Clinton-Glen Gardner School District

Curriculum Management System

Mathematics

Grade 4

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.**

Board Approved: June 19, 2012

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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) ad 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 balances 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 4
Mathematics

Scope and Sequence

Quarter I	
Topic: Number & Operations/Operations & Algebraic Thinking I. Addition and Subtraction a. Place Value i. Standard and expanded forms ii. Compare multi-digit numbers iii. Inequality symbols b. Rounding c. Add multi-digit numbers d. Subtract multi-digit numbers e. Estimation f. Answer reasonableness g. Patterns i. Shape ii. Number	
Quarter II	
Topic: Number & Operations/Operations & Algebraic Thinking II. Multiplication a. Relation to skip counting b. Relation to addition c. Factor pairs i. Multiplication facts ii. Divisibility rules d. Prime and composite numbers e. Properties i. Commutative ii. Associative iii. Identity iv. Distributive v. Zero	

Quarter III

Topic: Number & Operations/Operations & Algebraic Thinking

III. Division
- a. Algorithm
- b. Remainders
- c. Relation to subtraction

Topic: Number and Operations – Fractions

IV. Fractions
- a. Equivalent fractions
- b. Common denominators
- c. Comparisons with inequality symbols
- d. Addition of fractions/mixed numbers
- e. Subtraction of fractions/mixed numbers
- f. Multiplication of fractions by whole numbers
- g. Fraction-decimal representations

Quarter IV

Topic: Measurement and Data and Geometry

V. Measurement
- a. Area
- b. Perimeter
- c. Measurement conversions
- d. Line plot

VI. Geometry
- a. Points, lines, line segments, and rays
  - i. Parallel
  - ii. Perpendicular
- b. Two dimensional figures
- c. Angles
  - i. Right, acute, and obtuse
  - ii. Measure
- iii. Symmetry
  - i. Right, acute, and obtuse
  - ii. Measure

Topic: Financial Literacy

VII. Problem Based Learning
- a. Career identification
- b. Income
- c. Taxes
- d. Budget
  - i. Savings and spending plans
  - ii. Cash, credit, debit
- e. Financial risks
- f. Risk management strategies

Suggested days of Instruction	Curriculum Management System **Subject/Grade Level:** **Grade 4** **Mathematics**	**Topic: Addition and Subtraction** **Goal 1:** The student will be able to utilize their understanding of the number system to determine place value, to round, and to add and subtract.	
	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**
	1.1. Identify the value of a digit based on its position. (4.NBT.1) 1.2. Recognize that the value of a digit in one place represents ten times what it represents in the place to its right. (4.NBT.1) 1.3. Write a number in word, standard, and expanded forms. (4.NBT.2) 1.4. Use knowledge of place value to compare multi-digit numbers using inequality symbols (<, >). (4.NBT.2) 1.5. Use place value knowledge to round multi-digit whole numbers to any place. (4.NBT.3) 1.6. Add and subtract multi-digit whole numbers using the standard algorithm.	**Essential Questions:** How does the position of a digit determine its worth? How does the base ten system work? How do you decide what operation to use in a word problem? How do you find the pattern of a series of numbers or shapes? What is the relationship between addition and subtraction? Why is recognizing what strategy to use for a specific purpose helpful? **Conceptual Understandings:** Each digit in the base ten system is 10 times what it represents in the place to its right. There are words in a word problem that prompt us to decide whether to add or subtract. Math sentence should be written and solved using a letter in place of the unknown information. Using inequalities is a way to compare numbers.	**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.*** **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.** **Assessment Models:** Solve a multi-step word problem. Write an equation for a word problem using a letter for the unknown quantity. Continue a pattern and identify the rule. Given a number to one million, identify the value of an underlined digit. Given a number, write the number in word, expanded, and standard forms. Given two numbers compare whether the numbers are greater than, less than, or equal to. Round a number to the underlined place value position.

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: **Grade 4** **Mathematics**	**Topic: Addition and Subtraction** **Goal 1:** The student will be able to utilize their understanding of the number system to determine place value, to round, and to add and subtract.	
	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**
	(4.NBT.4) 1.7. Use addition and subtraction to solve multi-step word problems. (4.OA.3) 1.8. Write an equation representing the word problem where a letter represents an unknown quantity. (4.OA.3) 1.9. Apply knowledge of estimation and mental computation to check if it is a reasonable answer. (4.OA.3) 1.10. Create and extend number or shape patterns that follow a given rule. (4.OA.5) 1.11. Identify and continue the number or shape patterns. (4.OA.5) 1.12. Reason abstractly and		Add or subtract multidigit whole numbers. **Additional Resources:**

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: **Grade 4** **Mathematics**	**Topic: Addition and Subtraction** **Goal 1:** The student will be able to utilize their understanding of the number system to determine place value, to round, and to add and subtract.	
	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**
	quantitatively. (MP.2) 1.13. Model with mathematics. (MP.4) 1.14. Look for and make use of structure. (MP.7) 1.15. Look for and express regularity in repeated reasoning. (MP.8) 1.16. Use appropriate tools strategically. (MP.5) 1.17. Make sense of problems and persevere in solving them. (MP.1) 1.18. Attend to precision. (MP.6) 1.19. Recognize a problem and brainstorm ways to solve the problem individually or		

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: **Grade 4** **Mathematics**	**Topic: Addition and Subtraction** **Goal 1:** The student will be able to utilize their understanding of the number system to determine place value, to round, and to add and subtract.	
	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**
	collaboratively. (9.1.4.A.1) 1.20. Evaluate available resources that can assist in solving problems. (9.1.4.A.2) 1.21. Determine when the use of technology is appropriate to solve problems. (9.1.4.A.3) 1.22. Apply critical thinking and problem-solving skills in classroom settings. (9.1.4.A.5) 1.23. Participate in brainstorming sessions to seek information, ideas, and strategies that foster creative thinking. (9.1.4.B.1) 1.24. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in diferent settings. (9.1.4.C.1)		

Suggested days of Instruction	Curriculum Management System **Subject/Grade Level:** **Grade 4** **Mathematics**	**Topic: Multiplication** **Goal 2:** The student will be able to identify factor pairs and prime and composite numbers as well as expand their ability to include multi-digit multiplication.	
	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**
	2.1. Use multiplication facts and divisibility rules (2, 3, 5, 6, 9, 10) to help in determining factor pairs. (4.OA.4) 2.2. Identify prime and composite numbers (of the first 100 numbers). (4.OA.4) 2.3. Use multiplication fact knowledge to identify factor pairs of whole numbers 1-100. (4.OA.4) 2.4. Apply knowledge that multiples can be thought of as the result of skip counting by each of the factors. (4.OA.4) 2.5. Multiply a whole number of up to four digits by a one-digit whole number. (4.NBT.5) 2.6. Multiply a two- digit number by a two-digit number.	**Essential Questions:** How do we solve a multiplication equation? How do you decide what operation to use in a word problem? What strategies can you use to find factors? How do you find the pattern of a series of numbers or shapes? What are some different strategies that can be used to assist in solving multiplication equations? **Conceptual Understandings:** Each digit in the base ten system is 10 times what it represents in the place to its right. One quantity is multiplied by a specific number to get another quantity. There are words in a word problem that prompt us to decide when to use multiplication. Math sentences should be written and solved using a letter in place of the unknown information.	**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.*** **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.** **Assessment Models:** Multiply a four digit number by a 1 digit. Multiply a two-digit by a two-digit number. List all the factors of a given number. Identify if a given number is a prime or composite. Solve a multi-step word problem. Write an equation for a word problem using a letter for the unknown quantity. Demonstrate or explain the strategy used to come up with the answer to multiplication equations. Continue a pattern and identify the rule. **Additional Resources:**

Suggested days of Instruction	Curriculum Management System **Subject/Grade Level:** **Grade 4** **Mathematics**	**Topic: Multiplication** **Goal 2:** The student will be able to identify factor pairs and prime and composite numbers as well as expand their ability to include multi-digit multiplication.	
	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**
	(4.NBT.5) 2.7. Use strategies on place value to illustrate the calculations for up to four digit by one digit and two digit by two digit numbers. (4.NBT.5) 2.8. Write a related multiplication equation using the commutative , associative, zero property, identity, and distributive properties. (4.OA.1) 2.9. Identify and verbalize which quanity is being multiplied and which number tells how many times. (4.OA.1) 2.10. Solve multiplication word problems. (4.OA.2) 2.11. Compare and understand the two approaches (multiplication and addition) to solve multiplication problems.		

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: **Grade 4** **Mathematics**	**Topic: Multiplication** **Goal 2:** The student will be able to identify factor pairs and prime and composite numbers as well as expand their ability to include multi-digit multiplication.	
	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**
	(4.OA.2) 2.12. Use multiplication to solve multi-step word problems. (4.OA.3) 2.13. Write an equation representing the word problem where a letter represents an unknown quantity. (4.OA.3) 2.14. Apply knowledge of estimationand mental computation to check if it is a reasonable answers. (4.OA.3) 2.15. Reason abstractly and quantitatively. (MP.2) 2.16. Model with mathematics. (MP.4) 2.17. Look for and make use of structure. (MP.7)		

Suggested days of Instruction	Curriculum Management System **Subject/Grade Level:** **Grade 4** **Mathematics**	**Topic: Multiplication** **Goal 2:** The student will be able to identify factor pairs and prime and composite numbers as well as expand their ability to include multi-digit multiplication.	
	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**
	2.18. Look for and express regularity in repeated reasoning. (MP.8) 2.19. Use appropriate tools strategically. (MP.5) 2.20. Make sense of problems and persevere in solving them. (MP.1) 2.21. Attend to precision. (MP.6) 2.22. Recognize a problem and brainstorm ways to solve the problem individually or collaboratively. (9.1.4.A.1) 2.23. Evaluate available resources that can assist in solving problems. (9.1.4.A.2) 2.24. Determine when the use of technology is appropriate to		

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: **Grade 4** **Mathematics**	**Topic: Multiplication** **Goal 2:** The student will be able to identify factor pairs and prime and composite numbers as well as expand their ability to include multi-digit multiplication.	
	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**
	solve problems. (9.1.4.A.3) 2.25. Apply critical thinking and problem-solving skills in classroom settings. (9.1.4.A.5) 2.26. Participate in brainstorming sessions to seek information, ideas, and strategies that foster creative thinking. (9.1.4.B.1) 2.27. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in diferent settings. (9.1.4.C.1)		

Suggested days of Instruction	Curriculum Management System **Subject/Grade Level:** **Grade 4** **Mathematics**	**Topic: Division** **Goal 3:** The student will be able to accurately calculate quotients involving multi-digit dividends.	
	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**
	3.1. Divide up to four digit dividends and one digit divisors with whole number quotients and remainders. (4.NBT.5) 3.2. Use strategies on place value to illustrate the calculations for up to four digit dividends and one digit divisors with whole number quotients and remainders. (4.NBT.5) 3.3. Solve division word problems. (4.OA.2) 3.4. Compare and understand the two approaches (multiplication and subtraction) to solve division problems. (4.OA.2) 3.5. Use division to solve multi-step word problems including problems with remainders. (4.OA.3)	**Essential Questions:** What are some different strategies that can be used to assist in solving division equations? Why is recognizing what strategy to use for a specific purpose helpful? How do we solve a division equation? How do you decide what operation to use in a word problem? What is the relationship between multiplication and division? **Conceptual Understandings:** There are words in a word problem that prompt us to decide whether to use division. Math sentences should be written and solved using a letter in place of the unknown information. Division is the process of making equal groups and the remainder is when a number cannot be divided exactly by another. Remainders must be interpreted.	**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.*** **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.** **Assessment Models:** Divide a four digit dividend by a one digit divisor where the quotient is a whole number and another where the quotient has a remainder. Solve a multi-step word problem. Write an equation for a word problem using a letter for the unknown quantity. Solve a word problem involving a remainder in the answer. Demonstrate or explain the strategy used to come up with the answer to division equations. **Additional Resources:**

Suggested days of Instruction	Curriculum Management System **Subject/Grade Level:** **Grade 4** **Mathematics**	**Topic: Division** **Goal 3:** The student will be able to accurately calculate quotients involving multi-digit dividends.	
	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**
	3.6. Write an equation representing the word problem where a letter represents an unknown quantity. (4.OA.3) 3.7. Apply knowledge of estimationand mental computation to check if it is a reasonable answers. (4.OA.3) 3.8. Reason abstractly and quantitatively. (MP.2) 3.9. Model with mathematics. (MP.4) 3.10. Look for and make use of structure. (MP.7) 3.11. Look for and express regularity in repeated reasoning. (MP.8)		

Suggested days of Instruction	Curriculum Management System **Subject/Grade Level:** **Grade 4** **Mathematics**	**Topic: Division** **Goal 3:** The student will be able to accurately calculate quotients involving multi-digit dividends.	
	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**
	3.12. Use appropriate tools strategically. (MP.5) 3.13. Make sense of problems and persevere in solving them. (MP.1) 3.14. Attend to precision. (MP.6) 3.15. Recognize a problem and brainstorm ways to solve the problem individually or collaboratively. (9.1.4.A.1) 3.16. Evaluate available resources that can assist in solving problems. (9.1.4.A.2) 3.17. Determine when the use of technology is appropriate to solve problems. (9.1.4.A.3) 3.18. Apply critical thinking and problem-solving skills in		

Suggested days of Instruction	Curriculum Management System **Subject/Grade Level:** **Grade 4** **Mathematics**	**Topic: Division** **Goal 3:** The student will be able to accurately calculate quotients involving multi-digit dividends.	
	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**
	classroom settings. (9.1.4.A.5) 3.19. Participate in brainstorming sessions to seek information, ideas, and strategies that foster creative thinking. (9.1.4.B.1) 3.20. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in diferent settings. (9.1.4.C.1)		

Suggested days of Instruction	Curriculum Management System **Subject/Grade Level:** **Grade 4** **Mathematics**	**Topic: Fractions** **Goal 4:** The student will be able to generate equivalent fractions, determine common denominators, and 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**
	4.1. Use visual fraction models to demonstrate the equivalency of fractions. (4.NF.1) 4.2. Use this principle to recognize and generate equivalent fractions. (4.NF.1) 4.3. Find the common denominator between fractions with different denominators. (4.NF.2) 4.4. Compare fractions with different denominators using the inequality symbols (<, >, =). (4.NF.2) 4.5. Add or subtract fractions with like denominators. (4.NF.3) 4.6. Separate a fraction into a combination of several unit fractions.	**Essential Questions:** Are two halves always equal? How can fractions with different denominators represent the same value? When is it appropriate to use fraction or decimal representation? How are fractions ordered and compared? **Conceptual Understandings:** When adding or subtracting fractions with like denominators, you are adding or subtracting pieces of the same size, so you can add the numerators. Benchmark fractions are familiar fractions that are easy to visualize, such as halves, thirds, and fourths. Drawing visual fraction models can help to represent what you know in solving a problem. The same fractional part can have different names that are equivalent. Equivalent fractions are found by multiplying or dividing the numerator and denominator of a fraction by the same non-zero number. When two fractions have the same denominator, the greater fraction has the greater numerator, and when two fractions have the same numerator, the fraction with greater denominator is less. Fractions with a common denominator or a common	**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.*** **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.** **Assessment Models:** List 5 equivalent fractions of a given fraction. Convert a fraction to a decimal and a decimal to a fraction. Solve a word problem involving multiplication of fraction by a whole number. Compare the same fraction of different sized wholes. **Additional Resources:**

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: **Grade 4** **Mathematics**	**Topic: Fractions** **Goal 4:** The student will be able to generate equivalent fractions, determine common denominators, and 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**
	(4.NF.3) 4.7. Add mixed numbers with like denominators. (4.NF.3) 4.8. Subtract mixed numbers by either borrowing from the whole or changing the mixed number into an improper fraction. (4.NF.3) 4.9. Solve word problems involving addition and subtraction of fractions with like denominators using the skills previously learned. (4.NF.3) 4.10. Multiply a fraction by a whole number. Use a visual fraction model to express the equation. (4.NF.4) 4.11. Solve word problems involving multiplication of a fraction by a whole number using the skills previously learned.	numerator are easy to compare and order. When multiplying a fraction by a whole number you must make the whole number over 1 and then multiply the numerators by the numerators and multiply the denominators by the denominators. Decimals are a fraction of a whole. To convert a fraction with a denominator of 10 or 100 into a decimal they need to understand the place values to the right of the decimal point representing tenths and hundredths.	

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: **Grade 4** **Mathematics**	**Topic: Fractions** **Goal 4:** The student will be able to generate equivalent fractions, determine common denominators, and 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**
	(4.NF.4) 4.12. Multiply a fraction with a denominator of 10 by 10/10 to get an equivalent fraction with a denominator of a 100. Use this skill to add fractions with unlike denominators of 10 and 100. (4.NF.5) 4.13. Represent a fraction as a decimal and decimal as a fraction with denominators of 10 or 100. (4.NF.6) 4.14. Understand that comparisons between decimals and fractions are only valid when the whole is the same in both cases. (4.NF.7) 4.15. Recognize a problem and brainstorm ways to solve the problem individually or collaboratively. (9.1.4.A.1) 4.16. Evaluate available		

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: **Grade 4** **Mathematics**	**Topic: Fractions** **Goal 4:** The student will be able to generate equivalent fractions, determine common denominators, and 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**
	resources that can assist in solving problems. (9.1.4.A.2) 4.17. Determine when the use of technology is appropriate to solve problems. (9.1.4.A.3) 4.18. Apply critical thinking and problem-solving skills in classroom settings. (9.1.4.A.5) 4.19. Participate in brainstorming sessions to seek information, ideas, and strategies that foster creative thinking. (9.1.4.B.1) 4.20. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in diferent settings. (9.1.4.C.1)		

Suggested days of Instruction	**Curriculum Management System** **Subject/Grade Level:** **Grade 4** **Mathematics**	**Topic: Measurement** **Goal 5:** The student will be able to represent and interpret data. The student will be able to convert like measurement units within a given measurement system.	
	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**
	5.1. Solve word problems involving forms of measurement by applying algorithms for the four operations including those with fractions and/or decimals and those that require various sized units within a measurement system. (4.MD.2) 5.2. Solve real world problems that involve area and perimeter through the use of mathematical formulas. (4.MD.3) 5.3. Represent quantities of measurement using diagrams. (4.MD.2) 5.4. Make a line plot using fractions of a unit (1/2, ¼, 1/8). (4.MD.4) 5.5. Utilize information on a line plot to solve problems	**Essential Questions:** How do you use measurement in your life? How can the collection, organization, interpretation, and display of data be used to answer questions? **Conceptual Understandings:** Perimeter is a linear measurement to measure the distance around the outside edge of a two-dimensional figure. Area is the amount of space a given object occupies. Everyday objects have a variety of attributes, each of which can be measured in many ways.	**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.*** **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.** **Assessment Models:** Given a set of data including fractional intervals including whole numbers, ½, ¼, 1/8 construct a line plot and solve problems related to this data. Given several figures, calculate the perimeter and area. Construct visual representations of measurement units within a given system of measurement. **Additional Resources:**

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: **Grade 4** **Mathematics**	**Topic: Measurement** **Goal 5:** The student will be able to represent and interpret data. The student will be able to convert like measurement units within a given measurement system.	
	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**
	involving addition and subtraction of fractions. (4.MD.4) 5.6. Convert among different sizes within a given measurement system (metric, standard, time). (4.MD1) 5.7. Identify and record measurement equivalents in a two-column table. (4.MD.1) 5.8. Recognize a problem and brainstorm ways to solve the problem individually or collaboratively. (9.1.4.A.1) 5.9. Evaluate available resources that can assist in solving problems. (9.1.4.A.2) 5.10. Determine when the use of technology is appropriate to solve problems. (9.1.4.A.3)		

Suggested days of Instruction	Curriculum Management System **Subject/Grade Level:** **Grade 4** **Mathematics**	**Topic: Measurement** **Goal 5:** The student will be able to represent and interpret data. The student will be able to convert like measurement units within a given measurement system.	
	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**
	5.11. Apply critical thinking and problem-solving skills in classroom settings. (9.1.4.A.5) 5.12. Participate in brainstorming sessions to seek information, ideas, and strategies that foster creative thinking. (9.1.4.B.1) 5.13. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in diferent settings. (9.1.4.C.1)		

Suggested days of Instruction	Curriculum Management System **Subject/Grade Level:** **Grade 4** **Mathematics**	**Topic: Geometry and Measurement** **Goal 6:** The student will be able to classify, draw, and measure angles.	
	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**
	6.1. Identify points, lines, line segements, rays, and perpendicular and parallel lines. (4.G.1) 6.2. Draw these two dimensional figures. (4.G.1) 6.3. Identify angles as two rays that come together at a vertex. (4.MD.5) 6.4. Identify angles as either right, acute, obtuse. (4.G.1) 6.5. Measure angles using a protractor. (4.MD.6) 6.6. Given a degree, draw an angle using a protractor. (4.MD.6) 6.7. Add or subtract the provided angle measurements to	**Essential Questions:** What strategies can be used to verify symmetry and congruency? What is angle and how is it measured? **Conceptual Understandings:** Triangles can be identified using two categories: acute, obtuse, and right and/or equilateral, isosceles, and scalene. Certain two-dimensional figures have more than one line of symmetry. Symmetry is a line that divides a two dimensional figure into matching parts. Right angle is 90 degrees, an obtuse angle is greater than 90 degrees and less than 180 degrees, and an acute angle is less than 90 degrees and greater than 0 degrees. An angle is measured in relationship to a circle, which is 360 degrees. Use a protractor to measure various angles. Add smaller angles to get a larger angle. Subtract the smaller angle from the larger angle to get the whole angle measurement.	**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.*** **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.** **Assessment Models:** Given an angle identify it as acute, obtuse, or right angle. Using a protractor measure a given angle. Given a measure draw the angle using a protractor. Without the use of protractor, determine the measurement of the unknown angle in a diagram. Identify a point, line, line segment, ray, parallel, and perpendicular lines in a given diagram. Determine whether a figure has lines of symmetry if so draw the line(s) of symmetry for a given figure. Given a specific triangle, classify it based on its angles and sides.

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: Grade 4 Mathematics	Topic: Geometry and Measurement Goal 6: The student will be able to classify, draw, and measure angles.	
	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**
	determine the unknown angle. (4.MD.7) 6.8. Use knowledge of parallel, perpedicular lines, and angle size to classify two-dimensional figures. (4.G.2) 6.9. To classify triangles by their angles or congruent sides. (4.G.2) 6.10. Identify and draw lines of symmetry. (4.G.3) 6.11. Reason abstractly and quantitatively. (MP.2) 6.12. Model with mathematics. (MP.4) 6.13. Look for and make use of structure. (MP.7) 6.14. Look for and express		**Additional Resources:**

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: Grade 4 Mathematics	Topic: Geometry and Measurement Goal 6: The student will be able to classify, draw, and measure angles.	
	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**
	regularity in repeated reasoning. (MP.8) 6.15. Use appropriate tools strategically. (MP.5) 6.16. Make sense of problems and persevere in solving them. (MP.1) 6.17. Attend to precision. (MP.6) 6.18. Recognize a problem and brainstorm ways to solve the problem individually or collaboratively. (9.1.4.A.1) 6.19. Evaluate available resources that can assist in solving problems. (9.1.4.A.2) 6.20. Determine when the use of technology is appropriate to solve problems.		

Suggested days of Instruction	Curriculum Management System **Subject/Grade Level:** **Grade 4 Mathematics**	**Topic: Geometry and Measurement** **Goal 6:** The student will be able to classify, draw, and measure angles.	
	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**
	(9.1.4.A.3) 6.21. Apply critical thinking and problem-solving skills in classroom settings. (9.1.4.A.5) 6.22. Participate in brainstorming sessions to seek information, ideas, and strategies that foster creative thinking. (9.1.4.B.1) 6.23. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in diferent settings. (9.1.4.C.1)		

Suggested days of Instruction	Curriculum Management System **Subject/Grade Level:** **Grade 4** **Mathematics**	**Topic: Financial Literacy** **Goal 7:** The student will be able to develop a budget based on provided financial data, considering available income and its effect on life decisions.	
	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**
	7.1. Explain the difference between a career and a job, and identify various jobs in the community and the related earnings. (9.2.4.A.1) 7.2. Explain how income affects spending and take-home pay. (9.2.4.A.3) 7.3. Explain the meaning and purposes of taxes and tax deductions and why fees for various benefits (e.g., medical benefits) are taken out of pay. (9.2.4.A.4) 7.4. Explain what a budget is and why it is important. (9.2.4.B.3) 7.5. Identify ways to earn and save. (9.2.4.B.5) 7.6. Distinguish among cash, check, credit card, and debit	**Essential Questions:** How do today's decisions affect tomorrow? How do you responsibly budget for financial security such as fixed expenses, variably expenses, and unexpected expenses? **Conceptual Understandings:** Educational achievement, career choice, and entrepreneurial skills all play a role in achieving a desired lifestyle. Credit management includes making informed choices about sources of credit and requires an understanding of the cost of credit. Credit management includes making informed choices about sources of credit and requires an understanding of the cost of credit. Credit worthiness is dependent on making informed credit decisions and managing debt responsibly. Information about investment options assists with financial planning. Appropriate application of basic economic principles leads to wiser decisions for individual, family, and business financial planning. Cost-benefit analysis informs responsible spending practices.	**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.*** **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.** **Learning Activity:** In this unit students will learn about making "real life" decisions and financial literacy. Students will decide on a type of career or job that they would like to pursue. They will base their "income" on that occupation. After that, various other choices need to be made, such as: home, neighborhood, and other expenses. Students will create a budget and "live" in this project for a predetermined amount of time. After bills are paid, students will have a savings account and can decide what luxuries they would like to have, such as boats or vacations, etc. At the end of the project students can share their experiences with one another and make conclusions about the paths they had chosen. **Assessment Models:** **Additional Resources:** **This unit requires access to computers!**

Suggested days of Instruction	Curriculum Management System **Subject/Grade Level:** **Grade 4** **Mathematics**	**Topic: Financial Literacy** **Goal 7:** The student will be able to develop a budget based on provided financial data, considering available income and its effect on life decisions.	
	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**
	card. (9.2.4.B.6) 7.7. Identify common sources of credit (e.g., banks, credit card companies) and types of credit (e.g., loans, credit cards, mortgages). (9.2.4.C.2) 7.8. Compare and contrast credit cards and debit cards and the advantages and disadvantages of using each. (9.2.4.C.3) 7.9. Determine the relationships among income, expenses, and interest. (9.2.4.C.4) 7.10. Summarize ways to avoid credit problems. (9.2.4.C.6) 7.11. Determine various ways to save. (9.2.4.D.1)	The ability to recognize a problem and apply critical thinking and problem-solving skills to solve the problem is a lifelong skill that develops over time.	Websites for resources and lessons: http://kidsmoneymanagement.com/store-2/wells-fargos-savings-quest/ http://www.jumpstart.org/reality-check.html Financial Fitness for Life (paid materials- 15 Lessons for teaching) http://fffl.councilforeconed.org/ http://www.thefrugalitygame.com/Kidz/index.html http://bizkids.com/students http://www.kidsmoney.org/kids.htm

Suggested days of Instruction	Curriculum Management System **Subject/Grade Level:** **Grade 4** **Mathematics**	**Topic: Financial Literacy** **Goal 7:** The student will be able to develop a budget based on provided financial data, considering available income and its effect on life decisions.	
	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**
	7.12. Explain the concept of "opportunity cost." (9.2.4.D.2) 7.13. Explain what it means to "invest." (9.2.4.D.3) 7.14. Distinguish between saving and investing. (9.2.4.D.4) 7.15. Identify ways interest rates add to the cost of goods and services. (9.2.4.E.2) 7.16. Evaluate financial information from a variety of sources. (9.2.4.E.3) 7.17. Apply comparison shopping skills to purchasing decisions. (9.2.4.E.4) 7.18. Identify common types of financial risks and basic risk management strategies.		

Suggested days of Instruction	Curriculum Management System **Subject/Grade Level:** **Grade 4** **Mathematics**	**Topic: Financial Literacy** **Goal 7:** The student will be able to develop a budget based on provided financial data, considering available income and its effect on life decisions.	
	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**
	(9.2.4.G.1) 7.19. Recognize a problem and brainstorm ways to solve the problem individually or collaboratively. (9.1.4.A.1) 7.20. Evaluate available resources that can assist in solving problems. (9.1.4.A.2) 7.21. Determine when the use of technology is appropriate to solve problems. (9.1.4.A.3) 7.22. Use data accessed on the Web to inform solutions to problems and the decision-making process. (9.1.4.A.4) 7.23. Apply critical thinking and problem-solving skills in classroom and family settings. (9.1.4.A.5)		

Suggested days of Instruction	Curriculum Management System **Subject/Grade Level:** **Grade 4** **Mathematics**	**Topic: Financial Literacy** **Goal 7:** The student will be able to develop a budget based on provided financial data, considering available income and its effect on life decisions.	
	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**
	7.24. Reason abstractly and quantitatively. (MP.2) 7.25. Make sense of problems and persevere in solving them. (MP.1) 7.26. Attend to precision. (MP.6)		