Mathematics Curriculum:
Grade One
Moonachie School District

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The following maps outline the New Jersey Student Learning Standards for Grade One 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	Wiki-Sticks
SmartBoard	Money/Coins	Pattern Blocks
Flannel Board	Measurement Tools	Three Dimensional Shapes
Center Games	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	

Websites:

http://www.aplusmath.com
http://www.studyisland.com
http://www.funbrain.com
http://www.songsforteaching.com

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: GRADE 1
DOMAIN: OPERATIONS AND ALGEBRAIC THINKING

Topic and Length of Time: Topics 1 - 5 - 71 days

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

Performance Indicators

1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

1.OA.A.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, 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: - Use addition and subtraction within 20 to solve word problems. - Solve word problems and add together 3 whole numbers.	Adding to Taking from Putting together Taking apart Comparing Unknown numbers Plus Minus Equals Addends Equation Counting on	- Independent worksheets - Flashcards - Numberless word problems - Whole group - Guided practice - Independent practice - Write the room

Cluster Heading
1.OA.B: Understand and apply properties of operations and the relationship between addition and subtraction.

Performance Indicators
1.OA.B.3 Apply properties of operations as strategies to add and subtract. Examples: If is known, then is also known. (Commutative property of addition.) To add the second two numbers can be added to make a ten, so . (Associative property of addition.) (Clarification: Students need not use formal terms for these properties.) 1.OA.B.4 Understand subtraction as an unknown-addend problem. For example, subtract by finding the number that makes 10 when added to 8.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: - Apply adding and subtracting strategies. - Recognize the commutative and associative properties. - Understand that subtraction as an unknown addend problem.	Adding Addend Subtracting 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

Cluster Heading **1.OA.C: Add and subtract within 20.**
Performance Indicators
1.OA.C.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). 1.OA.C.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities

Students will be able to: - Demonstrate accuracy and efficiency when adding and subtracting within 10 - Relate counting to adding and subtracting within 20.	Adding Addend Subtracting Equals Decomposing Plus Minus Sum Making 10 Counting on Difference Equivalent Accuracy Efficiency Fact families	- 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 **1.O.A.D: Work with addition and subtraction equations.**
Performance Indicators
1.OA.D.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2. 1.OA.D.8 Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 + __ = 11, 5 = __ – 3 and 6 + 6 = __.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: - Determine the meaning of the equal sign and solve for the missing number in an equation to make it true. - Differentiate if an equation is true or false.	Adding Addend Subtracting Equals True false Plus	- Number talks - Independent worksheets - Centers - Flashcards - Whole group - Guided practice - Independent practice

	Minus Sum Making 10 Counting on Difference Equivalent Accuracy Efficiency Fact families	- Preview new vocabulary words - Write the room - Math puzzles - Fact families

MATHEMATICS: GRADE 1 **DOMAIN: DATA LITERACY**
Topic and Length of Time: Topics 6 and 7 - 21 days
Cluster Heading **1.DL.A Represent and interpret data.**
Performance Indicators
1.DL.A.1 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
Key Vocabulary: Data, Interpret, Organize, Bar graph, Picture graph, Tally chart, More, Less

Student Learning Objectives	Suggested Tasks/Activities
Students be will able to: - Organize, represent, and interpret data - Ask and answer questions about the data.	- Graphing worksheets - Class data collection - Whole group practice - Independent practice - Guided practice - Taking votes to create tally charts - Calendar math - Tally weather graphs

MATHEMATICS: GRADE 1
DOMAIN: NUMBER AND OPERATION IN BASE TEN

Topic and Length of Time: Topics 8 - 11 - 49 days

Cluster Heading
1.NBT.A: Extend the counting sequence.

Performance Indicators

1.NBT.A.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: - Count, read, write, and represent numbers up to 120 using objects and numbers.	Count Read Write Number line 120 chart objects	- Fill in the blank 120's chart - Independent practice - Guided practice - Whole group practice - Counting game - Counting sequence worksheets

Cluster Heading
1.NBT.B: Understand place value.

Performance Indicators

1.NBT.B.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:

- 1.NBT.B.2.a: 10 can be thought of as a bundle of ten ones — called a "ten."
- 1.NBT.B.2.b: The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
- 1.NBT.B.2.c: The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

1.NBT.B.3 Compare two two-digit numbers based on meanings of the tens & ones digits, recording the results of comparisons with the symbols >, = and <.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities

Students will be able to: - Understand two-digit numbers. - Understand that two-digit numbers are made up of 10s and 1s. - Compare two-digit numbers based off of their 10s and 1s. - Record the results of comparisons using symbols.	Greater than Less than Equal to Tens Ones Symbols Two-digit Compare Place value	- Modeling alligator mouth for greater than and less than - Alligator mouth worksheets - Whole group practice - Guided practice - Independent practice - Build numbers with base ten blocks - Filling in tens frames for counting

Cluster Heading

1.NBT.C: Use place value understanding and properties of operations to add and subtract.

Performance Indicators

1.NBT.C.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models (e.g., base ten blocks) 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 and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.
1.NBT.C.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.
1.NBT.C.6 Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90 (positive or zero differences), 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 and explain the reasoning used.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: - Add numbers within 100 using various strategies. - Find 10 more, 10 less than a number mentally. - Understand the relationship between adding and subtracting and subtract multiples of 10.	Multiples 10 less 10 more Adding Subtracting Two-digit One-digit Strategy	- Finding 10 more, 10 less on a 120's chart - Whole group practice - Guided practice - Independent practice - Calendar math - Number talks - Worksheets

	Concrete models Base 10 blocks Place value	- Skip counting by 10s

MATHEMATICS: GRADE 1 **DOMAIN: MEASUREMENT**
Topic and Length of Time: Topics 12 and 13 - 19 days
Cluster Heading **1.M.A: Measure lengths indirectly and by iterating length units.**
Performance Indicators
1.M.A.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object. 1.M.A.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: - Order and compare three objects by length and accurately measure objects using non-standard units from end to end.	Measure Length Order Compare Height Objects Non-standard units Gaps Overlaps	- Measuring items around the classroom using non-standard units - Worksheets - Whole group practice - Independent practice - Guided practice - Measuring people - Order items from shortest to longest

Cluster Heading **1.M.B: Tell and write time**
Performance Indicators
1.M.B.3 Tell and write time in hours and half-hours using analog and digital clocks.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: - Tell and write time in hours and half-hours using analog and digital clocks.	Analog Digital Hour Half-hour Minutes Minute hand Hour hand	- Time worksheets - Whole group practice - Independent practice - Guided practice - Hands-on clock activities - Time songs

Cluster Heading
1.M.C: Work with money

Performance Indicators

1.M.C.4 Know the comparative values of coins and all dollar bills (e.g., a dime is of greater value than a nickel). Use appropriate notation (e.g., 69¢, $10).
1.M.C.5 Use dollars in the solutions of problems up to $20. Find equivalent monetary values (e.g., a nickel is equivalent in value to five pennies). Show monetary values in multiple ways. For example, show 25¢ as two dimes and one nickel, and as five nickels. Show $20 as two tens and as 20 ones.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: - Compare the values of coins and dollar bills as well as using the correct symbol. - Use money to solve problems within $20 as well as finding equivalent monetary values in multiple ways.	Penny Nickel Dime Quarter Dollar Equivalent Compare Value Money Coins Money symbols Cents	- Calendar math - Coin matching activities - Sorting coins - Counting money worksheets - Money value worksheets - Independent practice - Guided practice - Whole group practice - Identifying size and color of coins and bills - Matching amount of money

	Bills	

MATHEMATICS: GRADE 1 DOMAIN: GEOMETRY
Topic and Length of Time: Topics 14 and 15 - 23 days
Cluster Heading **1.G.A: Reason with shapes and their attributes.**
Performance Indicators
1.G.A.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes. 1.G.A.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. (Clarification: Students do not need to learn formal names such as "right rectangular prism.") 1.G.A.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

Student Learning Objectives	Key Vocabulary	Suggested Tasks/Activities
Students will be able to: - Define shapes by their attributes. - Draw and build shapes - Compose two and three-dimensional shapes - Partition circles and rectangles into 2 and 4 equal shares.	Circle Triangle Rectangle Square Rhombus Trapezoid Hexagon Cylinder Cube Rectangular prism Cone Sphere	- Slide, stack, roll hands on activity - Matching shapes to attributes worksheet - Count the vertices assignments - Independent practice - Guided practice - Whole group practice - Building shapes with objects - Composing shapes using pattern blocks - Building with 3D shapes

	Pyramid Three-dimensional Two-dimensional Equal Halves Fourths Quarters Attributes Vertices	

INTERDISCIPLINARY CONNECTIONS	
Other Core Content Areas	**English Language Arts** - L.RF.1.1: Demonstrate mastery of the organization and basic features of print; recognize and understand the distinguishing features of a sentence (e.g., first word, capitalization, ending punctuation). - L.WF.1.1: Demonstrate command of the conventions of writing. - L.KL.1.1: With prompting and support, develop knowledge of language and its conventions when writing, speaking, reading, or listening. - L.VL.1.2: Ask and answer questions to determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 1 reading and content. - SL.ES.1.3: Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood. - SL.UM.1.5: Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings. **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	Word walls Visual aides Graphic organizers Multimedia Leveled-readers Assistive technology Notes/summaries	Teacher tutoring Peer tutoring Study guides Graphic organizers Extended time Parent communication	Curriculum compacting Challenge assignments Enrichment activities Tiered activities Independent research/inquiry Collaborative	Word walls Visual aides Graphic organizers Multimedia Leveled readers Assistive technology Notes/summaries

Read Alouds Highlight key vocabulary Annotation guides Think-pair-share Visual aides Modeling Cognates	Extended time Answer masking Answer eliminator Highlighter Color Contrast	Modified assignments Counseling	teamwork Higher level questioning Critical/Analytical thinking tasks Self-directed activities	Extended time Answer masking Answer eliminator Highlighter Color contrast Parent communication Modified assignments Counseling