Sayreville Public Schools
MD 6-8 Mathematics

MD 6-8 Mathematics
Required
Schools Course Applies to
Full Year

Date Curriculum Approved/ Revised: _____

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Statement of Purpose

Summary of the Course: Mathematics learning is a progressive journey, with the intermediate grades serving as a critical foundation for future academic success. Students will build upon their existing understanding of whole numbers, decimals, fractions, data analysis, pre-algebra, and basic geometry. Instruction will focus on deepening conceptual understanding while strengthening computational fluency.

Through engaging, relevant activities, students will develop their reasoning and critical thinking skills, applying them to solve problems both independently and collaboratively. Key objectives include mastering basic operations with whole numbers and decimals, exploring numerical equivalencies, and understanding fractions as parts of a whole.

The overarching goal of the mathematics curriculum is to foster curiosity, confidence, and a lasting interest in the subject. This will be achieved through a diverse range of instructional strategies, including hands-on learning, projects, cooperative problem-solving, and educational games. Emphasis will be placed on connecting mathematical concepts to real-world applications to ensure students see the relevance of what they are learning.

At this stage, students are emerging as independent thinkers and problem-solvers. They will be encouraged to express their reasoning, explore multiple solutions, and model mathematical concepts. Exposure to foundational algebraic thinking will also be incorporated to prepare students for future mathematical challenges.

By providing varied and meaningful learning experiences, the course aims to lay a strong mathematical foundation and cultivate a positive disposition toward mathematics that students will carry into the upper grades.

In order to demonstrate a cohesive and complete implementation plan the following general suggestions are provided:

- The use of various formative assessments are encouraged in order to provide an ongoing method of determining the current level of understanding the students have of the material presented.
- Homework, when assigned, should be relevant and reflective of the current teaching taking place in the classroom.
- Organizational strategies should be in place that allow the students the ability to take the information gained in the classroom and put it in terms that are relevant to them.
- Instruction should be differentiated to allow students the best opportunity to learn.
- Assessments should be varied and assess topics of instruction delivered in class.
- Modifications to the curriculum should be included that address students with Individualized Educational Plans (IEP), English Language Learners (ELL), and those requiring other modifications (504 plans).

Unit 1: Number Sense
Topic 1

Summary of the Unit:

In this unit of study, students gain understanding of the place value system by learning to read, write, interpret, round, and compare whole numbers and decimals. This unit is based on standard 5.NBT.A Students will engage in hands-on center activities, guided practice, and real-world applications to support understanding and independence. Instruction builds from concrete manipulatives to visual supports and then to abstract practice to meet diverse learning needs.

Enduring Understanding:

- Numbers can be represented in different ways, and understanding place value helps us interpret them.
- The base-ten system is predictable and follows patterns, including patterns in powers of 10.
- Rounding, comparing, and ordering numbers helps us make decisions and solve everyday problems.

Essential Questions:

- How does place value help me understand the size of a number?
- What patterns do I notice when numbers are multiplied and divided by powers of 10?
- How can rounding help me estimate or check my work?
- What strategies can I use to compare and order numbers?
- How can I use number sense in real-life situations?

Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit:

Students will complete a **Number Sense Performance Task** that includes:

- Identifying the value of digits in multi-digit numbers
- Showing how a number changes when multiplied/divided by 10, 100, and 1000
- Rounding numbers using real-life scenarios (money, measurement, populations, etc.)
- Comparing and ordering a set of numbers using symbols and/or manipulatives
- Teacher observation checklist for independence, accuracy, and use of strategies
- Topic Test
- Performance Task

Mastery for this unit will be demonstrated through **70%+ accuracy** on adapted tasks, **consistent use of strategies**, and **increased independence** with minimal prompting.

Resources:

- Base-ten blocks
- Place value charts (individual and large-format)
- Number lines
- Whiteboards/dry erase markers
- Anchor charts
- Interactive notebooks
- Adapted worksheets and task cards
- Digital tools: Pearson Realize, Math 180, IXL, or adapted Google Slides
- Math centers: matching, ordering cards, rounding mats, hands-on sorting activities

Unit Plan:

Topic	Timeline	Objectives	Instructional	NJSLS
Place Value (Whole Numbers up to Millions)	1-1.5 Weeks	Students will recognize digit values in multi-digit numbers Students will name numbers in different ways. Students will skip count.	Read and write numbers in standard, word, and expanded form Use place value to compare numbers |- Place value chart with digits Base-ten block modeling Build-a-number center Expanded form puzzles Read/write/say place value drills Place value scavenger hunt using real-life numbers |-Exit tickets Teacher checklist Matching numbers to forms Place value identification sheets	MA.K.CC.A.1 MA.K.CC.A.2 MA.K.CC.A.3 MA.1.NBT.A MA.1.NBT.B.2 6.NS.1 5.NBT.A.1 5.NBT.A.3

Powers of 10 (Multiply/Divide by 10, 100, 1,000)	1 Week	Students will recognize patterns when multiplying or dividing by powers of 10. Students will write powers of 10 using whole number exponents.	Understand how the position of digits changes - Interactive anchor chart (shift left/right) Moving digits using place-value sliders Powers of 10 card sort Real-life examples (money, measurement, scientific notation intro) - Quick checks on shifting digits "Move the Number" worksheets Small-group demonstration tasks	MA.3.OA.A.3 5.NBT.A.2
Rounding Whole Numbers	1 Week	Students will round numbers to any place. Students will apply rounding to solve problems involving estimation, such as estimating sums or costs.	• Use rounding for estimation | - Rounding Mountain/number line visuals • Hands-on rounding centers Real-world tasks (round prices, distances, class data) Partner games with dice generated numbers - Rounding exit slips Performance task: "Estimate the Grocery Total" Sorting rounded vs. not rounded examples	4.NBT.A.3 5.NBT.A.4

Comparing and Ordering Numbers	1 Week	Students will identify and correctly use the following symbols: <, >, =. Students will order numbers on a number line. Students will compare whole numbers in real life problems.	Order sets of numbers from least to greatest and vice versa - Number card ordering center Human "number line" activity Place value strategy practice Compare numbers using manipulatives or visual supports - Small-group sorting assessments Symbol quizzes Ordering task cards	MA.K.CC.C.6 MA.K.CC.C.7 MA.2.NBT.A.4 MA.1.NBT.B.3 MA.1.OA.D.7 6.NS.C.7 5.NBT.A.1
Unit Review & Summative Assessment	3-4 Days	Students will reinforce all number sense skills.	Demonstrate mastery on summative task - Rotating review centers (place value, rounding, ordering, powers of 10) Games: Kahoot, Blooket, Bingo, Matching - Completed 5-part Number Sense Performance Task Teacher rubric for independence and accuracy	

Standards:

MA.K.CC.A.1 Count to 100 by ones and by tens.
MA.K.CC.A.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
MA.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).

MA.3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
MA.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.
MA.1.OA.D.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false.
MA.K.CC.C.7 Compare two numbers between 1 and 10 presented as written numerals.
MA.1.OA.D.8 Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers.
MA.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.
MA.1.NBT.A Extend the counting sequence.
MA.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:
MA.1.NBT.B.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.
5.NBT.A.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
5.NBT.A.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
5.NBT.A.3 Read, write, and compare decimals to thousandths.
a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.
5.NBT.A.4 Use place value understanding to round decimals to any place.
6.NS.C.7. Understand ordering and absolute value of rational numbers.

Suggested Modifications for Students with Disabilities, ML, At Risk, and Gifted Students

- Consistent with individual plans, when appropriate.
- Below-level learners can be provided with graphic organizers, vocabulary cards, study guides, printed notes, and leveled readers. Projects can be modified or leveled as needed.
- Design lessons using UDL principles Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community.
- Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling).
- Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences).
- Provide ML students with multiple literacy strategies including websites with various language options.
- Collaborate with after-school programs or clubs to extend learning opportunities.

Suggested Technological Innovations/ Use:

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

A.Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.

B. Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology

C. Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

D: Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.

E: Critical thinking, problem solving, and decision making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

Cross Curricular/ 21st Century Connections:

9.2 21st Century Life and Career Skills: Personal Financial Literacy: All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy. 9.3 21st Century Life and Career Skills: Career Awareness, Exploration, and Preparation: All students will apply knowledge about and engage in the process of career awareness, exploration, and preparation in order to navigate the globally competitive work environment of the information age.

Unit 2: Adding & Subtracting
Topic 2

Summary of the Unit:

This unit will provide students with foundational skills in adding and subtracting whole numbers, including single-digit, multi-digit, and real-life application problems. Students will participate in differentiated, hands-on activities to strengthen number sense, use manipulatives, and apply strategies such as using number lines, counting on/back, regrouping, and using visual models. The goal is to build confidence, accuracy, and independence in solving addition and subtraction problems.

Enduring Understanding:

- Addition and subtraction are used to solve everyday problems.
- Numbers can be broken apart and put together in many different ways.
- Understanding place value helps us add and subtract multi-digit numbers accurately.

● There are multiple strategies for solving addition and subtraction problems, and students can choose strategies that work best for them.

Essential Questions

- When do we use addition and subtraction in real life?
- How does place value help us add and subtract numbers?
- What strategies can I use to solve addition and subtraction problems?
- How can I check my work to make sure my answer makes sense?

Summative Assessment and/or Summative Criteria

Students will demonstrate mastery by:

- Completing a teacher-created assessment with addition and subtraction problems (with and without regrouping).
- Solving real-life word problems using addition and subtraction and explaining their reasoning with pictures, manipulatives, or verbal explanation.
- Demonstrating fluency and accuracy as determined by individualized student goals (IEPs).
- Showing independence using tools such as number lines, base-ten blocks, counters, or calculators (as appropriate).

Mastery Criteria (adjustable based on student needs):

- 80% accuracy on addition and subtraction tasks over three consecutive sessions.
- Consistent use of at least one appropriate strategy without prompting.

Resources

- Base-ten blocks
- Counters, linking cubes
- Number lines (tabletop and floor versions)
- Ten frames
- Whiteboards and markers
- Adapted worksheets and task cards (visual supports, step-by-step layouts)
- Interactive notebooks
- Digital tools: Pearson Realize, Math 180, IXL, or adapted Google Slides
- Real-world materials (menus, receipts, classroom store items)

Unit Plan

Topic	Timeline	Objectives	Instructional	NJSLS
Review of Number Sense and Place Value	2-3 Days	Students will identify place value in multi-digit numbers	Use base-ten blocks to build numbers.	6.NS.1, 5.NBT.A.1

			Read and represent numbers on place value charts. Matching activities: number cards to expanded form	
Single-Digit Addition & Subtraction Strategies	3-4 Days	Students will solve single-digit addition and subtraction problems using tools/strategies.	Practice using number lines, counters, drawings. Hands-on centers with ten frames and cubes. Partner games: dice addition, flash card matching.	6.NS.3, 4.OA.A.1
Multi-Digit Addition (With and Without Regrouping)	1 Week	Students will add multi-digit numbers with and without regrouping	Explicit modeling with base-ten blocks. Guided practice using place value mats. Build it, write it, solve worksheets. Technology practice IXL, Math 180.	5.NBT.B.5
Multi-Digit Subtraction (With and Without Regrouping)	1 Week	Students will subtract multi-digit numbers with and without regrouping.	Use manipulatives to represent subtraction. Break apart strategy practice. Scaffolded worksheets (visual regrouping). Small-group practice for step-by-step modeling.	5.NBT.B.5, 4.NBT.B.4
Real-Life Application Problems	3-4 Days	Students will solve real-world addition and subtraction problems	Grocery store simulation (total cost, change). Classroom store or point system.	6.RP.A.3, 6.NS.3

			Real-life scenarios: schedules, time differences, classroom jobs.	
Review & Summative Assessment	2-3 Days	Students will demonstrate cumulative understanding of addition and subtraction concepts.	Review stations: puzzles, task cards, hands-on practice. Individual or small-group assessment.	6.NS 6.RP

Standards:

6.NS.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions.
5.NBT.A.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithms.
4.OA.A.1 Interpret a multiplication equation as a comparison (e.g., 35 = 5 × 7 means 35 is 5 times as many as 7
5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm.
4.NBT.B.4 Use place value understanding and properties of operations to perform multi-digit arithmetic.
6.RP.A.3 Use ratio and rate reasoning to solve problems (tables, tape diagrams, double number lines, equations).
6.NS Apply and extend previous understandings of numbers to the system of rational numbers.
6.RP Understand ratio concepts and use ratio reasoning to solve problems.

Suggested Modifications for Students with Disabilities, ML, At Risk, and Gifted Students

- Consistent with individual plans, when appropriate.
  Below-level learners can be provided with graphic organizers, vocabulary cards, study guides, printed notes, and leveled readers. Projects can be modified or leveled as needed.
- Design lessons using UDL principles Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community.
- Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling).
- Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences).

- Provide ML students with multiple literacy strategies including websites with various language options.
- Collaborate with after-school programs or clubs to extend learning opportunities.

Suggested Technological Innovations/ Use:

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D: Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.

E: Critical thinking, problem solving, and decision making:
Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

Cross Curricular/ 21st Century Connections:

9.2 21st Century Life and Career Skills: Personal Financial Literacy: All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy. 9.3 21st Century Life and Career Skills: Career Awareness, Exploration, and Preparation: All students will apply knowledge about and engage in the process of career awareness, exploration, and preparation in order to navigate the globally competitive work environment of the information age.

Unit 3: Multiplying and Dividing
Topic 3

Summary of the Unit:

This unit introduces and reinforces foundational skills in multiplication and division with whole numbers. Students will engage with hands-on materials, visuals, repeated practice, and real-world scenarios. The goal is to help students build conceptual understanding, increase procedural fluency,

and apply these operations to meaningful daily tasks such as equal grouping, arrays, sharing, and solving simple word problems.

Enduring Understanding:

- Multiplication represents equal groups, repeated addition, and arrays.
- Division represents sharing equally or separating items into equal groups.
- There are multiple strategies for solving multiplication and division problems, including models, manipulatives, repeated addition/subtraction, arrays, and fact families.
- Multiplication and division are inverse operations and can be used to check each other.

Essential Questions

- What does it mean to multiply?
- What does it mean to divide?
- How can I determine which operation to use?
- How can multiplication and division help me solve real-life problems?
- How can I use one operation to check the other?

Summative Assessment and/or Summative Criteria

Students will demonstrate mastery by:

- Accurately solving multiplication and division problems using models or strategies taught in class.
- Successfully completing a teacher-created performance task involving equal grouping, arrays, or real-life word problems (e.g., sharing items, organizing items into rows).
- Matching multiplication and division fact families or demonstrating the inverse relationship through manipulatives or pictures.
- Independently applying strategies with minimal prompting in a structured assessment setting.

Resources

- Manipulatives (counters, cubes, tiles)
- Visual supports (array cards, equal group cards, fact family triangles)
- Whiteboards and dry-erase markers
- Interactive games (Boom Cards, Kahoot, IXL, Math Playground)
- Graphic organizers and adapted worksheets
- Anchor charts
- Number lines and multiplication charts (adapted as needed)

Unit Plan

Topic	Timeline	Objectives	Instructional	Assessments	NJSLS
Introduction to Multiplication (Equal Groups & Repeated Addition)	1 Week	Understand multiplication as equal groups and repeated addition. Represent multiplication using manipulatives and drawings.	Use counters to build equal groups. Create repeated addition sentences to match groupings. Anchor chart: Multiplication Means Use real objects (pencils, snacks) to model groups.	Students build equal groups and label with multiplication sentences. Teacher observation checklist. Exit ticket with pictures representing multiplication.	6.EE.A.1 5.OA.A.1
Arrays & Visual Models	1 Week	Represent multiplication through arrays. Connect arrays to repeated addition and multiplication sentences.	Build arrays with tiles. Draw arrays on grid paper. Use Find the Array task cards. Identify rows and columns.	Students create an array model and write the matching equation. Task card completion. Math journal entry explaining arrays in simple terms.	3.OA.A.1 3.OA.A.3
Multiplication Strategies (Skip Counting, Number Lines, Using Charts)	1-1.5 Weeks	Explore multiple strategies to solve multiplication problems. Develop fluency with one-digit multiplication.	Skip counting with movement (counting by 2s, 5s, 10s). Number line jumps.	Mini assessment with mixed strategy problems. Progress monitoring sheet for fact fluency (adapted to student level).	3.OA.B.5 3.OA.C.7

			Practice with multiplication charts/strips. Small group guided practice.		
Introduction to Division **(Sharing & Equal Groups)**	1 Week	Understand division as making equal groups or sharing. Use manipulatives to model division.	Fair Share activities using real objects. Build equal groups with counters and identify how many per group. Anchor chart: Division Means	Students model division with manipulatives and write matching division sentences. Exit ticket using pictures of groups.	3.OA.A.2 3.OA.B.6
Division with Arrays & Repeated Subtraction	1 Week	Represent division using arrays. Explore division as repeated subtraction	Break arrays into equal groups. Practice repeated subtraction on number lines. Use division task cards with pictures.	Students complete a division array worksheet. Observation notes from guided practice.	3.OA.A.3 3.OA.B.6
Fact Families & Multiplication-Division Relationship	1 Week	Understand multiplication and division as inverse operations. Build fact families using manipulatives, pictures, and numbers.	Use fact family triangles. Sort multiplication and division facts that belong together. Matching cards: Make the Family.	Students create a fact family poster or worksheet. Exit slip identifying correct inverse operations.	3.OA.B.5 3.OA.C.7
Real-World Word Problems & Application	1 Week	Apply multiplication and division to solve real-life scenarios.	Picture-based word problems. Grocery store simulation (e.g.,	Performance task assessing problem-solving using real materials.	3.OA.D.8 6.EE.A.2

		Identify clue words and choose correct operations.	grouping items, sharing packs). Use graphic organizers to break down problems.	Teacher rubric assessing strategy use, accuracy, and independence.	

Standards:

3.OA.A.1 Interpret products of whole numbers (e.g., 5 × 7 as the total number of objects in 5 groups of 7).
3.OA.A.2 Interpret whole-number quotients of whole numbers (e.g., 56 ÷ 8 as number of objects in each group when 56 objects are partitioned into 8 equal groups).
3.OA.A.3 Use multiplication and division within 100 to solve word problems involving equal groups, arrays, and measurement quantities.
3.OA.B Understand properties of multiplication and the relationship between multiplication and division.
3.OA.B.5 Apply properties of operations (commutative, associative, distributive) as strategies to multiply and divide.
3.OA.B.6 Understand division as an unknown-factor problem.
3.OA.C.7 Fluently multiply and divide within 100.
3.OA.D.8 Solve two-step word problems using the four operations.
5.OA.A Write and interpret numerical expressions.

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D: Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.

E: Critical thinking, problem solving, and decision making:
Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

Cross Curricular/ 21st Century Connections:

9.2 21st Century Life and Career Skills: Personal Financial Literacy: All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy. 9.3 21st Century Life and Career Skills: Career Awareness, Exploration, and Preparation: All students will apply knowledge about and engage in the process of career awareness, exploration, and preparation in order to navigate the globally competitive work environment of the information age.

Unit 4: Fractions and Decimals
Topic 4

Summary of the Unit:

This unit introduces and reinforces foundational skills in students' ability to identify, order, compare, and operate with fractions.

Enduring Understanding:

By the end of this unit students will know:

- Identifying Fractions and Decimals
- Ordering Fractions and Decimals
- Fraction Equivalents
- Operations with Fractions
- Operations with Decimals

Essential Questions

- What are the practical applications of fractions and decimals?
- How are fractions and decimals ordered?
- What are the practical applications of fractions and decimals?

Unit Plan

Topic	Timeline	Objectives	Instructional Activities	NJSLS
Identifying Fractions and Decimals	3-5 Days	Students will read and write fractions utilizing their understanding of the numerator and denominator. Students will identify fractions from visual representations. Students will read and write decimals utilizing their understanding of place value. Students will identify decimals from visual representations.	Use visuals to introduce common fractions (halves, thirds, fourths, etc.) Classify various fraction using visuals. Be sure to incorporate improper fractions. Use manipulatives to create and identify parts of wholes. Have students will write decimals from verbal and written expression as well as visual models.	MA.3.NF.A.2 MA.3.NF.A.2b MA.3.NF.A.2a MA.4.NF.B.3 MA.4.NF.C.5 MA.4.NF.C.6 MA.4.NF.C.7
Ordering Fractions and Decimals	3-5 Days	Students will compare fractions and order from largest to smallest and smallest to largest. Students will compare decimals and order from largest to smallest and smallest to largest. Students will place fractions and decimals in	Compare fractions with like denominators. Compare fractions with like numerators. Use the place value within decimals to compare decimals. Model comparing fractions and placing them on a number line.	MA.3.NF.A.3d MA.4.NF.C.5 MA.4.NF.C.6 MA.4.NF.C.7

		the appropriate place on a number line.	Model comparing decimals and placing them on a number line.	
Equivalent Fractions	3-5 Days	Students will identify equivalent fractions using visual representations. Students will reduce fractions to identify equivalents. Students will identify fractions and decimals that are equivalent.	Use models of different shapes to represent equivalencies. Use division to reduce fractions. Use division to convert fractions to decimals. Use place value and simplification to convert from decimals to fractions.	MA.3.NF.A.3a MA.3.NF.A.3b MA.3.NF.A.3c MA.4.NF.C.5 MA.4.NF.C.6 MA.4.NF.C.7
Operations with Fractions	3-5 Days	Students will add and subtract fractions with common denominators. Students will find common denominators in order to add and subtract fractions. Students will multiply fractions. Students will divide fractions by multiplying by the reciprocal.	Provide students with examples or each type of problem. Allow students to practice skills as a class, with one-on-one instruction, and independently. Discuss real-world examples of operations with fractions.	MA.4.NF.B.3 MA.4.NF.B.4 MA.3.NF.A.1 MA.3.NF.A.2 MA.5.NF.B.5 MA.5.NF.B.6 MA.5.NF.B.7
Operations with Decimals	3-5 Days	Students will use place values to add and subtract decimals. Students will use place values to multiply and divide fractions. Students will add and subtract money amounts.	Provide students with examples of each type of problem. Allow students to practice skills as a class, with one-on-one instruction, and independently. Discuss real-world examples of operations of decimals.	MA.4.NF.B.3 MA.4.NF.B.4 MA.3.NF.A.1 MA.3.NF.A.2

Standards:

MA.3.NF.A.1 Understand a fraction 1/b as one part of a whole divided into b equal parts; understand a/b as a copies of 1/b.
MA.3.NF.A.2 Understand a fraction as a number on the number line; represent fractions on a number line.

MA.3.NF.A.2b Represent fractions on a number line by marking off lengths of 1/b.
MA.3.NF.A.2a Divide the interval from 0 to 1 into b equal parts to locate unit fractions.
MA.3.NF.A.3a Understand two fractions as equivalent if they are the same size or at the same point on the number line.
MA.3.NF.A.3b Recognize and generate simple equivalent fractions; explain why they are equivalent.
MA.3.NF.A.3c Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers.
MA.3.NF.A.3d Compare fractions with the same numerator or denominator using >, <, =.
MA.4.NF.B.3 Understand a fraction a/b with a > 1 as a sum of unit fractions; represent and add/subtract mixed numbers and fractions.
MA.4.NF.B.4 Apply multiplication to fractions (a/b × n as repeated addition).
MA.5.NF.B.5 Interpret multiplication as scaling/resizing.
MA.5.NF.B.6 Solve real-world problems involving multiplication of fractions.
MA.5.NF.B.7 Divide unit fractions by whole numbers and whole numbers by unit fractions.
MA.4.NF.C.5 Express equivalent fractions with denominators of 10 and 100.
MA.4.NF.C.6 Use decimal notation for fractions with denominators 10 or 100.
MA.4.NF.C.7 Compare decimals using place value understanding.

Summative Assessment and/or Summative Criteria

Performance Assessments

- Observations
- Teacher designed tests or quizzes
- Chapter Tests
- Short/Extended Constructed Response Items
- Multiple-Choice Items (where multiple answer choices may be correct)
- Quizzes
- Journal Entries/Reflections/Quick-Writes
- Projects
- Portfolio

Suggested Modifications for Students with Disabilities, ML, At Risk, and Gifted Students

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  Below-level learners can be provided with graphic organizers, vocabulary cards, study guides, printed notes, and leveled readers. Projects can be modified or leveled as needed.
- Design lessons using UDL principles Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community.
- Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling).
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- Provide ML students with multiple literacy strategies including websites with various language options.
- Collaborate with after-school programs or clubs to extend learning opportunities.

Suggested Technological Innovations/ Use:

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

A.Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.

B. Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology

C. Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

D: Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.

E: Critical thinking, problem solving, and decision making:
Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

Cross Curricular/ 21st Century Connections:

9.2 21st Century Life and Career Skills: Personal Financial Literacy: All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy. 9.3 21st Century Life and Career Skills: Career Awareness, Exploration, and Preparation: All students will apply knowledge about and engage in the process of career awareness, exploration, and preparation in order to navigate the globally competitive work environment of the information age.

Unit 5: Volume
Topic 5

Summary of the Unit:

In this unit, students will learn to understand, measure, and calculate volume of three-dimensional objects. They will explore volume using hands-on manipulatives, real-life containers, cubes, and visual models. Students will build foundational knowledge of what volume is, why it matters, and how to determine the volume of rectangular prisms using repeated addition and multiplication. The unit incorporates visual supports,

experiential learning, and modified problem-solving to meet the needs of a self-contained middle school classroom.

Enduring Understanding:

By the end of this unit students will know:

- Volume describes the amount of space inside a three-dimensional object.
- Volume can be measured using cubic units.
- The volume of rectangular prisms can be found using the formula length × width × height (l × w × h).
- Understanding volume helps us make sense of everyday tasks such as packing, storage, and filling containers.

Essential Questions

- What is volume?
- How can we measure the amount of space inside a 3-D object?
- How do we use cubic units to find volume?
- How does volume help us in the real world?

Resources

- Manipulatives (unit cubes, linking cubes)
- Real containers/boxes of varying sizes
- Grid paper / cube nets
- Illustrated anchor charts
- Interactive whiteboard visuals
- Adapted worksheets (multiple choice, matching, fill-in)
- Digital math tools as appropriate

Unit Plan

Topic	Timeline	Objectives	Instructional	NJSLS
Introduction to Volume	2-3 Days	Students will understand that volume measures space inside. Students will identify objects that have volume.	Show real objects and discuss space inside. Compare 2-D vs 3-D shapes. Students explore containers using cubes. Anchor chart: What is Volume? Hands-on cube exploration. Build box shapes; count cubes.	6.G.A.2

Measuring Volume Using Unit Cubes	4-5 Days	Students will count and measure volume using cubic units. Students will be able to fill simple box shapes with cubes.	Fill small containers and compare which holds more/less. Structured centers: cube fill, picture models, matching games.	6.G.A.2Â
Volume as Repeated Addition	2-3 Days	Students will understand layers of cubes (length, width, and repeated by height. Students will be able to write repeated addition sentences for cube structures.	Build prisms in layers, count cubes by layers. Visual layering charts. Students label: Layer 1 Layer 2 etc	6.G.A.2
Introduction to Formula of Volume = LxWxH	4-5 Days	Students will use measurements to calculate volume of rectangular prisms. Students will understand dimensions (length, width, height).	Use color-coded rulers and boxes. Students measure edges of rectangular objects. Practice with formula using guided examples, unit cube visuals, or touch-point numbers.	6. G.A.2
Real-Life Volume Application	2-3 Days	Students will apply volume knowledge to practical scenarios.	Which holds more? activity with containers. Classroom challenge: Build a supply box or backpack insert using set dimensions.	6. G.A.2

		Students will estimate and compare volumes in real-life.	Sorting activity: big volume vs. small volume.	
Review and Assessment	1-2 Days	Students will demonstrate mastery of unit concepts	Review game (Jeopardy-style, Kahoot, card centers). Hands-on cube assessment or modified test.	6.G.A2

Standards:

7.G.B Solve problems involving angle measure, area, surface area, and volume.
5.MD.C.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
5.MD.C.3.a A unit cube is said to have "one cubic unit"; volume is measured by counting unit cubes.
5.MD.C.4 Measure volume by counting unit cubes.
5.MD.C.5 Relate volume to multiplication and addition.
5.MD.C.5.a Find volume of a right rectangular prism with whole-number side lengths.
5.MD.C.5.b Apply decomposition and addition to find the volume of composite figures.
6.G.A.2 Find volume of right rectangular prisms with fractional edge lengths.

Summative Assessment and/or Summative Criteria

Students will:

- Identify volume as the amount of space inside a 3-D shape.
- Measure volume using unit cubes and count total cubes accurately.
- Calculate the volume of rectangular prisms using $l \times w \times h$ with at least 70–80% accuracy (based on IEP modifications).
- Complete a hands-on performance task (e.g., "Design a Classroom Supply Box"), demonstrating ability to measure, estimate, or calculate volume.

Summative assessments may include:

- Modified test with visuals.
- Task cards with real or photographed objects.
- Hands-on cube-building challenge.
- Teacher observation checklist.

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Unit 6: Time
Topic 6

Summary of the Unit:

This unit introduces students to the concept of time, including reading analog and digital clocks, understanding elapsed time, sequencing events, using timetables/schedules, and applying time concepts to real-life routines. Students will engage in hands-on, visual, and functional activities to build independence in reading, calculating, and applying time in everyday settings such as school schedules, cooking, transportation, and personal routines.

Enduring Understanding:

- Time is a measurable quantity used to organize our daily lives.
- Knowing how to read clocks and calculate elapsed time helps us manage routines, schedules, and real-world tasks.
- Different tools exist to measure and represent time (analog clocks, digital clocks, timers, calendars, schedules).

Essential Questions

- How do we read and understand different types of clocks?
- How does time help us plan and organize our day?
- How do we calculate the amount of time that has passed?
- Why is understanding time important in real-life situations?
- How can we use schedules, routines, and timers to build independence?

Resources

- Judy clocks / movable-hand clocks
- Digital clock cards
- Timers and stopwatches
- Picture schedules
- Interactive clock apps (e.g., Toy Theater Analog Clock, ABCya Time Tools)
- Real classroom schedule
- Worksheets adapted for multiple levels
- Velcro time-matching tasks
- Task boxes for independent practice

Sayreville Public Schools
MD 6-8 Mathematics

Unit Plan

Topic	Timeline	Objectives	Instructional	NJSLS
Understanding Units of Time	3-4 Days	Students recognize common units of time. Students order units from shortest to longest.	Anchor chart on units of time Sorting: "What takes seconds/minutes/hours?" Visual timers demonstration Daily calendar review Sorting activity accuracy Teacher checklist Verbal/AAC identification	6. MD.A.1
Reading Digital Clocks	4-5 Days	Students read and write time to the nearest hour/half hour/quarter hour. Students match digital times to daily events.	Digital time flashcards Step-by-step guided practice "Daily Schedule Time Match" with pictures Interactive digital clock app Student reads 8/10 digital times correctly Schedule-matching task	6.MD.A.1 6.RP.A.3
Reading Analog Clocks	6-8 Days	Students identify the hour hand and minute hand. Students read analog clocks to nearest hour, half hour, quarter hour, and (for some) minute.	Using Judy clocks Color-coding hour/minute hands "Move the hands to match the time" Clock matching task boxes Student reads analog time accurately based on individualized goals 1:1 performance check	6.MD.A.1 5.MD.1

Telling Time in Real-Life Situations	4-6 Days	Students connect time to routines and activities. Students identify what time daily events occur.	Using the classroom schedule "What time is lunch?" picture prompts Matching clock times to real events Role-playing scenarios (bedtime, bus pickup, class periods) Correctly matching times to events Verbal/AAC responses	6.SP.B.5 6.MD.A.1
Introduction to Elapsed Time	6-8 Days	Students understand that time passes. Students calculate how much time passes between events (using timelines, number lines, and visual clocks). Students apply elapsed time to daily schedule events.	Timeline of the school day "Start/End Time" cards Using number lines to count forward Comparing two times using manipulatives Timer activities: "How long did it take?" Student calculates elapsed time with teacher support Exit tickets or 1:1 task performance	6.RP.A.3 6.MD.A.1 4.MD.A.2

Using Schedules, Timetables, and Calendars	4-5 Days	Students navigate picture and written schedules. Students locate times on class timetables. Students use a calendar to identify dates.	Personal picture schedule activity Reading a simplified bus schedule Calendar routines Sequencing daily events Students answer schedule-based questions Correct sequencing of daily events	6.SP.A.1 6.SP.B.5 3.MD.A.1
End of Unit Review & Performance Task	2-3 Days	Students will reinforce all time telling skills.	Stations: analog clocks, digital clocks, elapsed time, schedules Final real-life task: "Plan My Morning Routine" or "Follow This Mini-Schedule" Teacher checklist documenting mastery of standards	

Standards:

2.MD.C Work with time and money.
2.MD.C.7 Tell and write time from analog and digital clocks.
1.MD.B Tell and write time.
1.MD.B.3 Tell and write time in hours and half-hours using analog and digital clocks.
3.MD.A.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes e.g., by representing the problem on a number line diagram.

Summative Assessment and/or Summative Criteria

Students will demonstrate mastery by completing a Time Skills Performance Task, which may include:

- Reading and writing times on analog and digital clocks.
- Solving real-life elapsed time problems (e.g., start/end times of classes).
- Following a simple daily schedule and answering time-related questions.
- Matching activities to lengths of time (e.g., "The bus ride takes 10 minutes").
- Completing a mini-schedule showing what they do at certain times.

Students may show mastery through:

- Verbal responses
- Written responses
- Manipulatives (clock models)
- AAC devices
- Sorting and matching tasks
- Teacher observation checklists

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Unit 7: Measurement
Topic 7

Summary of the Unit:

This unit introduces students to the fundamentals of measurement, including length, weight, capacity, and temperature. Students will learn to select appropriate measurement tools, use customary and metric units, and compare, estimate, and record measurements in real-life contexts. Lessons include hands-on activities, visuals, repetition, and functional connections to daily living skills.

Enduring Understanding:

- Measurement helps us describe and understand the world around us.
- Different tools and units are used to measure different attributes (length, weight, capacity, temperature).
- Accurate measurement is essential for daily life tasks, such as cooking, shopping, building, and personal organization.

Essential Questions

- How do we choose the correct tool and unit for measurement?
- Why does measurement matter in real-life situations?
- How do we estimate and measure objects accurately?
- How can we record, compare, and communicate measurements?

Resources

- Rulers, yardsticks, and tape measures
- Standard and metric measuring cups/spoons
- Digital and analog scales
- Liquid capacity containers (cups, pints, quarts, gallons)
- Classroom thermometers
- Visual charts and anchor posters
- Hands-on center bins and task boxes

- Adapted data sheets and picture-supported materials
- Interactive videos (BrainPOP Jr., YouTube Kids safe content)

Unit Plan

Topic	Timeline	Objectives	Instructional	NJSLS
Introduction to Measurement	1 Week	Students will understand what measurement is and why it is important. Identify basic measurement tools. Match tools to measurement types.	Measurement Tool Sorting: Students sort pictures/toys into categories (ruler for length, scale for weight, etc.). Tool Exploration: Students handle real tools and practice naming them. Anchor Charts: Build class posters showing tools and their uses. Interactive Video: BrainPOP Jr. "Non-Standard Measurement."	5.MD.A.1 4.MD.A.1
Measuring Length (Customary & Metric)	1-2 Weeks	Students will be able to measure length using rulers, yardsticks, and tape measures. Students will be able to use inches, feet, centimeters, and meters. Students will be able to compare length of objects (longer/shorter).	Hands-on Stations: Measure desks, books, pencils, floor tiles. Nonstandard to Standard Bridge: Use paper clips first, then rulers. Length Hunt: Find objects that match target lengths. Interactive Notebook: Recording measurements using pictures.	4.MD.A.2 3.MD.B.4

Measuring Weight (Mass)	1 Week	Students will be able to measure weight using scales. Students will be able to identify heavier and lighter objects. Students will understand ounces, pounds, grams.	Weighing Objects Center: Students weigh classroom items and record results with picture supports. Heavier or Lighter Sort: Use manipulatives or real objects. Cooking Connection: Measure ingredients for a simple snacks. (e.g., trail mix)	3.MD.A.2
Measuring Capacity (Volume of Liquids)	1 Week	Students will be able to identify units of capacity (cups, pints, quarts, gallons, milliliters, liters). Students will be able to measure liquids using measuring cups. Students will be able to compare capacities.	Pouring Station: Practice filling specific lines on measuring cups. Capacity Sort: Match containers to unit of measurement. Gallon Man Visual: Build a poster for gallon/pint/quart relationships. Functional Task: Measure water for plants or classroom cleaning.	5.MD.C.3 4.MD.A.1
Measuring Temperature	1 Week	Students will be able to read thermometers (digital and analog). Students will understand Fahrenheit and Celsius. Students will be able to identify hot, warm, cool, and cold.	Temperature Check-In: Students read indoor/outdoor temperatures daily. Hot vs. Cold Sort: Objects or pictures representing different temperatures. Science Connection: Track classroom temperature changes.	5.MD.A.1

Real-Life Measurement Applications/ Review	1 Week	Students will be able to apply measurement skills to functional tasks. Students will be able to emonstrate understanding across measurement types. Students will reinforce vocabulary and tool selection.	Measurement Stations: Rotating stations for length, weight, capacity, temperature. Mini-Project: Choose one real-life task to complete (recipe, item measurement, weather report). Class Measurement Book: Each student adds a page showing one measurement skill.	

Standards:

5.MD.A.1 Convert among different-sized standard measurement units.
4.MD.A.1 Know relative sizes of measurement units and convert larger units to smaller units.
5.MD.C.3 Recognize volume as an attribute of solid figures.
6.MD.A.1 Convert between measurement units and solve problems (same as before).
5.MD.1 Convert measurement units within a system of measurement.
3.MD.A.2 Measure and estimate liquid volume and mass of objects.
4.MD.A.2 Solve word problems involving measurement, including simple conversions.
3.MD.B.4 Generate measurement data and represent it using line plots.

Summative Assessment and/or Summative Criteria

Students will demonstrate mastery by:

- Correctly identifying appropriate tools for measuring length, weight, capacity, and temperature.
- Successfully measuring objects using rulers, measuring cups, scales, and thermometers.
- Comparing measurements using terms such as longer/shorter, heavier/lighter, more/less.
- Completing a Real-Life Measurement Project, such as:
- Measuring items in the classroom and sorting by size.
- Following a simple recipe requiring measurement of ingredients.
- Conducting a “Classroom Weather Report” using a thermometer.

Mastery Criteria (adjust based on IEP needs):

- 80% accuracy on measurement tasks over three trials.
- Demonstrates use of correct measurement tool in at least 3/4 categories.
- Accurately records measurements using numbers, visuals, or assistive communication tools.

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Unit 8: Money and Payment
Topic 8

Summary of the Unit:

This unit introduces students to identifying money, counting coins and bills, determining costs, making purchases, and understanding basic payment methods. Students will develop functional money skills needed for real-life situations such as shopping, budgeting small amounts, and completing simple transactions within school and community settings. Instruction will be highly scaffolded, visual, and hands-on.

Enduring Understanding:

- Money has value and is used to buy goods and services.
- There are different types of money (coins, bills, digital payments), and each has a specific value.
- Making smart financial decisions helps individuals meet needs and wants.
- Understanding how to count money, make change, and complete payments builds independence in daily life.

Essential Questions

- What is money and how do we use it?
- How do I identify coins and bills and know their value?
- How do I count money to pay for items?
- What are different ways to pay (cash, card, digital)?
- How do I know if I have enough money for what I want to buy?
- Why is it important to budget and make good financial choices?

Resources

- Real or plastic coins and bills
- 1:1 and whole-group visuals and anchor charts
- Touch-money or adapted counting strategies
- Classroom “Store” or simulated shopping materials
- Price tags, wallets, receipt templates
- Task cards, worksheets, adapted matching activities
- Videos on money identification (BrainPOP Jr., YouTube Kids options)
- Calculators (as needed)

Unit Plan

Topic	Timeline	Objectives	Instructional	NJSLS
Identifying Coins and Bills	1 Week	Students will be able to identify coins (penny, nickel, dime, quarter) and bills ($1, $5, $10, $20). Students will be able to state values with visual prompts.	Coin/bill sorting centers Matching coin to value. Coin rubbing art activity. Real money exploration Coin songs, videos.	6.RP.A 7.NS.A
Counting Money	1-2 Weeks	Students will be able to count sets of like coins. Students will be able to count mixed coins and bills.	Use skip-counting or touch-money strategies. Use calculator (as needed). Counting trays. Mystery bag coin pull. Partner counting games.	6.NS.C 7.RP.A
Understanding Prices & Determining Costs	1 Week	Students will be able to read price tags.	Compare item costs Determine if they have “enough money” Classroom store window shopping Compare items using visuals “Find the Cheapest/Most Expensive” card sort Price comparison worksheet	6.EE.A 7.RP.A

Making Purchases & Payment Methods	1 Week	Students will understand payment options: cash, card, digital.	Practice paying with cash Identify debit vs. credit in simple terms Use a mock debit card to "pay" School store role-play Cash register simulation Pay-and-go stations Scenario cards: "How would you pay?"	9.1.8.B.1 9.1.8.D.4
Making Change (as appropriate per student ability)	1 Week	Students will be able to recognize when change is needed.	Exchange money for equal value. Determine basic change visually or with counters. "Change Match" using price tags. Cashier role-play giving change. Counting-up strategy practice.	7.NS.A
Real-Life Application School Store/ Community Setting	1 Week	Students will be able to apply all money skills to real or simulated environment.	Demonstrate purchasing process independently or with prompts. Class store with priced items. Job roles (cashier, shopper, bagger). Field trip to school snack shop or cafeteria (if available).	

Standards:

7. RP.A Analyze proportional relationships and use them to solve real-world and mathematical problems.
6. RP.A.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.

7.NS.A Apply and extend previous understandings of operations with fractions to add, subtract, multiply and divide rational numbers.
3,OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
6.NS.C Apply and extend previous understandings of numbers to the system of ratio
2.MD.C Work with time and money.
6.EE.A Apply and extend previous understandings of arithmetic to algebraic equations.

Summative Assessment and/or Summative Criteria

Students demonstrate mastery by completing a "School Store Simulation" where they:

- Identify coins and bills by name and value.
- Count mixed sets of money to match given amounts.
- Determine whether they can afford selected items.
- Pay with exact cash or choose correct bills and calculate change with support (as appropriate).
- Choose correct payment method (cash or simple "debit card" check-off).
- Demonstrate appropriate purchasing behavior (e.g., waiting turn, handing payment, requesting receipt).

Mastery is determined through:

- Observation checklist
- Student task card completion
- Point-of-sale role-play performance

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