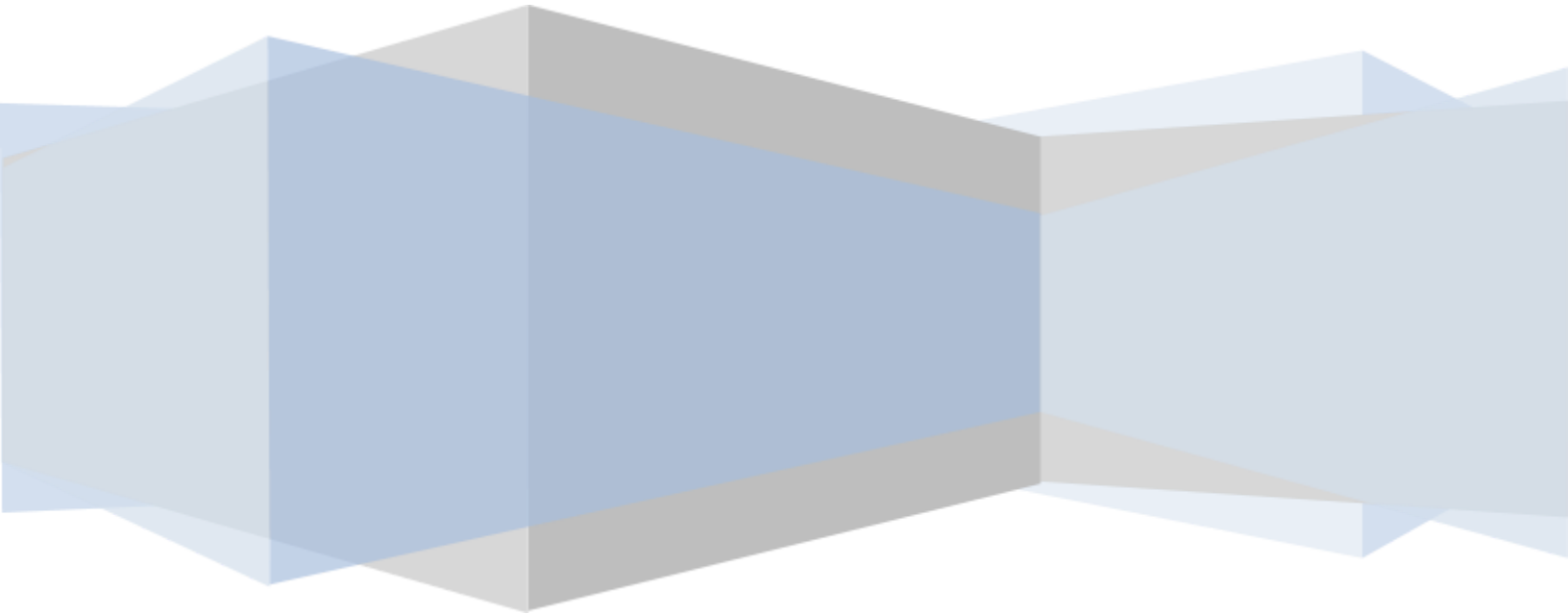
Lebanon Borough Public School

Mathematics

Curriculum Guide

Fifth Grade



Approved by the Lebanon Borough Board of Education

December 10, 2010/Revised:

Introduction

The Lebanon Borough Public School believes in celebrating the rich history of our magnet school system while ensuring consistent, high quality instruction for all learners. The Mathematics curriculum is built upon this belief by blending the NJSLS Math Grade Level Standards within the components of the GoMath program. This approach provides all students with equitable access to the same learning goals while allowing teachers the flexibility to adapt to the needs of their learners.

In addition to the content standards for each grade level, the guides connect these to the critical mathematical practice standards as listed below:

- *Make sense of problems and persevere in solving them. (MP1))*
- *Reason abstractly and quantitatively. (MP2)*
- *Construct viable arguments and critique the reasoning of others. (MP3)*
- *Model with mathematics. (MP4)*
- *Use appropriate tools strategically. (MP5)*
- *Attend to precision. (MP6)*
- *Look for and make use of structure. (MP7)*
- *Look for and express regularity in repeated reasoning. (MP8)*

Fifth Grade Math At A Glance

TRIMESTER 1	TRIMESTER 2	TRIMESTER 3
MATH	**MATH**	**MATH**
Focus: **Place Value: Number Sense**	Focus: **Fractions: Addition and Subtraction**	Focus: **Measurement**
Focus: **The Power of Ten**	Focus: **Fractions: Multiplication and Division**	Focus: **Geometry: Shapes and Attributes and Coordinate Geometry**
Focus: **Comparing and Ordering Decimals to Thousandths**	Focus: **Volume**	Focus: **Data Interpretation**
Focus: **Addition, Subtraction, Multiplication and Division with Decimals to Hundredths**	Focus: **Line Plots**	Focus: **Algebraic Expressions and Order of Operations**

Trimester Priority Standards

TRIMESTER 1		TRIMESTER 2		TRI	
NJSLS	**By the end of Trimester 1, students can:**	**NJSLS**	**By the end of Trimester 2, students can:**	**NJSLS**	**By the en students**
5.NBT.1	Understand that each place value is 10 times larger than the place to the right, and 1/10 as large as the place to the left	**5.NF.1**	Use equivalent fractions to add and subtract fractions with like and unlike denominators	**5MD.1**	Convert n measuren
5.NBT.2	Explain patterns in the number of zeros in a product when multiplying by a power of 10, and in the placement of the decimal point when a decimal is multiplied or divided by a power of 10	**5.NF.2**	Use bench mark fraction to estimate fractions. Use my understanding of fractions to decide if my answer is reasonable	**5.G.1**	Understa coordinat ordered p
5.NBT.2	Use exponents to show powers of 10	**5.NF.2**	Solve word problems by adding and subtracting fractions with like and unlike denominators	**5.G.2**	Graph poi coordinat real-worl
5.NBT.3	Read, write, and compare decimals to the thousandths place	**5.NF.3**	Solve division word problems where the answer will be a fraction or a mixed number	**5G. 3**	Understa figures w attributes
5.NBT.3a	Read, write, and compare decimals to the thousandths place using numerals, words, and expanded form	**5.NF.4**	Multiply a fraction or a whole number by a fraction	**5G.4**	Classify tw categorie their prop
5.NBT.3b	Use >,=,< to compare two decimals to the thousandths place based on values of the digits in each place	**5.NF.4a**	Multiply a fraction or a whole number using various strategies	**5OA.1**	Use paren numerica expressio
5.NBT.4	Round decimals to any place	**5.NF.4b**	Use various strategies to find the area of a rectangle with fraction side lengths and represent the area with a fraction	**5OA.2**	Write and expressio

5.NBT.5	Multiply multi-digit whole numbers	**5.NF.5a**	Understand multiplication by comparing the sizes of the factors in related multiplication problems	**5OA.3**	Generate two given
5.NBT.6	Divide up to four-digit dividends by two-digit divisors using various strategies	**5.NF.5b**	Use my understanding of multiplication as resizing to explain the results of multiplying numbers by fractions greater than and less than 1		
5.NBT.7	Add, subtract, multiply, and divide decimals to the hundredths place, using various strategies	**5.NF.6**	Solve real world problems by multiplying fractions and mixed numbers		
		5.NF.7	Use understanding of division to divide fractions		
		5.NF.7a	Divide a fraction by a whole number		
		5.NF7b.	Divide a whole number by fraction		
		5.NF.7c	Solve real world problems by dividing fractions and whole numbers		
		5.MD.2	Make a like plot displaying fractions and solve problems using them		
		5.MD.3	Define and understand the concept of volume.		
		5.MD.3a	Recognize one cubic unit of volume		
		5.MD.4	Measure volumes using various units		
		5.MD.5	Solve volume problems using multiplication and addition		
		5.MD.5a	Find the volume of a right rectangular prism by using models and solving equations		
		5.MD.5b	Use formulas to find the volume of rectangular prisms		
		5.MD.5c	Find the volume of solid figures by finding the volumes of rectangular prisms within the figure and adding the volumes together		

Lebanon Borough Public School Instructional Unit				
Content:	Mathematics			**Grade:**
Trimester:	1	**Unit Title:**	Numbers and Operations in Base Ten	**Pacing:**

CRITICAL AREAS OF FOCUS FOR 5th Grade

In grade 5, instructional time should focus on three critical areas:

1. Develop fluency with addition and subtraction of fractions, and develop understanding of the multiplication of fractions and of
limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions);
2. Extend division to two-digit divisors, integrating decimal fractions into the place value system and develop understanding of op
hundredths, develop fluency with whole number and decimal operations and;
3. Develop understanding of volume.

1. Students apply their understanding of fractions and fraction models to represent the addition and subtraction of fractions with unlike
calculations with like denominators. They develop fluency in calculating sums and differences of fractions, and make reasonable estima
use the meaning of fractions, of multiplication and division, and the relationship between multiplication and division to understand an
procedures for multiplying and dividing fractions make sense. (Note: this is limited to the case of dividing unit fractions by whole numb
unit fractions.)
2. Students develop understanding of why division procedures work based on the meaning of base-ten numerals and properties of operat
with multi-digit addition, subtraction, multiplication, and division. They apply their understandings of models for decimals, decimal no
operations to add and subtract decimals to hundredths. They develop fluency in these computations, and make reasonable estimates o
the relationship between decimals and fractions, as well as the relationship between finite decimals and whole numbers (i.e., a finite de
appropriate power of 10 is a whole number), to understand and explain why the procedures for multiplying and dividing finite decima
compute products and quotients of decimals to hundredths efficiently and accurately.
3. Students recognize volume as an attribute of three-dimensional space. They understand that volume can be measured by finding the to
units of volume required to fill the space without gaps or overlaps. They understand that a 1-unit by 1-unit by 1-unit cube is the standa
volume. They select appropriate units, strategies, and tools for solving problems that involve estimating and measuring volume. They d
dimensional shapes and find volumes of right rectangular prisms by viewing them as decomposed into layers of arrays of cubes. They r
attributes of shapes in order to determine volumes to solve real-world and mathematical problems.

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Essential Questions
1. How are whole numbers and decimals written, compared, and ordered? 2. How can I use power-of ten-rule to multiply and divide numbers? 3. How can sums and differences of decimals be estimated? 4. What are the standard procedures for adding and subtracting whole numbers and decimals? 5. What are the standard procedures for estimating and multiplying whole numbers and decimals? 6. What is the standard procedure for division and why does it work? 7. What is the standard procedure for dividing with two-digit divisors? 8. What is the standard procedure for estimating and finding quotients involving decimals?

TARGET STANDARDS		
Math NJSLS	**I Can...**	**Mathematical Practice Standards**
NBT.1	Understand that each place value is 10 times larger than the place to the right, and 1/10 as large as the place to the left	MP 2,6,7
NBT.2	Explain patterns in the number of zeros in a product when multiplying by a power of 10, and in the placement of the decimal point when a decimal is multiplied or divided by a power of 10	MP 2,6,7
NBT.2	Use exponents to show powers of 10.	MP 2,6,7
NBT.3	Read, write, and compare decimals to the thousandths	MP 2,4,5,6,7
NBT.3a	Read, write, and compare decimals to the thousandths place using base-ten numerals, words, and expanded form	MP 2,4,5,6,7

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NBT.3b	Use >,=,< to compare two decimals to the thousandths place based on values of the digits in each place	MP 2,4,5,6,7
NBT.4	Round decimals to any place	MP 2,6,7
NBT.5	Multiply multi-digit whole numbers	MP 2,6,7,8
NBT.6	Divide up to four-digit dividends by two-digit divisors using various strategies	MP 2,3,4,5,7
NBT.7	Add, subtract, multiply, and divide decimals to the hundredths place, using various strategies	MP 2,3,4,5,7

INSTRUCTIONAL PROGRESSION

Weekly Plan	Concept	GoMath Connection	Vocabulary
During Week 1	•Place value: 10ths , 100ths, 1,000ths •Decimal Place Value	Topic 1: 1-1, 1-2, 1-3, 1-4	digits, place value, period in place value, whole numbers, standard form, expanded form, word form, equivalent decimals
During Week 2	•Comparing and Ordering Decimals •Mental Math Multiplication •Exponents •Multiplication and Division with Decimals by 10, 100, 1000 *MULTIPLICATION SHOULD BE PRACTICED THROUGHOUT THE YEAR.	1-5+1-6, *3-2, *3-4, 6-1, 7-1	factors, product, multiple, base, exponents, power of ten, exponential notation, squared, cubed
During Week 3	•Mental Math •Round Whole Numbers and Decimals • Estimating Sums and Differences	Review / Assess Topic 2: 2-1, 2-2, 2-3	Commutative and Associative Properties of Addition, compatible numbers, compensation, rounding,

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During Week 4	•Addition and Subtraction with Decimals •Problem Solving: Multiple-Step Problems	2-4 + 2-5, 2-6, 2-7, 2-8 Review /Assess	
During Week 5	•Multiplication: Estimation and Distributive Property •Multiplication with 2 Digit by 2 Digit numbers	Topic 3: 3-1+3-3, 3-5, 3-6, 3-7, 3-8	Multiplication Properties (Commutative, Associative, Identity, Zero, Distributive), multiple, overestimate, underestimate, partial product, base, exponent, squared, cubed
During Week 6	•Multiplication: Word Problems-Writing Equations •Division: Dividing Multiples of 10 and 100 •Estimating Quotients •Connecting Models and Symbols	3-9, Review and Assess Topic 4: 4-1, 4-2+4-3, 4-4	dividend, divisor, quotient,
During Week 7	•Division: Dividing by 1 Digit and 2 Digit divisors •Zeros in the Quotient •Word Problems: Drawing Pictures and Writing an Equation	4-5, 4-6, 4-7, Review and Assess	
During Week 8	•Connecting Models and Symbols •Dividing by Multiples of 10 •1-Digit and 2-Digit Quotients	Topic 5: 5-1+5-2, 5-3, 5-4, 5-5, 5-6,	
During Week 9	•Estimating and Dividing with Greater Numbers •Word Problems	5-7, 5-8, Review and Assess	
Week 10	•Estimating Product of a Decimal and a Whole Number •Decimal Multiplication •Models for Multiplying Decimals • Multiplying Two Decimals	Topic 6: * 6-2+6-3, 6-4, 6-5, 6-6	

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Week 11	•Word Problems •Estimating Decimal Quotients •Dividing by a Whole Number •Decimal Division	6-7, Review and Assess, Topic 7:* 7-2, 7-3, 7-4	
Week 12	•Dividing Whole Numbers by a Decimal •Dividing a Decimal by a Decimal •Word Problems	7-5, 7-6, 7-7	
Week 13	Review/Assessment	Unit 1 Assessmen t	

Additional Resources

- ELL, Enrichment, Reteach lesson book
- Math concept readers
- Animated Math Models-GoMath
- Grab and Go Differentiated Center Kits
- Student workbooks
- MegaMath
- iPad apps-GoMath, Front Row Math, Fast Facts

Special Notes:

Some lessons are combined because they cover the same concepts or do not require a whole math period for each lesson. Ho your students need additional time, plan accordingly.

Some lessons are omitted as they do not reflect grade level standards or are repetitive in nature.

Finally, some of the lessons are out of order, to help reinforce certain concepts. * (ie.3-2,3-4,6-1,7-1)

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DIFFERENTIATION			
Special Education	**ELL**	**I&RS**	**Acad**
• Provide modifications & accommodations as listed in the student's IEP • Position student near helping peer or have quick access to teacher • Modify or reduce assignments/tests • Reduce length of assignment for different mode of delivery • Increase one-to-one time • Utilize working contract between you and student at risk • Prioritize tasks • Provide manipulatives • Use graphic organizers • Use interactive math journals • Use online resources for skill building • Provide teacher notes • Use collaborative grouping strategies such small groups • Use GoMath online resources • NJDOE resources	• Use GoMath Spanish Resources • Provide text to speech for math problems • Use of translation dictionary or software • Implement strategy groups • Confer frequently • Provide graphic organizers • Modification plan • NJDOE resources • Adapt a Strategy-Adjusting strategies for ESL students: http://www.teachersfirst.com/content/esl/adaptstrat.cfm	• Tiered Interventions following I&RS framework • I&RS Intervention Bank • NJDOE resources • Math Lab • Utilize online resources such as www.tenmarks.com • GoMath k-5 intervention supports	• Process order th thinking • Utilize p greater • Utilize e higher g • Content abstract organiza • Product world pr deadline transfor • Learning modifie learning openne varied • Use of w as www • GoMath • NJDOE r

CROSS CURRICULUR RESOURCES
Literacy in Mathematics: http://www.readwritethink.org/search/?resource_type=6&q=math&sort_order=relevance
Grade 3-5 STEM resource: http://www.kineticcity.com/
K-12 STEM Educator and Career Resource: http://www.egfi-k12.org/

ALIGNMENT TO 21st CENTURY SKILLS AND TECHNOLOGY	
21st Century/ Interdisciplinary Themes: **Bold all that apply**	**21st Century Skills:** **Bold all that apply**
Global Awareness **Financial, Economic, Business and Entrepreneurial Literacy** Civic Literacy Health Literacy Environmental Literacy	Creativity & Innovation **Critical Thinking & Problem Solving** Communication & Collaboration Media Literacy Information Literacy **Information, Communication & Technology**

	Life & Career Skills

Technology Infusion

National Library of Virtual Manipulatives http://nlvm.usu.edu/en/nav/vlibrary.html
Math Resources for Technology https://drive.google.com/file/d/0B4Zh_BcwMUEMOFRfSXZpdW9Yams/view?usp=sharing
Smart Board Applications
GoMath applications and online resources

Evidence of Student Learning

- Common benchmark
- Observation
- Evaluation rubrics
- Self-reflections
- Teacher-student conferences
- Running records
- Performance Tasks
- Unit tests
- Quizzes

CRP Standards

CRP1. Act as a responsible and contributing citizen and employee.
CRP2. Apply appropriate academic and technical skills.
CRP3. Attend to personal health and financial well-being.
CRP4. Communicate clearly and effectively and with reason.
CRP5. Consider the environmental, social and economic impacts of decisions.
CRP6. Demonstrate creativity and innovation.
CRP7. Employ valid and reliable research strategies.
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
CRP9. Model integrity, ethical leadership and effective management.
CRP10. Plan education and career paths aligned to personal goals.
CRP11. Use technology to enhance productivity.
CRP12. Work productively in teams while using cultural global competence.

Lebanon Borough Public School Instructional Unit

Content:	Mathematics			**Grade:**	5
Trimester:	2	**Unit Title:**	Fractions and Volume	**Pacing:**	14 wee

CRITICAL AREAS OF FOCUS FOR 5th Grade

In grade 5, instructional time should focus on three critical areas:

1. Develop fluency with addition and subtraction of fractions, and develop understanding of the multiplication of fractions and of division cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions);
2. Develop Extend division to two-digit divisors, integrating decimal fractions into the place value system and develop understanding of op hundredths, develop fluency with whole number and decimal operations and;
3. Develop understanding of volume.

1. Students apply their understanding of fractions and fraction models to represent the addition and subtraction of fractions with unlike denomin calculations with like denominators. They develop fluency in calculating sums and differences of fractions, and make reasonable estimates of th meaning of fractions, of multiplication and division, and the relationship between multiplication and division to understand and explain why th multiplying and dividing fractions make sense. (Note: this is limited to the case of dividing unit fractions by whole numbers and whole number
2. Students develop understanding of why division procedures work based on the meaning of base-ten numerals and properties of operations. Th multi-digit addition, subtraction, multiplication, and division. They apply their understandings of models for decimals, decimal notation, and pr add and subtract decimals to hundredths. They develop fluency in these computations, and make reasonable estimates of their results. Student between decimals and fractions, as well as the relationship between finite decimals and whole numbers (i.e., a finite decimal multiplied by an a a whole number), to understand and explain why the procedures for multiplying and dividing finite decimals make sense. They compute produ decimals to hundredths efficiently and accurately.
3. Students recognize volume as an attribute of three-dimensional space. They understand that volume can be measured by finding the total num volume required to fill the space without gaps or overlaps. They understand that a 1-unit by 1-unit by 1-unit cube is the standard unit for meas appropriate units, strategies, and tools for solving problems that involve estimating and measuring volume. They decompose three-dimensiona of right rectangular prisms by viewing them as decomposed into layers of arrays of cubes. They measure necessary attributes of shapes in orde solve real-world and mathematical problems.

Mathematics

Mathematics

Essential Questions
1. How can I work effectively with improper fraction and mixed numbers?
2. How can fractions be applied in real world situations?
3. How can my understanding of Number Sense help when dealing with fractions?
4. What does it mean to add and subtract with fractions or mixed numbers?
5. How can three-dimensional shapes be represented and analyzed?
6. How can line plots be used to represent data, and answer questions?

TARGET STANDARDS			
Math NJSLS	**I Can …**	**Mathematical Practice Standard**	**Ben (Pla**
5.NF.1	Use equivalent fractions to add and subtract fractions with like and unlike denominators	MP 2,4,7	
5.NF.2	Use benchmark fraction to estimate fractions. Use my understanding of fractions to decide if my answer is reasonable	MP 1,2,3,4,5,6,7,8	
5.NF.2	Solve word problems by adding and subtracting fractions with like and unlike denominators	MP 1,2,3,4,5,6,7,8	
5.NF.3	Solve division word problems where the answer will be a fraction or a mixed number	MP 1,2,3,4,5,7	
5.NF.4	Multiply a fraction or a whole number by a fraction	MP 1,2,3,4,5,6,7,8	
5.NF.4a	Multiply a fraction or a whole number using various strategies	MP 1,2,3,4,5,6,7,8	
5.NF.4b	Use various strategies to find the area of a rectangle with fraction side lengths and represent the area with a fraction	MP 1,2,3,4,5,6,7,8	
5.NF.5a	Understand multiplication by comparing the sizes of the factors in related multiplication problems	MP 2,4,6,7	
5.NF.6	Solve real world problems by multiplying fractions and mixed numbers	MP 1,2,3,4,5,6,7,8	
5.NF.7	Use my understanding of division to divide fractions	MP 1,2,3,4,5,6,7,8	
5.MD.2	Make a like plot displaying fractions and solve problems using them	MP 1,5,6	
5.MD.3	Define and understand the concept of volume.	MP 7	

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5.MD.3a	Recognize one cubic unit of volume	MP 7	
5.MD.4	Measure volumes using various units	MP 7	
5.MD.5	Solve volume problems using multiplication and addition	MP 2,5,7	
5.MD.5a	Find the volume of a right rectangular prism by using models and solving equations	MP 5,7	
5.MD.5b	Use formulas to find the volume of rectangular prisms	MP 2,5	
5.MD.5c	Find the volume of solid figures by finding the volumes of rectangular prisms within the figure and adding the volumes together	MP 2,5	

INSTRUCTIONAL PROGRESSION

Weekly Plan	Concept	GoMath Connection nn	Vocabulary
During Week 1	● Equivalent Fractions ● Fractions in Simplest Form ● Estimating Sums and Differences of Fractions ● Common Multiples: Least Common Multiples	Topic 9: 9-1,9-2,9-3,9-4,9-5	equivalent fractions, simplest form, benchmark fraction, common multiple, least common multiple (LCM), common denominator, least common denominator (LCD)
During Week 2	● Finding Common Denominators ● Adding Fractions with Unlike Denominators ● Subtracting Fractions with Unlike Denominators ● Problem solving ● Drawing picture models, and writing equations	9-6,9-7,9-8, 9-9,9-10	
During Week 3	● Review/Assess	Review/Assess Topic 9, Games or Teacher-Made-Projects	

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During Week 4	• Improper Fraction and Mixed Number • Estimating Sums and Differences • Modeling Addition and Subtraction • Adding and Subtracting Mixed Number	Topic 10: 10-1,10-2, 10-3,10-4,10-5	Proper fraction, improper fraction, mixed number,
During Week 5	• More Adding and Subtracting Mixed Number • Problem Solving with Drawing and Writing Equations	10-6,10-7, Review/Game/ Assessment Topic 10	
During Week 6	• Fractions and Divisions • Multiplying Fractions and Mixed Numbers • Estimating Product • Area of Rectangles	Topic 11: 11-1, 11-2+11-3,11-4, 11-5	Resizing, scaling, reciprocal,
During Week 7	• Multiplying Mixed Numbers • Multiplication as Scaling • Word Problems • Dividing Whole Numbers by Unit Fractions • Dividing Unit Fractions by Non-Zero Numbers	11-6, 11-7,11-8,11-9+11-10	
During Week 8	• Volume of Solids • View of Solids	11-11, Review/ Assessment Topic 12: 12-1, 12-2,12-3	Volume, cubic unit, 3-dimensional shapes, cube, face, edge, vertex, vertices, prism, cylinder, cone, pyramid
During Week 9	• Models and Volume • Combining Volume/Volume of Irregular Solids	12-4+12-7, 12-5,12-6, Teacher-Made Projects	
During Week 10	• Review/Assess	President's Week, Conferences, Teacher-Made Projects, Review, Assess	

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During Week 11	• Line Plots • Data from Surveys • Measurement Data	Topic 14: 14-1,14-2,14-3,14-4	Line plot, outlier, survey, data, sample, frequency table, line plot
During Week 12	• Review/Assess	Review/ Assessment Topic 14	
During Week 13	Review/Assess	Unit 2 Assessment	
Flexible Week	NJSLA ASSESSMENT FLEXIBLE		

Additional Resources

- ELL, Enrichment, Reteach lesson book
- Math concept readers
- Animated Math Models-GoMath
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Special Notes:

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Some lessons are omitted as they do not reflect grade level standards or are repetitive in nature.

DIFFERENTIATION			
Special Education	**ELL**	**I&RS**	**Acad**
• Provide modifications & accommodations as listed in the student's IEP • Position student near helping peer or have quick access to teacher • Modify or reduce assignments/tests • Reduce length of assignment for different mode of delivery • Increase one-to-one time • Utilize working contract between you and student at risk • Prioritize tasks • Provide manipulatives • Use graphic organizers • Use interactive math journals • Use online resources for skill building • Provide teacher notes • Use collaborative grouping strategies such small groups • Use GoMath online resources • NJDOE resources	• Use GoMath Spanish Resources • Provide text to speech for math problems • Use of translation dictionary or software • Implement strategy groups • Confer frequently • Provide graphic organizers • Modification plan • NJDOE resources • Adapt a Strategy-Adjusting strategies for ESL students: http://www.teachersfirst.com/content/esl/adaptstrat.cfm	• Tiered Interventions following I&RS framework • I&RS Intervention Bank • NJDOE resources • Math Lab • Utilize online resources such as www.tenmarks.com • GoMath k-5 intervention supports	• Process order th thinking • Utilize p greater • Utilize e higher g • Content abstract organiza • Product world pr deadline transfor • Learning modifie learning openne varied • Use of w as www • GoMath • NJDOE r

CROSS CURRICULUR RESOURCES
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ALIGNMENT TO 21st CENTURY SKILLS AND TECHNOLOGY	
21st Century/ Interdisciplinary Themes: Bold all that apply	**21st Century Skills: Bold all that apply**
Global Awareness **Financial, Economic, Business and Entrepreneurial Literacy** Civic Literacy Health Literacy Environmental Literacy	Creativity & Innovation **Critical Thinking & Problem Solving** Communication & Collaboration Media Literacy Information Literacy **Information, Communication & Technology**

	Life & Career Skills

Technology Infusion

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Smart Board Applications
GoMath applications and online resources

Evidence of Student Learning

- Common benchmark
- Observation
- Evaluation rubrics
- Self-reflections
- Teacher-student conferences
- Running records
- Performance Tasks
- Unit tests
- Quizzes

CRP Standards

CRP1. Act as a responsible and contributing citizen and employee.
CRP2. Apply appropriate academic and technical skills.
CRP3. Attend to personal health and financial well-being.
CRP4. Communicate clearly and effectively and with reason.
CRP5. Consider the environmental, social and economic impacts of decisions.
CRP6. Demonstrate creativity and innovation.
CRP7. Employ valid and reliable research strategies.
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
CRP9. Model integrity, ethical leadership and effective management.
CRP10. Plan education and career paths aligned to personal goals.
CRP11. Use technology to enhance productivity.
CRP12. Work productively in teams while using cultural global competence.

Lebanon Borough Public School Instructional Unit

Content:	Mathematics			**Grade:**	5
Trimester:	3	**Unit Title:**	Measurement and Data, Geometry, Operation and Algebraic Thinking	**Pacing:**	13 Wee

CRITICAL AREAS OF FOCUS FOR 5th Grade

In grade 5, instructional time should focus on three critical areas:

1. Develop fluency with addition and subtraction of fractions, and develop understanding of the multiplication of fractions and of division cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions);
2. Extend division to two-digit divisors, integrating decimal fractions into the place value system and develop understanding of operations hundredths, develop fluency with whole number and decimal operations and;
3. Develop understanding of volume.

1. Students apply their understanding of fractions and fraction models to represent the addition and subtraction of fractions with unlike denomin calculations with like denominators. They develop fluency in calculating sums and differences of fractions, and make reasonable estimates of th meaning of fractions, of multiplication and division, and the relationship between multiplication and division to understand and explain why th multiplying and dividing fractions make sense. (Note: this is limited to the case of dividing unit fractions by whole numbers and whole number
2. Students develop understanding of why division procedures work based on the meaning of base-ten numerals and properties of operations. Th multi-digit addition, subtraction, multiplication, and division. They apply their understandings of models for decimals, decimal notation, and pr add and subtract decimals to hundredths. They develop fluency in these computations, and make reasonable estimates of their results. Student between decimals and fractions, as well as the relationship between finite decimals and whole numbers (i.e., a finite decimal multiplied by an a a whole number), to understand and explain why the procedures for multiplying and dividing finite decimals make sense. They compute produ decimals to hundredths efficiently and accurately.
3. Students recognize volume as an attribute of three-dimensional space. They understand that volume can be measured by finding the total num volume required to fill the space without gaps or overlaps. They understand that a 1-unit by 1-unit by 1-unit cube is the standard unit for meas appropriate units, strategies, and tools for solving problems that involve estimating and measuring volume. They decompose three-dimensiona of right rectangular prisms by viewing them as decomposed into layers of arrays of cubes. They measure necessary attributes of shapes in orde solve real-world and mathematical problems.

Mathematics

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Essential Questions
1. How are the values of an algebraic expression and a numerical expression found? 2. What are customary measurement units and how are they related? 3. What are metric measurement units and how are they related? 4. How can angles be measured and classified? 5. How can polygons, triangles, and quadrilaterals be described, classified and named? 6. How are points graphed? 7. How can we show the relationship between sequences on a graph? 8. What are customary measurement units and how are they related? 9. What are metric measurement units and how are they related?

TARGET STANDARDS		
Math NJSLS	**I Can …**	**Mathematical Practice Standard**
5.OA.1	Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	MP 1,2,4,5,6,7,8
5.OA.2	Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.	MP 1,2,4,5,6,7,8
5.OA.3	Use given rules to generate numerical patterns, form ordered pairs, and graph the ordered pairs on a coordinate plane.	MP 2,4,5,6,7
5.MD.1	Convert measurement units within a measurement system.	MP 1,2,4,5,6
5.G.1	Understand a coordinate system and coordinates, and correctly plot ordered pairs on a grid.	MP 2,4,5,6,7
5.G.2	Graph points in the first quadrant of the coordinate	MP 2,4,5,6,7,8

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INSTRUCTIONAL PROGRESSION			
Weekly Plan	**Concept**	**GoMath Connection**	**Vocabulary**
During Week 1	•Using variables to write expressions •Use order of operations •Simplify and evaluate expressions •Addition and subtraction expressions	Topic 8: 8-1, 8-2, 8-3, 8-4, 8-5	Variable, algebraic expression, corresponding, sequence, term, order of operations
During Week 2	•Understand multiplication and division expressions • Use patterns to extend tables •Understand variables and expressions	8-6, 8-7, 8-8, 8-9 Review & Assessment	
During Week 3	•Measurement: converting customary units of length , capacity and weight •Converting metric units of length and capacity	Topic 13: 13-1, 13-2, 13-3, 13-4, 13-5	Customary units of measurement, metric units of measurements, weight, length, capacity, mass, Prefix:milli-, centi-, deci-, deka-, hector-,kilo-
During Week 4	•Measurement: converting metric units of mass •Solving multi-step problems.	13-6, 13-7, Review & Assessment	
During Week 5	•Classifying Plane Figures: polygons, triangles, quadrilaterals	Topic 15: 15-1, 15-2, 15-3, 15-4, 15-5	Regular polygons, irregular polygons, parallelogram, quadrilateral, pentagon, hexagon, octagon trapezoid, rectangle, rhombus, square, triangles: equilateral, isosceles, scalene, right, acute, obtuse

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During Week 6	•Coordinate Geometry: Ordered pairs •Distances on a coordinate plane	15-6, Review Assessment Topic 16 16-1, 16-2	Coordinate grid, x- axis, y-axis, origin, ordered pair, x- coordinate, y- coordinate.
During Week 7	•Coordinate Geometry: Problem Solving: breaking complex problems into simpler parts; working backwards. •Patterns and graphing	16-3, 16-4, 16-5, 16-6	
During Week 8	Review and Assessment	Review and Assessment	
Flexible NJSLA Week	PARRC ASSESSMENT FLEXIBLE		
During Week 9	Review/Assessment	Unit 3 Assessment	
During Week 10		Stepping Up to Next Grade	
During Week 11		Stepping Up to Next Grade	
During Week 12	•Using variables to write expressions •Use order of operations	Topic 8: 8-1, 8-2, 8-3, 8-4, 8-5	Variable, algebraic expression,

	•Simplify and evaluate expressions •Addition and subtraction expressions		corresponding, sequence, term, order of operations

Additional Resources

- ELL, Enrichment, Reteach lesson book
- Math concept readers
- Animated Math Models-GoMath
- Grab and Go Differentiated Center Kits
- Student workbooks
- MegaMath
- iPad apps-GoMath, Front Row Math, Fast Facts

Special Notes:

Some lessons are combined because they cover the same concepts or do not require a whole math period for each lesson. Howeve
students need additional time, plan accordingly.

DIFFERENTIATION			
Special Education	**ELL**	**I&RS**	**Acad**
• Provide modifications & accommodations as listed in the student's IEP • Position student near helping peer or have quick access to teacher • Modify or reduce assignments/tests • Reduce length of assignment for different mode of delivery • Increase one-to-one time • Utilize working contract between you and student at risk • Prioritize tasks • Provide manipulatives • Use graphic organizers • Use interactive math journals • Use online resources for skill building • Provide teacher notes • Use collaborative grouping strategies such small groups • Use GoMath online resources • NJDOE resources	• Use GoMath Spanish Resources • Provide text to speech for math problems • Use of translation dictionary or software • Implement strategy groups • Confer frequently • Provide graphic organizers • Modification plan • NJDOE resources • Adapt a Strategy-Adjusting strategies for ESL students: http://www.teachersfirst.com/content/esl/adaptstrat.cfm	• Tiered Interventions following I&RS framework • I&RS Intervention Bank • NJDOE resources • Math Lab • Utilize online resources such as www.tenmarks.com • GoMath k-5 intervention supports	• Process order th thinking • Utilize p greater • Utilize e higher g • Content abstract organiza • Product world pr deadline transfor • Learning modifie learning openne varied • Use of w as www • GoMath • NJDOE r

CROSS CURRICULUR RESOURCES
Literacy in Mathematics: http://www.readwritethink.org/search/?resource_type=6&q=math&sort_order=relevance
Grade 3-5 STEM resource: http://www.kineticcity.com/
K-12 STEM Educator and Career Resource: http://www.egfi-k12.org/

ALIGNMENT TO 21st CENTURY SKILLS AND TECHNOLOGY	
21st Century/ Interdisciplinary Themes: **Bold all that apply**	**21st Century Skills:** **Bold all that apply**
Global Awareness **Financial, Economic, Business and Entrepreneurial Literacy** Civic Literacy Health Literacy Environmental Literacy	Creativity & Innovation **Critical Thinking & Problem Solving** Communication & Collaboration Media Literacy Information Literacy **Information, Communication & Technology**

	Life & Career Skills

Technology Infusion

National Library of Virtual Manipulatives http://nlvm.usu.edu/en/nav/vlibrary.html
Math Resources for Technology https://drive.google.com/file/d/0B4Zh_BcwMUEMOFRfSXZpdW9Yams/view?usp=sharing
Smart Board Applications
GoMath applications and online resources

Evidence of Student Learning

- Common benchmark
- Observation
- Evaluation rubrics
- Self-reflections
- Teacher-student conferences
- Running records
- Performance Tasks
- Unit tests
- Quizzes

CRP Standards

CRP1. Act as a responsible and contributing citizen and employee.
CRP2. Apply appropriate academic and technical skills.
CRP3. Attend to personal health and financial well-being.
CRP4. Communicate clearly and effectively and with reason.
CRP5. Consider the environmental, social and economic impacts of decisions.
CRP6. Demonstrate creativity and innovation.
CRP7. Employ valid and reliable research strategies.
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
CRP9. Model integrity, ethical leadership and effective management.
CRP10. Plan education and career paths aligned to personal goals.
CRP11. Use technology to enhance productivity.
CRP12. Work productively in teams while using cultural global competence.

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