Correlation to Integrated Physics and Chemistry **TEKS** and **TAKS**

Knowledge and Skills	*Glencoe Texas Integrated Physics and Chemistry* Student Edition (by page)	TAKS Grade 10 and Grade 11 Exit Level Science
TEKS 1: ***Scientific processes*** **The student, for at least 40% of instructional time, conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.** The student is expected to:		
(A) demonstrate safe practices during field and laboratory investigations; and *Grade 10 TAKS and Grade 11 Exit Level TAKS*	19, 25, 27, 28, 57, 58, 71, 81, 89, 90, 91, 99, 106, 112, 116, 117, 125, 129, 147, 157, 169, 171, 180, 181, 216, 217, 229, 231, 247–249, 279–281, 289, 293, 338, 348, 349, 357, 359, 397, 402, 431, 441–443, 459, 471, 474, 475, 487, 496, 506, 508, 509, 517, 521, 525, 528, 534, 535, 543, 573, 584, 592, 594, 595, 618, 621, 630, 631, 639, 643, 649, 653, 662, 663, 671, 673, 679, 691–693, 705, 710, 715, 727–729, 737, 752, 755, 765, 768, 776, 786, 787	**TAKS Objective 1:** The student will demonstrate an understanding of the nature of science.
(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.	508, 509, 525, 534, 535, 592, 649, 776	

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Correlation to Glencoe Texas Integrated Physics and Chemistry **Science TEKS** and **TAKS**

continued

Knowledge and Skills	*Glencoe Texas Integrated Physics and Chemistry* Student Edition (by page)	TAKS Grade 10 and Grade 11 Exit Level Science
TEKS 2: ***Scientific processes*** **The student uses scientific methods during field and laboratory investigations.** The student is expected to:		
(A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology; *Grade 10 TAKS and Grade 11 Exit Level TAKS*	13, 19, 27, 29, 57–59, 90, 91, 106, 116, 117, 148–151, 155, 170, 193, 216, 217, 223, 232, 248, 249, 255, 279–281, 293, 311–313, 374, 380, 381, 386, 395, 410, 411, 442, 443, 459, 473–475, 496, 507, 521, 534, 535, 543, 555, 563–565, 593–595, 607, 618, 621, 630, 631, 662, 663, 691–693, 705, 715, 756, 757, 786, 787	**TAKS Objective 1:** The student will demonstrate an understanding of the nature of science.
(B) collect data and make measurements with precision; *Grade 10 TAKS and Grade 11 Exit Level TAKS*	5, 16, 18, 19, 21, 23, 25, 27, 29, 35, 37, 57, 59, 67, 71, 81, 89–91, 103, 106, 112, 116, 117, 125, 129, 147–149, 157, 162, 169, 171, 180, 181, 204, 225, 247–249, 267, 279–281, 289, 293, 306, 311–313, 338, 357, 359, 374, 380, 381, 389, 392, 397, 402, 410, 411, 413, 419, 423, 431, 441–443, 459, 474, 475, 487, 496, 508, 509, 517, 521, 525, 528, 534, 535, 543, 547, 563–566, 573, 584, 594, 595, 607, 612, 618, 621, 630, 631, 649, 662, 663, 673, 691–693, 705, 710, 715, 727–729, 737, 752, 755–757, 765, 768, 776, 781, 786, 787	

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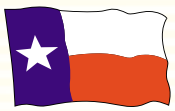

Knowledge and Skills	*Glencoe Texas Integrated Physics and Chemistry* Student Edition (by page)	TAKS Grade 10 and Grade 11 Exit Level Science
(C) organize, analyze, evaluate, make inferences, and predict trends from data; and *Grade 10 TAKS and Grade 11 Exit Level TAKS*	4, 5, 11, 17, 19, 21, 23–27, 29, 31–34, 36, 37, 51, 56, 57, 59, 66, 67, 74, 81, 89–91, 99, 103, 106, 112, 116, 117, 125, 129, 131, 137, 146–149, 157, 163, 168, 169, 171, 179–181, 192, 193, 200, 204, 207, 208, 213–215, 217, 225, 229–231, 247–249, 255, 257, 267, 270, 272, 274, 279–281, 287, 288, 289, 293, 306, 311–313, 319, 333, 338, 357, 359, 366, 374, 380, 381, 389, 392, 397, 402, 410, 411, 413, 419, 423, 431, 441–443, 451, 455, 458, 459, 462, 470, 471, 474, 475, 478, 481, 487, 495, 496, 498, 500, 506, 508–510, 516, 517, 521, 524, 525, 528, 533–535, 537, 541, 543, 547, 552, 555, 563–656, 573, 578, 579, 584, 586, 590, 592–595, 607, 612, 618, 621, 624, 625, 639, 643, 649, 653, 662, 663, 668, 669, 671, 673, 679, 691–693, 705, 710, 715, 727, 737, 741, 752, 755–757, 765, 768, 776, 786, 787	**TAKS Objective 1:** The student will demonstrate an understanding of the nature of science.
(D) communicate valid conclusions. *Grade 10 TAKS and Grade 11 Exit Level TAKS*	4, 5, 11–13, 18, 27, 29, 31, 35, 36, 51, 57, 59, 66, 67, 74, 81, 82, 88–91, 99, 106, 115–117, 123, 125, 131, 147–149, 155, 157, 169, 171, 179–181, 193, 201, 204, 208, 217, 225, 232, 247–249, 257, 279–281, 286, 287, 289, 311–313, 319, 356, 357, 362, 368, 373, 374, 380, 381, 387, 389, 402, 410, 411, 413, 419, 423, 441–443, 451, 458, 459, 470, 474, 475, 481, 487, 494, 496, 500, 504, 508, 509, 517, 524, 525, 532, 534, 535, 541, 542, 543, 545, 552, 553, 563–565, 573, 578, 579, 592, 594, 595, 606, 607, 620, 621, 624, 630–632, 637, 639, 643, 649, 653, 655, 662, 663, 671, 684, 689–693, 705, 717, 726, 727, 737, 755–757, 765, 776, 786, 787	

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Correlation to Glencoe Texas Integrated Physics and Chemistry **Science TEKS** and **TAKS**

continued

Knowledge and Skills	*Glencoe Texas Integrated Physics and Chemistry* Student Edition (by page)	TAKS Grade 10 and Grade 11 Exit Level Science
TEKS 3: ***Scientific processes*** **The student uses critical thinking and scientific problem solving to make informed decisions.** The student is expected to:		
(A) analyze, review, [and critique] scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information; *Grade 10 TAKS and Grade 11 Exit Level TAKS (Bracketed copy not tested on Grade 10 TAKS)*	9, 12, 19, 50, 51, 54, 55, 57, 59, 64, 65, 69, 71, 74, 76, 81, 82, 88–91, 93, 97, 106, 116, 117, 127, 129, 131, 137, 148–151, 157, 169, 171, 223, 248, 249, 272, 311–313, 319, 374, 380, 381, 441–443, 495, 496, 498, 501, 507, 512, 547, 555, 562–565, 578, 598, 615, 630, 631, 649, 662, 663, 667, 686, 691–693, 705, 715, 722, 734, 749, 756, 757, 786, 787	**TAKS Objective 1:** The student will demonstrate an understanding of the nature of science.
(B) draw inferences based on data related to [promotional materials for] products and services; *Grade 10 TAKS and Grade 11 Exit Level TAKS (Bracketed copy not tested on Grade 10 TAKS)*	57, 476, 477	

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Knowledge and Skills	*Glencoe Texas Integrated Physics and Chemistry* Student Edition (by page)	TAKS Grade 10 and Grade 11 Exit Level Science
(C) evaluate the impact of research on scientific thought, society, and the environment;	7, 31, 118, 119, 137, 219, 226, 250, 251, 282, 283, 286, 315, 380, 381, 399, 470, 476–478, 519, 544, 545, 548, 555, 566, 567, 627, 632, 664, 665, 672, 676–678, 682, 683, 689, 694, 695, 751, 756–759	Not tested
(D) describe connections between physics and chemistry, and future careers; and	6, 30, 31, 148–151, 219, 250, 251, 282, 283, 445, 680	
(E) research and describe the history of physics, chemistry, and contributions of scientists.	31, 118, 119, 226, 250, 251, 262, 351, 401, 406, 470, 545, 548, 554, 555, 561, 562, 566, 567, 569, 597, 628, 629, 632, 665, 672, 678, 695, 696, 739, 751, 762	

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Correlation to Glencoe Texas Integrated Physics and Chemistry **Science TEKS** and **TAKS**

continued

Knowledge and Skills	*Glencoe Texas Integrated Physics and Chemistry* Student Edition (by page)	TAKS Grade 10 and Grade 11 Exit Level Science
TEKS 4: ***Science concepts*** **The student knows concepts of force and motion evident in everyday life.** The student is expected to:		
(A) calculate speed, momentum, acceleration, work, and power in systems such as in the human body, moving toys, and machines; *Grade 10 TAKS and Grade 11 Exit Level TAKS*	37–44, 46–51, 54–57, 59, 62–65, 67, 71, 88–91, 93, 94, 96, 97, 127–131, 154	**TAKS Objective 5:** The student will demonstrate an understanding of motion, forces, and energy.
(B) investigate and describe [applications of] Newton's laws such as in vehicle restraints, sports activities, geological processes, and satellite orbits; *Grade 10 TAKS and Grade 11 Exit Level TAKS (Bracketed copy not tested on Grade 10 TAKS)*	52, 56, 68–70, 72–74, 76, 77, 79, 82, 83, 86, 88, 89, 93–97, 104–106	
(C) analyze the effects caused by changing force or distance in simple machines as demonstrated in household devices, the human body, and vehicles; and	47–49, 56, 57, 59, 63–65, 87, 90, 91, 94, 132–155	
(D) investigate and demonstrate [mechanical advantage and] efficiency of various machines such as levers, motors, wheels and axles, pulleys, and ramps. *Grade 11 Exit Level TAKS (Bracketed copy not tested)*	125, 132, 133, 136–139, 141–155	

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Knowledge and Skills	*Glencoe Texas Integrated Physics and Chemistry* Student Edition (by page)	TAKS Grade 10 and Grade 11 Exit Level Science
TEKS 5: *Science concepts* **The student knows the effects of waves on everyday life.** **The student is expected to:**		
(A) demonstrate wave types and their characteristics through a variety of activities such as modeling with ropes and coils, activating tuning forks, and interpreting data on seismic waves; *Grade 10 TAKS*	325, 327, 328, 331–333, 335, 337, 338, 347–349, 357–365, 368–370, 372, 373, 384–387, 436	**TAKS Objective 5:** The student will demonstrate an understanding of motion, forces, and energy.
(B) demonstrate wave interactions including interference, polarization, reflection, refraction, and resonance within various materials; *Grade 11 Exit Level TAKS*	339–345, 347, 363, 367, 371–374, 377–379, 384–387, 419–425, 427–429, 432–435, 437–439, 442, 443, 448–451, 455–464, 467–475, 478–481, 523	
(C) identify uses of electromagnetic waves in various technological applications such as fiber optics, optical scanners, and microwaves; and	388, 392, 397, 398, 401–404, 406–409, 412–417, 434, 440	
(D) demonstrate the application of acoustic principles such as in echolocation, musical instruments, noise pollution, and sonograms.	235, 345, 350, 351, 357, 358, 365, 366, 369, 370, 372–377, 380–387	

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Correlation to Glencoe Texas Integrated Physics and Chemistry **Science TEKS** and **TAKS**

continued

Knowledge and Skills	*Glencoe Texas Integrated Physics and Chemistry* Student Edition (by page)	TAKS Grade 10 and Grade 11 Exit Level Science
TEKS 6: *Science concepts* **The student knows the impact of energy transformations in everyday life.** **The student is expected to:**		
(A) describe the law of conservation of energy; *Grade 10 TAKS and Grade 11 Exit Level TAKS*	106–114, 116–123, 307, 308	**TAKS Objective 5:** The student will demonstrate an understanding of motion, forces, and energy.
(B) investigate and demonstrate the movement of heat through solids, liquids, and gases by convection, conduction, and radiation; *Grade 10 TAKS and Grade 11 Exit Level TAKS*	99, 157–177, 180–187, 196–198, 200, 205, 206, 208, 220–222, 289, 309, 311, 510–513, 639	
(C) analyze the efficiency of energy conversions that are responsible for the production of electricity such as from radiant, nuclear, and geothermal sources, fossil fuels such as coal, gas, oil, and the movement of water or wind;	212, 242, 290–310, 313–318, 756, 757	
(D) investigate and compare economic and environmental impacts of using various energy sources such as rechargeable or disposable batteries and solar cells; *Grade 11 Exit Level TAKS*	297, 301–310, 312–317, 756, 757	

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Knowledge and Skills	*Glencoe Texas Integrated Physics and Chemistry* Student Edition (by page)	TAKS Grade 10 and Grade 11 Exit Level Science
(E) measure the thermal and electrical conductivity of various materials and explain results;	200, 201, 240, 241, 295, 621, 673	**TAKS Objective 5:** The student will demonstrate an understanding of motion, forces, and energy.
(F) investigate and compare series and parallel circuits; *Grade 10 TAKS*	209–212, 216, 217, 219–223, 240, 241, 245, 246	
(G) analyze the relationship between an electric current and the strength of its magnetic field using simple electromagnets; and	233–249, 252–255	
(H) analyze the effects of heating and cooling processes in systems such as weather, living, and mechanical.	114, 115, 166, 167–169, 172–176, 178, 179, 182–185, 198, 199, 289, 310	

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Correlation to Glencoe Texas Integrated Physics and Chemistry **Science TEKS** and **TAKS**

continued

Knowledge and Skills	*Glencoe Texas Integrated Physics and Chemistry* Student Edition (by page)	TAKS Grade 10 and Grade 11 Exit Level Science
TEKS 7: ***Science concepts*** **The student knows relationships exist between properties of matter and its components.** The student is expected to:		
(A) investigate and identify properties of fluids including density, viscosity, and buoyancy; *Grade 10 TAKS and Grade 11 Exit Level TAKS*	497, 498, 501, 508, 509, 513–515	**TAKS Objective 4:** The student will demonstrate an understanding of the structures and properties of matter.
(B) research and describe the historical development of the atomic theory;	547, 548, 579	
(C) identify constituents of various materials or objects such as metal salts, light sources, fireworks displays, and stars using spectral-analysis techniques;	450–458, 460–464, 468–475, 478–481, 736	
(D) relate the chemical behavior of an element including bonding, to its placement on the periodic table; and *Grade 11 Exit Level TAKS*	434, 558–562, 568, 576–579, 582, 583, 586–588, 593, 598, 599, 608–614, 616, 617, 620, 622, 623, 625–627, 630, 631, 634–637, 681	
(E) classify samples of matter from everyday life as being elements, compounds, or mixtures. *Grade 10 TAKS*	517, 518, 520–525, 538–540, 621, 630, 631, 636, 637	

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Knowledge and Skills	*Glencoe Texas Integrated Physics and Chemistry* Student Edition (by page)	TAKS Grade 10 and Grade 11 Exit Level Science
TEKS 8: *Science concepts* **The student knows that changes in matter affect everyday life.** **The student is expected to:**		
(A) distinguish between physical and chemical changes in matter such as oxidation, digestion, changes in states, and stages in the rock cycle; *Grade 10 TAKS and Grade 11 Exit Level TAKS*	114, 115, 488, 489, 491, 494–496, 522, 528–536, 541, 574, 575, 584, 587, 588, 594, 595, 598, 599, 648, 651, 662, 663, 730, 737–739, 741, 742, 746, 765	**TAKS Objective 4:** The student will demonstrate an understanding of the structures and properties of matter.
(B) analyze energy changes that accompany chemical reactions such as those occurring in heat packs, cold packs, and glow sticks to classify them as endergonic or exergonic reactions;	607, 722, 750–753, 760–762	
(C) investigate and identify the law of conservation of mass; *Grade 10 TAKS and Grade 11 Exit Level TAKS*	533, 538–540, 738, 742–745, 748, 749, 760–763	
(D) describe types of nuclear reactions such as fission and fusion and their roles in applications such as medicine and energy production; and	113, 273–286	
(E) research and describe the environmental and economic impact of the end products of chemical reactions.	529, 580, 581, 591, 592, 597, 610, 611, 613, 618, 619, 622, 623, 626, 627, 629, 632, 636, 637, 641, 680, 681, 694, 695, 714, 740, 758, 759, 789	

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Correlation to Glencoe Texas Integrated Physics and Chemistry **Science TEKS** and **TAKS**

continued

Knowledge and Skills	*Glencoe Texas Integrated Physics and Chemistry* Student Edition (by page)	TAKS Grade 10 and Grade 11 Exit Level Science
TEKS 9: ***Science concepts*** **The student knows how solution chemistry is a part of everyday life.** The student is expected to:		
(A) relate the structure of water to its function [as the universal solvent]; *Grade 10 TAKS and Grade 11 Exit Level TAKS (Bracketed copy not tested on Grade 10 TAKS)*	586, 709, 713, 716, 781	**TAKS Objective 4:** The student will demonstrate an understanding of the structures and properties of matter.
(B) relate the concentration of ions in a solution to physical and chemical properties such as pH, electrolytic behavior, and reactivity; *Grade 11 Exit Level TAKS*	582–585, 588, 589, 592, 598, 599, 610, 713, 715, 722–726, 732, 766, 768, 770–778, 780, 786, 787, 790–793	
(C) simulate the effects of acid rain on soil, buildings, statues, or microorganisms;	788, 789	
(D) demonstrate how various factors influence solubility including temperature, pressure, and nature of the solute and solvent; and *Grade 10 TAKS and Grade 11 Exit Level TAKS*	594, 595, 705, 709, 710, 712, 718–721, 725–729, 732–734	
(E) demonstrate how factors such as particle size influence the rate of dissolving.	710, 732	

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