

**2012 Science Textbook Approval Committee Consensus  
Correlation to the 2010 Science Standards of Learning and Curriculum Framework – Physics**

Text Title: Physics Principles and Problems Publisher School Education Group, a division of The McGraw-Hill Companies, Inc. Print X Digital X Combination \_

Section I. Correlation with the 2010 Science Standards of Learning and Curriculum Framework  Physics Summary	Rating		
	Adequate	Limited	No Evidence
PH.1	X		
PH.1a	X		
PH.1b	X		
PH.1c	X		
PH.1d	X		
PH.1e	X		
PH.1f	X		
PH.1g	X		
PH.2	X		
PH.2a	X		
PH.2b	X		
PH.2c	X		
PH.2d	X		

Section I. Correlation with the 2010 Science Standards of Learning and Curriculum Framework  Physics Summary	Rating		
	Adequate	Limited	No Evidence
PH.2e	X		
PH.3	X		
PH.3a		X	
PH.3b	X		
PH.3c	X		
PH.3d	X		
PH.3e	X		
PH.4	X		
PH.4a	X		
PH.4b	X		
PH.5	X		
PH.5a	X		
PH.5b	X		

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	Adequate	Limited	No Evidence
PH.5c	X		
PH.5d	X		
PH.5e	X		
PH.5f	X		
PH.5g	X		
PH.6	X		
PH.6a	X		
PH.6b	X		
PH.6c	X		
PH.7	X		
PH.7a	X		
PH.7b	X		
PH.8	X		

Section I. Correlation with the 2010 Science Standards of Learning and Curriculum Framework  Physics Summary	Rating		
	Adequate	Limited	No Evidence
PH.8a	X		
PH.8b	X		
PH.8c	X		
PH.9	X		
PH.9a	X		
PH.9b	X		
PH.9c	X		
PH.10	X		
PH.10a	X		
PH.10b	X		
PH.11	X		
PH.11a	X		
PH.11b	X		

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	Adequate	Limited	No Evidence
PH.11c	X		
PH.11d	X		
PH.12	X		
PH.12a	X		
PH.12b	X		
PH.12c	X		
PH.12d	X		
PH.12e		X	
PH.12f	X		
PH.12g	X		
PH.12h		X	
PH.12i		X	
PH.12j	X		

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Section II. Additional Criteria: Instructional Planning and Support	Degree of Correlation: Place an X to the right of your choice (Adequate, Limited , No Evidence) Must provide comments to support the ratings other than Adequate.		
1. The textbook is presented in an organized, logical manner and is appropriate for the age, grade, and maturity of the students.	<b>Adequate X</b>	<b>Limited</b>	<b>No Evidence</b>
	Textbook is logically organized and grade/age appropriate for students.	Textbook lacks consistency in organization and appropriateness for the grade/age of students.	Textbook is not reasonably organized and is inappropriate for the grade/age of the students.
2. The textbook is organized appropriately within and among units of study.	Comments:		
	<b>Adequate X</b>	<b>Limited</b>	<b>No Evidence</b>
Scope and sequence is easy to read and understand.	Scope and sequence is confusing and not easy to understand.	Scope and sequence is difficult to read and understand.	3. The format design includes titles, subheadings, and appropriate cross-referencing for ease of use.
Comments:			
<b>Adequate X</b>	<b>Limited</b>	<b>No Evidence</b>	
Organizational properties of the textbook assist in understanding and processing content.	Organizational properties of the textbook offer limited assistance in understanding and processing content.	Organizational properties of the textbook do not assist in understanding and processing content.	
Comments:			

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Section II. Additional Criteria: Instructional Planning and Support	Degree of Correlation: Place an X to the right of your choice (Adequate, Limited , No Evidence) Must provide comments to support the ratings other than Adequate.		
4. The writing style, syntax, and vocabulary are appropriate.	<b>Adequate X</b>	<b>Limited</b>	<b>No Evidence</b>
	Readability is appropriate for the grade level. Writing style and syntax are varied and appropriate to enhance student understanding. Vocabulary consists of both familiar and challenging words.	Readability may be appropriate but is inconsistent throughout the text. Writing style and syntax may be inappropriate or lack variety, offering limited support for student understanding. Vocabulary may be too challenging or too familiar.	Readability is not appropriate for the grade level. Writing style and syntax are often inappropriate and lack variety to enhance student understanding. Vocabulary is too challenging or unfamiliar.
5. Graphics and illustrations are appropriate.	<b>Adequate X</b>	<b>Limited</b>	<b>No Evidence</b>
	Visuals are accurate, support the text, and enhance student understanding.	Visuals are somewhat unclear and offer limited support for the text and student understanding.	Visuals are inaccurate, do not support the text, and do not enhance student understanding.
6. Sufficient, high-quality instructional strategies are provided to promote depth of understanding.	<b>Adequate X</b>	<b>Limited</b>	<b>No Evidence</b>
	Materials (investigations, laboratories, and inquiry activities) provide students with opportunities to integrate skills and concepts.	Materials (investigations, laboratories, and inquiry activities) provide students with limited opportunities to integrate skills and concepts.	Materials (investigations, laboratories, and inquiry activities) provide students with no opportunities to integrate skills and concepts.
	Comments:		

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Science Standard of Learning	Rating Scale Please indicate the rating for each by placing an X in the appropriate cell.		
	Adequate	Limited	No Evidence
PH.1 The student will plan and conduct investigations using experimental design and product design processes. Key concepts include	X		
a) the components of a system are defined;	X		
b) instruments are selected and used to extend observations and measurements;	X		
c) information is recorded and presented in an organized format;	X		
d) the limitations of the experimental apparatus and design are recognized;	X		
e) the limitations of measured quantities are recognized through the appropriate use of significant figures or error ranges;	X		
f) models and simulations are used to visualize and explain phenomena, to make predictions from hypotheses, and to interpret data; and	X		
g) appropriate technology, including computers, graphing calculators, and probeware, is used for gathering and analyzing data and communicating results.	X		
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	Adequate	Limited	No Evidence
PH.2 The student will investigate and understand how to analyze and interpret data. Key concepts include	X		
a) a description of a physical problem is translated into a mathematical statement in order to find a solution;	X		
b) relationships between physical quantities are determined using the shape of a curve passing through experimentally obtained data;	X		
c) the slope of a linear relationship is calculated and includes appropriate units;	X		
d) interpolated, extrapolated, and analyzed trends are used to make predictions; and	X		
e) situations with vector quantities are analyzed utilizing trigonometric or graphical methods.	X		
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Science Standard of Learning	Rating Scale		
	Adequate	Limited	No Evidence
PH.3 The student will investigate and demonstrate an understanding of the nature of science, scientific reasoning, and logic. Key concepts include	X		
a) analysis of scientific sources to develop and refine research hypotheses;		X	
b) analysis of how science explains and predicts relationships;	X		
c) evaluation of evidence for scientific theories;	X		
d) examination of how new discoveries result in modification of existing theories or establishment of new paradigms; and	X		
e) construction and defense of a scientific viewpoint.	X		
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		Adequate	Limited	No Evidence
PH.4	The student will investigate and understand how applications of physics affect the world. Key concepts include	X		
	a) examples from the real world; and	X		
	b) exploration of the roles and contributions of science and technology.	X		
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Science Standard of Learning	Rating Scale		
	Adequate	Limited	No Evidence
PH.5 The student will investigate and understand the interrelationships among mass, distance, force, and time through mathematical and experimental processes. Key concepts include	X		
a) linear motion;	X		
b) uniform circular motion;	X		
c) projectile motion;	X		
d) Newton’s laws of motion;	X		
e) gravitation;	X		
f) planetary motion; and	X		
g) work, power, and energy.	X		
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Science Standard of Learning	Rating Scale		
	Adequate	Limited	No Evidence
PH.6 The student will investigate and understand that quantities including mass, energy, momentum, and charge are conserved. Key concepts include	X		
a) kinetic and potential energy;	X		
b) elastic and inelastic collisions; and	X		
c) mass/energy equivalence;	X		
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		Adequate	Limited	No Evidence
PH.7	The student will investigate and understand that energy can be transferred and transformed to provide usable work. Key concepts include	X		
	a) transfer and storage of energy among systems including mechanical, thermal, gravitational, electromagnetic, chemical, and nuclear systems; and	X		
	b) efficiency of systems.	X		
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Science Standard of Learning	Rating Scale		
	Adequate	Limited	No Evidence
PH.8 The student will investigate and understand wave phenomena. Key concepts include	X		
a) wave characteristics;	X		
b) fundamental wave processes; and	X		
c) light and sound in terms of wave models.	X		
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Science Standard of Learning		Rating Scale		
		Adequate	Limited	No Evidence
PH.9	The student will investigate and understand that different frequencies and wavelengths in the electromagnetic spectrum are phenomena ranging from radio waves through visible light to gamma radiation. Key concepts include	X		
	a) the properties, behaviors, and relative size of radio waves, microwaves, infrared, visible light, ultraviolet, X-rays, and gamma rays;	X		
	b) wave/particle dual nature of light; and	X		
	c) current applications based on the respective wavelengths.	X		
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Science Standard of Learning	Rating Scale		
	Adequate	Limited	No Evidence
PH.10 The student will investigate and understand how to use the field concept to describe the effects of gravitational, electric, and magnetic forces. Key concepts include	X		
a) inverse square laws (Newton’s law of universal gravitation and Coulomb’s law); and	X		
b) technological applications.	X		
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	Adequate	Limited	No Evidence
PH.11 The student will investigate and understand how to diagram, construct, and analyze basic electrical circuits and explain the function of various circuit components. Key concepts include	X		
a) Ohm’s law;	X		
b) series, parallel, and combined circuits;	X		
c) electrical power; and;	X		
d) alternating and direct currents.	X		
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	Adequate	Limited	No Evidence
PH.12 The student will investigate and understand that extremely large and extremely small quantities are not necessarily described by the same laws as those studied in Newtonian physics. Key concepts include	X		
a) wave/particle duality;	X		
b) wave properties of matter;	X		
c) matter/energy equivalence;	X		
d) quantum mechanics and uncertainty;	X		
e) relativity;	X		
f) nuclear physics;	X		
g) solid state physics;	X		
h) nanotechnology;		X	
i) superconductivity; and	X		
j) radioactivity.	X		
<b>Comments: Provide comments to support “limited” or “no evidence” ratings.</b>			