

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

Text Title: Miller Levine Biology      Publisher: Pearson Education, Inc., publishing as Prentice Hall    Print  Digital  Combination

Section I. Correlation with the 2010 Science Standards of Learning and Curriculum Framework  Biology Summary	Rating		
	Adequate	Limited	No Evidence
BIO.1	X		
BIO.1a	X		
BIO.1b	X		
BIO.1c	X		
BIO.1d	X		
BIO.1e	X		
BIO.1f	X		
BIO.1g	X		
BIO.1h	X		
BIO.1i	X		
BIO.1j		X	
BIO.1k	X		
BIO.1l	X		

Section I. Correlation with the 2010 Science Standards of Learning and Curriculum Framework  Biology Summary	Rating		
	Adequate	Limited	No Evidence
BIO.1m	X		
BIO.2	X		
BIO.2a	X		
BIO.2b	X		
BIO.2c	X		
BIO.2d	X		
BIO.3	X		
BIO.3a	X		
BIO.3b	X		
BIO.3c	X		
BIO.3d	X		
BIO.3e	X		
BIO.4	X		

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	Adequate	Limited	No Evidence
BIO.4a	X		
BIO.4b	X		
BIO.4c	X		
BIO.4d	X		
BIO.4e	X		
BIO.4f	X		
BIO.5	X		
BIO.5a	X		
BIO.5b	X		
BIO.5c	X		
BIO.5d	X		
BIO.5e	X		
BIO.5f	X		

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	Adequate	Limited	No Evidence
BIO.5g	X		
BIO.5h	X		
BIO.5i	X		
BIO.5j	X		
BIO.6	X		
BIO.6a	X		
BIO.6b	X		
BIO.6c	X		
BIO.6d	X		
BIO.6e	X		
BIO.7	X		
BIO.7a	X		
BIO.7b	X		

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	Adequate	Limited	No Evidence
BIO.7c	X		
BIO.7d	X		
BIO.7e	X		
BIO.8	X		
BIO.8a	X		
BIO.8b	X		
BIO.8c	X		
BIO.8d	X		
BIO.8e	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.
	Comments:		
2. The textbook is organized appropriately within and among units of study.	<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.
	Comments:		
3. The format design includes titles, subheadings, and appropriate cross-referencing for ease of use.	<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:		
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	Readability may be appropriate but is inconsistent throughout the text.	Readability is not appropriate for the grade level. Writing style and syntax

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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.		
	and appropriate to enhance student understanding. Vocabulary consists of both familiar and challenging words.	Writing style and syntax may be inappropriate or lack variety, offering limited support for student understanding. Vocabulary may be too challenging or too familiar.	are often inappropriate and lack variety to enhance student understanding. Vocabulary is too challenging or unfamiliar.
	Comments:		
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.
	Comments:		
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
BIO.1 The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which	X		
a) observations of living organisms are recorded in the lab and in the field;	X		
b) hypotheses are formulated based on direct observations and information from scientific literature;	X		
c) variables are defined and investigations are designed to test hypotheses;	X		
d) graphing and arithmetic calculations are used as tools in data analysis;	X		
e) conclusions are formed based on recorded quantitative and qualitative data;	X		
f) sources of error inherent in experimental design are identified and discussed;	X		
g) validity of data is determined;	X		
h) chemicals and equipment are used in a safe manner;	X		
i) appropriate technology including computers, graphing calculators, and probeware, is used for gathering and analyzing data, communicating results, modeling concepts, and simulating experimental conditions;	X		

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	Adequate	Limited	No Evidence
BIO.1 The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which	X		
j) research utilizes scientific literature;		X	
k) differentiation is made between a scientific hypothesis, theory, and law;	X		
l) alternative scientific explanations and models are recognized and analyzed;	X		
m) current applications of biological concepts are used.	X		
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	Adequate	Limited	No Evidence
BIO.2 The student will investigate and understand the chemical and biochemical principles essential for life. Key concepts include	X		
a) water chemistry and its impact on life processes;	X		
b) the structure and function of macromolecules;	X		
c) the nature of enzymes; and	X		
d) the capture, storage, transformation, and flow of energy through the processes of photosynthesis and respiration.	X		
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Science Standard of Learning	Rating Scale		
	Adequate	Limited	No Evidence
BIO.3 The student will investigate and understand relationships between cell structure and function. Key concepts include	X		
a) evidence supporting the cell theory;	X		
b) characteristics of prokaryotic and eukaryotic cells;	X		
c) similarities between the activities of the organelles in a single cell and a whole organism;	X		
d) the cell membrane model; and	X		
e) the impact of surface area to volume ratio on cell division, material transport, and other life processes.	X		
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	Adequate	Limited	No Evidence
BIO.4 The student will investigate and understand life functions of Archaea, Bacteria and Eukarya. Key concepts include	X		
a) comparison of their metabolic activities;	X		
b) maintenance of homeostasis;	X		
c) how the structures and functions vary among and within the Eukarya kingdoms of protists, fungi, plants, and animals, including humans;	X		
d) human health issues, human anatomy, and body systems;	X		
e) how viruses compare with organisms; and	X		
f) evidence supporting the germ theory of infectious disease.	X		
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Science Standard of Learning	Rating Scale		
	Adequate	Limited	No Evidence
BIO.5 The student will investigate and understand common mechanisms of inheritance and protein synthesis. Key concepts include	X		
a) cell growth and division;	X		
b) gamete formation;	X		
c) cell specialization;	X		
d) prediction of inheritance of traits based on the Mendelian laws of heredity;	X		
e) historical development of the structural model of DNA;	X		
f) genetic variation;	X		
g) the structure, function, and replication of nucleic acids;	X		
h) events involved in the construction of proteins;	X		
i) use, limitations, and misuse of genetic information; and	X		
j) exploration of the impact of DNA technologies.	X		
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	Adequate	Limited	No Evidence
BIO.6 The student will investigate and understand bases for modern classification systems. Key concepts include	X		
a) structural similarities among organisms;	X		
b) fossil record interpretation;	X		
c) comparison of developmental stages in different organisms;	X		
d) examination of biochemical similarities and differences among organisms; and	X		
e) systems of classification that are adaptable to new scientific discoveries.	X		
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Science Standard of Learning	Rating Scale		
	Adequate	Limited	No Evidence
BIO.7 The student will investigate and understand how populations change through time. Key concepts include	X		
a) evidence found in fossil records;	X		
b) how genetic variation, reproductive strategies, and environmental pressures impact the survival of populations;	X		
c) how natural selection leads to adaptations;	X		
d) emergence of new species; and;	X		
e) scientific evidence and explanations for biological evolution.	X		
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Science Standard of Learning	Rating Scale		
	Adequate	Limited	No Evidence
BIO.8 The student will investigate and understand dynamic equilibria within populations, communities, and ecosystems. Key concepts include	X		
a) Interactions within and among populations including carrying capacities, limiting factors, and growth curves;	X		
b) nutrient cycling with energy flow through ecosystems;	X		
c) succession patterns in ecosystems;	X		
d) the effects of natural events and human activities on ecosystems; and	X		
e) analysis of the flora, fauna, and microorganisms of Virginia ecosystems.	X		
<b>Comments: Provide comments to support “limited” or “no evidence” ratings.</b>			