



SOUTH DAKOTA
Mathematics Standards 9-12
***Geometry: Concepts and Applications* © 2004**

OBJECTIVES	PAGE REFERENCES
Core High School Geometry Grade Standards, Supporting Skills, and Examples	
Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.	
9-12.G.1.1. Students are able to apply the properties of triangles and quadrilaterals to find unknown parts.	SE: pages 203-207 (Chapter 5, Lesson 4) pages 208-209 (Chapter 5) pages 210-214 (Chapter 5, Lesson 5) pages 215-219 (Chapter 5, Lesson 6) page 221 #20-#21 (Chapter 5) pages 356-361 (Chapter 9, Lesson 2) pages 362-367 (Chapter 9, Lesson 3) pages 368-373 (Chapter 9, Lesson 4) TWE: A page 207 (Chapter 5, Lesson 4) A page 361 (Chapter 9, Lesson 2) EC page 207 (Chapter 5, Lesson 4) EC page 214 (Chapter 5, Lesson 5) EC page 219 (Chapter 5, Lesson 6) RA page 205 (Chapter 5, Lesson 4) RA page 212 (Chapter 5, Lesson 5) <i>Enrichment Masters</i> page 28 <i>Hands-On Geometry Masters</i> page 65 <i>Practice Masters</i> pages 28, 29, 48 <i>Study Guide Masters</i> pages 28, 29, 48
9-12.G.1.2. Students are able to identify and apply relationships among triangles.	
<ul style="list-style-type: none"> • Definitions and postulates 	SE: pages 188-192 (Chapter 5, Lesson 1) pages 208-209 (Chapter 5) pages 210-214 (Chapter 5, Lesson 5) pages 215-219 (Chapter 5, Lesson 6) TWE: A page 192 (Chapter 5, Lesson 1) A page 214 (Chapter 5, Lesson 5) A page 219 (Chapter 5, Lesson 6) RA page 190 (Chapter 5, Lesson 1) RA page 212 (Chapter 5, Lesson 5) RA page 217 (Chapter 5, Lesson 6) <i>Enrichment Masters</i> page 25 <i>Hands-On Geometry Masters</i> pages 66, 67, 68 <i>Practice Masters</i> pages 25, 29, 30 <i>Study Guide Masters</i> pages 25, 29, 30

OBJECTIVES	PAGE REFERENCES
<ul style="list-style-type: none"> Similarity theorems 	SE: pages 356-361 (Chapter 9, Lesson 2) pages 362-367 (Chapter 9, Lesson 3) page 373 #26 (Chapter 9, Lesson 4) page 378 #34-#35 (Chapter 9, Lesson 5) page 395 #20-#21 (Chapter 9) page 397 #8-#10 (Chapter 9) TWE: A page 367 (Chapter 9, Lesson 3) EC page 367 (Chapter 9, Lesson 3) RA page 365 (Chapter 9, Lesson 3) TT page 363 (Chapter 9, Lesson 3) <i>Hands-On Geometry Masters</i> page 101 <i>Practice Masters</i> pages 48, 49 <i>Study Guide Masters</i> pages 48, 49
<ul style="list-style-type: none"> Congruence theorems 	SE: pages 203-207 (Chapter 5, Lesson 4) pages 208-209 (Chapter 5) pages 210-214 (Chapter 5, Lesson 5) pages 215-219 (Chapter 5, Lesson 6) page 222 #22-#25 (Chapter 5) page 223 #17-#19 (Chapter 5) TWE: A page 207 (Chapter 5, Lesson 4) EC page 207 (Chapter 5, Lesson 4) EC page 214 (Chapter 5, Lesson 5) HG page 204 (Chapter 5, Lesson 4) MTL page 203 (Chapter 5, Lesson 4) RA page 212 (Chapter 5, Lesson 5) RA page 217 (Chapter 5, Lesson 6) <i>Enrichment Masters</i> page 28 <i>Hands-On Geometry Masters</i> pages 65, 66, 67, 68 <i>Practice Masters</i> pages 28, 29, 30 <i>Study Guide Masters</i> pages 28, 29, 30
Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.	
9-12.G.2.1. Students are able to recognize the relationship between a three-dimensional figure and its two-dimensional representation.	
<ul style="list-style-type: none"> Interpret floor plans 	SE: page 81 #34 (Chapter 2, Lesson 5) page 373 #27 (Chapter 9, Lesson 4) TWE: EC page 361 (Chapter 9, Lesson 2)
<ul style="list-style-type: none"> Follow instructions for assembly of a product, e.g., “some assembly required.” 	SE: page 500 #32 (Chapter 12, Lesson 1) page 506 (Chapter 12, Lesson 2) page 509 #20 (Chapter 12, Lesson 2) page 516 (Chapter 12, Lesson 4) <i>Graphing Calculator Exploration</i> page 504 (Chapter 12, Lesson 2) <i>Hands-On Geometry</i> page 522 (Chapter 12, Lesson 5) TWE: MTL page 517 (Chapter 12, Lesson 4) TT page 518 (Chapter 12, Lesson 4)

OBJECTIVES	PAGE REFERENCES
9-12.G.2.2. Students are able to reflect across vertical or horizontal lines, and translate two-dimensional figures.	
<ul style="list-style-type: none"> Identify lines of symmetry. 	SE: pages 434-439 (Chapter 10, Lesson 6) page 444 #21 (Chapter 10, Lesson 7) page 448 #27-#30 (Chapter 10) page 449 #16 (Chapter 10) TWE: MTL page 434 (Chapter 10, Lesson 6) RA page 436 (Chapter 10, Lesson 6) <i>Practice Masters</i> page 59 <i>Study Guide Masters</i> page 59
<ul style="list-style-type: none"> Use the coordinate plane. 	SE: pages 68-73 (Chapter 2, Lesson 4) pages 74-75 (Chapter 2) page 81 #36-#39 (Chapter 2, Lesson 5) page 83 #23-#26 (Chapter 2) Page 85 #9-#14 (Chapter 2) pages 346-347 (Chapter 8) TWE: A page 73 (Chapter 2, Lesson 4) EC page 73 (Chapter 2, Lesson 4) HG page 69 (Chapter 2, Lesson 4) RA page 71 (Chapter 2, Lesson 4) TT page 69 (Chapter 2, Lesson 4) <i>Enrichment Masters</i> page 10 <i>Hands-On Geometry Masters</i> pages 34, 35, 37 <i>Practice Masters</i> page 10 <i>Study Guide Masters</i> page 10
9-12.G.2.3. Students are able to use proportions to solve problems.	
	SE: pages 350-355 (Chapter 9, Lesson 1) page 361 #28 (Chapter 9, Lesson 2) page 395 #22-#23 (Chapter 9) page 397 #3-#5 (Chapter 9) TWE: EC page 355 (Chapter 9, Lesson 1) TT page 351 (Chapter 9, Lesson 1) <i>Hands-On Geometry Masters</i> pages 103, 104 <i>Practice Masters</i> page 47 <i>Study Guide Masters</i> page 47
Core High School Measurement Grade Standards, Supporting Skills, and Examples	
Indicator 1: Apply measurement concepts in practical applications.	
9-12.M.1.1. Students are able to choose appropriate unit label, scale, and precision.	
<ul style="list-style-type: none"> Determine appropriate scales for histograms, scatter plots, and other graphs. 	SE: pages 184-185 (Chapter 4) <i>Prerequisite Skills Workbook</i> pages 109-110
9-12.M.1.2. Students are able to use suitable units when describing rate of change.	
	SE: page 171 ex 5 (Chapter 4, Lesson 5) page 172 #10-#18 (Chapter 4, Lesson 5) page 177 #12a (Chapter 4, Lesson 6) page 179 #38-#39 (Chapter 4, Lesson 6) TWE: A page 173 (Chapter 4, Lesson 5) <i>Enrichment Masters</i> page 24

OBJECTIVES	PAGE REFERENCES
9-12.M.1.3. Students are able to use formulas to find perimeter, circumference, and area to solve problems involving common geometric figures.	
<ul style="list-style-type: none"> Use algebraic expressions with geometric formulas. 	SE: page 35 (Chapter 1, Lesson 6) page 66 #7 (Chapter 2, Lesson 3) page 67 #21 (Chapter 2, Lesson 3) page 81 #40 (Chapter 2, Lesson 5) page 101 #31 (Chapter 3, Lesson 2) page 109 #23 (Chapter 3, Lesson 3) page 120 #11 (Chapter 3, Lesson 5) page 121 #28 (Chapter 3, Lesson 5) page 125 #8 (Chapter 3, Lesson 6) page 127 #24 (Chapter 3, Lesson 6) page 133 #29 (Chapter 3, Lesson 7) <i>Enrichment Masters</i> pages 7, 9 <i>Hands-On Geometry Masters</i> page 26 <i>Study Guide Masters</i> page 6
Core High School Number Sense Grade Standards, Supporting Skills, and Examples	
Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.	
9-12.N.1.1. Students are able to identify multiple representations of a real number.	
<ul style="list-style-type: none"> Given a real number identify the subset(s) of real numbers to which it belongs. 	SE: pages 50-51 (Chapter 2, Lesson 1) page 54 #4 (Chapter 2, Lesson 1) page 82 #1-#3 (Chapter 2) page 85 #1-#2 (Chapter 2) page 641 #10 (Chapter 15, Lesson 2) <i>Hands-On Geometry Masters</i> page 30
<ul style="list-style-type: none"> Represent rational and irrational numbers in different forms. 	SE: page 50 (Chapter 2, Lesson 1) page 54 #5-#6 (Chapter 2, Lesson 1) pages 548-553 (Chapter 13, lesson 1) page 558 #18-#20 (Chapter 13, Lesson 2) page 578 #11-#16 (Chapter 13) page 581 #3-#5 (Chapter 13) TWE: A page 553 (Chapter 13, Lesson 1) EC page 553 (Chapter 13, Lesson 1) TT page 549 (Chapter 13, Lesson 1) <i>Practice Masters</i> page 7 <i>Study Guide Masters</i> page 7
9-12.N.1.2. Students are able to apply the concept of place value, magnitude, and relative magnitude of real numbers.	
<ul style="list-style-type: none"> Scientific notation 	SE: page 46 State Test Example (Chapter 1) page 47 #5 (Chapter 1) page 214 #28 (Chapter 5, Lesson 5) page 347 #3 (Chapter 8) page 583 #2 (Chapter 13)
<ul style="list-style-type: none"> Infinitely many solutions 	SE: page 678 #3 (Chapter 16, Lesson 1)
<ul style="list-style-type: none"> Completeness of the real numbers (density, i.e. between any two real numbers is another real number) 	This objective can be met in Glencoe's <i>Algebra Concepts and Applications</i> © 2004 on page 601 (Chapter 14, Lesson 1), EC page 99 (Chapter 3, Lesson 1), and <i>Enrichment Masters</i> page 21.

OBJECTIVES	PAGE REFERENCES
Indicator 2: Apply number operations with real numbers and other number systems.	
9-12.N.2.1. Students are able to add, subtract, multiply, and divide real numbers including integral exponents.	SE: page 86 State Test Example (Chapter 2) page 87 #3 (Chapter 2) page 265 #4-#6 (Chapter 6, Lesson 7) page 718 (Algebra Review) page 719 (Algebra Review) page 720 (Algebra Review) page 721 (Algebra Review) <i>Prerequisite Skill Workbook</i> pages 1-2, 3-4, 5-6, 7-8, 15-16, 17-18, 19-20, 21-22, 23-24, 27-28, 29-30
Indicator 3: Develop conjectures, predictions, or estimations to solve problems and verify or justify the results.	
9-12.N.3.1. Students are able to use estimation strategies in problem situations to predict results and to check the reasonableness of results.	
<ul style="list-style-type: none"> Use rounding as an estimation strategy. 	SE: page 171 #2 (Chapter 4, Lesson 5) page 267 #34 (Chapter 6, Lesson 7) page 347 #7 (Chapter 8) page 414 ex 2 (Chapter 10, Lesson 3) page 416 #7 (Chapter 10, Lesson 3) page 417 #24 (Chapter 10, Lesson 3) page 424 #26 (Chapter 10, Lesson 4) page 447 #20 (Chapter 10) <i>Prerequisite Skills Workbook</i> pages 11-12
<ul style="list-style-type: none"> Use non-routine estimation strategies. 	SE: page 171 #2 (Chapter 4, Lesson 5) page 267 #34 (Chapter 6, Lesson 7) page 347 #7 (Chapter 8) page 414 ex 2 (Chapter 10, Lesson 3) page 416 #7 (Chapter 10, Lesson 3) page 417 #24 (Chapter 10, Lesson 3) page 424 #26 (Chapter 10, Lesson 4) page 447 #20 (Chapter 10) <i>Prerequisite Skills Workbook</i> pages 11-12
9-12.N.3.2. Students are able to select alternative computational strategies and explain the chosen strategy.	
<ul style="list-style-type: none"> Use properties of numbers that allow operational shortcuts for computational procedures. 	SE: page 86 State Test Example (Chapter 2) page 87 #3 (Chapter 2) page 265 #4-#6 (Chapter 6, Lesson 7) page 718 (Algebra Review) page 719 (Algebra Review) page 720 (Algebra Review) page 721 (Algebra Review) <i>Prerequisite Skill Workbook</i> pages 1-2, 3-4, 5-6, 7-8, 15-16, 17-18, 19-20, 21-22, 23-24, 27-28, 29-30, 77-78

OBJECTIVES	PAGE REFERENCES
Core High School Statistics & Probability Grade Standards, Supporting Skills, and Examples	
Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.	
9-12.S.1.1. Students are able to draw conclusions from a set of data.	
<ul style="list-style-type: none"> Determine and use appropriate statistical values. 	SE: page 22 #39 (Chapter 1, Lesson 3) page 224 (Chapter 5) page 225 #1 (Chapter 5) page 307 #5 (Chapter 7) page 418 #30 (Chapter 10, Lesson 3) page 583 #8 (Chapter 13) page 665 #32 (Chapter 15, Lesson 6)
<ul style="list-style-type: none"> Determine which questions can or cannot be answered from a given data set. 	SE: page 133 #32 (Chapter 3, Lesson 7) page 267 #34 (Chapter 6, Lesson 7) page 347 #7 (Chapter 8)
9-12.S.1.2. Students are able to compare multiple one-variable data sets, using range, interquartile range, mean, mode, and median.	SE: page 22 #39 (Chapter 1, Lesson 3) page 224 (Chapter 5) page 225 #1 (Chapter 5) page 307 #5 (Chapter 7) page 418 #30 (Chapter 10, Lesson 3) page 583 #8 (Chapter 13) page 665 #32 (Chapter 15, Lesson 6)
9-12.S.1.3. Represent a set of data in a variety of graphical forms and draw conclusions.	
<ul style="list-style-type: none"> Make a scatter plot to draw a regression line and make predictions. 	This objective can be met in Glencoe's <i>Algebra Concepts and Applications</i> © 2004 on pages 302-307 (Chapter 7, Lesson 4) and pages 308-309 (Chapter 7).
<ul style="list-style-type: none"> Make a box-and-whisker plot to model a set of one-variable data. 	SE: page 339 (Chapter 8) TWE: TT page 339 (Chapter 8)
<ul style="list-style-type: none"> Make a histogram from a frequency distribution. 	SE: page 185 #10 (Chapter 4) page 347 #10 (Chapter 8)
Indicator 2: Apply the concepts of probability to predict events/outcomes and solve problems.	
9-12.S.2.1. Students are able to distinguish between experimental and theoretical probability.	SE: page 139 #10 (Chapter 3) page 347 #2 (Chapter 8) page 438 #29 (Chapter 10, Lesson 6) page 484 (Chapter 11, Lesson 6) page 629 #2 (Chapter 14)
9-12.S.2.2. Students are able to predict outcomes of simple events using given theoretical probabilities.	
<ul style="list-style-type: none"> Determine the sample space of an experiment. 	SE: page 138 SAT Example (Chapter 3) page 185 #4 (Chapter 4) page 545 #5 (Chapter 12)

Codes Used for TWE Pages

A	Assessment
EC	Extra Credit
HG	Hands-On Geometry
MTL	Motivating the Lesson
RA	Reteaching Activity
TT	Teaching Tip