Unit 2: Title of Unit : Multiplication, Division Properties and Equations

Content Area: **Mathematics**
Course(s): **Mathematics - Grade 3**
Time Period: **October**
Length: **17 Weeks**
Status: **Published**

Unit Overview

Represent and solve problems involving multiplication and division; understand properties of multiplication and the relationship between multiplication and division; multiply and divide within 100; solve problems involving the four operations, and identify and explain patterns in arithmetic.

By the end of January, administer the Link It! G3 Math NJSLS Form B online.

Transfer

Students will be able to independently use their learning to...

Represent, relate, and solve real world problems by determining when to use multiplication and/or division. They will understand properties of multiplication and the relationship between multiplication and division. Students will multiply and divide within 100 and solve problems involving the four operations.

For more information, read the following article by Grant Wiggins.

http://www.authenticeducation.org/ae_bigideas/article.lasso?artid=60

Meaning

Understandings

Students will understand that...

- a set of equal groups can be used to multiply

- repeated addition is multiplication
- arrays can be used to model the multiplication of two numbers
- the number of objects in each row and the number of objects in each column represent the numbers that are being multiplied
- the order in which factors are multiplied does not change the product
- two number sentences can be written to represent a situation that involved the multiplication of two numbers
- multiplication is used to solve word problems involving combinations
- a table or a tree diagram can be used to show all the combinations in a situation
- objects separated, one at a time, into equal groups can be used to show division
- making equal groups of a certain quantity can be used to find the number of groups
- a quotient describes how many equal groups there are or how many objects are in each group
- the operations of subtraction and division are related
- one way to divide numbers is to use repeated subtraction
- multiplication and division are inverse operations because they undo each other
- one type of fact family usually contains two multiplication sentences and two division sentences using the same numbers
- models and multiplication facts can be used to find an unknown numbers
- the number of columns and rows in an array represents the two factors being multiplied
- bar diagrams can be used to multiply
- an array is a model for two related multiplication facts
- using multiplication facts can find the unknown number in a division problem
- counters can be divided in to equal groups
- multiplication can be written as a related fact
- multiplying by a number is the same as skip counting by that number
- patterns in numbers can be observed by skip counting
- models can be used to find the unknown number in a multiplication sentence
- related multiplication facts and properties can be used to find the unknown number in a multiplication sentence
- a number line can be used to divide
- the number of jumps is the quotient
- the number four can be multiplied by the number 2 and then doubling the product
- the operations of subtraction and division are related
- one way to divide numbers is to use repeated subtraction
- the Identity Property of Multiplication states that when a number is multiplied by 1, the product is that number
- the Zero Property of Multiplication states that when a number is multiplied by 0, the product is 0
- multiplying the number six, you can multiply the other number by three and then double the product
- the Commutative Property of multiplication states that facts can be multiplied in any order
- models and arrays can be partitioned into equal groups to solve multiplication and division problems
- inverse operations can be used to solve multiplication and division problems
- whole numbers can be decomposed, or taken apart, to make them easier to work with
- after decomposing numbers, the products of both parts can be found and added
- the Distributive Property combines the operations of multiplication and addition
- the Associative Property of Multiplication states that the way in which numbers are grouped does not change their product
- parenthesis are used to group numbers when multiplying
- grouping numbers can make it easier to understand
- a variable is a letter that stands for an unknown quantity in an expression or equation

- to evaluate an expression, replace the variable with a number and then find its value
- an equation shows that two expressions are equal

Essential Questions

Students will keep considering...

- What does multiplication mean?
- What does division mean?
- What is the importance of patterns in learning multiplication and division?
- What strategies can be used to learn multiplication and division facts?
- How can multiplication and division facts with smaller numbers be applied to larger numbers?
- How are properties and equations used to group numbers?

Application of Knowledge and Skill

Students will know...

Students will know...

- how to interpret the product of whole numbers
- how to use arrays to represent multiplication
- how to use the Commutative Property of Multiplication to solve problems
- how to solve word problems by writing multiplication number sentences
- how to use multiplication to solve real-life problems
- how to model division problems
- how to write a division sentence that describes equal sharing
- how to use repeated subtraction to find the quotient of a division problem
- how to write related multiplication and division sentences
- how to find the unknown in a division problem
- how to multiply using arrays, bar diagrams, and drawings
- how to solve division problems by using multiplication facts
- how to divide using equal groups
- how to skip count and repeated addition to multiply
- how to mentally multiply a one-digit number by multiples of ten
- how to find the unknown number in a multiplication sentence
- how to use a number line to divide numbers
- how to multiply by using a known fact and doubling
- how to use subtraction to solve a division problem
- how to use properties of multiplication to solve problems

- how to find the unknown number in a multiplication or division problem
- how to use models and arrays to solve multiplication and division problems
- how to use models to decompose factors and find products
- how to use the Distributive Property to multiply two whole numbers
- how to use the Associative Property of Multiplication to multiply three numbers more easily
- how to evaluate an expression
- how to write an equation to represent a real-world problem

Students will be skilled at...

Students will be skilled at...

- writing an addition sentence and a multiplication sentence to represent a problem
- using an array to write two multiplication sentences
- using the Commutative Property of Multiplication to write two multiplication sentences for the same product
- writing a numbers sentence to represent and solve a problem
- finding the number of combinations that are possible in real-life situations (combination problems)
- using models to find the quotient of division problems.
- using division to find quotients that involve equal sharing
- finding the quotient of division problems by using repeated subtraction
- writing a fact family for an array
- finding the unknown number in a division sentence
- writing multiplication sentences using arrays
- solving division problem by thinking of it as an "unknown factor " problem and using multiplication facts.
- using equal groups to solve division problems.
- finding products by skip counting
- using place value to find products
- finding the unknown factor in multiplication sentences
- solving division problems by skip counting backwards
- solving multiplication problems by doubling a known fact
- solving division problems using subtraction
- using properties to multiply numbers by 1 and 0
- finding the unknown number in division problems
- finding quotients to division problems using a number line
- finding products to multiply problems by doubling a known fact
- finding products to multiplication problems by using known facts
- finding quotients to division problems by using multiplication and arrays
- using models to find products
- using the Distributive Property to multiply two numbers
- using the Associative Property of Multiplication to multiply three numbers
- evaluating expressions

- writing equations to represent sentences

Academic Vocabulary

Review Terms

- number sentence
- repeated addition
- sum
- bar diagram
- Distributive Property

New Vocabulary Terms

Chapter 4

- equal groups
- multiplication
- multiplication sentence
- multiply
- factors
- multiply
- product
- array
- Commutative Property of Multiplication
- combination
- tree diagram

Chapter 5

- division
- divide
- partition
- division sentence
- repeated subtraction
- dividend
- divisor
- quotient
- inverse operations
- related facts
- fact family

Chapter 6

- multiple

Chapter 7

- known fact
- decompose
- Identity Property of Multiplication
- Zero Property of Multiplication

Chapter 8

- no new vocabulary

Chapter 9

- Distributive Property of Multiplication
- Associate Property of Multiplication
- operations
- expression
- evaluate
- equation

Learning Goal 1

Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.

Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

Daily Targets

SWBAT:

- Use models to explore the meaning of multiplication **(Ch. 4 Les 1 - DOK 2)**
- Related multiplication and addition **(Ch. 4 Les 2 - DOK 2)**
- Use arrays to explore and model multiplication **(Ch. 4 Les 3 - DOK 3)**
- Use arrays to multiply **(Ch. 4 Les 4 - DOK 3)**
- Use the make a table strategy **(Ch. 4 Les 5 - DOK 3)**
- Use multiplication to find the total number of combinations that can be made when given two groups of object. **(Ch. 4 Les 6 - DOK 4)**

This standard interprets products of whole numbers. Students recognize multiplication as a means to determine the total number of objects when there are a specific number of groups with the same number of objects in each group. Multiplication requires students to think in terms of groups of things rather than individual things. Students learn that the multiplication symbol ‘x’ means “groups of” and problems such as 5 x 7 refer to 5

groups of 7.

Example:

Jim purchased 5 packages of muffins. Each package contained 3 muffins. How many muffins did Jim purchase?

5 groups of 3, 5 x 3 = 15. Describe another situation where there would be 5 groups of 3 or 5 x 3.

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.3.OA.A	Represent and solve problems involving multiplication and division.
MA.K-12.2	Reason abstractly and quantitatively.
MA.3.OA.A.1	Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.3.OA.A.3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
MA.K-12.5	Use appropriate tools strategically.
MA.3.OA.B	Understand properties of multiplication and the relationship between multiplication and division.
MA.3.OA.B.5	Apply properties of operations as strategies to multiply and divide.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.
MA.3.OA.D	Solve problems involving the four operations, and identify and explain patterns in arithmetic.
MA.3.OA.D.8	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Learning Goal 2

Students will be able to represent and solve problems using division.

Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.

Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade

3, know from memory all products of two one-digit numbers.

Daily Targets

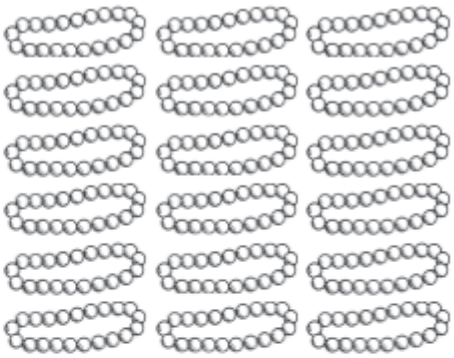
Students will be able to...

- Explore two meanings of division **(Ch. 5 Les 1 - DOK 2)**
- Model division as equal sharing **(Ch. 5 Les 2 - DOK 2)**
- Use models to relate division and subtraction **(Ch. 5 Les 3 - DOK 3)**
- Explore how division and multiplication are related **(Ch. 5 Les 4 - DOK 3)**
- Divide using related multiplication facts **(Ch. 5 Les 5 - DOK 4)**
- Use models to solve problems **(Ch. 5 Les 6 - DOK 4)**

Examples:

Solve: ___ ÷ 5 = 10

8. Stephanie has arranged her bracelets into six equal rows of three bracelets each. Use the array and inverse operations to find each of the unknowns. 3.OA.2



$3 \times 6 = \square$

$18 \div ? = 3$

$18 \div \# = 6$

$\square$ = _____

? = _____

= _____

Which number of stickers could be found using $24 \div 4$?

A. The number of stickers left when 4 of the 24 stickers are given away.

B. The total number of stickers in a book with 24 pages when 4 stickers are placed on each page.

C. The total number of stickers on a page with 24 stickers and 4 more stickers are added to the page.

D. The number of stickers in each row when a total of 24 stickers are equally placed into 4 rows on a page.

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.3.OA.A	Represent and solve problems involving multiplication and division.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.3.OA.A.2	Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.
MA.K-12.4	Model with mathematics.
MA.3.OA.A.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
MA.K-12.5	Use appropriate tools strategically.
MA.3.OA.B	Understand properties of multiplication and the relationship between multiplication and division.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.3.OA.B.6	Understand division as an unknown-factor problem.
MA.K-12.8	Look for and express regularity in repeated reasoning.
MA.3.OA.C	Multiply and divide within 100.
MA.3.OA.C.7	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

Learning Goal 3

Students will be able to identify and use multiplication and division patterns to develop fluency. Solve problems involving the four operations. Understand properties of mulitiplication and the relationship between mulitiplication and division.

This learning goal combines Chapters 6-8 to develop fluency.

Daily Targets

Students will be able to....

- Identify and explain patterns in the multiplication table **(Ch. 6 Les 1 - DOK 2)**
- Use arrays and drawings, such as bar diagrams, to multiply by 2 **(Ch. 6 Les 2 - DOK 2)**
- Use models and related multiplication facts to divide by 2 **(Ch. 6 Les 3 - DOK 2)**
- Use different strategies, including patterns, to multiply by 5 **(Ch. 6 Les 4 - DOK 3)**
- Use different strategies, including related facts, to divide by 5 **(Ch. 6 Les 5 - DOK 3)**
- Solve problems by looking for a pattern **(Ch. 6 Les 6 - DOK 4)**
- Use different strategies, including patterns to multiply by 10 **(Ch. 6 Les 7 - DOK 3)**
- Use basic facts and patterns to multiply a number by a multiple of 10 **(Ch. 6 Les 8 - DOK 2)**
- Use different strategies, including related multiplication facts to divide by 10 **(Ch. 6 Les 9 - DOK 3)**
- Use different strategies, such as arrays, equal groups, and properties to multiply by 3 **(Ch. 7 Les 1 - DOK 3)**
- Use different strategies, including related multiplication facts, to divide by 3 **(Ch. 7 Les 2 - DOK 3)**
- Explore how to double a known fact in order to multiply **(Ch. 7 Les 3- DOK 4)**
- Double a known fact to multiply by 4 **(Ch. 7 Les 4 - DOK 3)**
- Use different strategies, including related multiplication facts to divide by 4 **(Ch. 7 Les 5 - DOK 3)**
- Solve a problem by identifying extra or missing information **(Ch. 7 Les 6 - DOK 4)**
- Use different strategies, such as equal groups, patterns, and properties to multiply by 0 and 1**(Ch. 7 Les 7 - DOK 2)**
- Use division rules to divide with 0 and 1 **(Ch. 7 Les 8 - DOK 2)**
- Use different strategies, including doubling a known fact to multiply by 6 **(Ch. 8 Les 1 - DOK 3)**
- Use different strategies, such as properties, arrays, and decomposing factors, to multiply 7 **(Ch. 8 Les 2 - DOK 3)**
- Use different strategies, including arrays and repeated subtraction, to divide by 6 and 7 **(Ch. 8 Les 3 - DOK 3)**
- Use different strategies, such as arrays, drawings, and known facts, to multiply by 8 **(Ch. 8 Les 4 - DOK 3)**
- Use different strategies, such as properties, known facts, or patterns, to multiply by 9 **(Ch. 8 Les 5 - DOK 3)**
- Use different strategies, such as equal groups, repeated subtraction, and related multiplication facts, to divide by 8 and 9 **(Ch. 8 Les 6 - DOK 3)**
- Make an organized list to solve problems **(Ch. 8 Les 7 - DOK 4)**
- Use different strategies, such as patterns, models, and arrays, to multiply by 11 and 12 **(Ch. 8 Les 1 - DOK 4)**

This standard uses the word fluently, which means accuracy, efficiency (using a reasonable amount of steps and time), and flexibility (using strategies such as the distributive property). “Know from memory” should not focus only on timed tests and repetitive practice, but ample experiences working with manipulatives, pictures, arrays, word problems, and numbers to internalize the basic facts (up to 9 x 9).

By studying patterns and relationships in multiplication facts and relating multiplication and division, students build a foundation for fluency with multiplication and division facts. Students demonstrate fluency with multiplication facts through 10 and the related division facts. Multiplying and dividing fluently refers to knowledge of procedures, knowledge of when and how to use them appropriately, and skill in performing them flexibly, accurately, and efficiently.

Example:

Strategies students may use to attain fluency include:

- Multiplication by zeros and ones
- Doubles (2s facts), Doubling twice (4s), Doubling three times (8s)
- Tens facts (relating to place value, 5 x 10 is 5 tens or 50)
- Five facts (half of tens)
- Skip counting (counting groups of __ and knowing how many groups have been counted)
- Square numbers (ex: 3 x 3)
- Nines (10 groups less one group, e.g., 9 x 3 is 10 groups of 3 minus one group of 3)
- Decomposing into known facts (6 x 7 is 6 x 6 plus one more group of 6)
- Turn-around facts (Commutative Property)
- Fact families (Ex: 6 x 4 = 24; 24 ÷ 6 = 4; 24 ÷ 4 = 6; 4 x 6 = 24)
- Missing factors

General Note: Students should have exposure to multiplication and division problems presented in both vertical and horizontal forms.

Examples:

Complete each equation.

Drag and drop each correct answer into the appropriate box.

$8 \times 70 =$ ☐

$4 \times 40 =$ ☐

$5 \times 50 =$ ☐

$3 \times 60 =$ ☐

120 160 180 250 270 360 560 630

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MA.K-12.6	Attend to precision.
MA.3.OA.B.5	Apply properties of operations as strategies to multiply and divide.
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MA.K-12.8	Look for and express regularity in repeated reasoning.
MA.3.OA.C.7	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
MA.3.OA.D	Solve problems involving the four operations, and identify and explain patterns in arithmetic.
MA.3.OA.D.9	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.
MA.3.NBT.A	Use place value understanding and properties of operations to perform multi-digit arithmetic.
MA.3.NBT.A.3	Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.

Learning Goal 4

Student will be able to apply properties of operations as strategies to multiply and divide.

Daily Targets

Students will be able to...

- Explore how to take apart factors to multiply **(Ch. 9 Les 1 - DOK 4)**
- Apply the Distributive Property of Multiplication to find products **(Ch. 9 Les 2 - DOK 4)**
- Explore how to find the product of three factors **(Ch. 9 Les 3 - DOK 4)**
- Apply the Associative Property of Multiplication to find products **(Ch. 9 Les 4 - DOK 4)**
- Write expressions using the four operations **(Ch. 9 Les 5 - DOK 4)**
- Write, then find the value of expressions **(Ch. 9 Les 6 - DOK 4)**
- Represent one- and two-step word problems using equations with a variable **(Ch. 9 Les 7 - DOK 4)**
- Represent and solve two-step word problems using equations with variables **(Ch. 9 Les 8 - DOK 4)**

Examples:

Zora found the value of 4×5. The steps she followed are shown.

- First, she broke apart the 5 into $3 + 2$ and said that 4×5 is the same as $4 \times (3 + 2)$.
- Zora then said $4 \times (3 + 2)$ is the same as $12 + 2$ because the problem should be completed from left to right.

Part A

List which part of Zora's reasoning is correct and which part of Zora's reasoning is **not** correct. Be sure to label which part is correct and which part is **not** correct in your list.

Enter your answer in the space provided.

Part B

Explain how Zora should correct the part of her reasoning that is **not** cor and find the correct value.

Enter your answer and your explanation in the space provided.

What number makes the number sentence true?

$10 \times 9 = \_\_\_ \times 10$

Which is equivalent to $5 \times 9 \times 8$?

A. ☐ 45×72
B. ☑ 5×72
C. ☐ 45×9
D. ☐ 72×8

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	division.
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MA.3.OA.D	Solve problems involving the four operations, and identify and explain patterns in arithmetic.
MA.3.OA.D.8	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Formative Assessment and Performance Opportunities

Performance Tasks:

Chapter 4 Performance Task: **Fashion Designer** DOK 2, DOK 3: Use multiplication to find the total number of items and the total number of possible combinations of items (Rubric in TM pg. 234PT1-PT2)

Chapter 5 Performance Task: **Academic Challenge** DOK 2, DOK 3: Use division to find the number of students or objects in equal-sized groups (Rubric TM pg. 286PT1-PT2)

Chapter 6 Performance Task: **Car Wash** DOK 2, DOK 3: Use multiplication and division to identify patterns and explore various products and quotients (Rubric TM pg. 356PT2)

Chapter 7 Performance Task: **At the Movies** DOK 2, DOK 3: Use multiplication and division equations to solve problems involving the sales of popcorn at a movie theater (Rubric TM pg. 420PT2)

Chapter 8 Performance Task: **Get Your Hot Dogs Here** DOK 2, DOK 3: Use arrarys, repeated subtraction, equations, and other methods of their choice to determine the number of hot dogs, thier cost, and the number of purchases (Rubric TM pg. 492PT2)

Chapter 9 Performance Task: **Pooch Pockets** DOK 2, DOK 3: Use properties to multiply two or three numbers to determine how many pockets can be cut from a piece of cloth. (Rubric TM pg. 560PT2)

Chapter Projects Available in Student Book:

Chapter 4 Project: The Fruit Store (pg. 183-184)

Chapter 5 Project: Division Classroom Bulletin Board (pg. 235-236)

Chapter 6 Project: Clothing Drive (pg. 287-288)

Chapter 7 Project: Plant an Array (pg. 357-358)

Chapter 8 Project: Stocking the Store (pg. 421-422)

Chapter 9 Project: Make a Game (pg. 493-494)

- Am I Ready Assessments
- Check My Progress assessments
- Classwork
- homework
- Link It https://www.linkit.com/testtaker/testtaker/testtaker.html
- Projects
- Quizzes
- Student interviews
- Teacher observation

Summative Assessment

Projects

Unit Tests

Quizzes

Performance Based Assessments

21st Century Life and Careers and Technology

CRP.K-12.CRP1	Act as a responsible and contributing citizen and employee.
CRP.K-12.CRP1.1	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.

CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP2.1	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.
CRP.K-12.CRP4	Communicate clearly and effectively and with reason.
CRP.K-12.CRP4.1	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.
CRP.K-12.CRP5	Consider the environmental, social and economic impacts of decisions.
CRP.K-12.CRP5.1	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.
CRP.K-12.CRP8	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP.K-12.CRP8.1	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.
CRP.K-12.CRP12	Work productively in teams while using cultural global competence.
CRP.K-12.CRP12.1	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.
CAEP.9.2.4.A	Career Awareness
CAEP.9.2.4.A.1	Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.
CAEP.9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.
TECH.8.1.5.A	Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.
TECH.8.1.5.A.CS1	Understand and use technology systems
TECH.8.1.5.D	Digital Citizenship: Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.
TECH.8.1.5.D.3	Demonstrate an understanding of the need to practice cyber safety, cyber security, and cyber ethics when using technologies and social media.
TECH.8.1.5.D.CS1	Advocate and practice safe, legal, and responsible use of information and technology.
TECH.8.1.5.D.CS2	Demonstrate personal responsibility for lifelong learning

Accomodations and modifications

- Real-World Problem Solving Readers (appoaching level, on level, beyond level, and Spanish)
- preteach and/or reteach
- small group instruction or one-on-one (parent volunteer)
- manipulatives whenever necessary (hands-on approach)
- extra brain breaks
- use noise buffers whenever appropriate (headphones or earbuds)
- sensory tools- ex: rubber band around chair to allow for movement
- "act it out" approach
- work with a partner; allow to ask & answer questions
- use a highlighter so students can trace easier
- allow a student to use a highlighter to trace larger numbers
- allow for physical activity to practice skills (ex: jump 5 times; have a large number line and have student hop to each number while counting aloud)
- sing songs/dance to reinforce or introduce skills
- have students "choral respond" (for ex: teacher says sentence aloud; students repeat it to a peer
- small group instruction
- perfomance tasks
- English Language Support Interactive Guide
- Beyond Level Enrichment Resources
- clickers
- challenge problems
- StMath

Unit Resources

- AAAmath http://www.aaamath.com/
- Aleks online supplement
- Brainpop http://www.brainpop.com/
- Cool math 4 kids http://www.coolmath4kids.com/
- English Language Learner Support in My Math
- Funbrain http://www.funbrain.com/
- http://achievethecore.org/coherence-map/
- https://www.illustrativemathematics.org/
- Link It https://www.linkit.com/testtaker/testtaker/testtaker.html

- Math Fact Café http://www.mathfactcafe.com/
- Math playground http://www.mathplayground.com/
- McGraw-Hill Chapters 4-7,13
- multilingual glossary in connect ed
- NCTM illuminations http://illuminations.nctm.org/ factor game, product game
- Power Up for PARCC in connect ed
- Project Based Learning associated to chapters
- Reteach/enrich lessons in My Math
- RTI section of My Math
- Spanish resources in connect ed
- stmath.com

Interdisciplinary connections

Real-World Problem Sovling Readers

- Craft Store Supplies (Real-World Problem Solving Teacher Guide p.3) (3.OA.3 Students will reprsent and solve problems involving multiplication and division.) - Students learn to create a craft project. Students will use math skills to plan, build, and calculate costs.

- Light, Sight, and Colors So Bright (Real-World Problem Solving Teacher Guide p.6) (3.OA.8 Students will solve problems involving the four operations, and identify and explain patterns in artithmetic.) - Focuses on light, how prisms refract light, and how color is perceived by the human eye

- Making a Budget (Real-World Problem Solving Teacher Gudie p.7) (3.OA.4) Students will reprsent and solve problems involving multiplication and division. - Students explore income and expenses, needs and wants. They learn about making a budget to reach a goal.

- Money Around the World (Real-World Problem Solving Teacher Guide p.8) (3.OA.8 Students will solve problems using the four operations, and identify and explain patterns in arithmetic.) - Compares currencies from around the world to the U.S. dollar. Students will make comparisons and use multiplication skills to convert currencies.

- Populations on the Rise (Real-World Problem Solving Teacher Guide p.10) (3.OA.7 Students will mulitply and divide within 100.) - Explores rising populations of rabbits, Canada geese, deer, and mosquitoes. Students will use mathematics skills to explain overpopulation.

- Think About It (Real-World Problem Solving Teacher Guide p.13) (3.NBT.3 Students will use place value understanding and properties of operations to perfrom multi-digit arithmetic.) - Chronicles the achievements of a young nineteenth-century inventor, Mattie Knight, and how she paved the way for the acceptance of female inventors.

- Understanding Government (Real-World Problem Solving Teacher Guide p.14) (3.OA.8 Students will solve problems involving the four operations, and identify and explain patterns in artithmetic.) - Focuses on how the government of the United States is organized. Students will interpret data and use probabilities

- Water in Our World (Real-World Problem Solving Teacher Guide p.15) (3.OA.4 Students will represent and solve problems involving multiplication and division.) - Focuses on the availability of

fresh water, how we use it, and how we can use less. Students will read diagrams, charts, and graphs and apply a variety of operations to answer questions.

SOC.6.1.4.A.4	Explain how the United States government is organized and how the United States Constitution defines and checks the power of government.
SOC.6.1.4.A.CS4	There are different branches within the United States government, each with its own structure, leaders, and processes, and each designed to address specific issues and concerns.
SOC.6.1.4.B	Geography, People, and the Environment
SOC.6.1.4.C.10	Explain the role of money, savings, debt, and investment in individuals' lives.
SOC.6.1.4.C.16	Explain how creativity and innovation resulted in scientific achievement and inventions in many cultures during different historical periods.