Grade 3 Math

Course Description:
The Midland Park Grade 3 math instruction is taught utilizing the Concrete Pictorial Abstract model of instruction. Starting with Concrete stage, students will utilize manipulatives for hands-on learning. Next moving on to Pictorial stage, students will represent concepts visually using models, pictures, or drawings. Lastly, students will move into the Abstract stage utilizing numbers and symbols to solidify their understanding of the concept. By moving though these three stages the Standards for Math Practice are addressed. The areas of focus are on developing understanding of multiplication and division and strategies for multiplication and division within 100; developing understanding of fractions, especially unit fractions (fractions with numerator 1); developing understanding of the structure of rectangular arrays and of area; and describing and analyzing two-dimensional shapes.

Course Sequence:

Unit Title	Pacing
Unit 1: Place Value, Addition & Subtraction	46 days
Unit 2: Multiplication	39 days
Unit 3: Division	23 days
Unit 4: Fractions	38 days
Unit 5: Area and Perimeter	32 days
Unit 6: Calendar Math	Full-year

Pre-Requisite- 2nd grade math

Unit 1 Overview

Content Area: Math

Unit Title: Place Value - Addition and Subtraction

Grade Level: 3

Unit Summary: In this unit, students will engage in activities to reinforce place value concepts learned in second grade. Students will build upon this foundation by using mental math strategies to solve one and two digit problems to develop fluency with numbers. Students will learn strategies for solving addition and subtraction and be able to explain how and why they solved using these strategies.

Standards

Standards (Content and Technology)**:**

CPI#:	Statement:
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.[3]
3.OA.D.9	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*
3.NBT.A.1	Use place value understanding to round whole numbers to the nearest 10 or 100.
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.
SMP.1	Make sense of problems and persevere in solving them.
SMP.2	Reason abstractly and quantitatively.
SMP.3	Construct viable arguments and critique the reasoning of others.
SMP.4	Model with mathematics.
SMP.5	Use appropriate tools strategically.
SMP.6	Attend to precision.
SMP.7	Look for and make use of structure.
SMP.8	Look for and express regularity in repeated reasoning.

21st century themes and skills (standard 9)

9.1.4.E.2	Apply comparison shopping skills to purchasing decisions.

Educational Technology Standards

8.1.5.A.1	Understand and Use Technology Systems-Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

8.1.5.A.2	Select and use applications effectively and productively.- Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.
8.1.5.A.3	Use a graphic organizer to organize information about problem or issue.

Career Ready Practices

CRP2	Apply appropriate academic and technical skills
CRP4	Communicate clearly and effectively and with reason
CRP8	Utilize critical thinking to make sense of problems and persevere in solving them

Interdisciplinary Connections

RI.3.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
SL.3.3	Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.
3-PS2-2.	Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.

Unit Essential Question(s):	**Unit Enduring Understandings:**
● Why do we solve using estimation as opposed to an actual amount? ● What strategies are effective for solving addition and subtraction problems? ● When are these strategies appropriate to use?	● Estimation is used to check the reasonableness of an answer. ● Depending on the numbers used I can apply different strategies

Unit Learning Targets/Objectives:
Students will…
● Round two and three digit numbers to the nearest ten and hundred
● Check their answers for reasonableness through using estimation
● Use various strategies (add up, find the difference, associative and commutative properties of addition, etc.) to solve addition and subtraction problems

Evidence of Learning

Formative Assessments: Entrance Slips, exit slips, quizzes, question/answer routines, homework, small group work, practice pages, active participation (i.e. whiteboard work student talk)

Summative/Benchmark Assessment(s): unit/ benchmark assessment,

Alternative Assessments: Modified versions of formative and summative assessments, project-based assessment, oral assessment

Resources/Materials (copy hyperlinks for digital resources)**:**
● Teacher created binders
● Teacher created calendars
● SMARTBOARD
● Math Textbook
● Everyday Counts Calendar Math
● Online Resources (i.e ThinkCentral, Reflex, IXL. Edulastic, BrainPop,etc.)
● Math Manipulatives
  ○ Base ten blocks

Modifications:

- **Special Education Students/504**
  - Allow errors
  - Rephrase questions, directions, and explanations
  - Allow extended time to answer questions, and permit drawing, as an explanation
  - Accept participation at any level, even one word
  - Consult with Case Managers and follow IEP accommodations/modifications

- **English Language Learners**
  - Assign a buddy, same language or English speaking
  - Allow errors in speaking
  - Rephrase questions, directions, and explanations
  - Allow extended time to answer questions
  - Accept participation at any level, even one word

- **At-Risk Students**
  - Provide extended time to complete tasks
  - Consult with Guidance Counselors and follow I&RS procedures/action plans
  - Consult with classroom teacher(s) for specific behavior interventions
  - Provide rewards as necessary

- **Gifted and Talented Students**
  - Provide extension activities
  - Build on students' intrinsic motivations
  - Consult with parents to accommodate students' interests in completing tasks at their level of engagement

Lesson Plans

Lesson Name/Topic	Lesson Objective(s)	Time frame (day(s) to complete)
Welcome	Students will analyze and categories shapes based on their attributes	5 days
Pre-assessment	Students will complete an assessment involving both procedural and problem solving tasks	2 days
Exploration	Students will explore the math tools in the classroom	1 day
Open Ended	Students will complete an open ended task solving addition and subtraction word problems	1 day
Arithmetic patterns	Students will identify arithmetic patterns in the addition table and explain them using properties of operations.	3 days
Rounding	Students will round two digit numbers using base ten blocks	1 day
Rounding	Students will round three digit numbers using base ten blocks	1 day
Rounding	Students will round three digit numbers using a hundreds grid or open number line	1 day
Estimate Sums	Mathematicians will estimate the sum by rounding first then adding	1 day
Mental Math Strategies	Mathematicians will use mental strategies to make a fast ten to add up	1 day

Math Routines, Practice and Application	Mathematicians will create and practice math routines in the classroom and develop rules for play of math games	1 day
Commutative and Associative Properties of Addition	Mathematicians will learn and apply the Properties of addition (Commutative and Associative) to solve problems.	1 day
Expanded Form	Mathematicians will apply place value concepts to show the digits value in a number	1 day
Partial Sums (concrete + representational)	Mathematicians will model addition problems using the partial sums strategy with base ten blocks	1 day
Partial Sums (symbolic)	Mathematicians will model addition problems using the partial sums strategy with base ten blocks and record symbolic representations of the number	1 day
Traditional Algorithm for Subtraction	Mathematicians will solve addition problems using the traditional algorithm	3 days
Assessment	Mid-Chapter Assessment	1 day
Adding up on a number line	Mathematicians will model adding up on the number line	1 day
Algorithms for Subtraction	Mathematicians will use base ten blocks to model subtraction with two digit numbers and regrouping	1 day
Algorithms for Subtraction	Mathematicians will use base ten blocks to model subtraction with three digit numbers and regrouping	1 day
Estimation	Mathematicians will use estimation with addition to check if their work is reasonable	1 day
Estimation	Mathematicians will use estimation with subtraction to check if their work is reasonable	1 day

Add Up (related to subtraction) Strategy	Mathematicians will use the add up strategy to solve subtraction problems to find the difference	1 day
Same Change Rule Strategy	Mathematicians will apply the same change rule to solve subtraction problems involving zero's in the tens and ones place	1 day
Review	Review concepts taught through a game or online kahoot	1 day
Formative Assessment	Mathematicians will complete problems to determine where extra support or enrichment is necessary. (Formative Assessment)	1 day
Estimation	Mathematicians will estimate differences using three digit problems	1 day
Mixed Addition and Subtraction Word Problems	Mathematicians will solve both addition and subtraction problems (application word problems)	2 days
Composition and Decomposition of Numbers	Mathematicians will rename numbers by composing and decomposing two and three digit numbers	Embed throughout unit- 2 days
Composition and Decomposition of Numbers	Mathematicians will compose and decompose two and three digit numbers to find the sum (true and false activities)	Embed throughout unit- 2 days
Reteaching	Mathematicians will review previously taught concepts in small groups	3 days
Assessment	Mathematicians will take a test to display their knowledge of place value concepts related to addition and subtraction	1 day

Teacher Notes:
- Include benchmark assessment- procedure and problem solving over the course of 3 math periods (procedure- 1 period; problem solving 2 periods)
- Include daily practice of basic facts (addition and subtraction) through games and fluency practice
- Insert Open ended tasks throughout the unit
- Insert PARCC like practice problems aligned to these standards and concepts taught throughout the unit

Additional Resources
Grade Level Team is shared on the following Google Docs including activities to practice and apply skills entitled:
- Whole class game- Talk a Mile a Minute
- Build 1,000 using noodles
- This website has resources for learning tasks- link

Unit 2 Overview

Content Area: Math

Unit Title: Introduction to Multiplication

Grade Level: 3

Unit Summary: In this unit, students will engage in a number of hands on learning activities to build a foundation and conceptual understanding of multiplication. Students will engage in reading work problems and identifying the factors (number of groups and number in each group) and product (total amount in all). Students will model the math using hands on, pictures, and symbolic methods. Students will begin to be held responsible for automaticity of facts and to committing the multiplication facts to memory upon the completion of third grade.

STANDARDS

Standards (Content and Technology)**:**

CPI#:	Statement:
NJSLS Standards	
3.NBT A.3	A. Use place value understanding and properties of operations to perform multi-digit arithmetic. Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9×80, 5×60) using strategies based on place value and properties of operations.
3.OA.A.1	Represent and solve problems involving multiplication and division. Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. For example, describe and/or represent a context in which a total number of objects can be expressed as 5×7.
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.1
3.OA.A.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = \div 3$, $6 \times 6 = ?$.
3.OA.B. 5	Understand properties of multiplication and the relationship between multiplication and Division. Apply properties of operations as strategies to multiply and divide.2 Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)
3.OA.C.7	Multiply and divide within 100. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.OA.D.9	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends*

SMP.1	Make sense of problems and persevere in solving them.
SMP.2	Reason abstractly and quantitatively.
SMP.3	Construct viable arguments and critique the reasoning of others.
SMP.4	Model with mathematics.
SMP.5	Use appropriate tools strategically.
SMP.6	Attend to precision.
SMP.7	Look for and make use of structure.
SMP.8	Look for and express regularity in repeated reasoning

21st century themes and skills (standard 9)

9.1.4.E.2	Apply comparison shopping skills to purchasing decisions.

Educational Technology Standards

8.1.5.A.1	Understand and Use Technology Systems-Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
8.1.5.A.2	Select and use applications effectively and productively.- Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.
8.1.5.A.3	Use a graphic organizer to organize information about problem or issue.

Interdisciplinary Connections:

SL.3.1.B	Follow agreed-upon norms for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
SL.3.1.C	Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.
SL.3.1.D	Explain their own ideas and understanding in light of the discussion.

Unit Essential Question(s):	**Unit Enduring Understandings:**
● How does multiplication assist in solving ● When is it appropriate to use multiplication for solving problems?	● Multiplication is repeated addition ● Multiplication speeds up and is an efficient strategy when dealing with multiple groups of something

Unit Learning Targets/Objectives:
Students will…
● Use hands on materials to model multiplication
● Model using drawings to represent multiplication problems
● Use various strategies (equal groups, arrays, associative and commutative properties of multiplication, etc.) to solve multiplication problems
● Begin to commit facts to memory for fluency
● Multiply one digit numbers by 10
● Write equations including a variable and solve

Evidence of Learning

Formative Assessments: Entrance Slips, exit slips, quizzes, question/answer routines, homework, small group work, practice pages, active participation (i.e. whiteboard work student talk)

Summative/Benchmark Assessment(s): unit/ benchmark assessment,

Alternative Assessments: Modified versions of formative and summative assessments, project-based assessment, oral assessment

Resources/Materials (copy hyperlinks for digital resources)**:**

- Teacher created binders
- Teacher created calendars
- SMARTBOARD
- Math Textbook
- Everyday Counts Calendar Math
- Online Resources (i.e ThinkCentral, Reflex, IXL. Edulastic, BrainPop, etc.)
- Math Manipulatives

Modifications:

- **Special Education Students/504**
  - Allow errors
  - Rephrase questions, directions, and explanations
  - Allow extended time to answer questions, and permit drawing, as an explanation
  - Offer opportunity to utilize concrete math tools during all coursework and assessments
  - Consult with Case Managers and follow IEP accommodations/modifications

- **English Language Learners**
  - Assign a buddy, same language or English speaking
  - Allow errors in speaking
  - Rephrase questions, directions, and explanations
  - Allow extended time to answer questions
  - Accept participation at any level, even one word

- **At-Risk Students**
  - Provide extended time to complete tasks
  - Consult with Guidance Counselors and follow I&RS procedures/action plans
  - Consult with classroom teacher(s) for specific behavior interventions
  - Provide rewards as necessary

- **Gifted and Talented Students**
  - Provide extension activities
  - Build on students' intrinsic motivations
  - Consult with parents to accommodate students' interests in completing tasks at their level of engagement

Lesson Plans		

Lesson Name/Topic	Lesson Objective(s)	Time frame (day(s) to complete)
Introduction to Multiplication Part I		
Exploration	Mathematicians will read and explore multiplication concepts through books and visuals	1 day
Equal Groups	Mathematicians will determine groups of objects by using katie cubes or beans to make equal groups	1 day
Multiplication as Repeated Addition	Mathematicians will develop repeated addition number sentences and relate to concrete models	1 day

Assessment	Mathematicians will take a short assessment to determine their initial understanding of multiplication	1 day
Commutative Property	Mathematicians will model multiplication through arrays and explore the commutative property	2 days
Fact Practice	Mathematicians will being to memorize x2 multiplication facts through skip counting, various activities and games	1 day
Multiplication Properties: Identity and Zero	Mathematicians will model and memorize the rule for multiplying with 1 and 0	1 day
Assessment	Mathematicians will take Part 1 of teacher developed assessment on the basic concepts of multiplication	1 day
Multiplication Part II		
Determine a Rule	Mathematicians will determine a rule to complete input and output tables utilizing known multiplication facts (GOMATH 5.1)	1 day
Determine a Rule	Mathematicians will determine a rule to complete input and output tables utilizing known multiplication facts (GOMATH 3.2)	1 day
Distributive Property	Mathematicians will complete the distributive property problems using katie cubes with factors like 5 x 12 (break into place value-- tens and ones + color code)	3 days
Distributive Property	Mathematicians will complete the distributive property problems using katie cubes with factors like 5 x 9	1 day
Distributive Property	Mathematicians will complete the distributive property problems	1 day
Assessment	Mathematicians will take a short teacher created quiz to assess their understanding of distributive property	1 day
Associative Property	Mathematicians will learn and apply associative property problems Day 1- Model concretely with math tools Day 2- Move to symbolic	2 days
Fact Practice (Dispersed throughout unit)	Mathematicians will use multiplication strategies with multiples of 10	1 day

Fact Practice (Dispersed throughout unit)	Mathematicians will multiply with one-digit numbers and multiples of ten	1 day
Fact Practice (Dispersed throughout unit)	Mathematicians will multiply and find the unknown factors in a problem	1 day
Fact Practice (Dispersed throughout unit)	Mathematicians will use strategies to solve and memorize x3 multiplication facts through skip counting, various activities and games	1 day
Fact Practice (Dispersed throughout unit)	Mathematicians will use strategies to solve and memorize x4 multiplication facts through skip counting, various activities and games	1 day
Fact Practice (Dispersed throughout unit)	Mathematicians will use strategies to solve and memorize x5 multiplication facts through skip counting, various activities and games	1 day
Fact Practice (Dispersed throughout unit)	Mathematicians will use strategies to solve and memorize x6 multiplication facts through skip counting, various activities and games	1 day
Fact Practice (Dispersed throughout unit)	Mathematicians will use strategies to solve and memorize x7 multiplication facts through skip counting, various activities and games	1 day
Fact Practice (Dispersed throughout unit)	Mathematicians will use strategies to solve and memorize x8 multiplication facts through skip counting, various activities and games	1 day
Fact Practice (Dispersed throughout unit)	Mathematicians will use strategies to solve and memorize x9 multiplication facts through skip counting, various activities and games	1 day
Fact Practice (Dispersed throughout unit)	Mathematicians will use strategies to solve and memorize x10 multiplication facts through skip counting, various activities and games	1 day
Fact Practice (Dispersed throughout unit)	Mathematicians will use strategies to solve and memorize x11 multiplication facts through skip counting, various activities and games	1 day
Fact Practice	Mathematicians will use strategies to solve and memorize x12 multiplication facts	1 day

(Dispersed throughout unit)	through skip counting, various activities and games	
Assessment (Dispersed throughout unit)	Mathematicians will take a short teacher created quiz to assess acquisition of multiplication facts	1 day
Arithmetic patterns	Students will identify arithmetic patterns in the multiplication table and explain them using properties of operations.	3 days
Assemblies		3 days

Teacher Notes:
Include daily practice of skip counting procedures through chants, games and fluency practice
Insert Open ended practice throughout the unit
Insert PARCC like practice problems aligned to these standards and concepts taught throughout the unit

Additional Resources
Literature: Too Many Kangaroo Things to Do!, One Hundred Angry Ants, Amazing Beans, Each Orange had Eight Slices

Unit 3 Overview

Content Area: Math

Unit Title: Division

Grade Level: 3

Unit Summary: Students develop an understanding of division of whole numbers through activities and problems involving equal-sized groups, arrays, and area models; multiplication is finding an unknown product, and division is finding an unknown factor in these situations. Students will solve problems related to equal-sized groups and amount of groups.

Unit 3 Standards

Standards (Content and Technology)**:**

CPI#:	Statement:
NJSLS Standards	
3.OA.A.1	Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. For example, describe and/or represent a context in which a total number of objects can be expressed as 5×7.
3.OA.A.2	Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe and/or represent a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.
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.1
3.OA.A.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = \div 3$, $6 \times 6 = ?$.
3.OA.B.5	Apply properties of operations as strategies to multiply and divide.2 Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5+ 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.) 6.
3.OA.B.6	Understand division as an unknown-factor problem. For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.
3.OA.C.7	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
SMP.1	Make sense of problems and persevere in solving them
SMP.2	Reason abstractly and quantitatively.

SMP.3	Construct viable arguments and critique the reasoning of others.
SMP.4	Model with mathematics.
SMP.5	Use appropriate tools strategically.
SMP.6	Attend to precision.
SMP.7	Look for and make use of structure.
SMP.8	Look for and express regularity in repeated reasoning.

Career Ready Practices

CRP1	Act as a responsible and contributing citizen and employee
CRP2	Apply appropriate academic and technical skills
CRP5	Consider the environmental, social and economic impacts of decisions
CRP8	Utilize critical thinking to make sense of problems and persevere in solving them

21st century themes and skills (standard 9)

9.1.4.E.2	Apply comparison shopping skills to purchasing decisions.

Educational Technology Standards

8.1.5.A.1	Understand and Use Technology Systems-Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
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Interdisciplinary Connections

SL.3.1.B	Follow agreed-upon norms for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
SL.3.1.C	Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.
SL.3.1.D	Explain their own ideas and understanding in light of the discussion.

Unit Essential Question(s):
- How are multiplication and division related?
- What is division and when do we use it?

Unit Enduring Understandings:
- Multiplication speeds up and is an efficient strategy when dealing with multiple groups of something
- Division is breaking down a total amount into smaller equal groups
- We find multiplication and division in real-life and can model it in many ways

Unit Learning Targets/Objectives:
Students will…
- Use hands on materials to model division
- Model using drawings to represent division problems

- Use various strategies (fair share, equal groups, etc.) to solve division problems
- Relate multiplication and division through solving and writing equations

Evidence of Learning

Formative Assessments: Entrance Slips, exit slips, quizzes, question/answer routines, homework, small group work, practice pages, active participation (i.e. whiteboard work student talk)

Summative/Benchmark Assessment(s): unit/ benchmark assessment

Alternative Assessments: Modified versions of formative and summative assessments, project-based assessment, oral assessment

Resources/Materials (copy hyperlinks for digital resources)**:**
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- Math Textbook
- Everyday Counts Calendar Math
- Online Resources (i.e ThinkCentral, Reflex, IXL. Edulastic, BrainPop, etc.)
- Math Manipulatives
  - Counters, beans, egg cartons, katie cubes

Modifications:
- **Special Education Students/504**
  - Allow errors
  - Rephrase questions, directions, and explanations
  - Allow extended time to answer questions, and permit drawing, as an explanation
  - Accept participation at any level, even one word
  - Consult with Case Managers and follow IEP accommodations/modifications

- **English Language Learners**
  - Assign a buddy, same language or English speaking
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- **At-Risk Students**
  - Provide extended time to complete tasks
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  - Consult with classroom teacher(s) for specific behavior interventions
  - Provide rewards as necessary

- **Gifted and Talented Students**
  - Provide extension activities
  - Build on students' intrinsic motivations
  - Consult with parents to accommodate students' interests in completing tasks at their level of engagement

Lesson Plans- Suggested Pacing Guide

Lesson Name/Topic	Lesson Objective(s)	Time frame (day(s) to complete)
Introduction to Division	Students will practice using manipulatives to model the act of division	1 day
Fair Share	Students utilize strategy of sharing equally across groups to divide	1 day
Equal Groups	Students will make equal groups to divide	1 day
Vocabulary	Students will learn vocabulary associated with division	1 day

Repeated subtraction	Students will model division through repeated subtraction	2 days
Assessment	Students will complete mid-chapter review	1 day
Reteach	Dependent on student need, practice and review unit outcomes	1 day
Division Rules	Students will practice dividing by 1 and 0	1 day
Division Practice	Students will play games to practice division	1 day
Arrays	Students will use arrays to divide	1 day
Relate Multiplication and Division	Students will relate multiplication and division through modeling and writing equations	2 days
Word Problems	Students will apply strategies learned by solving division word problems	3 days
Fact Families	Students will identify factors and products and relate to division by writing equations	1 day
Open ended Response	Students will complete an open ended response and translate to the computer	2 day
Practice	Students will solve problems and divide by number 2	1 day
Review	Students will practice and apply skills learned in unit	1 day
Assessment	Students will demonstrate knowledge of unit outcomes	1 day
Reteach	Dependent on student need, practice and review unit outcomes	1 day
Assemblies		2 days

Teacher Notes:
- Include daily practice of skip counting procedures through chants, games and fluency practice
- Insert Open ended practice throughout the unit
- Insert PARCC like practice problems aligned to these standards and concepts taught throughout the unit

Additional Resources
- GOMath

Unit 4 Overview

Content Area: Math

Unit Title: Fractions

Grade Level: 3

Unit Summary: The purpose of this unit is to introduce students to fractions. Students were previously exposed to fractions through shapes and regions and will begin to view and present fractions on a number line. Students develop an understanding of fractions, beginning with unit fractions. Students view fractions in general as being built out of unit fractions, and they use fractions along with visual fraction models to represent parts of a whole. Students understand that the size of a fractional part is relative to the size of the whole. Students are able to use reasoning and manipulatives to compare fractions.

Unit 4 Standards

Standards (Content and Technology)**:**

CPI#:	Statement:
NJSLS Standards	
3.NF.A.1	A. Develop understanding of fractions as numbers. 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 $1/b$.

3.NF.A.2	Understand a fraction as a number on the number line; represent fractions on a number line diagram.
	      a. Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and 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.
	      b. 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.

3.NF.A.3	Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
	      a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
	      b. 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.
	      c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.*
	      d. 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

3.G.A.2	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as ¼ of the area of the shape.*
SMP.1	Make sense of problems and perservere in solving them
SMP.2	Reason abstractly and quantitatively

SMP.3	Construct viable arguments and critique the reasoning of others
SMP.4	Model with mathematics
SMP.5	Use appropriate tools strategically
SMP.6	Attend to precision
SMP.7	Look for and make use of structure
SMP.8	Look for and express regularity in repeated reasoning

21st century themes and skills (standard 9)

9.1.4.E.2	Apply comparison shopping skills to purchasing decisions

Educational Technology Standards

8.1.5.A.1	Understand and Use Technology Systems-Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
8.1.5.A.2	Select and use applications effectively and productively.- Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.
8.1.5.A.3	Use a graphic organizer to organize information about problem or issue.

Career Ready Practices

CRP1.	Act as a responsible and contributing citizen and employee.
CRP2.	Apply appropriate academic and technical skills.
CRP3.	Attend to personal health and financial well-being.
CRP5.	Consider the environmental, social and economic impacts of decisions.
CRP8	Utilize critical thinking to make sense of problems and persevere in solving them
CRP10.	Plan education and career paths aligned to personal goals.

Interdisciplinary Connection

SL.3.1.A	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. Explicitly draw on previously read text or material and other information known about the topic to explore ideas under discussion.
SL.3.1.B	Follow agreed-upon norms for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
SL.3.1.C	Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.
SL.3.1.D	Explain their own ideas and understanding in light of the discussion.

Unit Essential Question(s):
- When are fractions used in our lives?
- How can we represent fractions using a model?

Unit Enduring Understandings:
- Fractions are numbers that represent equal parts
- Fractions are used in linear (number lines) concepts and regional (shapes) concepts
- Equivalent fractions are equal quantities or take up the same amount of space

Unit Learning Targets/Objectives:
Students will…
- identify numerator and denominator
- Generate equivalent fractions
- Partition a number line into equal parts
- Plot and label fractions on a number line
- Recognize one whole as a fractional amount

Evidence of Learning

Formative Assessments: Entrance Slips, exit slips, quizzes, question/answer routines, homework, small group work, practice pages, active participation (i.e. whiteboard work student talk)

Summative/Benchmark Assessment(s): unit/ benchmark assessment

Alternative Assessments: Modified versions of formative and summative assessments, project-based assessment, oral assessment

Resources/Materials (copy hyperlinks for digital resources)**:**

- Teacher created binders
- Teacher created calendars
- SMARTBOARD
- Math Textbook
- Everyday Counts Calendar Math
- Online Resources (i.e ThinkCentral, Reflex, IXL. Edulastic, BrainPop, NearPod, Flocabulary, etc.)
- Math Manipulatives
  - Fraction tiles, fraction circles, Smartpal, katie kubes (linking cubes), pattern blocks, blank number lines, fraction strips and circles (on paper)

Modifications:
- **Special Education/ 504 Students -**
  - Allow errors
  - Rephrase questions, directions, and explanations
  - Allow extended time to answer questions, and permit drawing, as an explanation
  - Accept participation at any level, even one word
  - Consult with Case managers and follow IEP/ 504 accommodations/ modifications
- **English Language Learners -**
  - Assign a buddy, same language or English speaking
  - Allow errors in speaking
  - Rephrase questions, directions, and explanations
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- **At-Risk Students -**
  - Provide extended time to complete tasks
  - Consult with Guidance Counselors and follow I&RS procedures / action plans
  - Consult with classroom teacher(s) for specific behavior interventions

Provide rewards as necessary
- **Gifted and Talented Students-**
  - o Provide extension activities
  - o Build on students' intrinsic motivations
  - o Consult with parents to accommodate students' interests in completing tasks at their level of engagement

Lesson Plans- Suggested Pacing Guide		
Lesson Name/ Topic	**Lesson Objective(s)**	**Time frame (day(s) to complete)**
Introduction to fractions	Students will explore fractions through problem solving and using manipulatives	2 days
Unit Fractions	Build one whole when given the unit fraction	2 days
Unit Fraction on a Number Line	Build one whole when given the unit fraction on a number line	1 day
Fractions on a Number Line	Read fractions on a number line. Plot fractions on a number line.	4 days
Review	Mathematicians will play concentration to practice vocabulary associated with fractions	1 day
Equivalent Fractions	Identify equivalent fractions with halves, fourths, eighths using fraction tiles	2 days
Equivalent Fractions	Identify equivalent fractions with thirds and sixths using fraction tiles	2 days
Number Lines	Partition number lines into halves, fourths, eighths using fraction strips	1 day
Number Lines	Partition number lines into thirds, sixths using fraction strips	1 day
Number Lines	Partition number lines into halves, fourths, eighths from memory	1 day
Number Lines	Partition number lines into thirds, sixths from memory	1 day
Number Lines	Mathematicians will work in partnerships to play concentration to apply skills of number lines	1 day
Equal Shares	Divide models to make equal shares.	2 days
Parts of a group	Find fractional parts of a group using unit fractions.	1 day
Find the Whole	Find the whole group using unit fractions	1 day
Review	Students will review all skills and practice in small groups with targeted feedback	1 day
Assessment	Students will demonstrate their knowledge on unit outcomes	1 day
Reteach	Dependent on student need, practice and review unit outcomes	1 day
Unit Bend 2: PATTERN BLOCKING		

Reference Cards	**BUILD REFERENCE CARDS**	1 day
Equivalent Fractions	Students build shapes with pattern blocks to show equivalencies	2 days
Compare Fractions	Compare fractions with the s*ame denominator*	1 day
Compare Fractions	Compare fractions with the *same numerator*	2 days
Explanations	Students will provide justification or explanations to their comparisons	1 day
Explanations	Students will evaluation their explanations based on a rubric that is co-created as a class	1 day
Reteach/ Review	Students will review all skills and practice in small groups with targeted feedback	1 day
Assessment	Assessment	1 day
Reteach	Dependent on student need, practice and review unit outcomes	1 day

Teacher Notes & Additional Resources

- Make a Fraction Flip Book
- Have students make their own set of fraction strips to use at home
- http://www.fldoe.org/core/fileparse.php/7576/urlt/Grade3FractionUnit.pdf This website offers additional resources and tasks for students to complete along with some formative assessments

Unit 5 Overview

Content Area: Math

Unit Title: Area & Perimeter

Grade Level: 3

Unit Summary:

In this unit, students recognize area as an attribute of two-dimensional regions. They will use concrete math tools to measure the area of a shape by finding the total number of same size units of area required to cover the shape without gaps or overlaps. Students will connect their knowledge of multiplication to rectangular arrays to solve for

area. Students will also solve for the perimeter of shapes. They will apply their fractional knowledge to use rulers to measure side lengths.

Unit 5 Standards

Standards (Content and Technology)**:**

CPI#:	Statement:
NJSLS Standards	

3.MD.C.5	Geometric measurement: understand concepts of area and relate area to multiplication and to addition. Recognize area as an attribute of plane figures and understand concepts of area measurement.
	     a. 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.
	     b. A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units.

3.MD.C.6	Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units).

3.MD.C.7	Relate area to the operations of multiplication and addition.
	     a. 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.
	     b. 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.
	     c. 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 $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.
	     d. 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.

3.MD.D.8	D. Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures. 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.
SMP.1	Make sense of problems and persevere in solving them

SMP.2	Reason abstractly and quantitatively
SMP.3	Construct viable arguments and critique the reasoning of others
SMP.4	Model with mathematics
SMP.5	Use appropriate tools strategically
SMP.6	Attend to precision
SMP.7	Look for and make use of structure
SMP.8	Look for and express regularity in repeated reasoning
21st century themes and skills (standard 9)	
9.1.4.E.2	Apply comparison shopping skills to purchasing decisions
Educational Technology Standards	
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8.1.5.A.3	Use a graphic organizer to organize information about problem or issue.
Career Ready Practices	
CRP1.	Act as a responsible and contributing citizen and employee.
CRP2.	Apply appropriate academic and technical skills.
CRP3.	Attend to personal health and financial well-being.
Interdisciplinary Connection	
SL.3.1.A	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. Explicitly draw on previously read text or material and other information known about the topic to explore ideas under discussion.
SL.3.1.B	Follow agreed-upon norms for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
SL.3.1.C	Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.
SL.3.1.D	Explain their own ideas and understanding in light of the discussion.

Unit Essential Question(s):
- How do you find the perimeter of a shape?
- What shapes can you make when you know the perimeter?
- How do you find the area of a shape?

Unit Enduring Understandings:

- Understand the difference between area and perimeter
- Perimeter is the measurement of the distance around a shape
- Area is the amount of square units inside a shape
- Recognize the difference between a linear length (i.e. centimeter) and a square unit (i.e. square centimeter)

Unit Learning Targets/Objectives:
Students will…
- Identify real life connections of when and how to use area and perimeter
- Recognize area as additive
- Solve real-world problems related to area and perimeter
- Utilize formulas such as

Evidence of Learning

Formative Assessments: Entrance Slips, exit slips, quizzes, question/answer routines, homework, small group work, practice pages, active participation (i.e. whiteboard work student talk)

Summative/Benchmark Assessment(s): unit/ benchmark assessment,

Alternative Assessments: Modified versions of formative and summative assessments, project-based assessment, oral assessment

Resources/Materials (copy hyperlinks for digital resources)**:**
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- Teacher created calendars
- SMARTBOARD
- Math Textbook
- Everyday Counts Calendar Math
- Online Resources (i.e ThinkCentral, Reflex, IXL. Edulastic, BrainPop, NearPod, Flocabulary, etc.)
- Math Manipulatives (toothpicks, square tiles, geoboards, rulers, dot paper, graph paper)

Modifications:
- **Special Education/ 504 Students -**
  - Allow errors
  - Rephrase questions, directions, and explanations
  - Allow extended time to answer questions, and permit drawing, as an explanation
  - Accept participation at any level, even one word
  - Consult with Case managers and follow IEP/ 504 accommodations/ modifications
- **English Language Learners -**
  - Assign a buddy, same language or English speaking
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- **At-Risk Students -**
  - Provide extended time to complete tasks
  - Consult with Guidance Counselors and follow I&RS procedures / action plans
  - Consult with classroom teacher(s) for specific behavior interventions
    Provide rewards as necessary
- **Gifted and Talented Students-**
  - Provide extension activities
  - Build on students' intrinsic motivations
  - Consult with parents to accommodate students' interests in completing tasks at their level of engagement

Lesson Plans- Suggested Pacing Guide		
Lesson Name/ Topic	**Lesson Objective(s)**	**Time frame (day(s) to complete)**
What is area and perimeter?	Students will explore area and perimeter through inquiry- problem solving to develop a real world understanding	2 days
Modeling perimeter	Students will use toothpicks to model perimeter	2 days
Finding perimeter	Students will use a ruler to find side lengths and perimeter	1 day
Finding perimeter	Students will add up all the sides to find perimeter	2 days
Modeling area	Students will model that area is using square tiles	2 days
Assessment	Students will complete a mid-chapter quiz to monitor their understanding of area and perimeter	1 day
Counting square units	Students will find the area of a shape by counting the square units	1 day
Area is like an array!	Students will find the area by multiplying the length times width	2 days
Irregular shapes	Students will find the area of a irregular shape though decomposing	3 days
Side Lengths	Students will find the missing side lengths	2 days
Same area, Different Perimeters	Students will compare shapes that have the same area and different perimeters	1 day
Same perimeter, different areas	Students will compare shapes that have the same perimeter and different areas	1 day
Review	Students will practice all skills in an interactive format	1 day
Open Ended	Students will complete a word problem and share outcomes with one another	1 day
Assessment	Assessment	1 day
NJSLA	Testing	4 days

Teacher Notes
GoMath Textbook pages:
- Chapter 11
- Model Perimeter page 435-436
- Find Perimeter page 437-440
- EdConnect Practice Test

Unit 6 Overview

Content Area: Math

Unit Title: Calendar Math

Grade Level: 3

Unit Summary: The purpose of this unit is for students to preview and review skills by building readiness for upcoming concepts and learned content. It is supplementary to the units taught and embeds key concepts to support student learning in math class. Students are exposed to and practice all third grade math standards in a hands on way or through literature. This is taught outside of the math class period for a suggested timing of 15 minute increments on a daily basis over the course of a month.

Unit 6 Standards

Standards (Content and Technology)**:**

CPI#:	Statement:
NJSLS Standards	
3.OA.A.1	A. Represent and solve problems involving multiplication and division. 1. Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. *For example, describe and/or represent a context in which a total number of objects can be expressed as 5×7.*
3.OA.A.2	Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe and/or represent a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.*
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.[1]
3.OA.A.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = \square \div 3$, $6 \times 6 = ?$*
3.OA.B.5	B. Understand properties of multiplication and the relationship between multiplication and division. Apply properties of operations as strategies to multiply and divide.[2] *Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)*
3.OA.B.6	Understand division as an unknown-factor problem. *For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.*
3.OA.C.7	C. Multiply and divide within 100. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

3.OA.D.8	D. Solve problems involving the four operations, and identify and explain patterns in arithmetic. 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.[3]
3.OA.D.9	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*
3.NF.A.1	A. Develop understanding of fractions as numbers. 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 $1/b$.

3.NF.A.2	Understand a fraction as a number on the number line; represent fractions on a number line diagram.
	  a. Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and 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.
	  b. 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.

3.NF.A.3	3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
	  a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
	  b. 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.
	  c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.*
	  d. 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

3.MD.A.1	A. Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. 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.
3.MD.A.2	Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).[6] Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.[7]
3.MD.B.3	B. Represent and interpret data. 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. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*

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.

3.MD.C.5	C. Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
	
	    5. Recognize area as an attribute of plane figures and understand concepts of area measurement.
	        a. 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.
	        b. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.

3.MD.C.6	Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units).

3.MD.C.7	Relate area to the operations of multiplication and addition.
	    a. 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.
	    b. 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.
	    c. 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 $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.
	    d. 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.

3.MD.D.8	D. Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures. 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.
3.G.A.1	A. Reason with shapes and their attributes. 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. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.*
SMP.1	Make sense of problems and persevere in solving them
SMP.2	Reason abstractly and quantitatively
SMP.3	Construct viable arguments and critique the reasoning of others
SMP.4	Model with mathematics
SMP.5	Use appropriate tools strategically
SMP.6	Attend to precision

SMP.7	Look for and make use of structure
SMP.8	Look for and express regularity in repeated reasoning

21st century themes and skills (standard 9)

9.1.4.E.2	Apply comparison shopping skills to purchasing decisions

Educational Technology Standards

8.1.5.A.1	Understand and Use Technology Systems-Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
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Career Ready Practices

CRP1	Act as a responsible and contributing citizen and employee.
CRP2	Apply appropriate academic and technical skills.
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Interdisciplinary Connection

SL.3.1.A	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. Explicitly draw on previously read text or material and other information known about the topic to explore ideas under discussion.
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SL.3.1.C	Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.
SL.3.1.D	Explain their own ideas and understanding in light of the discussion.

Unit Essential Question(s):
- What mental math strategies support solving addition and subtraction problems?
- How is multiplication more efficient than addition?
- How can I collect and organize data?
- Are area and perimeter always equal or can they be different?
- How can a pattern be described?
- How can we keep track of time?
- How can we describe different two- and three- dimensional shapes?

Unit Enduring Understandings:
- Numbers and quantities can be manipulated to add and subtract with ease
- Multiplication involves grouping items or objects together
- Information can be collected through surveys and tally charts and presented in a graph
- Figures and/or shapes can have the same area, but different perimeters
- Patterns can be described through shape, color, size, and frequency
- We can keep track of time to the one, five, quarter and half hour increments using a clock
- Three-dimensional shapes have three attributes (length, width, height)
- Two-dimensional shapes typically have a name
- Polygons are closed shapes with one interior, made of straight lines
- Quadrilaterals are a four-sided figure

Unit Learning Targets/Objectives:
Students will…
- Develop number sense
- Practice mental math strategies for addition and subtraction
- Recognize odd, even and multiples patterns on a calendar
- Group and count by 2, 3, 4, 5, 6, 7, 8, 9, 10
- Known coin values and coin equivalencies
- Count mixed coins
- Analyze patterns on a calendar
- Collect, organize, and represent data in forms such as: tally chart, frequency table, bar graph, line plot
- Understand and solve problems involving area and perimeter
- Estimate and compute problems involving weight and capacity
- Identify the time on a clock
- Determine the elapsed time
- Examine three-dimensional shapes
- Compare and analyze attributes of polygons
- Partition a shape to show equal parts
- Compare and analyze attributes of 3-dimensional shapes
- Compare and analyze attributes of two-dimensional shapes
- Compare and analyze attributes of quadrilaterals

Evidence of Learning

Formative Assessments: Entrance Slips, exit slips, quizzes, question/answer routines, homework, small group work, practice pages, active participation (i.e. whiteboard work, student talk)

Summative/Benchmark Assessment(s): unit/ benchmark assessment, Calendar Math monthly assessments

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- Online Resources (i.e ThinkCentral, Reflex, IXL. Edulastic, BrainPop, NearPod, Flocabulary, etc.)

- Math Manipulatives (i.e. linking cubes, base ten blocks, geometric solids, pattern blocks, weights, pan-balance scale, toothpicks, square tiles, timers, counters, clocks, rulers, tangrams, money, graphing small and large chart paper, number lines, elapsed time number lines,)

Modifications:
- **Special Education/ 504 Students -**
  - Allow errors
  - Rephrase questions, directions, and explanations
  - Allow extended time to answer questions, and permit drawing, as an explanation
  - Accept participation at any level, even one word
  - Consult with Case managers and follow IEP/ 504 accommodations/ modifications
- **English Language Learners -**
  - Assign a buddy, same language or English speaking
  - Allow errors in speaking
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- **At-Risk Students -**
  - Provide extended time to complete tasks
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- **Gifted and Talented Students-**

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Lesson Plans- Suggested Pacing Guide		
Lesson Name/ Topic	**Lesson Objective(s)**	**Time frame (day(s) to complete)**
September	Calendar ● Pattern on calendar: Recognize patterns of multiples of 2 and 3, explore even and odd numbers and examine rotation of two-dimensional shapes ● Skip counting- build a color-coded counting stick for both 2's and 3's, develop chants, and create language-based patterns Daily Depositor ● Count the days of school and add up on the daily depositor and using penny coins ● Develop coin combinations for daily amount ● Include fractions for the days of school out of 100 ● Know and apply even and odd numbers Activities ● Play Monster Squeeze- Number fluency	One month

	● Reference Hundred Board book ○ Add and subtract friendly numbers Geometry ● Polygons- review attributes and begin creating a flowchart; use Exploragons and Geoboards for exploration	
October	Calendar ● Pattern on calendar: A,B,A,B,C ● Review multiples of 2's and 5's according to dot placed on ● Develop patterns with body motions and mimic pattern using a variety of language (fruits, vegetables, animals, etc.) Clock concepts ● Tell time to the hour. Students will understand A.M. and P.M. and learn to tell time accurately to the hour Daily depositor ● Determine daily sum, complete standard, word, and expanded form. Round to the nearest 10, 100, and 1000. Measurement ● Students will develop length references using inches, feet, and yards. Display "big foot" and "yard" models around the room. Math packets from Groundworks ● Place it Right ● Grid Sums ● Globs of Goo Activities ● Hundred Board Book pages 7-12, 14-15, 22, 24-26 Literature: ● The Greedy Triangle	One month
November	Calendar ● Recognize patterns of multiples of 2 and 3, explore even and odd numbers and examine rotation of two-dimensional shapes Counting Stick ● Skip counting- build a color-coded counting stick for both 2's and 3's, develop chants, and create Geometry (shapes) ● Polygons- review attributes and create a flowchart; use Exploragons and Geoboards for exploration Daily Depositor ● Count the days of school and add up on the daily depositor and using penny coins ● Include fractions for the days of school out of 100 ● Monster Squeeze- Number fluency Literature ● Too Many Kangaroo Things to Do! ● One Hundred Angry Ants ● Amazing Beans ● Each Orange had Eight Slices	One month
December	Calendar ● Review multiples of 2's and 5's according to dot placed on calendar ● Develop patterns with body motions and mimic pattern using a variety of language (fruits, vegetables, animals, etc.) Measurement (clock)	One month

	● Tell time to the 5 minute increment. ● As a class build arrays on grid paper. Determine the area. Discuss prime and composite numbers. Daily depositor ● Determine daily sum, complete standard, word, and expanded form. ● Round to the nearest 10, 100, and 1000.	
January	Calendar ● Pattern: A,B,B ● Color: red, red, yellow ● Multiples of 6 ● Shape: trapezoid, trapezoid, hexagon Counting stick ● skip counting by 6 Coin Counter ● Roll dice to make and compare large and small 3-digit numbers ● Roll dice to solve sum and differences in money amounts ● Flip a deck of cards to build three digit numbers to add and subtract Measurement- Capacity ● Relate cups, quarts, pints through hands on models and drawing models (reference Calendar Math Resources) Math packets from Groundworks- ● Be a Detective! ● On the Level ● Grids Hundred Board Book Activities- pages 62-63	One month
February	Students will explore a growing pattern for the first time this year. Please see pages 102-103 in the Calendar Math Teacher's Guide. Calendar Work ● Use pattern pieces for March- growing pattern (AB,ABB,ABBB, ABBBBB) ● Shape: Triangle, square; triangle square square ● Patterns into body motions ● Build similar patterns using classroom objects ● Mimic pattern using a variety of language (fruits, vegetables, animals, etc.) ● Days of the week ● Months of the year Counting Stick ● Skip counting by 8's ● Compare and Contrast counting stick of 6 and counting sticks of 2,3,4,5, and 6 to see patterns (common multiples) ● Chorally have students respond to the highlighted values in the counting sticks previously discussed. Front-load multiplication language of "One group of two, two groups of 2, three groups of 2, etc. Coin Counter/ Money ● Addition and subtraction with decimals ● The goal is to reinforce addition and subtraction of 3 digits in a decimal format. Create a way to generate two different dollar amounts (e.g. roll dice to record numbers, place values in a bag	One month

	and select two sets of 3 values, students volunteer different amounts, etc.) Have students calculate the sum and difference between two different dollar amounts. ● The focus is on aligning money correctly using a decimal point ● Present problems vertically as in the past. Also include horizontal format so students have to rewrite the problem in order to solve accurately.	
March	*Use January pieces for this month Students will examine three-dimensional figures: rectangular prisms, cubes, pyramids, cylinders, cones, and spheres ● Pattern by color: A,A,B,C,D,E ● Pattern by shape: A,B,C,D,E,F Counting stick: ● Build counting stick skip counting by 9 up to 30. Compare/ Contrast counting stick of 9 and 2, 3, 5 and 6 to see patterns (common multiples) Measurement- Weight ● Convert ounces to pounds (16 ounces= 1 pound) ● Clock: students practice telling time to the nearest minute ● Graphing: Form a question, collect data, analyze data, represent in the form of bar graph, scaled bar graph, or line plot. Develop and respond questions "how many more"; "how many less" Coin Counter/ Money ● Addition and subtraction with decimals ● The goal is to reinforce addition and subtraction of 3 digits in a decimal format. Create a way to generate two different dollar amounts (e.g. roll dice to record numbers, place values in a bag and select two sets of 3 values, students volunteer different amounts, etc.) Have students calculate the sum and difference between two different dollar amounts. ● The focus is on aligning money correctly using a decimal point ● Present problems vertically as in the past. Also include horizontal format so students have to rewrite the problem in order to solve accurately.	One month
April	*Use the pattern pieces for the month of May/June Daily Depositor ● Use estimation and mental math ● Express large numbers in various notations Counting stick ● Building "counting stick" that models skip counting by 7 up to and including 30 cubes-- add one cube of the appropriate color per day ● Contrast counting stick of 7 and 2, 3, 5, 6 and 9 to see patterns (common multiples) Coin Counter/ Money ● Addition and subtraction with decimals	One month

	● The goal is to reinforce addition and subtraction of 3 digits in a decimal format. Create a way to generate two different dollar amounts (e.g. roll dice to record numbers, place values in a bag and select two sets of 3 values, students volunteer different amounts, etc.) Have students calculate the sum and difference between two different dollar amounts. ● The focus is on aligning money correctly using a decimal point ● Present problems vertically as in the past. Also include horizontal format so students have to rewrite the problem in order to solve accurately. Measurement- Weight & Capacity ● Clock: solve elapsed time problems (problem types- find: start time, end time or elapsed time) ● Measure using grams. ● Suggested Activity #1- Students estimate the amount of liquid in liters in two large clear containers, using one-liter container as a benchmark for their estimates. Students pour the liquid from the containers one at a time into the one-liter container to accurately measure each liquid volume. Students compare estimates with actual measurements and add the liquid volumes to determine the sum. ● Suggestion Activity #2- Students estimate the mass of two objects in grams and kilograms, using a gram and kilogram weight as a benchmark. Students use balance scales to find the actual mass of the two objects and compare estimates to actual measurements. Students add the two masses together to determine the sum. ● Utilize balances, gram/measurement pieces, or everyday objects with equal masses. The students will be able to add 100 grams a day to build a kilogram. Use thousandths grids to have students name and visualize grams as a fractional piece of a kilogram.	
May & June	Continue to review and solidify concepts explored this year and work towards mastery. Tangrams- includes a variety of skills. See below. Literature ● Read Grandfather Tang's Story Measurement/ Shapes ● Solve word problems using tangrams. Assign a value for shapes and determine the total amount. Can include the four operations (addition, subtraction, multiplication, division) and include fractional concepts ● Review flags and determine the fractional amounts represented by each color	One month

Teacher Notes

Students will engage in Everyday Counts Calendar Math to reinforce and preview concepts. This is an opportune time to incorporate read alouds into the math curriculum.

When building counting sticks, select one color to be the base color (across any and all counting sticks) the color that should change is the multiple. For example, select white for the base and another color for the multiples (multiples of 2 white, pink, white, pink; for multiples of 5-- white, white, white, white, green, white, white, white, white, green)

The routine for Calendar Math can be taught and followed to students. Students can assume the responsibility of leading the class. Students can complete Calendar math on paper, in SmartPals, or through online submissions on Google Classroom to help vary routine and support application of concepts.