SOUTH HARRISON TOWNSHIP ELEMENTARY SCHOOL DISTRICT



Committed to Excellence

Course Name: Mathematics	Grade Level(s): 3
BOE Adoption Date: October 2017	Revision Date(s):

ABSTRACT

In Grade 3, instructional time should focus on four critical areas: (1) developing understanding of multiplication and division and strategies for multiplication and division within 100; (2) developing understanding of fractions, especially unit fractions (fractions with numerator 1); (3) developing understanding of the structure of rectangular arrays and of area; and (4) describing and analyzing two-dimensional shapes.

- 1. Students develop an understanding of the meanings of multiplication and 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. For equal-sized group situations, division can require finding the unknown number of groups or the unknown group size. Students use properties of operations to calculate products of whole numbers, using increasingly sophisticated strategies based on these properties to solve multiplication and division problems involving single-digit factors. By comparing a variety of solution strategies, students learn the relationship between multiplication and division.
- 2. 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. For example, 1/2 of the paint in a small bucket could be less paint than 1/3 of the

paint in a larger bucket, but 1/3 of a ribbon is longer than 1/5 of the same ribbon because when the ribbon is divided into 3 equal parts, the parts are longer than when the ribbon is divided into 5 equal parts. Students are able to use fractions to represent numbers equal to, less than, and greater than one. They solve problems that involve comparing fractions by using visual fraction models and strategies based on noticing equal numerators or denominators.

3. Students recognize area as an attribute of two-dimensional regions. They 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, a square with sides of unit length being the standard unit for measuring area. Students understand that rectangular arrays can be decomposed into identical rows or into identical columns. By decomposing rectangles into rectangular arrays of squares, students connect area to multiplication, and justify using multiplication to determine the area of a rectangle. Students describe, analyze, and compare properties of two-dimensional shapes. They compare and classify shapes by their sides and angles, and connect these with definitions of shapes. Students also relate their fraction work to geometry by expressing the area of part of a shape as a unit fraction of the whole.

TABLE OF CONTENTS Mission Statement Page 4 Curriculum and Instruction Goals Page 4 Philosophy of Shared Curriculum Service with South Harrison Township Elementary Page 4 How to Read this Document Page 5 Terms to Know Pages 5 - 7 Pacing Guide Pages 8 - 18 Curriculum Units Pages 19 - 56

Mission Statement

The primary goal of the South Harrison Township Elementary School District is to prepare each student with the real life skills needed to compete in a highly competitive global economy. This will be achieved by providing a comprehensive curriculum, the integration of technology, and the professional services of a competent and dedicated faculty, administration, and support staff.

Guiding this mission will be Federal mandates, including the Every Student Succeeds Act (ESSA), the New Jersey Student Learning Standards, and local initiatives addressing the individual needs of our students as determined by the Board of Education. The diverse resources of the school district, which includes a caring Home and School Association (HSA) and active adult community, contribute to a quality school system. They serve an integral role in supporting positive learning experiences that motivate, challenge and inspire children to learn.

Curriculum and Instruction Goals

Goal(s):

- 1. To ensure students are college and career ready upon graduation
- 2. To vertically and horizontally align curriculum K-12 to ensure successful transition of students at each grade level
- 3. To identify individual student strengths and weaknesses utilizing various assessment measures (formative, summative, alternative, etc.) so as to differentiate instruction while meeting the rigor of the applicable content standards
- 4. To improve student achievement as assessed through multiple measures including, but not limited to, state testing, local assessments, and intermediate benchmarking

Philosophy of the Shared Curriculum Service with Kingsway Regional School District

Together in its partnership with the South Harrison Township Elementary School District, the Kingsway Curriculum & Instruction Department is committed to providing all students grades K-12 with an engaging and quality curricular experience that aligns with the New Jersey Student Learning Standards (NJ SLS) for mathematics and English-Language Arts as well as the New Jersey Student Learning Standards (NJ SLS) for mathematics and English-Language Arts as well as the New Jersey Student Learning Standards (NJ SLS) for all other core disciplines. It is the goal of this shared service to provide students with curricular and educational experiences that allows them to succeed as they move on to the middle and high school level. Through this shared service, both horizontal and vertical alignment is stressed at and within each grade level with the aim of developing life-long learners who are college and career ready upon graduation from high school. Additionally, classroom instruction will be designed to meet the unique learning desires of all children and will be differentiated according to the needs of each learner. Whether through added support or enrichment activities, it is the role of the educator in the classroom to ensure students are reaching their highest level of social, emotional, and academic growth each school year. A combination of summative, formative,

4

and performance-based assessments will be used to assess students' understanding and acquisition of necessary concepts and skills. Group work, projects, and a variety of co-curricular activities will make mathematics more meaningful and aid in the understanding of its application across all disciplines as well as in life.

How to Read this Document

This document contains a pacing guide and curriculum units. The pacing guides serve to deliver an estimated timeframe as to when noted skills and topics will be taught. The pacing of each course, however, will differ slightly depending upon the unique needs of each class. The curriculum units contain more detailed information as to the specific skills and concepts that are introduced as well as how students will be assessed. The terms and definitions below will assist the reader in better understanding the sections and components of this curriculum document.

Terms to Know

Accommodation(s): The term "accommodation" may be used to describe an *alteration* of environment, curriculum format, or equipment that allows an individual with a disability to gain access to content and/or complete assigned tasks. They allow students with disabilities to pursue a regular course of study. The term accommodation is often used interchangeable with the term modification. However, it is important to remember that modifications change or modify the intended learning goal while accommodations result in the same learning goal being expected but with added assistance in that achievement. Since accommodations do not alter what is being taught, instructors should be able to implement the same grading scale for students with disabilities as they do for students without disabilities.

Differentiated Instruction: Differentiation of instruction relies on the idea that instructional approaches should be tailored to each individual student's learning needs. It provides students an array of options during the learning process that allows them make sense of ideas as it relates to them. The integration of differentiated instructional techniques is a curriculum design approach to increase flexibility in teaching and decrease the barriers that frequently limit student access to materials and learning in classrooms. <u>http://www.udlcenter.org/aboutudl</u>

Enduring Understanding: Enduring understandings (aka big ideas) are statements of understanding that articulate deep conceptual understandings at the heart of each content area. Enduring understandings are noted in the alongside essential questions within each unit in this document. <u>http://www.ascd.org</u>

Essential Question: These are questions whose purpose is to stimulate thought, to provoke inquiry, and to spark more questions. They extend beyond a single lesson or unit. Essential questions are noted in the beginning of each unit in this document. <u>http://www.ascd.org</u>

Formative Assessment(s): Formative assessments monitor student learning to provide ongoing feedback that can be used by (1) instructors to improve teaching and (2) by students to improve their learning. Formative assessments help identify students' strengths and weaknesses and address problems immediately.

5

Learning Activity(s): Learning activities are those activities that take place in the classroom for which the teacher facilitates and the students participate in to ensure active engagement in the learning process. (Robert J. Marzano, *The Art and Science of Teaching*)

Learning Assignment(s): Learning assignments are those activities that take place independently by the student inside the classroom or outside the classroom (i.e. homework) to extend concepts and skills within a lesson. <u>http://www.marzanocenter.com</u>

Learning Goal(s): Learning goals are broad statements that note what students "should know" and/or "be able to do" as they progress through a unit. Learning goals correlate specifically to the NJSLS (New Jersey Student Learning Standards) are noted within each unit.

Learning Objective(s): Learning objectives are more specific skills and concepts that students must achieve as they progress towards the broader learning goal. These are included within each unit and are assessed frequently by the teacher to ensure students are progressing appropriately. <u>http://www.marzanoresearch.com</u>

Model Assessment: Within the model curriculum, model assessments are provided that included assessments that allow for measuring student proficiency of those target skills as the year of instruction progresses. <u>http://www.state.nj.us/education/modelcurriculum/</u>

Model Curriculum: The model curriculum has been provided by the state of New Jersey to provide a "model" for which districts can properly implement the NJSLS (New Jersey Student Learning Standards) by providing an example from which to work and/or a product for implementation.

Modification(s): The term "modification" may be used to describe a *change* in the curriculum. Modifications are typically made for students with disabilities who are unable to comprehend all of the content an instructor is teaching. The term modification is often used interchangeable with the term accommodations. However, it is important to remember that modifications change or modify the intended learning goal while accommodations result in the same learning goal being expected but with assistance in that achievement.

Performance Assessment(s): (aka alternative or authentic assessments) Performance assessments are a form of assessment that requires students to perform tasks that generate a more authentic evaluation of a student's knowledge, skills, and abilities. Performance assessments stress the application of knowledge and extend beyond traditional assessments (i.e. multiple-choice question, matching, true & false, etc.).

Standard(s): Academic standards, from which the curriculum is built, are statements that of what students "should know" or "be able to do" upon completion of a grade-level or course of study. Educational standards help teachers ensure their students have the skills and knowledge they need to be successful by providing clear goals for student learning. <u>http://www.state.nj.us/njded/cccs/</u>

State: The New Jersey Student Learning Standards (NJSLS) include Preschool Teaching and Learning Standards as well as K-12 standards for: *Visual and Performing Arts; Comprehensive Health and Physical Education; Science; Social Studies; World Languages; Technology; and 21st-Century Life and Careers.*

Summative Assessment(s): Summative assessments evaluate student learning at the end of an instructional time period by comparing it against some standard or benchmark. Information from summative assessments can be used formatively when students or faculty use it to guide their efforts and activities in subsequent courses.

21st Century Skill(s): These skills emphasis the growing need to focus on those skills that prepare students successfully by focusing on core subjects and 21st century themes; learning and innovation skills; information, media and technology skills; and life and career skills. These concepts are embedded in each unit of the curriculum. <u>http://www.p21.org/our-work/p21-framework</u>

Unit Title	Duration/Month(s)	Related Standards	Learning Goals	Topics and Skills
Unit 1	September - November	NJ SLS 3.OA.A.1	Learning Goal 1: NJ SLS	NJ SLS 3.OA.A.1 Interpret products of whole
Multiplication, Division		NJ SLS 3.OA.A.2	3.OA.A.1	numbers as a total number of objects.
and concepts of area		NJ SLS 3.OA.A.3*	Interpret products of	
		NJ SLS 3.OA.A.4	whole numbers as	NJ SLS 3.OA.A.1 Use repeated addition to find
		NJ SLS 3.OA.B.6	repeated addition and as	the total number of objects arranged in an
		NJ SLS 3.MD.C.5	the total number of	array and in equal groups and compare to the
		NJ SLS 3.MD.C.6	objects (up to 100) in	result of multiplication.
		NJ SLS 3.MD.C.7a-b	equal groups or arrays.	
		NJ SLS 3.NBT.A.1		NJ SLS 3.OA.A.1Describe a context in which a
		NJ SLS 3.NBT.A.3	Learning Goal 2: NJ SLS 3.OA.A.2	total number of objects is represented by a product.
		Interdisciplinary	Interpret the quotient as	
		Standards	a set of objects (up to 100)	NJ SLS 3.OA.A.1 Interpret the product in the
			partitioned equally into a	context of a real-world problem.
		Technology	number of shares and as	
			the number of equal	NJ SLS 3.OA.A.2 Interpret division of whole
		8.1.5.A.1	shares.	numbers as a number of equal shares or the
		Select and use the		number of groups when objects are divided
		appropriate digital tools	Learning Goal 3: NJ SLS	equally.
		and resources to	3.OA.A.3 Use	
		accomplish a variety of	multiplication and division	NJ SLS 3.OA.A.2 Use repeated subtraction to
		tasks including solving	within 100 to solve word	find the number of shares or the number of
		problems.	problems by modeling	groups and compare to the result of division.
			equal groups or arrays and	
		8.1.5.A.3	by writing equations to	NJ SLS 3.OA.A.2 Describe a context in which
		Use a graphic organizer to	represent equal groups or	the number of shares or number of groups is
	organize information	arrays	represented with division.	
		about problem or issue.		
			Learning Goal 4: NJ SLS	NJ SLS 3.OA.A.2 Interpret the quotient in the
		8.1.5.F.1	3.OA.A.4	context of a real-world problem.
		Apply digital tools to	Determine the unknown	
		collect, organize, and	in a division or	NJ SLS 3.OA.A.3 Multiply to solve word

analyze data that support a scientific finding.multiplication equation relating 3 whole numbers (within 100).problems involving equal groups and arrays.Career Ready PracticesLearning Goal S: NJ SLSNJ SLS 3.OA.A.3 Divide to solve word problems involving equal groups and arrays.CAP2 Apply appropriate academic and technical skills.3.OA.8.6NJ SLS 3.OA.A.3 Represent a word problem with a drawing showing equal groups, arrays, equal shares, and/or total objects.Financial Literacy surfactsunknown factor problem. shopping skills to purchasing decisions.NJ SLS 3.OA.A.4 Determine which operation is needed to find the unknown.9.1.4.E.2 Apply comparison shopping skills to purchasing decisions.craring Goal 6: NJ SLS 3.MD C.5 & 3.MD C.6NJ SLS 3.OA.A.4 Determine which operation is needed to find the unknown.9.2.4.A.1 Identify reason and explain the work, and hey work can help a person achieve personal and professional goals.NJ SLS 3.OA.A.6 Solve division of whole numbers by finding the unknown factor.NJ SLS 3.OA.B.6 Solve division of whole numbers by finding the unknown factor.NJ SLS 3.OA.B.6 Solve division of whole numbers by finding the unknown factor.NJ SLS 3.OA.C.5 & NJ SLS 3.OD.C.5 & NJ SLS 3.OD.C.6 Lose unit squares of centimeters, meters, inches, feet, and other units to measure area.NJ SLS 3.MD.C.7a-b Tile a rectangle with unit reversor and other units to measure area.NJ SLS 3.MD.C.7a-b Tile a rectangle with unit reversorNJ SLS 3.MD.C.7a-b Tile a rectangle with unit reversorNJ SLS 3.MD.C.7a-b Tile a rectangle with unit reversorNJ SLS 3.MD.C.7a-b Tile a rectangle w	Г	[1
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ine cycles but an nave in squares.		life cycles but all have in		squares.

	common birth, growth, reproduction, and death. Numbers in base 10.	Learning Goal 9: NJ SLS 3.NBT.A.3 Multiply one digit whole numbers by multiples of 10 (10-90).	NJ SLS 3.MD.C.7a-b Multiply side lengths of a rectangle to find its area and compare the result to that found by tiling the rectangle with unit squares. NJ SLS 3.MD.C.7a-b Solve real world and mathematical problems involving measurement. NJ SLS 3.MD.C.7a-b Represent a rectangular area as the product of whole-numbers. NJ SLS 3.NBT.A.1 Use number lines and a hundreds charts to explain rounding numbers to the nearest 10 and 100. NJ SLS 3.NBT.A.1 Round a whole number to the nearest 10. NJ SLS 3.NBT.A.1 Round a whole number to the nearest 100. NJ SLS 3.NBT.A.3 Multiply to determine the total number of groups of ten. NJ SLS 3.NBT.A.3 Multiply one-digit whole numbers by multiples of 10.

Unit Title	Duration/Month(s)	Related Standards	Learning Goals	Topics and Skills
Unit 2	November – January	NJ SLS 3.OA.A.3	Learning Goal 1: NJ SLS	NJ SLS 3.OA.A.3 Multiply to solve word
Modeling Multiplication,		NJ SLS 3.OA.B.5	3.OA.A.3 Use	problems involving arrays and measurement
Division and Fractions		NJ SLS 3.MD.C.7c	multiplication and division	quantities (area).
		NJ SLS 3.MD.C.7d	within 100 to solve word	
		NJ SLS 3.OA.C.7	problems involving	NJ SLS 3.OA.A.3 Divide to solve word
		NJ SLS 3.OA.D.8	measurement quantities	problems involving arrays and measurement
		NJ SLS 3.OA.D.9	(area) using drawings.	quantities (area).
		NJ SLS 3.NBT.A.2		
		NJ SLS 3.NF.A.1	Learning Goal 2: NJ SLS	NJ SLS 3.OA.A.3 Represent a word problem
		NJ SLS 3.G.A.2	3.OA.B.5 & NJ SLS	with a drawing or array.
			3.MD.C.7c Multiply one-	
		Interdisciplinary Standards	digit whole numbers by	NJ SLS 3.OA.A.3 Represent a word problem
			applying the properties of	with an equation.
		Technology	operations (commutative,	
			associative, and	NJ SLS 3.OA.B.5 & NJ SLS 3.MD.C.7c
		8.1.5.A.1	distributive properties).	Multiply whole numbers using the
		Select and use the		commutative property as a strategy.
		appropriate digital tools	Learning Goal 3: NJ SLS	
		and resources to	3.OA.B.5 & NJ SLS	NJ SLS 3.OA.B.5 & NJ SLS 3.MD.C.7c
		accomplish a variety of	3.MD.C.7c Use tiling and	Multiply whole numbers using the associative
		tasks including solving	an area model to	property as a strategy.
		problems.	represent the distributive	
			property.	NJ SLS 3.OA.B.5 & NJ SLS 3.MD.C.7c
		8.1.5.A.3	,	Use tiling to show that the area of a rectangle
		Use a graphic organizer to		with whole-number side lengths a and $b + c$ is
		organize information about	Learning Goal 4: NJ SLS	the sum of $a \times b$ and $a \times c$.
		problem or issue.	3.MD.C.7d Solve real-	
		world problems involving	NJ SLS 3.OA.B.5 & NJ SLS 3.MD.C.7c	
	Career Ready Practices	finding areas of rectilinear	Multiply whole numbers using the	
	,	figures by decomposing	distributive property as a strategy.	
		CRP4 Communicate clearly	them into non-overlapping	
		and effectively and with	rectangles and adding the	NJ SLS 3.MD.C.7d Decompose rectilinear
		reason	areas of the non-	figures into non-overlapping rectangles.

Unit Title	Duration/Month(s)	Related Standards	Learning Goals	Topics and Skills
			overlapping parts.	
		Career Exploration		NJ SLS 3.MD.C.7d Find areas of non-
		9.2.4.A.2 Identify	Learning Goal 5: NJ SLS	overlapping rectangles and add to find the
		various life roles and civic	3.OA.C.7 Fluently multiply	area of the rectilinear figure.
		and work - related activities	and divide <u>within 40</u> using	
		in the school, home, and	strategies such as the	NJ SLS 3.MD.C.7d Solve real world problems
		community.	relationship between	involving area of rectilinear figures.
			multiplication and	
		Science	division.	NJ SLS 3.OA.C.7 Multiply and divide within 40
				with accuracy and efficiency.
		NGSS 3-LS4-1	Learning Goal 6: NJ SLS	
		Analyze and interpret	3.OA.D.8 Write equations	NJ SLS 3.OA.D.8 Represent the solution to
		data from fossils to provide	when solving two-step	two-step word problems with equations.
		evidence of the organisms	word problems, using a	
		and the environments in	symbol for an unknown;	NJ SLS 3.OA.D.8 Use a symbol to represent an
		which they lived long ago.	find the value of an	unknown in an equation.
			unknown in an equation	
			involving any of the four operations and use	NJ SLS 3.OA.D.8 Use rounding as an
			estimation strategies to	estimation strategy.
			assess the reasonableness	NJ SLS 3.OA.D.8 Explain, using an estimation
			of answers.	strategy, whether an answer is reasonable.
			of answers.	strategy, whether an answer is reasonable.
			Learning Goal 7: NJ SLS	NJ SLS 3.OA.D.9 Explain arithmetic patterns
			3.OA.D.9 Recognize	using properties of operations.
			arithmetic patterns,	
			including patterns in	NJ SLS 3.NBT.A.2 Add and subtract two 2-digit
			addition or multiplication	whole numbers within 100 with accuracy and
			tables, and explain the	efficiency.
			patterns using properties	
			of operations.	NJ SLS 3.NF.A.1 & NJ SLS 3.G.A.2 Partition
			Learning Goal 8: NJ SLS	rectangles, and other shapes, into halves,
			3.NBT.A.2Fluently add and	thirds, fourths, sixths and eighths.

Unit Title Dur	uration/Month(s)	Related Standards	Learning Goals	Topics and Skills
			subtract (with regrouping) two 2-digit whole numbers within 100. Learning Goal 9: NJ SLS 3.NF.A.1 & NJ SLS 3.G.A.2 Partition shapes into parts with equal areas and express the area of each part as a unit fraction; 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 of size 1/b.	NJ SLS 3.NF.A.1 & NJ SLS 3.G.A.2 Identify the fractional name of each part. NJ SLS 3.NF.A.1 & NJ SLS 3.G.A.2 Model and explain that a fraction <i>a/b</i> is the quantity formed by <i>a</i> parts of size 1/ <i>b</i> (For example, 10/2 is 10 parts and each part is of size ½).

Unit Title	Duration/Month(s)	Related Standards	Learning Goals	Topics and Skills
Unit 3 Fractions as Numbers and Measurement		NJ SLS 3.NF.A.2 NJ SLS 3.NF.A.3 NJ SLS 3.MD.A.1 NJ SLS 3.MD.A.2 NJ SLS 3.G.A.1 NJ SLS 3.MD.D.8 NJ SLS 3.OA.C.7 Interdisciplinary Standards	Learning Goal 1: NJ SLS 3.NF.A.2 Draw a number line depicting the position of 1/b (with b = 2, 3, 4, 6, or 8); represent the unit fraction ¼ on the number line by partitioning the number line between 0 and 1 into 4 equal lengths and name the point at the end of the first length as	 NJ SLS 3.NF.A.2 Partition a number line into parts of equal sizes between 0 and 1 (halves, thirds, fourths sixths and eighths). NJ SLS 3.NF.A.2 Plot unit fractions on the number line. NJ SLS 3.NF.A.2 Identify multiple parts (of length 1/b) on the number line. NJ SLS 3.NF.A.2 Plot a fraction on the number

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	Technology	the position of the unit	line by marking off multiple parts of size 1/b.
		fraction ¼; apply the same	
	8.1.5.A.3	method for placing points	NJ SLS 3.NF.A.2 Plot fractions equivalent to
	Use a graphic organizer to	1/2, 1/3, 1/6, and 1/8 on	whole numbers including 0 and up to 5.
	organize information	the number line.	
	about problem or issue.		NJ SLS 3.NF.A.2 Find equivalent fractions
		Learning Goal 2: NJ SLS	(limited to fractions with denominators 2, 3, 4,
	8.1.5.F.1	3.NF.A.2 Draw a number	6, and 8).
	Apply digital tools to	line depicting the position	
	collect, organize, and	of fraction a/b (with $b = 2$,	NJ SLS 3.NF.A.2 Explain why two fractions are
	analyze data that support	4, 3, 6, or 8, and including	equivalent; use a visual fraction model to
	a scientific finding.	whole numbers up to 5).	support explanation.
		Learning Goal 3: NJ SLS	NJ SLS 3.NF.A.2 Write whole numbers as
	Career Ready Practices	3.NF.A.3 Generate simple	fractions.
	···· , ·····	equivalent fractions,	
	CRP6 Demonstrate	explain why they are	NJ SLS 3.NF.A.2 Identify fractions that are
	creativity and innovation.	equivalent, and support	equivalent to whole numbers.
		the explanation with visual	
		fraction models; locate	NJ SLS 3.NF.A.2 Compare two fractions having
	Financial Literacy	them on the number line.	the same numerator by reasoning about their
			size.
	9.1.4.E.2 Apply comparison	Learning Goal 4: NJ SLS	
	shopping skills to	3.NF.A.3 Express whole	NJ SLS 3.NF.A.2 Compare two fractions having
	purchasing decisions	numbers as fractions,	the same denominator by reasoning about their
		identify fractions	size.
	Career Exploration	equivalent to whole	
		numbers and locate them	NJ SLS 3.NF.A.2 Explain why comparing
	9.2.4.A.3 Investigate both	on the number line.	fractions that do not have the same whole is
	traditional and		not valid (reason about their size and support
	nontraditional careers and	Learning Goal 5: NJ SLS	reasoning with a model).
	relate information to	3.NF.A.3 Compare two	
	personal likes and dislikes.	fractions having the same	NJ SLS 3.NF.A.2 Use <, =, and > symbols to write
		numerator; compare two	comparisons of fractions and justify conclusions
	Science	fractions having the same	with a visual fraction model.
	l	-	

NGSS 3-ESS2-1	denominator; reason	
Represent data in tables	about their size and use	NJ SLS 3.MD.A.1 Tell time to the nearest minute
and graphical displays to	the symbols >, =, or < to	using digital and analog clocks.
describe typical weather	record the comparison.	
conditions expected during		NJ SLS 3.MD.A.1 Write time to the nearest
a particular season.	Learning Goal 6: NJ SLS	minute using analog clocks.
	3.MD.A.1 Tell and write	с с
	time to the nearest	NJ SLS 3.MD.A.1 Choose appropriate strategies
	minute, and solve word	to solve real world problems involving time.
	problems with addition	
	and subtraction involving	NJ SLS 3.MD.A.1 Use the number line as a visual
	time intervals in minutes.	model to determine intervals of time as <i>jumps</i>
		on a number line.
	Learning Goal 7: NJ SLS	
	3.MD.A.2 Solve one step	NJ SLS 3.MD.A.1 Measure time intervals.
	word problems by	
	estimating and measuring	NJ SLS 3.MD.A.2 Measure and read a scale to
	volume and mass using	estimate volume.
	appropriate tools and	
	standard units of grams,	NJ SLS 3.MD.A.2 Measure and read a scale to
	kilograms, and liters.	estimate mass.
	3	
	Learning Goal 8: NJ SLS	NJ SLS 3.MD.A.2 Add, subtract, multiply, or
	3.OA.C.7 Fluently multiply	divide to solve one-step word problems
	and divide within 100	involving masses or volumes.
	using strategies such as	J
	the relationship between	NJ SLS 3.OA.C.7 Multiply and divide within 100
	multiplication and	with accuracy and efficiency.
	division.	, , ,
		NJ SLS 3.G.A.1 Classify and sort shapes by
	Learning Goal 9: NJ SLS	attributes.
	3.G.A.1 Recognize	
	rhombuses, rectangles,	NJ SLS 3.G.A.1 Explain why rhombuses,
	and squares as examples	rectangles, and squares are examples of
	of quadrilaterals, and draw	quadrilaterals.

			examples of quadrilaterals that do not belong to any of these subcategories. Learning Goal 10: NJ SLS 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.	NJ SLS 3.G.A.1 Draw examples of quadrilaterals. NJ SLS 3.MD.D.8 Determine the perimeter of various plane shapes and irregular shapes given the side lengths. NJ SLS 3.MD.D.8 Determine the unknown side length give the perimeter and other sides. NJ SLS 3.MD.D.8 Show rectangles having the same perimeter and different areas. NJ SLS 3.MD.D.8 Show rectangles having different perimeters and the same area.
Unit 4 Representing Data	March – June	NJ SLS 3.MD.B.3 NJ SLS 3.MD.B.4 NJ SLS 3.OA.C.7* NJ SLS 3.OA.D.8* NJ SLS 3.NBT.A.2* NJ SLS 3.MD.C.7d* Interdisciplinary Standards Technology 8.1.5.F.1 Apply digital tools to collect, organize, and	Learning Goal 1: NJ SLS 3.MD.B.3 Draw scaled picture and scaled bar graphs to represent data with several categories. Solve one and two-step word problems using scaled bar graphs. Learning Goal 2: NJ SLS 3.MD.B.4 Depict data measured in fourths and halves of an inch with a line plot with scales marked with appropriate	 NJ SLS 3.MD.B.3 Draw scaled picture graphs. NJ SLS 3.MD.B.3 Draw scaled bar graphs. NJ SLS 3.MD.B.3 Analyze, interpret and create bar graphs and pictographs in real world situations. NJ SLS 3.MD.B.3 Solve "how many more" and "how many less" problems using scaled bar graphs. NJ SLS 3.MD.B.4 Measure length using rulers marked with inch, quarter inch and half inch

analyze data that support	units.	NJ SLS 3.MD.B.4 Generate measurement data
a scientific finding.		by measuring length and create a line plot of
	Learning Goal 3: NJ SLS	the data
	3.OA.C.7 Fluently multiply	
Career Ready Practices	and divide <u>within 100</u>	NJ SLS 3.MD.B.4 Accurately measure several
	using strategies such as	small objects using a standard ruler and display
CRP8 Utilize critical	the relationship between	findings on a line plot
thinking to make sense of	multiplication and	
problems and persevere in	division.	NJ SLS 3.MD.B.4 Display data on line plots with
solving them		horizontal scales in whole numbers, halves, and
	Learning Goal 4: NJ SLS	quarters
	3.OA.D.8 Write	
Financial Literacy	equation(s) containing an	NJ SLS 3.OA.C.7 Multiply and divide within 100
	unknown and find the	with accuracy and efficiency.
	value of an unknown in an	
•	equation that is a	NJ SLS 3.OA.D.8 Represent two-step word
		problems with equation(s) containing
-		unknowns.
· · ·		
•	0	NJ SLS 3.OA.D.8 Perform operations in the
, ,		conventional order (no parentheses).
and quality of living.	of answers.	
		NJ SLS 3.OA.D.8 Use rounding as an estimation
Career Exploration	Learning Goal 5: NJ SLS	strategy.
	3.NBT.A.2 Fluently add	
		NJ SLS 3.OA.D.8 Explain, using an estimation
		strategy, whether an answer is reasonable.
	.	
grades lay the foundation	value, properties of	NJ SLS 3.NBT.A.2 Add and subtract within 1000
for future academic and	operations, and/or the	with accuracy and efficiency.
career success.	relationship between	
	addition and subtraction.	NJ SLS 3.MD.C.7d Decompose rectilinear figures
Science		into non-overlapping rectangles.
	Learning Goal 6: NJ SLS	
NGSS 3-LS4-1	3.MD.C.7d Solve real	NJ SLS 3.MD.C.7d Find areas of non-overlapping
	a scientific finding. Career Ready Practices CRP8 Utilize critical thinking to make sense of problems and persevere in solving them Financial Literacy 9.1.4.F.2 Explain the roles of philanthropy, volunteer service, and charitable contributions, and analyze their impact on community development and quality of living. Career Exploration 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success. Science	 a scientific finding. Learning Goal 3: NJ SLS 3.OA.C.7 Fluently multiply and divide within 100 using strategies such as the relationship between multiplication and division. CRP8 Utilize critical thinking to make sense of problems and persevere in solving them Financial Literacy 9.1.4.F.2 Explain the roles of philanthropy, volunteer service, and charitable contributions, and analyze their impact on community development and quality of living. Career Exploration 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success. Science Learning Goal 5: NJ SLS Substrategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Analyze and interpret data from fossils to provide evidence of th organisms and the environments in whic they lived long ago.	world problems involving finding areas of rectilinear figures by decomposing them into non overlapping rectangles and adding the areas of the non overlapping parts.rectangles and add to find the area of the rectilinear figure.NJ SLS 3.MD.C.7d Solve real world problems involving area of rectilinear figures.
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Recommended Duration: September - November

Unit Description: Represent and solve problems involving multiplication and division, understand properties of multiplication and the relationship between multiplication and division, understand concepts of area and relate area to multiplication and addition (Geometric measurement), use place value understanding and properties of operations to perform multi-digit arithmetic.

Essential Questions	Enduring Understandings
 How do you decide which tools to use to solve a problem? What strategies can I use to accurately solve multiplication problems? What strategies can I use to accurately solve division problems? How does drawing an array help us think about different ways to decompose a number? How is multiplication commutative and associative? 	 The teaching of multiplication and division parallels that of addition and subtraction. Arrays and multiples of equal groups demonstrate the meaning of multiplication. Using equal sharing help demonstrate the meaning of division. Identifying the properties of multiplication and division is a strategy to help multiply and divide.

Relevant Standards	Learning Goals	Learning Objectives
Content Standards: Primary or Power 3.OA.A.1. Interpret products of whole numbers, e.g., interpret 5 x 7 as the total number of	Learning Goal 1: 3.OA.A.1 Interpret products of whole numbers as repeated addition and as the total number of objects (up to	 Students will be able to: interpret products of whole numbers as a total number of objects
objects in 5 groups of 7 objects each. For example, describe and/or represent a context in	100) in equal groups or arrays.	 number of objects. use repeated addition to find the total number of objects arranged in an array and in equal
which a total number of objects can be expressed as 5 x 7.	Learning Goal 2: 3.OA.A.2 Interpret the quotient as a set of objects (up to 100) partitioned equally into a number of shares	groups and compare to the result of multiplication.describe a context in which a total number of
3.OA.A.2. Interpret whole-number quotients of	and as the number of equal shares.	objects is represented by a product.



Relevant Standards	Learning Goals	Learning Objectives
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. *(benchmarked) 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.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.MD.C.5. Recognize area as an attribute of plane figures and understand concepts of area measurement.	Learning Goal 3: 3.OA.A.3 Use multiplication and division within 100 to solve word problems by modeling equal groups or arrays and by writing equations to represent equal groups or arrays Learning Goal 4: 3.OA.A.4 Determine the unknown in a division or multiplication equation relating 3 whole numbers (within 100). Learning Goal 5: 3.OA.B.6 Solve division of whole numbers by representing the problem as an unknown factor problem. Learning Goal 6: 3.MD.C.5 & 3.MD.C.6 Measure areas by counting unit squares (cm ² , m ² , in ² , ft ² , and improvised units). Learning Goal 7: 3.MD.C.7a-b Tile a rectangle to find its area and explain the relationship between tiling and multiplying side lengths to find the area of rectangles; solve real world problems by multiplying side lengths to find areas of rectangles. Learning Goal 8: 3.NBT.A.1 Round whole numbers to the nearest 10 or 100. Learning Goal 9: 3.NBT.A.3 Multiply one digit whole numbers by multiples of 10 (10-90).	 interpret the product in the context of a real-world problem. interpret division of whole numbers as a number of equal shares or the number of groups when objects are divided equally. use repeated subtraction to find the number of shares or the number of groups and compare to the result of division. describe a context in which the number of shares or number of groups is represented with division. interpret the quotient in the context of a real-world problem. multiply to solve word problems involving equal groups and arrays. divide to solve word problems involving equal groups and arrays. represent a word problem with a drawing showing equal groups, arrays, equal shares, and/or total objects. represent a word problem with an equation. determine which operation is needed to find the unknown. multiply or divide, within 100, to find the unknown whole number in a multiplication or division equation. write division number sentences as unknown factor problems. solve division of whole numbers by finding the unknown factor. count unit squares in order to measure the area of a figure. use unit squares of centimeters, meters, inches,

Relevant Standards	Learning Goals	Learning Objectives
 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. 3.MD.C.5b. A plane figure which can be covered without gaps or overlaps by <i>n</i> unit squares is said to have an area of <i>n</i> 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. 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.NBT.A.1. Round whole numbers to the nearest 10 or 100. 3.NBT.A.3. Multiply one-digit whole numbers by multiples of 10 in the range 10 to 90 (e.g., 9 × 		 feet, and other units to measure area. tile a rectangle with unit squares. multiply side lengths of a rectangle to find its area and compare the result to that found by tiling the rectangle with unit squares. solve real world and mathematical problems involving measurement. represent a rectangular area as the product of whole-numbers. use number lines and a hundreds charts to explain rounding numbers to the nearest 10 and 100. round a whole number to the nearest 10. round a whole number to the nearest 100. multiply to determine the total number of groups of ten. multiply one-digit whole numbers by multiples of 10.

Relevant Standards	Learning Goals	Learning Objectives
80, 5×60) using strategies based on place value and properties of operations.		

Formative Assessments	Summative Assessments	Performance Assessments	Major Activities/ Assignments (required)
 One to one conferencing and anecdotal notes Rubrics Pre/Post RTI benchmark assessments Differentiated Facts Centers Essential Questions Home Link Review Mental Math and Reflexes Math Message Teaching the Lesson (Vocabulary Infused) Ongoing Learning and Practice Differentiation Options Math Boxes Games (reinforcement of skill) Reflection - Essential Questions revisited (Exit Slip, Journal, Orally, etc) 	 Written test days Math Message Self-Assessment Oral and Slate Assessments Assessment Building Background for next unit 	 Project Base Learning Opportunities: Essential Questions Class Directions/Discussion/Questions Work on Project Use of rubric and teacher "informal assessment" or checklist Reflection - Essential Questions revisited (Exit slip, Journal, Orally, etc.) 	 Math Formative Diagnostic Tasks CSA #1

Possible Assessment Adjustments (Modifications / Accommodations / Differentiation): How will the teacher provide multiple means for the following student			
groups to EXPRESS their understanding and comprehension of the content/skills taught?			
Special Education Students	English Language Learners (ELLs)	At-Risk Learners	Advanced Learners
Accommodations	Accommodations	Accommodations	Accommodations/Differentiation
Work in-progress check	Multiple-choice format	Number Line, Fraction Blocks	Tiered assessments



groups to **EXPRESS** their understanding and comprehension of the content/skills taught? **Special Education Students English Language Learners (ELLs) At-Risk Learners** Advanced Learners (comments only marking) Work in-progress check Number Line, Fraction Blocks Independent Study (i.e. Desmos • • Highlight/underline key words (comments only marking) Chunked assessments • • Activities) Simplify language, Single step Learning menus Multiplication Table, Number • . • Line, Fraction Blocks directions, Read directions Vary test format • Modifications Modifications Allow corrections for credit • Shortened assessment • Provide modeled examples Accept short answers • • Allow use of resources (notes) Personalized tiered questions . Calculator for computation . Alternative objectives ٠ Change level of complexity

Possible Assessment Adjustments (Modifications / Accommodations / Differentiation): How will the teacher provide multiple means for the following student

 Instructional Strategies (refer to Robert Marzano's 41 Elements)

 Manipulatives, KWL, academic games,

 Mathematic Workstations,

 Read Aloud

 Model think aloud comprehension strategies

 Modeling

 Choice Menus

 Math logs/journals

groups to ACCESS the content/skills being taught?			
Special Education Students	English Language Learners (ELLs)	At-Risk Learners	Advanced Learners
Accommodations	Accommodations	Accommodations	Accommodations/Differentiation
Kinesthetic Movement to Model	Kinesthetic Movement to Model	Kinesthetic Movement to Model	Low Floor, High Ceiling Tasks
Integers	Integers	Integers	Math Debates
Word wall & Anchor Posters	 Word wall – add pictures 	Word wall & Anchor Posters	Tiered assignments
Graph paper for vector diagrams	Graph paper for vector diagrams	Graph paper for vector diagrams	Flexible Grouping
(line models)	(line models)	(line models)	Graphing Calculator extension

Possible Instructional Adjustments (Modifications / Accommodations / Differentiation): How will the teacher provide multiple means for the following student



Possible Instructional Adjustments (M	odifications /Accommodations/ Differen	ntiation): How will the teacher provide m	nultiple means for the following student
groups to ACCESS the content/skills bein	ng taught?		
Manipulatives – Integer Cards that	 Manipulatives – Integer Cards 	Manipulatives – Integer Cards	Peer Coaching
model the number on the number	that model the number on the	that model the number on	Compare and Contrast Solution
line, Positive/Negative Counters,	number line, Positive/Negative	the number line,	Paths
Number Lines, Slide lines, Fraction	Counters, Number Lines, Slide	Positive/Negative Counters,	Independent Study
Blocks, Fraction Circles	lines, Fraction Blocks, Fraction	Number Lines, Slide lines	
Multiplication Table	Circles Graph paper for vector	Multiplication Table, Fraction	
Mnemonics	diagrams	Blocks, Fraction Circles	
 SADS (same signs –add, different 	Calculator	Mnemonics	
signs – subtract)	 Visual charts & Outlined Notes – 	 SADS (same signs – 	
 KCC (keep, change, change) 	Add Pictures	add, different signs –	
 KCF (keep, change, flip) 	 Provide written stems for For 	subtract)	
 Personalized Examples – Explicit 	example, "The sum is units	 KCC (keep, change, 	
instruction for word problems and	to the of"	change)	
numerous modeled examples	 Highlight/underline key words 	 KCF (keep, change, 	
Modifications	 Simplify language 	flip)	
Use of a calculator for	Modifications	Differentiation	
computation	 Use of a calculator for 	Low Floor, High Ceiling Tasks	
Alternative objectives	computation	Flexible Grouping	
Change level of complexity	 Alternative objectives 	Learning Stations	
Differentiation	 Change level of complexity 		
Low Floor, High Ceiling Tasks	Differentiation		
Flexible Grouping	 Personalized tiered questions 		
Learning Stations	 Enhanced directions 		

Unit Vocabulary Essential:

Interdisciplinary Connections	Integration of Technology	21 st Century Themes	21 st Century Skills
(Applicable Standards)			
Interdisciplinary Standards	Technology	$\underline{\checkmark}$ Financial, Economic,	_✓_ Critical Thinking and Problem Solving
	8.1.5.A.1	Business, & Entrepreneurial	Students engage with real world situations
Career Ready Practices	Select and use the appropriate	Literacy	involving rational numbers. Students
	digital tools and resources to	Establish an understanding that	carefully consider the options to solve the
CRP1 Act as a responsible and	accomplish a variety of tasks	career-ready individuals take	problem. Once a solution is agreed upon,
contributing citizen and employee.	including solving problems.	regular action to contribute to their	they follow through to ensure the problem
		personal financial wellbeing,	is solved, whether through their own
CRP2 Apply appropriate academic and	8.1.5.A.3	understanding that personal	actions or the actions of others.
technical skills.	Use a graphic organizer to	financial security provides the	
	organize information about	peace of mind required to	Life and Career Skills
Financial Literacy	problem or issue.	contribute more fully to their own	Students make connections between
		career success.	abstract concepts with real-world
9.1.4.E.2 Apply comparison-shopping	8.1.5.F.1		applications, and they make correct
skills to purchasing decisions.	Apply digital tools to collect,		insights about when it is appropriate to
	organize, and analyze data that		apply the use of an academic skill in a
Career Exploration	support a scientific finding.		workplace situation.
9.2.4.A.1 Identify reasons why people			Technologies Literacy
work, different types of work, and how			Communication & Collaboration
work can help a person achieve			Career-ready individuals communicate
personal and professional goals.			thoughts, ideas, and action plans with
			clarity, whether using written, verbal,
Science			and/or visual methods. Students
			collaborate via the integer game, number
NGSS 3-LS1-1			line discussions and problem solving real
Develop models to describe			world situations involving rational
that organisms have unique and			numbers.
diverse life cycles but all have in			
common birth, growth, reproduction,			
and death. Numbers in base 10.			

Resources

Texts/Materials: Textbook:

- My Math- McGraw Hill
- Reference Social Studies, Science, Math and Health curricula for other literary connections

Suggested Literature:

- Each Orange Had 8 Slices: A Counting Book by Paul Giganti
- The Doorbell Rang by Pat Hutchins
- Betcha by Stuart J. Murphy
- Sea Sqares by Joy B. Hulme
- The King's Chessboard by David Birch
- The Best of Times by Gregory Tang
- If You Hopped Like a Frog by David M. Schwartz
- Anno's Mysterious Multiplying Jar by Mitsumasa Anno
- Anno's Magic Seeds by Mitsumasa Anno

Links:

- <u>http://pearsonsuccessnet.com</u>
- <u>http://www.brainpopjr.com</u>
- <u>http://www.primarygames.com</u>
- <u>http://www.abcmouse.com</u>
- <u>http://www.starfall.com</u>
- <u>http://www.destiny.com</u>
- <u>http://www.gamequarium.com</u>
- <u>http://www.rubistar.4teachers.org</u>
- http://kinderwebgames.com/
- <u>http://kinderwebgames.com</u>
- <u>http://www.njcore.org</u>

http://www.free-training-tutorial.com/times-tables-games.html - Multiplication Games

http://www.sheppardsoftware.com/mathgames/popup/popup_multiplication.htm - Multiplication Games



Resources

http://www.helpingwithmath.com/by_subject/multiplication/mul_games.htm - Isolation Multiplication Facts

http://www.internet4classrooms.com/skill_builders/multiplication_math_fourth_4th_grade.htm Multiplication – Car Wash

http://arcademicskillbuilders.com/games/grand_prix/grand_prix.html - Multiplication Grand Prix

Unit Description: Represent and solve problems involving multiplication and division, understand properties of multiplication and the relationship between multiplication and division, geometric measurement: understand concepts of area and relate area to multiplication and to addition, multiply and divide within 100, solve problems involving the four operations, and identify and explain patterns in arithmetic, use place value understanding and properties of operations to perform multi-digit arithmetic, develop understanding of fractions as numbers, reason with shapes and their attributes

Essential Questions	Enduring Understandings
 How can the properties of multiplication help us learn our multiplication facts? What strategies can we use to learn our multiplication and division facts? How can I use addition, subtraction, multiplication, and division to help you solve real world problems? How can you learn to quickly calculate sums in your head? How can you select among the most useful mental math strategies for the problem you are trying to solve? How can you use patterns to solve problems? 	 Multiplying and dividing frequently requires the use and practice of mental strategies. Proficiency with basic facts aids computation and estimation of larger and smaller numbers. Number stories are created based upon information from everyday life. Answers can be found by using mental math, acting out situations with counters, and drawing sketches, especially of arrays. Patterns can be found in many forms through addition, subtraction, multiplication, and division.

Relevant Standards	Learning Goals	Learning Objectives
Content Standards: Primary or Power NJ SLS 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. *(benchmarked)	Learning Goal 1: NJ SLS 3.OA.A.3 Use multiplication and division within 100 to solve word problems involving measurement quantities (area) using drawings. Learning Goal 2: NJ SLS 3.OA.B.5 & NJ SLS 3.MD.C.7c Multiply one-digit whole numbers by applying the properties of	 Students will be able to: multiply to solve word problems involving arrays and measurement quantities (area). divide to solve word problems involving arrays and measurement quantities (area). represent a word problem with a drawing or array. represent a word problem with an equation. multiply whole numbers using the
NJ SLS 3.OA.B.5. Apply properties of operations	operations (commutative,	commutative property as a strategy.

as strategies to multiply and divide.	associative, and distributive	multiply whole numbers using the associative
Examples: If $6 \times 4 = 24$ is known, then 4×6	properties).	property as a strategy.
= 24 is also known. (Commutative property		• use tiling to show that the area of a rectangle
of multiplication.) $3 \times 5 \times 2$ can be found by	Learning Goal 3: NJ SLS 3.OA.B.5 & NJ SLS	with whole-number side lengths a and $b + c$ is
3 × 5 = 15, then 15 × 2 = 30, or by 5× 2 = 10,	3.MD.C.7c Use tiling and an area model to	the sum of $a \times b$ and $a \times c$.
then 3 × 10 = 30. (Associative property of	represent the distributive property.	multiply whole numbers using the distributive
multiplication.) Knowing that 8 × 5 = 40 and		property as a strategy.
8 × 2 =16, one can find 8 × 7 as 8 × (5 + 2) =		decompose rectilinear figures into non-
(8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive	Learning Goal 4: NJ SLS 3.MD.C.7d Solve real-world	overlapping rectangles.
property.)	problems involving finding areas of rectilinear	• find areas of non-overlapping rectangles and
*[Students need not use the formal terms	figures by decomposing them into non-	add to find the area of the rectilinear figure.
for these properties.]	overlapping rectangles and adding the areas of the	• solve real world problems involving area of
*[Limit to single digit factors and	non-overlapping parts.	rectilinear figures.
multipliers. 7 x 4 x 5 would exceed grade 3		• multiply and divide <u>within 40</u> with accuracy
expectations because it would result in a	Learning Goal 5: NJ SLS 3.OA.C.7 Fluently multiply	and efficiency.
two-digit multiplier (28 x 5)]	and divide within 40 using strategies such as the	 represent the solution to two-step word
	relationship between multiplication and division.	problems with equations.
NJ SLS 3.MD.C.7. Relate area to the operations		• use a symbol to represent an unknown in an
of multiplication and addition.	Learning Goal 6: NJ SLS 3.OA.D.8 Write equations	equation.
	when solving two-step word problems, using a	 use rounding as an estimation strategy.
NJ SLS 3.MD.C.7c. Use tiling to show in a	symbol for an unknown; find the value of an	 explain, using an estimation strategy, whethe
concrete case that the area of a rectangle with	unknown in an equation involving any of the four	an answer is reasonable.
whole-number side lengths <i>a</i> and <i>b</i> + <i>c</i> is the	operations and use estimation strategies to assess	 explain arithmetic patterns using properties of
sum of $a \times b$ and $a \times c$. Use area models to	the reasonableness of answers.	operations.
represent the distributive property in		 add and subtract two 2-digit whole numbers
mathematical reasoning.	Learning Goal 7: NJ SLS 3.OA.D.9 Recognize	within 100 with accuracy and efficiency.
	arithmetic patterns, including patterns in addition	 partition rectangles, and other shapes, into
NJ SLS 3.MD.C.7. Relate area to the operations	or multiplication tables, and explain the patterns	halves, thirds, fourths, sixths and eighths.
of multiplication and addition.	using properties of operations.	 identify the fractional name of each part.
	Learning Goal 8: NJ SLS 3.NBT.A.2Fluently add and	 model and explain that a fraction <i>a/b</i> is the
NJ SLS 3.MD.C.7d. Recognize area as additive.	subtract (with regrouping) two 2-digit whole	quantity formed by <i>a</i> parts of size 1/ <i>b</i> (For
Find areas of rectilinear figures by	numbers <u>within 100.</u>	example, 10/2 is 10 parts and each part is of
decomposing them into non-overlapping		size ½).
rectangles and adding the areas of the non-	Learning Goal 9: NJ SLS 3.NF.A.1 & NJ SLS 3.G.A.2	5120 /2].
overlapping parts, applying this technique to	Partition shapes into parts with equal	
solve real world problems.	areas and express the area of each part as	

NJ SLS 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. *(benchmarked)	a unit fraction; 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 of size 1/b.	
NJ SLS 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. *(benchmarked)		
NJ SLS 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.		
NJ SLS 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. *(benchmarked)		
NJ SLS 3.NF.A.1. Understand a fraction 1/ <i>b</i> as the quantity formed by 1 part when a whole is partitioned into <i>b</i> equal parts; understand a fraction <i>a</i> / <i>b</i> as the quantity formed by <i>a</i> parts		

of size 1/b. *[Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.]	
NJ SLS 3.G.A.2. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. <i>For example, partition a shape into 4 parts having equal area and describe the area of each part as 1/4 of the area of the shape.</i>	

Formative Assessments	Summative Assessments	Performance Assessments	Major Activities/ Assignments (required)
 One to one conferencing and anecdotal notes Rubrics Pre/Post RTI benchmark assessments Differentiated Facts Centers Essential Questions Home Link Review Mental Math and Reflexes Math Message Teaching the Lesson (Vocabulary Infused) Ongoing Learning and Practice Differentiation Options Math Boxes Games (reinforcement of skill) Reflection - Essential Questions revisited (Exit Slip, Journal, Orally, etc) 	 Written test days: Math Message Self-Assessment Oral and Slate Assessments Assessment Building Background for next unit 	 Project Base Learning Opportunities: Essential Questions Class Directions/Discussion/Questions Work on Project Use of rubric and teacher "informal assessment" or checklist Reflection - Essential Questions revisited (Exit slip, Journal, Orally, etc.) 	 Math Formative Diagnostic Tasks CSA #2

Formative Assessments	Summative Assessments	Performance Assessments	Major Activities/ Assignments (required)

Possible Assessment Adjustments (Modifications / Accommodations / Differentiation): How will the teacher provide multiple means for the following student groups to EXPRESS their understanding and comprehension of the content/skills taught?			
Special Education Students	English Language Learners (ELLs)	At-Risk Learners	Advanced Learners
 <u>Accommodations</u> Work in-progress check (comments only marking) Chunked assessments Multiplication Table, Number Line, Fraction Blocks 	 <u>Accommodations</u> Multiple-choice format Number Line, Fraction Blocks Highlight/underline key words Simplify language, Single step directions, Read directions 	Accommodations Number Line, Fraction Blocks Work in-progress check (comments only marking) Learning menus Vary test format	 <u>Accommodations/Differentiation</u> Tiered assessments Independent Study (i.e. Desmos Activities)
Modifications Allow corrections for credit Provide modeled examples Allow use of resources (notes) Calculator for computation Alternative objectives Change level of complexity	 <u>Modifications</u> Shortened assessment Accept short answers Personalized tiered questions 		

Instructional Strategies (refer to Robert Marzano's 41 Elements)	
Manipulatives, KWL, academic games,	
Mathematic Workstations,	
Read Aloud	
Model think aloud comprehension strategies	
Modeling	
Choice Menus	
Math logs/journals	

English Language Learners (ELLs) Special Education Students At-Risk Learners Advanced Learners Accommodations Accommodations Accommodations/Differentiation Accommodations Kinesthetic Movement to Model Kinesthetic Movement to Model • Kinesthetic Movement to Model Low Floor, High Ceiling Tasks Math Debates Integers Integers Integers Word wall & Anchor Posters Word wall – add pictures • Word wall & Anchor Posters **Tiered** assignments • • Graph paper for vector diagrams • Graph paper for vector diagrams Graph paper for vector diagrams Flexible Grouping Graphing Calculator extension (line models) (line models) (line models) • Manipulatives – Integer Cards that • Manipulatives – Integer Cards • Manipulatives – Integer Cards Peer Coaching ٠ model the number on the number that model the number on the that model the number on Compare and Contrast Solution line, Positive/Negative Counters, number line, Positive/Negative the number line, Paths Number Lines, Slide lines, Fraction Positive/Negative Counters, Independent Study Counters, Number Lines, Slide Blocks. Fraction Circles lines, Fraction Blocks, Fraction Number Lines, Slide lines Circles Graph paper for vector Multiplication Table Multiplication Table, Fraction Mnemonics diagrams Blocks. Fraction Circles • SADS (same signs –add, different Calculator Mnemonics Visual charts & Outlined Notes – signs – subtract) SADS (same signs – • KCC (keep, change, change) Add Pictures add, different signs -• KCF (keep, change, flip) Provide written stems for For subtract) • Personalized Examples – Explicit example, "The sum is _____ units KCC (keep, change, 0 to the of ." instruction for word problems and change) • Highlight/underline key words numerous modeled examples KCF (keep, change, 0 Modifications • Simplify language flip) Use of a calculator for Modifications Differentiation • computation • Use of a calculator for Low Floor, High Ceiling Tasks Flexible Grouping • Alternative objectives computation Change level of complexity • Alternative objectives Learning Stations • Change level of complexity Differentiation ٠ Low Floor, High Ceiling Tasks Differentiation • Flexible Grouping Personalized tiered questions ٠ ٠ Learning Stations Enhanced directions • •

Possible Instructional Adjustments (Modifications / Accommodations / Differentiation): How will the teacher provide multiple means for the following student groups to **ACCESS** the content/skills being taught?

Unit Vocabulary

Essential:

Interdisciplinary Connections	Integration of Technology	21 st Century Themes	21 st Century Skills
(Applicable Standards)			
Interdisciplinary Standards	Technology	$\underline{\checkmark}$ Financial, Economic,	_✓_ Critical Thinking and Problem Solving
	8.1.5.A.1	Business, & Entrepreneurial	Students engage with real world situations
Career Ready Practices	Select and use the appropriate	Literacy	involving rational numbers. Students
	digital tools and resources to	Establish an understanding that	carefully consider the options to solve the
CRP4 Communicate clearly and	accomplish a variety of tasks	career-ready individuals take	problem. Once a solution is agreed upon,
effectively and with reason	including solving problems.	regular action to contribute to their	they follow through to ensure the problem
		personal financial wellbeing,	is solved, whether through their own
Career Exploration	8.1.5.A.3	understanding that personal	actions or the actions of others.
9.2.4.A.2 Identify	Use a graphic organizer to	financial security provides the	
various life roles and civic and work -	organize information about	peace of mind required to	_ ✓ Life and Career Skills
related activities in the school, home,	problem or issue.	contribute more fully to their own	Students make connections between
and community.		career success.	abstract concepts with real-world
			applications, and they make correct
Science			insights about when it is appropriate to
			apply the use of an academic skill in a
NGSS 3-LS4-1			workplace situation.
Analyze and interpret data from fossils			
			Technologies Literacy
to provide evidence of the organisms			Communication & Collaboration
			Career-ready individuals communicate
and the environments in which they			thoughts, ideas, and action plans with
			clarity, whether using written, verbal,
lived long ago.			and/or visual methods. Students
			collaborate via the integer game, number
			line discussions and problem solving real
			world situations involving rational
			numbers.

Interdisciplinary Connections (Applicable Standards)	Integration of Technology	21 st Century Themes	21 st Century Skills

Resources

Texts/Materials:

- My Math- McGraw Hill
- Reference Social Studies, Science, Math and Health curricula for other literary connections
- Links:
 - <u>http://pearsonsuccessnet.com</u>
 - <u>http://www.brainpopjr.com</u>
 - <u>http://www.primarygames.com</u>
 - <u>http://www.abcmouse.com</u>
 - <u>http://www.starfall.com</u>
 - <u>http://www.destiny.com</u>
 - <u>http://www.gamequarium.com</u>
 - <u>http://www.free-training-tutorial.com/times-tables-games.html</u> Multiplication Games
 - <u>http://www.sheppardsoftware.com/mathgames/popup/popup_multiplication.htm</u> Multiplication Games
 - <u>http://www.helpingwithmath.com/by_subject/multiplication/mul_games.htm</u> Isolation Multiplication Facts
 - http://www.internet4classrooms.com/skill_builders/multiplication_math_fourth_4th_grade.htm
 - <u>http://arcademicskillbuilders.com/games/grand_prix/grand_prix.html</u> Multiplication Grand Prix

Unit Description:

Develop understanding of fractions as numbers, solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects, reason with shapes and their attributes, recognize perimeter as an attribute of plane figures and distinguish between linear and area measure, multiply and divide within 100.

Essential Questions	Enduring Understandings
 How can numbers be expressed, ordered, or compared? Does rounding a number change its value relative to other numbers? In what situations would a person want to round? Why is place value important? How does place value help you add large numbers? How are addition and subtraction alike and how are they different? What strategies can you use to help you add and subtract quickly and accurately? How can you model multiplication by ten? 	 Understanding place value can lead to number sense and efficient strategies for computing with numbers. Adding and subtracting fluently requires the use and practice of mental strategies Numbers can be expressed in many ways. We can interpret the world around us using a variety of fractional models. Shapes can be compared and categorized and their attributes help us make sense of our world. Multiplication can be understood using array and area models. New shapes can be created by either composing or decomposing existing shapes.

Relevant Standards	Learning Goals	Learning Objectives
Content Standards: Primary or Power	Learning Goal 1: NJ SLS 3.NF.A.2 Draw a number	Students will be able to:
NJ SLS 3.NF.A.2. Understand a fraction as a number on the number line; represent fractions on a number line diagram.	line depicting the position of 1/b (with b = 2, 3, 4, 6, or 8); represent the unit fraction ¼ on the number line by partitioning the number line between 0 and 1 into 4 equal lengths and name the point at the end of the first length as the	 partition a number line into parts of equal sizes between 0 and 1 (halves, thirds, fourths sixths and eighths). plot unit fractions on the number line. identify multiple parts (of length 1/b) on the
NJ SLS 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 partitioning it into	position of the unit fraction ¼; apply the same method for placing points 1/2, 1/3, 1/6, and 1/8 on the number line.	 number line. plot a fraction on the number line by marking off multiple parts of size 1/b.



Relevant Standards	Learning Goals	Learning Objectives
<i>b</i> equal parts. Recognize that each part has size 1/ <i>b</i> and that the endpoint of the part based at 0 locates the number 1/ <i>b</i> on the number line. 3.NF.A.2b. Represent a fraction <i>a</i> / <i>b</i> on a number line diagram by marking off <i>a</i> lengths 1/ <i>b</i> from 0. Recognize that the resulting interval has size <i>a</i> / <i>b</i> and that its endpoint locates the number <i>a</i> / <i>b</i> on the number line. *[Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.] NJ SLS 3.NF.A.3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size NJ SLS 3.NF.A.3a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. NJ SLS 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. NJ SLS 3.NF.A.3c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. <i>Examples:</i> <i>Express 3 in the form 3 = 3/1; recognize that</i> 6/1 = 6; locate 4/4 and 1 at the same point of anumber line diagram.	Learning Goal 2: NJ SLS 3.NF.A.2 Draw a number line depicting the position of fraction <i>a/b</i> (with <i>b</i> = 2, 4, 3, 6, or 8, and including whole numbers up to 5). Learning Goal 3: NJ SLS 3.NF.A.3 Generate simple equivalent fractions, explain why they are equivalent, and support the explanation with visual fraction models; locate them on the number line. Learning Goal 4: NJ SLS 3.NF.A.3 Express whole numbers as fractions, identify fractions equivalent to whole numbers and locate them on the number line. Learning Goal 5: NJ SLS 3.NF.A.3 Compare two fractions having the same numerator; compare two fractions having the same denominator; reason about their size and use the symbols >, =, or < to record the comparison. Learning Goal 6: NJ SLS 3.MD.A.1 Tell and write time to the nearest minute, and solve word problems with addition and subtraction involving time intervals in minutes. Learning Goal 7: NJ SLS 3.MD.A.2 Solve one step word problems by estimating and measuring volume and mass using appropriate tools and standard units of grams, kilograms, and liters. Learning Goal 8: NJ SLS	 plot fractions equivalent to whole numbers including 0 and up to 5. find equivalent fractions (limited to fractions with denominators 2, 3, 4, 6, and 8). explain why two fractions are equivalent; use a visual fraction model to support explanation. write whole numbers as fractions. identify fractions that are equivalent to whole numbers. compare two fractions having the same numerator by reasoning about their size. compare two fractions having the same denominator by reasoning about their size. compare two fractions having the same denominator by reasoning about their size. explain why comparing fractions that do not have the same whole is not valid (reason about their size and support reasoning with a model). use <, =, and > symbols to write comparisons of fractions and justify conclusions with a visual fraction model. tell time to the nearest minute using digital and analog clocks. choose appropriate strategies to solve real world problems involving time. use the number line as a visual model to determine intervals of time as <i>jumps</i> on a number line. measure time intervals.
	3.OA.C.7 Fluently multiply and divide within 100	measure and read a scale to estimate volume.measure and read a scale to estimate mass.

Relevant Standards	Learning Goals	Learning Objectives
NJ SLS 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. *[Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.] NJ SLS 3.MD.A.1. Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes. (e.g., by representing the problem on a number line diagram) NJ SLS 3.MD.A.1. Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes. (e.g., by representing the problem on a number line diagram) NJ SLS 3.MD.A.2. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one- step word problems involving masses or volumes that are given in the same units.	using strategies such as the relationship between multiplication and division. Learning Goal 9: NJ SLS 3.G.A.1 Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. Learning Goal 10: NJ SLS 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.	 add, subtract, multiply, or divide to solve one- step word problems involving masses or volumes. multiply and divide <u>within 100</u> with accuracy and efficiency. classify and sort shapes by attributes. explain why rhombuses, rectangles, and squares are examples of quadrilaterals. draw examples of quadrilaterals. determine the perimeter of various plane shapes and irregular shapes given the side lengths. determine the unknown side length give the perimeter and other sides. show rectangles having the same perimeter and different areas. show rectangles having different perimeters and the same area.

Relevant Standards	Learning Goals	Learning Objectives
NJ SLS 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.		
NJ SLS 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.		
NJ SLS 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.		
*(benchmarked)		

Formative Assessments	Summative Assessments	Performance Assessments	Major Activities/ Assignments
			(required)
One to one conferencing and	Math Message	Class	Math Formative Tasks
anecdotal notes	Self-Assessment	Directions/Discussion/Questions	• CSA #3



Formative Assessments	Summative Assessments	Performance Assessments	Major Activities/ Assignments (required)
 Rubrics Pre/Post RTI benchmark assessments Differentiated Facts Centers Essential Questions Home Link Review Mental Math and Reflexes Math Message Teaching the Lesson (Vocabulary Infused) Ongoing Learning and Practice Differentiation Options Math Boxes Games (reinforcement of skill) Reflection - Essential Questions revisited (Exit Slip, Journal, Orally, etc) 	 Oral and Slate Assessments Assessment Building Background for next unit 	 Work on Project Use of rubric and teacher "informal assessment" or checklist Reflection - Essential Questions revisited (Exit slip, Journal, Orally, etc.) 	

Possible Assessment Adjustments (Modifications /Accommodations/ Differentiation): How will the teacher provide multiple means for the following student groups to EXPRESS their understanding and comprehension of the content/skills taught?			
Special Education Students	English Language Learners (ELLs)	At-Risk Learners	Advanced Learners
 <u>Accommodations</u> Work in-progress check (comments only marking) Chunked assessments Multiplication Table, Number Line, Fraction Blocks 	 <u>Accommodations</u> Multiple-choice format Number Line, Fraction Blocks Highlight/underline key words Simplify language, Single step directions, Read directions 	 <u>Accommodations</u> Number Line, Fraction Blocks Work in-progress check (comments only marking) Learning menus Vary test format 	 Accommodations/Differentiation Tiered assessments Independent Study (i.e. Desmos Activities)
Modifications Allow corrections for credit	Modifications Shortened assessment		



Possible Assessment Adjustments (Modifications / Accommodations / Differentiation): How will the teacher provide multiple means for the following student					
groups to EXPRESS their understanding	g and comprehension of the content/skill	's taught?			
Special Education Students	Special Education Students English Language Learners (ELLs) At-Risk Learners Advanced Learners				
 Provide modeled examples Allow use of resources (notes) Calculator for computation Alternative objectives Change level of complexity 	 Accept short answers Personalized tiered questions 				

Instructional Strategies (refer to Robert Marzano's 41 Elements)	
Manipulatives, KWL, academic games,	
Mathematic Workstations,	
Read Aloud	
Model think aloud comprehension strategies	
Modeling	
Choice Menus	
Math logs/journals	

 Possible Instructional Adjustments (Modifications / Accommodations / Differentiation): How will the teacher provide multiple means for the following student groups to ACCESS the content/skills being taught?

 Special Education Students
 English Language Learners (ELLs)
 At-Risk Learners
 Advanced Learners

Accommodations	Accommodations	Accommodations	Accommodations/Differentiation
Kinesthetic Movement to Model	Kinesthetic Movement to Model	Kinesthetic Movement to Model	Low Floor, High Ceiling Tasks
Integers	Integers	Integers	Math Debates
 Word wall & Anchor Posters 	 Word wall – add pictures 	Word wall & Anchor Posters	 Tiered assignments
Graph paper for vector diagrams	 Graph paper for vector diagrams 	Graph paper for vector diagrams	Flexible Grouping
(line models)	(line models)	(line models)	Graphing Calculator extension
Manipulatives – Integer Cards that	 Manipulatives – Integer Cards 	Manipulatives – Integer Cards	Peer Coaching
model the number on the number	that model the number on the	that model the number on	Compare and Contrast Solution
line, Positive/Negative Counters,	number line, Positive/Negative	the number line,	Paths
Number Lines, Slide lines, Fraction	Counters, Number Lines, Slide	Positive/Negative Counters,	Independent Study
Blocks, Fraction Circles	lines, Fraction Blocks, Fraction	Number Lines, Slide lines	
 Multiplication Table 	Circles Graph paper for vector	Multiplication Table, Fraction	
Mnemonics	diagrams	Blocks, Fraction Circles	



Possible Instructional Adjustments (Modifications / Accommodations / Differentiation): How will the teacher provide multiple means for the following			
student groups to ACCESS the content/	/skills being taught?		
 SADS (same signs –add, different 	Calculator	Mnemonics	
signs – subtract)	 Visual charts & Outlined Notes – 	 SADS (same signs – 	
 KCC (keep, change, change) 	Add Pictures	add, different signs –	
 KCF (keep, change, flip) 	 Provide written stems for For 	subtract)	
 Personalized Examples – Explicit 	example, "The sum is units	 KCC (keep, change, 	
instruction for word problems and	to the of"	change)	
numerous modeled examples	 Highlight/underline key words 	 KCF (keep, change, 	
Modifications	 Simplify language 	flip)	
Use of a calculator for	Modifications	Differentiation	
computation	 Use of a calculator for 	Low Floor, High Ceiling Tasks	
Alternative objectives	computation	Flexible Grouping	
Change level of complexity	 Alternative objectives 	Learning Stations	
Differentiation	 Change level of complexity 		
Low Floor, High Ceiling Tasks	Differentiation		
Flexible Grouping	 Personalized tiered questions 		
Learning Stations	 Enhanced directions 		

Unit Vocabulary	
Essential:	

Interdisciplinary Connections (Applicable Standards)	Integration of Technology	21 st Century Themes	21 st Century Skills
Career Ready Practices	Technology	Financial, Economic,	Critical Thinking and Problem Solving
		Business, & Entrepreneurial	Students engage with real world situations
CRP6 Demonstrate creativity and	8.1.5.A.3	Literacy	involving rational numbers. Students
innovation.	Use a graphic organizer to	Establish an understanding that	carefully consider the options to solve the
	organize information about	career-ready individuals take	problem. Once a solution is agreed upon,
	problem or issue.	regular action to contribute to their	they follow through to ensure the problem
Financial Literacy		personal financial wellbeing,	is solved, whether through their own

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Interdisciplinary Connections (Applicable Standards)	Integration of Technology	21 st Century Themes	21 st Century Skills
	8.1.5.F.1	understanding that personal	actions or the actions of others.
9.1.4.E.2 Apply comparison shopping	Apply digital tools to collect,	financial security provides the	
skills to purchasing decisions	organize, and analyze data that	peace of mind required to	_✓ Life and Career Skills
	support a scientific finding.	contribute more fully to their own	Students make connections between
Career Exploration		career success.	abstract concepts with real-world
			applications, and they make correct
9.2.4.A.3 Investigate both traditional			insights about when it is appropriate to
and nontraditional careers and relate			apply the use of an academic skill in a
information to personal likes and			workplace situation.
dislikes.			
			Technologies Literacy
Science			$\underline{\checkmark}$ Communication & Collaboration
NGSS 3-ESS2-1			Career-ready individuals communicate
Represent data in tables and graphical			thoughts, ideas, and action plans with
displays to describe typical weather			clarity, whether using written, verbal,
conditions expected during a			and/or visual methods. Students
particular season.			collaborate via the integer game, number
			line discussions and problem solving real
			world situations involving rational numbers.
			numbers.

Resources

Texts/Materials:

- My Math- McGraw Hill
- Reference Social Studies, Science, Math and Health curricula for other literary connections

Links:

- http://pearsonsuccessnet.com
- <u>http://www.brainpopjr.com</u>

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43

Resources

- <u>http://www.primarygames.com</u>
- <u>http://www.abcmouse.com</u>
- <u>http://www.starfall.com</u>
- <u>http://www.destiny.com</u>
- <u>http://www.gamequarium.com</u>
- <u>http://www.rubistar.4teachers.org</u>



Unit 4: Representing Data	Recommended Duration: March - May	
Unit Description:		
Represent and interpret data, multiply and divide within 100, use place value understanding and properties of operations to perform multi-digit arithmetic,		
understand concepts of area and relate area to multiplication and to addition.		

Essential Questions	Enduring Understandings
 How can numbers be expressed, ordered, or compared? Does rounding a number change its value relative to other numbers? In what situations would a person want to round? Why is place value important? How does place value help you add large numbers? How are addition and subtraction alike and how are they different? What strategies can you use to help you add and subtract quickly and accurately? How can you model multiplication by ten? 	 Understanding place value can lead to number sense and efficient strategies for computing with numbers. Adding and subtracting fluently requires the use and practice of mental strategies Numbers can be expressed in many ways. We can interpret the world around us using a variety of fractional models.

Relevant Standards	Learning Goals	Learning Objectives
Content Standards: Primary or Power	Learning Goal 1: NJ SLS 3.MD.B.3 Draw scaled	Students will be able to:
	picture and scaled bar graphs to represent data	• draw scaled picture graphs.
NJ SLS 3.MD.B.3. Draw a scaled picture graph	with several categories. Solve one and two-step	• draw scaled bar graphs.
and a scaled bar graph to represent a data set	word problems using scaled bar graphs.	• analyze, interpret and create bar graphs and
with several categories. Solve one- and two-		pictographs in real world situations.
step "how many more" and "how many less"	Learning Goal 2: NJ SLS 3.MD.B.4 Depict data	 solve "how many more" and "how many less"



Relevant Standards	Learning Goals	Learning Objectives
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. NJ SLS 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. NJ SLS 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. *(benchmarked) NJ SLS 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. *(benchmarked) NJ SLS 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	 measured in fourths and halves of an inch with a line plot with scales marked with appropriate units. Learning Goal 3: NJ SLS 3.OA.C.7 Fluently multiply and divide within 100 using strategies such as the relationship between multiplication and division. Learning Goal 4: NJ SLS 3.OA.D.8 Write equation(s) containing an unknown and find the value of an unknown in an equation that is a representation of a two-step word problem (with any four operations); use estimation strategies to assess the reasonableness of answers. Learning Goal 5: NJ SLS 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. Learning Goal 6: NJ SLS 3.MD.C.7d Solve real world problems involving finding areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts. 	 problems using scaled bar graphs. measure length using rulers marked with inch, quarter inch and half inch generate measurement data by measuring length and create a line plot of the data accurately measure several small objects using a standard ruler and display findings on a line plot display data on line plots with horizontal scales in whole numbers, halves, and quarters multiply and divide within 100 with accuracy and efficiency. represent two-step word problems with equation(s) containing unknowns. perform operations in the conventional order (no parentheses). use rounding as an estimation strategy. explain, using an estimation strategy, whether an answer is reasonable. add and subtract within 1000 with accuracy and efficiency. decompose rectilinear figures into nonoverlapping rectangles. find areas of non-overlapping rectangles and add to find the area of the rectilinear figure. solve real world problems involving area of rectilinear figures.

Relevant Standards	Learning Goals	Learning Objectives
subtraction. *(benchmarked)		
NJ SLS 3.MD.C.7. Relate area to the operations of multiplication and addition.		
NJ SLS 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. *(benchmarked)		

Formative Assessments	Summative Assessments	Performance Assessments	Major Activities/ Assignments (required)
 One to one conferencing and anecdotal notes Rubrics Pre/Post RTI benchmark assessments Differentiated Facts Centers Essential Questions Home Link Review Mental Math and Reflexes Math Message Teaching the Lesson (Vocabulary Infused) Ongoing Learning and Practice Differentiation Options Math Boxes Games (reinforcement of skill) Reflection - Essential Questions revisited (Exit Slip, Journal, Orally, etc) 	 Math Message Self-Assessment Oral and Slate Assessments Assessment Building Background for next unit 	 Essential Questions Class Directions/Discussion/Questions Work on Project Use of rubric and teacher "informal assessment" or checklist Reflection - Essential Questions revisited (Exit slip, Journal, Orally, etc.) 	 Math Formative Tasks CSA #4



Possible Assessment Adjustments (Modifications / Accommodations / Differentiation): How will the teacher provide multiple means for the following student groups to **EXPRESS** their understanding and comprehension of the content/skills taught?

Special Education Students	English Language Learners (ELLs)	At-Risk Learners	Advanced Learners
 <u>Accommodations</u> Work in-progress check (comments only marking) Chunked assessments Multiplication Table, Number Line, Fraction Blocks 	 <u>Accommodations</u> Multiple-choice format Number Line, Fraction Blocks Highlight/underline key words Simplify language, Single step directions, Read directions 	Accommodations Number Line, Fraction Blocks Work in-progress check (comments only marking) Learning menus Vary test format	 Accommodations/Differentiation Tiered assessments Independent Study (i.e. Desmos Activities)
<u>Modifications</u> Allow corrections for credit Provide modeled examples Allow use of resources (notes) Calculator for computation Alternative objectives Change level of complexity	Modifications Shortened assessment Accept short answers Personalized tiered questions		

Instructional Strategies (refer to *Robert Marzano's* 41 Elements)

- Manipulatives, KWL, academic games,
- Mathematic Workstations,
- Read Aloud
- Model think aloud comprehension strategies
- Modeling
- Choice Menus
- Math logs/journals

Possible Instructional Adjustments (Modifications / Accommodations / Differentiation): How will the teacher provide multiple means for the following student groups to **ACCESS** the content/skills being taught?

Special Education Students	English Language Learners (ELLs)	At-Risk Learners	Advanced Learners
Accommodations	Accommodations	Accommodations	Accommodations/Differentiation
Kinesthetic Movement to Model	Kinesthetic Movement to Model	Kinesthetic Movement to Model	Low Floor, High Ceiling Tasks
Integers	Integers	Integers	Math Debates
Word wall & Anchor Posters	 Word wall – add pictures 	Word wall & Anchor Posters	Tiered assignments

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Possible Instructional Adjustments (M	odifications /Accommodations/ Differen	ntiation): How will the teacher provide m	ultiple means for the following student
groups to ACCESS the content/skills bein	ng taught?		
 Graph paper for vector diagrams (line models) Manipulatives – Integer Cards that model the number on the number line, Positive/Negative Counters, Number Lines, Slide lines, Fraction Blocks, Fraction Circles Multiplication Table Mnemonics SADS (same signs –add, different signs – subtract) KCC (keep, change, change) KCF (keep, change, flip) Personalized Examples – Explicit instruction for word problems and numerous modeled examples Modifications Use of a calculator for computation 	 Graph paper for vector diagrams (line models) Manipulatives – Integer Cards that model the number on the number line, Positive/Negative Counters, Number Lines, Slide lines, Fraction Blocks, Fraction Circles Graph paper for vector diagrams Calculator Visual charts & Outlined Notes – Add Pictures Provide written stems for For example, "The sum is units to the of" Highlight/underline key words Simplify language Modifications Use of a calculator for 	 Graph paper for vector diagrams (line models) Manipulatives – Integer Cards that model the number on the number line, Positive/Negative Counters, Number Lines, Slide lines Multiplication Table, Fraction Blocks, Fraction Circles Mnemonics SADS (same signs – add, different signs – subtract) KCC (keep, change, change) KCF (keep, change, flip) Differentiation Low Floor, High Ceiling Tasks 	 Flexible Grouping Graphing Calculator extension Peer Coaching Compare and Contrast Solution Paths Independent Study
Alternative objectives	computation	Flexible Grouping	
Change level of complexity	 Alternative objectives 	Learning Stations	
Differentiation	Change level of complexity		
Low Floor, High Ceiling Tasks	Differentiation		
Flexible Grouping	Personalized tiered questions		
Learning Stations	 Enhanced directions 		
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Unit Vocabulary Essential:



Interdisciplinary Connections (Applicable Standards)	Integration of Technology	21 st Century Themes	21 st Century Skills
 (Applicable Standards) Career Ready Practices CRP8 Utilize critical thinking to make sense of problems and persevere in solving them Financial Literacy 9.1.4.F.2 Explain the roles of philanthropy, volunteer service, and charitable contributions, and analyze their impact on community development and quality of living. Career Exploration 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success. Science NGSS 3-LS4-1 Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago. 	Technology 8.1.5.F.1 Apply digital tools to collect, organize, and analyze data that support a scientific finding.		 ✓ Critical Thinking and Problem Solving Students engage with real world situations involving rational numbers. Students carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others. ✓ Life and Career Skills Students make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation. Technologies Literacy ✓ Communication & Collaboration Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. Students collaborate via the integer game, number line discussions and problem solving real world situations involving rational numbers.

Resources

Texts/Materials:

- My Math- McGraw Hill
- Reference Social Studies, Science, Math and Health curricula for other literary connections

Links:

- http://pearsonsuccessnet.com
- <u>http://www.brainpopjr.com</u>
- <u>http://www.primarygames.com</u>
- <u>http://www.abcmouse.com</u>
- <u>http://www.starfall.com</u>
- <u>http://www.destiny.com</u>
- <u>http://www.gamequarium.com</u>
- <u>http://www.rubistar.4teachers.org</u>