Correlation of Mathematics TEKS and TAKS
to Glencoe Texas Integrated Physics and Chemistry

Knowledge and Skills ** bracketed copy not tested*	*Glencoe Texas Integrated Physics and Chemistry* Student Edition (by page)	TAKS Grades 9, 10, and 11 Exit Level Mathematics
TEKS (b): ***Algebra I Concepts*** **Foundations for functions:** knowledge and skills and performance descriptions. (1) The student understands that a function represents a dependence of one quantity on another and can be described in a variety of ways. The student		
(A) describes independent and dependent quantities in functional relationships.	379	**TAKS Objective 1** The student will describe functional relationships in a variety of ways.
(B) [gathers and records data, or]* uses data sets, to determine functional (systematic) relationships between quantities.	304, 562	
(C) describes functional relationships for given problem situations and writes equations or inequalities to answer questions arising from the situation.	42, 104, 105, 137, 162, 163, 170, 207, 214, 246, 267, 310, 331, 335, 373, 378, 393, 395, 499, 501, 531, 533, 549, 586, 593, 625, 677, 711, 742	
(D) represents relationships among quantities using [concrete]* models, tables, graphs, diagrams, verbal descriptions, equations, and inequalities.	42, 104, 105, 146, 162, 170, 207, 214, 267, 310, 331, 335, 378, 395, 495, 501, 505, 507, 531, 533, 562, 586, 625, 677, 711, 742, 748	
(E) interprets and makes inferences from functional relationships.	331, 337, 347	
TEKS (b): ***Algebra I Concepts*** **Foundations for functions:** knowledge and skills and performance descriptions. (2) The student uses the properties and attributes of functions. The student		
(C) interprets situations in terms of given graphs [or creates situations that fit given graphs]*.	230, 495, 562, 644, 658, 680	**TAKS Objective 2** The student will demonstrate an understanding of the properties and attributes of functions.
(D) [collects and]* organizes data, [makes and]* interprets scatter plots, and models, predicts, and makes decisions and critical judgements.	495, 644, 680	
TEKS (b): ***Algebra I Concepts*** **Foundations for functions:** knowledge and skills and performance descriptions. (3) The student understands how algebra can be used to express generalizations and recognizes and uses the power of symbols to represent situations. The student		
(A) uses symbols to represent unknowns and variables.	239, 379, 658	**TAKS Objective 2** The student will demonstrate an understanding of the properties and attributes of functions.
(B) looks for patterns and represents generalizations algebraically.	644, 661, 748	

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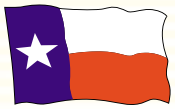

Knowledge and Skills	*Glencoe Texas Integrated Physics and Chemistry* Student Edition (by page)	TAKS Grades 9, 10, and 11 Exit Level Mathematics
TEKS (b): ***Algebra I Concepts*** **Foundations for functions:** knowledge and skills and performance descriptions. (4) The student understands the importance of the skills required to manipulate symbols in order to solve problems and uses the necessary algebraic skills required to simplify algebraic expressions and solve equations and inequalities in problem situations. The student		
(A) finds specific function values, simplifies polynomial expressions, transforms and solves equations, and factors as necessary in problem situations.	42, 104, 105, 137, 162, 207, 214, 246, 267, 310, 335, 378, 379, 393, 395, 501, 505, 507, 531, 533, 549, 586, 593, 625, 677, 711, 742, 748	**TAKS Objective 2** The student will demonstrate an understanding of the properties and attributes of functions.
(B) uses the commutative, associative, and distributive properties to simplify algebraic expressions.	745	
TEKS (c): ***Algebra I Concepts*** **Linear functions:** knowledge and skills and performance descriptions. (1) The student understands that linear functions can be represented in different ways and translates among their various representations. The student		
(C) translates among and uses algebraic, tabular, graphical, or verbal descriptions of linear functions.	495	**TAKS Objective 3** The student will demonstrate an understanding of linear functions.
TEKS (c): ***Algebra I Concepts*** **Linear functions:** knowledge and skills and performance descriptions. (3) The student formulates equations and inequalities based on linear functions, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation. The student		
(A) analyzes situations involving linear functions and formulates linear equations or inequalities to solve problems.	393	**TAKS Objective 4** The student will formulate and use linear equations and inequalities.
TEKS (b): ***Geometry Concepts*** **Geometric structure:** knowledge and skills and performance descriptions. (3) The student understands the importance of logical reasoning, justification, and proof in mathematics. The student		
(D) uses inductive reasoning to formulate a conjecture.	680	Not tested
(E) uses deductive reasoning to prove a statement.	680	

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continued

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TEKS (b): ***Geometry Concepts*** **Geometric structure:** knowledge and skills and performance descriptions. (4) The student uses a variety of representataions to describe geometric relationships and solve problems. The student		
selects an appropriate representation ([concrete], pictorial, graphical, verbal, or symbolic) in order to solve problems. *Grade 11 Exit Level TAKS only*	625, 711	**TAKS Objective 6** The student will demonstrate an understanding of geometric relationships and spatial reasoning.
TEKS (d): ***Geometry Concepts*** **Dimensionality and the geometry of location:** knowledge and skills and performance descriptions. (1) The student analyzes the relationship between three-dimensional objects and related two-dimensional representations to solve problems. The student		
(C) uses top, front, side, and corner views of three-dimensional objects to create accurate and complete representations and solve problems. *Grade 11 Exit Level TAKS only*	711	**TAKS Objective 6** The student will demonstrate an understanding of geometric relationships and spatial reasoning.
TEKS (e): ***Geometry Concepts*** **Congruence and the geometry of size:** knowledge and skills and performance descriptions. (1) The student extends measurement concepts to find area, perimeter, and volume in problem situations. The student		
(A) finds surface areas and volumes of prisms, pyramids, spheres, cones, and cylinders in problem situations. *Grade 11 Exit Level TAKS only*	499, 507, 711	**TAKS Objective 8** The student will demonstrate an understanding of the concepts and uses of measurement and similarity.
TEKS (f): ***Geometry Concepts*** **Similarity and the geometry of shape:** knowledge and skills and performance descriptions. (4) The student applies the concepts of similarity to justify properties of figures and solve problems.		
(D) describes the effect on perimeter, area, and volume when length, width, or height of a three-dimensional solid is changed and applies this idea in solving problems. *Grade 11 Exit Level TAKS only*	499	**TAKS Objective 8** The student will demonstrate an understanding of the concepts and uses of measurement and similarity.

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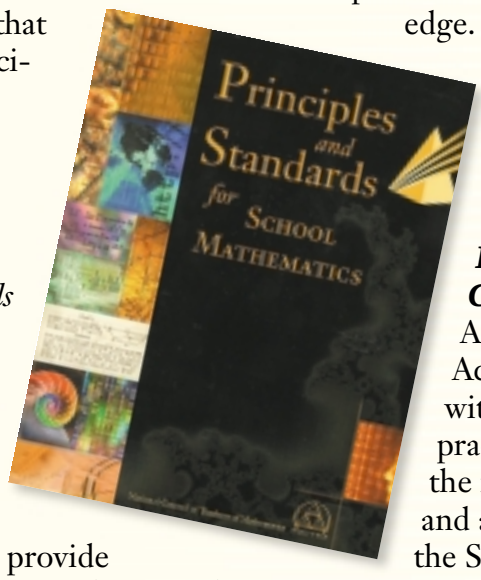
National Council of Teachers of Mathematics

Principles and Standards for School Mathematics

High school students often make personal, educational, and career choices on their own that can influence the rest of their lives. Throughout their school years, they acquire skills that help them make these decisions. The development of keen mathematical skills can ensure that students have a wide variety of life options.



Principles and Standards for School Mathematics of the National Council of Teachers of Mathematics describes the foundation of mathematical concepts and applications that can provide students with the necessary mathematical skills to help achieve their life goals.

The ten categories of mathematical concepts and applications, as shown in the table below, include a broad range of topics that build on previous knowledge. They also allow students to increase their abilities to visualize, describe, and analyze situations in mathematical terms.

In Glencoe ***Texas Integrated Physics and Chemistry***, each Math Skill Activity and Problem-Solving Activity provides students with the opportunity to practice and apply some of the mathematical concepts and applications described in the Standards. These activities serve to reinforce mathematical skills in real-life situations, thus, preparing students to meet their needs in an ever-changing world.

Correlation of *Glencoe Texas Integrated Physics and Chemistry* to NCTM Standards Grades 9–12

Standard	Chapter-Section
1. Number and Operations	1-2, 1-3, 2-1, 3-1, 4-1, 5-1, 7-3, 8-1, 9-3, 11-2, 12-4, 13-1, 15-2, 16-2, 17-2, 18-2, 19-3, 20-3, 21-4, 23-1, 24-3
2. Algebra	1-2, 1-3, 2-1, 3-1, 4-1, 5-1, 7-3, 9-3, 11-2, 12-4, 15-2, 16-2, 17-2, 20-3, 23-1, 24-3
3. Geometry	1-3, 23-1
4. Measurement	1-2, 2-1, 16-2, 23-1
5. Data Analysis and Probability	1-3, 8-1, 15-2, 18-2, 20-3, 21-4, 22-2
6. Problem Solving	1-3, 2-1, 3-1, 4-1, 5-1, 7-3, 8-1, 9-3, 10-2, 13-1, 15-2, 16-2, 18-2, 19-3, 20-3, 21-4, 22-2, 23-1, 24-3, 25-3
7. Reasoning and Proof	8-1, 10-2 19-3
8. Communication	8-1, 10-2, 12-4, 15-2, 18-2, 19-3, 21-4, 22-2, 23-1, 25-3
9. Connections	1-2, 1-3, 2-1, 3-1, 4-1, 5-1, 7-3, 8-1, 9-3, 10-2 11-2, 12-4, 13-1, 15-2, 16-2, 17-2, 18-2, 19-3, 20-3, 21-4, 22-2, 23-1, 24-3, 25-3
10. Representation	1-3, 8-1, 9-3, 13-1, 18-2, 19-3, 20-3, 21-4, 24-3