do You Count A Dozen Ducklings?. Discuss the meaning of a dozen, use empty egg cartons to practice modeling and counting twelve objects. - Listen to songs about composing and decomposing.

MATHEMATICS: KINDERGARTEN
DOMAIN: GEOMETRY

Cluster Heading
K.G.A: Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres)

Performance Indicators

K.G.A.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.
K.G.A.2 Correctly name shapes regardless of their orientations or overall size.
K.G.A.3 Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").

Key Vocabulary: Shapes, Positions, Above, Below, Beside, In front of, Behind, Next to, 2-dimensional, flat, 3-dimensional, solid

Envision Topic and Length of Time: Topics 12 - 13 - 27 days

Student Learning Objectives	Suggested Tasks/Activities
Students will be able to: - Identify 2D and 3D shapes. - Describe 2D and 3D shapes in relation to their environment. - Differentiate between 2D and 3D shapes.	- "Where is the Shape?" Game Position shapes around different students and name the position) - Shape activities - Write the room - "I Have, Who Has…?" game - Sorting 2D vs. 3D - Cut and glue crafts

Cluster Heading
K.G.B: Analyze, compare, create, and compose shapes.

Performance Indicators

K.G.B.4 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).
K.G.B.5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
K.G.B.6 Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"

Key Vocabulary: Shape, 2D shapes, 3D shapes, Size, Orientation, Vertices, Sides, Attributes, Equal

Resources/Materials: 2D shapes, 3D shapes, White boards, Attribute blocks, Sticks, Clay, Play-doh, Rubberbands, Q-tips, Marshmallows Toothpicks, Magnetic Designer

Student Learning Objectives	Suggested Tasks/Activities

Students will be able to:
- Analyze and compare 2D and 3D shapes
- Create shapes from different objects.
- Create larger shapes from simple shapes.
	- Play dough mats
	- Preview Vocabulary
	- Building shapes with:
	  - Marshmallows
	  - Rubberbands
	  - Clay
	  - Play-doh
	  - Sticks
	  - Q-tips
	- Partner work
	- Tangram building

MATHEMATICS: KINDERGARTEN **DOMAIN: MEASUREMENT**	
Cluster Heading **K.M.A: Describe and compare measurable attributes.**	
Performance Indicators	
K.M.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. K.M.A.2 Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.	
Key Vocabulary: Attributes, More than, Less than, Compare, Same, Different, Length, Height	
Envision Topic and Length of Time: Topic 14 - 11 days	
Student Learning Objectives	**Suggested Tasks/Activities**
Students will be able to: - Describe attributes of objects such as length or weight. - Describe several attributes of one object.	- Sorting Objects by Size: Provide two objects such as blocks, toys, or pictures, and ask students to sort them based on their size. Encourage them to use comparative language such as big, small, tall, short, long, and short to describe the objects. - Measuring with Non-Standard Units: Give students different non-standard measuring tools such as paper clips, cubes, or hands-on materials. Ask them to measure various

- Compare the same attributes of two objects (ie: taller and shorter).	objects in the classroom using these tools and then compare two objects by length or height. - Comparing Weight: Set up a balance scale and provide a variety of objects with different weights such as toys, fruits, or classroom items. Have students compare the weights of these objects by placing them on the balance scale and discussing which one is heavier or lighter. - Graphing Height: Have students measure their own heights using a measuring tape or a height chart. Give students a partner to compare their height. - Have students choose one object from the classroom or school and verbally explain its attributes.
Cluster Heading **K.M.B: Work with money.**	
Performance Indicators	
K.M.B.3: Understand that certain objects are coins and dollar bills, and that coins and dollar bills represent money. Identify the values of all U.S. coins and the one-dollar bill.	
Key Vocabulary: Money, Cents, Dollars, Quarter, Nickel, Dime, Penny	
Resources/Materials: Fake Money/Coins, Cash register, Anchor charts, Songs	
Student Learning Objectives	**Suggested Tasks/Activities**
Students will be able to: - Recognize that certain objects represent currency, such as coins and the one-dollar bill, and understand their significance. - Identify the different values of United States coins and the one-dollar bill.	- Provide students with fake money. Use a chart/table to identify the value of each coin or bill. - Coin Sorting Game: Provide a variety of coins (pennies, nickels, dimes, and quarters) along with pictures or illustrations of each coin. Have students sort the coins into separate piles based on their type. Encourage them to match each coin with its corresponding picture or illustration. Once sorted, discuss the characteristics of each coin, such as size, color, and the images on the front and back. - Coin Matching Cards: Create a set of coin matching cards with pictures or illustrations of coins on one card and the corresponding coin names on another card.

	Distribute the cards to students and have them match each coin picture with its name. Encourage them to say the name of each coin as they match the cards. - Coin Recognition Bingo - Play Money Activities: Provide students with play money, including coins and dollar bills. Show them real coins and bills, and then let them explore and play with the play money. Encourage them to identify each coin and bill and discuss their values. Use the play money for role-playing activities, such as pretending to buy items from a pretend store or counting out money for various transactions. - Coin and Dollar Scavenger Hunt: Hide coins and dollar bills around the classroom or outdoor play area. Give students a list of coins and bills to find, along with pictures or descriptions of each. As students find each coin or bill, have them bring it back to the group and identify it before moving on to find the next one.

INTERDISCIPLINARY CONNECTIONS	
Other Core Content Areas	**English Language Arts** - L.RF.K.1: Demonstrate understanding of the organization and basic features of print. - L.WF.K.1: Demonstrate command of the conventions of writing. - L.KL.K.1: With prompting and support, develop knowledge of language and its conventions when speaking and listening. - L.VL.K.2: With prompting and support, ask and answer questions to help determine or clarify the meaning of unknown and multiple-meaning words and phrases based on kindergarten reading and content. - RI.MF.K.6: With prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts). - SL.ES.K.3: Ask and answer questions in order to seek help, get information, or clarify something that is not understood. - SL.UM.K.5: Add drawings or other visual displays to descriptions as desired to provide additional detail. **Science** - K-2-ETS1-1: Ask questions, make observations, and gather information about a situation people want to change (e.g., climate change) to define a simple problem that can be solved through the development of a new or improved object or tool.

	- K-2-ETS1-2: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. **Social Studies** - 6.1.2.Geo.SV.3: Identify and describe the properties of a variety of maps and globes (e.g., title, legend, cardinal directions, scale, symbols,) and purposes (wayfinding, thematic). - 6.1.2.CivicsPD.1: Engage in discussions effectively by asking questions, considering facts, listening to the ideas of others, and sharing opinions. - 6.1.2.CivicsPD.2: Establish a process for how individuals can effectively work together to make decisions. - 6.1.2.CivicsCM.2: Use examples from a variety of sources to describe how certain characteristics can help individuals collaborate and solve problems (e.g., open-mindedness, compassion, civility, persistence).
Career Readiness, Life Literacies and Key Skills	- 9.1.2. FI.1: Differentiate the various forms of money and how they are used (e.g., coins, bills, checks, debit and credit cards). - 9.4.2.CI.1: Demonstrate openness to new ideas and perspectives. - 9.4.2.CI.2: Demonstrate originality and inventiveness in work. - 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive). - 9.4.2.IML.2: Represent data in a visual format to tell a story about the data. - 9.4.2.IML.3: Use a variety of sources including multimedia sources to find information about topics such as climate change, with guidance and support from adults.
Computer Science and Design Thinking	- 8.1.2.CS.1: Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences. - 8.1.2.DA.3: Identify and describe patterns in data visualizations. - 8.1.2.DA.4: Make predictions based on data using charts or graphs. - 8.1.2.AP.4: Break down a task into a sequence of steps. - 8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

Modifications				
ML	**Special Education**	**At-Risk**	**Gifted and Talented**	**504**
Scaffolding Word walls Sentence/paragraph frames	Word walls Visual aides Graphic organizers Multimedia	Teacher tutoring Peer tutoring Study guides Graphic organizers	Curriculum compacting Challenge assignments Enrichment activities Tiered activities	Word walls Visual aides Graphic organizers Multimedia

Bilingual dictionaries/translation Think Alouds Read Alouds Highlight key vocabulary Annotation guides Think-pair-share Visual aides Modeling Cognates	Leveled-readers Assistive technology Notes/summaries Extended time Answer masking Answer eliminator Highlighter Color Contrast	Extended time Parent communication Modified assignments Counseling	Independent research/inquiry Collaborative teamwork Higher level questioning Critical/Analytical thinking tasks Self-directed activities	Leveled readers Assistive technology Notes/summaries Extended time Answer masking Answer eliminator Highlighter Color contrast Parent communication Modified assignments Counseling