Glencoe/McGraw-Hill

Environmental Science: A Study of Interrelationships

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correlated to

Alabama Course of Study for Environmental Science
Grades 9-12

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CORRELATED TO
ALABAMA COURSE OF STUDY FOR ENVIRONMENTAL SCIENCE

GRADES 9-12

OBJECTIVES	PAGE REFERENCES
1. Identify the influence of human population, technology, and cultural and industrial changes on the environment. (AHSGE Standard VI: 1)	
• Describing the relationship between carrying capacity and population size	SE: 136, 137, 139, 140–142 TWE: 136, 137, 139, 140–142
2. Evaluate various fossil fuels for their effectiveness as energy resources. (AHSGE Standard VI: 1)	
• Describing the formation and use of nonrenewable fossil fuels	SE: 187, 188, 189, 190, 191, 192, 193, 194, 196, 197 TWE: 187, 188, 189, 190, 191, 192, 193, 194, 196, 197
• Identifying the by-products of the combustion of fossil fuels, including particulates, mercury, sulfur dioxide, nitrogen dioxide, and carbon dioxide	SE: 172, 392, 393, 398 TWE: 172, 392, 393, 398
• Identifying chemical equations associated with the combustion of fossil fuels (AHSGE Standard II: 4)	SE: 69 TWE: 69
• Describing benefits to mankind of having abundant, affordable energy	SE: 173, 174, 175, 176, 177, 178 TWE: 173, 174, 175, 176, 177, 178
• Identifying effects of fossil fuel by-products on the environment, including ozone depletion; formation of acid rain, brown haze, and greenhouse gases; and concentration of particulates and heavy metals	SE: 400, 401, 402, 403, 405, 406, 407, 408, 409 TWE: 400, 401, 402, 403, 405, 406, 407, 408, 409

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OBJECTIVES	PAGE REFERENCES
3. Evaluate other sources of energy for their effectiveness as alternatives to fossil fuels.	
• Comparing nuclear fission and nuclear fusion reactions in the production of energy	SE: 221, 222, 223, 224, 225, 226, 227, 228 TWE: 221, 222, 223, 224, 225, 226, 227, 228
• Comparing energy production and waste output in generating nuclear energy	SE: 227, 228, 234, 236, 237 TWE: 227, 228, 234, 236, 237
• Differentiating between renewable and nonrenewable energy resources	SE: 187–189, 190, 191–196, 197–200, 201–203, 204–206, 207–211, 212–216 TWE: 187–189, 190, 191–196, 197–200, 201–203, 204–206, 207–211, 212–216
• Identifying local energy sources	The opportunity to address this objective is available. See the following: SE: 181, 183, 187–189, 190, 191–193, 194–197, 198–203, 204–208, 209–213 TWE: 181, 183, 187–189, 190, 191–193, 194–197, 198–203, 204–208, 209–213
• Identifying ways the law of conservation of energy relates to fuel consumption	SE: 213–214 TWE: 213–214

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4. Identify the impact of pollutants on the atmosphere.	
• Identifying layers of the atmosphere and the composition of air	SE: 389 TWE: 389
• Describing the formation of primary, secondary, and indoor air pollutants	SE: 390, 391, 392, 393, 394, 395, 396, 397–399, 411, 413 TWE: 390, 391, 392, 393, 394, 395, 396, 397–399, 411, 413
• Relating pollutants to smog and thermal inversions	SE: 394, 395, 396, 397–399 TWE: 394, 395, 396, 397–399
• Investigating the impact of air quality on the environment	SE: 400, 401, 402, 403, 405, 406, 407, 408, 409, 410, 411 TWE: 400, 401, 402, 403, 405, 406, 407, 408, 409, 410, 411
• Interpreting social, political, and economic influences on air quality	SE: 390, 397, 400, 410–411, 412 TWE: 390, 397, 400, 410–411, 412
5. Describe properties of water that make it a universal solvent. (AHSGE Standard II: 4)	SE: 353 TWE: 353
6. Identify sources of local drinking water.	
• Determining the quality of fresh water using chemical testing and bioassessment	The opportunity to address this objective is available. See the following: SE: 353 TWE: 353
• Describing the use of chemicals and microorganisms in water treatment	SE: 373, 374, 376 TWE: 373, 374, 376

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OBJECTIVES	PAGE REFERENCES
• Describing water conservation methods	SE: 357, 358, 359 TWE: 357, 358, 359
• Describing the process of underground water accumulation, including the formation of aquifers	SE: 354, 355 TWE: 354, 355
• Identifying major residential, industrial, and agricultural water consumers	SE: 357, 358, 359, 360 TWE: 357, 358, 359, 360
• Identifying principal uses of water	SE: 356, 357, 358, 359 TWE: 356, 357, 358, 359
7. Identify reasons coastal waters serve as an important resource.	
• Classifying biota of estuaries, marshes, tidal pools, wetlands, beaches, and inlets	SE: 122, 123, 124, 125, 126, 127, 128 TWE: 122, 123, 124, 125, 126, 127, 128
• Comparing components of marine water to components of inland bodies of water	SE: 126, 127, 128 TWE: 126, 127, 128
8. Identify major contaminants in water resulting from natural phenomena, homes, industry, and agriculture. (AHSGE Standard VI: 1)	
• Describing the eutrophication of water by industrial effluents and agricultural runoffs	SE: 364, 368, 369 TWE: 364, 368, 369
• Classifying sources of water pollution as point and nonpoint	SE: 364, 365, 366 TWE: 364, 365, 366

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OBJECTIVES	PAGE REFERENCES
9. Describe land-use practices that promote sustainability and economic growth.	
• Defining various types and sources of waste and their impact on the soil	The opportunity to address this objective is available. See the following: SE: 422, 423, 424, 425, 426, 428 TWE: 422, 423, 424, 425, 426, 428
• Identifying ways to manage waste, including composting, recycling, reusing, and reclaiming	SE: 426, 427, 428, 429, 430, 431 TWE: 426, 427, 428, 429, 430, 431
10. Describe the composition of soil profiles and soil samples of varying climates.	
• Identifying various processes and activities that promote soil formation	SE: 309, 310, 311, 316, 317, 318, 319, 320, 321, 322, 323 TWE: 309, 310, 311, 316, 317, 318, 319, 320, 321, 322, 323
• Relating particle size to soil texture and type of sand, silt, or clay	SE: 310, 311, 312 TWE: 310, 311, 312
11. Describe agents of erosion, including moving water, gravity, glaciers, and wind.	
• Describing methods for preventing soil erosion	SE: 315, 316, 317, 318, 319, 320, 321, 322, 323, 344, 345 TWE: 315, 316, 317, 318, 319, 320, 321, 322, 323, 344, 345
12. Identify positive and negative effects of human activities on biodiversity. (AHSGE Standard VI: 1)	
• Identifying endangered and extinct species locally, regionally, and worldwide	SE: 247, 270, 271, 272 TWE: 247, 270, 271, 272

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OBJECTIVES	PAGE REFERENCES
• Identifying causes for species extinction locally, regionally, and worldwide	SE: 247, 248, 255, 256, 257, 258, 259, 260, 261, 262, 263 TWE: 247, 248, 255, 256, 257, 258, 259, 260, 261, 262, 263

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