

**Oregon's Academic Content Standards (CIM) Correlated to Larson's Intermediate Math  
Grade 6**

Oregon's Academic Content Standards (CIM) 2005-2006		Larson's Intermediate Math		
Grade-Level Standards		Module	Topic	Grade
<b>I. Calculations and Estimations</b>				
<b>1. Numbers</b>				
<b>Understand numbers, ways of representing numbers, relationships among numbers, and number systems.</b>				
1.	Order, model, and compare positive rational numbers (fractions, decimals, and percentages).	Fraction and Number Concepts	Fractions and Fraction Models	3, 4
		Fraction and Number Concepts	Mixed Numbers and Improper Fractions	3, 4, 5, 6
		Fraction and Number Concepts	Comparing Fractions Using Models	3, 4
		Fraction and Number Concepts	Comparing Fractions	4
		Fraction and Number Concepts	Comparing and Ordering Fractions and Mixed Numbers	5, 6
		Decimals	Decimals Through Hundredths	3, 4
		Decimals	Decimals Through Thousandths	5, 6
		Decimals	Comparing and Ordering Decimals Through Hundredths	3, 4
		Decimals	Comparing and Ordering Decimals Through Thousandths	5, 6
		Decimals	Relating Fractions and Decimals	3, 4, 5, 6
		Decimals	Relating Mixed Numbers and Decimals	3, 4, 5, 6
		Percents	Percents	5, 6
		Percents	Relating Fractions, Decimals, and Percents	5, 6
		Percents	Percents Greater Than 100%	5, 6
2.	Apply factors and multiples to express fractions in lowest terms and identify fraction equivalents.	Fractions and Number Concepts	Equivalent Fractions	3, 4
		Fractions and Number Concepts	Simplest Form	3, 4, 5, 6
3.	Understand rates and ratios as comparisons of two quantities by division.	Ratios and Proportions	Ratios	5, 6
		Ratios and Proportions	Equivalent Ratios	5, 6
4.	Differentiate between rates and ratios and express both as fractions.	Ratios and Proportions	Ratios	5, 6
5.	Solve problems by calculating rates and ratios.	Ratios and Proportions	All Topics	5, 6
6.	Locate positive rational numbers (fractions, decimals, and percentages) on a number line.	Decimals	Rounding Decimals Through Hundredths	3, 4
7.	Apply equivalent forms of fractions and decimals to solve problems.	Fraction and Number Concepts	Equivalent Fractions	3, 4
		Fractions and Number Concepts	Simplest Form	3, 4, 5, 6
		Decimals	Relating Fractions and Decimals	3, 4, 5, 6

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8.	Determine equivalent forms of fractions, mixed numbers, and improper fractions.	Fraction and Number Concepts	Equivalent Fractions	3, 4
		Fraction and Number Concepts	Mixed Numbers and Improper Fractions	3, 4, 5, 6
		Fraction and Number Concepts	Simplest Form	3, 4, 5, 6
9.	Model square numbers and recognize their characteristics.	Fraction and Number Concepts	Exponents	6
10.	Identify prime and composite numbers less than 100.	Fraction and Number Concepts	Prime and Composite Numbers	5, 6
11.	Solve problems using concepts related to factoring and determining divisibility (e.g., 2, 3, 5, 9 and 10).	Dividing Whole Numbers	Divisibility Rules	5, 6
		Fraction and Number Concepts	Exponents	6
		Fraction and Number Concepts	Greatest Common Factors	5, 6
<b>2. Computation and Estimation</b>				
<b>Compute fluently and make reasonable estimates.</b>				
1.	Develop and analyze algorithms for computing with fractions and mixed numbers.	Adding Fractions	All Topics	4, 5, 6
		Subtracting Fractions	All Topics	4, 5, 6
		Multiplying Fractions	All Topics	5, 6
		Dividing Fractions	All Topics	6
2.	Add and subtract fractions with like and unlike denominators.	Adding Fractions	All Topics	4, 5, 6
		Subtracting Fractions	All Topics	4, 5, 6
3.	Understand linear, area, and discrete models to multiply and divide fractions.	Multiplying Fractions	Multiplying Whole Numbers and Fractions Using Models	5
		Multiplying Fractions	Multiplying Fractions Using Models	5, 6
		Multiplying Fractions	Multiplying Mixed Numbers and Whole Numbers Using Models	5
		Dividing Fractions	Dividing Whole Numbers by Fractions	6
		Dividing Fractions	Dividing Fractions by Whole Numbers	6
		Dividing Fractions	Dividing Mixed Numbers by Whole Numbers	6
4.	Solve problems involving common percentages.	Percents	All Topics	5, 6
5.	Convert mentally among common decimals, fractions, and percentages.	Percents	Relating Fractions, Decimals, and Percents	5, 6

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6.	Apply grouping symbols to simplify calculations and evaluate expressions.	Multiplying Whole Numbers	Understanding the Distributive Property	5
		Dividing Whole Numbers	Order of Operations	5, 6
7.	Develop and use strategies to estimate the results of positive rational number computations and judge the reasonableness of results.	Subtracting Whole Numbers	Adding and Subtracting Money	3, 4, 5
		Adding Fractions	Adding Mixed Numbers with Unlike Denominators	4, 5
		Adding Fractions	Adding Mixed Numbers	5, 6
		Subtracting Fractions	Subtracting Mixed Numbers with Unlike Denominators	4, 5
		Multiplying Fractions	Multiplying Mixed Numbers and Whole Numbers Using Models	5
		Multiplying Fractions	Multiplying Mixed Numbers	5, 6
		Decimals	Rounding Decimals Through Hundredths	3, 4
		Decimals	Rounding Decimals Through Thousandths	5, 6
		Adding and Subtracting Decimals	Adding More Than Two Decimals	5, 6
		Adding and Subtracting Decimals	Subtracting Decimals (Regrouping)	4, 5
		Multiplying Decimals	Multiplying Decimals Through Thousandths	6
		Dividing Decimals	Dividing Decimals Through Hundredths	6
		Dividing Decimals	Dividing Decimals Through Thousandths	6
8.	Use referent numbers in estimating answers to adding and subtracting fractions and mixed numbers (e.g., $2 \frac{1}{4} + \frac{3}{8} < 3$ , since both $\frac{1}{4}$ and $\frac{3}{8}$ are less than $\frac{1}{2}$ ).	Adding Fractions	Adding Mixed Numbers with Unlike Denominators	4, 5
		Adding Fractions	Adding Mixed Numbers	5, 6
		Subtracting Fractions	Subtracting Mixed Numbers with Unlike Denominators	4, 5

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<b>3. Operations and Properties</b>				
<b>Understand meanings of operations and how they relate to one another.</b>				
1.	Use the inverse operations of addition and subtraction to solve problems and check solutions involving adding and subtracting fractions and mixed numbers.	Algebra	Solving Addition and Subtraction Equations	6
		Algebra	Solving Multiplication and Division Equations	6
2.	Apply the associative, commutative, and distributive properties to simplify computations with positive rational numbers.	Adding Whole Numbers	Properties of Addition	5
		Multiplying Whole Numbers	Multiplying Three Factors	5
		Multiplying Whole Numbers	The Distributive Property	5
<b>II. Statistics and Probability</b>				
<b>1. Statistics</b>				
<b>Select and use appropriate statistical methods to analyze data.</b>				
1.	Find, use, and interpret measures of center and spread.	Statistics and Probability	Mean, Median, Mode, and Range	4, 5, 6
<b>2. Probability</b>				
<b>Understand and apply basic concepts of probability.</b>				
1.	Determine experimental probability of an event from a set of data.	Statistics and Probability	Experimental Probability	5, 6
2.	Express probability using fractions, ratios, decimals, and percents.	Statistics and Probability	Probability	3, 4, 5
		Statistics and Probability	Probability of Simple Events	5, 6
		Statistics and Probability	Probability of Complementary Events	6
		Statistics and Probability	Experimental Probability	5, 6
3.	Understand that probability cannot determine an individual outcome, but can be used to predict the frequency of an outcome.	Statistics and Probability	Probability	3, 4, 5
		Statistics and Probability	Probability of Simple Events	5, 6
		Statistics and Probability	Probability of Complementary Events	6
		Statistics and Probability	Experimental Probability	5, 6
4.	Determine the number of possible combinations of two or more classes of objects (e.g., shirts, pants, and shoes).	Statistics and Probability	Sample Spaces	5, 6

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<b>3. Collect and Display Data</b>				
<b>Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.</b>				
1.	Design experiments and simulations to determine experimental probability of different outcomes.	Statistics and Probability	Experimental Probability	5, 6
2.	Understand that experimental probability approaches theoretical probability as the number of trials increases.	Statistics and Probability	Experimental Probability	5, 6
3.	Recognize and understand the connections among concepts of independent outcomes, picking at random, and fairness.	Statistics and Probability	Experimental Probability	5, 6
4.	Represent and interpret the outcome of a probability experiment using a frequency distribution, including determining experimental probabilities.	Statistics and Probability	Experimental Probability	5, 6
<b>4. Data Analysis and Predictions</b>				
<b>Develop and evaluate inferences and predictions that are based on data.</b>				
1.	Make predictions for succeeding trials of a probability experiment given the outcome of preceding repeated trials.	Statistics and Probability	Experimental Probability	5, 6
2.	Predict the outcome of a probability experiment by computing and using theoretical probability.	Statistics and Probability	Experimental Probability	5, 6
<b>III. Algebraic Relationships</b>				
<b>1. Patterns and Functions</b>				
<b>Understand patterns, relations, and functions.</b>				
1.	Represent, analyze, and determine rules for finding patterns involving positive rational numbers with tables, graphs, words, and when possible, symbolic rules.	Statistics and Probability	Line Graphs	4, 5, 6
		Algebra	Variables and Expressions	6
		Also covered in the Commander Problems titled Finding a Pattern, Using a Pattern, and Complete the Sequence.		
<b>2. Algebraic Relationships</b>				
<b>Represent and analyze mathematical situations and structures using algebraic symbols.</b>				
1.	Develop an understanding of different uses of variables (e.g., as a placeholder for a specific unknown, as representative of a range of values).	Algebra	Variables and Expressions	6
2.	Represent and evaluate algebraic expressions involving two variables (e.g., $bh/2$ , $2w + 2l$ ).	Algebra	Variables and Expressions	6
		Algebra	Evaluating Expressions	6
3.	Describe and interpret relationships using information from tables and graphs including coordinate graphs (first quadrant).	Statistics and Probability	Graphing Ordered Pairs	3, 4, 5
		Statistics and Probability	Line Graphs	4, 5, 6

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4.	Graph linear equations on a coordinate grid by making a table using whole number coordinates.	Statistics and Probability	Graphing Ordered Pairs	3, 4, 5
		Statistics and Probability	Line Graphs	4, 5, 6
		Integers	Graphing Ordered Pairs in the Coordinate Plane	6
<b>3. Modeling</b>				
Use mathematical models to represent and understand quantitative relationships.				
1.	Model and solve contextualized problems using various representations such as graphs, tables, and equations.	Statistics and Probability	Graphing Ordered Pairs	3, 4, 5
		Statistics and Probability	Line Graphs	4, 5, 6
		Integers	Graphing Ordered Pairs in the Coordinate Plane	6
		Algebra	Variables and Expressions	6
		Algebra	Solving Addition and Subtraction Equations	6
		Algebra	Solving Multiplication and Division Equations	6
		Algebra	Solving Equations with Integers	6
		Also covered in many other topics of Larson's Intermediate Math.		
2.	Recognize and represent direct variation using tables and graphs.			
3.	Identify and sketch a graph that models a given situation.	Statistics and Probability	Line Graphs	4, 5, 6
<b>4. Change</b>				
<b>Analyze change in various contexts.</b>				
1.	Investigate how a change in one variable relates to a change in a second variable.	Statistics and Probability	Line Graphs	4, 5, 6
<b>IV. Measurement</b>				
<b>1. Units and Tools</b>				
<b>Understand measurable attributes of objects and the units, systems, and processes of measurement.</b>				
1.	Select the most appropriate unit to measure area and perimeter.	Customary Units of Measure	Choosing Appropriate Units of Measure	3, 4
		Metric Units of Measure	Choosing Appropriate Units of Measure	3, 4
		Basic Geometry	Perimeter	3, 4, 6
		Basic Geometry	Area	3, 4
		Advanced Geometry	Perimeter and Area of a Rectangle	4, 5, 6
		Advanced Geometry	Area of a Triangle	5, 6

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Grade-Level Standards		Module	Topic	Grade
(IV.1.1. continued)		Advanced Geometry	Circumference and Area of a Circle	6
2.	Carry out unit conversions in the US customary system as a result of calculations involving measurements of length, perimeter, volume, and weight (e.g., $6 \frac{1}{2}'' + 3 \frac{3}{4}'' + 6 \frac{1}{2}'' = 16 \frac{3}{4}''$ or $1 \text{ ft } 4 \frac{3}{4}''$ ).	Customary Units of Measure	Measuring Length	3, 4
		Customary Units of Measure	Measuring Capacity	3, 4
		Customary Units of Measure	Measuring Weight	3, 4
3.	Convert from a measurement expressed in one unit within a system to another using a different unit within the same system to measure perimeter and area.	Customary Units of Measure	Measuring Length	3, 4
		Metric Units of Measure	Measuring Length	3, 4
<b>2. Direct and Indirect Measurement</b>				
<b>Apply appropriate techniques, tools, and formulas to determine measurements.</b>				
1.	Determine measurements of length and perimeter to the nearest eighth inch (for length less than one foot) and nearest inch (for lengths greater than one foot).	Customary Units of Measure	Measuring Length	3, 4
		Basic Geometry	Perimeter	3, 4, 6
		Advanced Geometry	Perimeter and Area of a Rectangle	4, 5, 6
2.	Estimate the measures of angles greater than 180 degrees.	Advanced Geometry	Classifying Angles	3, 4, 5, 6
3.	Develop and use formulas for finding perimeter and area of polygons.	Basic Geometry	Perimeter	3, 4, 6
		Basic Geometry	Area	3, 4
		Advanced Geometry	Perimeter and Area of a Rectangle	4, 5, 6
		Advanced Geometry	Area of a Triangle	5, 6
4.	Calculate the area and circumference of a circle using pi as well as common approximations of pi (e.g., 3.14, $\frac{22}{7}$ ).	Advanced Geometry	Circumference and Area of a Circle	6
5.	Develop strategies for determining approximate perimeter and area of irregular shapes.	Basic Geometry	Perimeter	3, 4, 6
		Basic Geometry	Area	3, 4
		Advanced Geometry	Area of a Triangle	5, 6
6.	Determine the area of a complex figure representative of a problem situation composed of a combination of two or more geometric figures (e.g., attach a triangle to a parallelogram).	Basic Geometry	Area	3, 4

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7.	Recognize that two-dimensional shapes having the same perimeter may have different areas and that shapes having the same area may have different perimeters.	Advanced Geometry	Perimeter and Area of a Rectangle	4, 5, 6
8.	Analyze how changes in area of a figure affect the dimensions of the figure.	Basic Geometry	Area	3, 4, 5
		Advanced Geometry	Perimeter and Area of a Rectangle	4, 5, 6
		Advanced Geometry	Area of a Triangle	5, 6
9.	Use referents to make estimates of area and evaluate the reasonableness of the estimate (e.g., estimate area of classroom by measuring area of one floor tile).	Basic Geometry	Area	3, 4, 5
10.	Calculate rates (e.g., miles per hour, miles per gallon, people per square mile) to solve problems.			
<b>V. Geometry</b>				
<b>1. Properties and Relationships</b>				
<b>Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.</b>				
1.	Identify, describe, compare and classify polygons by their sides and angles.	Basic Geometry	Classifying Plane Figures	3, 4, 5, 6
		Basic Geometry	Classifying Triangles	5, 6
		Basic Geometry	Classifying Quadrilaterals	5, 6
2.	Identify and represent the radius, center, diameter, chord, and circumference of a circle.	Basic Geometry	Circles	4, 5
		Advanced Geometry	Circumference and Area of a Circle	6
3.	Identify combinations of angles that are complementary or supplementary and determine their measures.			
4.	Use properties of polygons to determine the lengths of sides and perimeters.	Basic Geometry	Perimeter	3, 4, 6
		Basic Geometry	Classifying Triangles	5, 6
		Basic Geometry	Classifying Quadrilaterals	5, 6
		Advanced Geometry	Perimeter and Area of a Rectangle	4, 5, 6
5.	Develop, understand, and apply the property of the sum of the measures of the interior angles in a polygon as well as the sum of the exterior angles.			
6.	Find and use congruent polygons which will cover a surface without overlapping (tessellation).	Basic Geometry	Slides, Flips, and Turns	3, 4, 5, 6

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<b>2. Modeling</b>				
<b>Use visualization, spatial reasoning, and geometric modeling to solve problems.</b>				
1.	Model, sketch, draw, and label polygons, circles (including the center, radius, and diameter), complementary angles, supplementary angles, vertical angles, and adjacent angles.	Basic Geometry	Classifying Plane Figures	3, 4, 5, 6
		Basic Geometry	Classifying Triangles	5, 6
		Basic Geometry	Classifying Quadrilaterals	5, 6
		Basic Geometry	Circles	4, 5
		Advanced Geometry	Classifying Angles	3, 4, 5, 6
2.	Identify and describe the intersection of two or more geometric figures in the plane (e.g., the intersection of a circle and a line).			
<b>3. Coordinate Geometry</b>				
<b>Specify locations and describe spatial relationships using coordinate geometry and other representational systems</b>				
1.	Plot polygons on coordinate graphs (first quadrant).	Statistics and Probability	Graphing Ordered Pairs	3, 4, 5
2.	Determine lengths and areas of simple polygons from coordinate graphs.	Basic Geometry	Perimeter	3, 4, 6
		Basic Geometry	Area	3, 4
		Advanced Geometry	Perimeter and Area of a Rectangle	4, 5, 6
		Advanced Geometry	Area of a Triangle	5, 6
<b>4. Transformations and Symmetry</b>				
<b>Apply transformations and use symmetry to analyze mathematical situations.</b>				
1.	Build or sketch a shape that has a given number of lines of symmetry, or rotational symmetries (e.g., sketch a simple polygon with a given number of lines of symmetry).	Basic Geometry	Slides, Flips, and Turns	3, 4, 5, 6
		Advanced Geometry	Symmetry	3, 4, 6
<b>VI. Mathematical Problem Solving</b>				
<b>1. Conceptual Understanding</b>				
<b>Select, apply, and translate among mathematical representations to solve problems.</b>				
1.	Interpret the concepts of a problem-solving task and translate them into mathematics.	Covered in many topics of Larson's Intermediate Math.		
<b>2. Processes and Strategies</b>				
<b>Apply and adapt a variety of appropriate strategies to solve problems.</b>				
1.	Choose strategies that can work and then carry out the strategies chosen.	Covered in many topics of Larson's Intermediate Math including Mental Math, Estimation, Use a Calculator, Reasoning, Model It, and Using Models.		

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<b>3. Verification</b>				
<b>Monitor and reflect on the process of mathematical problem solving.</b>				
1.	Produce identifiable evidence of a second look at the concepts/strategies/calculations to defend a solution.	Covered in many topics of Larson's Intermediate Math.		
<b>4. Communication</b>				
<b>Communicate mathematical thinking coherently and clearly; Use the language of mathematics to express mathematical ideas precisely.</b>				
1.	Use pictures, symbols, and/or vocabulary to convey the path to the identified solution.	Covered in many topics of Larson's Intermediate Math.		
<b>5. Accuracy</b>				
<b>Accurately solve problems that arise in mathematics and other contexts.</b>				
1.	Accurately solve problems using mathematics.	Covered in many topics of Larson's Intermediate Math.		