

Fifth Grade Mathematics Content Standards and Objectives

Standard 1:	Number and Operations	
M.S.5.1	Through communication, representation, reasoning and proof, problem solving, and making connections within and beyond the field of mathematics, students will <ul style="list-style-type: none"> • demonstrate understanding of numbers, ways of representing numbers, and relationships among numbers and number systems, • demonstrate meanings of operations and how they relate to one another, and • compute fluently and make reasonable estimates. 	
Objectives	Students will	PLT Activity and Page
M.O.5.1.1	read, write, order and compare all whole numbers, fractions, mixed numbers and decimals using multiple strategies (e.g., symbols, manipulatives, number line).	
M.O.5.1.2	demonstrate an understanding of place value of each digit utilizing standard and expanded form in any whole number using powers of 10 $[(3 \times 10^5) + (4 \times 10^3) + 7 \times 10^2) + (1 \times 10^1) + 6]$.	
M.O.5.1.3	estimate solutions to problems involving whole numbers, decimals, fractions, and percents to determine reasonableness using benchmarks.	
M.O.5.1.4	use inductive reasoning to identify the divisibility rules of 2, 3, 5, 9 and 10 and apply the rules to solve application problems.	
M.O.5.1.5	determine and apply greatest common factor and lowest common multiple to write equivalent fractions and to real-world problem situations.	
M.O.5.1.6	model and write equivalencies of fractions decimals, percents, and ratios.	#85 In the Driver's Seat p.370
M.O.5.1.7	analyze and solve application problems and justify reasonableness of solution in problems involving addition and subtraction of: <ul style="list-style-type: none"> • fractions and mixed numbers • decimals. 	
M.O.5.1.8	apply the distributive property as it relates to multiplication over addition.	
M.O.5.1.9	solve multi-digit whole number division problems using a variety of strategies, including the standard algorithm and justify the solutions.	
M.O.5.1.10	demonstrate fluency in addition, subtraction, multiplication and division of whole numbers.	#85 In the Driver's Seat p.370
M.O.5.1.11	solve real-world problems involving whole numbers, decimals and fractions using multiple strategies and justify the reasonableness by estimation.	#67 How Big is Your Tree? p.288 #85 In the Driver's Seat p.370
Standard 2:	Algebra	

M.S.5.2	Through communication, representation, reasoning and proof, problem solving, and making connections within and beyond the field of mathematics, students will <ul style="list-style-type: none"> demonstrate understanding of patterns, relations and functions, represent and analyze mathematical situations and structures using algebraic symbols, use mathematical models to represent and understand quantitative relationships, and analyze change in various contexts. 	
Objectives	Students will	PLT Activity and Page
M.O.5.2.1	use inductive reasoning to find missing elements in a variety of patterns (e.g., square numbers, arithmetic sequences).	
M.O.5.2.2	given an input/output model using two operations, determine the rule, output or input.	
M.O.5.2.3	solve simple equations and inequalities using patterns and models of real-world situations, create graphs on number lines of the equations and interpret the results.	
M.O.5.2.4	model identify and describe square, prime and composite numbers.	
Standard 3:	Geometry	
M.S.5.3	Through communication, representation, reasoning and proof, problem solving, and making connections within and beyond the field of mathematics, students will <ul style="list-style-type: none"> analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships, specify locations and describe spatial relationships using coordinate geometry and other representational systems, apply transformations and use symmetry to analyze mathematical situations, and solve problems using visualization, spatial reasoning, and geometric modeling. 	
Objectives	Students will	PLT Activity and Page
M.O.5.3.1	classify and compare triangles by sides and angles; measure the angles of a triangle using a protractor.	
M.O.5.3.2	construct and analyze three-dimensional shapes using properties (i.e. edges, faces or vertices).	
M.O.5.3.3	create a design with more than one line of symmetry.	
M.O.5.3.4	construct a circle with a given radius or diameter.	#48 Field, Forest, and Stream p.203
M.O.5.3.5	draw a similar figure using a scale, given a real-world situation.	#48 Field, Forest, and Stream p.203

Standard 4:	Measurement	
M.S.5.4	<p>Through communication, representation, reasoning and proof, problem solving, and making connections within and beyond the field of mathematics, students will</p> <ul style="list-style-type: none"> demonstrate understanding of measurable attributes of objects and the units, systems, and processes of measurement, and apply appropriate techniques, tools and formulas to determine measurements. 	
Objectives	Students will	PLT Activity and Page
M.O.5.4.1	estimate, measure, compare, order and draw lengths of real objects in parts of an inch up to 1/8 of an inch and millimeters.	#41 How Plants Grow p.179 #48 Field, Forest, and Stream p.203 #65 Bursting Buds p.279 #66 Germinating Giants p.284
M.O.5.4.2	model, calculate and compare area of triangles and parallelograms using multiples strategies (including, but not limited to, formulas).	
M.O.5.4.3	develop strategies (i.e. finding number of same sized units of volume) to determine the volume of a rectangular prism; solve application problems involving estimating or measuring volume of rectangular prisms.	
M.O.5.4.4	describe the effects on the measurements of a two-dimensional shape (such as its perimeter and area) when the shape is changed in some way, justify changes.	
M.O.5.4.5	solve real-world problems requiring conversions within a system of measurement.	#53 On the Move p.232 #67 How Big is Your Tree? p.288 #85 In the Driver's Seat p.370
M.O.5.4.6	estimate and/or measure the weight/mass of real objects in ounces, pounds, grams, and kilograms.	
M.O.5.4.7	collect, record, estimate and calculate elapsed times from real-world situations (with and without technology)	
M.O.5.4.8	determine the actual measurements of a figure from a scale drawing, using multiple strategies.	
Standard 5:	Data Analysis and Probability	
M.S.5.5	<p>Through communication, representation, reasoning and proof, problem solving, and making connections within and beyond the field of mathematics, students will</p> <ul style="list-style-type: none"> formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them, select and use appropriate statistical methods to analyze data, develop and evaluate inferences and predictions that are based on models, and apply and demonstrate an understanding of basic concepts of probability. 	

Objectives	Students will	PLT Activity and Page
M.O.5.5.1	construct a sample space and make a hypothesis as to the probability of a real life situation overtime, test the prediction with experimentation, and present conclusions (with and without technology).	#80. Nothing Succeeds Like Succession p.345
M.O.5.5.2	construct, read, and interpret tables, charts, and graphs including stem and leaf plots to draw reasonable inferences or verify predictions.	
M.O.5.5.3	collect and organize real-world data to construct a circle graph (with and without technology), present data and draw conclusions.	
M.O.5.5.4	collect and analyze data using mean, median and mode to determine the best statistical measure.	