Math - Grade 4

Idaho Department of Education Content Standards	Objective	Sub Objectives	Task Analysis	Essential Vocabulary	Sample Question	Resources
Cognitive level codes: • B: Memorize • C: Perform procedures • D: Demonstrate understanding • E: Conjecture, generalize, prove • F: Solve non-routine problems, make connections	Bloom's Equivalent • B = Knowledge • C = Comprehension • D = Comprehension • E = Application and Analysis • F = Synthesis	Calculator codes: NO: student MUST NOT have a calculator while completing this item in order to assess this objective.	**Shaded objectives should be assessed in the classroom, but not included on the ISAT assessment.**	*Italic indicates concepts to be introduced in preparation for 5th grade.*		
Standard 1: Number and Operation						
Goal 1.1: Understand and use numbers.	4.M.1.1.1 Read, write, compare, and order whole numbers to 100,000. CL: B Calc: NO Content Limit: When comparing, symbols for greater than and less than will not be used. When ordering, no more than four values are used. Numbers may be ordered least to greatest or greatest to least.	• Read, write, and compare numbers to 100,000. • Compare and order no more than four numbers (least to greatest or greatest to least).	• Recognize the value of an underlined digit • Read and write numbers in standard, expanded, and word form • Compare and order numbers using place value	standard form • expanded form • word form • order • compare • place value • digit • greater than • less than • greatest • least • whole number	• Write these numbers in order from least to greatest: 10,439; 10,349; 10,934. • Write the above numbers in word form and expanded form.	http://www.linkslearning.org/Kids/1_Math/2_Illustrated_lessons
	4.M.1.1.2 Identify and apply place value in whole numbers. CL: B Calc: NO Content Limit: Whole numbers to 100,000.	• Identify and apply place value in whole numbers up to 100,000.	• Recognize the value of an underlined digit • Read and write numbers in standard, expanded, and word form • Compare and order numbers using place value	place value • whole numbers • digit	• What is the value of the digit 6 in the following number: 6,723? The digit 7?	www.mathslice.com/placevalue_ws.php www.eduplace.com/math/mw/practice/lp_4.html http://www.col-ed.org/cur/math/math16.txt
	4.M.1.1.3 Count the value of a collection of bills and coins up to $100.00. CL: C Calc: NO Content Limit: Any quantity of coins or bills whose sum is under $100. Pictures of bills and coins are not required.	• Count the value of a collection of bills and coins up to $100 using pictures, words, and/or money.	• Identify the names and values of bills and coins • Skip-count to add money • Line up decimal points	cent • penny • nickel • dime • quarter • half dollar (fifty cent piece) • dollar • value	• What is the value of the following: five quarters, three dimes, and two pennies.	www.mathslice.com/simplemoney.php Special Needs: Touch Money - Microsoft internet Explorer - http://www/coleman.k12.us/StaffWebsite/petersonc/touch_money.htm
	4.M.1.1.4 Read, write, compare, and order commonly used fractions with pictorial representations. CL: D Calc: NO Content Limit: Fraction denominators limited to 2, 3, 4, 5, 6, and 8. Fractions not simplified. Improper fractions not allowed as correct answer.	• Read, write, compare, and order commonly used fractions with pictorial representations.	• Identify and write the names and values of pictorial representations of fractions • Create visual representations of fractions • Compare and order fractions using models	fraction • whole • halves • thirds • fourths (quarters) • fifths • sixths • eighths	• Draw a picture to show that 3 of 5 children wore hats. Then write the fraction that this picture represents. • Compare 3/5 and 2/5. • Put the following fractions in order from least to greatest: 1/2,1/5,1/3, and 1/4.	http://resourcesoswego.org/games/
	4.M.1.1.5 Use decimal numbers with money. CL: B Calc: NO Content Limit: Items will state an amount of money less than $100 in words and ask to find the appropriate expression or value written with dollar sign ($) and decimal point.	• Match written money amounts with correct decimal numbers and dollar signs (e.g. thirty-five cents = $0.35).	• Read and identify written money amounts (less than $100) in word and standard form • Place the dollar sign and decimal correctly in standard form • Use the word "and" to indicate a decimal point	cent • dollar • decimal • dollar sign *tenths* • *hundredths*	• Using a dollar sign and decimal write the value of 3 dollars, 2 quarters, and 4 dimes.	www.geocities.com/ljacoby_2000/money.html
	4.M.1.1.6 Select strategies appropriate for solving a problem. CL: Calc: Content Limit: Assessed in the classroom and DMA, not on the ISAT.	• Select strategies appropriate for solving a problem.	• Identify the relationship between the numbers in a problem • Define what the problem is looking for and which operations are needed to solve the problem • Apply strategies such as: guess and check, draw a picture, estimate, make a table, work backward, look for a pattern, solve a simpler problem, write an equation, etc.	strategy • order of operation • pattern • estimate • equation (number sentence)	• A customer has 7 coins worth $0.35. What could the coins be?	http://teacherszine.tripod.com/teacherszine/MathWorksheets.html

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	4.M.1.1.7 Use appropriate vocabulary. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use appropriate vocabulary.	• Use the vocabulary correctly identified for Goal 1.1	strategy • order of operation • pattern • estimate • equation (number sentence)		
Goal 1.2: Perform computations accurately.	4.M.1.2.1 Recall multiplication facts through 10 x 10. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Memorize multiplication facts through 10 x 10.	• Write the multiplication problem as repeated addition or vice versa. • Write and recite the multiplication facts through 10 x 10	repeated addition • times tables • memorize • multiplication/multiply • factor • product • multiple	• 2 X 3 = ____ • 2 + 2 + 2 = ____ • Write 4 + 4 + 4 as a multiplication equation.	http://resourcesoswego.org/games/
	4.M.1.2.2 Add and subtract whole numbers. CL: C Calc: NO Content Limit: At most, three addends. Each number contains at most, three digits. Differences must be greater than zero. May be done with or without regrouping. Expression must be clearly stated. Items may be written in horizontal or vertical form.	• Add whole numbers using up to three digits and three addends with or without regrouping. • Subtract whole numbers up to three digits with or without regrouping and with differences greater than zero. • Add or subtract in horizontal or vertical form.	• Regroup addition and subtraction problems using manipulatives • Show the correct use of place value by lining up numbers correctly • Read, rewrite, and solve problems in horizontal and vertical form	addition • subtraction • addend • regroup • sum • difference • total	• 356 207 + 299	http://resourcesoswego.org/games/
	4.M.1.2.3 Multiply up to two-digit by two-digit whole numbers and divide whole numbers by one-digit divisors. CL: C Calc: NO Content Limit: Divide up to three-digit whole numbers by one-digit divisors. Division must result in a whole number quotient. Division problems may be written with bracket or division symbol (÷). Expression must be clearly stated. Items may be written in horizontal or vertical form.	• Multiply up to two-digit by two-digit whole numbers. • Divide up to three-digit whole numbers by one-digit divisors. Division must result in a whole number quotient. • Divide or multiply in horizontal or vertical form.	• Use models, expanded form, and pictures to show and explain the processes of division and multiplication • How the correct use of place value by lining up numbers correctly • Read, rewrite, and solve problems in horizontal and vertical form	vertical • horizontal • expanded form • two digit • three digit • factor • product • divisor • dividend • quotient • multiple • division bracket	• 240 ÷ 8 = ____	http://resourcesoswego.org/games/
	4.M.1.2.4 Add and subtract fractions with like denominators that do not require simplification. CL: C Calc: NO Content Limit: Fraction denominators limited to 2, 3, 4, 6, 8, 10, and 12. Improper fractions allowed in answer options. Expression must be clearly stated. Items may be written in horizontal or vertical form.	• Add and subtract fractions with like denominators that do not require simplification. Fraction denominators limited to 2, 3, 4, 6, 8, 10, and 12. Improper fractions allowed in answer options.	• Identify the denominator and numerator • Draw a picture or use manipulatives to add and subtract fractions with like denominators • Write the fractions in correct form (write numerator over denominator) • Add or subtract the numerators of fractions with the same denominator	numerator • denominator • fraction • whole number *proper fraction* • *improper fraction* • *mixed number*	• 2/4 + 1/4 = ____	http://www.dadsworksheets.com
	4.M.1.2.5 Add and subtract decimals using money. CL: C Calc: NO Content Limit: May be done with or without regrouping. Values for answer options up to $10.00. All values written with dollar sign ($) and decimal point. Expression must be clearly stated. Items may be written in horizontal or vertical form.	• Add and subtract decimals using money with values up to $10.00 in horizontal or vertical form.	• Place the dollar sign and decimal correctly in standard form • Show the correct use of place value by lining up numbers correctly • Add or subtract money problems with or without regrouping	decimal • dollar sign • regrouping • standard form	• Add the following: $0.43; $2.34; $0.10. • Add the following $12, $0.57, $2, and $7.	http://www.math-drills.com/money.shtml

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	4.M.1.2.6 Select and use an appropriate method of computation from mental math, paper and pencil, calculator, or a combination of the three. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Select and use an appropriate method of computation from mental math, paper and pencil, calculator, or a combination of the three.	• Ask yourself questions to help you solve the problem • Choose an appropriate method of computation • Check to see if the answer is reasonable • Use another method to check the answer	mental math • strategies • method • reasonable	• Which method would you use to find 137 + 23? Explain your choice.	
	4.M.1.2.7 Select and use appropriate operations to solve word problems and show or explain work. CL: D Calc: NO Content Limit: Content limits for objectives 1.2.2, 1.2.3, 1.2.4, and 1.2.5 apply. Expression should not be stated. 'Show or explain the work' assessed in the classroom, not on the ISAT.	• Select and use appropriate operations to solve word problems. • Show or explain work.	• State what the problem is looking for and state which operations are needed to solve the problem • Ask yourself questions to help you solve the problem • Choose an appropriate method of computation • Check to see if the answer is reasonable • Use another method to check the answer • Draw a picture/diagram or write an explanation of what was done to solve the problem	solution • explanation • reasonable • appropriate • operation • computation • diagram • illustration	• Johnny traded some of his marbles. He started with 45 blue marbles. He gave 12 to Sally in exchange for 6 red ones. How many marbles did he end up with? How many blue marbles did Johnny have after the trade?	http://teacherszine.tripod.com/teacherszine/MathWorksheets.htm http://math.about.com/od/wordproblem1/ss/gr4wp.htm http://www.dadsworksheets.html
	4.M.1.2.8 Use appropriate vocabulary. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use appropriate vocabulary.	• Use the vocabulary correctly identified for Goal 1.2	see the vocabulary above		
Goal 1.3: Estimate and judge reasonableness of results.	4.M.1.3.1 Estimate to predict computation results. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Estimate to predict computation results.	• Select the appropriate place value to round to that generates a reasonable prediction • Round numbers to the appropriate value and then solve the problem	round • estimate • appropriate • predict • place value • reasonable	• On Monday, 2,359 people visited the capitol. On Tuesday, 4,697 people visited. About how many people visited altogether?	http://www.teach-nology.com/worksheets/math/estimate/der1/index.html http://www.proteacher.org/c/246_Estimation_Jar.html
	4.M.1.3.2 Use estimation to evaluate the reasonableness of an answer. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use estimation to evaluate the reasonableness of an answer.	• Select the appropriate place value to round to that generates a reasonable prediction • Round numbers to the appropriate value and then solve the problem • Use estimation to check your answer	estimation • reasonable	• Estimate to see if the change is reasonable. Cost: $1.28 Cash Given: $2.00 Change: $1.72	http://www.teach-nology.com/worksheets/math/estimate/der1/index.html
	4.M.1.3.3 Investigate the use of a four-function calculator to solve complex grade-level problems. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use a four-function calculator to solve complex grade-level problems.	• Identify the four functions on the calculator • Demonstrate the proper use of the four calculator functions	calculator • calculate • function • addition sign, subtraction sign, multiplication sign, division sign, equal sign	• Find the mean of the following numbers: 73, 27, 15, 35, 20 • Do you want your calculator to be more friendly? Try this calculation: First enter 6.2 then multiply this by itself, add 0.23, divide by 50, finally turn the calculator upside down and read the friendly greeting.	www.netrover.com/~kingskid/calc/calculator_problems.htm www.dr-mikes-math-games-for-kids.com/calculator-games.html
	4.M.1.3.4 Use appropriate vocabulary. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use appropriate vocabulary.	• Use the vocabulary correctly identified for Goal 1.3	see the vocabulary above		

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Standard 2: Concepts and Principles of Measurement						
Goal 2.1: Understand and use U.S. customary and metric measurements.	4.M.2.1.1 Select and use appropriate units and tools to make the formal measurements of length, temperature, and weight in both systems. CL: C Calc: NO Content Limit: Select appropriate units and tools only. Units are degrees, inches, feet, yards, miles, millimeters, centimeters, meters, ounces, pounds, tons, grams, kilograms, and degrees. Tools are rulers, yardsticks, meter sticks, thermometers, clocks, and scales. 'Use … tools to make formal measurements' to be assessed in the classroom, not on the ISAT.	• Select appropriate units and tools to make the formal measurements of length, temperature, and weight in both metric and standard systems. • Use the appropriate units and tools to make the formal measurements of length, temperature, and weight in both metric and standard systems.	• Identify the units of measurement for the assigned task • Identify the appropriate tool of measurement for the assigned task • Use the tool correctly (e.g. start with the "0" and not the edge of a ruler) • Record and label the measurement	measurement • degree • inch • feet • yard • mile • millimeter • centimeter • meter • ounce • pounds • ton • gram • kilogram • ruler • yardstick • meter stick • thermometer • clock • scale • length • temperature • weight • standard/customary • metric	• Which unit of measurement would you use to buy apples?	
	4.M.2.1.2 Estimate length, time, weight, and temperature in real-world problems using standard units. CL: C Calc: NO Content Limit: Lengths are measured in inches, feet, and yards. Time is measured in minutes, hours, and days. Weight is measured in ounces, pounds, and tons. Capacity is measured in cups, pints, quarts, and gallons. May select estimate of size from among list of different numbers with same units (e.g., 1 inch, 1 foot, 10 inches, 10 feet).	• Estimate length as measured in inches, feet, and yards in real-world problems. • Estimate time as measured in minutes, hours, and days in real-world problems. • Estimate weight as measured in ounces, pounds, and tons in real-world problems. • Estimate capacity as measured in cups, pints, quarts, and gallons in real-world problems. • Estimate temperature as measured in degrees Fahrenheit in real-world problems.	• Select the correct unit of measurement and tool for the assigned task • Make a reasonable estimate of measurement	length • inch • foot • yard • time • second • minute • hour • day • weight • ounce • pound • ton • capacity • cup • pint • quart • gallon • temperature • degree • Fahrenheit • measurement • reasonable • estimate	• Estimate the length of the room in feet.	
	4.M.2.1.3 Tell time to the nearest minute using digital and analog clocks. CL: B Calc: NO Content Limit: Second hand not shown on clock face. Picture of analog clock is given and answer options show time on digital clock OR digital clock is shown and answer options are analog clocks.	• Tell time to the nearest minute using digital and analog/face clocks.	• Identify the difference between the minute and hour hand • Count by fives and ones around the clock face • Read the time on digital and analog clocks • Match the digital time with the correct analog time or vice-versa	digital • analog/face • clock • minute • hour		www.homeschoolmath.net/clock.php www.mathfactcafe.com/time/
	4.M.2.1.4 Solve real-world problems related to elapsed time. CL: F Calc: NO Content Limit: Times given in hours and minutes.	• Solve real-world problems related to elapsed time using hours and minutes.	• Tell equivalent units of time (e.g. 60 minutes equals 1 hour) • Show elapsed time using the clock as a manipulative • Find the difference in hours and minutes • Convert time between minutes and hours • Explain the reasonableness of the answer • Distinguish between a.m. and p.m. • Identify signal words (before, after, earlier, later, etc.)	elapsed time	• The afternoon movie starts at 1:20 p.m. and ends at 3:05 p.m. How long is the movie?	www.superteacherworksheets.com/elapsed-time.html
	4.M.2.1.5 Convert units of length and time within the U. S. Customary system. CL: C Calc: NO Content Limit: Units of length are inches, feet, and yards. Units of time are seconds, minutes, hours, and days. Conversion may only bridge two adjacent units such as hours to minutes and not hours to seconds. Conversions may not include or result in fractions.	• Convert units of length using inches, feet, and yards between adjacent units such as inches to feet. • Convert units of time using seconds, minutes, hours, and days between adjacent units such as seconds to minutes.	• Memorize the equivalent units of length (12 inches equals 1 foot) • Convert different units of length • Memorize the equivalent units of time (60 seconds equals 1 minute) • Convert different units of time	length • inch • foot • yard • time • second • minute • hour • day • convert • equivalent	• 24 inches = ____ feet	

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	4.M.2.1.6 State that there are 365 days in a year and 52 weeks in a year. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• State that there are 365 days in a year and 52 weeks in a year.	• Memorize the number of days in a year • Memorize the number of weeks in a year	day • week • year *decade* • *century*	• How many days are in a leap year?	
	4.M.2.1.7 Recall length and volume (capacity) equivalences involving inches, feet, yards, cups, pints, quarts, and gallons in the U.S. Customary system. CL: B Calc: CR Content Limit: Equivalences include 12 inches = 1 foot, 3 feet = 1 yard, 2 cups = 1 pint, 2 pints = 1 quart, and 4 quarts = 1 gallon. No conversions.	• Recall length equivalences involving inches, feet, and yards. • Recall volume (capacity) equivalences involving cups, pints, quarts, and gallons.	• State the following equivalences: 12 inches = 1 foot 3 feet = 1 yard 2 cups = 1 pint 2 pints = 1 quart 4 quarts = 1 gallon	inch • foot • yard• cup • pint • quart • gallon • equivalent • capacity • volume • length	• ____ inches = 1 foot • ____ feet = 1 yard • ____ cups = 1 pint • ____ pints = 1 quart • ____ quarts = 1 gallon	http://www.linkslearning.org www.mathworksheetwizard.com/grade4/grade4measurements.html
	4.M.2.1.8 Use appropriate vocabulary. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use appropriate vocabulary.	• Use the vocabulary correctly identified for Goal 2.1	see the vocabulary above		
Goal 2.2: Apply the concepts of rates, ratios, and proportions.	No objectives at this grade level.					
Goal 2.3: Apply dimensional analysis.	No objectives at this grade level.					
Standard 3: Concepts and Language of Algebra and Functions						
Goal 3.1: Use algebraic symbolism as a tool to represent mathematical relationships.	4.M.3.1.1 Write a division problem using a bracket (⌐) and/or the division symbol (÷). CL: B Calc: NO Content Limit: Whole numbers less than 100,000. Student is not required to find the quotient.	• Write a division problem using a bracket (⌐) and/or the division symbol (÷).	• Identify both division symbols • Place divisor and dividend in the correct position using a bracket (⌐) and/or the division symbol (÷)	dividend • divisor • division bracket • division symbol		
	4.M.3.1.2 Write a number sentence using simple geometric shapes or letters of the alphabet as symbols to represent an unknown number. CL: C Calc: NO Content Limit: Information given in words to be rewritten as a number sentence that includes a symbol. Number sentence includes no more than one operation. Geometric symbols used limited to squares, rectangles and triangles.	• Write a number sentence using simple geometric shapes (limited to squares, rectangles, and triangles) or letters of the alphabet as symbols to represent an unknown number.	• Recognize that different shapes and letters (variables) can represent an unknown number • Write a number sentence using a variable	variable • number sentence	• 3 X Δ = 15	
	4.M.3.1.3 Show the relationship between multiplication and division using fact families. CL: D Calc: NO Content Limit: Whole number factors between 1 and 10, inclusive.	• Show the relationship between multiplication and division using fact families (factors between 1 and 10).	• Create arrays to display various fact families • Demonstrate with pictures or manipulatives that multiplication and division are inverse operations of each other • Write the multiplication/division fact family for a set of three numbers	fact family• array • inverse operation • multiplication • division	• Complete the fact family for 3, 7, 21. • Answer: 7 X 3 = 21 3 X 7 = 21 21 ÷ 3 = 7 21 ÷ 7 = 3	

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	4.M.3.1.4 Read and use symbols of “<,” “>,” and “=” to express relationships with numbers through 1,000,000. CL: C Calc: CN Content Limit: May compare results of expressions. Use whole numbers and expressions with no more than one operation. ‘Read’ means to express in words.	• Read the words "less than", "greater than", and "equal to" in representing the symbols “<”, “>”, and “=”. • Use the symbols to compare numbers.	• Identify the words and symbols representing "less than", "greater than", and "equal to" • Compare the numbers using the symbols “<”, “>”, and “=” • Compare the numbers and operations on both sides of the symbol	symbol • represent • compare	• 9 + 4 ____ 4 + 7	
Goal 3.2: Evaluate algebraic expressions.	4.M.3.2.1 Use the identity and zero properties of multiplication. CL: C Calc: NO Content Limit: Item can be assessed using a numeric representation (4 x 0 or 4 x 1) or a description in words such as “Any number times zero …” a) Equals itself b) Equals zero c) Does not exist d) Equals the number with a zero added on…,etc. Factors limited to 0 through 9.	• Use the identity property of multiplication (property of one). • Use the zero property of multiplication.	• Name the property used when multiplying any number by one • Name the property used when multiplying any number by zero • Solve problems by multiplying numbers with ones and zeroes • Explain the identity and zero properties in your own words	identity property • property of one • zero property *associative property* • *commutative property* • *distributive property*	• Which property would you use to find the missing number? 9 X ____ = 9	
Goal 3.3: Solve algebraic equations and inequalities.	4.M.3.3.1 Solve missing factor equations. CL: C Calc: NO Content Limit: Whole number factors with products less than 100. Geometric symbols used to represent missing factor limited to squares, rectangles, or triangles.	• Solve missing factor equations with products less than 100. Use geometric symbols to represent the missing factor.	• Identify squares, rectangles, and triangles as representing missing factors • Use multiplication/division fact families to solve for the missing factor	factor • product • fact family • variable • geometric	• 3 X Δ = 15	
Goal 3.4: Understand the concept of functions.	4.M.3.4.1 Identify the rule (function) for a pattern using whole numbers and addition and then extend the pattern. CL: F Calc: NO Content Limit: Numbers less than 100. Items can ask for a rule, an extension of the pattern, or both. Minimum of four terms of pattern must be given.	• Identify the addition pattern. • State the rule for the pattern. • Extend the pattern.	• Recognize addition patterns • State the pattern using a mathematical expression • Extend the pattern using the rule	pattern • extend • mathematical expression • function (rule)	• Finish the pattern and write the rule. 45, ____, 55, 60, 65, ____	
	4.M.3.4.2 Use appropriate vocabulary. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use appropriate vocabulary.	• Use the vocabulary correctly identified for Goal 3	see the vocabulary above		
Goal 3.5: Represent equations, inequalities and functions in a variety of formats.	No objectives at this grade level.					
Goal 3.6: Apply functions to a variety of problems.	No objectives at this grade level.					

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Standard 4: Concepts and Principles of Geometry						
Goal 4.1: Apply concepts of size, shape, and spatial relationships.	4.M.4.1.1 Identify, compare, and analyze attributes of two- and three-dimensional shapes, including parallel, intersecting, and perpendicular lines, and develop vocabulary to describe the attributes. CL: B, C, D Calc: NO Content Limit: Identify and compare only. Two-dimensional shapes limited to triangles, quadrilaterals (rectangle, square, rhombus, and trapezoid), and hexagons. Three-dimensional shapes limited to cubes, cylinders, cones, spheres, pyramids, and rectangular prisms. 'Analyze attributes … and develop vocabulary to describe the attributes' to be assessed in the classroom, not on the ISAT.	• Identify and compare attributes of two-dimensional shapes: triangles, quadrilaterals (rectangle, square, rhombus, trapezoid), and hexagons. • Identify and compare attributes of three-dimensional shapes: cubes, cylinders, cones, spheres, pyramids, rectangular prisms. • Identify and compare parallel, intersecting, and perpendicular lines. • Develop vocabulary to describe the attributes of the shapes and lines.	• Name the shapes and lines • Describe the attributes of two-dimensional shapes (e.g. vertices, lines, angles, sides) • Describe the attributes of three-dimensional shapes (e.g. vertices, faces, curves, edges) • Describe the attributes of lines (parallel, intersecting, perpendicular) • State similarities and differences between the different shapes and lines	shape • line • two-dimensional • triangle• quadrilateral • rectangle • square • rhombus • trapezoid • hexagon • symmetry • attributes • three-dimensional • cube • cylinder • cone • sphere • pyramid • rectangular prism • parallel • intersecting • perpendicular • polygon • vertices • closed/open figure • angle • side • face • curve • edge • right angle	• How are these two shapes alike and different?	
	4.M.4.1.2 Predict the results of sliding and flipping two-dimensional shapes. CL: D Calc: NO Content Limit: Use diagrams showing non-regular polygons on a grid. Include items where student is given a description and there is a graphic shown for each answer option.	• Predict the results of sliding and flipping two-dimensional shapes.	• Use concrete manipulatives to demonstrate sliding and flipping of non-regular polygons • Draw pictures of slides and flips of non-regular polygons using grid paper • Identify the results of slides and flips	polygon • flip • slide • non-regular polygon *reflection (flip)* • *rotation (turn)* • *translation (slide)*	• Is the shape a slide or flip?	http://www.linkslearning.org http://www.solar.physics.montana.edu/astromath/draft/gliding_galaxy_finalversion.pdf http://www.haelmedia.com/OnlineActivities_txh/mc_txh4_001.html
	4.M.4.1.3 Identify multiple lines of symmetry in two-dimensional shapes. CL: B, C Calc: NO Content Limit: Shapes limited to parallelogram, hexagon, and octagon.	• Identify multiple lines of symmetry in two-dimensional shapes (parallelogram, hexagon, octagon only).	• Define a line of symmetry • Locate, draw, or fold lines of symmetry on a two-dimensional shape	line of symmetry • two-dimensional • parallelogram • hexagon • octagon	• How many lines of symmetry does this shape have?	http://www.linkslearning.org http://www.haelmedia.com/OnlineActivities_txh/mc_txh4_001.html http://math.slu.edu/escher/index.php/Slides,_Flips_and_Turns
	4.M.4.1.4 Discuss perimeters of polygons, and areas and perimeters of rectangles and squares, using concrete objects. CL: Calc: Content Limit: Assessed in the classroom and on the DMA, not on the ISAT.	• Find perimeters of polygons using concrete objects. • Find areas and perimeters of rectangles and squares using concrete objects.	• Find the perimeter of a polygon (add all sides) • Find the area of rectangles and squares by counting the square units • Find the area of rectangles and squares by multiplying length times width • Find area and perimeter on concrete objects and illustrations	polygon • length • width • figure	• Find the perimeter of your desktop.	http://www.abcteach.com/free/m/measurementsatmyschool.pdf
	4.M.4.1.5 Use appropriate vocabulary. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use appropriate vocabulary.	• Use the vocabulary correctly identified for Goal 4.1	see the vocabulary above		
Goal 4.2: Apply the geometry of right triangles.	No objectives at this grade level.					
Goal 4.3: Apply graphing in two dimensions.	4.M.4.3.1 Use ordered pairs to identify the position of a point in the first quadrant on a coordinate grid. CL: C Calc: NO Content Limit: Coordinates are whole numbers. Point may not be on x-axis or y-axis.	• Use ordered pairs to identify the position of a point in the first quadrant on a coordinate grid.	• Follow directions to plot a point on a grid • Label point on a grid as an ordered pair (e.g. 5, 6) • Plot a point on a grid given an ordered pair	grid • coordinate • horizontal • vertical • ordered pair • plot		

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Standard 5: Data Analysis, Probability, and Statistics						
Goal 5.1: Understand data analysis.	4.M.5.1.1 Read and interpret simple tables, charts, bar graphs, and line graphs. CL: D Calc: NO Content Limit: Graphics may have at most ten data categories. Scales are in increments of 1, 2, 5, or, 10 or must be consistent with real-world applications. Bar graphs may be vertical or horizontal. Pictograph may be used as a type of bar graph.	• Read and interpret simple tables, charts, bar graphs, and line graphs.	• Read the title, labels, and key on the graph • Interpret data from several types of graphs • Draw conclusions about the data	table • data • bar graph • line graph • chart • conclusion • key		
	4.M.5.1.2 Use appropriate vocabulary. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use appropriate vocabulary.	• Use the vocabulary correctly identified for Goal 5.1	see the vocabulary above		
Goal 5.2: Collect, organize, and display data.	4.M.5.2.1 Collect, organize, and display data in tables and charts to answer a question. CL: C Calc: NO Content Limit: Given data, choose a display. Graphics may have at most ten data categories. Scales are in increments of 1, 2, 5, or 10, or must be consistent with real-world applications. Bar graphs may be vertical or horizontal. Pictograph may be used as a type of bar graph. Line graphs, vertical bar graphs, and horizontal bar graphs may be used. 'Collect' data to be assessed in the classroom, not on the ISAT.	• Collect, organize, and display data in a graphic form (tables, charts, and graphs) to answer a question. • Decide which graphic form is most appropriate to display given data.	• Collect data (e.g. conduct a survey) • Record data using tally marks and tables • Organize data and create the most appropriate graphic form to display the data • Read and analyze graphs	table • data • bar graph • line graph • chart • conclusion • horizontal • vertical • tally mark • pictograph		
	4.M.5.2.2 Display data in a bar graph using appropriate notation such as a title, axes labels, and reasonable scales. CL: Calc: Content Limit: Assessed in the classroom and DMA, not on the ISAT.	• Display data in a bar graph using appropriate notation such as a title, axes labels, and reasonable scales.	• Draw axes of a bar graph • Label title and axes of a bar graph • Select a reasonable scale for a bar graph (e.g. increments of 1, 2, 5, or 10) • Create and label a bar graph from given data	title • axes • bar graph • label • scale • reasonable • increment • data		
Goal 5.3: Apply simple statistical measurements.	4.M.5.3.1 Find the mode of a simple set of whole number data. CL: C Calc: NO Content Limit: Numbers used for data are less than 100. Data set must contain unique (one) mode. Limited to ten values in data set.	• Find the mode of a simple set of whole number data (limited to numbers less than 100).	• Define mode (value that occurs most often) • Arrange data in numerical order • Identify the mode	mode *range* • *mean (average)* • *median*	Find the mode of the following set of numbers: 23, 17, 13, 31, 17, 13, 21, 13	----------
Goal 5.4: Understand basic concepts of probability.	4.M.5.4.1 Predict the results of simple probability experiments using coins or spinners (e.g., 3 out of 6 choices). CL: E Calc: NO Content Limit: Situation may involve at most two coins or spinners divided in up to six equal sections.	• Predict the results of simple probability experiments using coins or spinners (e.g., 3 out of 6 choices).	• Define probability • Predict possible outcomes using coins or spinners • Write outcomes as words or fractions	probability • predict • fraction		

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Goal 5.5: Make predictions or decisions based on data.	4.M.5.5.1 Make predictions based on data. CL: E Calc: NO Content Limit: Data given in tables, bar graphs, or line graphs.	• Make predictions based on data given in tables, bar graphs, or line graphs.	• Interpret data from several types of graphs and draw conclusions about the data • Predict outcomes based on data from graphs • Recognize patterns/trends in data	interpret • data • predict • outcome • conclusion		
Our favorite Web sites that contain multiple math content activities: www.internet4classrooms.com/skills-4th-mathbuilders.htm www.mathslice.com/ www.eduplace.com/math/mw/g_4.html http://resources.oswego.org/games/ http://www.superkids.com/aweb/tools/math/index.shtml http://www.funbrain.com htt://www.mathsisfun.com www.coolmath-games.com/ http://www.dadsworksheets.com/v1/Worksheets.html http://www.math-drills.com						