



**ALASKA**  
**Sixth Grade Math Performance Standards**  
*Impact Mathematics: Algebra and More*  
**Course 1 © 2004**

STANDARDS	PAGE REFERENCES
<b>6:1 Estimation:</b>	
.1 Explain to what place it is reasonable to round given data.	SE: 104-105, 128-131 <i>On Your Own Exercises</i> 107 #30-#34, 137 #1-#5, #33-#38
.2 Estimate lengths, weights, areas, and volumes.	SE: 484-485, 504-507, 515-517, 518-521, 522-524 <i>On Your Own Exercises</i> 528-534
.3 Estimate products and quotients.	SE: 104-105, 128-131, 178-181, 182-185, 185-188 <i>On Your Own Exercises</i> 189-197
.4 Estimate the fractional part or percent of a whole.	SE: 104-105, 226-230, 234-236, 236-239
.5 Estimate the measure of angles.	SE: 46-49, 466, 467-471 <i>On Your Own Exercises</i> 62 #4-#11, 65 #34-#35 TG: T466
.6 Round numbers to estimate answers to word problems.	SE: 104-105, 130-131 <i>On Your Own Exercises</i> 110-111 #45-#46, 241 #19-#20 TG: T130
.7 Use estimation to check reasonableness of results of operations.	SE: 104-105, 128-131, 233 <i>On Your Own Exercises</i> 215-216 #25-#28
<b>6:2 Number Sense:</b>	
.1 Model the rounding of large and small numbers to a given place.	SE: 104-105, 128-131 <i>On Your Own Exercises</i> 107 #30-#34, 137 #1-#3, 139 #33-#38, 216-217 #33-#34 TG: T202
.2 Model, order, read, and write whole numbers, fractions, decimals, percents, and <sup>1</sup> .	SE: 99-101, 102-103, 120-122, 128-131, 131-134, 134-136 <i>On Your Own Exercises</i> 124 #24-#26
.3 Order, read, and write positive and negative numbers.	SE: 143-145 <i>On Your Own Exercises</i> 146-147 <i>Review and Self-Assessment</i> 150 #13-#15
.4 Convert data from tables to fractions, decimals, and percents.	SE: 133, 236-239 <i>On Your Own Exercises</i> 243 #28 TG: T134
.5 Convert between mixed numbers, fractions, and decimals.	SE: 99-101, 102-103, 131-134, 134-136, 236-239 <i>On Your Own Exercises</i> 106-107 #6-#21, 137-140

STANDARDS	PAGE REFERENCES
.6 Identify and explain prime and composite numbers.	SE: 79-81 <i>Lab Investigation</i> 88-89 <i>Remember</i> 616 <i>On Your Own Exercises</i> 90-95, 616 #7 TG: T80-T81
.7 Simplify fractions.	SE: 99-101 <i>On Your Own Exercises</i> 106-107 #6-#21 <i>Review and Self-Assessment</i> 149 #5 TG: T99-T101
.8 Use models, pictures, or symbols to show equivalent representations of a ratio.	SE: 99-101 <i>On Your Own Exercises</i> 106-107 #6-#21 TG: T101
<b>6:3 Concepts of Number Operations:</b>	
.1 Write and solve word problems involving fractions and decimals.	SE: 128-131, 131-134, 134-136 <i>On Your Own Exercises</i> 137-140
.2 Use models, pictures, or symbols to solve word problems using rational numbers.	SE: 97-98, 112-117 <i>On Your Own Exercises</i> 106 #1-#5, 123 #1a, #2a, 190 #5-#6, 244 #33
.3 Use manipulatives to model and explain strategies for finding sums, differences, products, and quotients of decimals and fractions.	SE: 154-157, 157-160, 161-163, 198-201, 201-203, 204-206, 207-210, 210-212 <i>On Your Own Exercises</i> 25-26, 27 #23-#28
.4 Show that the product of a number and its reciprocal is one.	SE: 182-185, 185-188 <i>On Your Own Exercises</i> 191 #19-#30
.5 Write the product of repeated factors in exponential form.	SE: 81, 498-500, 501-503 <i>On Your Own Exercises</i> 508-509 #11-#28
.6 Demonstrate that “ - ” can mean: take away, difference or “the opposite of”.	SE: 142-145 <i>On Your Own Exercises</i> 146-147 TG: T143
<b>6:4 Computation:</b>	
.1 Find a quotient using a two-digit divisor.	SE: 207-210, 210-212 <i>On Your Own Exercises</i> 215-216 TG: QQ 220
.2 Convert fractions to equivalent mixed numbers or decimals.	SE: 128-131, 131-134, 134-136 <i>On Your Own Exercises</i> 137-140 <i>Review and Self-Assessment</i> 150 #10-#12 TG: QC #2-#3
.3 Find sums, differences, products and quotients of fractions, decimals, and mixed numbers.	SE: 157-160, 161-163, 172-174, 175-177, 185-188, 201-203, 204-206, 207-209, 210-212, <i>Lab Investigation</i> 164-165
.4 Find sums and differences of positive and negative numbers.	See Glencoe’s <i>Impact Mathematics: Algebra and More Course 2</i> © 2004. SE: 218-219, 222-227, 228-230, 231-233, 234-235 <i>On Your Own Exercises</i> 236-240
.5 Find equivalent values between fractions, decimals, and percents.	SE: 99-101, 128-131, 131-134, 134-136, 236-239 <i>On Your Own Exercises</i> 106-107 #6-#21, 137-140

STANDARDS	PAGE REFERENCES
.6 Find the percent of a number.	SE: 261-263, 264-267 <i>Lab Investigation</i> 268-269 <i>On Your Own Exercises</i> 270-272 TG: SA T262
.7 Use mental math when appropriate.	This objective is implied throughout the book with estimation strategies. SE: 204-206
.8 Use a calculator when appropriate.	SE: 20, 200 #1-#7, 507 <i>Lab Investigation</i> 164-165
<b>6:5 Geometry:</b>	
.1 Identify and classify 2- and 3-dimensional geometric shapes in the real world.	SE: 42-46, 46-49, 50-53, 54-57, 466-471, 472-476, 515-517 <i>Lab Investigation</i> 58-60 <i>On Your Own Exercises</i> 61-68
.2 Compare properties of 2- and 3-dimensional shapes.	SE: 42-46, 46-49, 50-53, 54-57, 466-471, 472-476, 515-517 <i>Lab Investigation</i> 58-60 <i>On Your Own Exercises</i> 61-68
.3 Construct a circle with a given diameter or radius.	SE: 486-489 <i>On Your Own Exercises</i> 491 #6-#9
.4 Use corresponding sides and angles to identify similar polygons.	SE: 42-46, 46-49, 50-54, 54-57, 466-471 <i>Lab Investigation</i> 58-60 <i>On Your Own Exercises</i> 61-68
.5 Use a ruler and protractor to construct congruent triangles and quadrilaterals.	SE: 54-57 <i>Lab Investigation</i> 58-60
.6 Use a compass and a straight edge to construct a figure from a given set of directions.	SE: 42-46, 46-49, 50-53, 54-57 <i>Lab Investigation</i> 58-60
<b>6:6 Measurement</b>	
.1 Use a protractor to draw and measure angles.	SE: 467-471, 472-476 <i>On Your Own Exercises</i> 477-480 TG: T467-471
.2 Find the surface area of a cube, rectangular prism, and pyramid.	See Glencoe's <i>Impact Mathematics: Algebra and More Course 2</i> © 2004. SE: 98-99, 109-112, 501-504 <i>On Your Own Exercises</i> 122 #1, 124 #10
.3 Find the volume of a cube and a rectangular prism.	See Glencoe's <i>Impact Mathematics: Algebra and More Course 2</i> © 2004. SE: 109-112, 112-116, 116-119, 499-500 <i>Lab Investigation</i> 119-121
.4 Use manipulatives to explain how to find the circumference and area of a circle.	SE: 486-489, 522-524 <i>Lab Investigation</i> 527 #12-#14 <i>On Your Own Exercises</i> 491 #6-#9
.5 Solve rate problems involving life applications.	SE: 429 #21, 582 #19, 583 #22, 596 #22
.6 Measure to the nearest 1/8 of an inch or one millimeter.	SE: 117-119, 482-486 <i>On Your Own Exercises</i> 490-491 #1-#4
.7 Use manipulatives and grids to construct scale drawings and models.	SE: 152, 249-251 <i>Lab Investigation</i> 58-60 <i>On Your Own Exercises</i> 256 #1-#5, 258 #23

STANDARDS	PAGE REFERENCES
<b>6:7 Statistics:</b>	
.1 Find the mean, median, mode, and range of a set of data.	SE: 362-365, 366-369, 370-372, 373-376, 394-395 <i>On Your Own Exercises</i> 380-388 <i>Lab Investigation</i> 396-398
.2 Collect and organize a set data.; use it to construct charts, tables, or graphs.	SE: 342-345, 346-349, 350-352, 377-379, 390-393, 394-395 <i>On Your Own Exercises</i> 353-360, 399-401
.3 Describe and explain data from tables, charts and graphs; and use the data to predict an outcome.	SE: 317-318, 319-320, 320-323, 343-345 <i>Lab Investigation</i> 324-326
.4 Evaluate data to determine reasonableness, validity, propaganda, and prejudice.	SE: 317-318, 319-320, 320-323, 346-349, 377-379, 390-393 <i>On Your Own Exercises</i> 353-360, 399-401
<b>6:8 Probability:</b>	
.1 Present a set of probability data using percents and ratios.	SE: 605-607, 608-612, 621-622, 623-624, 624-625, 626-630 <i>Lab Investigation</i> 613-614 <i>On Your Own Exercises</i> 615-618, 631-636
.2 Design an experiment with given criteria, make predictions, record the results, and compare the predicted outcome with the actual results.	SE: 605-607, 608-612, 621-622, 623-624, 624-625, 626-630 <i>Lab Investigation</i> 613-614 <i>On Your Own Exercises</i> 615-618, 631-636
.3 Compute the probability of chance and expected outcomes.	SE: 605-607, 608-612, 621-622, 623-624, 624-625, 626-630 <i>Lab Investigation</i> 613-614 <i>On Your Own Exercises</i> 615-618, 631-636
.4 Create a data set, given the maximum and minimum values and the mean.	SE: 363, 366-369, 370-372 <i>Lab Investigation</i> 396-398 <i>Review and Self-Assessment</i> 402
.5 Create probability problems about chance occurrences that are expressed as simple ratios and percents.	SE: 605-607, 608-612, 621-622, 623-624, 624-625, 626-630 <i>Lab Investigation</i> 613-614 <i>On Your Own Exercises</i> 615-618, 631-636
<b>6:9 Patterns:</b>	
.1 Identify and continue number sequences and geometric patterns.	SE: 4-9, 10-12, 14-18, 32-35, 36-41, 42-45, 410-413
.2 Find and describe patterns in nature.	SE: 4-9 <i>On Your Own Exercises</i> 10-13, 39 #12 TG: T4-T9
.3 Explain patterns in the relationships between area and perimeter.	SE: 482-486, 494-498, 498-501, 501-503, 514-517, 518-521, 522-524 <i>Lab Investigation</i> 525-527
.4 Use symbols to describe number patterns.	SE: 4-9, 32-35, 410-413, 414-148, 436-439 <i>On Your Own Exercises</i> 36-41, 422-429
.5 Create a story that describes the behavior of a graph.	SE: 278-282, 282-286, 286-291, 430-432 <i>Lab Investigation</i> 433-435 <i>On Your Own Exercises</i> 292-299
.6 Find a pattern, explain its rule, and extend the pattern.	SE: 15-18, 28-31, 32-35, 410-413 <i>On Your Own Exercises</i> 23-26 #1-#3, 15, 18-21, 36-41

<b>STANDARDS</b>	<b>PAGE REFERENCES</b>
.7 Explain the patterns found in tables and graphs.	SE: 28-31, 32-35, 410-413, 414-418, 419-421 <i>On Your Own Exercises</i> 36-41, 422-429
.8 Explain how to use patterns as a strategy for problem solving.	SE: 4-9, 10-12, 14-18, 32-35, 36-41, 42-45, 410-413
<b>6:10 Algebra:</b>	
.1 Use manipulatives to model and solve simple algebraic problems created from life situations.	SE: 560-562, 571-573, 574-576, 576-578 <i>Lab Investigation</i> 563-564
.2 Graph data from a table of values.	SE: 300-301, 302-305, 306-310, 317-318, 319-320 <i>On Your Own Exercises</i> 311-315
.3 Complete a table using a formula.	SE: 15-18, 430-432, 454, 484, 488, 497, 517, 519 <i>Lab Investigation</i> 525-527 <i>On Your Own Exercises</i> 24, 433
.4 Use manipulatives to solve a simple equation.	SE: 560-562, 571-573, 574-576, 576-578 <i>On Your Own Exercises</i> 579-583
.5 Explain the process used to solve a one-step equation.	SE: 559-560, 560-562, 570-573, 574-576, 576-578 <i>Lab Investigation</i> 563-564
.6 Apply the rules for order of operations and parentheses to simplify number sentences.	SE: 19-22, 501-503 <i>Remember</i> 412 <i>On Your Own Exercises</i> 25 #7-#14, 41 #25-#27, 509 #21-#28 <i>Review and Self-Assessment</i> 71 #4 TG: TT T20
.7 Use symbols to model a word problem.	SE: 436-439, 439-442, 451-454, 455-456 <i>On Your Own Exercises</i> 443-448, 457-459
.8 Write and solve number sentences that contain a variable.	SE: 410-414, 414-418, 419-421, 560-562 <i>Share &amp; Summarize</i> 454 <i>On Your Own Exercises</i> 565-569
<b>6:11 Problem Solving:</b>	
.1 Analyze and summarize a problem using the relationships that exist between the known facts and unknown information.	SE: 29-31, 32-35, 282-286, 286-291, 320-323, 592-593 <i>On Your Own Exercises</i> 36-42
<b>6:12 Communication:</b>	
.1 Explain strategies used to solve problems involving multiple operations.	SE: 451-454, 589-591 <i>Lab Investigation</i> 88-89, 433-435, 563 TG: T563
<b>6:13 Reasoning:</b>	
.1 Justify solutions using examples and counter examples.	SE: 14-18, 410-414, 414-418 <i>On Your Own Exercises</i> 23-27, 422-429
<b>6:14 Connections:</b>	
.1 Apply mathematical skills and processes to other disciplines (e.g., time lines in social studies and scientific notation in space distances).	SE: 430-432 <i>On Your Own Exercises</i> 296 #9, 299 #14, 328 #2-#4, #6-#7, #9, 446 #14-#15, #18-#19, #21

## Codes Used for TG Pages

QC	Quick Check
QQ	Quick Quiz
SA	On the Spot Assessment
TT	Tips from Teacher