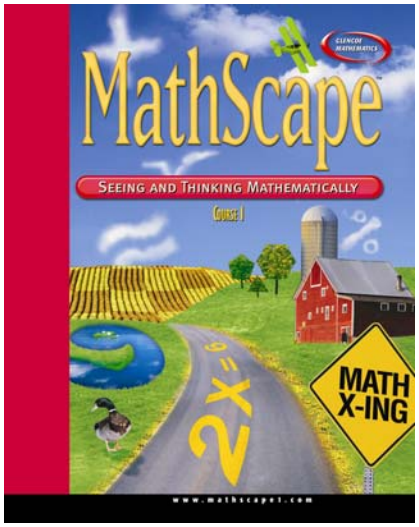
Glencoe

Math Grade 6
Assessment Anchors and
Eligible Content

Pennsylvania



MathScape

Seeing and Thinking Mathematically

Course 1

STANDARDS	PAGE REFERENCES
M6.A Numbers and Operations	
ASSESSMENT ANCHOR **M6.A.1** **Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers, and number systems.**	
M6.A.1.1 Express numbers in equivalent forms.	
M6.A.1.1.1 Represent common percents as fractions and/or decimals (e.g., 25% = ¼ = .25) – common percents are 1%, 10%, 25%, 50%, 75%, 100%.	**Student Edition:** 232-233, 234-235, 265, 266 **Teacher's Guide:** 233A, 234A, 235A, 235
M6.A.1.1.2 Convert between fractions and decimals and/or differentiate between a terminating decimal and a repeating decimal.	**Student Edition:** 210-211, 212-213, 256, 257 **Teacher's Guide:** 210A, 210, 211A, 211, 212A, 213A, 214A
M6.A.1.1.3 Represent a number in exponential form (e.g., $10x10x10=10^3$).	**Student Edition:** 72-73, 74-75, 88, 89 **Teacher's Guide:** 74A, 74, 75A
M6.A.1.1.4 Represent a mixed number as an improper fraction.	**Student Edition:** 112-113, 122-123, 124-125, 149, 153, 154 **Teacher's Guide:** 112, 113A, 122A, 122

Codes used for Teacher's Guide pages are the initial caps of headings on that page.

STANDARDS	PAGE REFERENCES
M6.A.1.2 Compare quantities and/or magnitudes of numbers.	
M6.A.1.2.1 Compare and/or order whole numbers, mixed numbers, fractions and/or decimals (do not mix fractions and decimals – decimals through thousandths).	**Student Edition:** 112-113, 114-115, 148, 149, 214-215, 216-217, 244-245, 258, 259, 266, 268, 270 **Teacher's Guide:** 111A, 111, 112A, 113A, 115A, 214A, 214, 216A, 217A
M6.A.1.3 Apply number theory concepts (i.e., factors, multiples).	
M6.A.1.3.1 Find the Greatest Common Factor (GCF) of two numbers (through 50) and/or use the GCF to simplify fractions.	**Student Edition:** 98-99, 143, 309 **Teacher's Guide:** 99A, 99
M6.A.1.3.2 Find the Least Common Multiple (LCM) of two numbers (through 50) and/or use the LCM to find the common denominator of two fractions.	**Student Edition:** 100-101, 114-115, 144, 150 **Teacher's Guide:** 100A, 101A, 101
M6.A.1.3.3 Use divisibility rules for 2, 3, 5 and/or 10 to draw conclusions and/or solve problems.	This concept is covered in *MathScape: Seeing and Thinking Mathematically Course 2* © 2005 **Student Edition:** 116-117, 132 **Teacher's Guide:** 114, 115
M6.A.1.4 Use or develop models to represent percents.	
M6.A.1.4.1 Model percents (through 100%) using drawings, graphs and/or sets (e.g., circle graph, base ten blocks, etc.).	**Student Edition:** 232-233, 234-235, 236-237, 238-239, 265, 266, 267, 268 **Teacher's Guide:** 232A, 233A, 234A, 237A, 239A
ASSESSMENT ANCHOR **M6.A.2** **Understand the meanings of operations, use operations and understand how they relate to each other.**	
M6.A.2.1 Select and/or use operations to simplify or solve problems.	
M6.A.2.1.1 Complete equations by using the following properties: associative, commutative, distributive and identity.	This concept is implied on the following pages. **Student Edition:** 104-105, 109, 146 **Teacher's Guide:** 104A

STANDARDS	PAGE REFERENCES
ASSESSMENT ANCHOR **M6.A.3 Compute accurately and fluently and make reasonable estimates.**	
M6.A.3.1 Apply estimation strategies to a variety of problems.	
M6.A.3.1.1 Use estimation to solve problems involving whole numbers and decimals (up to 2-digit divisors and 4 operations).	**Student Edition:** 134-135, 138-139, 158, 160, 216-217, 236-237, 259, 267 **Teacher's Guide:** 134A, 139A, 216A, 234A
M6.A.3.2 Solve problems with and without the use of a calculator.	
M6.A.3.2.1 Solve problems involving operations (+, -, x, ÷) with whole numbers, decimals (through thousandths) and fractions (avoid complicated LCDs) – straight computation or word problems.	**Student Edition:** 118-119, 120-121, 122-123, 124-125, 126-127, 132-133, 134-135, 136-137, 140-141, 151, 152, 153, 154, 157, 158, 159, 161, 220-221, 222-223, 224-225, 226-227, 260, 261, 262, 263
M6.B Measurement	
ASSESSMENT ANCHOR **M6.B.1 Demonstrate an understanding of measurable attributes of objects and figures, and the units, systems and processes of measurement.**	
M6.B.1.1 Compare and/or determine elapsed time.	
M6.B.1.1.1 Determine and/or compare elapsed time to the minute (time may cross AM to PM or more than one day).	The following can be used to meet this standard. **Student Edition:** 372 #21
ASSESSMENT ANCHOR **M6.B.2 Apply appropriate techniques, tools and formulas to determine measurements.**	
M6.B.2.1 Choose or use appropriate tools and/or units to determine measurements within the same system.	
M6.B.2.1.1 Use or read a ruler to measure to the nearest 1/16 inch or millimeter.	**Student Edition:** 286-287, 290-291, 292-293 **Teacher's Guide:** 290
M6.B.2.1.2 Choose the more precise measurement of a given object (e.g., smaller measurements are more precise).	**Student Edition:** 282-283, 284-285, 286-287 **Teacher's Guide:** 281A, 282A, 283A, 287A

STANDARDS	PAGE REFERENCES
M6.B.2.1.3 Measure angles using a protractor up to 180° – protractor must be drawn – one side of the angle to be measured should line up with the straight edge of the protractor.	**Student Edition:** 178-179, 199 **Teacher's Guide:** 178A, 178, 179A
M6.B.2.2 Solve problems involving length, perimeter, area and/or volume of geometric figures.	
M6.B.2.2.1 Find the perimeter of any polygon (may include regular polygons where only the measure of one side is given – same units throughout).	**Student Edition:** 182-183, 201 **Teacher's Guide:** 182A, 183A, 185
M6.B.2.3 Identify, label, and/or list properties of angles or triangles.	
M6.B.2.3.1 Define, label and/or identify right, straight, acute and obtuse angles.	**Student Edition:** 178-179, 180-181, 199 **Teacher's Guide:** 178A, 179A, 180A
M6.C Geometry	
ASSESSMENT ANCHOR **M6.C.1 Analyze characteristics and properties of two- and three-dimensional geometric shapes and demonstrate understanding of geometric relationships.**	
M6.C.1.1 Define and/or use basic properties of triangles, quadrilaterals, pentagons, hexagons, heptagons, octagons, nonagons, decagons and circles.	
M6.C.1.1.1 Identify, classify and/or compare polygons (up to ten sides.).	**Student Edition:** 176-177, 178-179, 180-181, 182-183, 198, 199, 200, 201 **Teacher's Guide:** 176A, 179A, 180A, 183A
M6.C.1.1.2 Identify and/or describe properties of all types of triangles (scalene, equilateral, isosceles, right, acute, obtuse).	**Student Edition:** 176-177, 178-179, 182-183, 198, 199, 200 #13, 201 **Teacher's Guide:** 174-175, 176A
M6.C.1.1.3 Identify and/or determine the measure of the diameter and/or radius of a circle (when one or the other is given).	This standard is met in *MathScape: Seeing and Thinking Mathematically Course 2* © 2005 **Student Edition:** 294-295, 298-299, 310, 312 **Teacher's Guide:** 292, 294A, 295A, 298A

STANDARDS	PAGE REFERENCES
M6.C.1.1.4 Identify and/or use the total number of degrees in a triangle, quadrilateral and/or circle.	This standard is met in *MathScape: Seeing and Thinking Mathematically Course 2* © 2005 **Student Edition:** 274-275, 276-277, 286-287, 296-297, 302, 303, 307, 311 **Teacher's Guide:** 272, 276A, 286A, 296A
M6.C.1.2 Represent and/or use concepts and relationships of lines and line segments.	
M6.C.1.2.1 Identify, describe and/or label parallel, perpendicular or intersecting lines.	**Student Edition:** 176-177, 198, 199 **Teacher's Guide:** 176A, 177A
M6.C.1.2.2 Identify, draw and/or label points, planes, lines, line segments, rays, angles and vertices.	**Student Edition:** 176-177, 178-179, 186-187, 202 **Teacher's Guide:** 187A
ASSESSMENT ANCHOR **M6.C.2 Locate points or describe relationships using the coordinate plane.**	
M6.C.2.1 Identify, plot or match points given an ordered pair.	
M6.C.2.1.1 Plot, locate or identify points in Quadrant I and/or on the x and y axes with intervals of 1, 2, 5 or 10 units – up to a 200 by 200 grid. Points may be in-between lines.	**Student Edition:** 340-341, 342-343, 348-349, 360-364 **Teacher's Guide:** 340A, 342A
M6.D Algebraic Concepts	
ASSESSMENT ANCHOR **M6.D.1 Demonstrate an understanding of patterns, relations and functions.**	
M6.D.1.1 Create or extend patterns.	
M6.D.1.1.1 Create, extend or find a missing element in a pattern displayed in a table, chart or graph (pattern must show at least 3 repetitions – may use up to 2 operations with whole numbers).	**Student Edition:** 324-325, 326-327, 336-337, 354, 355, 359 **Teacher's Guide:** 323, 326A, 346-347

STANDARDS	PAGE REFERENCES
M6.D.1.2 Analyze patterns.	
M6.D.1.2.1 Determine a rule based on a pattern or illustrate a pattern based on a given rule (displayed on a table, chart or graph; pattern must show at least 3 repetitions).	**Student Edition:** 332-333, 334-335, 336-337, 342-343, 348-349, 350-351, 352-353, 357, 358, 359, 361, 363, 364, 365 **Teacher's Guide:** 333A, 334A, 335A, 337A, 342A, 343A, 349A
ASSESSMENT ANCHOR **M6.D.2** **Represent and/or analyze mathematical situations and structures using algebraic symbols, words, tables, and graphs.**	
M6.D.2.1 Select and/or use appropriate strategies to solve number sentences.	
M6.D.2.1.1 Identify the inverse operation needed to solve a one-step equation.	**Student Edition:** 332-333, 334-335, 336-337, 357, 358, 359 **Teacher's Guide:** 332A, 333A, 334A, 337A
M6.D.2.1.2 Solve a one-step equation (i.e., using the inverse operation – whole numbers only).	**Student Edition:** 332-333, 334-335, 336-337, 357, 358, 359 **Teacher's Guide:** 332A, 333A, 334A, 337A
M6.D.2.2 Create and/or interpret expressions or equations that model problem situations.	
M6.D.2.2.1 Match an equation or expression involving one variable to a verbal math situation (one operation only).	**Student Edition:** 332-333, 336-337, 357, 359 **Teacher's Guide:** 332A
M6.E Data Analysis and Probability	
ASSESSMENT ANCHOR **M6.E.1** **Formulate questions that can be addressed with data and/or collect, organize, display, and analyze data.**	
M6.E.1.1 Interpret data shown in frequency tables, histograms, circle, bar or double bar graphs, line or double line graphs or line plots.	
M6.E.1.1.1 Analyze data and/or answer questions pertaining to data represented in frequency tables, circle graphs, double bar graphs, double line graphs or line plots (for circle graphs, no computation with percents).	**Student Edition:** 14-15, 16-17, 18-19, 22-23, 24-25, 26-27, 39, 40, 41, 42, 43, 44 **Teacher's Guide:** 14A, 16A, 17A, 19A, 22A, 25, 26A

STANDARDS	PAGE REFERENCES
M6.E.1.1.2 Choose the appropriate representation for a specific set of data (choices should be the same type of graph).	**Student Edition:** 14-15, 16-17, 18-19, 22-23, 24-25, 26-27, 39, 40, 41, 42, 43, 44 **Teacher's Guide:** 14A, 16A, 17A, 19A, 22A, 25, 26A
M6.E.1.1.3 Display data in frequency tables, circle graphs, double bar graphs, double line graphs or line plots using a title, appropriate scale, labels and a key when needed. Circle graphs for open-ended items must show a center point and tic marks.	**Student Edition:** 6-7, 8-9, 10-11, 16-17, 18-19, 22-23, 24-25, 26-27, 36, 37, 38, 39, 40, 41, 42, 43, 44 **Teacher's Guide:** 7A, 8A, 10A, 16A, 19A, 25A
ASSESSMENT ANCHOR **M6.E.2** **Select and use appropriate statistical methods to analyze data.** **M6.E.2.1** Describe data sets using mean, median, mode and/or range.	
M6.E.2.1.1 Determine/calculate the mean, median, mode and/or range of displayed data (data can be displayed in a table or line plot – use whole numbers only up to 2 digits).	**Student Edition:** 6-7, 8-9, 10-11, 18-19, 22-23, 24-25, 26-27, 30-31, 36, 37, 38, 41, 42, 43, 44 **Teacher's Guide:** 6A, 8A
ASSESSMENT ANCHOR **M6.E.3** **Understand and apply basic concepts of probability.** **M6.E.3.1** Determine all possible combinations, outcomes and/or calculate the probability of a simple event.	
M6.E.3.1.1 Define and/or find the probability of a simple event (express as a fraction in lowest terms).	Student Edition: 30-31, 32-33, 34-35, 45, 46, 47 **Teacher's Guide:** 28-29, 30A, 31A, 32A, 33A, 34A, 35A
M6.E.3.1.2 Determine/show all possible combinations involving no more than 20 total arrangements (e.g., tree diagram, table, grid).	**Student Edition:** 30-31, 32-33, 45, 46 **Teacher's Guide:** 30A, 32A, 35A