LESTER C. NOECKER SCHOOL
ROSELAND SCHOOL DISTRICT

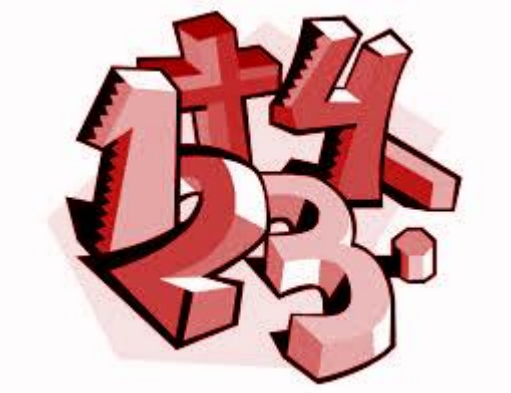
Math Curriculum

Fifth Grade

Updated and aligned NJ SLS

August 2024

Approved by the Roseland Board of Education
August 2024



Giuseppe Leone, Superintendent
With special appreciation to Michele Smith & the Math Curriculum Writing Staff

Roseland Mathematics

Grade Level: 5

Contents

Instructional Materials

Everyday Mathematics 4th Edition
© McGraw-Hill Education 2014
www.everydaymath.com

Supplemental Resources

- Connected Ed https://connected.mcgraw-hill.com/connected/login.do
- Illustrative Mathematics https://www.illustrativemathematics.org/
- Khan Academy https://www.khanacademy.org/
- Math for Elementary School Teachers http://www.mathforelementaryteachers.org/ video clips that contain explanations of arithmetic topics including: Place

Value/Arithmetic Models/Arithmetic Algorithms, Mental Math, Primes/Divisibility, Fraction Arithmetic, and Word Problems/Model Drawing.

- National Council of Teachers of Mathematics http://www.nctm.org/
- National Library of Virtual Manipulatives http://nlvm.usu.edu/
- NCTM Illuminations Resources for Teaching Math http://illuminations.nctm.org/

Interdisciplinary Connections

Mathematics is a unified body of knowledge whose concepts build upon each other. Connecting mathematical concepts includes linking ideas to related ideas learned previously.

Major emphasis should be given to ideas and concepts across mathematical content areas that help students see that mathematics is a web of closely connected ideas. Students need to connect their mathematical learning to appropriate real-world contexts. They need to create interest and maintain the interest after the novelty of the work has worn off.

Mathematics is the language of science and is greatly utilized in industry and business. It gives us the power to solve difficult real-world problems, but also helps us to understand how the universe operates.

Every mathematics teacher needs to make students unafraid of the subject by convincing the students of the usefulness of learning mathematics in their daily lives and for higher studies. The world today, which leans more and more heavily on Science and Technology, demands more from mathematics. Tomorrow's world will, no doubt, make still greater demands from mathematics.

Interdisciplinary Connections for Grade 5

See Me in Space-A Walk through the Solar System

SUBJECT AREA: Science, Language Arts, Social Studies, Math, Art

A practice in scientific notation, measurement, and scale distances, this lesson plan integrates mathematics into the science curriculum. Students will apply knowledge of the properties, movements, and locations of objects in our solar system. We hope that our students will be able to recognize and elaborate on each of the planets and be able to transfer knowledge from one curricular area to the next.

http://www.learnnc.org/lp/pages/3091

Myahsteward.weebly.com

Be the Author of Your Own Problem!

SUBJECT AREA: ELA- Writing, Reading, Math, Art

Students will become authors of their own division word problems. Before writing students will brainstorm ideas and wording for their word problems. Word problems can be centered around a grade level related theme. (read-aloud book, science unit, ss unit, season etc). Students will need to write a division word problem that includes a remainder in the quotient. The final result should include: word problem, number sentence, illustration, solution, and an explanations of what they did with the remainder and why.

5th Grade Shape Sorter

SUBJECT AREA: Math, Science, ELA-Writing and Presenting, Art, Technology

Students will work in small groups to design a machine that sorts triangles and quadrilaterals. They are required to draw, describe and present their machines. Their drawing is a detailed diagram that explains how their machine sorts the shapes. The written response is a description of what happens with two different shapes as they travel through the machine. Presentations are an overview of their machine, where both teacher and classmates can ask questions.

Google Doc- directions

Interdisciplinary Connections (continued)

Design Your Own Classroom

SUBJECT AREA: Math, art, technology, ELA-Writing

Students will study interior design as a profession as well as a vocation. They will integrate their study with math, writing, and computer skills by designing a classroom of their dreams. They will learn to draw given lengths accurately. They will practice measuring to scale and convert actual to scale sizes, while integrating the geometry unit in mathematics. The students will work in small groups to integrate writing and computer technology by developing a precise description of their dream room and presenting through slides and sheets.

Google Doc-docs and rubric

Fairytale Word Problems

SUBJECT AREA: ELA- Writing, Reading, Math, Art, Technology

This lesson is a hands-on math lesson that is meant to stimulate critical thinking as well as reinforce vocabulary that is necessary to be able to create and solve word problems both on paper and on the computer. Students will be able to generate and utilize a list of math vocabulary words by identifying which operations they reflect and by using them when they create their own word problems incorporating fairytales as their LA focus. Students will be able to work cooperatively with a partner to participate in creating their own word problem and showing the work for a class book. They will first sketch out this page and then be asked to input it using Google Slides. The students will then need to present their word problems to the class via slideshow on Google Slides.

Google Docs- directions & rubric

Willis Tower

SUBJECT AREA: Math, Soc.St., LA, Art

Students apply their knowledge of volume concepts to calculate the volume of a building. The students will read and research the Willis Tower in Chicago, IL. They will work in small groups to find the volume of Willis Tower. They will need to estimate the

volume of Willis Tower and make posters summarizing their work.

Everyday Math lesson 6-13

New Jersey Student Learning Standards (NJSLS)

In Grade 5, instructional time should focus on three critical areas: (1) developing fluency with addition and subtraction of fractions, and developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions); (2) extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations; and (3) developing understanding of volume.

(1) Students apply their understanding of fractions and fraction models to represent the addition and subtraction of fractions with unlike denominators as equivalent calculations with like denominators. They develop fluency in calculating sums and differences of fractions, and make reasonable estimates of them. Students also use the meaning of fractions, of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for multiplying and dividing fractions make sense. (Note: this is limited to the case of dividing unit fractions by whole numbers and whole numbers by unit fractions.)

(2) Students develop understanding of why division procedures work based on the meaning of base-ten numerals and properties of operations. They finalize fluency with multi-digit addition, subtraction, multiplication, and division. They apply their understandings of models for decimals, decimal notation, and properties of operations to add and subtract decimals to hundredths. They develop fluency in these computations, and make reasonable estimates of their results. Students use the relationship between decimals and fractions, as well as the relationship between finite decimals and whole numbers (i.e., a finite decimal multiplied by an appropriate power of 10 is a whole number), to understand and explain why the procedures for multiplying and dividing finite decimals make sense. They compute products and quotients of decimals to hundredths efficiently and accurately.

(3) Students recognize volume as an attribute of three-dimensional space. They understand that volume can be measured by finding the total number of same-size units of volume required to fill the space without gaps or overlaps. They understand that a 1-unit by 1-unit by 1-unit cube is the standard unit for measuring volume. They select appropriate units, strategies, and tools for solving problems that involve estimating and measuring volume. They decompose three-dimensional shapes and find volumes of right rectangular prisms by viewing them as decomposed into layers of arrays of cubes. They measure necessary attributes of shapes in order to determine volumes to solve real world and mathematical problems.

Operations and Algebraic Thinking

Write and interpret numerical expressions.

5.OA.A.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

5.OA.A.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. *For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.*

Understandings	Essential Questions
Students will understand… ● the order of operations affects the value of the answer.	● Why is there an order to follow to compute answers?
Knowledge	**Skills**

Students will know . . .
● the order of operations is as follows:
  ● parentheses
  ● exponents
  ● multiplication and division, left to right
  ● addition and subtraction, left to right.
	Students will be able to . . .
	● use the order of operations to find answers to expressions.
	● write simple expressions that record calculations with numbers.
	● interpret numerical expressions without evaluating them.

RESOURCES

- **Everyday Mathematics 4 Lessons:** 1-1, 1-5, 1-7, 1-8, 1-9, 1-11, 1-12, 2-3, 2-5, 2-6, 2-7, 2-8, 2-10, 3-1, 3-3, 3-6, 3-8, 3-11, 4-3, 4-10, 4-11, 6-2, 6-8, 6-13, 7-1 (1-2, 1-3, 1-4, 1-6, 1-8, 1-10, 2-1, 2-2, 2-4, 2-14, 3-2, 3-3, 3-4, 3-9, 3-10, 3-11, 3-12, 3-13, 3-14)
- **Supplemental Lessons:** Binder pages 5-38

Operations and Algebraic Thinking

Analyze patterns and relationships.

5.OA.B.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. *For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.*

Understandings	Essential Questions
Students will understand… ● patterns can be put together to generate new patterns.	● How are the coordinate points related to patterns?
Knowledge	**Skills**
Students will know . . . ● that to determine if there is a pattern present in a set of numbers, one can look for constant change between the variables.	Students will be able to . . . ● generate patterns from other patterns. ● graph ordered pairs generated by the pattern on a coordinate plane.

RESOURCES

- **Everyday Mathematics 4 Lessons:** 4-9, 5-6, 7-10, 7-11, 7-12, 7-13, 8-2, 8-9 (6-10, 6-14, 7-14, 8-6, 8-10,8-12)
- **Supplemental Lessons:** Binder pages 56-87

Numbers and Operations in Base Ten

Understand the place value system.

5.NBT.A.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.

5.NBT.A.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

5.NBT.A.3 Read, write, and compare decimals to thousandths.

a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form,
   e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.
b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.

5.NBT.A.4 Use place value understanding to round decimals to any place.

Understandings	Essential Questions
Students will understand… ● each place in the place-value system has a limit to the value which can be placed there. ● the same relationship exists between any two adjacent places in the place-value system. ● placement of a number into a place in the place-value system has a significant effect on its value.	● How does the location of a number in a place-value system affect the value of the number? ● How is place value used to round numbers? ● What is the significance of the decimal point?
Knowledge	**Skills**
Students will know . . . ● when the value in a place exceeds the limit, it must change places. ● in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. ● place-value understanding is needed to round decimals to any place. ● the place to examine in order to round numbers, including decimals.	Students will be able to . . . ● read and write decimals to thousandths using base-ten numerals, number names, and expanded form. ● compare two decimals to thousandths. ● use >, =, and < symbols to record the results of comparisons.

RESOURCES
• **Everyday Mathematics 4 Lessons:** 1-1, 2-1, 2-2, 2-3, 2-4, 2-5, 2-7, 2-8, 2-9, 2-10, 2-12, 2-13, 3-2, 3-5, 3-9, 3-10, 3-13, 3-14, 4-1, 4-2, 4-3, 4-4, 4-5, 4-7, 4-8, 4-9, 4-11, 4-12, 4-13, 4-14, 5-1, 5-3, 5-4, 5-5, 5-6, 5-8, 5-9, 5-10, 6-1, 6-2, 6-3, 6-4, 6-6, 6-7, 6-9, 6-10, 6-11, 6-12, 6-13, 7-2, 7-3, 7-5, 7-12, 8-1, 8-4, 8-5, 8-7, 8-8, 8-10, 8-11, 8-12 (1-2, 1-4, 1-8, 1—13, 2-3, 2-6, 2-7, 2-8, 2-8, 2-11, 2-12, 3-1, 3-3, 3-4, 3-5, 3-6, 3-7, 3-8, 3-10, 3-15, 4-5, 4-6, 4-7, 4-9, 4-11, 4-12, 4-13, 4-14, 5-1, 5-2, 5-3, 5-5, 5-6, 5-7, 5-8, 5-10, 5-11, 5-13, 5-15, 6-2, 6-3, 6-4, 6-5, 6-6, 6-8, 6-11, 6-13, 7-1, 7-8, 7-10, 7-14, 8-2, 8-9) • **Supplemental Lessons:** Binder pages 5-11, 21-87

Numbers and Operations in Base 10

Perform operations with multi-digit whole numbers and with decimals to hundredths.

5.NBT.B.5 With accuracy and efficiency, multiply multi-digit whole numbers using the standard algorithm.

5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-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.

5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Understandings	Essential Questions
Students will understand… ● rectangles have an area that represents the product of the two dimensions. ●	● How are products and quotients related?
Knowledge	**Skills**
Students will know . . . ● multi-digit computation is just an extension of single-digit computations.	Students will be able to . . . ● fluently multiply multi-digit whole numbers using the standard algorithm. ● find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors. ● illustrate and explain calculations by using equations, rectangular arrays, and/or area models. ● add, subtract, multiply, and divide decimals to hundredths.

RESOURCES

- **Everyday Mathematics 4 Lessons:** 1-2, 1-7, 1-11, 2-4, 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, 2-12, 2-13, 3-1, 3-2, 3-3, 3-4, 3-5, 3-6, 3-9, 3-12, 3-14, 4-4, 4-7, 4-11, 4-12, 4-13, 4-14, 5-1, 5-3, 5-7, 5-8, 5-9, 5-12, 6-4, 6-5, 6-6, 6-8, 6-9, 6-10, 6-11, 6-12, 6-13, 7-4, 7-6, 7-7, 7-12, 7-13, 8-1, 8-2, 8-3, 8-5, 8-6, 8-7, 8-8, 8-9, 8-10 (1-8, 1-13, 2-10, 2-11, 2-12, 2-13, 3-3, 3-4, 3-5, 3-7, 3-8, 3-9, 3-11, 3-12, 3-13, 3-14, 4-1, 4-2, 4-3, 4-5, 4-6, 4-7, 4-8, 4-11, 4-12, 4-14, 5-1, 5-2, 5-3, 5-4, 5-5, 5-6, 5-7, 5-8, 5-10, 5-11, 5-13, 5-14, 5-15, 6-2, 6-3, 6-4, 6-8, 7-1, 7-2, 7-3, 7-5, 7-8, 7-9, 7-10, 7-11, 8-1, 8-11, 8-12, 8-13)
- **Supplemental Lessons:** Binder pages 29-30, 39-87

Number and Operations - Fractions

Use equivalent fractions as a strategy to add and subtract fractions.

5.NF.A.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)*

5.NF.A.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.*

Understandings	Essential Questions
Students will understand… ● fractions must have common denominators in order to be added or subtracted.	● When would one use addition or subtraction of fractions?
Knowledge	**Skills**
Students will know . . . ● that a common denominator is a common multiple of the two denominators (usually the least common one). ● that when adding fractions, the common denominators do not get added together, only the numerators do.	Students will be able to . . . ● add and subtract fractions with unlike denominators (including mixed numbers). ● solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators. ● use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.

RESOURCES

- **Everyday Mathematics 4 Lessons:** 1-2, 1-4, 3-4, 3-6, 3-7, 3-9, 3-10, 3-11, 3-12, 4-2, 4-3, 4-8, 5-1, 5-2, 5-3, 5-4, 5-11, 6-4, 6-5, 6-7, 7-1, 7-5, 7-6, 7-9, 8-2, 8-8 (2-10, 2-14, 3-13, 3-14, 4-1, 4-3, 4-4, 4-5, 4-6, 4-7, 4-10, 4-11, 4-13, 4-15, 5-5, 5-6, 5-7, 5-8, 5-9, 5-10, 5-12, 5-13, 5-14, 6-1, 6-2, 6-3, 6-6, 6-8, 6-11, 6-13, 7-2, 7-3, 7-4, 7-6, 7-8, 7-11, 7-13)
- **Supplemental Lessons:** Binder pages 31-87

Numbers and Operations – Fractions

Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

5.NF.B.3 Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. *For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?*

5.NF.B.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

a. Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. *For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = ac/bd.)*
b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.

5.NF.B.5 Interpret multiplication as scaling (resizing), by:

a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.
b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.

5.NF.B.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

5.NF.B.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.[1]

a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3.*
b. Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4.*
c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction

models and equations to represent the problem. *For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 1/3-cup servings are in 2 cups of raisins?*

[1] Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.

(Continued on next page)

Understandings	Essential Questions
Students will understand… ● a fraction is division of the numerator by the denominator ($a/b = a \div b$). ● when multiplying by a fraction less than one, the product will be smaller than the first factor. ● when multiplying by a fraction greater than one, the product will be larger than the first factor.	● What does it mean to divide by a fraction? ● Why would one need to divide by a fraction?
Knowledge	**Skills**
Students will know . . . ● the relative size of the answer based on the sizes of the factors.	Students will be able to . . . ● solve word problems involving division of whole numbers. ● multiply a fraction or whole number by a fraction. ● find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths. ● show that the area from tiles is the same as would be found by multiplying the side lengths. ● multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas. ● solve real world problems involving multiplication of fractions and mixed numbers. ● divide unit fractions by whole numbers and whole numbers by unit fractions. ● interpret division of a unit fraction by a non-zero whole number. ● interpret division of a whole number by a unit fraction. ● solve real world problems involving division of unit fractions by non-zero

	whole numbers and division of whole numbers by unit fractions.

RESOURCES

- **Everyday Mathematics 4 Lessons:** 1-1, 1-2, 1-3, 1-4, 1-6, 3-1, 3-2, 3-3, 3-4, 3-5, 3-6, 3-8, 3-10, 3-11, 3-12, 3-13, 3-14, 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-8, 4-9, 4-12, 4-14, 5-1, 5-2, 5-3, 5-4, 5-5, 5-6, 5-7, 5-8, 5-9, 5-10, 5-11, 5-12, 5-13, 5-14, 6-2, 6-4, 6-5, 6-6, 6-7, 6-8, 6-10, 6-12, 6-13, 7-1, 7-2, 7-3, 7-4, 7-5, 7-6, 7-7, 7-8, 7-9, 7-10, 7-11, 7-12, 8-1, 8-2, 8-3, 8-6, 8-7, 8-8, 8-9, 8-10 (1-5, 1-7, 1-9, 1-10, 1-11, 1-12, 2-1, 2-3, 2-10, 2-14, 3-2, 3-4, 3-13, 3-14, 4-1, 4-3, 4-4, 4-5, 4-6, 4-7, 4-9, 4-10, 4-15, 5-1, 5-5, 5-6, 5-7, 5-8, 5-9, 5-10, 5-11, 5-12, 5-13, 5-14, 5-15, 6-1, 6-3, , 6-4, 6-5, 6-6, 6-7, 6-8, 6-9, 6-10, 6-11, 6-12, 6-13, 6-14, 7-1, 7-2, 7-3, 7-4, 7-5, 7-6, 7-7, 7-8, 7-9, 7-10, 7-11, 7-12, 7-13, 7-14, 8-1, 8-2, 8-3, 8-4, 8-5, 8-6, 8-7, 8-8, 8-9, 8-11, 8-12, 8-13)
- **Supplemental Lessons:** Binder pages 5-11, 21-87

Measurement

Convert like measurement units within a given measurement system.

5.M.A.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

Understandings	Essential Questions
Students will understand… ● measurement units vary in the customary system differently than in the metric system. ● understanding place value helps one to understand the metric system.	● Why would one need to convert measurements from one unit to another? ● How does one know whether the new answer should be a bigger or smaller number of units?
Knowledge	**Skills**
Students will know . . . ● every step in the metric system involves a power of 10, e.g. 10 cm = 1 decimeter, 10 mm = 1 cm, etc.) ● customary equivalents.	Students will be able to . . . ● convert among different-sized standard measurement units within a given measurement system. ● solve real-world problems involving conversions.

RESOURCES

- **Everyday Mathematics 4 Lessons:** 1-1, 1-3, 1-6, 1-8, 1-10, 1-11, 2-6, 2-10, 4-4, 5-13, 6-3, 6-4, 7-3, 7-11, 8-1, 8-5, 8-6, 8-7, 8-8, 8-9, 8-10 (1-2, 1-4, 1-12, 2-1, 2-3, 2-9, 2-12, 3-1, 3-3, 3-6, 3-8, 4-2, 5-2, 5-4, 7-10, 7-14, 8-13)
- **Supplemental Lessons:** Binder pages 5-11, 21-45

Measurement

Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

5.M.B.2 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.

a. A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.
b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.

5.M.B.3 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and non-standard units.

5.M.B.4 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.

a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.
b. Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.
c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

Understandings	Essential Question
Students will understand… ● volume is an attribute of solid figures. ● the concept of volume measurement involves filling up space. ● volume is related to the operations of multiplication and addition. ● volume is additive.	● For what types of items can we measure volume?
Knowledge	**Skills**
Students will know . . . ● a cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume. ● a solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.	Students will be able to . . . ● measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. ● solve real world and mathematical problems involving volume. ● apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge

	lengths in the context of solving real world and mathematical problems. ● find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts.
RESOURCES	
● **Everyday Mathematics 4 Lessons:** 1-5, 1-6, 1-7, 1-8, 1-9, 1-10, 1-11, 1-12, 2-1, 2-2, 2-6, 3-3, 3-13, 4-6, 4-13, 6-6, 6-7, 8-3, 8-4 (1-11, 2-3, 2-4, 2-5, 2-7, 2-8, 2-9, 2-11, 2-12, 2-13, 3-1, 3-5, 3-7, 3-11, 3-12, 4-2, 4-4, 4-8, 5-10, 5-15, 6-6, 7-10, 7-14) ● **Supplemental Lessons:** Binder pages 21-28, 39-53, 56-87	

Data Literacy

Understand and analyze data visualizations.

5.DL.A.1 Understand how different visualizations can highlight different aspects of data. Ask questions and interpret data visualizations to describe and analyze patterns.

5.DL.A.2 Develop strategies to collect, organize and represent data of various types and from various sources. Communicate results digitally through a data visual (e.g. chart, storyboard, video presentation).

5.DL.A.3 Collect and clean data to be analyzable (e.g., make sure each entry is formatted correctly, deal with missing or incomplete data).

5.DL.A.4 Using appropriate visualizations (i.e. double line plot, double bar graph), analyze data across samples.

Understandings	Essential Questions
Students will understand that… ● organized data helps analyze a problem by showing patterns, outcomes, and future trends ● different graphs represent different types of data ● collected data can be organized in different types of graphs	● What type of graph can one use with a given data? ● What does the data graphed represent? ● What is the pattern in the graph, if any?
Knowledge	**Skills**
Students will know… ● how to collect data to create graphs ● how to create graphs based on given/collected data ● how to organize data ● how to analyze data	Students will be able to . . . ● collect data ● create graphs using a given data set ● analyze data from graphs ● generate questions from given graphs

RESOURCES

- **Everyday Mathematics 4 Lessons:** 6-4, 6-5, 7-9, 7-10, 7-11, 7-12, 7-13
- **Supplemental Lessons: 5th Grade IXL NN section - Data and Graph.** **https://www.ixl.com/math/grade-5**
- **Math Binder: Illustrative Mathematics Task pg. 55, 56, 57, 58, 59, 60, 61, 62**

Data Literacy

Represent and interpret data.

5.DL.B.5 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*

Understandings	Essential Questions
Students will understand… ● data entries do not have to be only whole numbers. ● the scale on a line plot must be evenly spaced.	● What types of data can be graphed on a line plot with a fractional scale?
Knowledge	**Skills**
Students will know . . . ● there will still be a whole number of pieces of data even though there is a fractional scale.	Students will be able to . . . ● make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). ● use operations on fractions for this grade to solve problems involving information presented in line plots.

RESOURCES

- **Everyday Mathematics 4 Lessons:** 6-4, 6-5, 6-13, 7-1, 7-9, 8-8 (6-11, 7-6, 7-8, 8-2, 8-4)

Geometry

Graph points on the coordinate plane to solve real-world and mathematical problems.

5.G.A.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).

5.G.A.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

Understandings	Essential Questions
Students will understand… ● the first number in an ordered pair indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis.	● Why would one graph on a coordinate plane?
Knowledge	**Skills**
Students will know . . . ● a pair of perpendicular number lines, called axes, define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line. ● a given point in the plane is located by using an ordered pair of numbers, called its coordinates. ● the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).	Students will be able to . . . ● graph points in the coordinate plane. ● represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane.

RESOURCES

- **Everyday Mathematics 4 Lessons:** 4-6, 4-7, 4-8, 4-9, 4-10, 4-11, 5-2, 5-6, 5-13, 6-1, 7-10, 7-11, 7-12, 7-13, 8-2, 8-10, 8-11, 8-12 (3-10, 3-15, 4-13, 5-1, 5-3, 5-11, 6-2, 6-4, 6-11, 6-13, 7-2, 7-4, 8-6)
- **Supplemental Lessons:** Binder pages 54-87

Geometry

Classify two-dimensional figures into categories based on their properties.

5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. *For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.*

5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties.

Understandings	Essential Questions
Students will understand… ● attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.	● How does one classify two-dimensional figures? ● Why would one need to classify a two-dimensional figure?
Knowledge	**Skills**
Students will know . . . ● the characteristics of figures.	Students will be able to . . . ● classify two-dimensional figures in a hierarchy based on properties.

RESOURCES

- **Everyday Mathematics 4 Lessons:** 1-1, 7-5, 7-6, 7-7, 7-8, 7-9, 8-3, 8-8, 8-11, 8-12 (6-10, 6-14, 7-12, 8-6, 8-10, 8-13)
- **Supplemental Lessons:** Binder pages 5-11

Connecting the Standards for Mathematical Content to the Standards for Mathematical Practice

The Standards for Mathematical Practice describe ways in which developing student practitioners of the discipline of mathematics increasingly ought to engage with the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle and high school years. Designers of curricula, assessments, and professional development should all attend to the need to connect the mathematical practices to mathematical content in mathematics instruction.

The Standards for Mathematical Content are a balanced combination of procedure and understanding. Expectations that begin with the word "understand" are often especially good opportunities to connect the practices to the content. Students who lack understanding of a topic may rely on procedures too heavily. Without a flexible base from which to work, they may be less likely to consider analogous problems, represent problems coherently, justify conclusions, apply the mathematics to practical situations, use technology mindfully to work with the mathematics, explain the mathematics accurately to other students, step back for an overview, or deviate from a known procedure to find a shortcut. In short, a lack of understanding effectively prevents a student from engaging in the mathematical practices. In this respect, those content standards, which set an expectation of understanding, are potential "points of intersection" between the Standards for Mathematical Content and the Standards for Mathematical Practice. These points of intersection are intended to be weighted toward central and generative concepts in the school mathematics curriculum that most merit the time, resources, innovative energies, and focus necessary to qualitatively improve the curriculum, instruction, assessment, professional development, and student achievement in mathematics.

Standards for Mathematical Practice

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important "processes and proficiencies" with longstanding importance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council's report *Adding It Up*: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one's own efficacy).

1. Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using

concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

2. Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to *decontextualize*—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to *contextualize*, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

3. Construct viable arguments and critique the reasoning of others.

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

4. Model with mathematics.

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

5. Use appropriate tools strategically.

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to

identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

6. Attend to precision.

Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

7. Look for and make use of structure.

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well-remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.

8. Look for and express regularity in repeated reasoning.

Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

Standard 9
21st Century Life and Careers

In today's global economy, students need to be lifelong learners who have the knowledge and skills to adapt to an evolving workplace and world. To address these demands, Standard 9, 21st Century Life and Careers, which includes the 12 Career Ready Practices, establishes clear guidelines for what students need to know and be able to do in order to be successful in their future careers and to achieve financial independence.

Mission: *21st century life and career skills enable students to make informed decisions that prepare them to engage as active citizens in a dynamic global society and to successfully meet the challenges and opportunities of the 21st century global workplace.*

Vision: To integrate 21st Century life and career skills across the K-12 curriculum and in Career and Technical Education (CTE) programs to foster a population that:

- Continually self-reflects and seeks to improve the essential life and career practices that lead to success.
- Uses effective communication and collaboration skills and resources to interact with a global society.
- Is financially literate and financially responsible at home and in the broader community.
- Is knowledgeable about careers and can plan, execute, and alter career goals in response to changing societal and economic conditions.
- Seeks to attain skill and content mastery to achieve success in a chosen career path.

The Standards: Standard 9 is composed of the Career Ready Practices and Standard 9.1, 9.2, and 9.3 which are outlined below:

- **The 12 Career Ready Practices**
  These practices outline the skills that all individuals need to have to truly be adaptable, reflective, and proactive in life and careers. These are researched practices that are essential to career readiness.
- **9.1 Personal Financial Literacy**
  This standard outlines the important fiscal knowledge, habits, and skills that must be mastered in order for students to make informed decisions about personal finance. Financial literacy is an integral component of a student's college and career readiness, enabling students to achieve fulfilling, financially-secure, and successful careers.
- **9.2 Career Awareness, Exploration, and Preparation**
  This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about postsecondary and career options, career planning, and career requirements.

- **9.3 Career and Technical Education**
  This standard outlines what students should know and be able to do upon completion of a CTE Program of Study.

For students to be college and career ready they must have opportunities to understand career concepts and financial literacy. This includes helping students make informed decisions about their future personal, educational, work, and financial goals. By integrating Standard 9 into instruction, New Jersey students will acquire the necessary academic and life skills to not only achieve individual success but also to contribute to the success of our society.

21st Century Themes

Career Ready Practices describe the career-ready skills that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

CRP1. Act as a responsible and contributing citizen and employee.

CRP2. Apply appropriate academic and technical skills.

CRP3. Attend to personal health and financial well-being.

CRP4. Communicate clearly and effectively and with reason.

CRP5. Consider the environmental, social and economic impacts of decisions.

CRP6. Demonstrate creativity and innovation.

CRP7. Employ valid and reliable research strategies.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

CRP9. Model integrity, ethical leadership and effective management.

CRP10. Plan education and career paths aligned to personal goals.

CRP11. Use technology to enhance productivity.

CRP12. Work productively in teams while using cultural global competence.

CRP1. **Act as a responsible and contributing citizen and employee**
Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.

CRP2. Apply appropriate academic and technical skills.
Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They 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

CRP3. Attend to personal health and financial well-being.
Career-ready individuals understand the relationship between personal health, workplace performance and personal well-being; they act on that understanding to regularly practice healthy diet, exercise and

mental health activities. Career-ready individuals also 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.

CRP4. Communicate clearly and effectively and with reason.

Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.

CRP5. Consider the environmental, social and economic impacts of decisions.

Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organization, and the environment. They are aware of and utilize new technologies, understandings, procedures, materials, and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and the profitability of the organization.

CRP6. Demonstrate creativity and innovation.

Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.

CRP7. Employ valid and reliable research strategies.

Career-ready individuals are discerning in accepting and using new information to make decisions, change practices or inform strategies. They use reliable research process to search for new information. They evaluate the validity of sources when considering the use and adoption of external information or practices in their workplace situation.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They 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.

CRP9. Model integrity, ethical leadership and effective management.

Career-ready individuals consistently act in ways that align personal and community-held ideals and principles while employing strategies to positively influence others in the workplace. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the directions and actions of a team or organization, and they apply insights into human behavior to change others' action, attitudes and/or beliefs. They recognize the near-term and long-term effects that management's actions and attitudes can have on productivity, morals and organizational culture.

CRP10. Plan education and career paths aligned to personal goals.

Career-ready individuals take personal ownership of their own education and career goals, and they regularly act on a plan to attain these goals. They understand their own career interests, preferences, goals, and requirements. They have perspective regarding the pathways available to them and the time, effort, experience and other requirements to pursue each, including a path of entrepreneurship. They recognize the value of each step in the education and experiential process, and they recognize that nearly all career paths require ongoing education and experience. They seek counselors, mentors, and other experts to assist in the planning and execution of career and personal goals.

CRP11. Use technology to enhance productivity.

Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.

CRP12. Work productively in teams while using cultural global competence.

Career-ready individuals positively contribute to every team, whether formal or informal. They apply an awareness of cultural difference to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.

Differentiation Strategies

Students with Disabilities/ Students at Risk of School Failure

(For students with disabilities, appropriate accommodations, instructional adaptations, and/or modifications should be determined by the IEP or 504 team)

Modifications for Classroom

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Give repetition and practice exercises
- Model skills/techniques to be mastered
- Give extended time to complete class work
- Provide copy of class notes
- Determine if preferential seating would be beneficial
- Provide access to a computer
- Provide copies of textbooks for home
- Provide access to books on tape/CD/digital media, as available and appropriate
- Assign a peer helper in the class setting
- Provide oral reminders and check student work during independent work time
- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests
- Provide regular parent/school communication

Modifications for Homework and Assignments

- Provide extended time to complete assignments
- Break down assignments
- Provide the student with clearly stated (written) expectations and grading criteria for assignments
- Implement RAFT activities as they pertain to the types/modes of communication (role, audience, format, topic)

Modifications for Assessments

- Provide extended time on classroom tests and quizzes

- Provide alternate setting as needed
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests
- Establish procedures for accommodations /modifications for assessments

Differentiation Strategies

Gifted and Talented

(content, process, product and learning environment)

- Allow students to pursue independent projects based on their individual interests
- Provide enrichment activities that include more advanced material
- Allow team-teaching opportunities and collaboration
- Set individual goals
- Conduct research and provide presentation of appropriate topics
- Design surveys to generate and analyze data to be used in discussion.
- Use Higher-Level Questioning Techniques
- Provide assessments at a higher level of thinking

English Language Learners

Modifications for Classroom

- Pair visual prompts with verbal presentations
- Provide repetition and practice
- Model skills/techniques to be mastered

Modifications for Homework/Assignments

- Provide Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary)
- Provide extended time for assignment completion as needed
- Highlight key vocabulary
- Use graphic organizers