

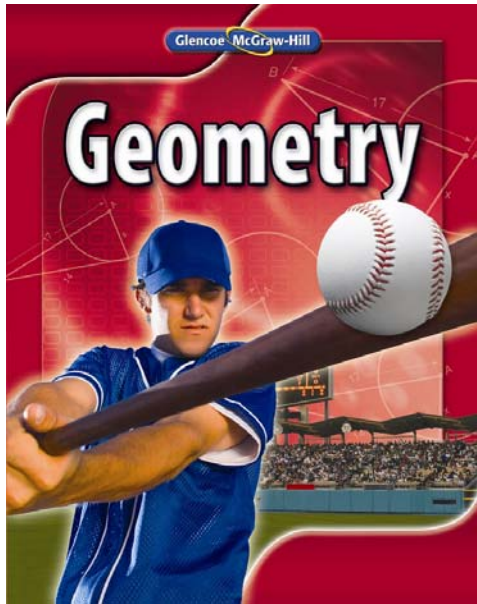


Glencoe

Mathematics
Course-Level Expectations (CLEs)
Geometry



Missouri



Geometry

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STANDARDS	PAGE REFERENCES
Number and Operations	
1. Understand numbers, ways of representing numbers, relationships among numbers and number systems	
A Read, write and compare numbers	
compare and order rational and irrational numbers, including finding their approximate locations on a number line	The following page references can be expanded to meet this standard. Student Edition: 25, 30-32 Also see <i>Algebra</i> © 2010 pages P7-P10.
B Represent and use rational numbers	
use real numbers and various models, drawing, etc. to solve problems	The following page references involve the concept of circles and can be used to meet this standard. Student Edition: <i>Practice and Problem Solving</i> 689 #44, 724 #31, 741 #22 <i>Preparing for Standardized Tests</i> 892-893 <i>Problem-Solving Tip</i> 737 <i>Real-World Example</i> 737 <i>Standardized Test Example</i> 686

STANDARDS	PAGE REFERENCES
C Compose and decompose numbers	
D Classify and describe numeric relationships	
2. Understand meanings of operations and how they relate to one another	
A Represent operations	
B Describe effects of operations	
C Apply properties of operations	
D Apply operations on real and complex numbers	
*apply operations to real numbers, using mental computation or paper-and-pencil calculations for simple cases and technology for more complicated cases	See <i>Algebra 1</i> © 2010 pages P11-P19.
3. Compute fluently and make reasonable estimates	
A Describe or represent mental strategies	
B Develop and demonstrate fluency	
C Compute problems	
D Estimate and justify solutions	
*judge the reasonableness of numerical computations and their results	Student Edition: <i>H.O.T. Problems</i> 365 #48 <i>Problem-Solving Tip</i> 661 <i>Study Tip</i> 832, 917
E Use proportional reasoning	
*solve problems involving proportions	Student Edition: 458 <i>Check Your Understanding</i> 460, 468-469, 498 #3 <i>Example</i> 459, 467 <i>Practice and Problem Solving</i> 460-462, 469-472, 499 #10 <i>Real-World Example</i> 497 <i>Study Guide and Review</i> 519, 521 #27-#29 <i>Study Tip</i> 459 Teacher Edition: AE 459, 468, 497

STANDARDS	PAGE REFERENCES
Algebraic Relationships	
1. Understand patterns, relations and functions	
A Recognize and extend patterns	
B Create and analyze patterns	
<p>generalize patterns using <u>explicitly</u> or <u>recursively</u> defined functions</p>	<p>The following page references can be used during teacher/class discussion to meet this standard.</p> <p>Student Edition: <i>Check Your Understanding</i> 92 #1-#6, #11 <i>Example</i> 89 <i>Practice and Problem Solving</i> 93, 94 #39 <i>Real-World Example</i> 91 <i>Standardized Test Practice</i> 96</p> <p>Teacher Edition: AE 90; DI 91; TT 90</p>
C Classify objects and representations	
<p>compare and contrast various forms of <u>representations</u> of patterns</p>	<p>The following page references can be used during teacher/class discussion to meet this standard.</p> <p>Student Edition: <i>Check Your Understanding</i> 92 #1-#6 <i>Example</i> 89, 90 <i>Practice and Problem Solving</i> 93 <i>Real-World Example</i> 91</p> <p>Teacher Edition: AE 90; DI 91; TT 90</p>
D Identify and compare functions	
<p>apply appropriate <u>properties of exponents</u> to simplify expressions and solve equations</p>	<p>See <i>Algebra 1</i> © 2010 pages 401-414.</p>
E Describe the effects of parameter changes	
2. Represent and analyze mathematical situations and structures using algebraic symbols	
A Represent mathematical situations	
B Describe and use mathematical manipulation	
C Utilize equivalent forms	
D Utilize systems	

STANDARDS	PAGE REFERENCES
3. Use mathematical models to represent and understand quantitative relationships	
A Use mathematical models	
identify quantitative relationships and determine the type(s) of functions that might model the situation to solve the problem	The following page references can be used during teacher/class discussion to meet this standard. Student Edition: 743-748 <i>Check Your Understanding</i> 200 #12 <i>Practice and Problem Solving</i> 201 #41, #42, 202 #53, #54 <i>Real-World Example</i> 199 Teacher Edition: AE 199
4. Analyze change in various contexts	
A Analyze change	
analyze linear functions by investigating rates of change and intercepts	Student Edition: 187 <i>Check Your Understanding</i> 190 #4 <i>Practice and Problem Solving</i> 191 #26, #27, 192 #45, #51 <i>Real-World Example</i> 188 Teacher Edition: AE 188
Geometric and Spatial Relationships	
1. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric	
A Describe and use geometric relationships	
use inductive and deductive reasoning to establish the validity of geometric <u>conjectures</u> , prove theorems and critique arguments made by others	Student Edition: 89, 115 <i>Check Your Understanding</i> 92-93, 119 <i>Example</i> 89, 90, 116 <i>Practice and Problem Solving</i> 93-95, 120-122 <i>Real-World Example</i> 91, 115, 118 <i>Standardized Test Example</i> 118 <i>Study Guide and Review</i> 159 #11-#13, 160 #18-#20 Teacher Edition: AE 90, 91, 116, 117, 118

STANDARDS	PAGE REFERENCES
B Apply geometric relationships	
C Compose and decompose shapes	
2. Specify locations and describe spatial relationships using coordinate geometry and other representational systems	
A Use coordinate systems	
make conjectures and solve problems involving 2-dimensional objects represented with Cartesian coordinates	<p>Student Edition: 301 <i>Check Your Understanding</i> 304 #1-#4, 414 #6, #7 <i>Example</i> 301, 302, 412 <i>Practice and Problem Solving</i> 304 #7-#18, 305 #27, 306 #29, 415 #24-#27, #35-#37 <i>Study Guide and Review</i> 312 #41</p> <p>Teacher Edition: AE 302, 412</p>
3. Apply transformations and use symmetry to analyze mathematical situations	
A Use transformations on objects	
use and apply constructions and the coordinate plane to represent translations, reflections, rotations and dilations of objects	<p>Student Edition: <i>Check Your Understanding</i> 297 #1, #2, 508 #1, #2, 619, 627, 635, 663 <i>Example</i> 295, 506, 615, 617, 618, 624, 625, 632, 633, 660, 662 <i>Explore</i> 631 <i>Key Concept</i> 294, 505, 615, 624, 632, 633, 660 <i>Practice and Problem Solving</i> 297, 508 #6-#11, 619-621, 627-629, 635-636, 663-665 <i>Real-World Example</i> 616, 626, 661 <i>Standardized Test Example</i> 634 <i>Study Guide and Review</i> 671, 672 #18-#22, 674</p> <p>Teacher Edition: AE 295, 506, 616, 617, 625, 633, 661</p>
B Use transformations on functions	

STANDARDS	PAGE REFERENCES
C Use symmetry	
<p>identify types of symmetries of 2- and 3-dimensional figures</p>	<p>Student Edition: <i>Check Your Understanding</i> 656 <i>Example</i> 654, 655 <i>Key Concept</i> 653, 654, 655 <i>Practice and Problem Solving</i> 656-658 <i>Real-World Example</i> 653 <i>Study Guide and Review</i> 673 #27-#31 <i>Study Tip</i> 654</p> <p>Teacher Edition: AE 654, 655, 656; TNT 654</p>
4. Use visualization, spatial reasoning and geometric modeling to solve problems	
A Recognize and draw three-dimensional representations	
<p>draw and use vertex-edge graphs or networks to find optimal solutions and draw representations of 3-dimensional geometric objects from different perspectives</p>	<p>Student Edition: <i>Activity</i> 946, 947 <i>Extend</i> 946-947 <i>Study Tip</i> 947</p>
B Draw and use visual models	
<p>*draw or use <u>visual models</u> to represent and solve problems</p>	<p>Student Edition: <i>Check Your Understanding</i> 8, 346 #7, 479 #8, 514 #4, 805 #5, 883 #5, 918 #4, #5 <i>Example</i> 7 <i>Practice and Problem Solving</i> 8-10, 347 #20, #21, #38, 480 #22-#24, 481 #29, #32, 515 #11, #12, 806 #14, #15, #18, 884 #15, #16, #19, 918 #12-#26 <i>Real-World Example</i> 6, 345, 478, 513, 804, 882, 917 <i>Study Tip</i> 7</p> <p>Teacher Edition: AE 6, 7, 345, 478, 513, 804, 882, 917</p>

STANDARDS	PAGE REFERENCES
Measurement	
1. Understand measurable attributes of objects and the units, systems and processes of measurement	
A Determine unit of measurement	
B Identify equivalent measures	
C Tell and use units of time	
D Count and compute money	
2. Apply appropriate techniques, tools and formulas to determine measurements	
A Use standard or non-standard measurement	
B Use angle measurement	
solve problems of angle measure, including those involving triangles or other polygons and of parallel lines cut by a transversal	<p>Student Edition: <i>Explore</i> 177 <i>Key Concept</i> 172 <i>Practice and Problem Solving</i> 181 #20-#23, 182 #31-#34, #36, 250 #33, #42, 258 #25, #31, 394 #25, 395 #38, #44, 396 #47 <i>Real-World Example</i> 179, 245, 247, 391</p>
C Apply geometric measurements	
determine the surface area, and volume of geometric figures, including cones, spheres, and cylinders	<p>Student Edition: <i>Check Your Understanding</i> 70, 833, 843, 850, 860, 868 <i>Concept Summary</i> 842, 859, 867 <i>Example</i> 69, 831, 832, 839, 840, 847, 848, 857, 858, 864, 865, 866 <i>Key Concept</i> 69, 832, 839, 841, 847, 848, 857, 864, 866 <i>Practice and Problem Solving</i> 71-73, 834-836, 843-845, 850-853, 860-862, 868-870 <i>Real-World Example</i> 70 Teacher Edition: AE 69, 831, 839, 840, 848, 858, 865; DI 69, 859</p>
D Analyze precision	

STANDARDS	PAGE REFERENCES
E Use relationships within a measurement system	
*use <u>unit analysis</u> to solve problems	Student Edition: <i>Example</i> P4, P5, P6, P7 <i>Exercises</i> P5, P7 <i>Practice and Problem Solving</i> 779 #30-#32, 869 #38, 883 #14, 884 #22 <i>Study Tip</i> P5, P7 Teacher Edition: AE P4, P5, P6, P7
Data and Probability	
1. Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them	
A Formulate questions	
formulate and collect data about a characteristic	The concepts on the following page references can be expanded to meet this standard. Student Edition: <i>Check Your Understanding</i> 927 #1, #2 <i>Example</i> 923, 924, 925 <i>H.O.T. Problems</i> 929 #22-#25 <i>Key Concept</i> 923 <i>Practice and Problem Solving</i> 927 #4-#10, 928 #15-#17 <i>Study Guide and Review</i> 950 #18-#20 Teacher Edition: AE 924, 925
B Classify and organize data	
C Represent and interpret data	
select and use appropriate graphical representation of data and given <u>one-variable quantitative data</u> , display the distribution and describe its shape	Student Edition: <i>Concepts and Skills Bank</i> 1022-1023 <i>Example</i> 1022, 1023 <i>Exercises</i> 1023 Teacher Edition: AE 1022, 1023
2. Select and use appropriate statistical methods to analyze data	
A Describe and analyze data	
B Compare data representations	
C Represent data algebraically	

STANDARDS	PAGE REFERENCES
3. Develop and evaluate inferences and predictions that are based on data	
A Develop and evaluate inferences	
B Analyze basic statistical techniques	
4. Understand and apply basic concepts of probability	
A Apply basic concepts of probability	
B Use and describe compound events	