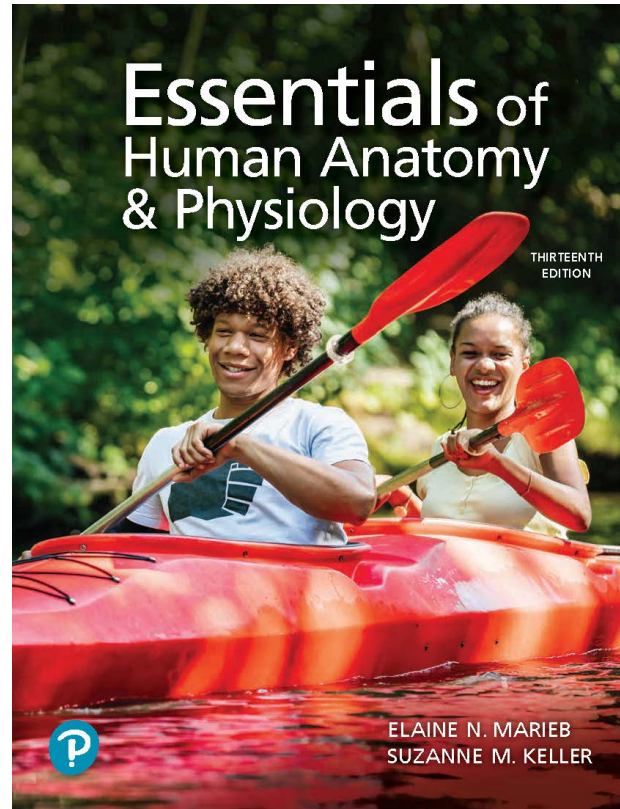


A Correlation of



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To the

**West Virginia
Course 6103 – Human Anatomy and Physiology
Evaluation Criteria**

PUBLISHER:	Savvas Learning Company LLC, formerly Pearson K12 Learning		
SUBJECT:	Science	SPECIFIC Course:	Human Anatomy and Physiology
COURDR:	6103 –Human Anatomy and Physiology	TITLE	Essentials of Human Anatomy & Physiology 13th Edition, Mastering® with eText
COPYRIGHT:	©2022		
SE ISBN:	9780137321599	TE ISBN:	N/A, Available online within Mastering®
URL for Online Resources:	PearsonMyLabandMastering.com		
Teacher Demo Account Username:	WV_APE_REVIEWER1	Teacher Demo Account Password:	Savvas123 (For state reviewer use only)
Student Demo Account Username:	WV_APE_REVIEWER2	Student Demo Account Password:	Savvas123 (For state reviewer use only)

NON-NEGOTIABLE EVALUATION CRITERIA
2022-2028
Group IV – Science
Human Anatomy and Physiology

Equity, Accessibility and Format – This section to be completed by the County Adoption Committee Evaluation Responses			
Yes	No	CRITERIA	NOTES – by County Adoption Committee
X		1. INTER-ETHNIC The instructional resource meets the requirements of inter-ethnic: concepts, content and illustrations, as set by WV Board of Education Policy 2445.41.	The photographic, illustrative and digital resources found throughout the <i>Essentials of Human Anatomy & Physiology</i> program show people of a variety of ages, and ethnicities in everyday and anatomy-related activities and images. See representative examples: Cover image, pages 6, 108, 138, 192, 214, 291, 419, 572

Digital Resources: The symbol > indicates a click to reach each digital asset on the Realize platform.

X		<p>2. EQUAL OPPORTUNITY The instructional resource meets the requirements of equal opportunity: concepts, content, illustration, heritage, roles contributions, experiences and achievements of males and females in American and other cultures.</p>	<p>The publisher is dedicated to creating content that reflects the diversity of all learners. This program embraces the many dimensions of diversity, including but not limited to race, ethnicity, gender, socioeconomic status, ability, age, sexual orientation, and religious or political beliefs.</p> <p>Pearson works with authors to create content for every product and service and acknowledges the responsibility to demonstrate inclusivity and incorporate diverse scholarship so that everyone can achieve their potential through learning. Equal opportunity requirements of males and females in America and other cultures are represented in the following examples: pages 1, 53, 139, 283, 311-312, 418-419, 452, 499, 500, 532</p>
X		<p>3. FORMAT This resource includes an interactive electronic/digital component for students.</p>	<p>Yes. The Mastering® series is the most effective and widely used online homework, tutorial, and assessment system for the sciences. It delivers self-paced tutorials that focus on your course objectives, provides individualized coaching, and responds to each student's progress.</p> <p>The Mastering® system helps teachers maximize class time with easy-to-assign, customizable, and automatically graded assessments that motivate students to learn. Each Mastering site is product specific and designed to align directly to our newest and noteworthy programs in each discipline area.</p>
X		<p>4. BIAS The instructional resource is free of political bias.</p>	<p>Pearson is dedicated to creating bias-free content that reflects the diversity of all learners. The <i>Essentials of Human Anatomy & Physiology</i> program is free of political bias.</p>
X		<p>5. COMMON CORE The instructional resource does not reference Common Core academic standards. (WV Code §18-2E-1b-1)</p>	<p><i>Essentials of Human Anatomy & Physiology</i> program does not include any references to the Common Core academic standards.</p>

Digital Resources: The symbol > indicates a click to reach each digital asset on the Realize platform.

X		<p>6. INQUIRY This resource must include rigorous and developmentally appropriate active inquiry, investigations, and hands-on activities.</p>	<p>Yes. Pearson offers a variety of hands-on and online activities for each program as it applies to the curriculum. Pearson's Mastering® technology offers teachers assignable activities/resources that may include Tutorials, Activities, Coaching Activities, Misconception Questions, Reading Questions, End-of-Chapter Questions and Test Bank Questions. In addition, these problem types offer a variety of Answer Types that vary by program and include Labeling, Matching/Vocab, Multiple Choice/Select, Ranking, Sorting and more. Mastering offers additional student study support that enables them to watch videos and animations, take practice quizzes, review key concepts, access study tools, and more. This resource makes it the ideal area to practice at your own pace and without penalty. Resources are located within the eText 2.0 or within sections of the Mastering technology site.</p>
X		<p>7. SAFETY This resource must include explicit guidance for demonstrating the safe and proper techniques for handling, manipulating and caring for developmentally appropriate science materials and treating living organisms humanely.</p>	<p>Yes. All lab needs for this course are provided electronically online within the Mastering® technology. Mastering offers educators assignable pre-built lab exercises plus the Mastering Study Area offers access to Practice Anatomy Lab (PAL) 3.1 PAL is an indispensable virtual anatomy study and practice tool that gives students 24/7 access to the most widely used lab specimens including human cadaver, anatomical models from leading manufacturers such as 3B Scientific, SOMSO, Denoyer-Geppert, Frey Scientific/Nystrom, Altay Scientific, and Ward's, histology, cat, and fetal pig. PAL is easy to use and includes built-in audio pronunciations, rotatable bones and simulated fill-in-the-blank lab practical exams.</p>

Digital Resources: The symbol > indicates a click to reach each digital asset on the Realize platform.

GENERAL EVALUATION CRITERIA

**2022-2028
Group IV – Science**

Human Anatomy and Physiology

The general evaluation criteria apply to each grade level and are to be evaluated for each grade level unless otherwise specified. These criteria consist of information critical to the development of all grade levels. In reading the general evaluation criteria and subsequent specific grade level criteria, **e.g. means “examples of” and i.e. means that “each of” those items must be addressed.** Eighty percent of the general and eighty percent of the specific criteria must be met with I (In-depth) or A (Adequate) in order to be recommended.

(Vendor/Publisher) SPECIFIC LOCATION OF CONTENT WITHIN PRODUCT	(IRR Committee) Responses										
	I=In-depth	A=Adequate	M=Minimal	N=Nonexistent	I		A		M		N
	In addition to alignment of West Virginia College- and Career-Readiness Standards (WVCCRS) for Science, instructional resources must also include opportunities for students to develop:										
College- and Career- Readiness Skills											
Thinking and Problem-Solving Skills											
<i>Science Content:</i>											
Multiple opportunities exist throughout the program. Representative Citations: Mastering A&P Digital Resources: Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual>Chapter 1: Student Activities; Chapter 6: Student Activities	1. provides opportunities for student collaboration.				X						

Digital Resources: The symbol > indicates a click to reach each digital asset on the Realize platform.

<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Practice Anatomy Lab (PAL); PhysioEx>Exercises >Exercise 2, Activity 4: Tetanus in Isolated Skeletal Muscle; >Exercise 5, Activity 3: Studying the Effect of Blood Viscosity on Blood Flow Rate; >Exercise 10, Activity 2: Rebreathing</p>	<p>2. requires students to investigate and discover multiple solutions through inquiry.</p>	<p>X</p>						
<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Animations & Videos>Bone & Dissection Videos; Histology Videos; Interactive Physiology (IP) >Launch the Study Area>Practice Anatomy Lab; PhysioEx>Exercises>Exercise 6, Activity 3: Examining the Effects of Chemical Modifiers on Heart Rate</p>	<p>3. includes options for using technology tools to gather information, make informed decisions and justify solutions.</p>	<p>X</p>						

Digital Resources: The symbol > indicates a click to reach each digital asset on the Realize platform.

<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Student Edition: A Closer Look: The “Terrible Three”, 246–247 Critical thinking and Clinical Application Questions, 301 A Closer Look: Covid-19: A Global Pandemic, 418–419 Critical thinking and Clinical Application Questions, 510</p> <p>Mastering A&P Digital Resources: Study Area PhysioEx>Exercises>Exercise 6, Activity 3: Examining the Effects of Chemical Modifiers on Heart Rate</p>	<p>4. engages students in critical thinking and the synthesis of information to analyze real-world problems.</p>	<p>X</p>					
<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Student Edition: A Closer Look: Joint Ventures, 162 Critical thinking and Clinical Application Questions, 391 Did You Get It?, 410 A Closer Look: Covid-19: A Global Pandemic, 418–419 Critical thinking and Clinical Application Questions, 431</p>	<p>5. offers activities to connect multiple scientific phenomena to real-world events.</p>	<p>X</p>					

Digital Resources: The symbol > indicates a click to reach each digital asset on the Realize platform.

Information and Communication Skills/Science

For student mastery of college- and career- readiness standards, the instructional resources will include multiple strategies that provide students with opportunities to:

<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual >Chapter 3 Investigate Online and Chapter 3 Media > Chapter 10: Investigate Online and Chapter 10 Media > Chapter 15 Investigate Online and Chapter 15 Media</p>	<p>6. interact with secure external multimedia resources for local and global collaboration.</p>	<p>X</p>					
<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Student Edition: Critical thinking and Clinical Application Questions, 219 Critical thinking and Clinical Application Questions, 330 Critical thinking and Clinical Application Questions, 459</p> <p>Mastering A&P Digital Resources: Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual>Chapter 6: Student Activities; Chapter 14: Student Activities; Chapter 16: Potential Student Responses</p>	<p>7. develop conceptual understanding and research skills.</p>	<p>X</p>					

Digital Resources: The symbol > indicates a click to reach each digital asset on the Realize platform.

<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Study Area > Launch the Study Area >Animations and Videos >A&P Flix >A&P 3D Animations >Launch Study Area >PhysioEx >Exercises Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual>Chapter 9: Student Activities; Chapter 16: Potential Student Responses</p>	<p>8. articulate thoughts and ideas through oral, written, and multimedia communications.</p>	<p>X</p>					
<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Student Edition: Figure 3.16 Protein synthesis, 85 Figure 6.5 Events at the neuromuscular junction, 185 Figure 7.18 Ventricles and location of the cerebrospinal fluid, 244 A Closer Look: Visual Pigments—The Actual Photoreceptors, 279</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Practice Anatomy Lab (PAL) > Practice Anatomy Lab 3.1; >Interactive Physiology >IP Animation: Tissues; > A&P 3D Animations: The Cross Bridge Cycle</p>	<p>9. analyze and interpret visually expressed information (e.g., flowchart, diagram, model, graph, table, or digital mapping technology).</p>	<p>X</p>					

Digital Resources: The symbol > indicates a click to reach each digital asset on the Realize platform.

Personal and Workplace Productivity Skills

For student mastery of college- and career- readiness standards, the instructional resources will provide students with opportunities to:

<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual>Chapter 6: Student Activities; >Chapter 14: Student Activities; >Chapter 16: Student Activities</p>	<p>10. use interpersonal skills to work cooperatively to accomplish a task.</p>	<p>X</p>						
<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Instructor Resources >Launch the Instructor Resources >Instructor Guide> Instructor Manual >Chapter 6: Student Activities >Chapter 11: Student Activities; >Chapter 14: Student Activities</p>	<p>11. develop and initiate a plan of action to complete a task or project.</p>	<p>X</p>						
<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual >Chapter 7: Student Activities; >Chapter 9: Student Activities; >Chapter 13: Student Activities; Chapter 16: Student Activities</p>	<p>12. practice time- and project-management skills</p>	<p>X</p>						

Digital Resources: The symbol > indicates a click to reach each digital asset on the Realize platform.

<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual >Chapter 10: Student Activities >Chapter 13: Student Activities; >Chapter 14: Student Activities</p>	<p>13. reflect upon and evaluate the results of a task or project.</p>	<p>X</p>						
<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual>Chapter 1: Student Activities; >Chapter 6: Student Activities; >Chapter 16: Student Activities</p>	<p>14. assume various roles and responsibilities when working independently or as a group.</p>	<p>X</p>						
<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Student Edition: Focus on Careers: Pharmacy Technician, 53 Focus on Careers: Radiologic Technologist, 174 Focus on Careers: Physical Therapy Assistant, 291 Focus on Careers: Licensed Practical Nurse (LPN), 538</p>	<p>15. explore science-related careers.</p>	<p>X</p>						

Digital Resources: The symbol > indicates a click to reach each digital asset on the Realize platform.

<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual>Chapter 3: Discussion Questions; Chapter 4: Discussion Questions and Student Activities; Chapter 7: Student Activities</p>	<p>16. conduct research, validate sources, and report findings in an ethical manner.</p>	<p>X</p>					
<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Study Area > Launch the Study Area >Animations and Videos >A&P Flix >A&P 3D Animations >Launch Study Area >PhysioEx >Exercises Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual>Chapter 10: Student Activities; >Chapter 16: Potential Student Responses</p>	<p>17. provide learning experiences for students to demonstrate mastery through multiple efforts.</p>	<p>X</p>					

Digital Resources: The symbol > indicates a click to reach each digital asset on the Realize platform.

Developmentally Appropriate Instructional Resources and Strategies

For student mastery of college- and career- readiness standards, the instructional resources:

<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Audio Summaries; Animations & Videos; Interactive Physiology (IP); Practice Anatomy Lab (PAL), PhysioEx >Additional Study Tools Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual>Chapter 7: Student Activities; Chapter 14: Student Activities</p>	<p>18. include multiple research-based strategies for differentiation, intervention and enrichment to support all learners.</p>	<p>X</p>						
<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Audio Summaries; Animations & Videos; Interactive Physiology (IP); Practice Anatomy Lab (PAL), > PhysioEx >Additional Study Tools Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual >Chapter 7: Classroom Demonstrations; Student Activities; Media.</p>	<p>19. provide multiple opportunities for incorporating various learning modalities.</p>	<p>X</p>						

Digital Resources: The symbol > indicates a click to reach each digital asset on the Realize platform.

<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual >Chapter 8: Classroom Demonstrations; >Chapter 10: Classroom Demonstrations; Chapter 12: Classroom Demonstrations.</p>	<p>20. cultivate investigative skills leading students to form logical conclusions.</p>	<p>X</p>						
<p>Scientific vocabulary and technical terminology are embedded throughout the text. Representative citations:</p> <p>Student Edition: 1.4b Directional Terms, 11–12 4.2a Functions of the Integumentary System, 110 6.4c Naming Skeletal Muscles, 198 9.2e Thymus, 313 12.2 Lymph Nodes, 395-396</p>	<p>21. incorporate authentic scientific vocabulary and technical terminology.</p>	<p>X</p>						
<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Animations & Videos><i>Bone and Dissection Videos</i> > Cow and Sheep Dissection > Sheep Heart: Right Side; Sheep Heart: Frontal Section; Sheep Heart: External >Launch the Study Area >Practice Anatomy Lab</p>	<p>22. integrate laboratory safety practices within learning experiences.</p>	<p>X</p>						

Digital Resources: The symbol > indicates a click to reach each digital asset on the Realize platform.

Life Skills

For student mastery of college- and career- readiness standards, the instructional resources will provide students with opportunities to:

<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual >Chapter 6: Classroom Demonstration; Student Activities; >Chapter 11: Classroom Demonstration; Student Activities; >Chapter 14: Classroom Demonstration; Student Activities.</p>	<p>23. persevere to complete a task and generate high quality work.</p>	<p>X</p>					
<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Student Edition: Critical Thinking and Clinical Application Questions, 219 Critical Thinking and Clinical Application Questions, 330 Critical Thinking and Clinical Application Questions, 459</p> <p>Mastering A&P Digital Resources: Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual>Chapter 6: Student Activities; Chapter 14: Student Activities; Chapter 16: Potential Student Responses</p>	<p>24. be exposed to and be respectful of varying viewpoints and positions of scientific issues.</p>	<p>X</p>					

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<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Study Area > Launch the Study Area >Animations and Videos >A&P Flix >A&P 3D Animations >Launch Study Area >PhysioEx >Exercises >Launch the Study Area>Animations & Videos> Bone and Dissection Videos > Cow and Sheep Dissection > Sheep Heart: Right Side; Sheep Heart: Frontal Section; Sheep Heart: External >Launch the Study Area >Practice Anatomy Lab</p>	<p>25. engage in hands-on activities to promote the understanding of science content.</p>	<p>X</p>					
<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Student Edition: Critical Thinking and Clinical Application Questions, 219 Critical Thinking and Clinical Application Questions, 330 Critical Thinking and Clinical Application Questions, 459</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Practice Anatomy Lab (PAL)</p>	<p>26. investigate the natural world and universe.</p>	<p>X</p>					
<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual>Chapter 2: Discussion Board Topic: Radioisotopes >Launch the Instructor Resources >Instructor Guide>Instructor Manual>Chapter 12: Student Activities</p>	<p>27. practice situational language (e.g., presentations, debates, speeches, collaborative discussions, social media) in real-world activities.</p>	<p>X</p>					

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<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Student Edition: A Closer Look: The “Terrible Three”, 246–247 Critical thinking and Clinical Application Questions, 301 A Closer Look: Covid-19: A Global Pandemic, 418–419 Critical thinking and Clinical Application Questions, 510</p>	<p>28. understand the impact of global issues and events on their lives, communities, and greater society.</p>	<p>X</p>						
<p><i>Essentials of Human Anatomy and Physiology</i> provides an array of procedural guides for labs and investigations.</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Practice Anatomy Lab (PAL) >Launch the Study Area>Animations & Videos> Bone and Dissection Videos</p>	<p>29. use laboratory equipment properly.</p>			<p>X</p>				

Digital Resources: The symbol > indicates a click to reach each digital asset on the Realize platform.

Assessment

The instructional resources provide:

Multiple opportunities exist throughout the program. Representative Citations:

Student Edition:

Critical thinking and Clinical Application Questions, 350

Did You Get It?, 359

Did You Get It?, 365

Critical thinking and Clinical Application Questions, 391

Did You Get It?, 424

Critical thinking and Clinical Application Questions, 431

Mastering A&P Digital Resources:

Instructor Resources

>Launch the Instructor Resources >Instructor Guide>Instructor Manual>Chapter 3: Student Activities; Chapter 7: Teaching Tip

>Launch the Instructor Resources >TestBank

30. ongoing diagnostic formative and summative assessments.

X

Digital Resources: The symbol > indicates a click to reach each digital asset on the Realize platform.

<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Student Edition: Short Answer Essay, 349 Critical thinking and Clinical Application Questions, 350 Did You Get It?, 359 Did You Get It?, 365 Short Answer Essay, 391 Critical thinking and Clinical Application Questions, 391 Did You Get It?, 424 Short Answer Essay, 430 Critical thinking and Clinical Application Questions, 431</p> <p>Mastering A&P Digital Resources: Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual>Chapter 3: Student Activities; Chapter 7: Teaching Tip >Launch the Instructor Resources >TestBank</p>	<p>31. a variety of assessment formats, including performance tasks as well as multimedia simulations, portfolio evaluations, and data-dependent and open-ended questions.</p>	<p>X</p>					
<p>Multiple opportunities exist throughout the program. Representative Citations:</p> <p>Mastering A&P Digital Resources: Instructor Resources >Launch the Instructor Resources >Instructor Guide >Instructor Manual >Chapter 1: Potential Student Responses; Chapter 3: Potential Student Responses; Chapter 5: Potential Student Responses >Launch the Instructor Resources >End of Chapter Answers</p>	<p>32. rubrics wherein all learners demonstrate progress toward mastery.</p>		<p>X</p>				

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Organization, Presentation and Format

The instructional resources:

Essentials of Human Anatomy and Physiology begins at a logical point—an orientation to the human body—and progresses through the systems, building on interrelationships among them. Furthermore, Instructor Resources for chapter are organized in a logical and efficient progression by starting with a lecture before continuing with labs, student activities, classroom discussion, assessments, and media access.

Student Edition:
Contents, ix–xvii

Mastering A&P Digital Resources:
Instructor Resources
>Launch the Instructor Resources >Instructor Guide >Instructor Manual >Chapter 1: Summary; Suggested Lecture Outline; Learning Objectives; Discussion Questions and Potential Student Responses; Investigate Online; Lecture Tips; Classroom Demonstrations and Student Activities; and Media.

33. are organized in logical sequence to optimize instructional effectiveness and efficiency.

X

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<p>Connections to chemistry, biology, and physical science concepts are present throughout <i>Essentials of Human Anatomy and Physiology</i>. Representative Citations:</p> <p>Student Edition: Chapter 2: Basic Chemistry, 23–55 14.4a Carbohydrate, Fat, and Protein Metabolism in Body Cells, 488–491 14.4b The Central Role of the Liver in Metabolism, 491–493 14.4c Body Energy Balance, 494–498</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Animations & Videos>BioFlix: Cellular Respiration, Gas Exchange, Protein Synthesis >Launch the Study Area>Interactive Physiology (IP)>IP Animation: Chemistry, IP2: Generation of Action Potential >Launch the Study Area>PhysioEx> Exercise 1: Activity 3: Simulating Osmotic Pressure; Exercise 8: Activity 3: Assessing Pepsin Digestion of Protein</p>	<p>34. connect common themes across multiple science disciplines.</p>	<p>X</p>					
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Digital Resources: The symbol > indicates a click to reach each digital asset on the Realize platform.

<p>Vocabulary support is incorporated throughout <i>Essentials of Human Anatomy and Physiology</i>. Representative citations:</p> <p>Student Edition: 1.4b Directional Terms, 11–13 1.4c Regional Terms, 13–14 1.4d Body Planes and Sections, 14–16 1.4e Body Cavities, 16–18 Aerobic Exercise, 191-192 A Closer Look: Anabolic Steroids: Dying to Win?, 201</p> <p>Mastering A&P Digital Resources: Instructor Resources >Launch the Instructor Resources >Instructor Guide>Instructor Manual>Chapter 1: Teaching Tip</p>	<p>35. integrate cross-curricular connections.</p>			X			
<p>Complete instructor support for <i>Essentials of Human Anatomy and Physiology</i> can be found in the Instructor Resources ancillary of Mastering A&P. Representative citations:</p> <p>Mastering A&P Digital Resources: Instructor Resources >Launch the Instructor Resources>Instructor Guides; TestBank; End of Chapter Answers; Audio Summaries; PAL 3.0 Instructor Resources</p>	<p>36. provide educators necessary science content knowledge, pedagogy, and management techniques to guide learning experiences.</p>	X					

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SPECIFIC EVALUATION CRITERIA

2022-2028
Group IV – Science
CCR Human Anatomy and Physiology

Human Anatomy and Physiology

All West Virginia teachers are responsible for classroom instruction that integrates content standards, foundational skills, literacy, learning skills, computer science and technology tools. Students in grades 9 - 12 will advance through a developmentally appropriate progression of standards. The following chart represents the College- and Career-Readiness Indicators for Science that will be developed in grades 9 – 12.

College- and Career-Readiness Indicators for Science	
Grades 9 - 12	
Nature of Science	
<ul style="list-style-type: none"> • Scientific knowledge is simultaneously reliable and subject to change based on empirical evidence and interpretation. • Scientific knowledge is obtained through a combination of observations of the natural world and inferences based on those observations. • Science is a creative human endeavor which is influenced by social and cultural biases. • A primary goal of science is the formation of theories and laws. Theories are inferred explanations of some aspect of the natural world based on successfully tested information from evidence and evaluated phenomena. Laws describe relationships among what has been observed in the natural world. • Scientific investigations use a variety of methods to address questions about the natural and material world. 	
Practices of Scientists and Engineers	Science Connecting Concepts
<ul style="list-style-type: none"> • Asking questions and defining problems • Developing and using models • Planning and carrying out investigations • Analyzing and interpreting data • Using mathematical and computational thinking • Constructing explanations and designing solutions • Engaging in argument from evidence • Obtaining, evaluating, and communicating information 	<ul style="list-style-type: none"> • Observing patterns • Investigating and explaining cause and effect • Recognizing scale, proportion, and quantity • Defining systems and system models • Tracking energy and matter flows, into, out of, and within systems to understand system behavior • Determining the relationships between structure and function • Studying stability and change

Digital Resources: The symbol > indicates a click to reach each digital asset on the Realize platform.

Science Literacy	Science Lab Safety
<ul style="list-style-type: none"> • Producing clear and coherent technical writing in which the development, organization and style are appropriate for the science topic • Correctly utilizing and explaining visually expressed information (e.g., flowchart, diagram, model, graph, table, or digital mapping technology) in a science narrative. • Appropriately using technical terminology or scientific concepts and processes to create visually expressed information • Reading with understanding articles about science in the popular press and engaging in 	<ul style="list-style-type: none"> • Requiring student lab safety training and demonstrating appropriate proficiency before participating in lab activities • Archiving signed student safety contracts documenting lab safety training and medical contraindications (e.g., allergies, contact lenses, medical conditions) • Wearing proper protective gear as needed (e.g., goggles, apron, and gloves) • Requiring grade appropriate lab equipment operation and safety training • Using and following SDS protocols

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The specific evaluation criteria apply to each grade level and are to be evaluated for each grade level unless otherwise specified. These criteria consist of information critical to the development of all grade levels. **In specific course criteria with bullet points, each of those items must be addressed. Eighty percent of the general and eighty percent of the specific criteria must be met with I (In-depth) or A (Adequate) in order to be recommended.**

(Vendor/Publisher) SPECIFIC LOCATION OF CONTENT WITHIN PRODUCT	(IRR Committee) Responses							
	I=In-depth	A=Adequate	M=Minimal	N=Nonexistent	I	A	M	N
In addition to alignment of West Virginia College- and Career-Readiness Standards (WVCCRS) for Science, instructional resources must also include opportunities for students to develop:								
College- and Career-Readiness Standards								
Human Anatomy and Physiology								
Human Anatomy and Physiology/Life Science, Physical Science Domains								
Student Edition: 1.4b Directional Terms, 11–12	1. Apply directional terminology to locate human body structures: <ul style="list-style-type: none"> • superior-inferior • dorsal-ventral • proximal-distal • medial-lateral • superficial-deep. 				X			
Student Edition: 1.2a Levels of Structural Organization, 2–3 Mastering A&P Digital Resources: Study Area >Launch the Study Area>Interactive Physiology (IP)>IP Animation: Tissues	2. Describe the organizational levels, interdependency, and the interaction of: <ul style="list-style-type: none"> • cells • tissues • organs • organ systems. 				X			

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<p>Student Edition: 3.4 Epithelial Tissue, 86–91 3.5 Connective Tissue, 91–96 3.6 Muscle Tissue, 96–98 3.7 Nervous Tissue, 98</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Animations & Videos>Histology Videos: >Launch the Study Area>Interactive Physiology (IP)>IP Animation: Tissues >Launch the Study Area>Practice Anatomy Lab (PAL)>Histology</p>	<p>3. Categorize, by structure and function, the four main human tissue types:</p> <ul style="list-style-type: none"> • muscle • epithelial • connective • nervous. 	X						
<p>Student Edition: Integumentary System, 3 4.2a Functions of the Integumentary System, 109–110 4.2b Structure of the Skin, 110–115</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Practice Anatomy Lab (PAL)>Anatomical Models>Integumentary System</p>	<p>4. Relate the structure of the integumentary system to its function as a/an:</p> <ul style="list-style-type: none"> • sensory organ • environmental barrier • temperature regulator. 	X						
<p>Student Edition: Bone, 92 5.1c Structure of Bone, 132–135</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Animations & Videos>Bone & Dissection Videos>Bone Videos >Launch the Study Area>Interactive Physiology (IP)>IP Animation: Bone</p>	<p>5. Relate how bone tissue is important to the development of the human skeleton.</p>	X						

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<p>Student Edition: 5.1a Functions of the Bones, 131 5.1b Classification of Bones, 131–132 5.4 Joints, 163–165 6.4 Muscle Movements, Roles, and Names, 192–193</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Animations & Videos>A&P Flix> Origins, Insertions, Actions, Innervations >Launch the Study Area>Animations & Videos>Bone & Dissection Videos>Bone Videos >Launch the Study Area>Interactive Physiology (IP)>IP Animation: Bone >Launch the Study Area>Practice Anatomy Lab (PAL)>Human Cadaver>Appendicular Skeleton, Joints >Launch the Study Area>Practice Anatomy Lab (PAL)>Anatomical Models>Axial Skeleton, Appendicular Skeleton, Joints</p>	<p>6. Correlate the structure and function of the elements of the skeletal system:</p> <ul style="list-style-type: none"> • bone • articulations • insertions. 	<p>X</p>					
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<p>Student Edition: 6.2 Microscopic Anatomy of Skeletal Muscle, 181–183 6.3a Stimulation and Contraction of Single Skeletal Muscle Fibers, 183–188</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Animations & Videos>A&P Flix>A&P 3D Animations>Events at the Neuromuscular Junction; Excitation-Contraction Coupling; The Cross Bridge Cycle >Launch the Study Area>Interactive Physiology (IP)>IP2: The Neuromuscular Junction, IP2: Excitation-Contraction Coupling; IP2: Cross Bridge Cycle, IP Animation: Events at the Neuromuscular Junction, IP Animation: Cross Bridge Cycle, IP Animation Muscle Metabolism >Launch the Study Area>PhysioEx>Exercise 2: Skeletal Muscle Physiology, Activities 1–3; Exercise 3: Neurophysiology of Nerve Impulses, Activities 1–9</p>	<p>7. Model the mechanisms of muscular contraction on the cellular and molecular levels.</p>	<p>X</p>						
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<p>Student Edition: Skeletal System, 3–4 Muscular System, 4 Nervous System, 4 Figure 1.2 The body's organ systems, 5–6 Systems in Synch; Homeostatic Relationships between the Skeletal System and Other Body Systems, 172 Systems in Synch; Homeostatic Relationships between the Muscular System and Other Body Systems, 215 Systems in Synch; Homeostatic Relationships between the Nervous System and Other Body Systems, 266 Critical Thinking and Clinical Application Questions—21, 271</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Animations & Videos>A&P Flix>Group Muscle Actions & Joints</p>	<p>8. Integrate the skeletal, muscular, and nervous systems to the functioning of the organism.</p>	<p>X</p>					
<p>Student Edition: 6.1a Muscle Types, 177–181 6.4a Types of Body Movements, 192–196 6.5a Head and Neck Muscles, 199–201 6.5b Trunk Muscles, 201–204 6.5c Muscles of the Upper Limb, 204–205 6.5d Muscles of the Lower Limb, 205–209</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Practice Anatomy Lab (PAL)>Human Cadaver>Muscular System >Launch the Study Area>Practice Anatomy Lab (PAL)>Anatomical Models>Muscular System</p>	<p>9. Model the muscular system including:</p> <ul style="list-style-type: none"> • locations • origins • insertions • muscle groups • types of muscles. 	<p>X</p>					

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<p>Student Edition: 7.2b Neurons, 224–229 7.2c Physiology Nerve Impulses, 229–232 7.2d Physiology: Reflexes, 232–234</p>	<p>10. Classify the various types of neurons emphasizing the relationship of structure and function.</p>	<p>X</p>					
<p>Student Edition: 7.2c Physiology Nerve Impulses, 229–232 7.2d Physiology: Reflexes, 232–234</p> <p>Mastering A&P Digital Resources Representative citations: Study Area >Launch the Study Area>Animations & Videos>BioFlix: How Synapses Work >Launch the Study Area>Interactive Physiology (IP)>IP2: Generation of an Action Potential, IP Animation: Generation of the Action Potential, IP Animation: Propagation and Velocity of the Action Potential</p>	<p>11. Model the mechanism of a nerve impulse at the cellular and molecular levels.</p>	<p>X</p>					
<p>Student Edition: 7.3a Functional Anatomy of the Brain, 234–242 7.3d Spinal Cord, 248–251 7.4a Structure of a Nerve, 251–252 7.4b Cranial Nerves, 252 7.4c Spinal Nerves and Nerve Plexuses, 252 7.4d Autonomic Nervous System, 252–263</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Animations & Videos>BioFlix: How Synapses Work >Launch the Study Area>Practice Anatomy Lab (PAL)>Human Cadaver>Nervous System >Launch the Study Area>Practice Anatomy Lab (PAL)>Anatomical Models>Nervous System</p>	<p>12. Compare and contrast the parts and functions of the central and peripheral nervous system including the autonomic portions.</p>	<p>X</p>					

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<p>Student Edition: 8.1b Internal Structures: The Eyeball, 275–278, 280 A Closer Look: Visual Pigments—The Actual Photoreceptors, 279 8.2a Pathway of Light through the Eye and Light Refraction, 281–282 8.2b Visual Fields and Visual Pathways to the Brain, 282 A Closer Look: Bringing Things into Focus, 283–284 8.2c Eye Reflexes, 284 8.3 Anatomy of the Ear, 285–286 8.4 Hearing, 286–288 8.5a Static Equilibrium, 289 8.5b Dynamic Equilibrium, 290–291 8.5c Hearing and Equilibrium Deficits, 291–292</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Practice Anatomy Lab (PAL)>Human Cadaver>Nervous System>Special Senses >Launch the Study Area>Practice Anatomy Lab (PAL)>Anatomical Models>Nervous System>Special Senses</p>	<p>13. Apply the structure of the ear and eye to their function/dysfunction in relation to environmental perception.</p>	<p>X</p>					
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<p>Student Edition: Fibrous and Globular Proteins, 49–50 Enzymes and Enzyme Activity, 50–51 Mitochondria, 65 Transcription, 84–85 8.1a External and Accessory Structures, 273–274 Hormones of the Adrenal Cortex, 315–316 10.2a Phases of Hemostasis, 341 Renal factors: the kidneys, 379–380 12.4a Innate Body Defenses, 398–400 Food Breakdown, 478–479 Chyme Breakdown and Absorption, 480–482 15.3b Maintaining Electrolyte Balance, 527–529</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Interactive Physiology (IP)>IP Animation: Enzymatic Digestion and Absorption</p>	<p>14. Apply the action of specific enzymes to their roles in bodily functions.</p>	<p>X</p>					
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<p>Student Edition: 9.1b Hormone Action, 303–304 9.2a Pituitary Gland and Hypothalamus, 307–310 9.2b Pineal Gland, 310–311 9.2c Thyroid Gland, 311–312 9.2d Parathyroid Glands, 313–314 9.2e Thymus, 314 9.2f Adrenal Glands, 314–318 9.2g Pancreatic Islets, 318–319 9.2h Gonads, 319–323 Systems in Synch; Homeostatic Relationships between the Endocrine System and Other Body Systems, 325</p> <p>Mastering A&P Digital Resources Representative citations: Study Area >Launch the Study Area>Animations & Videos>BioFlix: Homeostasis >Launch the Study Area>Interactive Physiology (IP)>IP Anatomy Review Animation: Endocrine, IP Animation: Response to Stress >Launch the Study Area>Practice Anatomy Lab (PAL)>Human Cadaver>Endocrine System >Launch the Study Area>Practice Anatomy Lab (PAL)>Anatomical Models>Endocrine System >Launch the Study Area>PhysioEx>Exercise 4: Endocrine System Physiology, Activity 1</p>	<p>15. Incorporate the role of endocrine glands and their hormones into the overall functions and dysfunctions of the body.</p>	<p>X</p>					
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<p>Student Edition: 14.2b Activities occurring in the Mouth, Pharynx, and Esophagus, 476–478 14.2c Activities of the Stomach, 478–480 14.2d Activities of the Small Intestine, 480–482</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Interactive Physiology (IP)>IP Anatomy Review Animation: Digestive, IP Animation: Control of the Digestive System, IP Animation: Digestive System Secretion, IP Animation: Enzymatic Digestion and Absorption >Launch the Study Area>Practice Anatomy Lab (PAL)>Human Cadaver>Digestive System >Launch the Study Area>Practice Anatomy Lab (PAL)>Anatomical Models>Digestive System >Launch the Study Area>PhysioEx>Exercise 8: Chemical and Physical Processes of Digestion Activities 1–4</p>	16. Analyze the role of components and processes of the digestive system in supplying essential nutrients.	X						
<p>Student Edition: 13.2 Respiratory Physiology, 441 Respiratory Zone Structures and the Respiratory Membrane, 439–440 Carbohydrate Metabolism, 488–490</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Interactive Physiology (IP)>IP Anatomy Review Animation: Respiratory, IP2: Pulmonary Ventilation, IP Animation: Pulmonary Ventilation, IP Animation: Control of Respiration, IP Animation: Gas Exchange >Launch the Study Area>Practice Anatomy Lab (PAL)>Human Cadaver>Respiratory System >Launch the Study Area>Practice Anatomy Lab (PAL)>Anatomical Models>Respiratory System >Launch the Study Area>PhysioEx>Exercise 7: Respiratory System Mechanics, Activities 1–3</p>	17. Explain how structures of the respiratory system are essential to cellular respiration, gas exchange and communication.	X						

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<p>Student Edition: Figure 10.1: The Composition of Blood, 333 Capillary Exchange of Gases and Nutrients, 382–383 Fluid Movements at Capillary Beds, 383 12.1 Lymphatic Vessels, 393–394 12.2 Lymph Nodes, 394–396 Part II: Body Defenses, 397–398</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Animations & Videos>BioFlix: Cellular Respiration, Gas Exchange >Launch the Study Area>Interactive Physiology (IP)>IP Animation: Capillary Pressures and Capillary Exchange, IP Animation: Lymphatic Organs, IP Anatomy Review Animation: Immune >Launch the Study Area>Practice Anatomy Lab (PAL)>Human Cadaver>Circulatory System, Lymphatic System >Launch the Study Area>Practice Anatomy Lab (PAL)>Anatomical Models>Circulatory System, Lymphatic System >Launch the Study Area>PhysioEx>Exercise 5: Cardiovascular Dynamics, Activities 1–7; Exercise 6: Cardiovascular Physiology, Activities 1–5</p>	<p>18. Illustrate the structures of the circulatory and lymphatic systems and the function of blood to the role of:</p> <ul style="list-style-type: none"> • transportation • cellular support • defense. 	X						
<p>Student Edition: 10.3a Human Blood Groups, 343–344 10.3b Blood Typing, 344–346</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>PhysioEx>Exercise 11: Blood Analysis, Activity 4</p>	<p>19. Compare the compatibility of blood types and assess the molecular basis for blood functions.</p>	X						

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<p>Student Edition: 15.1c Urine Formation and Characteristics, 516–520 15.3a Maintaining Water Balance of Blood, 524–527 15.3b Maintaining Electrolyte Balance, 527–529 15.3c Maintaining Acid-Base Balance of Blood, 529–531 Systems in Synchrony; Homeostatic Relationships between the Urinary System and Other Body Systems, 535</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Interactive Physiology (IP)>IP Anatomy Review Animation: Urinary, IP2: Glomerular Filtration, IP2: Tubular Reabsorption and Secretion, IP2: Urine Concentration and Volume, IP Animation: Glomerular Filtration, IP Animation: Processing of Salt and Water in the Nephron, IP Animation: Reabsorption and Secretion in the Proximal Tubule >Launch the Study Area>Practice Anatomy Lab (PAL)>Human Cadaver>Urinary System >Launch the Study Area>Practice Anatomy Lab (PAL)>Anatomical Models>Urinary System >Launch the Study Area>PhysioEx>Exercise 9: Renal System Physiology, Activities 1–6</p>	<p>20. Integrate the functions of the excretory system to the maintenance of the other body systems.</p>	<p>X</p>					
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<p>Student Edition: 16.1a Testes, 541 16.1b Duct System, 541–543 16.1c Accessory Glands and Semen, 543–544 16.1d External Genitalia, 544 16.2a Spermatogenesis, 545–547 16.2b Testosterone Production, 547–549 16.3a Ovaries, 549 16.3b Duct System, 549–552 16.3c External Genitalia and Female Perineum, 552–553 16.4a Oogenesis and the Ovarian Cycle, 553–555 16.4b Hormone Production by the Ovaries, 555–556</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Practice Anatomy Lab (PAL)>Human Cadaver>Reproductive System >Launch the Study Area>Practice Anatomy Lab (PAL)>Anatomical Models>Reproductive System</p>	21. Compare and contrast the structure and function of male and female reproductive systems.	X						
<p>Student Edition: 16.2a Spermatogenesis, 545–547 16.4a Oogenesis and the Ovarian Cycle, 553–555 16.4c Uterine Menstrual Cycle, 556 16.6a Accomplishing Fertilization, 560–561 16.6b Events of Embryonic and Fetal Development, 561–565</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>Animations & Videos>BioFlix: Meiosis</p>	22. Outline the events of reproduction for the formation of gametes through fertilizations and embryological development.	X						

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<p>Student Edition: 12.5a Antigens, 406 Antigen-Presenting Cells, 408 12.5c Humoral (Antibody-Mediated) Immune Response, 409–413 12.5d Cellular (Cell-Mediated) Immune Response, 414–416</p>	<p>23. Assess the role of components of the immune system in defending the body.</p>	<p>X</p>						
<p>Student Edition: A Closer Look: The “Terrible Three”, 246–247 A Closer Look: COVID-19: A Global Pandemic, 418–419 A Closer Look: AIDS: An Ongoing Pandemic, 424 A Closer Look: Cancer—An Intimate Enemy, 101 A Closer Look: Atherosclerosis? Get Out the Cardiovascular Plumber’s Snake!, 381</p>	<p>24. Research disease causative factors, symptoms, prevention, and treatment.</p>	<p>X</p>						
Engineering, Technology, and Applications of Science								
<p>Student Edition: Homeostatic Imbalance 5.1, 138 A Closer Look: Anabolic Steroids: Dying to Win?, 201 A Closer Look: The “Terrible Three”, 246–247 Homeostatic Imbalance 7.7, 246–247 Critical Thinking and Clinical Application Questions: 25, 271 A Closer Look: Bringing Things into Focus, 283–284 Homeostatic Imbalance 9.4, 311–312 A Closer Look: COVID-19: A Global Pandemic, 418–419 A Closer Look: AIDS: An Ongoing Pandemic, 424</p>	<p>1. Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.</p>	<p>X</p>						

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<p>Student Edition: Critical Thinking and Clinical Application Questions: 22, 105 A Closer Look: Joint Ventures, 162 Critical Thinking and Clinical Application Questions: 19, 330 A Closer Look: Peptic Ulcers: "Something Is Eating at Me", 484 A Closer Look: Obesity: Magical Solution Wanted, 500</p>	<p>2. Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.</p>	<p>X</p>						
<p>Student Edition: A Closer Look: Medical Imaging: Illuminating the Body, 10–11 A Closer Look: A Wrinkle Out of Time, 114 A Closer Look: Tracking Down CNS Problems, 265 Homeostatic Imbalance 13.14, 453 Homeostatic Imbalance 14.11, 484–485 A Closer Look: Renal Failure and the Artificial Kidney, 523 A Closer Look: Contraception: Preventing Pregnancy, 570</p>	<p>3. Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.</p>	<p>X</p>						
<p>Student Edition: A Closer Look: Medical Imaging: Illuminating the Body, 10–11 A Closer Look: Joint Ventures, 162</p> <p>Mastering A&P Digital Resources: Study Area >Launch the Study Area>PhysioEx >Exercises >Exercise 6, Activity 3: Examining the Effects of Chemical Modifiers on Heart Rate</p>	<p>4. Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.</p>	<p>X</p>						

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