

TEXTBOOK SELECTION AND ADOPTION FORM

Vital Information

Title Biotechnology, Science for the New Millennium-Text with Encore CD and Lab Manual
ISBN 978-0-76384-288-8

Price 93.95

Material (check one): Major text series Supplementary material

Instructional Course for which material will be used: Biotechnology Course

Author: Ellyn Daughtery Publisher: Paradigm Publisher

Place of Publication: Saint Paul, Minnesota

Year of Publication: 2012 Edition: First Edition, Revised

Current Text: None, as this is a new course Year of Adoption: _____

Please score each item 1 – 3 points. 1 = Poor 2 = Fair 3 = Excellent
If an item is not applicable, please mark N/A.

Please provide evidence and/or comments for each indicator.

Section A

Understanding: Content / Standards	Evidence / Comments	Points (1-3)
The materials support big ideas and/or essential questions that are aligned to the department/course curriculum.	The materials in this textbook are aligned with the Bioscience curriculum outlined by Arizona Career and Technical Education.	3
The content addresses district, state and national standards.	The ideas presented in this book meet both the Arizona State Standards and the Arizona CTE standards for Bio-innovation.	3
The content flows in a logical progression appropriate for this course-- from simple to complex, chronological, topical, etc.	The textbook provides students with the necessary background to understand and perform the technical skills necessary to be successful in biotechnology.	3

Subtotal 9

Section A (continued)

Understanding: Critical Thinking / Assessment	Evidence / Comments	Points (1-3)
The content, including illustrations and examples, presents ethnic and gender diversity.	The illustrations in this textbook include individuals from multiple ethnic groups. For example, on pg. 25 there is a woman who is Hispanic, whereas on pg. 77 there is a man who is Asian.	3
The materials require learners to be thoughtful, reflective and use high level skills.	The textbook provides the basic concepts and terminology used in biotechnology and shows how they apply to the industry. At the end of each chapter students are asked to think as a biotechnician by answering questions that they may confront working in a biotech lab, either at the university or in industry	3
The materials include valid and varied assessments-both traditional and performance based.	The materials included in the textbook would allow for varied assessments including both summative assessments as well as performance based assessments. For performance based assessments, the textbook outlines problems students might be confronted with in a laboratory situation that they have to solve.	3
The assessment tools encourage both assessment of learning and assessment for learning to document student progress and achievement.	The assessment tools provided with the text will allow for both summative and formative assessment. From the test bank, it will be able to pre-assess students to identify prior knowledge and any misconceptions they might have about the topic.	3
The content develops critical 21 st century skills which will enable students to effectively participate in a global society.	The content provided in this textbook will help develop critical thinking skills and using technology to seek out answers to important problems or addressing bioethical issues. For example, each chapter has a section entitled "Biotech Online" for students to research a topic using online resources. Another example, is students in the textbook are asked to create a line graph using Microsoft Excel that shows the amount of sales in biotechnology companies from 1995 til now.	3

Subtotal 15

Understanding: Integration / Differentiation	Evidence / Comments	Points (1-3)
Materials and activities are differentiated to address the diverse abilities, interests and needs of students.	The materials in this textbook are quite diversified. Not only does it outline the basic technical skills that students will need to function in the biotechnology workplace, but it	3

	provides the basic biological concepts used in biotechnology and discusses the different careers students can pursue in the future.	
The materials include interdisciplinary connections and allow for application of skills to promote lifelong learning.	The textbook covers topics that they will encounter throughout their lives including bioethics, and pros and cons of different commercial biotech products.	3
The materials reflect a “developmentally appropriate” approach to student learning.	The textbook is easy to read and full of colorful illustrations that are appropriate for students in grades 9-12.	3
Outside experiences, including family involvement, are part of the learning experience.	While the textbook itself does not include family involvement, the topics they cover in this textbook may lead to discussions at home around the dinner table including bioethics and commercial biotech products they might encounter, for example, at the grocery store.	3

Subtotal 12

Total Points for Section A 36

Section B

Pre-Reading: Background Knowledge	Evidence / Comments	Points (1-3)
Chapter introductions help students relate their own life experiences and previously learned information to the topic.	Each chapter begins with an introduction relating the content of the chapter to the students' everyday experiences. For example, in Chapter 1 biotechnology is defined and they begin this chapter with "Imagine going to a grocery store and having only a single choice of apple, orange....to buy" to show the relevance of biotechnology to a students' life experiences.	3
The materials build on the students' prior knowledge within the chapter subsections.	The material in each of the chapters builds upon topics taught in earlier chapters. In the beginning chapters, the author does a good job of setting the foundation making the later chapters comprehensible.	3

Subtotal 6

Pre-Reading: Purpose Setting	Evidence / Comments	Points (1-3)
Chapters begin with a list of objective statements or essential questions indicating what students will learn.	Each chapter begins with performance objectives allowing students to identify the expected performance outcomes of each chapter	3

Section headings are specific enough so that students can convert them to focus questions which direct their reading.	The section headings are well-written and indicate the content of the paragraphs that follow. When the author introduces key vocabulary, the key word is bolded in the text.	3
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Subtotal 6

Total Points for Section B 12

Section C

Active Reading: Main Ideas	Evidence / Comments	Points (1-3)
Titles of sections within the chapter indicate the main idea of each section.	Each section of the chapter is well-labeled and indicates the content of the section.	3
The main idea of each paragraph is clearly stated and easy to locate.	The main ideas in each paragraph are well-written and easily accessible by the student. Key words are highlighted with boldface.	3

Subtotal 6

Section C (continued)

Active Reading: Supporting Main Ideas	Evidence / Comments	Points (1-3)
Main idea explanations are thorough.	The main ideas in each paragraph are well-written and easily accessible by the student.	3
Charts, pictures and other graphics support the main ideas and are appropriately located.	The charts and illustrations provide excellent visuals that supplement the text so the student can quickly understand the meaning of the text.	3
Interesting details are included to expand on the essential information in the text and to engage students.	Throughout the text, everyday examples are used that students can easily relate to and keep the student engaged as they comprehend the essential information.	3

Subtotal 9

Active Reading: Organization of Information	Evidence / Comments	Points (1-3)
The text is organized logically, so students can easily take notes.	The overall textbook is organized sequentially with the beginning chapters providing the foundation for the later chapters. Likewise, each chapter introduces the main ideas at the beginning of the chapter and builds on those key concepts throughout the chapter, giving everyday examples to help students understand the content's meaning and then shows its application to the biotech industry.	3
Signal words are provided to indicate how ideas in the section are related to one another.	The key words in the text are boldface and related to the section heading. For example, in the section on carbohydrates, different categories of carbohydrates are boldface including monosaccharides, disaccharides, and polysaccharides. The author then provides an example of these categories.	3
The presentation of main ideas and details is consistent in each chapter.	The format of each chapter is consistent throughout the textbook	3

Subtotal 9

Active Reading: Vocabulary Development	Evidence / Comments	Points (1-3)
Important words/concepts are highlighted in the text (bold, italics, color).	Throughout the text, key words are boldface.	3
Important words/concepts are clearly defined or explained within the reading.	The definition of the boldface word is defined in the margins of the text where it is first introduced.	.3
Concrete examples or analogies are included to clarify abstract ideas.	The author throughout the text provides examples that students can relate to and often provides illustrations of those examples to accompany the text.	3

Section C (continued)

The author provides more than just a definition (e.g. pictures, examples, analogies, counter examples).	The author provides lots of examples both in the text as well as illustrations throughout the textbook.	3
The number of highlighted vocabulary terms is appropriate for the concepts being explained. (Avoid too much jargon!)	The highlighted vocabulary is appropriate for the subject being discussed. One of the difficulties students have with biology is all the terminology. The textbook does a good job of highlighting key words, defining those words, and using those words throughout the text.	3

Subtotal 15

Active Reading: Author's Writing/Student Engagement	Evidence / Comments	Points (1-3)
The author's style engages students— sentence structure is varied and not overly complex, verbs are mostly in the active voice.	The author has written the text that engages students. The text has varying sentence length, the verbs are for the most part in active voice.	3
The author uses imagery and concrete examples to help students visualize information.	The author provides lots of examples throughout the text to illustrate the point she is trying to make. For example, she talks about the relationship of the size and shape of cells to their structure and function and then discusses specific cells -skin cells, muscle cells, liver cells-to illustrate her point.	3

Subtotal 6

Total Points for Section C 45

Section D

Post Reading: Metacognition	Evidence / Comments	Points (1-3)
The author provides quality questions within and at the end of each chapter. They correlate to the chapter objectives, help students check their understanding as they read, encourage higher order thinking, and promote class or small group discussions.	At the end of each chapter, the author provides a variety of questions that check for understanding of the material. At the end of each section there are review questions to check for understanding and comprehension of the material. At the end of the chapter, there are additional activities that focus on higher order thinking skills where students have to apply the concepts learned to a new situation or extends the material taught. For	3

	example, in the discussion on macromolecules students have to select four foods and identify the molecular composition of each one. There are also questions that could lead to small group discussions such as "Biohazards - knowing when you have one".	
Signal words are provided to indicate how ideas in the section are related to one another.	Under each section, the sections are further divided starting with a signal word that outlines the key concepts to be discussed under that section. For example on p. 112, the section on isolating and manipulating DNA is further divided into recombinant DNA technology, site-specific mutagenesis, and gene therapy. Those signal words are all ways that DNA can be manipulated.	3
The summary accurately reflects the main ideas and key supporting information within the chapter.	The summary lists the key concepts taught in the chapter as well as the key technical skills learned in the chapter and their application in a biotechnology laboratory.	3

Total Points for Section D 9

Section E

Teacher's Guide and other Resources	Evidence / Comments	Points (1-3)
The teacher's guide includes activities for helping students to organize information, to lead their own discussions, and to work in cooperative groups.	The teacher's guide provides study aids and Web links for students that can reinforce or extend the subject matter being taught.	3
The materials and instructional plans are well organized and easy to use (teacher friendly).	The textbook comes with course planning tools and hints for presentation of the material using different pedagogical techniques.	3

Total Points for Section E 6

Section F

Ancillary Materials* for Students	Evidence / Comments	Points (1-3)
Ancillary materials expand knowledge of content by focusing on essential ideas.	Associated with the textbook is a lab manual that gives students hands-on activities to visualize concepts discussed in the textbook.	3

Ancillary materials meet the varying individual needs of students.	The ancillary materials provides opportunitites to present the materials in a variety of ways to address the different learning styles of the student.	3
Ancillary materials incorporate state of the art technology resources to facilitate teacher use and support student learning.	The instructional materials provide web links that students can access and provides instruction to create websites were students can be tested online	2

*Workbooks, blackline masters, skill sheets, CDs, videos, DVDs, multi-level libraries, and primary resource documents.

Total Points for Section F 8

Total Points Section A = 36

Total Points Section B = 12

Total Points Section C = 45

Total Points Section D = 9

Total Points Section E = 6

Total Points Section F = 8

Total Points for Text 116

Final Recommendation and explanation:

Based on my evaluation, I recommend that this textbook be purchased for the Biotechnology Course in the Amphitheater School District.

Submitted by:

Teacher	School	Date
Teacher	School	Date
Teacher	School	Date
Teacher	School	Date

Administrator

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