Moonachie School District Mathematics Curriculum: Second Grade

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

The following maps outline the New Jersey Student Learning Standards for grade two 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	Class-Work Review
Open-Ended Problems	Project-Based Assessment
Self-Assessment	Timed Drills
Teacher Observation	End of Year Assessment
Benchmark Assessment	Math Software
Homework Review	Group & Cooperative Work

Resources:

Counters (variety)	Center Games	Tangrams
Flashcards	Ten Frame	Geometric Shapes
Math Word Wall	Blocks	Geo-Board
Connecting Cubes	Calendar	Textbooks
Number Line	100 Chart	Attribute Blocks
Work Mats	Math Songs/Poems	Craft Sticks
Computer Software	Calculators	Measurement Tools
SmartBoard	Money/Coins	Pattern Blocks
Center Games	Judy Clock	Fraction Tiles
Concrete Objects	Small Student Clocks	Bar Models
Mini White Boards	Time Bingo	1's, 10's, 100's Bars/Cubes
Manipulatives	Digital Clock	Math Journals
Math/Pocket Charts	Analog Clock	Three- Dimensional Shapes

Websites:

www.aplusmath.com www.brainpop jr.com www.superteacherworksheets.com
www.funbrain.com www. learnzillion.com
www.songsforteaching.com www. mrnussbaum.com
www.mathplayground.com **www. interactivesites.weebly.com/math.html**

References:

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

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: GRADE 2
DOMAIN: OPERATIONS AND ALGEBRAIC THINKING

Topic and Length of Time: Topics 1 - 8 - 87 days

Cluster Heading
2.OA: Represent and solve problems involving addition and subtraction.

Performance Indicators

2.OA.A.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: - Represent and solve problems involving addition and subtraction. - Use addition and subtraction within 100 to solve one- and two-step word problems.	Putting together Taking apart Comparing Unknown numbers Plus Minus Equals Addends Sum Difference Equation Counting on Addition Subtraction Regrouping	- Independent worksheets - Flashcards - Numberless word problems - Whole group - Guided practice - Independent practice - Write the room

Cluster Heading

2.OA.B: Add and subtract within 20.
Performance Indicators
2.OA.B.2 With accuracy and efficiency, add and subtract within 20 using mental strategies. By the end of Grade 2, know from memory all sums of two one-digit numbers.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: - Add and subtract within 20 with accuracy and efficiency. - Add and subtract within 20 using mental strategies.	Addition Addend Subtraction Equals Commutative Associative Plus Minus Sum Counting on	- Number talks - Independent worksheets - Centers - Flashcards - Whole group - Guided practice - Independent practice - Preview new vocabulary words - Write the room - Math puzzles - Fact families

Cluster Heading **2.OA.C Work with equal groups of objects to gain foundations for multiplication.**
Performance Indicators
2.OA.C.3 Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends. 2.OA.C.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: - Work with equal groups of objects to gain foundations for multiplication.	Array Repeated addition Row Column	- Number talks - Independent worksheets - Centers - Flashcards

- Determine whether a group of objects has an odd or even number of members. - Use addition to find the total number of objects arranged in rectangular arrays.	Equation Sum Addends Skip Count Odd/even	- Whole group - Guided practice - Independent practice - Preview new vocabulary words - Write the room - Math puzzles - Fact families

MATHEMATICS: GRADE 2
DOMAIN: NUMBER AND OPERATION IN BASE TEN

Topic and Length of Time: Topics 9 -11 - 38 days

Cluster Heading
2.NBT.A : Understand place value.

Performance Indicators

2.NBT.A.1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:

- 2.NBT.A.1.a: 100 can be thought of as a bundle of ten tens — called a "hundred."
- 2.NBT.A.1.b: The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).

2.NBT.A.2 Count within 1000; skip-count by 5s, 10s, and 100s.
2.NBT.A.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
2.NBT.A.4 Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: - Understand place value.	Multiples 10 less	- Finding 10 more, 10 less on a 120's chart - Whole group practice

- Understand that the three digits of a three-digit number represent hundred, tens, and ones. - Read and write numbers to 1,000. - Count within 1,000. - Compare two three-digit numbers.	10 more Adding Subtracting Two-digit One-digit Strategy Concrete models Base 10 blocks Place value Hundred Expanded Form Skip Count Greater than/less than Compare	- Guided practice - Independent practice - Calendar math - Number talks - Worksheets - Skip counting by 10s - Work with Ten Frames

Cluster Heading

2.NBT.B : Use place value understanding and properties of operations to add and subtract.

Performance Indicators

2.NBT.B.5 With accuracy and efficiency, add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

2.NBT.B.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.

2.NBT.B.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

2.NBT.B.8 Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.

2.NBT.B.9 Explain why addition and subtraction strategies work, using place value and the properties of operations. (Clarification: Explanations should be supported by drawings or objects.)

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities

Students will be able to: - Use place value understanding and properties of operations to add and subtract with accuracy and efficiency. - Add up to four two-digit numbers. - Add and subtract within 1000. - Mentally add 10 or 100 to a given number. - Explain why addition and subtraction work using place value and the properties of operations.	Multiples 10 less 10 more Adding Subtracting Two-digit One-digit Strategy Concrete models Base 10 blocks Place value Hundred Expanded Form Skip Count Greater than/less than Compare Operation Properties Mental Math	- Finding 10 more, 10 less, 100 more, 100 less - Whole group practice - Guided practice - Independent practice - Calendar math - Number talks - Worksheets - Skip counting - Work with Ten/Hundred Frames - Target Numbers - Number of the Day

MATHEMATICS: GRADE 2
DOMAIN: MEASUREMENT

Topic and Length of Time: Topics 8, 12, 14 - 34 days
Cluster Heading **2.M.A: Measure and estimate lengths in standard units.**
Performance Indicators
2.M.A.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

2.M.A.2 Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen. 2.M.A.3 Estimate lengths using units of inches, feet, centimeters, and meters. 2.M.A.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: - Measure and estimate lengths in standard units. - Estimate lengths using inches, feet, centimeters, and meters.	Measure Estimate Length Order Compare Height Objects Non-standard units Standard Units Overlap Inches Feet Yards Centimeter Meter Ruler Yard Stick Meter Stick Tape Measure	- Measuring items around the classroom using non-standard units - Measuring items around the classroom using rulers, yard sticks, meter sticks and measuring tapes - Select the appropriate tool to measure objects - Estimate accurately before measuring - Worksheets - Whole group practice - Small group collaboration - Independent practice - Guided practice - Measuring people - Order items from shortest to longest - Compare the length of objects

Cluster Heading **2.M.B: Relate addition and subtraction to length.**
Performance Indicators
2.M.B.5 Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: - Relate addition and subtraction to length. - Use addition and subtraction within 100 to solve word problems involving lengths. - Represent whole numbers as lengths.	Measure Estimate Length Order Compare Height Objects Non-standard units Standard Units Overlap Inches Feet Yards Centimeter Meter Ruler Yard Stick Meter Stick Tape Measure	- Measuring items around the classroom using non-standard units - Measuring items around the classroom using rulers, yard sticks, meter sticks and measuring tapes - Select the appropriate tool to measure objects - Estimate accurately before measuring - Worksheets - Whole group practice - Small group collaboration - Independent practice - Guided practice - Measuring people - Order items from shortest to longest - Compare the length of objects

Cluster Heading **2.M.C: Work with time and money.**
Performance Indicators
2.M.C.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. 2.M.C.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities

Students will be able to: - Work with time and money. - Tell and write time from analog and digital clocks. - Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies.	Analog Digital Hour Half-hour Quarter-hour Minutes Minute hand Hour hand A.M/P.M. Quarter past Quarter Till Coins Dollars, Half-Dollars Quarters, Dimes, Nickels, Pennies Cents Decimal Point Dollar Sign/Cent Sign Skip Count	- Worksheets - Whole group practice - Small group collaboration - Independent practice - Guided practice - Hands-on clock activities - Hands-on money activities using play money - Sorting coins - Counting coins

MATHEMATICS: GRADE 2
DOMAIN: DATA LITERACY

Topic and Length of Time: Topic 15 - 11 days	
Cluster Heading **2.DL.A: Understand concepts of data.**	
Performance Indicators	
2.DL.A.1	Understand that people collect data to answer questions. Understand that data can vary.
2.DL.A.2	Identify what could count as data (e.g., visuals, sounds, numbers).

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities

Students will be able to: - Understand concepts of data by collecting data to answer questions. - Identify what could count as data.	Data Interpret Survey Organize Bar graph Picture graph Tally chart More Less	- Graphing worksheets - Class data collection - Whole group practice - Independent practice - Guided practice - Taking votes to create tally charts - Calendar math - Tally graph

Cluster Heading
2.DL.B: Represent and interpret data.

Performance Indicators

2.DL.B.3 Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.

2.DL.B.4 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put together, take-apart, and compare problems using information presented in a bar graph.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: - Represent and interpret data by generating measurement data - Draw a picture graph and a bar graph to represent a data set	Data Interpret Survey Organize Bar graph Picture graph Tally chart More Less Line-Plot Lengths Scale	- Graphing worksheets - Class data collection - Interpretation of Data - Whole group practice - Independent practice - Guided practice - Taking votes to create tally charts - Calendar math - Tally graph - Measure items to make a line plot - Make picture graphs and bar graphs - Class surveys

MATHEMATICS: GRADE 2
DOMAIN: GEOMETRY

Topic and Length of Time: Topic 13- 13 days

Cluster Heading
2.G.A: Reason with shapes and their attributes.

Performance Indicators

2.G.A.1 Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. (Clarification: sizes are compared directly or visually, not compared by measuring)
2.G.A.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.
2.G.A.3 Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape. For example, students partition a rectangle (i.e. the whole) into three equal shares, identify each of the shares as a 'third' and describe the rectangle as three 'thirds'.

Student Learning Objectives	Key Vocabulary		Suggested Tasks/Activities
Students will be able to: - Reason with shapes and their attributes. - Recognize and draw shapes. - Partition circles and rectangle into rows and columns and equal parts.	Circle Triangle Rectangle Square Rhombus Trapezoid Hexagon Quadrilateral Pentagon Cylinder Cube Rectangular prism Cone Sphere	Pyramid Three-dimensional Two-dimensional Equal Halves Thirds Fourths Quarters Attributes Vertices Partition Rows Columns	- Slide, stack, roll hands on activity - Matching shapes to attributes worksheet - Count the vertices assignments - Independent practice/worksheets - Guided practice - Whole group practice - Building shapes with objects - Composing shapes using pattern blocks - Building with 2D and 3D shapes

INTERDISCIPLINARY CONNECTIONS	
Other Core Content Areas	**English Language Arts** - L.RF.2.4.A: Read grade-level text with purpose and understanding. - L.WF.2.1.A: Write legibly and with sufficient fluency to support composition. - L.VL.2.2.A: Use sentence-level context as a clue to the meaning of a word or phrase. - L.VI.2.3.A: Identify real-life connections between words and their use. - RI.CR.2.1: Ask and answer questions to demonstrate understanding of key details in an informational text, referring explicitly to the text as the basis for the answers. **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				
English Language Learners	**Special Education**	**At-Risk**	**Gifted and Talented**	**504**
Scaffolding Word walls Sentence/paragraph frames Bilingual dictionaries/translation Think Alouds Read Alouds Highlight key vocabulary Annotation guides Think-pair-share Visual aides Modeling Cognates	Word walls Visual aides Graphic organizers Multimedia Leveled-readers Assistive technology Notes/summaries Extended time Answer masking Answer eliminator Highlighter Color Contrast	Teacher tutoring Peer tutoring Study guides Graphic organizers Extended time Parent communication Modified assignments Counseling	Curriculum compacting Challenge assignments Enrichment activities Tiered activities Independent research/inquiry Collaborative teamwork Higher level questioning Critical/Analytical thinking tasks Self-directed activities	Word walls Visual aides Graphic organizers Multimedia Leveled readers Assistive technology Notes/summaries Extended time Answer masking Answer eliminator Highlighter Color contrast Parent communication Modified assignments Counseling