BURCH CHARTER SCHOOL OF EXCELLENCE

2020-2021

Mathematics - Grade 5

Approved by the Burch Charter School of Excellence Board of Trustees

August 2020

MISSION STATEMENT OF BURCH CHARTER SCHOOL OF EXCELLENCE:

Burch Charter School of Excellence (BCSE) was founded in September, 2008. Our primal mission is to enable students to reach their intellectual and personal potential. We strive to instill integrity and respect in our students' in partnership with families and the community. We maintain a blended learning environment that enhances positive character traits that ensures our students become productive 21st century world citizens. The Burch Charter School of Excellence, a public school, is committed to providing best practices for educating our students in an environment that enables them to develop into critical thinkers that evolve into digital, life-long learners. Our curriculum emphasizes literacy and mathematics infused with technology.

We believe:

- Our students will be effective communicators, quality producers, self-directed lifelong learners, community contributors, collaborative workers and complex thinkers;
- All students are entitled to opportunities to maximize their talents and abilities;
- Our ethnic and cultural diversity is our strength and prepares students for success in a global society;
- Setting high expectations for students, teachers and administrators ensures that our students successfully meet or exceed the New Jersey Student Learning Standards.
- Parents are essential partners in the education of their children;
- Maintaining a strong partnership with the Irvington community is integral to student success;
- Understanding, implementing and responding to current trends in technology is intrinsic to success in a 21st century world; In ensuring that the district has a well-trained, highly qualified and competent staff; In maintaining a safe and secure learning environment.

The underlying values and principles that drive our mission and vision are our personal responsibility, a strong work ethic, cooperation, respect for others, honesty, integrity and the firm belief that every child can learn.

Grade: **Fifth**	Content: **Mathematics**
Unit: 1	Time Frame**: 43-45 days**

New Jersey Student Learning Standards:	**Mathematical Practices**	Skills
5.OA.A.1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. **Essential Questions:** • Why do I need to learn Algebra?	MP.1 Make sense of problems and persevere in solving them. MP.5 Use appropriate tools strategically. MP.8 Look for and express regularity in repeated reasoning.	• Standard convention for performing operations (Order of operations, including grouping symbols) • Evaluate numerical expressions that include grouping symbols (parentheses, brackets or braces). • Evaluate numerical expressions that include nested grouping symbols (for example, 3 x [5 + (7 - 3)]).
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.* **Essential Questions:** • What is a numerical expression? • What is the order of operations?	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning	• Order of operations, including grouping symbols. • Write a simple numerical expression when given a verbal description. • Interpret the quantitative relationships in numerical expressions without evaluating (simplifying) the expression.

I Can Statements

- I can use parentheses and brackets in expressions.
- I can write expressions I hear using mathematical symbols and the order of operations.

New Jersey Learning Standards	Mathematical Practice	Skills
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. **Essential Question:** • Why do we use numbers, what are their properties, and how does our number system function?	MP.2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.7 Look for and make use of structure.	• Quantitative relationships exist between the digits in place value positions of a multi-digit number. • Explain that a digit in one place represents 1/10 of what it would represent in the place to its left. • Explain that a digit in one place represents ten times what it would represent in the place to its right.
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. **Essential Question:** • How do numbers relate and compare to one another?	MP.2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.7 Look for and make use of structure.	• Explain patterns in the number of zeros of the product when multiplying a whole number by powers of 10. • Write powers of 10 using whole-number exponents.
5.NBT.B.5. Fluently multiply multi-digit whole numbers using the standard algorithm. *(benchmarked) **Essential Question**: • How do we solve problems with whole numbers and decimals?	MP.2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	• multiply a whole number of up to a four digits by a whole number of up two digits using the standard algorithm with accuracy and efficiency. .

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. **Essential Questions:** • What patterns occur in our number system? • How can I write quotients as equations?	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.7 Look for and make use of structure.	• Divide to find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors using strategies based on place value, properties of operations, and the relationship between multiplication and division. • Represent these operations with equations, rectangular arrays, and area models. • Explain the calculation by referring to the model (equation, array, or area model).
5.NBT.A.3. Read, write, and compare decimals to thousandths. 5.NBT.A.3a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$. 5.NBT.A.3b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons. **Essential Question**: • How do we compare decimals? • How can I read and write decimals?	MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure.	• Multiple representations of whole numbers • Read and write decimals to thousandths using base-ten numerals. • Read and write decimals to thousandths using number names. • Read and write decimals to thousandths using expanded form. • Compare two decimals to thousandths using $>$, $=$, and $<$ symbols. • Compare decimals when each is presented in a different form (base-ten numeral, number name, and expanded form).

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

Essential Questions:
• How do we solve problem with whole numbers and decimals?
• How do you round numbers and estimate sums and differences? | MP.2 Reason abstractly and quantitatively.

MP.6 Attend to precision.

MP.7 Look for and make use of structure. | • Round decimals to any place value. |

I can Statements

- I can recognize that in a multi-digit number, a digit in one place represents 1/10 of the place value to its left.
- I can explain patterns when multiplying a number by powers of 10.
- I can represent powers of 10 using whole number exponents.
- I can explain the relationship in the placement of the decimal point when a decimal is multiplied or divided by powers of 10.
- I can read and write decimals to thousandths.
- I can round decimals.

Resources

https://sso.rumba.pk12ls.com/

EnvisionMath
- Benchmarks Assessments
- Fluency Practice
- Vocabulary Review
- Topic Assessments

www.mobymax.com

www.iready.com

www.abcya.com

www.khanacedmy.com

www.funbrain.com

www.splashlearn.com

Differentiated Instruction
(content, process, product and learning environment)

At Risk Students	English Language Learners
Modifications for Classroom Pair visual prompts with verbal presentations Use of lab or experiments to give visual representation of concept Ask students to restate information, directions, and assignments. Work within group or partners Repetition and practice	**Modifications for Classroom** Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary) Preteach vocabulary Use graphic organizers or other visual models Use of manipulatives to visualize concept

Model skills / techniques to be mastered.	Highlight key vocabulary-chart or vocabulary bank
Use metacognitive work	Use of nonverbal responses (thumbs up/down)
Extended time to complete class work	
Provide copy of class notes	Use sentence frames
Student may request to use a computer to complete assignments.	Design questions for different proficiency levels
Use manipulatives to examine concepts	Utilize partners and partner talk
Assign a peer helper in the class setting	
Provide oral reminders and check student work during independent work time	

Special Education	Gifted and Talented
Modifications for Classroom	**Extension Activities**
Pair visual prompts with verbal presentations	Conduct research and provide presentation of cultural topics.
Use of lab or experiments to give visual representation of concept	Design surveys to generate and analyze data to be used in discussion.
Ask students to restate information, directions, and assignments.	Use of Higher Level Questioning Techniques
Preteach vocabulary	Provide assessments at a higher level of thinking
Repetition and practice	
Model skills / techniques to be mastered.	Create alternative assessment which requires writing, research and presentation
Use manipulatives and visual representation to examine Breakdown large assignments	

into smaller tasks

Extended time to complete
class work

Provide copy of class notes

Preferential seating to be mutually determined by the student
and teacher

Use of online component of book

Extra textbooks for home. Student may request 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

Grade: **Fifth**	Content: **Mathematics**
Unit 2	Time Frame: 43-45days

New Jersey Learning Standards	Mathematical Practices	Skills
5.MD.C.3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement. 5.MD.C.5a. 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. 5.MD.C.5b. 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.MD.C.4. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and non-standard units **Essential Questions**: • How do we convert measurements within systems? • How do you use a formula to help you find the volume of a rectangular prism?	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure.	• Volume is the amount of space inside a solid (3-dimensional) figure. • Cubes with side length of 1 unit, called "a unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume. • Solid figures which can be packed without gaps or overlaps using *n* unit cubes is said to have a volume of *n* cubic units. • Volume of a solid can be determined using unit cubes of other dimensions. • Count unit cubes in order to measure the volume of a solid. • Use unit cubes of centimeters, inches, and/or other units to measure volume. .
5.MD.C.5. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. 5.MD.C.5a. 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. 5.MD.C.5b. Apply the formulas $V = l \times w \times h$ and $V = B \times$	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically.	• Volume is additive: volumes of composite solids can be determined by adding the volumes of each solid. • Pack right rectangular prisms with cubes to find volume and multiply side lengths of the right rectangular prism to find volume, showing that they are the same. • Pack right rectangular prisms with cubes to find volume and multiply height by the area

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. 5.MD.C.5c. 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. **Essential Questions**: • How do we represent the inside of a 3 dimensional figure? • How can I find the volume of a rectangular prism?	MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	of the base, showing that they are the same. • Explain how both volume formulas relate to counting the cubes in one layer and multiplying that value by the number of layers (height). • Write the volume of an object as the product of three whole numbers. • Solve real-world and mathematical problems using the formulas $V = l \times w \times h$ and $V = B \times h$. • Find the volume of a composite solid composed of two right rectangular prisms.

I Can Statements:

• I can understand volume.
• I can measure volume by counting unit cubes.
• I can find the volume of an object using the formulas

New Jersey Learning Standards	Mathematical Practices	Skills
5.NBT.B.5. Fluently multiply multi-digit whole numbers using the standard algorithm. *(benchmarked)* **Essential Question:** • Can I multiply multidigit whole numbers fluently? • How do I multiply multi-digit numbers?	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.7 Look for and make use of structure.	• Multiply multi-digit whole numbers with accuracy and efficiency.

I Can Statements:
• I can fluently multiply multi-digit whole numbers. (use standard algorithm)

New Jersey Learning Standards	Mathematical Practices	Skills
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 = 23/1 (in general, a/b + c/d = (ad + bc)/bd).* **Essential Questions:** • How can I find out whether fractions are equivalent? • How do I add mixed numbers? • How can I subtract mixed numbers?	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	• Equivalent fractions can be used to add and subtract fractions. • Produce an equivalent sum (or difference) of fractions with like denominators from the original sum (or difference) of fractions that has unlike denominators. • Add and subtract fractions with unlike denominators by replacing given fractions with equivalent fractions.
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.* **Essential Questions:** • How will knowing how to use fractions help me solve complex mathematical problems?	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure.	• Add and subtract fractions, including mixed numbers, with unlike denominators to solve word problems. • Represent calculations and solutions with visual fraction models and equations • Estimate answers using benchmark fractions and explain whether the answer is reasonable. • Estimate answers by reasoning about the size of the fractions and explain whether the answer is reasonable.

| 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?* | MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. | • Fractions represent division. • Represent a fraction as a division statement ($a/b = a \div b$). • Divide whole numbers in order to solve real world problems, representing the quotient as a fraction or a mixed number. • Represent word problems involving division of whole numbers using visual fraction models and equations. |
| 5.NF.B.4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. 5.NF.B.4a. 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.)* 5.NF.B.4b. 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? **Essential Questions:** • How can I multiply fractions and mixed | MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. | • For whole number or fraction q, represent $(a/b) \times q$ as a parts of a partition of q into b equal parts [e.g. using a visual fraction model, (3/4) x 5 can be represented by 3 parts, after partitioning 5 objects into 4 equal parts]. • For whole number or fraction q, represent $(a/b) \times q$ as $a \times q \div b$ [e.g. showing that (2/5) x 3 is equivalent to (2 x 3) ÷ 5]. • From a story context, interpret $(a/b) \times q$ as a parts of a partition of q into b equal parts. Tile a rectangle having fractional side lengths using unit squares of the appropriate unit fraction [e.g. given a 3 ¼ inch x 7 ¾ inch rectangle, tile the |

numbers? • How can I divide fractions? • How will knowing how to use fractions help me solve complex mathematical problems?		rectangle using ¼ inch tiles]. • Show that the area found by tiling with unit fraction tiles is the same as would be found by multiplying the side lengths.

II Can Statements

- I can add and subtract fractions with unlike denominators and mixed numbers.
- I can solve word problems that involve fractions.
- I can multiply a fraction or whole number by a fraction.
- I can divide fractions by fractions by whole numbers and whole numbers by fractions.

Resources

https://sso.rumba.pk12ls.com/
EnvisionMath
· Benchmarks Assessments
· Fluency Practice
· Vocabulary Review
· Topic Assessments

www.mobymax.com
www.iready.com
www.abcya.com
www.khanacedmy.com
www.funbrain.com
www.splashlearn.com

Differentiated Instruction
(content, process, product and learning environment)

At Risk Students	English Language Learners
Modifications for Classroom Pair visual prompts with verbal presentations Use of lab or experiments to give visual representation of concept Ask students to restate information, directions, and assignments. Work within group or partners Repetition and practice Model skills / techniques to be mastered. Use metacognitive work Extended time to complete class work Provide copy of class notes Student may request to use a computer to complete assignments.	**Modifications for Classroom** Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary) Preteach vocabulary Use graphic organizers or other visual models Use of manipulatives to visualize concept Highlight key vocabulary-chart or vocabulary bank Use of nonverbal responses (thumbs up/down) Use sentence frames Design questions for different proficiency levels Utilize partners and partner talk

Use manipulatives to examine concepts

Assign a peer helper in the class setting

Provide oral reminders and check student work during independent work time

Special Education	Gifted and Talented
Modifications for Classroom Pair visual prompts with verbal presentations Use of lab or experiments to give visual representation of concept Ask students to restate information, directions, and assignments. Preteach vocabulary Repetition and practice Model skills / techniques to be mastered. Use manipulatives and visual representation to examine Breakdown large assignments into smaller tasks Extended time to complete class work Provide copy of class notes Preferential seating to be mutually determined by the student and teacher	**Extension Activities** Conduct research and provide presentation of cultural topics. Design surveys to generate and analyze data to be used in discussion. Use of Higher Level Questioning Techniques Provide assessments at a higher level of thinking Create alternative assessment which requires writing, research and presentation

Use of online component of book Extra textbooks for home. Student may request 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	

Grade: **Fifth**	Content: **Mathematics**
Unit 3	Time Frame: 43-45 days

New Jersey Learning Standards	Mathematical Practice	Skills
5.NF.B.4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. 5.NF.B.4b. 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. **Essential Questions:** • How can I multiply a fraction, whole number, or mixed number by a fraction or mixed number? • How do you use a formula to help you find the area or unknown side length of a rectangle with fractional side lengths?	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	• Multiply fractional side lengths to find areas of rectangles. • Represent fraction products as rectangular areas. • Multiply a fraction by a whole number. • Multiply a fraction by a fraction, in general, if q is a fraction c/d, then $(a/b) \times (c/d) = a(1/b) \times c(1/d) = ac \times (1/b)(1/d) = ac(1/bd) = ac/bd$.
5.NF.B.5. Interpret multiplication as scaling (resizing), by: 5.NF.B.5a. 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. 5.NF.B.5b. 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.	MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.6 Attend to precision. MP.7 Look for and make use of structure.	• Multiplication as resizing (scaling) • Compare the size of a product to the size of one of its factors, considering the size of the other factor (at least one factor is a fraction). • Explain why multiplying a given number by a fraction greater than 1 results in a product greater than the given number. • Explaining why multiplying a given

Essential Questions: • How do you multiply a fraction, whole number, or mixed number by a fraction or mixed number?		number by a fraction less than 1 results in a product smaller than the given number. • Explain that multiplying a given number by a fraction equivalent to 1 does not change the product.
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. **Essential Question:** • How so you solve real world problems with fractions?	MP.4 Model with mathematics. MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	• Multiply fractions and mixed numbers in order to solve real world problems. • Represent the solution to these real world problems with visual fraction models and equations.

5.NF.B.7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. *(benchmarked)* 5.NF.B.7a. 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.* 5.NF.B.7b. 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.* 5.NF.B.7c. 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?* Essential Questions: • How do you divide a whole number by a whole number in cases where the quotient is a fraction or a mixed number? • How do you divide a unit fraction by a whole number or a whole number by a unit fraction?	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	• Use a story context to interpret division of a unit fraction by a whole number. • Divide of a unit fraction by a whole number and represent with visual fraction models. • Use a story context to interpret division of a whole number by a unit fraction. • Divide of a whole number by a unit fraction and represent with visual fraction models. • Divide unit fractions by whole numbers to solve real-world problems, using visual fraction models and equations to represent the problem. • Divide whole numbers by unit fractions to solve real-world problems, using visual fraction models and equations to represent the problem.

• I can solve word problems where I divide whole numbers to create an answer that is a mixed number.
• I can multiply a fraction or whole number by a fraction.
• I can divide fractions by whole numbers and whole numbers by fractions.
• I can solve real world problems by multiplying fractions and mixed numbers.

New Jersey Learning Standards	Mathematical Practice	Skills
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. **Essential Questions:** • How do you explain the patterns in the number of zeros of a product? • How do you multiply whole numbers by powers of ten with and without exponents?	MP.2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.7 Look for and make use of structure.	• Explain patterns in the placement of the decimal point when multiplying or dividing a decimal by powers of 10. • Write powers of 10 using whole-number exponents.
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. *(benchmarked) **Essential Question:** • How do you add and subtract decimals to the hundredths? • What steps are necessary to multiply decimal number? • How do you divide whole numbers and decimals by decimals to the hundredths?	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.7 Look for and make use of structure.	• Add and subtract decimals to hundredths using concrete models and drawings. • Multiply and divide decimals to hundredths using concrete models and drawings. • Add, subtract, multiply, and divide decimals to hundredths using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. • Relate the strategy to the written method and explain the reasoning used.
I Can Statement		

- I can add, subtract, multiply, and divide decimals to hundredths.
- I can explain the reasoning used to solve decimal problems in written form.

5.MD.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. **Essential Question:** • How do you multiply or divide to convert among standard measurement units within a given measurement system?	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.5 Use appropriate tools strategically. MP.6 Attend to precision.	• Convert from one measurement unit to another within a given measurement system (e.g., convert 5 cm to 0.05 m, convert minutes to hours). • Solve multi-step, real world problems that require conversions.

I Can Statement

- I can convert measurements within the same measuring system.

Resources	
https://sso.rumba.pk12ls.com/ EnvisionMath · Benchmarks Assessments · Fluency Practice · Vocabulary Review · Topic Assessments	**www.mobymax.com** **www.iready.com** **www.abcya.com** **www.khanacedmy.com** **www.funbrain.com** **www.splashlearn.com**

Differentiated Instruction

(content, process, product and learning environment)	
At Risk Students	**English Language Learners**
Modifications for Classroom Pair visual prompts with verbal presentations Use of lab or experiments to give visual representation of concept Ask students to restate information, directions, and assignments. Work within group or partners Repetition and practice Model skills / techniques to be mastered. Use metacognitive work Extended time to complete class work Provide copy of class notes Student may request to use a computer to complete assignments. Use manipulatives to examine concepts Assign a peer helper in the class setting Provide oral reminders and check student work during independent work time	**Modifications for Classroom** Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary) Preteach vocabulary Use graphic organizers or other visual models Use of manipulatives to visualize concept Highlight key vocabulary-chart or vocabulary bank Use of nonverbal responses (thumbs up/down) Use sentence frames Design questions for different proficiency levels Utilize partners and partner talk
Special Education	**Gifted and Talented**

Modifications for Classroom	**Extension Activities**
Pair visual prompts with verbal presentations	Conduct research and provide presentation of cultural topics.
Use of lab or experiments to give visual representation of concept	Design surveys to generate and analyze data to be used in discussion.
Ask students to restate information, directions, and assignments.	Use of Higher Level Questioning Techniques
Preteach vocabulary	
Repetition and practice	Provide assessments at a higher level of thinking
Model skills / techniques to be mastered.	Create alternative assessment which requires writing, research and presentation
Use manipulatives and visual representation to examine Breakdown large assignments into smaller tasks	
Extended time to complete class work	
Provide copy of class notes	
Preferential seating to be mutually determined by the student and teacher	
Use of online component of book	
Extra textbooks for home. Student may request 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	

Grade: **Fifth**	Content: **Mathematics**
Unit 4	Time Frame: 43-45 days

New Jersey Learning Standards	Mathematical Practice	Skills
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).	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure.	• Coordinate plane as perpendicular number lines. • Perpendicular number lines (axes) define a coordinate system. • Intersection of the lines (origin) coincides with the 0 on each number line. • Given points in the plane is located using an ordered pair of numbers (coordinates). • First numbers in an ordered pair indicates how far to travel from the origin in the direction of the x-axis. • Second numbers in an ordered pair indicate how far to travel in the direction of the y-axis. • Graph points defined by whole number coordinates in the first quadrant of the coordinate plane in order to represent real world and mathematical problems. • Interpret coordinates in context.
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.		
5.G.B.3. Understand that attributes belonging to a category of two-		• Attributes belonging to a category of two-dimensional figures also

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. Essential Question: • How do you generate ordered pairs given rules? • How do you solve real world problems involving algebra, patterns, and the coordinate plane?	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure.	belong to *all* subcategories of that category. • Classify two-dimensional figures (triangles, quadrilaterals) based on shared attributes (e.g. parallel sides, number of sides, angle size, side length, etc.). • Arrange the categories/subcategories of figures (e.g. squares, rectangles, trapezoids, etc) in a hierarchy based on attributes. • Identify attributes of a two-dimensional shape based on attributes of the categories to which it belongs.

I Can Statements
• I can understand how to graph ordered pairs on a coordinate plane. • I can graph and interpret points in the fifth quadrant of a coordinate plane. • I can classify shapes into categories. • I can classify shapes based on properties.

5.OA.A.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*	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure.	• Use two rules to create two numerical patterns. • Compare corresponding terms (e.g. compare the first terms in each list, compare the second terms in each list, etc). Identify the relationship between corresponding terms and write ordered pairs. Graph the ordered pairs.

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.

Essential Question:
- How do you generate numerical patterns, given rules?

I Can Statements

- I can generate numerical patterns given two rules.
- I can identify numerical relationships and patterns.

New Jersey Learning Standards	Mathematical Practice	Skills
5.MD.B.2. 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.*	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision.	- Use measurement information to create a line plot. - Using measurement information presented in line plots, add, subtract, multiply and divide fractions in order to solve problems.

	MP.7 Look for and make use of structure.	
Essential Question: • How do you solve problems involving fractions using information from a line plot?		

<table>
<tr><td colspan="3" align="center">I Can Statements</td></tr>
<tr><td colspan="3">

• I can make a line plot to display data sets of measurements in fractions.
• I can use fraction operations to solve problems involving information presented on a line plot.

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New Jersey Learning Standards	Mathematical Practice	Skills
5.NBT.B.5. Fluently multiply multi-digit whole numbers using the standard algorithm. *(benchmarked) **Essential Question:** • Can I multiply multi digit whole numbers fluently?	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.7 Look for and make use of structure.	• Multiply multi-digit whole numbers with accuracy and efficiency.
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. *(benchmarked) **Essential Question:** • How do you add and subtract	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.7 Look for and make use of structure.	• Add and subtract decimals to hundredths using concrete models and drawings. • Multiply and divide decimals to hundredths using concrete models and drawings. • Add, subtract, multiply, and divide decimals to hundredths using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. • Relate the strategy to the written method and explain the reasoning used.

- decimals to the hundredths?
  - What steps are necessary to multiply decimal numbers?
  - How do you solve real world division problems with whole numbers and decimals?

I Can Statements

- I can fluently multiply multi digit whole numbers. (use standard algorithm)
- I can add, subtract, multiply, and divide decimals to hundredths.

New Jersey Learning Standards	Mathematical Practice	Skills
5.NF.B.7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.*(benchmarked) 5.NF.B.7c. 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?* **Essential Questions:** - How do you divide a unit fraction by a whole number or a whole number by a unit fraction? - How do you solve real world	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	- Use a story context to interpret division of a unit fraction by a whole number. - Use a story context to interpret division of a whole number by a unit fraction. - Divide unit fractions by whole numbers to solve real world problems, using visual fraction models and equations to represent the problem. - ivide whole numbers by unit fractions to solve real world problems, using visual fraction models and equations to represent the problem.

problems with fractions?		

I Can Statements

- I can solve real world problems by dividing fractions and whole numbers.
- I can divide fractions by whole numbers and whole numbers by fractions.

Resources

Resources	
https://sso.rumba.pk12ls.com/ EnvisionMath · Benchmarks Assessments · Fluency Practice · Vocabulary Review · Topic Assessments	**www.mobymax.com** **www.iready.com** **www.abcya.com** **www.khanacedmy.com** **www.funbrain.com** **www.splashlearn.com**

Differentiated Instruction

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| Assist student with long and short term planning of assignments | |