A Correlation of

Physical Science

Concepts in Action

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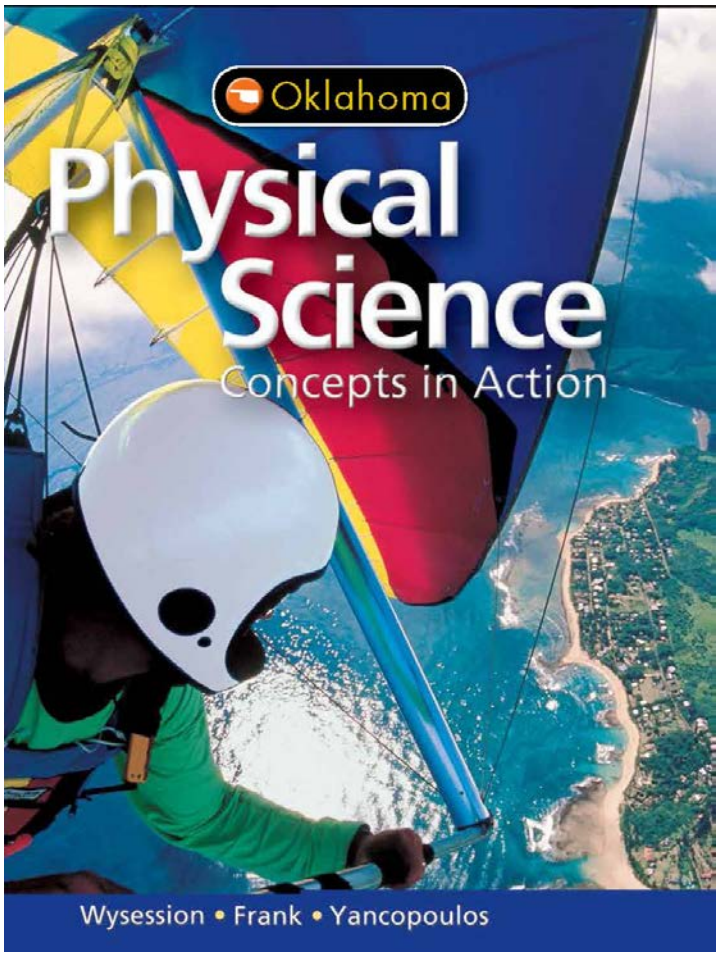

To the

Oklahoma Academic Standards for Physical Science

ALWAYS LEARNING PEARSON

Oklahoma Academic Standards for Physical Science	Physical Science: Concepts in Action Oklahoma Edition, ©2016
PHYSICAL SCIENCE	
HS-PS1 Matter and Its Interaction	
Performance Expectations	
HS-PS1-1 Students who demonstrate understanding can: Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.	**SE/TE:** Chapter 5, pp. 124-155
HS-PS1-2 Students who demonstrate understanding can: Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.	**SE/TE:** Chapter 5, pp. 139-145; Chapter 6, pp. 158-164, p. 165-169, pp. 176-181; Chapter 7, pp. 199-205
HS-PS1-5 Students who demonstrate understanding can: Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.	**SE/TE:** Chapter 7, pp. 206-209, pp. 212-215
HS-PS1-7 Students who demonstrate understanding can: Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.	**SE/TE:** Chapter 7, pp. 192-198
HS-PS2 Motion and Stability: Forces and Interactions	
Performance Expectations	
HS-PS2-1 Students who demonstrate understanding can: Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.	**SE/TE:** Chapter 12, pp. 365–367, p. 383
HS-PS2-2 Students who demonstrate understanding can: Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.	**SE/TE:** Chapter 12, pp. 376-377

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HS-PS2-3 Students who demonstrate understanding can: Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision. *	**SE / TE:** Chapter 12, pp. 365-368
HS-PS2-5 Students who demonstrate understanding can: Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current.	**SE / TE:** Chapter 20, p. 604; Chapter 21, p. 631, pp. 635-639, pp. 648-649
HS-PS3 Energy	
Performance Expectations	
HS-PS3-1 Students who demonstrate understanding can: Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.	**SE / TE:** Chapter 15, p. 447, p. 449, pp. 453-459
HS-PS3-2 Students who demonstrate understanding can: Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as either motions of particles or energy stored in fields.	**SE / TE:** Chapter 15, p. 451; Chapter 16, p. 475; Chapter 20, p. 602, p. 603; Chapter 21, pp. 631-632
HS-PS3-3 Students who demonstrate understanding can: Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.*	**SE / TE:** Chapter 15, p. 465; Chapter 16, p. 484, pp. 486-487; Chapter 21, p. 639, pp. 643-644, pp. 648-649
HS-PS3-4 Students who demonstrate understanding can: Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).	**SE / TE:** Chapter 16, pp. 474-478

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HS-PS4 Waves and Their Applications in Technologies for Information Transfer	
Performance Expectations	
HS-PS4-1 Students who demonstrate understanding can: Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.	**SE/TE:** Chapter 17, pp. 500-507, pp. 514-515; Chapter 18, pp. 532-538
HS-PS4-2 Students who demonstrate understanding can: Evaluate questions about the advantages of using a digital transmission and storage of information.*	**SE/TE:** Chapter 20, pp. 614-617, pp. 618-619, pp. 620, p. 622
HS-PS4-4 Students who demonstrate understanding can: Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.	**SE/TE:** Chapter 16, pp. 484-485; Chapter 18, pp. 541-543; Chapter 19, pp. 570-573, pp. 580-584, pp. 586-587; Chapter 21, ppp. 640-641

*The performance expectations marked with an asterisk integrate traditional science content with engineering through a Practice or Disciplinary Core Idea.