South Harrison Township Elementary School District

Committed to Excellence

Course Name: Mathematics	**Grade Level(s): 4**
BOE Adoption Date: October 2017	**Revision Date(s):**

ABSTRACT

In Grade 4, instructional time should focus on three critical areas: (1) developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends; (2) developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers; (3) understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

1. Students generalize their understanding of place value to 1,000,000, understanding the relative sizes of numbers in each place. They apply their understanding of models for multiplication (equal-sized groups, arrays, area models), place value, and properties of operations, in particular the distributive property, as they develop, discuss, and use efficient, accurate, and generalizable methods to compute products of multi-digit whole numbers. Depending on the numbers and the context, they select and accurately apply appropriate methods to estimate or mentally calculate products. They develop fluency with efficient procedures for multiplying whole numbers; understand and explain why the procedures work based on place value and properties of operations; and use them to solve problems. Students apply their understanding of models for division, place value, properties of operations, and the relationship of division to multiplication as they develop, discuss, and use efficient, accurate, and generalizable procedures to find quotients involving multi-digit dividends. They select and accurately apply appropriate methods to estimate and mentally calculate quotients, and interpret

remainders based upon the context.

2. Students develop understanding of fraction equivalence and operations with fractions. They recognize that two different fractions can be equal (e.g., 15/9 = 5/3), and they develop methods for generating and recognizing equivalent fractions. Students extend previous understandings about how fractions are built from unit fractions, composing fractions from unit fractions, decomposing fractions into unit fractions, and using the meaning of fractions and the meaning of multiplication to multiply a fraction by a whole number.

3. Students describe, analyze, compare, and classify two-dimensional shapes. Through building, drawing, and analyzing two-dimensional shapes, students deepen their understanding of properties of two-dimensional objects and the use of them to solve problems involving symmetry.

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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 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, 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

1. **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.

2. **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. http://www.udlcenter.org/aboutudl

3. **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. http://www.ascd.org

4. **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. http://www.ascd.org

5. **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.

6. **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*)

7. **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. http://www.marzanocenter.com

8. **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.

9. **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. http://www.marzanoresearch.com

10. **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. http://www.state.nj.us/education/modelcurriculum/

11. **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.

12. **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.

13. **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.).

14. **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. http://www.state.nj.us/njded/cccs/

    - **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.*

15. **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.

16. **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. http://www.p21.org/our-work/p21-framework

Proficiencies and Pacing:
Course Name: Fourth Grade Math

Unit Title	Duration/Month(s)	Related Standards	Learning Goals	Topics and Skills
Unit 1: Place Value & Operations with Whole Numbers	8 Weeks	**Major Standards** NJ SLS 4.OA.A.1 NJ SLS 4.OA.A.2 NJ SLS 4.NBT.A.1 NJ SLS 4.NBT.A.2 NJ SLS 4.NBT.A.3 **Supporting** NJ SLS 4.OA.B.4 NJ SLS 4.MD.A.1 **Additional Clusters** NJ SLS 4.OA.C.5 NJ SLS 4.MD.A.1	**NJ SLS 4.OA.B.4** Find all factor pairs for a whole numbers up to 100 and determine whether it I a multiple of a given 1-digit whole number and whether it is prime or composite (1 week) **NJ SLS 4.OA.C.5** Generate a number or shape pattern that follows a rule and identify features of the pattern that are not explicit in the rule. (1 week) **NJ SLS 4.MD.A.1** Express measurement in a larger unit in terms of a smaller unit and record equivalent measures in a two-column table. (1 week) **NJ SLS 4.OA.A.1** Write multiplication equations form word problems indicating multiplicative comparisons and describe multiplication equations as comparisons. (1 week) **NJ SLS 4.OA.A.2** Multiply and divide to solve word problems involving multiplicative comparisons and represent these problems with drawings and equations (1 week)	-Identify all the factor pairs for a whole number in the range 1-100. - Explain the relationship between a whole number and its factors. - Determine if a whole number is a multiple of a given one-digit number. - Determine if a whole number is prime or composite. -Generate a number or shape pattern that follows a given rule. - Draw conclusions regarding the features of the pattern not directly related to the rule. - Identify the pattern or rule for a given set of numbers or shapes. - Order units of measurement within a given system. - Convert larger units of measurement to smaller units of measurement within a given system. - Construct a conversion table to record equivalent measurements of two units within a given system.

Unit Title	Duration/Month(s)	Related Standards	Learning Goals	Topics and Skills
			NJ SLS 4.NBT.A.1 For a whole number up to one million, explain that a digit in one place represents ten times what it would represent in the place to its right (1 week) **NJ SLS 4.NBT.A.2** Compare two multi digit while numbers (up to one million) using >, =, and < for numbers presented as base ten numerals, number names, and/or in expanded form. (1 week) **NJ SLS 4.NBT.A.3** Round multi digit whole numbers up to one million to any place. (1 week)	- Write measurement equivalents as a set of ordered pairs. - Translate verbal statement involving multiplication to numeric equations (vice versa). - Explain the commutative property of multiplication. - Write factors of a given product. - Solve word problems for an unknown factor using multiplication or division (use a symbol for the unknown factor). - Compare multiplication to repeated addition. - Identify appropriate operations to solve word problems. - Identify place value of a multi-digit whole number up to millions. - Define a number in one place as 10 times its value in the place to its right. - Read and write whole numbers in standard form, word form, and expanded form up to one million. - Compare and order whole numbers

Unit Title	Duration/Month(s)	Related Standards	Learning Goals	Topics and Skills
				using <, >, = up to one million. - Compare and order whole numbers based on the meaning of place value. - Explain rules for rounding. - Round multi-digit whole numbers up to a million to any place value.
Unit 2: Multi-digit Arithmetic	8 Weeks	**Major Standards** NJ SLS 4.NBT.B.4* NJ SLS 4.NBT.B.5 NJ SLS 4.NBT.B.6 NJ SLS 4.OA.A.3* NJ SLS 4.NF.A.1 NJ SLS 4.NF.A.2 NJ SLS 4.NF.B.3a-b **Supporting** NJ SLS 4.MD.A.3	**NJ SLS 4.NBT.B.4*** Fluently add and subtract multi-digit whole numbers using the standard algorithm. (1 week) **NJ SLS 4.NBT.B.5** Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers; represent and explain calculations using equations, rectangular arrays, and area models. (1 week) **NJ SLS 4.NBT.B.6** Divide a whole number of up to four-digits by a one-digit divisor; represent and explain the calculation using equations, rectangular arrays, and area models. (1 week) **NJ SLS 4.OA.A.3***	- Add and subtract fluently within a million (apply fluency with basic math facts in columns). - Multiply whole numbers up to 4-digit by 1-digit and 2-digit by 2-digit using place value strategies and properties of operations. - Illustrate and explain multiplication calculations through equations, rectangular arrays, and/or area models. - Divide whole numbers with up to 4-digit dividends and 1-digit divisors; quotients may contain remainders. - Draw and explain calculations through equations, rectangular arrays, and/or area models. - Divide whole numbers using

Unit Title	Duration/Month(s)	Related Standards	Learning Goals	Topics and Skills
			Write and solve each equation (including any of the four operations) in order to solve multi-step word problems, using a letter to represent the unknown; interpret remainders in context and assess the reasonableness of answers using mental computation with estimation strategies. (1 week) **NJ SLS 4.NF.A.1** Recognize and generate equivalent fractions and explain why they are equivalent using visual fraction models. (1 week) **NJ SLS 4.NF.A.2** Compare two fractions with different numerators or different denominators, recording comparison with >, =, or <, and justifying the conclusion using visual fraction models. (1 week) **NJ SLS 4.NF.B.3a-b** Decompose a fraction into a sum of fractions with the same denominator in more than one way and record the decomposition as an equation; justify the decomposition with a visual fraction model. (1 week) **NJ SLS 4.MD.A.3**	strategies based on place value, properties of operations, and the relationships between multiplication and division. - Identify appropriate operations to solve word problems. - Solve multi-step word problems with whole numbers using addition and subtraction. - Write an equation from a word problem using a letter to represent the unknown quantity. - Justify the reasonableness of solutions using estimation, mental computation, and rounding. - Calculate equivalent fractions. - Draw a fraction model to identify equivalent fractions. - Explain why multiplying a fraction by an equivalent form of 1 ($\frac{2}{2}$, $\frac{3}{3}$, etc) results in an equivalent fraction. - Compare and order two fractions with unlike numerators and denominators by creating common denominators or common numerators.

Unit Title	Duration/Month(s)	Related Standards	Learning Goals	Topics and Skills
			Solve real world problems with whole numbers by finding the area and perimeter of rectangles using formulas. (1 week)	-Compare and order two fractions with unlike numerators and denominators by comparing them to benchmark fractions. -Explain that comparisons between two fractions are only valid when referring to the same whole. - Record comparisons between fractions with less than, greater than, or equal to symbols. - Justify comparisons between two fractions using a visual fraction model. - Explain adding fractions as joining parts of the same whole. - Explain subtracting fractions as separating parts of the same whole. - Rewrite a fraction into a sum of smaller fractions with the same denominator. - Write each decomposition as an equation. - Explain why rewriting a fraction is equivalent to the original fraction by using a visual fraction model.

Unit Title	Duration/Month(s)	Related Standards	Learning Goals	Topics and Skills
				- Calculate the area and perimeter for rectangles in word problems. - Solve word problems involving finding the missing factor/side of an area problem.
Unit 3: Building Fractions and Decimal Notation	8 Weeks	**Major Standards** NJ SLS 4.NF.B.3c-d NJ SLS 4.NF.B.4a-c NJ SLS 4.NF.C.5 NJ SLS 4.NF.C.6 NJ SLS 4.NF.C.7 NJ SLS 4.NBT.B.4* **Supporting** NJ SLS 4.MD.B.4 NJ SLS 4.MD.A.2	**NJ SLS 4.NF.B.3c-d** Add and subtract mixed numbers with like denominators by replacing each mixed number with an equivalent fraction or improper fraction. (1 week) Solve word problems involving addition and subtraction of fractions having like denominators using visual fraction models and equations to represent the problem. (1 week) **NJ SLS 4.NF.B.4a-c** Multiply a fraction by a whole number using visual fraction models and equations, demonstrating a fraction *a/b* as a multiple of 1*/b.* Multiply a fraction by a whole number, using a visual fraction model and equations to demonstrate that a multiple of *a/b* is the product of 1*/b* and a whole number. Solve 1-step word problems involving multiplication of a fraction by a whole	- Add mixed numbers with like denominators using properties of operations, equivalent fractions, and the relationship between addition and subtraction. - Subtract mixed numbers with like denominators using properties of operations. - Convert mixed numbers to improper fractions to add and subtract fractions with like denominators. -Identify the operation needed to solve a word problem. - Solve word problems that involve addition and subtraction of fractions with like denominators referring to the same whole. - Draw visual fraction models or create equations to represent word problems.

Unit Title	Duration/Month(s)	Related Standards	Learning Goals	Topics and Skills
			number, using visual fraction models and equations to represent the problem. (1 week) **NJ SLS 4.NF.C.5** Add two fractions with respective denominators of 10 and 100 by writing each fraction with denominator 100. (1 week) **NJ SLS 4.NF.C.6** Given decimal notation, write fractions having denominators of 10 or 100. (1 week) **NJ SLS 4.NF.C.7** Compare two decimals to hundredths by reasoning about their size, demonstrating that comparisons are valid only when the two decimals refer to the same whole; record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model. (1 week) **NJ SLS 4.NBT.B.4*** Fluently add and subtract multi-digit whole numbers using the standard algorithm. (Spiral Review as Needed) **NJ SLS 4.MD.B.4** Make a line plot to display a data set in measurements in fractions of a unit (1/2,	- Identify the relationship between repeated addition and multiplication. - Generate multiples of the fraction 1/b. - Multiply a fraction by a whole number by decomposing the fraction as the numerator multiplied by the unit fraction of its denominator. [For example, 3 x (2/5) = 6 x (1/5)]. - Create a numeric expression from a word problem involving the multiplication of a whole number and a fraction. - Solve word problems involving the multiplication of whole numbers and fractions. - Identify between what two whole numbers the solution lies. - Convert fractions with a denominator of 10 to an equivalent fraction with a denominator of 100. - Add two fractions with denominators of 10 and 100. - Convert fractions with denominators of 10 and 100 to decimals.

Unit Title	Duration/Month(s)	Related Standards	Learning Goals	Topics and Skills
			1/4, 1/8) and use it to solve problems involving addition and subtraction of fractions with like denominators. (1 week) **NJ SLS 4.MD.A.2** Solve word problems involving simple fractions or decimals that incorporate measurement comparisons of like units (including problems that require measurements given in a larger unit in terms of a smaller unit). (1 week)	- Locate decimals on a number line. - Describe lengths in decimal form. - Compare and order decimals to hundredths. - Draw a visual model to reason about the size of decimals. -Explain that comparisons between two decimals are only valid when referring to the same whole. - Compare decimals using greater than, less than, and equal to symbols. - Add and subtract fluently within a million (apply fluency with basic math facts in columns). - Construct a line plot to display data of fractional measurements. - Compare data displayed in the line plot to solve addition and subtraction problems. - Identify the appropriate operation needed to solve a word problem. - Identify the operation(s) needed to solve a word problem.

Unit Title	Duration/Month(s)	Related Standards	Learning Goals	Topics and Skills
				- Solve word problems involving simple fractions and decimals. - Solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money. - Convert larger unit measurements to smaller unit measurements in order to solve word problems.
Unit 4: Geometry and Measurement	8 Weeks	**Major Standards** NJ SLS 4.OA.A.3* NJ SLS 4.NBT.B.4* **Additional Clusters** NJ SLS 4.G.A.1 NJ SLS 4.G.A.2 NJ SLS 4.G.A.3 NJ SLS 4.MD.C.5 NJ SLS 4.MD.C.6 NJ SLS 4.MD.C.7	**NJ SLS 4.OA.A.3*** Write and solve each equation (including any of the four operations) in order to solve multi-step word problems, using a letter to represent the unknown; interpret remainders in context and assess the reasonableness of answers using mental computation with estimation strategies. (1 week) **NJ SLS 4.NBT.B.4*** Fluently add and subtract multi-digit whole numbers using the standard algorithm. (Spiral Review as Needed) **NJ SLS 4.G.A.1** Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines and identify these in two-dimensional figures. (1 week)	- Identify appropriate operations to solve word problems. - Solve multi-step word problems with whole numbers using all four operations. - Write an equation from a word problem using a letter to represent the unknown quantity. - Justify the reasonableness of solutions using estimation, mental computation, and rounding. - Interpret remainders in division word problems. - Add and subtract fluently within a million (apply fluency with basic math facts in columns).

Unit Title	Duration/Month(s)	Related Standards	Learning Goals	Topics and Skills
			NJ SLS 4.G.A.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a particular size; recognize right angles as a category, and identify right, acute, obtuse, equilateral, isosceles, and scalene triangles. (1 week) **NJ SLS 4.G.A.3** Draw lines of symmetry and identify line-symmetric figures. (1 week) **NJ SLS 4.MD.C.5** Explain angles as geometric shapes formed by two rays sharing a common endpoint and explain the relationship between a one-degree angle, a circle, and angle measure. (1 week) **NJ SLS 4.MD.C.6** Measure angles in whole number degrees using a protractor and sketch angles of specific measures. (1 week) **NJ SLS 4.MD.C.7** Solve addition and subtraction problems to find unknown angles on a diagram in real	- Draw points, lines, line segments, rays, angles (right, acute, obtuse), and parallel and perpendicular lines. - Identify points, lines, line segments, rays, angles (right, acute, obtuse), and parallel and perpendicular lines in 2D figures. - Classify angles as right, acute, or obtuse. - Classify 2D figures based on the presence or absence of parallel or perpendicular lines. - Classify 2D figures based on the presence or absence of specified angle measures. - Define right triangles as their own category and identify right triangles in drawings. - Define lines of symmetry as a line across a figure such that when the figure is folded on this line, both halves match up. - Identify lines of symmetry in two-dimensional figures.

Unit Title	Duration/Month(s)	Related Standards	Learning Goals	Topics and Skills
			world and mathematical problems using a symbol for an unknown angle measure. (1 week)	- Draw lines of symmetry on two-dimensional figures. - Measure angles with a protractor (half circle protractors and full circle protractors). - Define a “one degree angle” as an angle that turns 1/360 of a circle. - Define an angle measure as the fraction of the circular arc between two rays with a common endpoint. - Calculate *n* one-degree angles as having a measurement of *n* degrees. - Measure angles of *n* degrees. - Measure angles with whole number degrees using a protractor. - Sketch angles of a given measurement. - Define an angle measure as the sum of its non-overlapping parts. - Solve addition and subtraction problems to find the unknown angle in a diagram. - Create an algebraic expression in

Unit Title	Duration/Month(s)	Related Standards	Learning Goals	Topics and Skills
				order to solve for a missing angle measure. - Identify the appropriate operation needed to solve a word problem.

Unit 1: Place Value & Operations with Whole Numbers	Recommended Duration: (2 Months)
Unit Description: The focus for this unit is to: Gain familiarity with factors and multiples, generate and analyze patterns, solve problems involving measurement and conversion of measurements, use the four operations with whole numbers to solve problems, and generalize place value understanding for multi-digit whole numbers	

Essential Questions	Enduring Understandings
• How can we represent numbers? • How do operations affect numbers?	• Patterns in the place value system can make it easier to interpret and operate with numbers.

Relevant Standards	Learning Goals	Learning Objectives
Content Standards: Major or Supportive and additional **NJ SLS 4.OA.B.4.** Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite. **NJ SLS 4.OA.C.5**. Generate a number or shape pattern that follows a given rule. Identify apparent features	**NJ SLS 4.OA.B.4** Find all factor pairs for a whole number up to 100 and determine whether it I a multiple of a given 1-digit whole number and whether it is prime or composite **NJ SLS 4.OA.C.5** Generate a number or shape pattern that follows a rule and identify features of the pattern that are not explicit in the rule. **NJ SLS 4.MD.A.1**	***Students will be able to:*** • find all factor pairs for any whole number (between 1 and 100). • given a one-digit number, determine whether a given whole number (between 1 and 100) is a multiple of the one-digit number. • determine whether a given whole number (between 1 and 100) is prime or composite. • Produce a number pattern form a given rule • Produce shape patterns form a given rule • Analyze a sequence of number sin order to identify features that are not obvious explicitly stated in the rule

Relevant Standards	Learning Goals	Learning Objectives
of the pattern that were not explicit in the rule itself. *For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way* **NJ SLS 4.MD.A.1** Know relative sizes of measurement units within one system of units including km, m, cm, mm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36)* **NJ SLS 4.OA.A.1.** Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations. **NJ SLS 4.OA.A.2**.	Express measurement in a larger unit in terms of a smaller unit and record equivalent measures in a two-column table. **NJ SLS 4.OA.A.1** Write multiplication equations form word problems indicating multiplicative comparisons and describe multiplication equations as comparisons. **NJ SLS 4.OA.A.2** Multiply and divide to solve word problems involving multiplicative comparisons and represent these problems with drawings and equations **NJ SLS 4.NBT.A.1** For a whole number up to one million, explain that a digit in one place represents ten times what it would represent in the place to its right **NJ SLS 4.NBT.A.2** Compare two multi digit while numbers (up to one million) using >, =, and < for numbers presented as base ten numerals, number names, and/or in expanded form. **NJ SLS 4.NBT.A.3** Round multi digit whole numbers up to one million to any place.	• Express measurements of a larger unit in terms of a smaller unit (within a single measurement system) (e.g. convert hours to minutes, kilometers to centimeters, etc.) • Generate a two column table to record measurement equivalents • Multiply to solve word problems involving multiplicative comparisons • Divide to solve word problems involving multiplicative comparisons • Represent problems with drawings and equations, using a symbol for the unknown number • Distinguish word problems involving multiplicative comparisons from those involving additive comparison • Multiply t solve word problems involving multiplicative comparisons • Divide to solve word problems involving multiplicative comparisons • Represent problems with drawings and equations, using a symbol for the unknown number • Distinguish word problems involving multiplicative comparisons from those involving additive comparisons • Explain that a digit in one place represents tem times what it would represent in the place to its right • Multiple representation of whole numbers exists • Students will be able to: • Read and write multi-digit whole numbers using base-ten numerals

Relevant Standards	Learning Goals	Learning Objectives
Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. **NJ SLS 4.NB.A.1.** Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. *For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.* [Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.] **NJ SLS 4.NBT.A.2.** Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons [Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.] **NJ SLS 4.NBT.A.3.** Use place value understanding to round multi-digit whole numbers to any place. [Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.]		• Read and write multi-digit whole numbers using number names • Read and write multi-digit whole numbers using expanded form • Compare two multi-digit numbers using >, and < symbols • Round whole numbers to any place

Formative Assessments	Summative Assessments	Performance Assessments	Major Activities/ Assignments (required)
NJ SLS 4.OA.B.4 Identifying Multiples **NJ SLS 4.OA.C.5** Numbers in a Multiplication Table **NJ SLS 4.MD.A.1** Double plus One **NJ SLS 4.OA.A.1** Who is the tallest? **NJ SLS 4.OA.A.2** Comparing Money Raised **NJ SLS 4.NBT.A.1** Thousands and Millions of Fourth Graders **NJ SLS 4.NBT.A.2** Ordering 4 digit numbers **NJ SLS 4.NBT.A.3** Rounding on the Number Line	• 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 Diagnostic Tasks • CSA #1

Possible Assessment Modifications /Accommodations			
Special Education Learners	**English Language Learners**	**At-Risk Learners**	**Advanced Learners**
• Limited multiple choice • Prior notice of tests • Extra time- tests • Pace long term projects • Preview test procedures • Test study guide • Shortened tasks • Hands-on projects • Tests read aloud • Modified tests	• Limited multiple choice • Prior notice of tests • Extra time- tests • Pace long term projects • Preview test procedures • Rephrase test questions/directions • Test study guide with examples • Shortened tasks • Simplify test wording	• Prior notice of tests • Pace long term projects • Preview test procedures • Test study guide	• Pace long term projects • Individualized testing

Possible Assessment Modifications /Accommodations			
	• Hands-on projects • Tests read aloud		

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 Modifications /Accommodations/Differentiation			
Special Education Learners	**English Language Learners**	**At-Risk Learners**	**Advanced Learners**
• Vary assignment length • Read class materials orally • Provide daily assignment list • Provide homework lists • Provide assistance/cues for transition between activities • Provide options to obtain & demonstrate knowledge through: alternative projects, interviews, oral reports • Use multi-sensory modes to reinforce instruction • Use text/ workbooks/ worksheets at a modified reading level • Alter format of material on page (type/ highlight/ spacing) • Utilize audio/recorded books	• Vary assignment length • Utilize oral response • Read class materials orally • Provide daily assignment list • Provide homework lists • Provide assistance/cues for transition between activities • Provide options to obtain & demonstrate knowledge through: alternative projects, interviews, oral reports • Use multi-sensory modes to reinforce instruction • Use text/ workbooks/ worksheets at a modified reading level • Alter format of material on page (type/ highlight/ spacing) • Utilize audio/recorded books	• Read class materials orally • Provide daily assignment list • Provide homework lists • Provide options to obtain & demonstrate knowledge through: alternative projects, interviews, oral reports • Alter format of material on page (type/ highlight/ spacing) • Utilize graphic/ pictorial mode materials • Assign preferential seating • Allow breaks during work periods, between tasks, during testing	• Provide daily assignment list • Provide options to obtain & demonstrate knowledge through: alternative projects, interviews, oral reports • Use text/ workbooks/ worksheets at an above reading level • Provide individual instruction • Allow breaks during work periods, between tasks, during testing

Possible Instructional Modifications /Accommodations/Differentiation			
• Utilize graphic/ pictorial mode materials • Assign preferential seating • Allow breaks during work periods, between tasks, during testing	• Utilize graphic/ pictorial mode materials • Assign preferential seating • Assign peer tutors/ work buddies/ note takers • Allow breaks during work periods, between tasks, during testing		

Unit Vocabulary
Unit Vocabulary:

Interdisciplinary Connections (Applicable Standards)	Integration of Technology	21st Century Themes	21st Century Skills
Interdisciplinary Standards **Career Ready Practices** CRP1 Act as a responsible and contributing citizen and employee. CRP2 Apply appropriate academic and technical skills **Financial Literacy** 9.1.8.E.3 Compare and contrast product facts versus advertising claims	**Technology** 8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. 8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.	__✓__ Financial, Economic, Business, & Entrepreneurial Literacy *Establish an understanding that career-ready individuals take regular action to contribute to their personal financial wellbeing, understanding that personal financial security provides the peace of mind required to contribute more fully to their own career success.*	_✓_ 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

Interdisciplinary Connections (Applicable Standards)	Integration of Technology	21st Century Themes	21st Century Skills
Science NGSS 5-PS1-1 Develop a model to describe that matter is made of particles too small to be seen.			*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: ***Textbook:*** **My Math – McGraw Hill** https://www.mheonline.com/mh**mymath**/ • http://pearsonsuccessnet.com • http://www.brainpopjr.com • http://www.primarygames.com • http://www.abcmouse.com • http://www.starfall.com • http://www.destiny.com • http://www.gamequarium.com • http://www.rubistar.4teachers.orghttp://kinderwebgames.com/ • http://kinderwebgames.com • http://www.njcore.org • http://www.uen.org/commoncore/ Click on the Grade 5 Core Standards for Math to move to a site that offers links for each standard that contain additional examples and explanations of the material. • http://www.ode.state.or.us/search/page/?id=3511 The Mathematics Unpacked Content for Grade 5 offers detailed explanations of the requirements for each standard to use a reference. • http://www.k-5mathteachingresources.com/ • http://illustrativemathematics.org/standards/k8

Unit 2: Multi-digit Arithmetic and Fraction Equivalence	Recommended Duration: (2 Months)
Unit Description: The focus for this unit is to: Use place value understanding and properties of operations to perform multi-digit arithmetic, use the four operations with whole numbers to solve problems, solve problems involving measurement and conversion of measurements, extend understanding of fraction equivalence and ordering, and build fractions from unit fractions.	

Essential Questions	Enduring Understandings
• How do you look for and make use of structure when operating with fractions and patterns? • How do I know which unit of measurement is appropriate to use? • Where can you find examples of perimeter, area, and volume in the real world?	• There are many ways to represent numbers. • Number benchmarks are useful for relating numbers and estimating amounts.

Relevant Standards	Learning Goals	Learning Objectives
Content Standards: Major or Supportive and additional **NJ SLS 4.NBT.B.4.** Fluently add and subtract multi-digit whole numbers using the standard algorithm. *[Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.] *(benchmarked) **NJ SLS 4.NBT.B.5.**	**NJ SLS 4.NBT.B.4.** Fluently add and subtract multi-digit whole numbers using the standard algorithm. **NJ SLS 4.NBT.B.5.** Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers; represent and explain calculations using equations, rectangular arrays, and area models.	***Students will be able to:*** • add multi-digit whole numbers using the standard algorithm with accuracy and efficiency. • subtract multi-digit whole numbers using the standard algorithm with accuracy and efficiency. • multiply a whole number of up to four digits by a one-digit whole number using strategies based on place values. • multiply two two-digit numbers using strategies based on place value.

Relevant Standards	Learning Goals	Learning Objectives
Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. [Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.] **NJ SLS 4.NBT.B.6.** Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. [Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.] **NJ SLS 4.OA.A.3.** Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and	**NJ SLS 4.NBT.B.6.** Divide a whole number of up to four-digits by a one-digit divisor; represent and explain the calculation using equations, rectangular arrays, and area models. **NJ SLS 4.OA.A.3.** Write and solve each equation (including any of the four operations) in order to solve multi-step word problems, using a letter to represent the unknown; interpret remainders in context and assess the reasonableness of answers using mental computation with estimation strategies. **NJ SLS 4.MD.A.3.** Solve real world problems with whole numbers by finding the area and perimeter of rectangles using formulas. **NJ SLS 4.NF.A.1.** Recognize and generate equivalent fractions and explain why they are equivalent using visual fraction models. **NJ SLS 4.NF.A.2.** Compare two fractions with different numerators or different denominators, recording comparison with >, =, or <, and justifying the conclusion using visual fraction models. **NJ SLS 4.NF.B.3.**	• represent these operations with equations, rectangular arrays, and area models. • explain the calculation by referring to the model (equation, array, or area model). • find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors using strategies based on place value, the properties of operations, and the relationship between multiplication and division. • represent these operations with equations, rectangular arrays, and area models. • explain the calculation by referring to the model (equation, array, or area model). • solve multi-step word problems involving any of the four operations. • solve multi-step word problems involving interpretation (in context) of a remainder. • write equations to represent multi-step word problems, using a letter to represent the unknown quantity. • explain why an answer is reasonable. • use mental computation and estimation strategies to determine whether an answer is reasonable. • solve real world and mathematical problems by finding the area of rectangles using a formula. • solve real world and mathematical problems by finding the perimeter of rectangles using a formula. • explain, using visual fraction models, why two fractions are equivalent. • generate equivalent fractions, using fraction a/b as equivalent to fraction $(n \times a)/(n \times b)$.

Relevant Standards	Learning Goals	Learning Objectives
estimation strategies including rounding. *(benchmarked) **NJ SLS 4.MD.A.3.** Apply the area and perimeter formulas for rectangles in real world and mathematical problems. *For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.* **NJ SLS 4.NF.A.1.** Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. [Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.] **NJ SLS 4.NF.A.2.** Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the	Decompose a fraction into a sum of fractions with the same denominator in more than one way and record the decomposition as an equation; justify the decomposition with a visual fraction model.	• create common denominators in order to compare two fractions. • create common numerators in order to compare two fractions. • compare two fractions with different numerators and different denominators by comparing to a benchmark fraction. • record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. • decompose a fraction into a sum of fractions with the same denominator in more than one way. • write decompositions of fractions as an equation. • develop visual fraction models that represent decomposed fractions and use them to justify decompositions.

Relevant Standards	Learning Goals	Learning Objectives
results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. [Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.] **NJ SLS 4.NF.B.3.** Understand a fraction *a*/*b* with *a* > 1 as a sum of fractions 1/*b*. **NJ SLS 4.NF.B.3a.** Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. **NJ SLS 4.NF.B.3b.** Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples: 3/8 = 1/8 + 1/8 + 1/8; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.* [Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.]		

Formative Assessments	Summative Assessments	Performance Assessments	Major Activities/ Assignments (required)
NJ SLS 4.NBT.B.5 To regroup or not to regroup NJ SLS 4.NBT.B.6 Mental Division Strategy	• Self-Assessment • Oral and Slate Assessments • Assessment	• Essential Questions • Class Directions/Discussion/ Questions • Work on Project	• Math Formative Diagnostic Tasks • CSA #2

Formative Assessments	Summative Assessments	Performance Assessments	Major Activities/ Assignments (required)
NJ SLS 4.OA.A.3/NJ SLS 4.ND.A.3 Karl's Garden NJ SLS 4.NF.A.1 Explaining Fraction Equivalents with Pictures NJ SLS 4.NF.A.1 Fractions and Rectangles NJ SLS 4.NF.A.2 Comparing Fractions Using Benchmarks Game NJ SLS 4.NF.A.2 Doubling Numerators and Denominators NJ SLS 4.NF.B.3a Comparing Sums of Unit Fractions NJ SLS 4.NF.B.3b Making 22 Seventeenths in Different Ways	• Building Background for next unit	• Use of rubric and teacher "informal assessment" or checklist • Reflection - Essential Questions revisited (Exit slip, Journal, Orally, etc.)	

Possible Assessment Modifications /Accommodations			
Special Education Learners	**English Language Learners**	**At-Risk Learners**	**Advanced Learners**
• Limited multiple choice • Prior notice of tests • Extra time- tests • Pace long term projects • Preview test procedures • Test study guide • Shortened tasks • Hands-on projects • Tests read aloud • Modified tests	• Limited multiple choice • Prior notice of tests • Extra time- tests • Pace long term projects • Preview test procedures • Rephrase test questions/directions • Test study guide with examples • Shortened tasks • Simplify test wording • Hands-on projects • Tests read aloud	• Prior notice of tests • Pace long term projects • Preview test procedures • Test study guide	• Pace long term projects • Individualized testing

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 Modifications /Accommodations/Differentiation

Special Education Learners	English Language Learners	At-Risk Learners	Advanced Learners
• Vary assignment length • Read class materials orally • Provide daily assignment list • Provide homework lists • Provide assistance/cues for transition between activities • Provide options to obtain & demonstrate knowledge through: alternative projects, interviews, oral reports • Use multi-sensory modes to reinforce instruction • Use text/ workbooks/ worksheets at a modified reading level • Alter format of material on page (type/ highlight/ spacing) • Utilize audio/recorded books • Utilize graphic/ pictorial mode materials • Assign preferential seating • Allow breaks during work periods,	• Vary assignment length • Utilize oral response • Read class materials orally • Provide daily assignment list • Provide homework lists • Provide assistance/cues for transition between activities • Provide options to obtain & demonstrate knowledge through: alternative projects, interviews, oral reports • Use multi-sensory modes to reinforce instruction • Use text/ workbooks/ worksheets at a modified reading level • Alter format of material on page (type/ highlight/ spacing) • Utilize audio/recorded books • Utilize graphic/ pictorial mode materials • Assign preferential seating	• Read class materials orally • Provide daily assignment list • Provide homework lists • Provide options to obtain & demonstrate knowledge through: alternative projects, interviews, oral reports • Alter format of material on page (type/ highlight/ spacing) • Utilize graphic/ pictorial mode materials • Assign preferential seating • Allow breaks during work periods, between tasks, during testing	• Provide daily assignment list • Provide options to obtain & demonstrate knowledge through: alternative projects, interviews, oral reports • Use text/ workbooks/ worksheets at an above reading level • Provide individual instruction • Allow breaks during work periods, between tasks, during testing

Possible Instructional Modifications /Accommodations/Differentiation			
between tasks, during testing	• Assign peer tutors/ work buddies/ note takers • Allow breaks during work periods, between tasks, during testing		

Unit Vocabulary
Unit Vocabulary:

Interdisciplinary Connections (Applicable Standards)	Integration of Technology	21st Century Themes	21st Century Skills
Interdisciplinary Standards **Career Ready Practices** CRP1 Act as a responsible and contributing citizen and employee. CRP2 Apply appropriate academic and technical skills **Financial Literacy** 9.1.8.E.3 Compare and contrast product facts versus advertising claims **Science** NGSS 5-PS1-1	**Technology** 8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. 8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.	__✓__ Financial, Economic, Business, & Entrepreneurial Literacy *Establish an understanding that career-ready individuals take regular action to contribute to their personal financial wellbeing, understanding that personal financial security provides the peace of mind required to contribute more fully to their own career success.*	__✓__ 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,*

Interdisciplinary Connections (Applicable Standards)	Integration of Technology	21st Century Themes	21st Century Skills
Develop a model to describe that matter is made of particles too small to be seen.			*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: ***Textbook:***   **My Math – McGraw Hill** https://www.mheonline.com/mh**mymath**/   • http://pearsonsuccessnet.com   • http://www.brainpopjr.com   • http://www.primarygames.com   • http://www.abcmouse.com   • http://www.starfall.com   • http://www.destiny.com   • http://www.gamequarium.com   • http://www.rubistar.4teachers.orghttp://kinderwebgames.com/   • http://kinderwebgames.com   • http://www.njcore.org   • http://www.uen.org/commoncore/ Click on the Grade 5 Core Standards for Math to move to a site that offers links for each standard that contain additional examples and explanations of the material.   • http://www.ode.state.or.us/search/page/?id=3511 The Mathematics Unpacked Content for Grade 5 offers detailed explanations of the requirements for each standard to use a reference.   • http://www.k-5mathteachingresources.com/   • http://illustrativemathematics.org/standards/k8

Unit 3: Building Fractions and Decimal Notation	Recommended Duration: (2 Months)
Unit Description: The focus for this unit is to: Build fractions form unit fraction, represent and interpret data, understand decimal notation for fractions and compare decimal fractions, solve problems involving measurement and conversion of measurements, and use place value understanding and properties of operations to add and subtract.	

Essential Questions	Enduring Understandings
• How are fractions and decimals related? • How can you display and interpret data in a meaningful way?	• Numbers can be represented in many ways.

Relevant Standards	Learning Goals	Learning Objectives
Content Standards: Major or Supportive and additional **NJ SLS 4.NF.B.3.** Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$. **NJ SLS 4.NF.B.3c.**	**NJ SLS 4.NF.B.3.** Add and subtract mixed numbers with like denominators by replacing each mixed number with an equivalent fraction or improper fraction. Solve word problems involving addition and subtraction of fractions having like denominators	***Students will be able to:*** • add and subtract fractions having like denominators in order to solve real world problems. • develop visual fraction models and write equations to represent real world problems

Relevant Standards	Learning Goals	Learning Objectives
Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. **NJ SLS 4.NF.B.3d.** Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem. [Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.] **NJ SLS 4.MD.B.4.** Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.* **NJ SLS 4.NF.B.4.** Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. **NJ SLS 4.NF.B.4a.** Understand a fraction *a*/*b* as a multiple of 1/*b*.	using visual fraction models and equations to represent the problem. **NJ SLS 4.MD.B.4.** Make a line plot to display a data set in measurements in fractions of a unit (1/2, 1/4, 1/8) and use it to solve problems involving addition and subtraction of fractions with like denominators. **NJ SLS 4.NF.B.4.** Multiply a fraction by a whole number using visual fraction models and equations, demonstrating a fraction *a/b* as a multiple of 1*/b.* Multiply a fraction by a whole number, using a visual fraction model and equations to demonstrate that a multiple of *a/b* is the product of 1*/b* and a whole number. Solve 1-step word problems involving multiplication of a fraction by a whole number, using visual fraction models and equations to represent the problem. **NJ SLS 4.NF.C.5.** Add two fractions with respective denominators of 10 and 100 by writing each fraction with denominator 100. **NJ SLS 4.NF.C.6.** Given decimal notation, write fractions having denominators of 10 or 100. **NJ SLS 4.NF.C.7.**	involving addition and subtraction of fractions. • add and subtract mixed numbers with like denominators. • given a data set consisting of measurements in fractions of a unit, create a line plot. • using measurement information presented in line plots, add and subtract fractions with like denominators in order to solve problems. • represent *a/b* as a x (1*/b*) using a visual fraction model. • represent *n × (a/b) as (n × a)/b* in a visual fraction model. • multiply a fraction by a whole number. • solve real world problems by multiplying a fraction by a whole number, using visual fraction models and equations to represent the problem. • add two fractions with respective denominators of 10 and 100 using equivalent fractions. • write a decimal as a fraction that has a denominator of 10 or 100. • represent a decimal using a model. • compare two decimals to hundredths by reasoning about their size. • explain that comparisons are valid only when the two decimals refer to the same whole. • record the results of comparisons with the symbols >, =, or <, and justify the conclusions (e.g., by using a visual model).

Relevant Standards	Learning Goals	Learning Objectives
For example, use a visual fraction model to represent 5/4 as the product 5 × (1/4), recording the conclusion by the equation 5/4 = 5 × (1/4). **NJ SLS 4.F.4.B.4b.** Understand a multiple of *a*/*b* as a multiple of 1/*b*, and use this understanding to multiply a fraction by a whole number. *For example, use a visual fraction model to express 3 × (2/5) as 6 × (1/5), recognizing this product as 6/5. (In general, n × (a/b) = (n × a)/b.)* **NJ SLS 4.NF.4.B.4c.** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. *For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?* [Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.] **NJ SLS 4.NF.C.5.** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and	Compare two decimals to hundredths by reasoning about their size, demonstrating that comparisons are valid only when the two decimals refer to the same whole; record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model. **NJ SLS 4.MD.A.2.** Solve word problems involving simple fractions or decimals that incorporate measurement comparisons of like units (including problems that require measurements given in a larger unit in terms of a smaller unit). **NJ SLS 4.NBT.B.4.** Fluently add and subtract multi-digit whole numbers using the standard algorithm.	• solve word problems (using addition, subtraction and multiplication) involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals. • solve word problems (using all four operations) involving whole number distances, intervals of time, liquid volumes, masses of objects, and money, including problems requiring expressing measurements given in a larger measurement unit in terms of a smaller measurement unit (conversion). • construct diagrams (e.g. number line diagrams) to represent measurement quantities. • add using the standard algorithm with accuracy and efficiency. • subtract using the standard algorithm with accuracy and efficiency.

Relevant Standards	Learning Goals	Learning Objectives
use this technique to add two fractions with respective denominators 10 and 100. *For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.* [Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.] **NJ SLS 4.NF.C.6.** Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.* [Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.] **NJ SLS 4.NF.C.7.** Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model. [Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.] **NJ SLS 4.MD.A.2.** Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money,		

Relevant Standards	Learning Goals	Learning Objectives
including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. **NJ SLS 4.NBT.B.4.** Fluently add and subtract multi-digit whole numbers using the standard algorithm. [Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.] *(benchmarked)		

Formative Assessments	Summative Assessments	Performance Assessments	Major Activities/ Assignments (required)
NJ SLS 4.NF.B.3c Cynthia's Perfect Punch NJ SLS 4.NF.B.3c Peaches NJ SLS 4.MD.B.4 Button Diameters NJ SLS 4.NF.B.4 Extending Multiplication From Whole Numbers to Fractions NJ SLS 4.NF.B.4c Sugar in six cans of soda NJ SLS 4.NF.C.5 Adding Tenths and Hundredths NJ SL S 4.NF.C.6 Dimes and Pennies	• Math Message • Self-Assessment • Oral and Slate Assessments • Assessment • Building Background for next unit	• Math Message • Self-Assessment • Oral and Slate Assessments • Assessment • Building Background for next unit	• Math Formative Diagnostic Tasks • CSA #3

Formative Assessments	Summative Assessments	Performance Assessments	Major Activities/ Assignments (required)
NJ SLS 4.NF.C.6 Expanded Fractions and Decimals NJ SLS 4.NF.C.7 Using Place Value NJ SLS 4.MD.A.2 Margie Buys Apples			

Possible Assessment Modifications /Accommodations			
Special Education Learners	**English Language Learners**	**At-Risk Learners**	**Advanced Learners**
• Limited multiple choice • Prior notice of tests • Extra time- tests • Pace long term projects • Preview test procedures • Test study guide • Shortened tasks • Hands-on projects • Tests read aloud • Modified tests	• Limited multiple choice • Prior notice of tests • Extra time- tests • Pace long term projects • Preview test procedures • Rephrase test questions/directions • Test study guide with examples • Shortened tasks • Simplify test wording • Hands-on projects • Tests read aloud	• Prior notice of tests • Pace long term projects • Preview test procedures • Test study guide	• Pace long term projects • Individualized testing

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 Modifications /Accommodations/Differentiation			
Special Education Learners • Vary assignment length • Read class materials orally • Provide daily assignment list • Provide homework lists • Provide assistance/cues for transition between activities • Provide options to obtain & demonstrate knowledge through: alternative projects, interviews, oral reports • Use multi-sensory modes to reinforce instruction • Use text/ workbooks/ worksheets at a modified reading level • Alter format of material on page (type/ highlight/ spacing) • Utilize audio/recorded books • Utilize graphic/ pictorial mode materials • Assign preferential seating • Allow breaks during work periods, between tasks, during testing	**English Language Learners** • Vary assignment length • Utilize oral response • Read class materials orally • Provide daily assignment list • Provide homework lists • Provide assistance/cues for transition between activities • Provide options to obtain & demonstrate knowledge through: alternative projects, interviews, oral reports • Use multi-sensory modes to reinforce instruction • Use text/ workbooks/ worksheets at a modified reading level • Alter format of material on page (type/ highlight/ spacing) • Utilize audio/recorded books • Utilize graphic/ pictorial mode materials • Assign preferential seating • Assign peer tutors/ work buddies/ note takers • Allow breaks during work periods, between tasks, during testing	**At-Risk Learners** • Read class materials orally • Provide daily assignment list • Provide homework lists • Provide options to obtain & demonstrate knowledge through: alternative projects, interviews, oral reports • Alter format of material on page (type/ highlight/ spacing) • Utilize graphic/ pictorial mode materials • Assign preferential seating • Allow breaks during work periods, between tasks, during testing	**Advanced Learners** • Provide daily assignment list • Provide options to obtain & demonstrate knowledge through: alternative projects, interviews, oral reports • Use text/ workbooks/ worksheets at an above reading level • Provide individual instruction • Allow breaks during work periods, between tasks, during testing

Unit Vocabulary
Essential:

Interdisciplinary Connections (Applicable Standards)	**Integration of Technology**	**21st Century Themes**	**21st Century Skills**
Interdisciplinary Standards **Career Ready Practices** CRP4 Communicate clearly and effectively and with reason **Financial Literacy** 9.1.8.E.1 Explain what it means to be a responsible consumer and the factors to consider when making consumer decisions. **Career Exploration** 9.2.8.B.3 Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, and extracurricular activities for use in a career. **Science** NGSS 5-PS1-1 Develop a model to describe that matter is made of particles too small to	Technology **Technology** 8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. 8.1.5.F.1 Apply digital tools to collect, organize, and analyze data that support a scientific finding.	__✓__ Financial, Economic, Business, & Entrepreneurial Literacy *Establish an understanding that career-ready individuals take regular action to contribute to their personal financial wellbeing, understanding that personal financial security provides the peace of mind required to contribute more fully to their own career success.*	_✓_ 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*

Interdisciplinary Connections (Applicable Standards)	Integration of Technology	21st Century Themes	21st Century Skills
be seen			*rational numbers.*

Resources

Texts/Materials:

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

- http://pearsonsuccessnet.com
- http://www.brainpopjr.com
- http://www.primarygames.com
- http://www.abcmouse.com
- http://www.starfall.com
- http://www.destiny.com
- http://www.gamequarium.com
- http://www.uen.org/commoncore/ Click on the Grade 5 Core Standards for Math to move to a site that offers links for each standard that contain additional
- examples and explanations of the material.
- http://www.ode.state.or.us/search/page/?id=3511 The Mathematics Unpacked Content for Grade 5 offers detailed explanations of the requirements for each standard to use a reference.
- http://www.k-5mathteachingresources.com/
- http://illustrativemathematics.org/standards/k8

Unit 4: Geometry and Measurement	Recommended Duration: (2 Months)
Unit Description: The focus for this unit is to: Draw and identify lines and angles, and classify shapes by properties of their lines and angles, understand concepts of angle and measure angles (Geometric measurement), use the four operations with whole numbers to solve problems, and use place value understanding and properties of operations to perform multi-digit arithmetic.	

Essential Questions	Enduring Understandings
• How are different ideas about geometry connected? • How are numbers used in everyday life to convey information and solve problems?	• It is important recognize when each operation is appropriate to use.

Relevant Standards	Learning Goals	Learning Objectives
Content Standards: Major or Supportive and additional **NJ SLS 4.G.A.1.** Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	**NJ SLS 4.G.A.1.** Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines and identify these in two-dimensional figures. **NJ SLS 4.G.A.2.** Classify two-dimensional figures based on the presence or absence of parallel or perpendicular	***Students will be able to:*** • draw points, lines, line segments and rays. • draw angles (right, acute, obtuse). • draw perpendicular and parallel lines. • distinguish between lines, line segments, and rays. • identify points, lines, line segment, rays, right angles, acute angles, obtuse angles,

Relevant Standards	Learning Goals	Learning Objectives
NJ SLS 4.G.A.2. Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles. **NJ SLS 4.G.A.3.** Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry. **NJ SLS 4.MD.C.5.** Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement. NJ SLS 4.MD.C.5a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles. NJ SLS 4.MD.C.5b. An angle that turns through *n* one-degree angles is said to have an angle measure of *n*	lines, or the presence or absence of angles of a particular size; recognize right angles as a category, and identify right, acute, obtuse, equilateral, isosceles, and scalene triangles. **NJ SLS 4.G.A.3.** Draw lines of symmetry and identify line-symmetric figures. **NJ SLS 4.MD.C.5.** Explain angles as geometric shapes formed by two rays sharing a common endpoint and explain the relationship between a one-degree angle, a circle, and angle measure. **NJ SLS 4.MD.C.6.** Measure angles in whole number degrees using a protractor and sketch angles of specific measures. **NJ SLS 4.MD.C.7.** Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems using a symbol for an unknown angle measure. **NJ SLS 4.OA.A.3.** Write and solve each equation (including any of the four operations) in order to solve multi-step word problems, using a letter to represent the unknown; interpret remainders in context and assess the reasonableness of answers using mental computation with estimation strategies.	perpendicular lines and parallel lines in two-dimensional figures. • classify triangles based on the presence or absence of perpendicular lines and based on the presence or absence of angles of a particular size. • classify quadrilaterals based on the presence or absence of parallel or perpendicular lines and based on the presence or absence of angles of a particular size. • fold a figure along a line in order to create matching parts. • identify lines of symmetry as a line across the figure such that the figure can be folded along the line into matching parts. • identify figures having line symmetry. • draw lines of symmetry. • describe an angle as measured with reference to a circle with the center of the circle being the common endpoint of the rays. • explain a 'one-degree angle' and its relation to a circle; a "degree" is defined as 1/360 (one degree angle) of the entire circle. • measure angles in whole-number degrees. • given an angle measure, sketch the angle. • solve multi-step word problems involving any of the four operations. • solve multi-step word problems involving interpretation (in context) of a remainder. • write equations to represent multi-step word problems, using a letter to represent the unknown quantity.

Relevant Standards	Learning Goals	Learning Objectives
degrees. **NJ SLS 4.MD.C.6.** Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure. **NJ SLS 4.MD.C.7.** Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure. **NJ SLS 4.OA.A.3.** Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. 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. **NJ SLS 4.NBT.B.4.** Fluently add and subtract multi-digit whole numbers using the standard algorithm.	**NJ SLS 4.NBT.B.4.** Fluently add and subtract multi-digit whole numbers using the standard algorithm.	• explain why an answer is reasonable. • use mental computation and estimation strategies to determine whether an answer is reasonable. • add using the standard algorithm with accuracy and efficiency • subtract using the standard algorithm with accuracy and efficiency

Relevant Standards	Learning Goals	Learning Objectives
[Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.]		

Formative Assessments	Summative Assessments	Performance Assessments	Major Activities/ Assignments (required)
NJ SLS 4.G.A.1 The Geometry of Letters NJ SLS 4.G.A.1 What's the Point? NJ SLS 4.G.A.2 Are these right? NJ SLS 4.G.A.2 Defining Attributes of Rectangles and Parallelograms NJ SLS 4.G.A.3 Finding Lines of Symmetry NJ SLS 4.G.A.3 Lines of symmetry for triangles NJ SLS 4.MD.C.6, NJ SLS 4.MD.C.7, NJ SLS 4.G.A.1 Measuring Angles NJ SLS 4.MD.C.7, NJ SLS 4.G.A.2 Finding an unknown angle NJ SLS 4.OA.A.3 Carnival Tickets	• 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 Diagnostic Tasks • CSA #4

Possible Assessment Modifications /Accommodations			
Special Education Learners	**English Language Learners**	**At-Risk Learners**	**Advanced Learners**
• Limited multiple choice • Prior notice of tests	• Limited multiple choice • Prior notice of tests	• Prior notice of tests • Pace long term projects	• Pace long term projects • Individualized testing

Possible Assessment Modifications /Accommodations			
• Extra time- tests • Pace long term projects • Preview test procedures • Test study guide • Shortened tasks • Hands-on projects • Tests read aloud • Modified tests	• Extra time- tests • Pace long term projects • Preview test procedures • Rephrase test questions/directions • Test study guide with examples • Shortened tasks • Simplify test wording • Hands-on projects • Tests read aloud	• Preview test procedures • Test study guide	

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 Choice Menus • Reading logs/journals

Possible Instructional Modifications /Accommodations/Differentiation			
Special Education Learners • Vary assignment length • Read class materials orally • Provide daily assignment list • Provide homework lists • Provide assistance/cues for transition between activities • Provide options to obtain & demonstrate knowledge through: alternative projects, interviews, oral reports • Use multi-sensory modes to reinforce instruction • Use text/ workbooks/ worksheets at a modified reading level • Alter format of material on page (type/ highlight/ spacing) • Utilize audio/recorded books • Utilize graphic/ pictorial mode materials • Assign preferential seating • Allow breaks during work periods, between tasks, during testing	**English Language Learners** • Vary assignment length • Utilize oral response • Read class materials orally • Provide daily assignment list • Provide homework lists • Provide assistance/cues for transition between activities • Provide options to obtain & demonstrate knowledge through: alternative projects, interviews, oral reports • Use multi-sensory modes to reinforce instruction • Use text/ workbooks/ worksheets at a modified reading level • Alter format of material on page (type/ highlight/ spacing) • Utilize audio/recorded books • Utilize graphic/ pictorial mode materials • Assign preferential seating • Assign peer tutors/ work buddies/ note takers	**At-Risk Learners** • Read class materials orally • Provide daily assignment list • Provide homework lists • Provide options to obtain & demonstrate knowledge through: alternative projects, interviews, oral reports • Alter format of material on page (type/ highlight/ spacing) • Utilize graphic/ pictorial mode materials • Assign preferential seating • Allow breaks during work periods, between tasks, during testing	**Advanced Learners** • Provide daily assignment list • Provide options to obtain & demonstrate knowledge through: alternative projects, interviews, oral reports • Use text/ workbooks/ worksheets at an above reading level • Provide individual instruction • Allow breaks during work periods, between tasks, during testing

Possible Instructional Modifications /Accommodations/Differentiation			
	• Allow breaks during work periods, between tasks, during testing		

Unit Vocabulary
Essential:

Interdisciplinary Connections (Applicable Standards)	Integration of Technology	21st Century Themes	21st Century Skills
Interdisciplinary Standards **Career Ready Practices** CRP9 Model integrity, ethical leaders hip and effective management **Financial Literacy** 9.1.8.E.3 Compare and contrast product facts versus advertising claims **Career Exploration**	**Technology** 8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. 8.1.5.F.1 Apply digital tools to collect, organize, and analyze data that support a scientific finding.	__✓__ Financial, Economic, Business, & Entrepreneurial Literacy *Establish an understanding that career-ready individuals take regular action to contribute to their personal financial wellbeing, understanding that personal financial security provides the peace of mind required to contribute more fully to their own career success.*	__✓__ 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*

Interdisciplinary Connections (Applicable Standards)	Integration of Technology	21st Century Themes	21st Century Skills
9.2.8.B.3 Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, and extracurricular activities for use in a career. **Science** NGSS 5-PS1-2 Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved			*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:
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Materials:

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- http://www.primarygames.com
- http://www.abcmouse.com
- http://www.starfall.com
- http://www.destiny.com
- http://www.gamequarium.com
- http://www.rubistar.4teachers.org
- http://www.uen.org/commoncore/ Click on the Grade 5 Core Standards for Math to move to a site that offers links for each standard that contain additional examples and explanations of the material.

Resources
• http://www.ode.state.or.us/search/page/?id=3511 The Mathematics Unpacked Content for Grade 5 offers detailed explanations of the requirements for each standard to use a reference. • http://www.k-5mathteachingresources.com/ • http://illustrativemathematics.org/standards/k8 • http://www.learner.org/courses/learningmath/number/session9/part_a/