

Clinton-Glen Gardner School District



Curriculum Management System

Mathematics

Grade 5

May 2012

*** For adoption by all regular education programs as specified and for adoption or adaptation by all Special Education Programs in accordance with Board of Education Policy #2200.**

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Table of Contents

Clinton-Glen Gardner School District Administration and Board of Education Members	Page 3
Acknowledgments	Page 4
District Mission Statement and Philosophy	Page 5
Common Core State Standards	Page 6
Grade 5 Scope and Sequence	Page 9
Grade 5 Unit Plans	Page 11

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Acknowledgments

During the 2011-2012 school year, the Clinton-Glen Gardner School District continued working with the curriculum consortium we developed with eight other North-Voorhees sending districts, including Califon, Clinton Township, Hampton, High Bridge, Lebanon Borough, Lebanon Township, Tewksbury Township, and Union Township. This consortium represents a collaborative effort that created an opportunity to bring together math expertise from each of the participating districts. The following individuals are acknowledged for their assistance in the preparation of this Curriculum Management System:

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Clinton-Glen Gardner School District

Mission

The mission of Clinton Public School is to inspire our students to become contributing members of society who are independent, innovative, life-time learners equipped with the necessary skills to meet the demands of our ever-changing world.

Philosophy

The economy in which graduates of our schools will seek employment is more competitive than ever and is rapidly changing in response to advances in technology. To compete in today's global, information-based economy, students must be able to solve real problems, reason effectively, and make logical connections. In this changing world those who have a good understanding of mathematics will have many opportunities and doors open to them throughout their lives. Today's workforce requires mathematical knowledge and skills in areas such as data analysis, problem-solving, pattern recognition, statistics and probability; therefore, our school's curriculum must prepare students for these expectations.

The Clinton-Glen Gardner School is committed to providing all students with the opportunity and the support necessary to learn significant mathematics with depth and understanding. To that end, students will engage in a wide variety of learning activities designed to develop their ability to reason and solve complex problems. Calculators, computers, manipulatives, technology, and the Internet will be used as tools to enhance learning and assist in problem solving. Group work, projects, literature, and interdisciplinary activities will make mathematics more meaningful and aid understanding. Classroom instruction will be designed to meet the learning needs of all children and will reflect a variety of learning styles.

The math curriculum fosters students who:

- Develop computational, conceptual, problem-solving and reasoning skills
- Demonstrate their understanding of mathematical concepts based on higher levels of mathematical thought
- Use technology and other tools as an integral part of solving mathematical problems

**New Jersey State Department of Education
Common Core State Standards**

A note about Common Core State Standards for Mathematics.

The Common Core State Standards for Mathematics were adopted in 2010. The standards referenced in this curriculum guide refer to the progress indicators in these newly adopted standards. A complete copy of the Common Core State Standards for Mathematics may be found at:

<http://www.corestandards.org/the-standards/mathematics> (by grade level)

<http://www.corestandards.org/the-standards> (in their entirety)

Mathematics: Standards for Mathematical Practice Interpreted for Kindergarten Through Second Grade

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

The Standards for Mathematical Practice are:

1. MAKE SENSE OF PROBLEMS AND PERSEVERE IN SOLVING THEM.

As you look at or read a mathematical problem, think about what it means and what it is asking you to do. Also think about what would be a good way to start solving it. Ask yourself:

- What does the problem tell me?
 - What information is given?
 - What are the relationships among parts of the problem?
 - What is the goal of solving the problem?
 - Have I seen other problems similar to this one?
- What does the problem ask me to find out (solve)?
- How should I start solving the problem?
- Can pictures or a drawing help me to figure out how to solve the problem?
- Does how I'm answering the problem make sense with what the problem is asking?
- What are some other ways to solve the problem?
- Can I use another way to check if my answer is correct?
- Does my answer make sense?

2. REASON ABSTRACTLY AND QUANTITATIVELY.

Understand the relationship of numbers and number problems and represent them using pictures, drawings or symbols. Talk about the parts of number problems using pictures, drawings or symbols as well as how the pictures, drawings or symbols represent and help explain the problem. Show how using different numbers or operations in the same problem changes it.

3. CONSTRUCT VIABLE ARGUMENTS AND CRITIQUE THE REASONING OF OTHERS.

Use objects, drawings, diagrams or actions to construct arguments about math problems with understanding and using appropriate vocabulary to explain the reasoning process. Build a local argument, communicate it with others, justify your reasoning process and respond to the reasoning process someone else uses. Express agreement if both arguments are correct and explain why an argument is flawed if it is.

4. MODEL WITH MATHEMATICS.

Apply mathematical skills to everyday life, society, the workplace and other situations; identify important quantities in practical situations; write an equation to describe a situation; revise solutions; use tools such as diagrams, two-way tables, graphs, flowcharts and formulas to show relationships; analyze relationships to draw conclusions, interpret results in context and reflect on whether the results make sense.

5. USE APPROPRIATE TOOLS STRATEGICALLY.

Identify and make decisions regarding which tool, such as paper and pencil, models, rulers, spreadsheets, etc., to use to help solve mathematical problems as well as know when a tool is not the right one to use. Use technological and other tools to deepen understanding.

6. ATTEND TO PRECISION.

Communicate precisely when discussing math incorporating the following:

- Use clear definitions.

- Choose, use and explain symbols correctly, consistently and appropriately.
- Specify units of measure and labels correctly.
- Avoid careless errors.
- Follow formulas to explain thinking to others.

7. LOOK FOR AND MAKE USE OF STRUCTURE.

Look for and identify structure and patterns in mathematics (for example, three and seven more is the same amount as seven and three more, or sort shapes according to their number of sides) and see if the pattern or structure changes.

8. LOOK FOR AND EXPRESS REGULARITY IN REPEATED REASONING.

Look for repetition in calculations and numeric thinking, such as skip counting. Pay attention to the whole problem and the details and continuously evaluate the accuracy and reasonableness of both intermediate and final answers.

CONNECTING THE STANDARDS FOR MATHEMATICAL PRACTICE TO THE STANDARDS FOR MATHEMATICS CONTENT

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

**Grade 5
Mathematics**

Scope and Sequence

Quarter I	
Topic: Operations and Algebraic Thinking <ul style="list-style-type: none">I. Numerical Expressions<ul style="list-style-type: none">a. Write, evaluate, and calculate numerical expressionsb. Order of operationsc. Parenthesesd. ExponentsII. Operations<ul style="list-style-type: none">a. Division of multi-digit dividends and divisors	Topic: Number and Operations in Base Ten <ul style="list-style-type: none">III. Place Value<ul style="list-style-type: none">a. Expanded and standard formb. Powers of tenIV. Decimals to the thousandths<ul style="list-style-type: none">a. Comparisonsb. Roundingc. Conversions and equivalency with fractionsV. Decimal Operations<ul style="list-style-type: none">a. Addition to the hundredthsb. Subtraction to the hundredthsc. Multiplication to the hundredthsd. Division to the hundredths
Quarter II	
Topic: Number and Operations – Fractions <ul style="list-style-type: none">VI. Adding and Subtracting Fractions<ul style="list-style-type: none">a. Greatest Common Factorb. Least Common Multiplec. Mixed numbers and improper fractionsd. Equivalenciese. Additionf. SubtractionVII. Multiplying and Dividing Fractions<ul style="list-style-type: none">a. Multiplication<ul style="list-style-type: none">i. Whole number by fractionii. Fraction by fractioniii. Estimating productsiv. Calculating areab. Division<ul style="list-style-type: none">i. Fraction by whole numberii. Whole number by fractioniii. Fraction as a division problem	Topic: Geometry <ul style="list-style-type: none">VIII. Polygons<ul style="list-style-type: none">a. Properties ofb. Regularc. Irregular

Quarter III

Topic: Geometry

- IX. Graphing and Coordinate Planes
 - a. Coordinate grid
 - b. Ordered pairs
 - c. Scale and interval
 - d. Line graph
 - e. Scatterplot

Topic: Measurement and Data

- X. Volume
 - a. Solid figures
 - b. Volume of regular shapes
 - i. Formula
 - c. Volume of irregular shapes

Quarter IV

(Concepts from these units should be introduced throughout the year to prepare students.)

Topic: Operations and Algebraic Thinking

- XI. Patterns
 - a. Numerical
 - i. Create
 - ii. Identify rule
 - iii. Extend
 - iv. Function table

Topic: Measurement and Data

- XII. Represent and Interpret Data
 - a. Line plot
 - i. Using fractions of a unit
 - ii. Add, subtract, multiply, and divide data
 - b. Measures of central tendency
 - i. Mean
 - ii. Median
 - iii. Mode
 - iv. Range
- XIII. Measurement Conversions
 - a. Standard
 - b. Metric
 - c. Time

Suggested days of Instruction	Curriculum Management System	Topic: Numerical Expressions	
	Subject/Grade Level: Grade 5 Mathematics	Goal 1: The student will be able to write and interpret numerical expressions.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>1.1. Identify vocabulary needed to create numerical expressions. (5.OA.1, 5.OA.2)</p> <p>1.2. Use the standard algorithm to multiply multi-digit whole numbers. (5.NBT.5)</p> <p>1.3. Write, evaluate and calculate problems using the order of operations including the use of parentheses. (5.OA.1, 5.OA.2)</p> <p>1.4. Explain what the order of operations means in applying it to numbers. (5.OA.2)</p> <p>1.5. Find quotients of whole numbers up to four digit dividends and two digit divisors. (5.NBT.6)</p> <p>1.6. Utilize a variety of strategies to find whole number quotients including place value, properties of</p>	<p>Essential Questions: Why is it important to have a standard method for evaluating expressions?</p> <p>When do you use the order of operations?</p> <p>Conceptual Understandings: Computational fluency includes not only the meaning but also the appropriate use of numerical operations.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Assessment Models: Evaluate expressions with more than one operation including parentheses.</p> <p>Translate a verbal model to a mathematical expression (VV)</p> <p>Describe the steps (process) to follow the order of operations for a given problem.</p> <p>Insert parentheses and or operation symbols to make the statement true. (ex. Challenge 24)</p> <p>Identify which is larger (or smaller) and why without solving for an answer when given two similar expressions.</p> <p>Additional Resources:</p>

Suggested days of Instruction	Curriculum Management System	Topic: Numerical Expressions	
	Subject/Grade Level: Grade 5 Mathematics	Goal 1: The student will be able to write and interpret numerical expressions.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>operations, reciprocal relationship of multiplication and division. (5.NBT.6)</p> <p>1.7. Use the distributive property. (5.OA.2)</p> <p>1.8. Make sense of problems and persevere in solving them. (MP.1)</p> <p>1.9. Reason abstractly and quantitatively. (MP.2)</p> <p>1.10. Use appropriate tools strategically. (MP.5)</p> <p>1.11. Look for and make use of structure. (MP.7)</p> <p>1.12. Look for and express regularity in repeated reasoning. (MP.8)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Numerical Expressions	
	Subject/Grade Level: Grade 5 Mathematics	Goal 1: The student will be able to write and interpret numerical expressions.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>1.13. Develop strategies to reinforce positive attitudes and productive behaviors that impact critical thinking and problem solving skills. (9.1.8.A.1)</p> <p>1.14. Implement problem-solving strategies to solve a problem in school or the community. (9.1.8.A.2)</p> <p>1.15. Determine an individual's responsibility for personal actions and contributions to group activities. (9.1.8.C.1)</p> <p>1.16. Demonstrate the use of compromise, consensus, and community building strategies for carrying out different tasks, assignments, and projects. (9.1.8.C.2)</p> <p>1.17. Model leadership skills during classroom and extra-curricular activities.</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Numerical Expressions	
	Subject/Grade Level: Grade 5 Mathematics	Goal 1: The student will be able to write and interpret numerical expressions.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	(9.1.8.C.3) 1.18. Demonstrate how productivity and accountability contribute to realizing individual or group work goals within or outside the classroom. (9.1.8.F.1)		

Suggested days of Instruction	Curriculum Management System	Topic: Place Value	
	Subject/Grade Level: Grade 5 Mathematics	Goal 2: The student will be able to expand their understanding of the place value to include decimals to the thousandths.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>2.1. Recognize place value to the right is 1/10 and to the left is ten times larger. (5.NBT.1)</p> <p>2.2. Use whole number exponents to denote powers of ten. (5.NBT.2)</p> <p>2.3. Use expanded and standard forms. (5.NBT.3.a)</p> <p>2.4. Compare decimals to the thousandths. (5.NBT.3.b)</p> <p>2.5. Round decimals to any place value. (5.NBT.4)</p> <p>2.6. Convert between decimals and fractions.</p> <p>2.7. Understand equivalency between fractions and decimals.</p>	<p>Essential Questions: How do mathematical ideas interconnect and build on each other to produce a current whole? How can we compare and contrast numbers? How can we use the base ten number system to make sense of the world around us?</p> <p>Conceptual Understandings: One representation may sometimes be more helpful than another, and, used together, multiple representations give a fuller understanding of a problem. A quantity can be represented numerically in various ways. Problem solving depends upon choosing ways wisely. Numerically fluency includes both the understanding of and the ability to appropriately use numbers.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Assessment Models: Make a place value model from the billions to the millionths. Express whole numbers as exponents in base 10. Express positive powers of 10 in standard form, exponential form, and expanded form. Compare, order, and round a given decimal to thousandths. Convert a given terminating decimal into a fraction and VV. Match a given fraction with its equivalent decimal and VV.</p> <p>Additional Resources:</p>

Suggested days of Instruction	Curriculum Management System	Topic: Place Value	
	<u>Subject/Grade Level:</u> Grade 5 Mathematics	<u>Goal 2:</u> The student will be able to expand their understanding of the place value to include decimals to the thousandths.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	2.8. Reason abstractly and quantitatively. (MP.2) 2.9. Model with mathematics. (MP.4) 2.10. Use appropriate tools strategically. (MP.5) 2.11. Attend to precision. (MP.6) 2.12. Look for and make use of structure. (MP.7) 2.13. Develop strategies to reinforce positive attitudes and productive behaviors that impact critical thinking and problem solving skills. (9.1.8.A.1) 2.14. Implement problem-solving strategies to solve a problem in school or the community. (9.1.8.A.2)		

Suggested days of Instruction	Curriculum Management System	Topic: Place Value	
	Subject/Grade Level: Grade 5 Mathematics	Goal 2: The student will be able to expand their understanding of the place value to include decimals to the thousandths.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>2.15. Determine an individual's responsibility for personal actions and contributions to group activities. (9.1.8.C.1)</p> <p>2.16. Demonstrate the use of compromise, consensus, and community building strategies for carrying out different tasks, assignments, and projects. (9.1.8.C.2)</p> <p>2.17. Model leadership skills during classroom and extra-curricular activities. (9.1.8.C.3)</p> <p>2.18. Demonstrate how productivity and accountability contribute to realizing individual or group work goals within or outside the classroom. (9.1.8.F.1)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Decimal Operations	
	Subject/Grade Level: Grade 5 Mathematics	Goal 3: The student will be able to perform operations with multi-digit whole numbers and with decimals to the hundredths.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>3.1. Use the standard algorithm to multiply multi-digit whole numbers. (5.NBT.5)</p> <p>3.2. Use the standard algorithm to add, subtract, multiply, and divide decimals to the hundredths. (5.NBT.7)</p> <p>3.3. Construct a simple personal savings and spending plan based on various sources of income. (9.2.8.B.1)</p> <p>3.4. Compare the value of goods or services from different sellers when purchasing large and small quantities. (9.2.8.E.4)</p> <p>3.5. Demonstrate each operation with models. (5.NBT.6, 5.NBT.7)</p> <p>3.6. Estimate partial products and quotients to solve division and multiplication</p>	<p>Essential Questions: How do operations affect numbers? What makes a computational strategy both effective and efficient? How can we decide when to use an exact answer and when to use an estimate?</p> <p>Conceptual Understandings: Computational fluency includes understanding not only the meaning, but also the appropriate use of numerical operations. The magnitude of numbers affects the outcome of operations on them. In many cases, there are multiple algorithms for finding mathematical solutions, and those algorithms are frequently associated with different cultures.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Assessment Models: Perform decimal operations when given horizontally and vertically, which may or may not require movement of the decimal. Identify the model when given an operation on a 10X10 grid (100ths) or vice versa. Given a blank grid, students will illustrate addition, subtraction, multiplication, and division that results in a number to the 100ths (with two colors and the result a third). Use more than one algorithm to solve a given problem (ex. partial product, lattice, Austrian Method of Subtraction, Egyptian Multiplication, etc.). Given an equation, identify the property represented (ex. commutative, associative, and distributive) of addition and of multiplication,</p>

Suggested days of Instruction	Curriculum Management System	Topic: Decimal Operations	
	Subject/Grade Level: Grade 5 Mathematics	Goal 3: The student will be able to perform operations with multi-digit whole numbers and with decimals to the hundredths.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>problems. (5.NBT.6)</p> <p>3.7. Identify properties of operations. (5.NBT.6)</p> <p>3.8. Reason abstractly and quantitatively. (MP.2)</p> <p>3.9. Construct viable arguments and critique the reasoning of others. (MP.3)</p> <p>3.10. Model with mathematics. (MP.4)</p> <p>3.11. Use appropriate tools strategically. (MP.5)</p> <p>3.12. Attend to precision. (MP.6)</p> <p>3.13. Look for and make use of structure. (MP.7)</p>		<p>including use of parentheses.</p> <p>Additional Resources:</p>

Suggested days of Instruction	Curriculum Management System	Topic: Decimal Operations	
	<u>Subject/Grade Level:</u> Grade 5 Mathematics	Goal 3: The student will be able to perform operations with multi-digit whole numbers and with decimals to the hundredths.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>3.14. Look for and express regularity in repeated reasoning. (MP.8)</p> <p>3.15. Develop strategies to reinforce positive attitudes and productive behaviors that impact critical thinking and problem solving skills. (9.1.8.A.1)</p> <p>3.16. Implement problem-solving strategies to solve a problem in school or the community. (9.1.8.A.2)</p> <p>3.17. Determine an individual's responsibility for personal actions and contributions to group activities. (9.1.8.C.1)</p> <p>3.18. Demonstrate the use of compromise, consensus, and community building strategies for carrying out different tasks, assignments, and projects.</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Decimal Operations	
	Subject/Grade Level: Grade 5 Mathematics	Goal 3: The student will be able to perform operations with multi-digit whole numbers and with decimals to the hundredths.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>(9.1.8.C.2)</p> <p>3.19. Model leadership skills during classroom and extra-curricular activities. (9.1.8.C.3)</p> <p>3.20. Demonstrate how productivity and accountability contribute to realizing individual or group work goals within or outside the classroom. (9.1.8.F.1)</p> <p>3.21. Construct a simple personal savings and spending plan based on various sources of income. (9.2.8.B.1)</p> <p>3.22. Compare the value of goods or services from different sellers when purchasing large and small quantities. (9.2.8.E.4)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Adding and Subtracting Fractions	
	Subject/Grade Level:	Goal 4: The student will be able to add and subtract fractions and mixed numbers.	
	Grade 5 Mathematics		
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>4.1. Determine Greatest Common Factor (GCF) and Least Common Multiple (LCM). (5.NF.1)</p> <p>4.2. Add and subtract unlike denominators. (5.NF.1)</p> <p>4.3. Covert between mixed numbers and improper fractions. (5.NF.1)</p> <p>4.4. Determine equivalent fractions. (5.NF.1)</p> <p>4.5. Use fraction models of equations to represent word problems. (5.NF.2)</p> <p>4.6. Estimate and assess solutions to real-world problems and word problems involving fractions. (5.NF.2)</p>	<p>Essential Questions: How do operations affect numbers? What makes a computational strategy both effective and efficient? How can we decide when to use an exact answer and when to use an estimate?</p> <p>Conceptual Understandings: Computational fluency includes understanding not only the meaning, but also the appropriate use of numerical operations. The magnitude of numbers affects the outcome of operations on them. In many cases, there are multiple algorithms for finding mathematical solution, and those algorithms are frequently associated with different cultures. Context is critical when using estimation.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Assessment Models: Show equivalent forms of a given fraction, including proper and mixed forms. Show equivalent forms of a given fraction when adding unit fractions and mixed numbers when presented horizontally and vertically. Show equivalent forms of a given fraction when subtracting unit fractions and mixed numbers when regrouping is required when presented horizontally and vertically. Convert a mixed number to improper fraction and vv. Make a list to find GCF or LCM with up to three numbers up to hundreds. Round to the nearest 1/2 and estimate answers to given equations.</p>

Suggested days of Instruction	Curriculum Management System	Topic: Adding and Subtracting Fractions	
	Subject/Grade Level: Grade 5 Mathematics	Goal 4: The student will be able to add and subtract fractions and mixed numbers.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>4.7. Make sense of problems and persevere in solving them. (MP.1)</p> <p>4.8. Reason abstractly and quantitatively. (MP.2)</p> <p>4.9. Construct viable arguments and critique the reasoning of others. (MP.3)</p> <p>4.10. Model with mathematics. (MP.4)</p> <p>4.11. Use appropriate tools strategically. (MP.5)</p> <p>4.12. Attend to precision. (MP.6)</p> <p>4.13. Look for and make use of structure. (MP.7)</p>		<p>Show all fractions in simplest form.</p> <p>Additional Resources:</p>

Suggested days of Instruction	Curriculum Management System	Topic: Adding and Subtracting Fractions	
	Subject/Grade Level: Grade 5 Mathematics	Goal 4: The student will be able to add and subtract fractions and mixed numbers.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>4.14. Look for and express regularity in repeated reasoning. (MP.8)</p> <p>4.15. Develop strategies to reinforce positive attitudes and productive behaviors that impact critical thinking and problem solving skills. (9.1.8.A.1)</p> <p>4.16. Implement problem-solving strategies to solve a problem in school or the community. (9.1.8.A.2)</p> <p>4.17. Determine an individual's responsibility for personal actions and contributions to group activities. (9.1.8.C.1)</p> <p>4.18. Demonstrate the use of compromise, consensus, and community building strategies for carrying out different tasks, assignments, and projects. (9.1.8.C.2)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Adding and Subtracting Fractions	
	Subject/Grade Level: Grade 5 Mathematics	Goal 4: The student will be able to add and subtract fractions and mixed numbers.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>4.19. Model leadership skills during classroom and extra-curricular activities. (9.1.8.C.3)</p> <p>4.20. Demonstrate how productivity and accountability contribute to realizing individual or group work goals within or outside the classroom. (9.1.8.F.1)</p>		

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: Grade 5 Mathematics	Topic: Multiplying and Dividing Fractions	
		Goal 5: The student will be able to multiply and divide fractions.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>The following two objectives must be taught during the 2012-2013 school year only to address transition gaps:</p> <ol style="list-style-type: none"> 1. Add and subtract fractions with like denominators. (4.NF.3.a, 4.NF.3.d) 2. Multiply a fraction by a whole number. (4.NF.4.a, 4.NF.4.c) <p>5.1. Multiply fractions or whole number by a fraction. (5.NF.4)</p> <p>5.2. Divide a unit fraction by a whole number and whole number by a unit fraction. (5.NF.7.b)</p> <p>5.3. Calculate area of rectangle with fractional sides both through physical models and calculations. (5.NF.4.b)</p> <p>5.4. Represent fraction products as rectangular areas. (5.NF.4.b)</p>	<p>Essential Questions: How do operations affect numbers? What makes a computational strategy both effective and efficient? How can we decide when to use an exact answer and when to use an estimate?</p> <p>Conceptual Understandings: Computational fluency includes understanding not only the meaning, but also the appropriate use of numerical operations. The magnitude of numbers affects the outcome of operations on them. In many cases, there are multiple algorithms for finding mathematical solution, and those algorithms are frequently associated with different cultures. Context is critical when using estimation.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Assessment Models: Solve a multiplication equation of fraction by fraction, fraction by whole numbers, and mixed numbers. Solve a division equation of unit fractions by whole numbers and whole numbers by unit fractions, using reciprocals. Given the fractional dimensions of a rectangle, find the area. (Unit fractions and mixed numbers). When given an appropriate array, create a multiplication model using shading or tiling to demonstrate the product. (<i>Students must have LCM/LCD and multiplication array of whole numbers, and estimation to the nearest whole number.</i>) When given a simple multiplication word problem where one factor is a fraction (unit or mixed),</p>

Suggested days of Instruction	Curriculum Management System	Topic: Multiplying and Dividing Fractions	
	Subject/Grade Level: Grade 5 Mathematics	Goal 5: The student will be able to multiply and divide fractions.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>5.5. Estimate a product by understanding when multiplying less than a whole number, the product will be less than the other factor. If it is greater than one, the product will be more than the other factor (scaling or resizing). (5.NF.5.a, 5.NF.5.b)</p> <p>5.6. Understand a fraction is a division problem, as numerator (dividend) over denominator (divisor). (5.NF.3)</p> <p>5.7. Solve real world problems involving multiplication of fractions and mixed numbers by the use of modeling. (5.NF.6)</p> <p>5.8. Find the reciprocal of a number.</p> <p>5.9. Develop strategies to divide fractions by using the relationship between multiplication and division.</p>		<p>students will predict the product will be larger or smaller than the given whole number.</p> <p>When given a visual fraction model (completed array) of a non-zero whole less than ten and a unit fraction, students will rewrite the division problem as a multiplication problem.</p> <p>Additional Resources:</p>

Suggested days of Instruction	Curriculum Management System	Topic: Multiplying and Dividing Fractions	
	Subject/Grade Level: Grade 5 Mathematics	Goal 5: The student will be able to multiply and divide fractions.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	(5.NF.7.a) 5.10. Solve real world problems involving division of unit fractions by non-zero whole numbers and of whole numbers by unit fractions. (5.NF.7.c) 5.11. Make sense of problems and persevere in solving them. (MP.1) 5.12. Reason abstractly and quantitatively. (MP.2) 5.13. Construct viable arguments and critique the reasoning of others. (MP.3) 5.14. Model with mathematics. (MP.4) 5.15. Use appropriate tools strategically. (MP.5)		

Suggested days of Instruction	Curriculum Management System	Topic: Multiplying and Dividing Fractions	
	Subject/Grade Level: Grade 5 Mathematics	Goal 5: The student will be able to multiply and divide fractions.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>5.16. Attend to precision. (MP.6)</p> <p>5.17. Look for and make use of structure. (MP.7)</p> <p>5.18. Look for and express regularity in repeated reasoning. (MP.8)</p> <p>5.19. Develop strategies to reinforce positive attitudes and productive behaviors that impact critical thinking and problem solving skills. (9.1.8.A.1)</p> <p>5.20. Implement problem-solving strategies to solve a problem in school or the community. (9.1.8.A.2)</p> <p>5.21. Determine an individual's responsibility for personal actions and contributions to group activities. (9.1.8.C.1)</p>		

Suggested days of Instruction	Curriculum Management System <u>Subject/Grade Level:</u> Grade 5 Mathematics	Topic: Multiplying and Dividing Fractions	
		<u>Goal 5:</u> The student will be able to multiply and divide fractions.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>5.22. Demonstrate the use of compromise, consensus, and community building strategies for carrying out different tasks, assignments, and projects. (9.1.8.C.2)</p> <p>5.23. Model leadership skills during classroom and extra-curricular activities. (9.1.8.C.3)</p> <p>5.24. Demonstrate how productivity and accountability contribute to realizing individual or group work goals within or outside the classroom. (9.1.8.F.1)</p>		

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: Grade 5 Mathematics	Topic: Polygons	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>The following objectives must be taught during the 2012-2013 school year only to address transition gaps:</p> <p>1. Classify angles, how to measure angles, adding angles. (4.MD.5.a, 4.MD.5.b, 4.MD.6, 4.MD.7)</p> <p>6.1. Identify, describe, classify, and compare the properties of two-dimensional polygons. (5.G.3, 5.G.4)</p> <p>6.2. Recognize regular polygons. (5.G.3)</p> <p>6.3. Compare/contrast regular polygons to irregular polygons. (5.G.4)</p> <p>6.4. Reason abstractly and quantitatively. (MP.2)</p> <p>6.5. Construct viable arguments</p>	<p>Essential Questions: How can spatial relationships be described by careful use of geometric language?</p> <p>Conceptual Understandings: Geometric properties can be used to construct geometric figures.</p> <p>Geometric relationships provide a means to make sense of a variety of phenomena.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Assessment Models: Make a hierarchy of given polygons.</p> <p>Sort polygons with given properties.</p> <p>Given a regular and an irregular polygon, compare and contrast each using attributes and terms.</p> <p>Additional Resources:</p>

Suggested days of Instruction	Curriculum Management System	Topic: Polygons	
	Subject/Grade Level: Grade 5 Mathematics	Goal 6: The student will be able to classify two-dimensional figures into categories based on their properties.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>and critique the reasoning of others. (MP.3)</p> <p>6.6. Use appropriate tools strategically. (MP.5)</p> <p>6.7. Attend to precision. (MP.6)</p> <p>6.8. Look for and make use of structure. (MP.7)</p> <p>6.9. Develop strategies to reinforce positive attitudes and productive behaviors that impact critical thinking and problem solving skills. (9.1.8.A.1)</p> <p>6.10. Implement problem-solving strategies to solve a problem in school or the community. (9.1.8.A.2)</p> <p>6.11. Determine an individual's responsibility for personal</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Polygons	
	Subject/Grade Level: Grade 5 Mathematics	Goal 6: The student will be able to classify two-dimensional figures into categories based on their properties.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>actions and contributions to group activities. (9.1.8.C.1)</p> <p>6.12. Demonstrate the use of compromise, consensus, and community building strategies for carrying out different tasks, assignments, and projects. (9.1.8.C.2)</p> <p>6.13. Model leadership skills during classroom and extra-curricular activities. (9.1.8.C.3)</p> <p>6.14. Demonstrate how productivity and accountability contribute to realizing individual or group work goals within or outside the classroom. (9.1.8.F.1)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Graphing and Coordinate Planes	
	Subject/Grade Level: Grade 5 Mathematics	Goal 7: The student will be able to graph points on the coordinate planes to solve real-world and mathematical problems.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>7.1. Identify and define key terminology. (5.G.1)</p> <p>7.2. Label a coordinate grid using whole and/or 1/2 increments at intersection not space. (5.G.1)</p> <p>7.3. Plot an ordered pair on a coordinate grid. (5.G.1)</p> <p>7.4. Compare two numerical patterns in order to create an ordered pair (x,y). (5.G.1)</p> <p>7.5. Determine the scale and interval of a given graph. (5.G.2)</p> <p>7.6. Construct, interpret and predict real-life situations based on a line graph and a scatterplot. (5.G.2)</p>	<p>Essential Questions: How are mathematical models used to describe the relationships between two quantities?</p> <p>Conceptual Understandings: Coordinate geometry can be used to represent and verify geometric and algebraic relationships.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Assessment Models: Plot ordered pairs in whole and 1/2 increments in Quadrant I on a coordinate plane.</p> <p>Given a point on a coordinate plane, identify its ordered pair.</p> <p>Given a coordinate plane with at least one point plotted, label quadrant, x-axis, y-axis, perpendicular lines, origin, intersection, x-coordinate, y-coordinate, horizontal, and vertical lines.</p> <p>Given a blank coordinate grid, number the x- and y-axes number it by a specified interval (1/2s)</p> <p>Given a set of data, construct a scatterplot, define the trend and make a prediction.</p> <p>Additional Resources:</p>

Suggested days of Instruction	Curriculum Management System	Topic: Graphing and Coordinate Planes	
	<u>Subject/Grade Level:</u> Grade 5 Mathematics	<u>Goal 7:</u> The student will be able to graph points on the coordinate planes to solve real-world and mathematical problems.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>7.7. Make sense of problems and persevere in solving them. (MP.1)</p> <p>7.8. Reason abstractly and quantitatively. (MP.2)</p> <p>7.9. Model with mathematics. (MP.4)</p> <p>7.10. Use appropriate tools strategically. (MP.5)</p> <p>7.11. Attend to precision. (MP.6)</p> <p>7.12. Look for and make use of structure. (MP.7)</p> <p>7.13. Develop strategies to reinforce positive attitudes and productive behaviors that impact critical thinking and problem solving skills. (9.1.8.A.1)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Graphing and Coordinate Planes	
	Subject/Grade Level: Grade 5 Mathematics	Goal 7: The student will be able to graph points on the coordinate planes to solve real-world and mathematical problems.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>7.14. Implement problem-solving strategies to solve a problem in school or the community. (9.1.8.A.2)</p> <p>7.15. Assess data gathered to solve a problem for which there are varying perspectives and determine how the data can be used to design multiple solutions. (9.1.8.B.2)</p> <p>7.16. Determine an individual's responsibility for personal actions and contributions to group activities. (9.1.8.C.1)</p> <p>7.17. Demonstrate the use of compromise, consensus, and community building strategies for carrying out different tasks, assignments, and projects. (9.1.8.C.2)</p> <p>7.18. Model leadership skills during classroom and extra-curricular activities.</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Graphing and Coordinate Planes	
	<u>Subject/Grade Level:</u> Grade 5 Mathematics	<u>Goal 7:</u> The student will be able to graph points on the coordinate planes to solve real-world and mathematical problems.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	(9.1.8.C.3) 7.19. Demonstrate how productivity and accountability contribute to realizing individual or group work goals within or outside the classroom. (9.1.8.F.1)		

Suggested days of Instruction	Curriculum Management System	Topic: Volume	
	Subject/Grade Level: Grade 5 Mathematics	Goal 8: The student will be able to utilize their knowledge of volume and relate it to the processes of multiplication and addition.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>8.1. Identify and define solid figures. (5.MD.3)</p> <p>8.2. Recognize solid volume as an attribute of 3D figures. (5.MD.3)</p> <p>8.3. Understand concepts of volume measurement. (5.MD.3, 5.MD.3.a, 5.MD.3.b)</p> <p>8.4. Understand volume of irregular shapes. (5.MD.3)</p> <p>8.5. Model the volume of a rectangular prism with unit cubes. (5.MD.5.a)</p> <p>8.6. Find volumes of solid figures composed of two non-overlapping rectangular prisms. (5.MD.5.c)</p> <p>8.7. Apply the formula $V=l * w * h$</p>	<p>Essential Questions: Using spatial relationships how can you describe the correlation between two-dimensional and three-dimensional objects? How can measurement be used to solve problems?</p> <p>Conceptual Understandings: Everyday objects have a variety of attributes, each of which can be measured in many ways. What we measure affects how we measure it. Measurements can be used to describe, compare, and make sense of phenomena. Geometric properties can be used to construct geometric figures. Geometric relationships provide a means to make sense of a variety of phenomena.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Assessment Models: Label the dimensions of a given 3D figure and use the formula to determine volume, including “cubic units” Decompose a non-overlapping irregular 3D prism, into two or more rectangular prisms and find the volume of each. Add the volumes to find the total including “cubic units.” Solve real world word problems involving area. (How much concrete to build this step?)</p> <p>Additional Resources:</p>

Suggested days of Instruction	Curriculum Management System	Topic: Volume	
	Subject/Grade Level: Grade 5 Mathematics	Goal 8: The student will be able to utilize their knowledge of volume and relate it to the processes of multiplication and addition.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>h and $V=B \cdot h$ to real world problems. (5.MD.5.b)</p> <p>8.8. Label the unit of volume as the “unit cubed” (ex. in. ³). (5.MD.4)</p> <p>8.9. Make sense of problems and persevere in solving them. (MP.1)</p> <p>8.10. Reason abstractly and quantitatively. (MP.2)</p> <p>8.11. Construct viable arguments and critique the reasoning of others. (MP.3)</p> <p>8.12. Model with mathematics. (MP.4)</p> <p>8.13. Use appropriate tools strategically. (MP.5)</p> <p>8.14. Attend to precision.</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Volume	
	Subject/Grade Level: Grade 5 Mathematics	Goal 8: The student will be able to utilize their knowledge of volume and relate it to the processes of multiplication and addition.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	(MP.6) 8.15. Look for and make use of structure. (MP.7) 8.16. Look for and express regularity in repeated reasoning. (MP.8) 8.17. Develop strategies to reinforce positive attitudes and productive behaviors that impact critical thinking and problem solving skills. (9.1.8.A.1) 8.18. Implement problem-solving strategies to solve a problem in school or the community. (9.1.8.A.2) 8.19. Determine an individual's responsibility for personal actions and contributions to group activities. (9.1.8.C.1)		

Suggested days of Instruction	Curriculum Management System <u>Subject/Grade Level:</u> Grade 5 Mathematics	Topic: Volume	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	8.20. Demonstrate the use of compromise, consensus, and community building strategies for carrying out different tasks, assignments, and projects. (9.1.8.C.2) 8.21. Model leadership skills during classroom and extra-curricular activities. (9.1.8.C.3) 8.22. Demonstrate how productivity and accountability contribute to realizing individual or group work goals within or outside the classroom. (9.1.8.F.1)		

Suggested days of Instruction	Curriculum Management System	Topic: Patterns	
	Subject/Grade Level:	Goal 9: The student will be able to analyze patterns and relationships.	
	Grade 5 Mathematics		
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>9.1. Generate numerical patterns. (5.OA.3)</p> <p>9.2. Determine a rule and extend the pattern. (5.OA.3)</p> <p>9.3. Reason abstractly and quantitatively. (MP.2)</p> <p>9.4. Look for and make use of structure. (MP.7)</p> <p>9.5. Develop strategies to reinforce positive attitudes and productive behaviors that impact critical thinking and problem solving skills. (9.1.8.A.1)</p> <p>9.6. Implement problem-solving strategies to solve a problem in school or the community. (9.1.8.A.2)</p>	<p>Essential Questions: How are the patterns of change related to corresponding terms?</p> <p>Conceptual Understandings: Patterns and relationships can be represented graphically, numerically, symbolically, or verbally.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Assessment Models: Make a function table to compare two patterns. Determine a rule for a pattern and extend it. Graph the relationship between two patterns.</p> <p>Additional Resources:</p>

Suggested days of Instruction	Curriculum Management System	Topic: Patterns	
	Subject/Grade Level: Grade 5 Mathematics	Goal 9: The student will be able to analyze patterns and relationships.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>9.7. Determine an individual's responsibility for personal actions and contributions to group activities. (9.1.8.C.1)</p> <p>9.8. Demonstrate the use of compromise, consensus, and community building strategies for carrying out different tasks, assignments, and projects. (9.1.8.C.2)</p> <p>9.9. Model leadership skills during classroom and extra-curricular activities. (9.1.8.C.3)</p> <p>9.10. Demonstrate how productivity and accountability contribute to realizing individual or group work goals within or outside the classroom. (9.1.8.F.1)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Represent and Interpret Data	
	Subject/Grade Level: Grade 5 Mathematics	Goal 10: The student will be able to represent and interpret data.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>10.1. Make a line plot with fractions of a unit. (5.MD.2)</p> <p>10.2. Add, subtract, multiply, and divide data (in fractions of a unit) to answer questions in any given measurement system. (5.MD.2)</p> <p>10.3. Identify outliers and how they affect data. (5.MD.2)</p> <p>10.4. Calculate measures of central tendency (mean, median, mode, and range) with use of calculator as needed. (5.MD.2)</p> <p>10.5. Make sense of problems and persevere in solving them. (MP.1)</p> <p>10.6. Reason abstractly and quantitatively.</p>	<p>Essential Questions: How can the collection, organization, interpretation, and display of data be used to answer questions?</p> <p>Conceptual Understandings: The message conveyed by the data depends on how the data is collected, represented, and summarized.</p> <p>The results of a statistical investigation can be used to support or refute an argument.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Assessment Models: Make a number line with fractional intervals including whole numbers, 1/2s, 1/4ths, and 1/8.</p> <p>Given a set of data including fractional intervals including whole numbers, 1/8ths, construct a line plot.</p> <p>With a given set of data including whole numbers, 1/2s, 1/4ths, and 1/8ths, calculate measures of central tendency.</p> <p>Additional Resources:</p>

Suggested days of Instruction	Curriculum Management System	Topic: Represent and Interpret Data	
	Subject/Grade Level: Grade 5 Mathematics	Goal 10: The student will be able to represent and interpret data.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	(MP.2) 10.7. Model with mathematics. (MP.4) 10.8. Use appropriate tools strategically. (MP.5) 10.9. Attend to precision. (MP.6) 10.10. Look for and make use of structure. (MP.7) 10.11. Develop strategies to reinforce positive attitudes and productive behaviors that impact critical thinking and problem solving skills. (9.1.8.A.1) 10.12. Implement problem-solving strategies to solve a problem in school or the community. (9.1.8.A.2) 10.13. Determine an individual's		

Suggested days of Instruction	Curriculum Management System	Topic: Represent and Interpret Data	
	<u>Subject/Grade Level:</u> Grade 5 Mathematics	<u>Goal 10:</u> The student will be able to represent and interpret data.	
Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's)	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model	
The student will be able to:			
<p>responsibility for personal actions and contributions to group activities. (9.1.8.C.1)</p> <p>10.14. Demonstrate the use of compromise, consensus, and community building strategies for carrying out different tasks, assignments, and projects. (9.1.8.C.2)</p> <p>10.15. Model leadership skills during classroom and extra-curricular activities. (9.1.8.C.3)</p> <p>10.16. Demonstrate how productivity and accountability contribute to realizing individual or group work goals within or outside the classroom. (9.1.8.F.1)</p>			

Suggested days of Instruction	Curriculum Management System <u>Subject/Grade Level:</u> Grade 5 Mathematics	Topic: Measurement Conversions	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>The following objective must be taught during the 2012-2013 school year only to address transition gaps:</p> <p>1. Express measurement equivalents and relative sizes within a single system of measurement including standard, metric, and time. (4.MD.1)</p> <p>11.1. Convert among different sizes (both standard, metric, and time) within a given measurement system. (5.MD.1)</p> <p>11.2. Select the appropriate unit of measurement within a given measurement system when measuring an object. (5.MD.1)</p> <p>11.3. Solve real world problems involving measurement conversions. (5.MD.1)</p>	<p>Essential Questions: How can measurements be used to solve problems?</p> <p>Conceptual Understandings: Everyday objects have a variety of attributes, each of which can be measured in many ways.</p> <p>What we measure affects how we measure it.</p> <p>Measurements are tools and can be used to describe, compare, quantify and make sense of phenomena.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Assessment Models: Label the units of the metric system in ascending/descending order.</p> <p>When given an object, be able to select the appropriate (length, weight, and capacity) unit to measure without measuring it.</p> <p>With a given multi-step word problem, students convert the measure of an object within both customary and metric system.</p> <p>Additional Resources:</p>

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	11.4. Make sense of problems and persevere in solving them. (MP.1) 11.5. Reason abstractly and quantitatively. (MP.2) 11.6. Use appropriate tools strategically. (MP.5) 11.7. Attend to precision. (MP.6) 11.8. Develop strategies to reinforce positive attitudes and productive behaviors that impact critical thinking and problem solving skills. (9.1.8.A.1) 11.9. Implement problem-solving strategies to solve a problem in school or the community. (9.1.8.A.2) 11.10. Determine an individual's		

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	<p>responsibility for personal actions and contributions to group activities. (9.1.8.C.1)</p> <p>11.11. Demonstrate the use of compromise, consensus, and community building strategies for carrying out different tasks, assignments, and projects. (9.1.8.C.2)</p> <p>11.12. Model leadership skills during classroom and extra-curricular activities. (9.1.8.C.3)</p> <p>11.13. Demonstrate how productivity and accountability contribute to realizing individual or group work goals within or outside the classroom. (9.1.8.F.1)</p>		