Grade: 5	Content Area: Mathematics

Introduction:

Students in fifth grade complete three critical areas.

Adopted on:	October 23, 2018
Revised on:	July 20, 2021
Revised by:	Katie Micek, Jessica Wiehr, Suzanne Henry
Proposed Revision Date	Summer 2024

Beach Haven School District Mathematics Curriculum	
Content Area: Math	
Course Title: Math	Grade Level: 5
Instructional Materials: "Go Math"	
Critical Area 1: Fluency with Whole Numbers and Decimals (Chapters 1-5) **Focus:** • Write and interpret numerical expressions. • Understand the place value system. • Perform operations with multi digit whole numbers and decimals to hundredths. • Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	**110 Days- ongoing**
Critical Area 2: Operations and Fractions (Chapters 6-8) **Focus:** • Write and interpret numerical expressions. • Use equivalent fractions as a strategy to add and subtract. • Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	**40 Days- ongoing**
Critical Area 3: Geometry and Measurement (Chapters 9-11) **Focus:** • Write and interpret numerical expressions. • Analyze patterns and relationships.	**30 Days- ongoing**

• Understand the place value system. • Perform operations with multi-digit whole numbers and with decimals to hundredths. • Apply and extend previous understandings of multiplication and division to multiply and divide fractions. • Convert like measurement units within a given measurement system • Represent and interpret data. • Geometric measurement:understand concepts of volume and relate volume to multiplication and to addition. • Graph points on the coordinate plane to solve real-world and mathematical problems.	

Critical Area 1: Fluency with Whole Numbers and Decimals (Chapters 1-5)	Duration:110 Days- ongoing
Standards/Learning Targets	

New Jersey Student Learning Standards:

- 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.
- 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.
- 5.NBT.A.3a Read and write decimals to thousandths using base-ten numerals,number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (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.
- 5.NBT.4 Use place value understanding to round decimals to any place.
- 5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.
- 5.NBT.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.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.
- 5.NF.B.3 Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ 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

Standards for Mathematical Practice:

- 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.6 Attend to precision.
- MP.7 Look for and make use of structure.

Interdisciplinary Connections:

ELA:

- SL.5.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.

Career Ready Practices:

- CRP1. Act as a responsible and contributing citizen and employee.
- CRP4. Communicate clearly and effectively and with reason.
- CRP12. Work productively in teams while using cultural global competence.

21st Century Life and Career Standards:

- 9.1.4.A.1- Explain the difference between a career and a job, and identify various jobs in the community and the related earnings.

Technology:

- 8.1.2.A.1 Identify the basic features of a digital device and explain its purpose.
- 8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).
- 8.2.2.C.1 Brainstorm ideas on how to solve a problem or build a product
- 8.1.2.E.1 Use digital tools and online resources to explore a problem or issue.
- 8.2.2.E.1 List and demonstrate the steps to an everyday task

Accommodations/Modifications

English Language Learners:

- Simplify written and verbal instructions
- Provide written directions with models and diagrams when possible
- Build in more group work to allow ELL students to interact and communicate with peers
- Provide vocabulary ahead of time
- Use sentence frames to give students practice with academic language
- Pre-teach as often as possible- share videos, articles, vocabulary etc. with ELL students prior to use in class
- Utilize visual charts/cues
- Highlight key words
- Provide manipulatives
- Frequently check for understanding

Special Education/Students with Disabilities:

- Follow specific students accommodations and modifications as listed in individual student IEP
- Provide opportunities for movement
- Have manipulatives and other math resources available for student use
- Incorporate small group instruction
- Utilize visual charts/cuesFacilitate successful experiences
- Provide tutoring if needed
- Provide positive praise to increase motivation

504 :

- Follow specific students accommodations and modifications as listed in individual student 504 plan
- Provide opportunities for movement
- Have manipulatives and other math resources available for student use
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- Provide tutoring if needed
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Students at Risk of Failure:

- Ensure child has access to all appropriate academic resources both in school and at home
- Provide structure and adhere to a consistent daily routine with clear and concise rules
- Facilitate successful experiences
- Provide tutoring if needed
- Allow students to complete assignments in school
- Do not penalize for late or missing assignments/materials
- Offer encouragement and understanding
- Allow students to have personal possessions and property in school
- Give choice to provide a sense of control

Economically Disadvantaged:

- Provide clear, achievable expectations, do not lower academic requirements for them.
- Build a safe and nurturing atmosphere
- Be flexible with assignments
- Offer several alternatives from which all students can choose.
- Allow students to finish assignments independently, or give them the opportunity to complete tasks at their own pace.
- Use real-world examples and create mental models for abstract idea
- Provide increased knowledge base and vocabulary use about real world experiences.
- Share the decision making in class.
- Maintain expectations while offering choice and soliciting input

Culturally Diverse:

- Involve families in student learning
- Provide social/emotional support
- Respect cultural traditions
- Build in more group work to encourage interaction with peers
- Show photos, videos, and definitions when possible for culturally unique vocabulary
- Teach study skills
- Provided students with necessary academic resources and materials
- Allow for alternative assignments
- Provide visuals
- Assign peer tutor
- Support verbal explanations with non verbal cues: Gestures/ facial expressions Props, realia, manipulatives, concrete materials Visuals, graphs, pictures, maps
- Provide positive praise to increase motivation
- Provide real world connections and emphasize the value of education
- Communicate high expectations for the success of all students
- Integrate the arts into learning activities

Knowledge & Skills

	Essential Questions/Understandings: ● How can you use place value, multiplication, and expression to represent and solve problems? (Chapter 1) ● How can you divide whole numbers? (Chapter 2) ● How can you add and subtract decimals? (Chapter 3) ● How can you solve decimal multiplication problems? (Chapter 4) ● How can you solve decimal division problems? (Chapter 5)
Core Instructional & Supplemental Materials	
Suggested Activities/Resources: ● Self-reflection ● Math Center Activities ● Math Games ● Draw and Show ● Math Journals ● Khan Academy ● Prodigy ● Edhelper ● Education.com ● Kahoot ● ThatQuiz.org	**Varied Levels of Text:** ● Marilyn Burns Math Library List http://teacher.scholastic.com/reading/bestpractices/pdfs/mbmath_TitleList.pdf ● *Algebra & Geometry: Anything But Square!* Green, Dan W ● *I Wish I Knew That: Math* Goldsmith, Michael

	● *Math For Smarty Pants* Burns, Marilyn ● *Math: A Book You Can Count On* Green, Dan V ● *Math Game Volume 1* Jung, Tori ● *Stir It Up: Mixing Decimals* Brunner-Jass, Renata T ● *What Did I Eat? Fractions, Decimals, And Percents* Barker, Lori T ● *The Wishing Club: A Story About Fractions* Napoli, Donna Jo ● *All Of The Above* Pearsall, Shelley U ● *1000 Basketball Angles* Wall, Julia S ● *Finding The Treasure: Coordinate Grids* Brunner-Jass, Renata and David T. Hughes ● *Me And The Measure Of Things* Sweeney, Joan ● *Perimeter, Area, And Volume: A Monster Book Of Dimensions* Adler, David A. ● *Wildlife Scientists* McMillan, Dawn R ● *The I Hate Mathematics Book* Burns, Marilyn

Evidence of Student Learning	
Formative Tasks: ● Cooperative group learning ● Exit slips ● Analysis of student work ● Teacher observations ● Self-reflection **Summative Assessments:** ● Show-What-You-Know ● Mid-Chapter Checkpoints ● Chapter Test	**Alternative Assessments:** ● Student created models ● Written/verbal explanations ● Math journals **Benchmark Assessments:** ● Beginning of Year SGO ● Mid-Year SGO ● End of Year SGO

Critical Area 2: Operations and Fractions (Chapters 6-8)	Duration:40 Days- ongoing

Standards/Learning Targets

New Jersey Student Learning Standards:

- 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.
- 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.
- 5.NF.B.3 Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ 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.
- 5.NF.B.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
- 5.NF.B.4.a. Interpret the product (a/b) × q as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations a × q ÷ b
- 5.NF.B.4.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.a,b 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 × a)/(n × b) to the effect of multiplying a/b by
- 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.
- 5.N F. B.7a Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.
- 5.NF.B.7b Interpret division of a whole number by a unit fraction , and compute such quotients
- 5.NF.B.7c solve real 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

Standards for Mathematical Practice:

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- MP.2 Reason Abstractly and quantitatively.
- MP.3 Construct viable arguments and critique the reasoning of others.
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- MP.6 Attend to precision.
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Interdisciplinary Connections:

ELA:

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Career Ready Practices:

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Technology:

- 8.1.2.A.1 Identify the basic features of a digital device and explain its purpose.
- 8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).
- 8.2.2.C.1 Brainstorm ideas on how to solve a problem or build a product
- 8.1.2.E.1 Use digital tools and online resources to explore a problem or issue.
- 8.2.2.E.1 List and demonstrate the steps to an everyday task

Accommodations/Modifications

English Language Learners:

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- Provide written directions with models and diagrams when possible
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- Provide vocabulary ahead of time
- Use sentence frames to give students practice with academic language
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- Utilize visual charts/cues
- Highlight key words
- Provide manipulatives
- Frequently check for understanding

Special Education/Students with Disabilities:

- Follow specific students accommodations and modifications as listed in individual student IEP
- Provide opportunities for movement
- Have manipulatives and other math resources available for student use
- Incorporate small group instruction
- Utilize visual charts/cuesFacilitate successful experiences
- Provide tutoring if needed
- Provide positive praise to increase motivation

504 :

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Students at Risk of Failure:

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- Allow students to complete assignments in school
- Do not penalize for late or missing assignments/materials
- Offer encouragement and understanding
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- Give choice to provide a sense of control

Economically Disadvantaged:

- Provide clear, achievable expectations, do not lower academic requirements for them.
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Culturally Diverse:

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- Provide social/emotional support
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- Provide real world connections and emphasize the value of education
- Communicate high expectations for the success of all students
- Integrate the arts into learning activities

Knowledge & Skills

	Essential Questions/Understandings: ● How can you add and subtract fractions with unlike denominators? (Chapter 6) ● How do you multiply fractions? (Chapter 7) ● What strategies can you use to solve division problems involving fractions? (Chapter 8)
Core Instructional & Supplemental Materials	
Suggested Activities/Resources: ● Self-reflection ● Math Center Activities ● Math Games ● Draw and Show ● Math Journals ● Khan Academy ● Prodigy ● Edhelper ● Education.com ● Kahoot ● ThatQuiz.org	**Varied Levels of Text:** ● Marilyn Burns Math Library List http://teacher.scholastic.com/reading/bestpractices/pdfs/mbmath_TitleList.pdf ● *Algebra & Geometry: Anything But Square!* Green, Dan W ● *I Wish I Knew That: Math* Goldsmith, Michael

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Critical Area 3: Geometry and Measurement (Chapters 9-11)	Duration: 30 Days- ongoing

Standards/Learning Targets

New Jersey Student Learning Standards:

- 5.OA.A.1 Use parentheses brackets, or braces in numerical expressions, and evaluate expressions with these symbols
- 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
- 5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm.
- 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.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, 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.NF. B. 3: Interpret a fraction as division of the numerator by the denominator. 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
- 5.NF. B. 7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.
- 5.N F. B.7a Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.
- 5.MD. A.1: Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 cm)
- 5.MD. B.2 Make a line plot to display a data set of measurements in fractions of a unit. Use operations on fractions for this grade to solve problems involving information presented in line plots
- 5.MD.C.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
- 5.MD.C.3.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.MD.C.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
- 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.5.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.
- 5.MD.C.5.b . Apply the formulas V = l × w × h and V = b × 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.5.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.
- 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).

Standards for Mathematical Practice:

- 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.

Interdisciplinary Connections:

ELA:

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Culturally Diverse:

- Involve families in student learning

- Provide social/emotional support
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- Integrate the arts into learning activities

Knowledge & Skills	
	Essential Questions/Understandings: ● How can you use line plots, coordinate grids, and patterns to help you graph and interpret data? (Chapter 9) ● What strategies can you use to compare and convert measurements? (Chapter 10) ● How do unit cubes help you build solid figures and understand the volume of a rectangular prism? (Chapter 11)

Core Instructional & Supplemental Materials

Suggested Activities/Resources:	**Varied Levels of Text:**
• Self-reflection • Math Center Activities • Math Games • Draw and Show • Math Journals • Khan Academy • Prodigy • Edhelper • Education.com • Kahoot • ThatQuiz.org	• Marilyn Burns Math Library List http://teacher.scholastic.com/reading/bestpractices/pdfs/mbmath_TitleList.pdf • *Algebra & Geometry: Anything But Square!* Green, Dan W • *I Wish I Knew That: Math* Goldsmith, Michael • *Math For Smarty Pants* Burns, Marilyn • *Math: A Book You Can Count On* Green, Dan V • *Math Game Volume 1* Jung, Tori • *Stir It Up: Mixing Decimals* Brunner-Jass, Renata T • *What Did I Eat? Fractions, Decimals, And Percents* Barker, Lori T • *The Wishing Club: A Story About Fractions* Napoli, Donna Jo • *All Of The Above* Pearsall, Shelley U • *1000 Basketball Angles* Wall, Julia S • *Finding The Treasure: Coordinate Grids* Brunner-Jass, Renata and David T. Hughes • *Me And The Measure Of Things* Sweeney, Joan • *Perimeter, Area, And Volume: A Monster Book Of Dimensions* Adler, David A. • *Wildlife Scientists* McMillan, Dawn R • *The I Hate Mathematics Book* Burns, Marilyn

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