Totowa Public Schools

Mathematics

Grade 3

Aligned to NJSLS 2020 Standards

BOE Adopted: 8/31/2022

Revised: 12/14/2022

Units of Study & Pacing Guide

Unit of Study	Timeline	Notes
Unit 1: Properties of Multiplication & Division	12 Weeks	
Unit 2: Graphs & Data / Place Value	6 Weeks	
Unit 3: Understanding Fractions	6 Weeks	
Unit 4: Measurement & Geometry	8 Weeks	
Unit 5: Multiplication & Division Facts & Strategies	4 Weeks	

Title	Properties of Operation-Multiplication and Division
Unit Duration	12 Weeks
Unit Summary & Rationale	***Students work with properties of operations, Commutative, Associative and the Distributive Properties. Additionally, students work to understand the relationship between multiplication and division as well as fluently multiplying and dividing within 100.***
Unit Goals	
Essential Questions	• How might you use multiplication or division to solve problems in the real world? • How are multiplication and division alike? • How can multiplication patterns be used to solve problems? • What strategies aid in mastering • multiplication and division facts?
Enduring Understandings	• Multiplication and division is the grouping and ungrouping of objects using patterns / properties to solve everyday real world problems. • The inverse relationship between multiplication and division can be used to solve unknowns. • Multiplication facts can be deduced from patterns. Patterns are evident when multiplying a number by ten or a multiple of ten. • Multiplication and division are inverses; they undo each other. Multiplication and division can be modeled with arrays.
Learning Outcomes	• Be able to recognize the Commutative, Associative, and Distributive Properties as strategies to add and multiply whole numbers. • Be able to solve division of whole numbers by representing the problem as an unknown factor problem. • Be able to multiply and divide within 40 using strategies such as the relationship between multiplication and division • Be able to multiply and divide within 40 using strategies such as the relationship between multiplication and division

- Be able to use multiplication within 40 to solve word problems modeled as equal groups or arrays by writing equations to represent equal groups or arrays.
- Be able to recognize arithmetic patterns in addition or multiplication tables and explain the pattern using the properties of operations.
- Be able to find the area of a rectangular array by counting the number of square units and compare that number with the product of the whole side lengths rectangular array by counting the number of square units and compare that number with the product of the whole side lengths.

Assessment Evidence	
Formative	Collaborative Activities, Homework, Classwork, Discussion, Independent Class Assignment, Informal Observations of Students, Digital Personal Math Trainer, Games, Exit Slips, Questioning, Teacher Made Pages, Learning Centers, LinkIt, Problem of the Day, Problem of the Week, Entrance Slips.
Summative	LinkIt Benchmark Assessments, Tests, Mid-Chapter Checkpoint Assessments, Quizzes, Written Responses.
Alternative and Benchmark	Alternative – Reteaching, One on One Conferencing, Learning Centers, Levels Homework, Higher Order Thinking Problems, Additional leveled practice Benchmark - LinkIt Benchmark Assessments, Totowa TPA, student portfolio work, teacher generated assessments Formative, Summative, Alternative and Benchmark Assessments
Resources to Promote Learning	
Resources & Equipment Needed	Smartboard, Computers, iPads, websites and digital interactives/models, Multi-media presentations, video streaming, Brain Pop, Microsoft 365, Primary and Secondary Source Documents, Go Math! Resources, Assorted Manipulatives, connecting cubs, number cubes (dice), charts, graph paper, crayons, markers, colored pencils, construction paper, multiplication charts, color tiles, 2D & 3D objects Approved Class Resource List

Content & Interdisciplinary Standards	
NJ 2020 SLS: Mathematics	
NJSLS	**Activity**
3.OA.A.3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.	• Interdisciplinary reading Spaghetti and Meatballs for All area lesson. • Students use extended constructed response to solve word problems using arrays.
3.OA.B.5. Apply properties of operations as strategies to multiply and divide.	• Students represent expressions using various objects, pictures, words and symbols to add and multiply. Split arrays
3.OA.B.6. Understand division as an unknown-factor problem.	
3.OA.C.7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	• Use different representations to determine if equations are true or false. Use reasonableness of the solution to all problems using mental computations
3.OA.D.9. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.	• Students pair up and play and odd and even dice game. Check answer with calculator
3.MD.C.6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units).	• Students use geo boards to represent rectangles and count square units
3.MD.C.7. Relate area to the operations of multiplication and addition.	• Students use geo boards to represent rectangles and count square units
Mathematical Practices	

- 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.

NJ: 2016 SLS: English Language Arts

- RI.3.1. Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- W.3.1. Write opinion pieces on topics or texts, supporting a point of view with reasons.
- SL.3.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.
- L.3.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

2020 SLS: Computer Science & Design Thinking

NJSLS Performance Expectations (By the end of 5th Grade)

- 8.2.5.ED.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.
- 8.1.5.IC.1: Identify computing technologies that have impacted how individuals live and work and describe the factors that influenced the changes.
- 8.1.5.IC.2: Identify possible ways to improve the accessibility and usability of computing technologies to address the diverse needs and wants of users.
- 8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.
- 8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data.

2020 SLS: Career Readiness, Life Literacies, and Key Skills

NJSLS Performance Expectations (By the end of 5th Grade)

Career Readiness, Life Literacies, and Key Skills Practices describe the habits of the mind that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success. These practices should be taught and reinforced in all content areas with increasingly higher levels of complexity and expectation as a student advances through a program of study.	• Act as a responsible and contributing community members and employee. • Attend to financial well-being. • Consider the environmental, social and economic impacts of decisions • Demonstrate creativity and innovation. • Utilize critical thinking to make sense of problems and persevere in solving them. • Model integrity, ethical leadership and effective management. • Plan education and career paths aligned to personal goals. • Use technology to enhance productivity increase collaboration and communicate effectively. • Work productively in teams while using cultural/global competence
• 9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes. • 9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one's thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a). • 9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process • 9.4.5.CT.2: Identify a problem and list the types of individuals and resources • 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems. • 9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global.	
Interdisciplinary/21st Century Connections	
Science	• 3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
21st Century Connections	• Critical thinking • Collaboration and Teamwork • Problem Solving
SEL	• Self-Management • Responsible Decision-Making New Jersey Social and Emotional Learning Competencies and Sub-Competencies.docx

Title	Place Value, Graphs, and Data
Unit Duration	6 Weeks
Unit Summary & Rationale	***Addition/subtraction requiring students to add and subtract within 1000.Solve word problems using addition and subtraction. Place value terminology. Patterns in the addition table. Rounding numbers to 10s and 100s. Interpret graphed data represented in 1 or 2-step word problems. Use concrete pictures to help conceptualize data represented by a 1 or 2-step word problem. Create graph, interpret and plot data.***
Unit Goals	
Essential Questions	• How do I demonstrate the relationship • between numbers, quantities and place • value for whole numbers up to 1,000? • How can you use properties to identify patterns on the addition table?
Enduring Understandings	• Knowledge and use of place value for large numbers provides context for comparing and computing numbers. • Knowledge and use of properties of addition that translate to algebra
Learning Outcomes	• Be able to fluently add and subtract w/regrouping two digit whole numbers within 100 • Be able to identify patterns in an addition table and reason properties • Be able to round 3 digit numbers to the nearest 10, 100 place • Understand and use place value terminology • Interpret and create graphs. • Career Exploration – Students will explore careers involving statistics.
Assessment Evidence	
Formative	Collaborative Activities, Homework, Classwork, Discussion, Independent Class Assignment, Informal Observations of Students, Digital Personal Math Trainer, Games, Exit Slips, Questioning, Teacher Made Pages, Learning Centers, LinkIt, Problem of the Day, Problem of the Week, Entrance Slips.

Summative	LinkIt Benchmark Assessments, Tests, Mid-Chapter Checkpoint Assessments, Quizzes, Written Responses.
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Resources to Promote Learning	
Resources & Equipment Needed	Smartboard, Computers, iPads, websites and digital interactives/models, Multi-media presentations, video streaming, Brain Pop, Microsoft 365, Primary and Secondary Source Documents, Go Math! Resources, Assorted Manipulatives, connecting cubs, number cubes (dice), charts, graph paper, crayons, markers, colored pencils, construction paper, multiplication charts, color tiles, 2D & 3D objects, materials to build graphs/charts, Approved Class Resource List
Content & Interdisciplinary Standards	
NJ 2020 SLS: Mathematics	
NJSLS	**Activity**
3.NBT.A.1. Use place value understanding to round whole numbers to the nearest 10 or 100.	• Use a number line to reason rounding
3.NBT.A.2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	• Use place value blocks to make place value concrete models
3.OA.D.8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter	• Use crayons to mark patterns in table and use counters to identify odd and even patterns.

standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	

Mathematical Practices

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2020 SLS: Computer Science & Design Thinking

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- 8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data.

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- Consider the environmental, social and economic impacts of decisions
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	• Responsible Decision-Making New Jersey Social and Emotional Learning Competencies and Sub-Competencies.docx

Title	Understand Fractions
Unit Duration	6 Weeks
Unit Summary & Rationale	***The goal of this unit is to have students:*** • ***Understand fractions as numbers.*** • ***Build equivalent fractions and compare fractions.*** • ***Develop an understanding of fractions as numbers and locate on the number line.*** • ***Develop understanding of fractions, unit fractions and part-whole models. Equivalent fractions at the same point on the number line.*** • ***The abstract numeral ½ is used for "half" and more than one numeral represents the same number, e.g., ½ and 2/4.***
Unit Goals	
Essential Questions	• Where are fractions seen in real life? • Where do we find fractions on a number line? • What does it mean to be close to a whole? • What do letters mean in a math problem? • How many ways can we use models to represent fractions? • How can two fractions with different numbers equal each other? • How do I use concrete materials and drawings to understand and show understanding of fractions? • How do I explain the meaning of a fraction, and use my understanding to represent and compare fractions? • How do charts, tables, and graphs help you interpret and calculate data? • How do I measure accurately to the nearest half inch and quarter inch?
Enduring Understandings	• Fractional parts are equal shares of a whole or a whole set. • Fractions are represented between whole numbers on number lines.

	• When the numerator and denominator are the same number, the fraction equals one whole. The closer the numerator number is to the denominator number, the closer the fraction is to a whole. • The fraction name (half, third, etc) indicates the number of equal parts in the whole. Two halves and three thirds equal the same fraction even though the numbers represented in the fraction are different. • Number lines, fraction models (circles, bars, etc) can be used to compare, order, and demonstrate fraction equivalency. • Numbers are able to represent quantity, position, location, and relationships, and symbols (letters) may be used to express these relationships. • Number lines, fraction models (circles, bars, etc) can be used to compare, order, and demonstrate fraction equivalency. • Fractional parts are equal shares of a whole or a whole set. The more equal sized pieces that form a whole, the smaller the pieces of the whole become. • When the numerator and denominator are the same number, the fraction equals one whole. When the wholes are the same size, the smaller the denominator, the larger the pieces. • There are appropriate units of measurement and tools such as rulers) to use in different situations. • Measurement requires repeated measures to ensure accuracy.
Learning Outcomes	• Be able to interpret the unit fraction 1/b as the quantity formed by 1 of b equal parts of a whole and the fraction a/b as the quantity formed by a parts 1/b e.g., 3 unit fractions of 1/4 add to the quantity 3/4. • Be able to represent the equal parts of shapes as a unit fraction (e.g., a pizza cut into 8 equal slices has 8 slices and each slice has quantity 1/8 of the whole pizza). • Be able to make a drawing of a number line depicting the position of 1/b (with b = 2, 3, 4, 6, or 8). • Be able to make a drawing of a number line depicting a fraction a/b (with a < b and b = 2, 4, 3, 4, 6, 6 or 8).

- Be able to find the value of an unknown (expressed as a letter) in an equation that is a representation of a two-step word problem (with any four operations) and assess the reasonableness of the value.
- Be able to locate equivalent (equal) fractions on a number line (with dominators 2, 3, 4, 6, 8).
- Be able to generate and explain equivalent fractions using visual fraction models, e.g., interpret 1/4 of a group
- of 12 pennies as 3 pennies: Ⓟ Ⓟ Ⓟ Ⓟ Ⓟ Ⓟ Ⓟ Ⓟ Ⓟ Ⓟ Ⓟ Ⓟ (see the 4 equal sub-groups as fourths).
- Be able to generate and explain whole numbers as fractions, and locate them as fractions on a number line
- Be able to compare two fractions with the same numerator or the same denominator using the symbols >, =, <.
- Be able to create and interpret scaled picture (or bar) graph to represent data in 1- and 2-step word problems

Assessment Evidence	
Formative	Collaborative Activities, Homework, Classwork, Discussion, Independent Class Assignment, Informal Observations of Students, Digital Personal Math Trainer, Games, Exit Slips, Questioning, Teacher Made Pages, Learning Centers, LinkIt, Problem of the Day, Problem of the Week, Entrance Slips.
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Content & Interdisciplinary Standards	
NJ 2020 SLS: Mathematics	
NJSLS	**Activity**
3.NF.A.1. Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.	• Students will identify fractions on a number line in a round robin group activity.
3.NF.A.2. Understand a fraction as a number on the number line; represent fractions on a number line diagram. 3.G.A.2. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.	• Students will use geo boards to divide shapes into equal areas and label fraction
3.NF.A.2. Understand a fraction as a number on the number line; represent fractions on a number line diagram. 3.NF.A.2a. Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and	• Students will use a number line to represent the unit fraction 1/4 on the number line and divide the number line between 0 & 1 into 4 equal lengths and name the point at the end of the first length as the position of unit fraction 1/4; apply the same method for locating the points 1/2, 1/3, 1/5, 1/6, and 1/8 on the number line.

partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. 3.NF.A.2b. Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.	• Students will create an equivalent fraction notebook
3.OA.C.7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit 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.	• Students will make fact triangles and fact rockets
3.NF.A.3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.	• Students label and identify fractions on a number line in a round robin game • Students compare fractions by playing a game using index cards

3.NF.A.3a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. 3.NF.A.3b. Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model. 3.NF.A.3c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. 3.NF.A.3d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.	• Students label and identify fractions on a number line in a round robin game • Students compare fractions by playing a game using index cards an extension of a previous activity
MD.B.3. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.	• Students use pictograph to complete survey word problems and compare and reason, convert pictograph to bar graph

3.MD.B.4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.	• Students measure to build a bracelet
3.MD.C.5. Recognize area as an attribute of plane figures and understand concepts of area measurement. 3.MD.C.5a. A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.	• Students use math tiles to form a rectangle and identify fractional areas.

Mathematical Practices

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Title	Measurement and Geometry
Unit Duration	8 Weeks
Unit Summary & Rationale	***In this unit students will adapt to different measurement techniques and 2 and 3-dimensional shapes. Within the unit students will learn multiple vocabulary, measurement techniques, estimates, and be able to ally their knowledge to real world scenarios.***
Unit Goals	
Essential Questions	• How can different geometric terms be used to name the same shape? • How is area related to multiplication and addition? • How can two different shapes have the same area but different perimeter? • Why is it important to understand 2 and 3-dimensional figures? • How can I model and solve problems by representing, adding and subtracting amounts and intervals of time?

	• How can I measure and estimate volumes and masses using standard units, and how can these be applied to real-life problems
Enduring Understandings	• Geometry and the Number System. Geometry is interrelated to concepts of measurement, multiplication and addition in regards to 2-dimensional shapes, perimeter and area. • Two and three dimensional objects can be described, classified, and analyzed by their attributes. Different shapes can sometimes be classified into multiple categories. • The attributes of 2 and 3-dimensional figures can help us describe the environment and solve real life problems. • Area is an attribute of 2-dimensional shapes. Using addition, students can count and add the number of same-sized, tiled squares and use these dimensions to multiply the sides to find area. • Different shapes can share the same number of • square tiles, but the sides and lengths of the shapes may be different. • The duration of an event is called elapsed time, and it can be measured and computed using addition and subtraction. • Objects can be measured using standard units. • Everyday objects have a variety of attributes, each of which can be measured in many ways. • Estimation helps us see whether or not our answers are reasonable.
Learning Outcomes	• Be able to understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category. Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories • Be able to solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters • Be able to explain the relationship between tiling/multiplying side lengths to find the area of rectangles.

- Be able to use the area model (with rectangles) to explain the Distributive Property.
- Be able to recognize area as additive. Find area of rectilinear figures by decomposing them into non-overlapping rectangles and adding the area of non-rectangular parts, apply to solve real world problems
- Be able to measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
- Be able to fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
- Be able to fluently multiply and divide within 100, using the relationship between multiplication and division

Assessment Evidence	
Formative	Collaborative Activities, Homework, Classwork, Discussion, Independent Class Assignment, Informal Observations of Students, Digital Personal Math Trainer, Games, Exit Slips, Questioning, Teacher Made Pages, Learning Centers, LinkIt, Problem of the Day, Problem of the Week, Entrance Slips.
Summative	LinkIt Benchmark Assessments, Tests, Mid-Chapter Checkpoint Assessments, Quizzes, Written Responses.
Alternative and Benchmark	Alternative – Reteaching, One on One Conferencing, Learning Centers, Levels Homework, Higher Order Thinking Problems, Additional leveled practice Benchmark - LinkIt Benchmark Assessments, Totowa TPA, student portfolio work, teacher generated assessments Formative, Summative, Alternative and Benchmark Assessments
Resources to Promote Learning	
Resources & Equipment Needed	Smartboard, Computers, iPads, websites and digital interactives/models, Multi-media presentations, video streaming, Brain Pop, Microsoft 365, Primary and Secondary Source Documents, Go Math! Resources, Assorted Manipulatives,

	connecting cubs, number cubes (dice), charts, graph paper, crayons, markers, colored pencils, construction paper, multiplication charts, color tiles, 2D & 3D objects, rulers, string, Approved Class Resource List
Content & Interdisciplinary Standards	
NJ 2020 SLS: Mathematics	
NJSLS	**Activity**
3.G.A.1. Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. 3.G.A.2. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole	• Students build and draw shapes given the number of faces, number of angles and number of sides. The focus now is on identifying and describing properties of two-dimensional shapes in more precise ways using properties that are shared rather than the appearances of individual shapes
3.MD.D.8. Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	• Students explore finding the perimeter of a rectangle. Have students use non-stretchy string.
3.MD.C.7. Relate area to the operations of multiplication and addition.	• Using square tiles, students can discover that the area of rectangles may be the same, but the perimeter of the rectangles varies.

3.MD.C.7a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. 3.MD.C.7b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. 3.MD.C.7c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning. 3.MD.C.7d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.	• Students use multiplication to make the connection of the area of a rectangle to the area model used to represent • Students use geo boards can be used to find the perimeter of rectangles also. Provide students with different perimeters and have them create the rectangles on the geo boards. Once students know how to find the perimeter of a rectangle, they can find the perimeter of rectangular-shaped objects in their environment
3.MD.C.6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units).	• Students use arrays to discover that the length of one dimension of a rectangle tells how many squares are in each row of an array and the length of the other dimension of the rectangle tells how many squares are in each column.
Mathematical Practices	
• 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.

NJ: 2016 SLS: English Language Arts

- RI.3.1. Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- W.3.1. Write opinion pieces on topics or texts, supporting a point of view with reasons.
- SL.3.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.
- L.3.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

2020 SLS: Computer Science & Design Thinking

NJSLS Performance Expectations (By the end of 5th Grade)

- 8.2.5.ED.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.
- 8.1.5.IC.1: Identify computing technologies that have impacted how individuals live and work and describe the factors that influenced the changes.
- 8.1.5.IC.2: Identify possible ways to improve the accessibility and usability of computing technologies to address the diverse needs and wants of users.
- 8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.
- 8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data.

2020 SLS: Career Readiness, Life Literacies, and Key Skills

NJSLS Performance Expectations (By the end of 5th Grade)

Career Readiness, Life Literacies, and Key Skills Practices describe the habits of the mind that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success. These practices should be taught and	• Act as a responsible and contributing community members and employee. • Attend to financial well-being. • Consider the environmental, social and economic impacts of decisions • Demonstrate creativity and innovation. • Utilize critical thinking to make sense of problems and persevere in solving them.

reinforced in all content areas with increasingly higher levels of complexity and expectation as a student advances through a program of study.	• Model integrity, ethical leadership and effective management. • Plan education and career paths aligned to personal goals. • Use technology to enhance productivity increase collaboration and communicate effectively. • Work productively in teams while using cultural/global competence
• 9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes. • 9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one's thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a). • 9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process • 9.4.5.CT.2: Identify a problem and list the types of individuals and resources • 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems. • 9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global.	
Interdisciplinary/21st Century Connections	
Science	• 3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
21st Century Connections	• Critical thinking • Collaboration and Teamwork • Problem Solving
SEL	• Self-Management • Responsible Decision-Making New Jersey Social and Emotional Learning Competencies and Sub-Competencies.docx

Title	Multiplication & Division Facts & Strategies
Unit Duration	4 Weeks
Unit Summary & Rationale	***In this unit, students will strengthen their division skills.***
Unit Goals	

Essential Questions	• What does dividing by 2 mean? • What strategies can you use to divide by 10? • What does dividing by 5 mean? • What strategies can you use to divide by 3? • What strategies can you sue to divide by 4? • What strategies can you use to divide by 6? • What strategies can you use to divide by 7? • What strategies can you use to divide by 8? • What strategies can you use to divide by 9? • How can you use the strategy act it out to solve two-step problems? • Why are there rules such as the order of operations?
Enduring Understandings	• Multiplication and division is the grouping and ungrouping of objects using patterns / properties to solve everyday real world problems.
Learning Outcomes	• Use models to represent division by 2. • Count up by 5s, count back on a number line, or use 10s facts and doubles to divide by 5. • Use repeated subtraction, a number line, or a multiplication table to divide by 10. • Use equal groups, a number line, or a related multiplication fact to divide by 3. • Use an array, equal groups, factors or a related multiplication fact to divide by 4,6,7,8,9. • Perform operations in order when there are no parentheses.

Assessment Evidence	
Formative	Collaborative Activities, Homework, Classwork, Discussion, Independent Class Assignment, Informal Observations of Students, Digital Personal Math Trainer, Games, Exit Slips, Questioning, Teacher Made Pages, Learning Centers, LinkIt, Problem of the Day, Problem of the Week, Entrance Slips.
Summative	LinkIt Benchmark Assessments, Tests, Mid-Chapter Checkpoint Assessments, Quizzes, Written Responses.

Alternative and Benchmark	Alternative – Reteaching, One on One Conferencing, Learning Centers, Levels Homework, Higher Order Thinking Problems, Additional leveled practice Benchmark - LinkIt Benchmark Assessments, Totowa TPA, student portfolio work, teacher generated assessments Formative, Summative, Alternative and Benchmark Assessments
Resources to Promote Learning	
Resources & Equipment Needed	Smartboard, Computers, iPads, websites and digital interactives/models, Multi-media presentations, video streaming, Brain Pop, Microsoft 365, Primary and Secondary Source Documents, Go Math! Resources, Assorted Manipulatives, connecting cubs, number cubes (dice), charts, graph paper, crayons, markers, colored pencils, construction paper, multiplication charts, color tiles, 2D & 3D objects, rulers, string Approved Class Resource List
Content & Interdisciplinary Standards	
NJ 2020 SLS: Mathematics	
NJSLS	**Activity**
3.OA.A.3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.	• Students use extended constructed response to solve word problems using arrays. • Interdisciplinary reading Spaghetti and Meatballs for All area lesson
3.OA.A.4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers. Show details	• Students use extended constructed response to solve word problems using arrays. • Interdisciplinary reading Spaghetti and Meatballs for All area lesson
3.OA.C.7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know	• Use different representations to determine if equations are true or false. Use reasonableness of the solution to all problems using mental computations

from memory all products of two one-digit 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. Show details	

Mathematical Practices

- MP.1. Make sense of problems and persevere in solving them.
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- MP.3. Construct viable arguments and critique the reasoning of others.
- MP.4. Model with mathematics.
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2020 SLS: Computer Science & Design Thinking

NJSLS Performance Expectations (By the end of 5th Grade)

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- 8.1.5.IC.2: Identify possible ways to improve the accessibility and usability of computing technologies to address the diverse needs and wants of users.
- 8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.
- 8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data.

2020 SLS: Career Readiness, Life Literacies, and Key Skills

NJSLS Performance Expectations (By the end of 5th Grade)

Career Readiness, Life Literacies, and Key Skills Practices describe the habits of the mind that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success. These practices should be taught and reinforced in all content areas with increasingly higher levels of complexity and expectation as a student advances through a program of study.	• Act as a responsible and contributing community members and employee. • Attend to financial well-being. • Consider the environmental, social and economic impacts of decisions • Demonstrate creativity and innovation. • Utilize critical thinking to make sense of problems and persevere in solving them. • Model integrity, ethical leadership and effective management. • Plan education and career paths aligned to personal goals. • Use technology to enhance productivity increase collaboration and communicate effectively. • Work productively in teams while using cultural/global competence

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- 9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process
- 9.4.5.CT.2: Identify a problem and list the types of individuals and resources

• 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems. • 9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global.	
Interdisciplinary/21st Century Connections	
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Accommodations & Modifications		
Special Education Students, 504 students, English Language Learners, Students at-Risk Based on Students' Individual Needs		
Time/General	**Processing**	**Comprehension**
• Allow extra time • Repeat and clarify directions • Provide breaks in between tasks • Have student verbalize directions • Provide timelines/due dates for reports and projects	• Provide extra response time • Have student verbalize steps • Repeat directions • Provide small group instruction • Include partner work	• Provide reading material on student's level • Have student underline important points • Assist student on how to use context clues to identify words/phrases • Ensure short manageable tasks

Tests/Quizzes/Grading	Behavior/Attention	Organization
• Provide extended time • Provide study guides • Limit number of responses	• Establish classroom rules • Write a contract with the student specifying expected behaviors • Provide preferential seating • Re-focus student as needed • Reinforce student for staying on task	• Monitor the student and provide reinforcement of directions • Verify the accurateness of homework assignments • Display a written agenda

ELL, Enrichment, Gifted & Talented Strategies

Accommodations Based on Students' Individual Needs

ELL Strategies

- Provide explicit, systematic instruction in vocabulary.
- Ensure that ELLs have ample opportunities to talk with both adults and peers and provide ongoing feedback and encouragement.
- Expose ELLs to rich language input.
- Scaffolding for ELLs language learning.
- Encourage continued L1 language development.
- Alphabet knowledge
- Phonological awareness
- Print awareness
- Design instruction that focuses on all of the foundational literacy skills.
- Recognize that many literacy skills can transfer across languages.
- English literacy development by helping ELLs make the connection between what they know in their first language and what they need to know in English.
- Graphic organizers
- Modified texts
- Modified assessments

- Written/audio instruction
- Shorter paragraph/essay length
- Homogeneously grouped by level

Accommodations Based on Students' Individual Needs:

Enrichment Strategies

- Evaluate vocabulary
- Elevate Text Complexity
- Incorporate inquiry based assignments and projects
- Extend curriculum
- Balance individual, small group and whole group instruction
- Provide tiered/multi-level activities
- Include purposeful learning centers
- Provide open-ended activities and projects
- Offer opportunities for heterogeneous grouping to work with age and social peers as well as homogeneous grouping to provide time to work with individual peers
- Provide pupils with experiences outside the ‘regular’ curriculum
- Alter the pace the student uses to cover regular curriculum in order to explore topics of interest in greater depth/breadth within their own grade level
- Require a higher quality of work than the norm for the given age group
- Promote higher level of thinking and making connections.
- Focus on process learning skills such as brainstorming, decision making and social skills
- Use supplementary materials in addition to the normal range of resources.
- Encourage peer to peer mentoring
- Integrate cross-curricular lessons
- Incorporate real-world problem solving activities
- Facilitate student-led questioning and discussions

Gifted & Talented Strategies

- More elaborate, complex, and in-depth study of major ideas, problems, and themes that integrate knowledge within and across systems of thought.
- Development and application of productive thinking skills to enable students to reconceptualize existing knowledge and/or generate new knowledge.
- Explore constantly changing knowledge and information and develop the attitude that knowledge is worth pursuing in an open world.
- Encourage exposure to, selection, and use of appropriate and specialized resources.
- Promote self-initiated and self-directed learning and growth.
- Provide for the development of self-understanding and the understanding of one's relationship to persons, societal institutions, nature, and culture.
- Flexible pacing
- Use of more advanced or complex concepts, abstractions, and materials
- Encourage students to move through content areas at their own pace. If they master a particular unit, they need to be provided with more advanced learning activities, not more of the same activity.
- Questions that require a higher level of response and/or open-ended questions that stimulate inquiry, active exploration, and discovery.
- Encourage students to think about subjects in more abstract and complex ways
- Activity selection based on student interests, that encourage self-directed learning
- Group interaction and simulations
- Guided self-management
- Encourage students to demonstrate what they have learned in a wide variety of forms that reflect both knowledge and the ability to manipulate ideas.
- Engage students in active problem-finding and problem-solving activities and research.
- Provide students opportunities for making connections within and across systems of knowledge by focusing on issues, themes, and ideas.