

## Math - Grade 7

Idaho Department of Education Content Standards	Objective	Sub Objectives	Task Analysis	Essential Vocabulary	Clarifying Questions	Sample Assessment Questions	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.	<b>Shaded objectives should be assessed in the classroom, but not included on the ISAT assessment.</b>			Big Resource: See How North Carolina addresses standards, sample assessment, and resources. <a href="http://www.dpi.state.nc.us/curriculum/mathematics/middlegrades/grade07/">http://www.dpi.state.nc.us/curriculum/mathematics/middlegrades/grade07/</a>	
<b>Standard 1: Number and Operation</b>							
Goal 1.1: Understand and use numbers.	7.M.1.1.1 Compare magnitudes and relative magnitudes of rational numbers, including integers, fractions, and decimals.  CL: C, D Calc: CN Content Limit: Fraction denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, 16, 20, 25, and 100. Integers only as negative rational numbers. Decimals must be terminating. Numbers may be ordered least to greatest or greatest to least.	• Compare magnitudes and relative magnitudes of rational numbers, including integers, fractions, and decimals.	• Compare integers using greater than, less than, and equal to • Convert between decimals, fractions, and percent • Order positive and negative numbers, fractions, and percents	equivalent • convert • fractions • decimals • percent • integer • positive and negative	• Use < > or = to solve 1/2 0 0.8	• Put the following in order least to greatest: -1/2, 35%, 1/3, 75%, 0.8, -5 • Use < =, > to solve: -25 _____ 10 • Convert 2/5 to a percent and a decimal. • Convert 5/8 to a decimal.	<a href="http://www.boiseschools.org/schools/north/mrznorth/ISATMath/Computation/computation221-230.htm">http://www.boiseschools.org/schools/north/mrznorth/ISATMath/Computation/computation221-230.htm</a> <a href="http://argyll.epsb.ca/jreed/math8/strand1/1102.htm">http://argyll.epsb.ca/jreed/math8/strand1/1102.htm</a>
	7.M.1.1.2 Solve problems requiring the conversion between simple decimals, fractions, ratios, and percents.  CL: C Calc: NO Content Limit: Fraction denominators limited to 2, 3, 4, 5, 8, 10, 20, 25, and 100.	• Solve problems requiring the conversion between simple decimals, fractions, ratios, and percents.	• Convert between decimals, fractions, ratios, and percents in all combinations	equivalent • convert • fractions • decimals • percent • ratio	• Convert 0.6 to a percent	• Convert 0.8 to a percent • Convert 1/4 to percent • Convert 65% to decimal and fraction. 1:3 is = to what percent?	<a href="http://argyll.epsb.ca/jreed/math8/strand1/1102.htm">http://argyll.epsb.ca/jreed/math8/strand1/1102.htm</a> <a href="http://www.mathsisfun.com/converting-decimals-fractions.html">http://www.mathsisfun.com/converting-decimals-fractions.html</a> <a href="http://www.coolmath.com/decimals/05-decimals-converting-decimal-to-fraction.html">http://www.coolmath.com/decimals/05-decimals-converting-decimal-to-fraction.html</a> <a href="http://www.purplemath.com/modules/ratio.htm">http://www.purplemath.com/modules/ratio.htm</a>
	7.M.1.1.3 Locate the position of rational numbers on a number line.  CL: C Calc: NO Content Limit: Fraction denominators limited to 2, 3, 4, 5, 6, 8, and 10. Decimals to thousandths place.	• Locate the position of rational numbers on a number line.	• Create a number line using an appropriate scale • Use a number line to plot points including integers and fractions • Identify points on a number line	scale • integers • plot • rational numbers • position	• Plot -7 on a number line	• Plot the following values on a number line: 1/4, -2, .75, 1.5, 3, 0. • Plot the following values on a number line: 8, 8.005, 8.01, 8.025	<a href="http://theworksheetsonline.com/numline.html">http://theworksheetsonline.com/numline.html</a> <a href="http://www.helpingwithmath.com/resources/oth_number_lines.htm">http://www.helpingwithmath.com/resources/oth_number_lines.htm</a> <a href="http://www.funbrain.com/cgi-bin/nl.cgi?A1=s&amp;A2=3">http://www.funbrain.com/cgi-bin/nl.cgi?A1=s&amp;A2=3</a>
	7.M.1.1.4 Rewrite multiple factors using exponents.  CL: C Calc: CN Content Limit: Factors must be whole numbers greater than 1.	• Rewrite multiple factors using exponents.	• Explain that the exponent tells how many times the base is to be used as a factor	exponent • base • factor • product • exponential form • power	• Use exponents to rewrite the expression $7 * 7 * 7$	• Write in exponential form: $6 * 6 * 6 * 6 * 6$ • Write $5^2$ as a product. • $7^9$ Identify the base and the exponent.	<a href="http://www.math.com/school/subject2/lessons/S2U2L2G.L.html#sm6">http://www.math.com/school/subject2/lessons/S2U2L2G.L.html#sm6</a> <a href="http://video.google.com/videoplay?docid=-3322565867206620363">http://video.google.com/videoplay?docid=-3322565867206620363</a>
	7.M.1.1.5 Apply the number theory concepts of primes, composites, and prime factorization and find the Least Common Multiple (LCM) and the Greatest Common Factor (GCF).  CL: C Calc: CR Content Limit: Items involve no more than two numbers less than 100. Numbers are not relatively prime.	• Apply the number theory concepts of primes, composites, and prime factorization and find the Least Common Multiple (LCM) and the Greatest Common Factor (GCF).	• Apply rules of divisibility • Define prime and composite numbers • Calculate prime factorization • Find LCM and GCF	prime • composite • factorization • factor • LCM • GCF • divisibility	• Find the least common multiple of 8 and 6	• 243 is divisible by which of the following numbers? (2, 3, 5, 6, 9, 10) • Give the prime factorization for 51. • Which of the following numbers are composite? 88, 61, 2, 23, 49, 25 • List the first 10 prime numbers. • Find the GCF and LCM of 12 & 16.	<a href="http://www.helpingwithmath.com/resources/games/prime/prime01.html">http://www.helpingwithmath.com/resources/games/prime/prime01.html</a> <a href="http://www.mathgoodies.com/lessons/vol3/divisibility.html">http://www.mathgoodies.com/lessons/vol3/divisibility.html</a> <a href="http://www.mathsisfun.com/prime-factorization.html">http://www.mathsisfun.com/prime-factorization.html</a> <a href="http://www.math.com/school/subject1/lessons/S1U3L3G.L.html">http://www.math.com/school/subject1/lessons/S1U3L3G.L.html</a> <a href="http://www.mathplayground.com/howto_gcfcm.html">http://www.mathplayground.com/howto_gcfcm.html</a>
	7.M.1.1.6 Recognize pertinent information for problem solving.  CL: C Calc: CN Content Limit: Items include more information than required to solve. Information may be given in text or table form. Data provided consistent with context of the item (e.g., a table listing start/stop times for movies).	• Recognize pertinent information for problem solving.	• Distinguish between necessary and unnecessary information	necessary • unnecessary • pertinent	• Cross out the unnecessary information in the following problem. Bobby had a dog named Skip. Skip ate one cup of dog food each day. How many cups of dog food will he eat in a week?	• Cross out the unnecessary information: If it takes Sally 4 hours to paint a house and it takes John 6 hours to paint the same house, and they want to paint the house pink. How long will it take them to paint the house together?	<a href="http://www.wikihow.com/Solve-a-Wordy-Math-Problem">http://www.wikihow.com/Solve-a-Wordy-Math-Problem</a> <a href="http://library.thinkquest.org/4471/learn.htm">http://library.thinkquest.org/4471/learn.htm</a>

## Math - Grade 7

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	7.M.1.1.7 Describe the use of integers in real-world situations. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Describe the use of integers in real-world situations.	• Demonstrate real world applications such as checking account, golf, stock market, allowance, etc.		• Bobby got \$10 for washing the dishes. He spent \$3 at the store. Then he received \$20 for mowing the lawn. How much money does Bobby have now?	• John already has \$75, he is saving for a new bike and needs \$200. He mows lawns for \$5 per lawn. How many lawns would he need to mow to be able to buy the bike?	<a href="http://cte.jhu.edu/techacademy/web/2000/integers/intintmain.htm#actone">http://cte.jhu.edu/techacademy/web/2000/integers/intintmain.htm#actone</a>
	7.M.1.1.8 Use appropriate vocabulary. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use vocabulary appropriately.	• Communicate using mathematical terminology correctly		• As students are called upon in the classroom make sure that they are using correct mathematical language.		
Goal 1.2: Perform computations accurately.	7.M.1.2.1 Recall the common equivalent fractions, decimals, and percents of halves, fourths, and tenths. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Recall the common equivalent fractions, decimals, and percents of halves, fourths, and tenths.	• Name the common equivalent fractions, decimals, and percents of halves, fourths, and tenths	equivalent	• Write 1/4 as a decimal and a percent.	• Create a chart with fractions, decimals, percents, and have students find missing values.	<a href="http://www.homeschoolmath.net/worksheets/fraction-decimal.php">http://www.homeschoolmath.net/worksheets/fraction-decimal.php</a>
	7.M.1.2.2 Add, subtract, multiply, and divide whole numbers, fractions and decimals; and add, multiply, and divide integers. CL: C Calc: NO Content Limit: Fraction denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, 16, 20, 25, and 100. Negative rational numbers are limited to integers. Up to three numbers and two operations. No grouping symbols. Expression must be clearly stated.	• Solve addition, subtraction, multiplication and division of whole numbers, fractions and decimals; and add, multiply, and divide integers.	• Recognize and apply rules for addition, subtraction, multiplication and division of whole numbers, fractions, mixed numbers, decimals, and integers	LCM • GCF • reciprocal • simplify • denominator • numerator • negative • positive • integer • absolute value	• $\frac{3}{4} \div \frac{2}{3}$	• Solve any problems involving the following operations: addition, subtraction, multiplication and division of whole numbers, fractions and decimals: and add, multiply, and divide integers.	<a href="http://www.worksheet.com">www.worksheet.com</a> <a href="http://score.kings.k12.ca.us/standards/seventh.html#number">http://score.kings.k12.ca.us/standards/seventh.html#number</a>
	7.M.1.2.3 Evaluate whole numbers in exponential form. CL: C Calc: NO Content Limit: Exponents are limited to whole numbers 2 through 6 inclusive. Results must be less than 100.	• Evaluate whole numbers in exponential form.	• Multiply the base the appropriate number of times	exponent • base • factor • product • evaluate	• Solve $2^3$	• Evaluate: $2^3$ ; and $3^2$ Evaluate $10^7$	<a href="http://www.math.com/school/subject2/lessons/S2U2L2GL.html#sm6">http://www.math.com/school/subject2/lessons/S2U2L2GL.html#sm6</a> <a href="http://video.google.com/videoplay?docid=-3322565867206620363">http://video.google.com/videoplay?docid=-3322565867206620363</a>
	7.M.1.2.4 Evaluate numerical expressions using the order of operations with whole numbers and decimals. CL: C Calc: NO Content Limit: Operations may include addition, subtraction, multiplication, and division. Grouping symbols may be used and nested two levels at most. Decimals are limited to thousandths place.	• Evaluate numerical expressions using the order of operations with whole numbers and decimals.	• Apply the order of operations to evaluate expressions	order of operations • parenthesis • brackets		• $8 + 11 - 10 + 5 =$ $5(3 + 7) \div 10 + 13 =$ • Evaluate the expression. $(2 + 3)^2 * 6$ • Evaluate the expression. $\frac{17 + 47}{4 * 4}$	<a href="http://www.mathgoodies.com/lessons/vol7/order_operations.html">http://www.mathgoodies.com/lessons/vol7/order_operations.html</a> <a href="http://www.regentsprep.org/REGENTS/math/orderop/Lorder.htm">http://www.regentsprep.org/REGENTS/math/orderop/Lorder.htm</a> <a href="http://www.aaamath.com/g82-order-of-operations.html#section3">http://www.aaamath.com/g82-order-of-operations.html#section3</a> <a href="http://www.math-drills.com/orderofoperations.shtml">http://www.math-drills.com/orderofoperations.shtml</a>
	7.M.1.2.5 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.	• Demonstrate the use of a calculator • Solve mental math equations • Compare and select the most appropriate computation method or combination of		• Solve using mental math. $2.3 \times 100$	• Solve using mental math. $20 * 5 \div 2 + 3$ $1,000 * 4 + 45 - 30$	<a href="http://math.about.com/b/2009/06/01/mental-math-tricks.htm">http://math.about.com/b/2009/06/01/mental-math-tricks.htm</a> <a href="http://www.metacafe.com/watch/791048/fast_math_trick/">http://www.metacafe.com/watch/791048/fast_math_trick/</a> <a href="http://www.metacafe.com/watch/1007128/fast_maths_trick_of_calculation/">http://www.metacafe.com/watch/1007128/fast_maths_trick_of_calculation/</a> <a href="http://www.metacafe.com/watch/yt-v6oJ5rw9mys/magic_math_for_7s_multiplication_learning_the_times_table/">http://www.metacafe.com/watch/yt-v6oJ5rw9mys/magic_math_for_7s_multiplication_learning_the_times_table/</a>

## Math - Grade 7

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	7.M.1.2.6 Use a variety of strategies including common mathematical formulas to compute problems drawn from real-life situations.  CL: C Calc: NO Content Limit: Formulas will be given in item and limited to area of a parallelogram, triangle, or circle, circumference of a circle, distance formula, simple interest formula, and volume of a rectangular prism.	• Demonstrate and use a variety of strategies including common mathematical formulas to compute problems drawn from real-life situations.	• Explain substitution of numbers for variables • Evaluate the formula	variable • formula • substitution	• The formula for distance is: $d=rt$ Billy walked 3 miles per hour for 4 hours. How far did Billy walk?	• Sally is carpeting her bedroom. The room is 12 feet by 15 feet, how many square yards of carpet does she need to purchase? $Area = length \times width$ • If you deposit 200 dollars in your savings account at 7% annual interest for two years, what will your balance be at the end of two years? <i>Use the formula <math>I=prt</math></i>	<a href="http://mathforum.org/dr.math/faq/faq.word.problems.htm">http://mathforum.org/dr.math/faq/faq.word.problems.htm</a>
	7.M.1.2.7 Use appropriate vocabulary and notations.  CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use vocabulary and notations appropriately.	• Communicate using mathematical terminology correctly		• As students are called upon in the classroom make sure that they are using correct mathematical language.		
Goal 1.3: Estimate and judge reasonableness of results.	7.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.	• Demonstrate estimation strategies	estimate • number sense • predict	• Estimate the product. $32 \times 12$	• Estimate the sum of 312,000 + 456,000 • Estimate the quotient of $29 \div 7$ • Estimate the difference of 1,792 - 813	<a href="http://www.aaaknow.com/est.htm#topic10">http://www.aaaknow.com/est.htm#topic10</a> <a href="http://www.dpi.state.nc.us/docs/curriculum/mathematics/middlegrades/grade07/goal01/objective1.03/1.03-indicators.pdf">http://www.dpi.state.nc.us/docs/curriculum/mathematics/middlegrades/grade07/goal01/objective1.03/1.03-indicators.pdf</a>
	7.M.1.3.2 Explain when estimation is appropriate and describe the usefulness of an estimate as opposed to an exact answer.  CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Explain when estimation is appropriate and describe the usefulness of an estimate as opposed to an exact answer.	• Justify/question the answer for sensibility	estimate • number sense • predict	• Students need to ask themselves if they need a bigger or smaller number? Is their answer reasonable?	• Sally is carpeting her bedroom. The room is 12 feet by 15 feet, how many square yards of carpet does she need to purchase? $Area = length \times width$ Would your answer be 60 yards <sup>2</sup> or 20 yards <sup>2</sup> ? Justify your answer.	Refer to above objective
	7.M.1.3.3 Identify whether a given estimate is an overestimate or underestimate.  CL: E Calc: NO Content Limit: Estimates will involve multiplication only.	• Identify whether a given estimate is an overestimate or underestimate.	• Compare estimated quantity with the given quantity in the problem	underestimate • overestimate	• 7 x 32 Which is an overestimate: a. 300 b. 224 c. 210	• Judy needs to purchase supplies for a party. The cake is \$15.59, paper plates and utensils are \$5.68, and decorations are \$7.90. She estimates the total cost will be approximately \$40.00. Is this an underestimate or overestimate?	<a href="http://educationalgurumath.blogspot.com/2008/12/underestimate-overestimate.html">http://educationalgurumath.blogspot.com/2008/12/underestimate-overestimate.html</a>
	7.M.1.3.4 Use a four-function calculator to solve complex grade-level problems.  CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Demonstrate the use of a four-function calculator to solve complex grade-level problems.	• Enter problems correctly to demonstrate the use of a calculator		• Use the calculator to evaluate the expression: $3 + 4 \times 5$		<a href="http://pegasus.cc.ucf.edu/~ucfcasio/activities/jordan.txt">http://pegasus.cc.ucf.edu/~ucfcasio/activities/jordan.txt</a> <a href="http://pegasus.cc.ucf.edu/~ucfcasio/activities/place.txt">http://pegasus.cc.ucf.edu/~ucfcasio/activities/place.txt</a> <a href="http://www.cyffredin.co.uk/Calculator%20Books/Book%203/Book%203%20Index.htm">http://www.cyffredin.co.uk/Calculator%20Books/Book%203/Book%203%20Index.htm</a>
	7.M.1.3.5 Formulate conjectures and discuss why they must be or seem to be true.  CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Formulate conjectures and discuss why they must be or seem to be true.	• Explain and compare the relationships and or patterns in problems	conjecture • justify • formulate	• What are the next three numbers in this pattern 2, 4, 6, ...		<a href="http://www.kidport.com/grade7/tal/Patterns.htm">http://www.kidport.com/grade7/tal/Patterns.htm</a> <a href="http://mathforum.org/library/drmath/sets/select/dm_sequence_strategy.html">http://mathforum.org/library/drmath/sets/select/dm_sequence_strategy.html</a> <a href="http://www.learner.org/teacherslab/math/patterns/logic.html">http://www.learner.org/teacherslab/math/patterns/logic.html</a>
	7.M.1.3.6 Use appropriate vocabulary and notations.  CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use appropriate vocabulary and notations.	• Communicate using mathematical terminology correctly		• As students are called upon in the classroom make sure that they are using correct mathematical language.		

## Math - Grade 7

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<b>Standard 2: Concepts and Principles of Measurement</b>							
Goal 2.1: Understand and use U.S. customary and metric measurements.	7.M.2.1.1 Select and use appropriate units and tools to make formal measurements in both systems.  CL: C Calc: YES Content Limit: Select appropriate units and tools only. Units for length are inches, feet, yards, miles, millimeters, centimeters, and meters. Units for time are seconds, minutes, hours, days, and years. Units for weight are ounces, pounds, tons, grams, and kilograms. Units for volume (capacity) are cups, quarts, gallons, milliliters, and liters. 'Use ... tools to make formal measurements' to be assessed in the classroom, not on the ISAT.	<ul style="list-style-type: none"> <li>Select and use appropriate units and tools to make formal measurements in both systems.</li> </ul>	<ul style="list-style-type: none"> <li>Select US customary system or metric units appropriately</li> <li>Measure using appropriate tools for US customary or metric system</li> </ul>	inches • feet • yards • miles • millimeters • centimeters • meters • seconds • minutes • hours • days • ounces • pounds • tons • grams • kilograms • cups • quarts • gallons • milliliters • liters • volume • capacity	<ul style="list-style-type: none"> <li>What unit of measure would be used to measure the length of a bicycle?</li> </ul>	<ul style="list-style-type: none"> <li>What unit of measure would you use to measure the tile needed in your bathroom?</li> <li>Would a cat weigh 10 pounds, 10 kilograms, or 12 liters?</li> <li>A soda can contains 12 ounces, 12 quarts, or 12 gallon, or 12 liter?</li> <li>School is 6 1/2 hours long. How many minutes is this?</li> <li>A mile is how many feet?</li> </ul>	<a href="http://oncampus.richmond.edu/academics/education/projects/webunits/measurement/length2.html">http://oncampus.richmond.edu/academics/education/projects/webunits/measurement/length2.html</a>
	7.M.2.1.2 Apply estimation of measurement to real-world and content problems using standard measuring devices.  CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	<ul style="list-style-type: none"> <li>Apply estimation of measurement to real-world and content problems using standard measuring devices.</li> </ul>	<ul style="list-style-type: none"> <li>Select US customary system or metric units appropriately</li> <li>Estimate by using appropriate tools for US customary or metric system</li> </ul>		<ul style="list-style-type: none"> <li>Estimate the weight of two 7th grade students.</li> <li>A. 100 lbs</li> <li>B. 210 lbs</li> <li>C. 35 lbs</li> </ul>	<ul style="list-style-type: none"> <li>Estimate the length of the classroom in meters and yards.</li> <li>Give an approximate weight of a soccer ball in both grams and pounds.</li> <li>How much water approximately would and small goldfish bowl hold?</li> </ul>	
	7.M.2.1.3 Explain the differences between perimeter, area, and volume (capacity) and their measures within both systems.  CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	<ul style="list-style-type: none"> <li>Explain the differences between perimeter, area, and volume (capacity) and their measures within both systems.</li> </ul>	<ul style="list-style-type: none"> <li>Define perimeter, area, and volume</li> <li>Recognize their measures in US customary and metric systems.</li> </ul>	units • units <sup>2</sup> units <sup>3</sup>	<ul style="list-style-type: none"> <li>The living room needs new carpet. Will perimeter or area be used to determine how much carpet to buy?</li> </ul>	<ul style="list-style-type: none"> <li>Bob is fencing his yard. What measure will he use to determine how much material to purchase: volume, perimeter, or area?</li> <li>John needs to fill his fish tank. How would this measurement be labeled" units, units<sup>2</sup>, or units<sup>3</sup>?</li> </ul>	
	7.M.2.1.4 Given the formulas, find the perimeter, circumference, or area of triangles, circles, and quadrilaterals.  CL: C Calc: YES Content Limit: Quadrilaterals may include parallelograms and trapezoids. Diameter or radius may be given in circle problems. Radii may not be 2. A reference sheet will be available with formulas that include: perimeter and area of a rectangle; area of a triangle, trapezoid, and parallelogram; and circumference and area of a circle.	<ul style="list-style-type: none"> <li>Given the formulas, find the perimeter, circumference, or area of triangles, circles, and quadrilaterals.</li> </ul>	<ul style="list-style-type: none"> <li>Explain substitution of numbers for variables</li> <li>Evaluate the formula</li> </ul>	substitution • variable	<ul style="list-style-type: none"> <li>Find the circumference of a circle with a diameter of 5 cm. <math>C = \pi d</math></li> </ul>	<ul style="list-style-type: none"> <li>Find the area and perimeter of a parallelogram with a height of 6 cm and a base of 12 cm. Use <math>p=2b + 2h</math>; <math>a=bh</math></li> <li>Using the formula <math>a= 1/2bh</math> calculate the area of an isosceles triangle with a base of 8cm and a height of 4cm.</li> <li>If the area of a circle is 50.24 cm<sup>2</sup> what is the radius? Use <math>A = \pi r^2</math> and 3.14 for <math>\pi</math>.</li> </ul>	
	7.M.2.1.5 Convert units of measurement within each system.  CL: C Calc: YES Content Limit: All conversions must be within the same system of measurement: inches and feet, inches and yards, feet and yards, ounces and pounds, pounds and tons, fluid ounces and cups, cups and pints, pints and quarts, quarts and gallons, milli- and unit, centi- and unit, and kilo- and unit. Time units may include years, months, weeks, days, hours, minutes, and seconds.	<ul style="list-style-type: none"> <li>Convert units of measurement within each system.</li> </ul>	<ul style="list-style-type: none"> <li>Solve using unit multipliers</li> <li>List equivalent values between measurements within the same system</li> </ul>	unit multiplier • equivalent	<ul style="list-style-type: none"> <li>How many pounds are in 3 tons?</li> </ul>	<ul style="list-style-type: none"> <li>How many quarts are in 5 gallons?</li> <li>2000 meters is how many kilometers?</li> <li>5000 mL is how many liters, and how many kiloLiters?</li> <li>If each bead is 1/4inch, how many beads would you need to make a length of 1 yard?</li> </ul>	

## Math - Grade 7

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	7.M.2.1.6 Solve problems involving perimeter and area of rectangles and triangles.  CL: C Calc: YES Content Limit: Items may include shapes that are formed by a combination of two shapes.	• Solve problems involving perimeter and area of rectangles and triangles.	• Distinguish between area and perimeter formulas • Apply the appropriate formula to the correct shape	area • perimeter	• What is the area of a rectangle with length 7 ft and width 5 ft?	• Jake has 64 feet of fencing material, what is the largest area dog run he can build? • Jane is building a cabinet in a corner of the room that forms an isosceles triangle. The perimeter is 5.12 meters. What will be the length of the side facing the room, if the cabinet's wall sides are 1.5 meters?	
	7.M.2.1.7 Use appropriate vocabulary and notations.  CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use appropriate vocabulary and notations.	• Communicate using correct mathematical terminology		• As students are called upon in the classroom make sure that they are using correct mathematical language.		
Goal 2.2: Apply the concepts of rates, ratios, and proportions.	7.M.2.2.1 Explain rates and their relationship to ratios, and use proportions to solve problems represented with a diagram.  CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Explain rates and their relationship to ratios, and use proportions to solve problems represented with a diagram.	• Define rates and ratios • Solve problems using proportions including scale drawings	ratio • rate • proportion • scale drawing	• Solve the proportion. $\frac{7}{9} = \frac{z}{18}$ • If you need to compare the number of red marbles to blue marbles, would you use a rate or a ratio? • A map scale is 1/2 inch to 500 miles, how many miles would 3.25 inches be?	• Find the length of the side labeled x.	<a href="http://www.classzone.com/cz/books/msmath_2_na/get_chapter_group.htm?cin=3&amp;ci=7&amp;rg=ani_math&amp;npos=1&amp;spos=1&amp;at=animations&amp;var=animations">http://www.classzone.com/cz/books/msmath_2_na/get_chapter_group.htm?cin=3&amp;ci=7&amp;rg=ani_math&amp;npos=1&amp;spos=1&amp;at=animations&amp;var=animations</a>
	7.M.2.2.2 Reduce rates to unit rates.  CL: C Calc: YES Content Limit: Situations must be real-world applications such as gas mileage, speed, growth, etc. Rates given should be equivalent unit rates equal to a whole number or terminating decimal.	• Reduce rates to unit rates.	• Demonstrate simplifying rates	rate • unit rate	• Lucy drove 350 miles on a tank of gas. The tank hold 15 gallons. How many miles per gallon does her car get?	• Which is the better buy, a 16 oz jar of peanut butter for \$4.80 or a 24 oz jar for \$9.60? • Laura drove 227.5 miles in 3.5 hours, what was her average rate of speed?	<a href="http://www.slideshare.net/Ms.DH/61-ratios-and-unit-rates-presentation">http://www.slideshare.net/Ms.DH/61-ratios-and-unit-rates-presentation</a>
Goal 2.3: Apply dimensional analysis.	7.M.2.3.1 Identify properly constructed dimensional analysis conversions.  CL: C, D Calc: CN Content Limit: Customary units may include inches, feet, yards, miles, ounces, pounds, cups, pints, quarts, and gallons. Metric units may include millimeters, centimeters, meters, grams, kilograms, milliliters, and liters. Time units may include years, months, weeks, days, hours, minutes, and seconds. No more than one conversion ratio and one multiplier should be used for any item (e.g., 2 hours to minutes is acceptable: ).	• Identify properly constructed dimensional analysis conversions.	• Solve using unit multipliers • Recognize equivalent values between measurements within the same system		• Is 3 miles equivalent to 15,840 feet?	• The movie running time is 90 minutes and you have 1 1/2 hours of time. Do you have enough time to watch the movie? • You can buy a two year magazine subscription for \$104.00 or buy the magazine each week for \$1.00. Is this the same price? Explain your answer.	<a href="http://www.chem.tamu.edu/class/fyp/mathrev/mr-da.html">http://www.chem.tamu.edu/class/fyp/mathrev/mr-da.html</a>
<b>Standard 3: Concepts and Language of Algebra and Functions</b>							
Goal 3.1: Use algebraic symbolism as a tool to represent mathematical relationships.	7.M.3.1.1 Use variables in simple expressions and equations.  CL: D Calc: CN Content Limit: Evaluate an expression by substituting a number for every variable in the expression. Items are limited to at most two variables at a time. Items may also check solutions to equations by substituting values for the variable(s) in an equation.	• Use variables in simple expressions and equations.	• Evaluate an expression by substituting a number for every variable in the expression.	equation • variable • substitute • expression	• $x^3 = ?$ When $x$ is 4.	• Evaluate the following expression $xy + x$ when: a) $x = 4, y = -2$ b) $x = -8, y = 3$ c) $x = 250, y = 32$	<a href="http://www.classzone.com/cz/books/msmath_2_na/get_center_home.htm?rg=practice">http://www.classzone.com/cz/books/msmath_2_na/get_center_home.htm?rg=practice</a>

## Math - Grade 7

Idaho Department of Education Content Standards	Objective	Sub Objectives	Task Analysis	Essential Vocabulary	Clarifying Questions	Sample Assessment Questions	Resources
	7.M.3.1.2 Translate simple word statements into algebraic expressions and equations.  CL: D Calc: CN Content Limit: Expressions and equations may contain at most two operations and may require at most one grouping symbol. May contain one or two variables.	• Translate simple word statements into algebraic expressions and equations.	• Write equations or expressions that have the same meanings as the statements made with words. • Convert words to mathematical symbols	increase • decrease • sum • difference • quotient • product • greater • less than • opposite	• Write the following in an algebraic phrase. The sum of a number and 7	• Write the following as an expression: a) three less than twice a number b) the quotient of number and 7 c) the product of 3 and the sum of a number and 2 d) the square of a number increased by 5	<a href="http://www.ck12.org/idea/4755246_what-logical-problem-solving.html">http://www.ck12.org/idea/4755246_what-logical-problem-solving.html</a>
	7.M.3.1.3 Use symbols "<," ">," "=", "≠," "≤," and "≥" to express relationships.  CL: D Calc: CR Content Limit: Item may include integers between -50 and 50, up to two operations, at most one grouping symbol, and exponents limited to 2 and 3. May include one variable.	• Use symbols "<," ">," "=", "≠," "≤," and "≥" to express relationships.	• Identify the meaning of the different symbols: "<," ">," "=", "≠," "≤," and "≥" • Write inequalities and equations to represent numerical relationships	less than • more than • equal to • not equal to • greater than or equal to • and less than or equal to	• True or false $5 + 3 \leq 5 + 5$	• Put in the correct symbol (<, >, =) to make the statement true: a) $7^2$ ___ $7 * 2$ b) $(3*5)2 + 3$ ___ $18 + 15$ c) $(7+3)2$ ___ $7 + 3 \div 2$ • Sue can spend no more than \$35.00. Write this as an inequality expression.	
Goal 3.2: Evaluate algebraic expressions.	7.M.3.2.1 Evaluate simple numeric and algebraic expressions using commutative, associative, identity, zero, inverse, distributive, and substitution properties.  CL: C Calc: NO Content Limit: Expressions may include integers between -50 and 50, up to two operations, at most one grouping symbol, and exponents limited to 2 and 3. May include one variable.	• Evaluate simple numeric and algebraic expressions using commutative, associative, identity, zero, inverse, distributive, and substitution properties.	• Identify the property used to solve various expressions • Justify the use of one property over another • Evaluate simple algebraic expressions	commutative • associative • identity • zero • inverse • distributive • substitution	• Use the distributive property to solve. $2(3 + 4)$ • Solve $x + yz + xz$ • If $x = 2, y = 9,$ and $z = 6$	• Solve the following equations and name the property used: $(5 * 8) 7 = 5 (n * 7)$ $3 + n = 3$ $1/4 * n = 1$ $587 + 391 = 391 + N$ $6(50-32) =$ $7 + \_\_ = 10$	
	7.M.3.2.2 Use the order of operations in evaluating simple algebraic expressions.  CL: C Calc: NO Content Limit: Expressions may include integers between -50 and 50, up to four operations, at most two grouping symbols, and exponents limited to 2 and 3. The fraction bar may be used as a grouping symbol. May include one or two variables.	• Use the order of operations in evaluating simple algebraic expressions.	• List the correct order of operations • Apply the order of operations to simplify expressions	order of operations • parenthesis • brackets • variable	• Solve $x + yz + xz$ • If $x = 2, y = 9,$ and $z = 6$	• Use the order of operations to solve the following equations: $(7 + 8)/3 + 2 =$ $2^4 - 7(3) =$ $(5)6 + 18^3 \div 6 =$	
Goal 3.3: Solve algebraic equations and inequalities.	7.M.3.3.1 Solve one-step equations.  CL: C Calc: CR Content Limit: Equations may include integers between -50 and 50. Variable may appear on left or right side of equal sign.	• Solve one-step equations.	• Find a solution to the equation by applying the inverse operation to isolate and solve for the variable.	isolate • inverse • operation • variable	• $x + 11 = 97$	• $x - 25 = 50$ • $r - 58 = 72$ • $20x = 100$	
Goal 3.4: Understand the concept of functions.	7.M.3.4.1 Extend patterns involving rational numbers and describe the rule that generates the pattern.  CL: E Calc: CR Content Limit: Patterns involve adding or subtracting whole numbers, decimals, or fractions. Fraction denominators limited to 2, 3, 4, 5, 6, 8, and 10. Decimals to thousandths place. Items may ask the student to extend the pattern, state the rule for the pattern, or both.	• Extend patterns involving rational numbers and describe the rule that generates the pattern.	• State the rule for the pattern • Apply the rule to extend the pattern	rational number • pattern • rule	• Identify the pattern in the following sequence: 1, 4, 9, 16 ...	• Find the next three numbers and describe the rule: 2, 3, 5, 9, 17 ... 7, 6 ¼, 5 ½, 4 ¾, 4, ... .52, 1.04, 2.08, ...	<a href="http://www.ck12.org/idea/4755246_what-logical-problem-solving.html">http://www.ck12.org/idea/4755246_what-logical-problem-solving.html</a>

## Math - Grade 7

Idaho Department of Education Content Standards	Objective	Sub Objectives	Task Analysis	Essential Vocabulary	Clarifying Questions	Sample Assessment Questions	Resources
	7.M.3.4.2 Explain how a change in one quantity impacts a change in another quantity. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Explain how a change in one quantity impacts a change in another quantity.	• Predict the outcome when changing one quantity in an expression	predict • quantity • expression • outcome		• If the length of a rectangle is 4cm and the width is 2cm, What is the area? If the length and width are doubled, does the area double? Explain.	
	7.M.3.4.3 Use appropriate vocabulary and notations. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use appropriate vocabulary and notations.	• Communicate using mathematical terminology correctly		• As students are called upon in the classroom make sure that they are using correct mathematical language.		
Goal 3.5: Represent equations, inequalities and functions in a variety of formats.	7.M.3.5.1 Represent a simple set of data in a table, as a graph, and as a mathematical relationship. CL: C Calc: CR Content Limit: Relationship must be linear. Relationship is presented as a table, graph, or equation. Equation describing relationship must include one operation. The answer options will include a table, a graph, or an equation.	• Represent a simple set of data in a table, as a graph, and as a mathematical relationship.	• Interpret data in a table and graph • Create a linear graph or table using a simple set of data	graph • data • relationship • table	• Graph the following information for rainfall in Pocatello. Monday = 5 inches Tuesday = 0.5 inches Wednesday = 0 Thursday = 1 inch Friday = 0.3 Saturday = 0.4 Sunday = 3 inches Graph the line $y = x + 4$ Let $x$ be -2, 0, and 1	• Use $y = x + 3$ to complete the table of values, make a scatter plot, and determine if the values have a positive, negative, or no relationship.	
Goal 3.6: Apply functions to a variety of problems.	7.M.3.6.1 Use patterns and linear functions to represent and solve simple problems. CL: D Calc: CR Content Limit: Patterns may include rational numbers. Linear functions are limited to whole number variable values.	• Use patterns and linear functions to represent and solve simple problems.	• Create an input / output table • Select numbers and substitute for the variable • Plot the values on a coordinate plane	plot • substitute • coordinate plane • input/output tables		• Tell whether the situation would be represented as a linear or non-linear function. Explain your answer. a) The total cost of sunglasses is a function of the number of pairs you buy. Each pair of sunglasses costs \$10. b) The total cost of scarves is a function of the number of scarves you buy. The cost of a scarf is \$5. However, for every 3 scarves you buy, you get one free. Solution a) The function is linear. With each pair of sunglasses you buy, the cost increases at a constant rate of \$10. b) The function is non-linear. The cost increases steadily for every 3 scarves that you pay for, but then would stay the same as you get another scarf for free. It is not a constant rate situation.	<a href="http://www.classzone.com/cz/books/msmath_2_na/resources/pdfs/me_7_8.pdf">http://www.classzone.com/cz/books/msmath_2_na/resources/pdfs/me_7_8.pdf</a>
<b>Standard 4: Concepts and Principles of Geometry</b>							
Goal 4.1: Apply concepts of size, shape, and spatial relationships.	7.M.4.1.1 Classify relationships among types of one- and two-, dimensional geometric figures, using their defining properties. CL: D Calc: CN Content Limit: Figures may include triangles and quadrilaterals. Triangles may be classified by angles (acute, equiangular, obtuse, or right) or by sides (equilateral, isosceles, or scalene) or both (e.g., an obtuse isosceles triangle). Quadrilaterals may be classified according to number and position of parallel sides as well as angle measure (square, trapezoid, parallelogram, rectangle, or rhombus).	• Classify relationships among types of one- and two-, dimensional geometric figures, using their defining properties.	• List defining characteristics of geometrical figures • Compare one- and two- dimensional geometric figures	acute • obtuse • right • equilateral • isosceles • scalene • quadrilateral • parallel • perpendicular • trapezoid • parallelogram • rectangle • rhombus • square • triangle	• Classify the triangle by its sides.	• Name the quadrilateral, if more than one name applies, give all the names. a) A quadrilateral with two pair of parallel sides. b) A quadrilateral with two pair of non-congruent, parallel sides, and four right angles. c) A quadrilateral with four congruent sides and two pair of parallel sides, but no right angles.	<a href="http://www.classzone.com/cz/books/msmath_2_na/resources/pdfs/me_10_4.pdf">http://www.classzone.com/cz/books/msmath_2_na/resources/pdfs/me_10_4.pdf</a>

## Math - Grade 7

Idaho Department of Education Content Standards	Objective	Sub Objectives	Task Analysis	Essential Vocabulary	Clarifying Questions	Sample Assessment Questions	Resources
	7.M.4.1.2 Draw and measure various angles and shapes using appropriate tools.  CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Draw and measure various angles and shapes using appropriate tools.	• Demonstrate the use of protractor • Demonstrate the use of compass • Demonstrate the use of straight edge/ruler	protractor • compass • straight edge • angle • degree • vertex • line segment • point • ray • perimeter • area	• Draw a 60° angle using a protractor		<a href="http://www.mathsteacher.com.au/year7/ch08_angles/02_draw/draw.htm">http://www.mathsteacher.com.au/year7/ch08_angles/02_draw/draw.htm</a> <a href="http://www.mathplayground.com/measuringangles.html">http://www.mathplayground.com/measuringangles.html</a>
	7.M.4.1.3 Apply fundamental concepts, properties, and relationships among points, lines, rays, planes, and angles.  CL: C Calc: CN Content Limit: Items may include parallel, intersecting, and perpendicular lines. Angles may include acute, right, obtuse, straight, and congruent. Symbols may include: capital letter for points, two-headed arrow above two capital letters for lines, line segment above two capital letters for line segments, one-headed arrow above two capital letters for rays, angle symbol with one capital letter or angle symbol with three capital letters for angles, and symbols for parallel, perpendicular, and right angle.	• Apply fundamental concepts, properties, and relationships among points, lines, rays, planes, and angles.	• Describe the relationship between point, lines, rays, and angles • Identify point, line, ray, angle, and plane	point • line • ray • angle • plane	• Two rays that intersect to form a 90° angle create what type of lines?	• Tell whether the triangle is an acute, right or obtuse triangle. A) Triangle ABC: m A = 20° B = 45° C = 115°	<a href="http://www.mathleague.com/help/geometry/basicterms.htm">http://www.mathleague.com/help/geometry/basicterms.htm</a>
	7.M.4.1.4 Explain and model the effects of reflections, translations, and rotations on various shapes.  CL: D, E Calc: CN Content Limit: Items are limited to identifying the effects of a single transformation. Rotations are in increments of 45°. Rotations indicate clockwise or counterclockwise. 'Explain' to be assessed in the classroom, not on the ISAT.	• Explain and model the effects of reflections, translations, and rotations on various shapes.	• Describe reflection, translation, rotation • Show reflection, translation, rotation of various shapes	reflection • translation • rotation • transformation • clockwise • counterclockwise • 45-degree increment •	• Describe the transformation	• Name the transformation described: a) riding an escalator b) playing on the merry-go-round c) looking in the mirror	
	7.M.4.1.5 Identify congruence, similarities, and line symmetry of shapes.  CL: E Calc: CN Content Limit: Shapes limited to two-dimensional figures.	• Identify congruence, similarities, and line symmetry of shapes.	• Define and illustrate the terms: congruent, similar, and line of symmetry	congruent • similar • symmetry	• How many lines of symmetry does the following shape have?	• A square has 4 lines of symmetry and has rotational symmetry of 90° and 180°. • Tell how a rectangle compares to a square in lines of symmetry and rotational symmetry.	<a href="http://www.linkslearning.org/Kids/1_Math/2_Illustrated_Lessons/4_Line_Symmetry/index.html">http://www.linkslearning.org/Kids/1_Math/2_Illustrated_Lessons/4_Line_Symmetry/index.html</a>
	7.M.4.1.6 Describe the concept of surface area and volume (capacity).  CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Describe the concept of surface area and volume (capacity).	• Compare area, surface area and volume of various figures	surface area • volume • area • net	• Calculate the volume of the figure.		
	7.M.4.1.7 Use appropriate vocabulary and symbols.  CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use appropriate vocabulary and symbols.	• Communicate using mathematical terminology correctly		• As students are called upon in the classroom make sure that they are using correct mathematical language.		
Goal 4.2: Apply the geometry of right triangles.	No objectives at this grade level.						

## Math - Grade 7

Idaho Department of Education Content Standards	Objective	Sub Objectives	Task Analysis	Essential Vocabulary	Clarifying Questions	Sample Assessment Questions	Resources
Goal 4.3: Apply graphing in two dimensions.	7.M.4.3.1 Identify and plot points on a coordinate plane. CL: C Calc: CN Content Limit: Points may be in any of four quadrants or on an axis. Use integer coordinates.	• Identify and plot points on a coordinate plane.	• Demonstrate the rules associated with graphing on a coordinate plane	x axis • y axis • origin • quadrant • x,y coordinate • plot • points • ordered pair	• Plot the following points (-2, 3); (-4, 0); (1, 5)	• Plot the following points, and name the quadrant, or axis where they are found. (-5, 0); (-2, 5); (0, 5)(1,5) (-4,-5) (1, -3)	
<b>Standard 5: Data Analysis, Probability, and Statistics</b>							
Goal 5.1: Understand data analysis.	7.M.5.1.1 Read and interpret tables, charts, and graphs, including frequency tables, scatter plots, broken line graphs, line plots, bar graphs, histograms, circle graphs, and stem-and-leaf plots. CL: C Calc: CR Content Limit: For scatter plots and line graphs, scales are in increments of 1, 2, 5, and 10 and are consistent on x- and y-axis. No more than one table, chart, or graph per item.	• Read and interpret tables, charts, and graphs, including frequency tables, scatter plots, broken line graphs, line plots, bar graphs, histograms, circle graphs, and stem-and-leaf plots.	• Interpret graphical information to answer questions	table • chart • graph • frequency • scatter plots • broken line graphs • line plots • bar graphs • histograms • circle graphs • stem-and-leaf plots	• Which day had the highest temperature?	• Which day had the lowest temperature?	
	7.M.5.1.2 Explain conclusions drawn from tables, charts, and graphs. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Explain conclusions drawn from tables, charts, and graphs.	• Analyze information presented in tables, charts, and graphs • Justify responses for information gathered from tables, charts, and graphs	see above 5.1.1			
	7.M.5.1.3 Use appropriate vocabulary and notations. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use appropriate vocabulary and notations.	• Communicate correct mathematical terminology		• As students are called upon in the classroom make sure that they are using correct mathematical language.		
Goal 5.2: Collect, organize, and display data.	7.M.5.2.1 Collect, organize, and display data with appropriate notation in tables, charts and graphs, including scatter plots, broken line graphs, line plots, bar graphs, and stem-and-leaf plots. CL: C Calc: CR Content Limit: Given data, choose a display. Displays limited to scatter plots, broken line graphs, line plots, bar graphs, and stem-and-leaf plots. 'Collect' will be assessed in the classroom, not on the ISAT.	• Collect, organize, and display data with appropriate notation in tables, charts and graphs, including scatter plots, broken line graphs, line plots, bar graphs, and stem-and-leaf plots.	• Demonstrate and present numerical data and information in pictorial form • Select the most appropriate graph for the data collected	scale • labels • x -axis • y -axis • subtitles • grid lines • legend • interval	• Survey 25 students to determine their favorite type of soda and create a graph to represent your findings.	• Make a stem-and-leaf plot of the data. 15, 17, 9, 32, 17, 25, 21, 7, 35, 17	
Goal 5.3: Apply simple statistical measurements.	7.M.5.3.1 Determine the measures of central tendency – mean, median and mode – with sets of data. CL: C Calc: YES Content Limit: At most ten numbers in data set. Numbers are less than 300. Data set must contain at most a single mode. Data set may have an even number of data points, but should be in numeric order.	• Determine the measures of central tendency – mean, median and mode – with sets of data.	• Define and calculate mean, median, and mode • Arrange data in numerical order from least to greatest	measures of central tendency • mean • median • mode • average • numerical order	• From the following set of numbers calculate mean, median, and mode. 21, 9, 9, 2, 10, 3, 9, 3	• Make a stem-and-leaf plot of the data. 15, 17, 9, 32, 17, 25, 21, 7, 35, 17 • Find the mean, median, mode, and range.	
	7.M.5.3.2 Discuss distribution of data, including range, frequency, gaps, and clusters. CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Discuss distribution of data, including range, frequency, gaps, and clusters.	• Define range, frequency, gaps, and clusters	range • distribution • frequency • gaps • cluster	• Find the range of the following set of numbers: 21, 9, 9, 2, 10, 3, 9, 3		

## Math - Grade 7

Idaho Department of Education Content Standards	Objective	Sub Objectives	Task Analysis	Essential Vocabulary	Clarifying Questions	Sample Assessment Questions	Resources
Goal 5.4: Understand basic concepts of probability.	7.M.5.4.1 Predict, perform, and record results of simple probability experiments.  CL: C, D Calc: CN Content Limit: Items using multiple trials must be done with replacement. Items may ask for the probability of a combination of outcomes (e.g., the probability of drawing a red marble or a green marble). Items may require the representation of all possible outcomes.	• Predict, perform, and record results of simple probability experiments.	• Recognize the probability of an event is setting up the ratio of favorable outcomes to total outcomes	predict • probability • outcome • fair • unfavorable • favorable • likelihood	• What is the probability of getting "heads" when flipping a coin? • What is the probability of getting "heads" when flipping a coin 50 times? • Flip a coin fifty times and record your results in a frequency table. What was your probability for flipping heads; for flipping tails?	<a href="http://www.math-magic.com/probability.htm">http://www.math-magic.com/probability.htm</a>	
	7.M.5.4.2 Recognize equally likely outcomes.  CL: C, D Calc: CN Content Limit: Item describes a familiar situation such as spinning a spinner, rolling one or two dice (does not include sum of two dice), or drawing multi-color objects from a container. Equally likely outcomes must pertain to the same event.	• Recognize equally likely outcomes.	• Recognize an equally likely outcome has the same probability of occurring for that event	equally likely outcome	• In a bag of 12 marbles, 4 are red, 4 are green, and 4 are blue. Is the likelihood of drawing a red, green, or blue marble equal?	• Name two equally likely outcomes.	
	7.M.5.4.3 Explain that probability ranges from impossible to certain (0% to 100%).  CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Explain that probability ranges from impossible to certain (0% to 100%).	• Recognize 0% means impossible and 100% means certain • Compare fraction, percent & decimal representations of probability		• In a bag of 12 marbles, 4 are red, 4 are green, and 4 are blue. What is the probability of drawing a white marble?		
	7.M.5.4.4 Use the language of probability.  CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use the language of probability.	• Communicate correct mathematical terminology		• As students are called upon in the classroom make sure that they are using correct mathematical language.		
Goal 5.5: Make predictions or decisions based on data.	7.M.5.5.1 Make predictions based on simple theoretical probabilities.  CL: C, E Calc: CN Content Limit: Item describes a familiar situation such as spinning a spinner, rolling one or two dice (does not include sum of two dice), or drawing different colored objects from a container.	• Make predictions based on simple theoretical probabilities.	• Define theoretical probability and make predictions	theoretical probability	• What is the theoretical probability of rolling a one on a number cube. • How many times would you expect to flip heads on a coin when flipping the coin ten times?	<a href="http://argyll.epsb.ca/jreed/math7/strand4/4201.htm">http://argyll.epsb.ca/jreed/math7/strand4/4201.htm</a>	
	7.M.5.5.2 Use appropriate vocabulary and notations.  CL: Calc: Content Limit: Assessed in the classroom, not on the ISAT.	• Use appropriate vocabulary and notations.	• Communicate using mathematical terminology correctly		• As students are called upon in the classroom make sure that they are using correct mathematical language.		

[http://www.internet4classrooms.com/skills\\_7th\\_math.htm](http://www.internet4classrooms.com/skills_7th_math.htm)  
<http://www.classzone.com>  
<http://metacat2.com/iltestlinks.html>  
<http://argyll.epsb.ca/jreed/math7/>