

JUNCTION CITY SCHOOL DISTRICT - GRADE 4 MATH
2012 - 2013

Module 1 - Math	Start: 8/20/2012 Teaching Days: 25	Test: 9/28/2012	End: 9/27/2012
Common Core Standard		Materials / References	
Draw and identify lines and angles, and classify shapes by properties of their lines and angles.			
4.G.1	Draw points, lines, line segments, rays, angles, (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	***Straws for making lines; Twisters for making lines and angles; Promethean board for activities on internet; Pipe cleaners, toothpicks, popsicle sticks, construction paper, crayons, markers, or just whatever they choose to make a poster with parallel , perpendicular, and intersecting lines and let them have at it!	
4.G.2	Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.	***Road maps; Use real world objects to classify lines	
4.G.3	Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.		
Generalize place value understanding for multidigit whole numbers. (Expectations in this domain are limited to whole numbers less than or equal to 1,000,000)			
4.NBT.1	Recognize that in a multi-digit whole number , a digit in one place represents ten times what it represents in the place to its right . For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.		
4.NBT.2 *	Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record results of comparisons.		
	(A). Read and write		
	(B). Compare		
4.NBT.3	Use place value understanding to round multi-digit whole numbers to any place.		
Use place value understanding and properties of operations to perform multi-digit arithmetic.			
4.NBT.4	Fluently add and subtract multi-digit whole numbers using the standard algorithm.		

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Common Core Standard			Materials / References	
Use the four operations with whole numbers to solve problems.				
4.OA.3 *	Solve multistep word problems posed with whole numbers and having whole number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.			
	(A). Add and subtract			
9 testable standards				End of Module 1

ALIGNMENT NOTES
4.G.1
K-5 Math Teaching Resources

- Angles on the Geoboard
- Angle Barrier Game

NCTM Illuminations

- Exploring Properties of Rectangles and Parallelograms Using Dynamic Software
- Exploring Properties of Rectangles and Parallelograms Using Dynamic Software
- Turtle Pond

Online Practice from IXL

- Geometry: Acute, right, obtuse, and straight angles (Fourth grade - P.10)
- Geometry: Lines, line segments, and rays (Fourth grade - P.22)
- Geometry: Parallel

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Common Core Math Curriculum Map

4.G.2

K-5 Math Teaching Resources

- Constructing Quadrilaterals
- Quadrilateral Criteria
- Classifying Triangles 1
- Classifying Triangles 2
- Triangles on the Geoboard

NCTM Illuminations

- Building with Triangles
- Rectangles and Parallelograms

Online Practice from IXL

- Geometry: Identify planar and solid figures (Fourth grade - P.1)
- Geometry: Types of triangles (Fourth grade - P.2)

4.G.3

K-5 Math Teaching Resources

- Symmetry on the Geoboard
- Symmetry in Shapes
- Symmetry in Regular Polygons
- Symmetrical Coin Designs
- More Symmetrical Coin Designs

NCTM Illuminations

- Analyzing Designs
- Archimedes' Puzzle
- Calculation Nation
- Finding Lines of Symmetry
- Geometry in the World of Art
- Paper Quilts
- Planning a Mini-quilt

Online Practice from IXL

- Geometry: Lines of symmetry (Fourth grade - P.21)

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4.NBT.1

NCTM Illuminations

- Count on Math
- Making Your First Million

Online Practice from IXL

- Number sense: Place values (Fourth grade - A.1)
- Number sense: Convert between place values (Fourth grade - A.2)

4.NBT.2a & 4.NBT.2b

Study Jams by Scholastic

- Ordering Whole Numbers Lesson and Practice

Arts Edge

- Melodies and Math

NCTM Illuminations

- How Do You Organize the Counties in Your State?
- Numbers and Language
- Numbers and Me
- Post-Office Numbers
- Sports Numbers
- What Counties Are Your Favorite?

Online Practice from IXL

- Number sense: Place values
- Number sense: Word names for numbers
- Number sense: Compare numbers up to billions
- Addition: Addition patterns over increasing place values
- Multiplication: Inequalities with multiplication
- Division: Inequalities with division
- Mixed operations: Inequalities involving addition, subtraction, multiplication, and division

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4.NBT.3

K-5 Math Teaching Resources

- Round to the Nearest Ten
- Round to the Nearest Hundred

Online Practice from IXL

- Number sense: Rounding (Fourth grade - A.6)
- Addition: Estimate sums (Fourth grade - B.8)
- Addition: Estimate sums: word problems (Fourth grade - B.9)
- Multiplication: Estimate products (Fourth grade - D.6)
- Division: Estimate quotients, one-digit divisors (Fourth grade - E.10)
- Division: Estimate quotients (Fourth grade - E.21)

4.NBT.4

K-5 Math Teaching Resources

- Addition and Subtraction Number Stories

NCTM Illuminations

- Electronic Abacus
- Mathematics and Football: Unit Overview
- Number Line Journeys

Online Practice from IXL

- Addition: Add numbers up to millions (Fourth grade - B.1)
- Addition: Add numbers up to millions: word problems (Fourth grade - B.2)
- Addition: Addition: fill in the missing digits (Fourth grade - B.3)
- Addition: Add 3 or more numbers up to millions (Fourth grade - B.5)
- Addition: Choose numbers with a particular sum (Fourth grade - B.7)
- Subtraction: Subtract numbers up to millions (Fourth grade - C.1)
- Subtraction: Subtract numbers up to millions: word problems (Fourth grade - C.2)
- Subtraction: Subtraction: fill in the missing digits (Fourth grade - C.3)
- Subtraction: Choose numbers with a particular difference (Fourth grade - C.5)

XPMath Games

- Whole Numbers Addition 0-99 (XPMath.com Game)
- Whole Number Subtraction 0-99 (XPMath.com Game)

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4.OA.3a

K-5 Math Teaching Resources

- Multistep Word problems
- Interpreting Remainders

NCTM Illuminations

- Exploring Equal Sets
- Finding Products
- Hopping on the Number Line
- Keeping It All Together
- Multiplication Stories
- Problem-Solving Tasks

Online Practice from IXL

- Number sense: Rounding
- Division: Divide by 1-digit numbers: interpret remainders
- Mixed operations: Estimate sums, differences, products, and quotients: word problems
- Mixed operations: Multi-step word problems
- Algebra: Write variable expressions: word problems
- Algebra: Write variable equations to represent word problems

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4.OA.2a & 4.OA.2d

K-5 Math Teaching Resources

- Sample Multiplicative Comparison Problems

NCTM Illuminations

- Exploring Equal Sets
- Finding Products
- Hopping on the Number Line
- Keeping It All Together
- Multiplication Stories
- Problem-Solving Tasks

Online Practice from IXL

- Multiplication: Estimate products: word problems
- Multiplication: Multiply a 2-digit number by a 2-digit number: word problems
- Multiplication: Multiply a 2-digit number by a larger number: word problems
- Multiplication: Multiply numbers ending in zeroes: word problems
- Division: Division facts to 12: word problems
- Division: Divide larger numbers, one-digit divisors: word problems
- Division: Divide numbers ending in zeroes, multi-digit divisors: word problems
- Division: Divide by 2-digit numbers: word problems
- Division: Divide larger numbers by 2-digit numbers: word problems
- Mixed operations: Addition, subtraction, multiplication, and division word problems
- Mixed operations: Estimate sums, differences, products, and quotients: word problems
- Money: Price lists with multiplication

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JUNCTION CITY SCHOOL DISTRICT - GRADE 4 MATH
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Module 2 - Math	Start: 10/1/2012	Teaching Days: 30	Test: 11/9/2012	End: 11/8/2012
Common Core Standard		Materials / References		
Use the four operations with whole numbers to solve problems.				
4.OA.1 *	Interpret a multiplication equation as a comparison, e.g., Interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.			
	(A). Interpret a multiplication equation as a comparison			
	(B). Represent verbal statements of multiplicative comparisons as multiplication equations.			
4.OA.2 *	Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. (See Table 2)			
	(A). Equal Groups - Unknown products Discrete Ex. There are 3 bags with 6 plums in each bag. How many plums are there in all? $3 \times 6 = 18$			
	(D). Arrays, Area - Unknown products Array Ex. There are 3 rows of apples with 6 apples in each row. How many apples are there? $3 \times 6 = ?$ Area Ex. What is the area of a 3cm by 6 cm rectangle? $3 \text{ cm} \times 6 \text{ cm} = ?$			
4.OA.3 *	Solve multistep word problems posed with whole numbers and having whole number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.			
	(C). Interpret remainders			
Use place value understanding and properties of operations to perform multi-digit arithmetic.				
4.NBT.5 *	Multiply a whole number of up to four digits by a one-digit whole number, and multiply two -digit numbers, using strategies based on place value and the properties of operations (in particular the distributive property). Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.			
	(A). Multiply four digits by a one-digit whole number			
	(B). Multiply two-digit numbers			
4.NBT.6	Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.			

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Module 2 - Math	Start: 10/1/2012	Teaching Days: 30	Test: 11/9/2012	End: 11/8/2012
Common Core Standard	Materials / References			
Gain familiarity with factors and multiples.				
4.OA.4 *	Find all factor pairs for a whole number in the range 1 - 100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.			
	(A). Factor pairs			
	(B). Multiples			
	(C). Prime or composite			
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.				
4.MD.3 *	Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length by viewing the area formula as a multiplication equation with an unknown factor.			
	(A). Area			
	(B). Perimeter			
13 testable standards				End of Module 2

ALIGNMENT NOTES
4.OA.1a & 4.OA.1b

K-5 Math Teaching Resources

- Representing Multiplicative Comparison Problems

XPMath Game

- Multiply by 11 Trick

Online Practice from IXL

- Multiplication: Properties of multiplication (Fourth grade - D.5)
- Multiplication: Choose numbers with a particular product (Fourth grade - D.11)

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4.OA.2a & 4.OA.2d

K-5 Math Teaching Resources

- Sample Multiplicative Comparison Problems

NCTM Illuminations

- Exploring Equal Sets
- Finding Products
- Hopping on the Number Line
- Keeping It All Together
- Multiplication Stories
- Problem-Solving Tasks

Online Practice from IXL

- Multiplication: Estimate products: word problems
- Multiplication: Multiply a 2-digit number by a 2-digit number: word problems
- Multiplication: Multiply a 2-digit number by a larger number: word problems
- Multiplication: Multiply numbers ending in zeroes: word problems
- Division: Division facts to 12: word problems
- Division: Divide larger numbers, one-digit divisors: word problems
- Division: Divide numbers ending in zeroes, multi-digit divisors: word problems
- Division: Divide by 2-digit numbers: word problems
- Division: Divide larger numbers by 2-digit numbers: word problems
- Mixed operations: Addition, subtraction, multiplication, and division word problems
- Mixed operations: Estimate sums, differences, products, and quotients: word problems
- Money: Price lists with multiplication

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4.OA.3c

K-5 Math Teaching Resources

- Multistep Word problems
- Interpreting Remainders

NCTM Illuminations

- Exploring Equal Sets
- Finding Products
- Hopping on the Number Line
- Keeping It All Together
- Multiplication Stories
- Problem-Solving Tasks

Online Practice from IXL

- Number sense: Rounding
- Division: Divide by 1-digit numbers: interpret remainders
- Mixed operations: Estimate sums, differences, products, and quotients: word problems
- Mixed operations: Multi-step word problems
- Algebra: Write variable expressions: word problems
- Algebra: Write variable equations to represent word problems

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4.NBT.5a & 4.NBT.5b

K-5 Math Teaching Resources

- Multiplication Number Story
- Breaking Apart a Factor
- Multiplication Bump (x100)
- Make the Largest Product
- Make the Smallest Product

NCTM Illuminations

- Balance Beam Discoveries
- Exploring Equal Sets
- Looking for Calculator Patterns
- Multiplication Fact Mastery Record
- Multiplying Meanings
- Running Races
- Setting the Pace
- The First Race

Online Practice from IXL

- Multiplication: Multiply 1-digit numbers by larger numbers
- Multiplication: Multiplication patterns over increasing place values
- Multiplication: Properties of multiplication
- Multiplication: Multiply a 2-digit number by a 2-digit number: complete the missing steps
- Multiplication: Multiply a 2-digit number by a 2-digit number

4.NBT.6

K-5 Math Teaching Resources

- Remainders

Online Practice from IXL

- Division: Properties of division (Fourth grade - E.3)
- Division: Divide larger numbers, one-digit divisors (Fourth grade - E.4)
- Division: Divide by 1-digit numbers: complete the table (Fourth grade - E.6)
- Division: Divide numbers ending in zeroes, one-digit divisors (Fourth grade - E.9)

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4.OA.4a, 4.OA.4b, & 4.OA.4c

K-5 Math Teaching Resources

- Choose a Number Project
- Finding Multiples
- Prime Number Hunt
- Common Multiples
- Least Common Multiple

NCTM Illuminations

- Calculation Nation
- Factor Game
- Factorize
- Finding Products
- Making Your Own Product Game
- Multiplication Stories
- Product Game
- The Factor Game
- Times Six, Times Seven

Online Practice from IXL

- Number sense: Prime and composite numbers
- Multiplication: Choose the multiples of a given number up to 12
- Division: Divisibility rules
- Mixed operations: Choose numbers with a particular sum, difference, product, or quotient

Wonderopolis

- Wonder of the Day: - What Is a Prime Number?

XPMath Game

- Number Catch - Multiples of 2

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4.MD.3a & 4.MD.3b

K-5 Math Teaching Resources

- A Dinner Party
- Fencing a Garden
- Designing a Zoo Enclosure
- Build Your Dream Home Project

NCTM Illuminations

- Calculation Nation
- IGD: Area of a Rectangle
- Interactive Geometry Dictionary: Areas in Geometry
- Perimeter and Area of My Clubhouse

Online Practice from IXL

- Geometry: Perimeter (Fourth grade - P.15)
- Geometry: Area of squares and rectangles (Fourth grade - P.16)
- Geometry: Use area and perimeter to determine cost (Fourth grade - P.

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JUNCTION CITY SCHOOL DISTRICT - GRADE 4 MATH
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Module 3 - Math	Start: 11/12/2012	Teaching Days: 35	Test: 12/19/2012	End: 12/18/2012
Common Core Standard			Materials / References	
Use the four operations with whole numbers to solve problems.				
4.OA.2 *	Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. (See Table 2)			
	(B). Equal Groups - Group size unknown Discrete Ex. If 18 plums are shared equally into 3 bags, then how many plums will be in each bag? $3 \times ? = 18, 18 \div 3 = ?$			
	(C). Equal Groups - Number of groups unknown Discrete Ex. If 18 plums are to be packed 6 to a bag, then how many bags are needed? $? \times 6 = 18, \text{ and } 18 \div 6 = ?$			
Extend understanding of fraction equivalence and ordering. (Expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100) (includes sets of objects)				
4.NF.1	Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principal to recognize and generate equivalent fractions.			
4.NF.2 *	Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.			
	(A). Compare			
	(B). Recognize that comparisons are valid only when the two fractions refer to the same whole.			
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.				
4.MD.1 *	Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz; l, ml; hr, min, sec; Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 foot is 12 times as long as 1 in. Express the length of a four-foot snake as 48 in. Generate a conversion table for feet and inches listing the number of pairs (1, 12), (2, 24), (3, 36) ...			
	(A). Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz; l, ml; hr, min, sec			
	(B). Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.			

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Common Core Math Curriculum Map

JUNCTION CITY SCHOOL DISTRICT - GRADE 4 MATH
2012 - 2013

Module 3 - Math	Start: 11/12/2012	Teaching Days: 35	Test: 12/19/2012	End: 12/18/2012
Common Core Standard		Materials / References		
Generate and analyze patterns.				
4.OA.5 *	Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain formally why the numbers will continue to alternate in this way.			
	(A). Generate a number or shape pattern that follows a given rule.			
	(B). Identify apparent features of the pattern that were not explicit in the rule itself.			
9 testable standards				End of Module 3

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ALIGNMENT NOTES

4.OA.2b & 4.OA.2c

K-5 Math Teaching Resources

- Sample Multiplicative Comparison Problems

NCTM Illuminations

- Exploring Equal Sets
- Finding Products
- Hopping on the Number Line
- Keeping It All Together
- Multiplication Stories
- Problem-Solving Tasks

Online Practice from IXL

- Multiplication: Estimate products: word problems
- Multiplication: Multiply a 2-digit number by a 2-digit number: word problems
- Multiplication: Multiply a 2-digit number by a larger number: word problems
- Multiplication: Multiply numbers ending in zeroes: word problems
- Division: Division facts to 12: word problems
- Division: Divide larger numbers, one-digit divisors: word problems
- Division: Divide numbers ending in zeroes, multi-digit divisors: word problems
- Division: Divide by 2-digit numbers: word problems
- Division: Divide larger numbers by 2-digit numbers: word problems
- Mixed operations: Addition, subtraction, multiplication, and division word problems
- Shodor Spy Game

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4.NF.1

K-5 Math Teaching Resources

- Creating Equivalent Fractions
- Fraction Wall Game

NCTM Illuminations

- Another Look at Fractions of a Set
- Another Look at the Set Model Using Attribute Pieces
- Class Attributes
- Communicating about Mathematics Using Games
- Eggsactly Equivalent
- Equivalent Fractions
- Expanding Our Pattern Block Fraction Repertoire
- Exploring the Value of the Whole
- Fun with Fractions
- Investigating Equivalent Fractions with Relationship Rods
- Making and Investigating Fraction Strips
- Pattern Block Fractions
- Playing Fraction Track
- Virtual Pattern Blocks

Online Practice from IXL

- Fractions and mixed numbers: Equivalent fractions (Fourth grade - Q.1)
- Fractions and mixed numbers: Patterns of equivalent fractions (Fourth grade - Q.2)
- Fractions and mixed numbers: Reduce fractions to simplest form (Fourth grade - Q.3)

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4.NF.2a & 4.NF.2b

K-5 Math Teaching Resources

- Who Ate More?
- Fraction Compare
- Fraction Cards

NCTM Illuminations

- Another Look at Fractions of a Set
- Another Look at the Set Model Using Attribute Pieces
- Communicating about Mathematics Using Games
- Eggsactly Equivalent
- Eggsactly with Eighteen Eggs
- Eggsactly with a Dozen Eggs
- Expanding Our Pattern Block Fraction Repertoire
- Fun with Fractions
- Investigating Fraction Relationships with Relationship Rods
- Investigating with Pattern Blocks
- More Fun with Fraction Strips

XPMath Game

- Comparing Fractions

Online Practice from IXL

- Fractions and mixed numbers: Compare fractions
- Fractions and mixed numbers: Put fractions in order
- Add and subtract fractions: Inequalities with addition and subtraction of fractions

4.MD.1a & 4.MD.1b

K-5 Math Teaching Resources

- Measurement Conversion Word Problems
- Measurement Concentration

Online Practice from IXL

- Measurement: Compare and convert customary units (Fourth grade - N.1)
- Measurement: Compare and convert metric units (Fourth grade - N.2)
- Measurement: Convert mixed customary units (Fourth grade - N.4)
- Time: Convert time units (Fourth grade - O.1)

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4.OA.5a & 4.OA.5b

K-5 Math Teaching Resources
Square Numbers
Triangular Numbers
NCTM Illuminations
Covering the Plane with Rep-Tiles
Exploring Other Number Patterns
Food Court: Looking Back and Moving Forward
High Temperature
How Many Triangles Can You Construct?
Looking for Patterns
Looking for Patterns
More Patterns with Products
Paper Pool
Representing and Interpreting Data
Online Practice from IXL
Functions: Input/output tables with addition, subtraction, multiplication, and division
Functions: Function tables
Patterns: Geometric growth patterns
Patterns: Increasing growth patterns
Patterns: Numeric patterns: word problems
Patterns: Mixed patterns review
PBS.org
The Yo-Yo Problem: Solving Linear Equations
Read Write Think
The "Inner Triangle" Pattern
Shodor Recognizing Patterns
Visual Patterns in Tessellations

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Module 4 - Math	Start: 12/20/2012	Teaching Days: 30	Test: 2/13/2013	End: 2/12/2013
Common Core Standard		Materials / References		
Use the four operations with whole numbers to solve problems.				
4.OA.2 *	Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. (See Table 2)			
	(E). Arrays, Area - Group size unknown Array Ex. If 18 apples are arranged in 3 equal rows, how many apples will be in each row? $3 \times ? = 18$, $18 \div 3 = ?$ Area Ex. A rectangle has area 18 square centimeters. If one side is 3 cm long, how long is a side next to it? $3 \text{ cm} \times ? = 18 \text{ sq. cm}$, $18 \text{ sq. cm} \div 3 \text{ cm} = ?$			
	(F). Arrays, Area - Number of groups unknown Array Ex. If 18 apples are arranged into equal rows of 6 apples, how many rows will there be? $? \times 6 = 18$, $18 \div 6 = ?$ Area Ex. A rectangle has area 18 square centimeters. If one side is 6 cm long, how long is a side next to it? $? \times 6 \text{ cm} = 18 \text{ sq. cm}$, $18 \text{ sq. cm} \div 6 \text{ cm} = ?$			
Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. (Expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100) (includes sets of objects)				
4.NF.3 *	Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.			
	a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.			
	b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposing by an equation. Justify decomposition, e.g., by using a visual fraction model. Examples: $3/8 = 1/8 + 1/8 + 1/8$; $3/8 = 1/8 + 2/8$; $2 \frac{1}{8} = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8$			
	c. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.			
	d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.			

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Module 4 - Math	Start: 12/20/2012	Teaching Days: 30	Test: 2/13/2013	End: 2/12/2013
Common Core Standard	Materials / References			
Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. (Expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100) (includes sets of objects)				
4.NF.4 *	Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.			
	a. Understand a fraction a/b as a multiple of $1/b$. For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$			
	b. Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times 1/5$, recognizing this product as $6/5$. (In general, $n \times (a/b) = (n \times a)/b$)			
	c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat $3/8$ pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?			
Represent and interpret data				
4.MD.4	Make a line plot to display a data set of measurements in fractions of a unit ($1/2, 1/4, 1/8$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.			
10 testable standards				End of Module 4

* Indicates a Common Core standard has been broken into smaller areas of emphasis. For this module, only the listed areas are to be covered and/or assessed.

ALIGNMENT NOTES

4.OA.2e & 4.OA.2f

K-5 Math Teaching Resources
Sample Multiplicative Comparison Problems
NCTM Illuminations
Exploring Equal Sets
Finding Products
Hopping on the Number Line
Keeping It All Together
Multiplication Stories
Problem-Solving Tasks
Online Practice from IXL
Multiplication: Estimate products: word problems
Multiplication: Multiply a 2-digit number by a 2-digit number: word problems
Multiplication: Multiply a 2-digit number by a larger number: word problems
Multiplication: Multiply numbers ending in zeroes: word problems
Division: Division facts to 12: word problems
Division: Divide larger numbers, one-digit divisors: word problems
Division: Divide numbers ending in zeroes, multi-digit divisors: word problems
Division: Divide by 2-digit numbers: word problems
Division: Divide larger numbers by 2-digit numbers: word problems
Mixed operations: Addition, subtraction, multiplication, and division word problems
Mixed operations: Estimate sums, differences, products, and quotients: word problems
Money: Price lists with multiplication
Measurement: Compare customary units by multiplying
Shodor
• Spy Game

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4.NF.3a, 4.NF.3b, 4.NF.3c, & 4.NF.3d

K-5 Math Teaching Resources (4.NF.3.a)
Adding Fractions with Like Denominators
Adding Fractions Using Pattern Blocks
K-5 Math Teaching Resources (4.NF.3.b)
Decomposing Fractions
K-5 Math Teaching Resources (4.NF.3.c)
Adding Mixed Numbers
Subtracting Mixed Numbers
K-5 Math Teaching Resources (4.NF.3.d)
Addition Word Problem with Fractions (like denominators)
Subtraction Word Problem with Fractions (like denominators)
NCTM Illuminations (4.NF.3.a&d)
Communicating about Mathematics Using Games: Playing Fraction Tracks
Online Practice from IXL (4.NF.3.a)
Add and subtract fractions: Add and subtract fractions with like denominators
Add and subtract fractions: Add 3 or more fractions with like denominators
Online Practice from IXL (4.NF.3.b)
Add and subtract fractions: Add and subtract fractions with like denominators
Add and subtract fractions: Add 3 or more fractions with like denominators
Online Practice from IXL (4.NF.3.c)
Add and subtract fractions: Add and subtract mixed numbers with like denominators

Online Practice from IXL (4.NF.3.d)
Add and subtract fractions: Add and subtract fractions with like denominators: word problems

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4.NF.4a, 4.NF.4b, & 4.NF.4c

NCTM Illuminations (4.NF.4.a)
Another Look at Fractions of a Set
Another Look at the Set Model Using Attribute Pieces
Calculation Nation
Class Attributes
Communicating about Mathematics Using Games
Communicating about Mathematics Using Games: Playing Fraction Tracks
Eggsactly with a Dozen Eggs
Equivalent Fractions
Exploring the Value of the Whole
Fraction Game
Fraction Models
Fun with Fractions
Inch by Inch
Parts of a Square
Pattern Block Fractions
Post-Office Numbers
Sports Numbers
Virtual Pattern Blocks
Read Write Think (4.NF.4.a)
Picture Book Power: Connecting Children's Literature and Mathematics
Online Practice from IXL (4.NF.4.a)
Multiply fractions: Multiply fractions by whole numbers I

Online Practice from IXL (4.NF.4.b)
Multiply fractions: Multiply fractions by whole numbers II

K-5 Math Teaching Resources
Whole Number x Fraction Word Problems
Online Practice from IXL (4.NF.4.c)
Multiply fractions: Multiply fractions by whole numbers: word problems

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4.MD.4

K-5 Math Teaching Resources

Length of Ants Line Plot

Objects in My Desk Line Plot

NCTM Illuminations

Aluminum Cans

Let's Compare

Mathematics and Environmental Concerns: Unit Overview

The Soup Spot

Online Practice from IXL

Data, charts, and graphs: Interpret line plots (Fourth grade - J.6)

Data, charts, and graphs: Create line plots (Fourth grade - J.7)

Read Write Think

Picture Book Power: Connecting Children's Literature and Mathematics

Shodor

Histograms and Bar Graphs

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JUNCTION CITY SCHOOL DISTRICT - GRADE 4 MATH
2012 - 2013

Module 5 - Math		Start: 2/15/2013	Teaching Days: 30	Test: 4/2/2013	End: 4/1/2013
Common Core Standard			Materials / References		
Use the four operations with whole numbers to solve problems.					
4.OA.3 *	Solve multistep word problems posed with whole numbers and having whole number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.				
	(B). Four operations				
Understand decimal notation for fractions, and compare decimal fractions.					
4.NF.5	Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express $3/10$ as $30/100$, and add $3/10 + 4/100 = 34/100$. (Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators is not a requirement at this grade.)				
4.NF.6	Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $62/100$; describe a length as 0.62 meters; locate 0.62 on a number line.				
4.NF.7 *	Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when two decimals refer to the same whole. Record the results of comparisons with the symbols $<$, $=$, $>$, and justify the conclusion, e.g., by using a visual model.				
	(A). Compare two decimals to hundredths by reasoning about their size.				
	(B). Recognize that comparisons are valid only when two decimals refer to the same whole.				
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.					
4.MD.2 *	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.				
	(A). Distances				
	(B). Intervals of time				
	(C). Liquid volumes				
	(D). Masses of objects				
	(E). Money				
10 testable standards					End of Module 5

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ALIGNMENT NOTES

4.OA.3b

K-5 Math Teaching Resources
Multistep Word problems
Interpreting Remainders
NCTM Illuminations
Exploring Equal Sets
Finding Products
Hopping on the Number Line
Keeping It All Together
Multiplication Stories
Problem-Solving Tasks
Online Practice from IXL
Number sense: Rounding
Division: Divide by 1-digit numbers: interpret remainders
Mixed operations: Estimate sums, differences, products, and quotients: word problems
Mixed operations: Multi-step word problems
Algebra: Write variable expressions: word problems
Algebra: Write variable equations to represent word problems

4.NF.5

K-5 Math Teaching Resources
Sums of 1
XPMath Game
Chopper - Fractions and Decimals Edition

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Common Core Math Curriculum Map

4.NF.6

K-5 Math Teaching Resources

- Decimals in Money
- Representing Decimals with Base 10 Blocks
- Decimal Riddles

Online Practice from IXL

- Decimals: Convert fractions and mixed numbers to decimals (Fourth grade - T.6)
- Decimals: Convert decimals to fractions and mixed numbers (Fourth grade - T.7)

XPMath Game

- Chopper - Fractions and Decimals Edition

4.NF.7a & 4.NF.7b

K-5 Math Teaching Resources

- Comparing Decimals
- Decimal Sort

Online Practice from IXL

- Decimals: Compare decimal numbers (Fourth grade - T.10)
- Decimals: Put decimal numbers in order

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4.MD.2a, 4.MD.2b, 4.MD.2c, 4.MD.2d, & 4.MD.2e

K-5 Math Teaching Resources
Measurement Word Problems
Elapsed Time Ruler 1
Elapsed Time Ruler 2
24 hour number line (4 per page)
NCTM Illuminations
Choosing the Best Option
Numbers and Language
Planning a Class Field Trip
Planning a Class Trip to a Local Attraction
Planning a Trip
Planning a Trip to Disneyland or Disney World
Planning a Trip to Disneyland or Disney World, Part Two
Planning a Trip to the State Capitol
Presenting the Plan for a Class Trip
Problem-Solving Tasks
Sports Numbers
Online Practice from IXL
Money: Compare money amounts (Fourth grade - M.1)
Money: Round money amounts (Fourth grade - M.2)
Money: Add and subtract money amounts (Fourth grade - M.3)
Money: Add, subtract, multiply, and divide money amounts (Fourth grade - M.4)

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JUNCTION CITY SCHOOL DISTRICT - GRADE 4 MATH
2012 - 2013

Module 6 - Math	Start: 4/3/2013	Teaching Days: 30	Test: 5/15/2013	End: 5/14/2013
Common Core Standard	Materials / References			
Use the four operations with whole numbers to solve problems.				
4.OA.2 *	Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. (See Table 2)			
	(G). Compare - Unknown product Discrete Ex. A blue hat costs \$6. A red hat costs 3 times as much as the blue hat. How much does the red hat cost? $\$6 \times 3 = ?$			
	(H). Compare - Group size unknown Discrete Ex. A red hat costs \$18 and that is 3 times as much as a blue hat costs. How much does a blue hat cost? $3 \times ? = \$18$, $\$18 \div 3 = ?$			
	(I). Compare - Number of groups unknown Discrete Ex. A red hat costs \$18 and a blue hat costs \$6. How many times as much does the red hat cost as the blue hat? $? \times \$6 = \18 , $\$18 \div \$6 = ?$			
Geometric measurement: understand concepts of angle and measure angles.				
4.MD.5 *	Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:			
	a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle" and can be used to measure angles.			
	b. An angle that turns through n one - degree angles is said to have an measure of n degrees.			
4.MD.6	Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.			
4.MD.7 *	Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram on real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.			
	(A). Recognize angle measure as additive			
	(B). Find unknown angles			
8 testable standards				End of Module 6

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ALIGNMENT NOTES

4.OA.2g, 4.OA.2h, & 4.OA.2i

K-5 Math Teaching Resources
Sample Multiplicative Comparison Problems
NCTM Illuminations
Exploring Equal Sets
Finding Products
Hopping on the Number Line
Keeping It All Together
Multiplication Stories
Online Practice from IXL
Multiplication: Estimate products: word problems
Multiplication: Multiply a 2-digit number by a 2-digit number: word problems
Multiplication: Multiply a 2-digit number by a larger number: word problems
Multiplication: Multiply numbers ending in zeroes: word problems
Division: Divide larger numbers, one-digit divisors: word problems
Shodor Spy Game

4.MD.5a & 4.MD.5b

K-5 Math Teaching Resources (4.MD.5.b)
Angles in Names
NCTM Illuminations (4.MD.5.a&b)
Turtle Pond
Online Practice from IXL (4.MD.5.a)
Geometry: Angles of 90, 180, 270, and 360 degrees
Online Practice from IXL (4.MD.5.b)
Geometry: Angles of 90, 180, 270, and 360 degrees
Geometry: Adjacent angles
XPMath Game
Flip Card - Angle Types

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Common Core Math Curriculum Map

4.MD.6

K-5 Math Teaching Resources
Predicting and Measuring Angles
Angle Barrier Game
Angles in Triangles
Angles in Quadrilaterals
NCTM Illuminations
Turtle Pond
Online Practice from IXL
Geometry: Measure angles with a protractor (Fourth grade - P.12)
XPMath Game
Helicopter Shootdown - Tank Angle Measurement
UFO Attack - Space Angle Measurement

4.MD.7a & 4.MD.7b

K-5 Math Teaching Resources

- Unknown Angle Word Problems
- How Many Degrees?
- Angles in a Right Triangle

Online Practice from IXL

- Geometry: Adjacent angles (Fourth grade - P.13)

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