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Correlation of *Introduction to Anatomy & Physiology* ©2024 to the Texas Essential Knowledge and Skills, Anatomy and Physiology

1: Employability skills. The student demonstrates professional standards/employability skill as required by business and industry. The student is expected to:

Standard 1A: demonstrate verbal and non-verbal communication in a clear, concise, and effective manner

Breakout	Narrative	Activity
(i) demonstrate verbal	Introduction to Anatomy &	Introduction to Anatomy &
communication in a clear	Physiology OLS:	Physiology OLS:
manner	39 (Communication and	44 (Thinking Critically #1)
	<u>Teamwork)</u>	279 (Communicating about
		Anatomy & Physiology #2)
		315 (Communicating about
		Anatomy & Physiology #2)
(ii) demonstrate verbal	Introduction to Anatomy &	Introduction to Anatomy &
communication in a concise	Physiology OLS:	Physiology OLS:
manner	39 (Communication and	44 (Thinking Critically #1)
	Teamwork, 1st and 2nd	
(11)	paragraphs)	
(iii) demonstrate verbal	Introduction to Anatomy &	Introduction to Anatomy &
communication in a[n] effective	Physiology OLS:	Physiology OLS:
manner	39 (1st paragraph, beginning "Of equal importance")	45 (Communicating about
	39 (Communication and	Anatomy & Physiology #1)
	Teamwork, 3rd paragraph)	44 (Thinking Critically #1)
(iv) demonstrate non-verbal	Introduction to Anatomy &	Introduction to Anatomy &
communication in a clear	Physiology OLS:	Physiology OLS:
manner	10 (Presenting Mathematical	45 (Lab Investigations #1)
	<u>Data)</u>	493 (In the Lab #1)
	39 (Communication and	
	Teamwork, 2nd paragraph)	
(v) demonstrate non-verbal	Introduction to Anatomy &	Introduction to Anatomy &
communication in a concise	Physiology OLS:	Physiology OLS:
manner	39 (Communication and	95 (Lab Investigations #2)
	Teamwork, 2nd paragraph)	315 (Communicating about
	29 (Step 7: Deriving Conclusions from the Results)	Anatomy & Physiology #3)
	nom the results)	648 (Taking It Further)



Breakout	Narrative	Activity
(vi) demonstrate non-verbal	Introduction to Anatomy &	Introduction to Anatomy &
communication in an effective	Physiology OLS:	Physiology OLS:
manner	10 (Presenting Mathematical	45 (Lab Investigations #1)
	Data)	

Standard 1B: exhibit the ability to cooperate, contribute, and collaborate as a member of a team; and

Breakout	Narrative	Activity
(i) exhibit the ability to cooperate as a member of a	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
team	39 (Communication and	45 (Lab Investigations #1)
	Teamwork, 4th paragraph)	151 (In the Lab #2)
		481 (Communicating about
		Anatomy & Physiology #3)
(ii) exhibit the ability to contribute as a member of a team	Introduction to Anatomy & Physiology OLS: 39 (Communication and Teamwork, 4th paragraph)	Introduction to Anatomy & Physiology OLS: 45 (Lab Investigations #1, #3) 114 (Taking It Further)
(iii) exhibit the ability to collaborate as a member of a team	Introduction to Anatomy & Physiology OLS: 39 (Communication and Teamwork, 4th paragraph)	Introduction to Anatomy & Physiology OLS: 45 (Lab Investigations #1) 228 ((Communicating about Anatomy & Physiology #2) 641 (In the Lab #2)

Standard 1C: investigate necessary skills for heath careers related to anatomy and physiology.

Breakout	Narrative	Activity
(i) investigate necessary skills	Introduction to Anatomy &	Introduction to Anatomy &
for health careers related to	Physiology OLS:	Physiology OLS:
anatomy	38-39 (Career Corner)	37 (In the Lab #3)
	88-89 (Career Corner feature	89 (Planning for a Health-Related
	(also Career Corner features in	Career) (also in the Career
	Chapters 3-15))	Corners for Chapters 3-15)
	v (Precision Exams by	527 (Communicating about
	YouScience Certification)	Anatomy & Physiology #4)
(ii) investigate necessary skills	Introduction to Anatomy &	Introduction to Anatomy &
for health careers related to	Physiology OLS:	Physiology OLS:
physiology	88-89 (Career Corner feature	37 (In the Lab #3)
	(also Career Corner features in	89 (Planning for a Health-Related
	Chapters 3-15))	Career) (also in the Career
	38-39 (Career Corner)	Corners for Chapters 3-15)
		221 (In the Lab #4)



Breakout	Narrative	Activity
	v (Precision Exams by	
	YouScience Certification)	

2: Scientific and Engineering Practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

Standard 2A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations;

Breakout	Narrative	Activity
(i) ask questions based on	Introduction to Anatomy &	Introduction to Anatomy &
observations or information	Physiology OLS:	Physiology OLS:
from text, phenomena,	26-27 (Step 1: Identifying a	30 (Taking It Further #1)
models, or investigations	Research Question)	347 (In the Lab #1 and #3)
	39 (Communication and	527 (Communicating about
	Teamwork, 1st paragraph)	Anatomy & Physiology #2)
	30 (Types of Research, 5th	
	paragraph)	
(ii) define problems based on	Introduction to Anatomy &	Introduction to Anatomy &
observations or information	Physiology OLS:	Physiology OLS:
from text, phenomena,	26-27 (Step 1: Identifying a	355 (Lab Investigations #3)
models, or investigations	Research Question)	30 (Taking It Further #1)
_	27-28 (Step 2: Formulating One	
	or More Hypotheses)	

Standard 2B: apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems;

Breakout	Narrative	Activity
(i) apply scientific practices to	Introduction to Anatomy &	Introduction to Anatomy &
plan descriptive investigations	Physiology OLS:	Physiology OLS:
	30 (Types of Research)	30 (Taking It Further #1)
(ii) apply scientific practices to	Introduction to Anatomy &	Introduction to Anatomy &
plan comparative	Physiology OLS:	Physiology OLS:
investigations	30 (Types of Research)	30 (Taking It Further #1)
(iii) apply scientific practices to	Introduction to Anatomy &	Introduction to Anatomy &
plan experimental	Physiology OLS:	Physiology OLS:
investigations	30 (Types of Research)	30 (Taking It Further #1)
(iv) apply scientific practices to	Introduction to Anatomy &	Introduction to Anatomy &
conduct descriptive	Physiology OLS:	Physiology OLS:
investigations	30 (Types of Research)	30 (Taking It Further #1)
		648 (Taking It Further)



Breakout	Narrative	Activity
		37 (In the Lab #1)
(v) apply scientific practices to conduct comparative investigations	Introduction to Anatomy & Physiology OLS: 30 (Types of Research)	Introduction to Anatomy & Physiology OLS: 30 (Taking It Further #1) 393 (Lab Investigations #2)
(vi) Apply scientific practices to conduct experimental investigations	Introduction to Anatomy & Physiology OLS: 29 (Step 7: Deriving Conclusions from the Results, 4th paragraph)	Introduction to Anatomy & Physiology OLS: 30 (Taking It Further #1) 445 (In the Lab #1)
(vii) Use engineering practices to design solutions to problems	Introduction to Anatomy & Physiology OLS: 24 (Engineering Practices)	Introduction to Anatomy & Physiology OLS: 24 (Check Your Understanding #5)

Standard 2C: use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards;

Breakout	Narrative	Activity
(i) use appropriate safety	Introduction to Anatomy &	Introduction to Anatomy &
equipment during laboratory	Physiology OLS:	Physiology OLS:
investigations as outlined in	30 (Safety and Resources)	30 (Taking It Further #2)
Texas Education Agency-	424 (Phlebotomist, 2nd	
approved safety standards	paragraph)	
(ii) use appropriate safety	Introduction to Anatomy &	Introduction to Anatomy &
equipment during classroom	Physiology OLS:	Physiology OLS:
investigations as outlined in	30 (Safety and Resources)	30 (Taking It Further #2)
Texas Education Agency-		
approved safety standards		
(iii) use appropriate safety	Introduction to Anatomy &	Introduction to Anatomy &
equipment during field	Physiology OLS:	Physiology OLS:
investigations and outlined in	30 (Safety and Resources)	30 (Taking It Further #2)
Texas Education Agency-	495 (Chain of Infection, 2nd	
approved safety standards	paragraph)	
(iv) use appropriate safety	Introduction to Anatomy &	Introduction to Anatomy &
practices during laboratory	Physiology OLS:	Physiology OLS:
investigations as outlined in	30 (Safety and Resources)	30 (Taking It Further #2)
Texas Education Agency-		183 (Lab Investigations #5)
approved safety standards		
(v) use appropriate safety	Introduction to Anatomy &	Introduction to Anatomy &
practices during classroom	Physiology OLS:	Physiology OLS:
investigations as outlined in	30 (Safety and Resources)	30 (Taking It Further #2)
Texas Education Agency-		
approved safety standards		
(vi) use appropriate safety	Introduction to Anatomy &	Introduction to Anatomy &
practices during field	Physiology OLS:	Physiology OLS:
investigations as outlined in	30 (Safety and Resources)	30 (Taking It Further #2)
Texas Education Agency-		
approved safety standards		



Standard 2D: use appropriate tools such as lab notebooks or journals, calculators, spreadsheet software, data-collecting probes, computers, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, meter sticks, electronic balances, micro pipettors, hand lenses, Celsius thermometers, hot plates, timing devices, Petri dishes, agar, lab incubators, dissection equipment, reflex hammers, pulse oximeters, stethoscope, otoscope, blood pressure monitors (sphygmomanometers), pen lights, ultrasound equipment, and models, diagrams, or samples of biological specimens or structures;

Breakout	Narrative	Activity
(i) use appropriate tools	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
	28 (Step 4: Collecting the Data)	44 (Thinking Critically #2)
	457 (Measuring Body	87 (In the Lab #2)
	<u>Temperature</u>)	
	26 (Goals for Research	
	Questions, 2nd paragraph)	

Standard 2E: collect quantitative data using the International System of Units (SI) and United States customary units and qualitative data as evidence;

Breakout	Narrative	Activity
(i) collect quantitative data using the International System of Units (SI) as evidence;	Introduction to Anatomy & Physiology OLS: 9-10 (The Metric System and Mathematics in Science and Medicine)	Introduction to Anatomy & Physiology OLS: 11 (In the Lab #3)
(ii) collect quantitative data using United States customary units as evidence;	Introduction to Anatomy & Physiology OLS: 10 (Converting Units of Measurement)	Introduction to Anatomy & Physiology OLS: 11 (In the Lab #3)
(iii) collect quantitative data using qualitative data as evidence	Introduction to Anatomy & Physiology OLS: 27 (Data Sets)	Introduction to Anatomy & Physiology OLS: 44 (Thinking Critically #2)

Standard 2F: organize quantitative and qualitative data using lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports;

Breakout	Narrative	Activity
(i) organize quantitative data	Introduction to Anatomy &	Introduction to Anatomy &
using lab reports	Physiology OLS:	Physiology OLS:
	27 (Data Sets)	44 (Thinking Critically #2)
	29 (Step 8: Disseminating	301 (In the Lab #1)
	Research Findings)	393 (Lab Investigations #2)
(ii) organize quantitative data	Introduction to Anatomy &	Introduction to Anatomy &
using labeled drawings	Physiology OLS:	Physiology OLS:
	27 (Data Sets)	45 (Lab Investigations #1)



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Breakout	Narrative	Activity
		95 (Lab Investigations #2)
(iii) organize quantitative data	Introduction to Anatomy &	Introduction to Anatomy &
using graphic organizers	Physiology OLS:	Physiology OLS:
	27 (Data Sets)	211 (In the Lab #4)
(iv) organize quantitative data	Introduction to Anatomy &	Introduction to Anatomy &
using journals	Physiology OLS:	Physiology OLS:
	27 (Data Sets)	19 (In the Lab #2)
	29 (Step 8: Disseminating	
	Research Findings)	
	10 (Presenting Mathematical	
	<u>Data)</u>	
(v) organize quantitative data	Introduction to Anatomy &	Introduction to Anatomy &
using summaries	Physiology OLS:	Physiology OLS:
	27 (Data Sets)	37 (Analyze and Apply #5)
	31 (end of first_paragraph)	315 (Lab Investigations #1)
		609 (Lab Investigations #1)
(vi) organize quantitative data	Introduction to Anatomy &	Introduction to Anatomy &
using oral reports	Physiology OLS:	Physiology OLS:
	29 (Step 8: Disseminating	355 (Lab Investigations #1)
(-2)	Research Findings)	Internal and a American O
(vii) organize quantitative data	Introduction to Anatomy &	Introduction to Anatomy &
using technology-based	Physiology OLS:	Physiology OLS:
reports	35-36 (Information Technology in Healthcare)	30 (Taking It Further #1) 228 (Communicating about
	<u>Healthcare)</u>	Anatomy & Physiology #4)
		301 (In the Lab #3)
(viii) organize qualitative data	Introduction to Anatomy &	Introduction to Anatomy &
using lab reports	Physiology OLS:	Physiology OLS:
	27 (Data Sets)	37 (In the Lab #1)
	<u>=: (20.00 20.00)</u>	60 (In the Lab #1)
(ix) organize qualitative data	Introduction to Anatomy &	Introduction to Anatomy &
using labeled drawings	Physiology OLS:	Physiology OLS:
	27 (Data Sets)	141 (In the Lab #1)
		440 (In the Lab #1)
		481 (Lab Investigations) #2)
		511 (In the Lab #2)
(x) organize qualitative data	Introduction to Anatomy &	Introduction to Anatomy &
using graphic organizers	Physiology OLS:	Physiology OLS:
	27 (Data Sets)	211 (In the Lab #4)
(xi) organize qualitative data	Introduction to Anatomy &	Introduction to Anatomy &
using journals	Physiology OLS:	Physiology OLS:
	27 (Data Sets)	19 (In the Lab #2)
(xii) organize qualitative data	Introduction to Anatomy &	Introduction to Anatomy &
using summaries	Physiology OLS:	Physiology OLS:
	27 (Data Sets)	25 (In the Lab #1)
		129 (Communicating about
		Anatomy & Physiology #2)
(viii) organiza gualitativa data	Introduction to Anatomy 0	183 (Lab Investigations #5)
(xiii) organize qualitative data using oral reports	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
using oral reports	Filysiology OLS.	
	<u> </u>	25 (In the Lab #2)



Breakout	Narrative	Activity
	29 (Step 8: Disseminating	279 (Communicating about
	Research Findings)	Anatomy & Physiology #4)
		382 (Taking It Further #1)
(xiv) organize qualitative data	Introduction to Anatomy &	Introduction to Anatomy &
using technology-based	Physiology OLS:	Physiology OLS:
reports	35-36 (Information Technology in	45 (Lab Investigations #3)
	Healthcare)	324 (In the Lab #2)
		579 (In the Lab #2)

Standard 2G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems; and

Breakout	Narrative	Activity
(i) develop models to	Introduction to Anatomy &	Introduction to Anatomy &
represent phenomena,	Physiology OLS:	Physiology OLS:
systems, processes, or	24 (Engineering Practices)	60 (In the Lab #2)
solutions to engineering		75 (In the Lab #1)
problems		<u>191 (In the Lab #5)</u>
(ii) use models to represent	Introduction to Anatomy &	Introduction to Anatomy &
phenomena, systems,	Physiology OLS:	Physiology OLS:
processes, or solutions to	27 (Data Sets)	571 (Lab Investigations #2)
engineering problems		164 (In the Lab #2)
		252 (In the Lab #1)

Standard 2H: distinguish among scientific hypotheses, theories, and laws.

Breakout	Narrative	Activity
(i) distinguish among scientific	Introduction to Anatomy &	Introduction to Anatomy &
hypotheses, theories, and laws	Physiology OLS:	Physiology OLS:
	31 (Developing Scientific	37 (Analyze and Apply #2, 6)
	<u>Theories)</u>	31 (1st Check Your Understanding
	27-28 (Step 2: Formulating One	#2; 2nd Check Your
	or More Hypotheses)	Understanding #1, #2)

3: Scientific and Engineering Practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

Standard 3A: identify advantages and limitations of models such as their size, scale, properties, and materials;



Breakout	Narrative	Activity
(i) identify advantages of	Introduction to Anatomy &	Introduction to Anatomy &
models	Physiology OLS:	Physiology OLS:
	24 (Engineering Practices)	24 (Check Your Understanding
		#4)
(ii) identify limitations of	Introduction to Anatomy &	Introduction to Anatomy &
models	Physiology OLS:	Physiology OLS:
	24 (Engineering Practices)	24 (Check Your Understanding
		#4)
		160 (In the Lab #1)

Standard 3B: analyze data by identifying significant statistical features, patterns, sources of error, and limitations;

Breakout	Narrative	Activity
(i) analyze data by identifying significant statistical features	Introduction to Anatomy & Physiology OLS: 28-29 (Step 5: Analyzing and Evaluating the Data with Statistical Tools)	Introduction to Anatomy & Physiology OLS: 31 (1st Check Your Understanding #4) 44 (Thinking Critically #2) 658 (Lab Investigations #1)
(ii) analyze data by identifying patterns	Introduction to Anatomy & Physiology OLS: 28 (Step 5: Analyzing and Evaluating the Data with Statistical Tools, 1st paragraph) 242 (Conducting and Interpreting NCV Tests, 4th paragraph) 51 (Proteins, 2nd paragraph)	Introduction to Anatomy & Physiology OLS: 95 (Lab Investigations #2) 451 (Taking It Further #3) 200 (Know and Understand #6)
(iii) analyze data by identifying sources of error	Introduction to Anatomy & Physiology OLS: 29 (Step 7: Deriving Conclusions from the Results, 2nd and 3rd paragraphs)	Introduction to Anatomy & Physiology OLS: 37 (Analyze and Apply #9)
(iv) analyze data by identifying limitations	Introduction to Anatomy & Physiology OLS: 29 (Step 7: Deriving Conclusions from the Results, 2nd and 3rd paragraphs)	Introduction to Anatomy & Physiology OLS: 37 (Analyze and Apply #9) 183 (Lab Investigations #3) 216 (Taking It Further #4)

Standard 3C: use mathematical calculations to assess quantitative relationships in data; and

Breakout	Narrative	Activity
(i) use mathematical	Introduction to Anatomy &	Introduction to Anatomy &
calculations to assess	Physiology OLS:	Physiology OLS:
quantitative relationships in	28 (Step 4: Collecting the Data	374 (In the Lab #2)
data	and Step 5: Analyzing and	461 (Analyze and Apply #4)
		440 (Analyze and Apply #4)



Breakout	Narrative	Activity
	Evaluating the Data with	
	Statistical Tools)	
	198 (Figure 5.13)	
	459 (Weight and BMI)	

Standard 3D: evaluate experimental and engineering designs.

Breakout	Narrative	Activity
(i) evaluate experimental	Introduction to Anatomy &	Introduction to Anatomy &
designs;	Physiology OLS:	Physiology OLS:
	29 (Step 7: Deriving Conclusions	37 (Analyze and Apply #9)
	from the Results)	44 (Thinking Critically #2)
		445 (In the Lab #1)
(ii) evaluate engineering	Introduction to Anatomy &	Introduction to Anatomy &
designs.	Physiology OLS:	Physiology OLS:
	24 (Engineering Practices)	24 (Check Your Understanding
		<u>#5)</u>

4: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

Standard 4A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories;

Breakout	Narrative	Activity
(i) develop explanations	Introduction to Anatomy &	Introduction to Anatomy &
supported by data	Physiology OLS:	Physiology OLS:
	26-31 (The Scientific Method)	37 (In the Lab #1)
	31 (Developing Scientific	37 (Analyze and Apply #5)
	<u>Theories</u>)	
(ii) develop explanations	Introduction to Anatomy &	Introduction to Anatomy &
supported by models	Physiology OLS:	Physiology OLS:
	24 (Engineering Practices)	60 (In the Lab #2)
	27 (Data Sets, 2nd paragraph)	87 (In the Lab #1)
		160 (In the Lab #2)
(iii) develop explanations	Introduction to Anatomy &	Introduction to Anatomy &
consistent with scientific ideas	Physiology OLS:	Physiology OLS:
	26-31 (The Scientific Method)	37 (In the Lab #1)
(iv) develop explanations	Introduction to Anatomy &	Introduction to Anatomy &
consistent with scientific	Physiology OLS:	Physiology OLS:
principles	24 (Engineering Practices)	19 (Know and Understand #2)
	26-31 (The Scientific Method)	36 (Check Your Understanding
		<u>#2)</u>



Breakout	Narrative	Activity
(v) develop explanations	Introduction to Anatomy &	Introduction to Anatomy &
consistent with scientific	Physiology OLS:	Physiology OLS:
theories	31 (Developing Scientific	75 (In the Lab #3)
	Theories)	37 (Analyze and Apply #2, 6)
(vi) propose solutions	Introduction to Anatomy &	Introduction to Anatomy &
supported by data	Physiology OLS:	Physiology OLS:
	26-31 (The Scientific Method)	37 (In the Lab #1)
	31 (Developing Scientific	37 (Analyze and Apply #5)
	Theories)	
(vii) propose solutions	Introduction to Anatomy &	Introduction to Anatomy &
supported by models	Physiology OLS:	Physiology OLS:
	24 (Engineering Practices)	229 (Lab Investigations #2, 4)
	27 (Data Sets, 2nd paragraph)	160 (In the Lab #2)
(viii) propose solutions	Introduction to Anatomy &	Introduction to Anatomy &
consistent with scientific ideas	Physiology OLS:	Physiology OLS:
	26-31 (The Scientific Method)	37 (In the Lab #1)
(ix) propose solutions	Introduction to Anatomy &	Introduction to Anatomy &
consistent with scientific	Physiology OLS:	Physiology OLS:
principles	24 (Engineering Practices)	19 (Know and Understand #2)
	26-31 (The Scientific Method)	36 (Check Your Understanding
		#2)
(x) propose solutions	Introduction to Anatomy &	Introduction to Anatomy &
consistent with scientific	Physiology OLS:	Physiology OLS:
theories	31 (Developing Scientific	75 (In the Lab #3)
	<u>Theories)</u>	37 (Analyze and Apply #2, #6)

Standard 4B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats; and

Breakout	Narrative	Activity
(i) communicate explanations	Introduction to Anatomy &	Introduction to Anatomy &
individually in a variety of	Physiology OLS:	Physiology OLS:
settings	29-31 (Step 8: Disseminating	44 (Thinking Critically #1)
	Research Findings)	221 (In the Lab #2)
		183 (Lab Investigations #4)
(ii) communicate explanations	Introduction to Anatomy &	Introduction to Anatomy &
individually in a variety of	Physiology OLS:	Physiology OLS:
formats	27 (Defining Research Problems;	228 (Communicating about
	Data Sets)	Anatomy & Physiology #3)
	29-31 (Step 8: Disseminating	502 (In the Lab #2)
	Research Findings)	571 (Lab Investigations #2)
(iii) communicate explanations	Introduction to Anatomy &	Introduction to Anatomy &
collaboratively in a variety of	Physiology OLS:	Physiology OLS:
settings	26-31 (The Scientific Method)	481 (Lab Investigations #1)
(iv) communicate explanations	Introduction to Anatomy &	Introduction to Anatomy &
collaboratively in a variety of	Physiology OLS:	Physiology OLS:
formats	26-31 (The Scientific Method)	30 (Taking It Further #1)
		183 (Communicating about
		Anatomy & Physiology #2)



Breakout	Narrative	Activity
(v) communicate solutions	Introduction to Anatomy &	Introduction to Anatomy &
individually in a variety of	Physiology OLS:	Physiology OLS:
settings	26-31 (The Scientific Method)	315 (Communicating about
		Anatomy & Physiology #1
		374 (Analyze and Apply #3)
(vi) communicate solutions	Introduction to Anatomy &	Introduction to Anatomy &
individually in a variety of	Physiology OLS:	Physiology OLS:
formats	26-31 (The Scientific Method)	365 (In the Lab #2)
		524 (Thinking Critically #3)
		556 (In the Lab #3)
(vii) communicate solutions	Introduction to Anatomy &	Introduction to Anatomy &
collaboratively in a variety of	Physiology OLS:	Physiology OLS:
settings	26-31 (The Scientific Method)	445 (In the Lab #1)
		129 (Lab Investigations #2)
(viii) communicate solutions	Introduction to Anatomy &	Introduction to Anatomy &
collaboratively in a variety of	Physiology OLS:	Physiology OLS:
formats	26-31 (The Scientific Method)	481 (Lab Investigations #1)
		95 (Communicating about
		Anatomy & Physiology #1)
		114 (Taking It Further)

Standard 4C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.

Breakout	Narrative	Activity
(i) engage respectfully in	Introduction to Anatomy &	Introduction to Anatomy &
scientific argumentation using	Physiology OLS:	Physiology OLS:
applied scientific explanations.	29 (Step 7: Deriving Conclusions	392 (Communicating about
	from the Results)	Anatomy & Physiology #3)
		599 (Taking It Further #2)
(ii) engage respectfully in	Introduction to Anatomy &	Introduction to Anatomy &
scientific argumentation using	Physiology OLS:	Physiology OLS:
empirical evidence.	28 (Step 4: Collecting the Data)	420 (Taking It Further #2)
	29 (Step 7: Deriving Conclusions	527 (Communicating about
	from the Results)	Anatomy & Physiology #1)
		645 (Taking It Further)

5: Scientific and engineering practices. The student knows the contributions of scientists and engineers and recognizes the importance of scientific research and innovation on society. The student is expected to:

Standard 5A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student;



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Breakout	Narrative	Activity
(i) analyze scientific	Introduction to Anatomy &	Introduction to Anatomy &
explanations and solutions by	Physiology OLS:	Physiology OLS:
using empirical evidence so as	28 (Step 5: Analyzing and	160 (In the Lab #1)
to encourage critical thinking	Evaluating the Data with	301 (In the Lab #4)
by the student	Statistical Tools)	309 (In the Lab #1)
	29 (Step 7: Deriving Conclusions	
	from the Results)	
	24 (Engineering Practices)	
(ii) analyze scientific	Introduction to Anatomy &	Introduction to Anatomy &
explanations and solutions by	Physiology OLS:	Physiology OLS:
using logical reasoning so as	29 (Step 7: Deriving Conclusions	221 (Analyze and Apply #2)
to encourage critical thinking	from the Results)	25 (Analyze and Apply #1)
by the student	26-31 (The Scientific Method)	140 (1st Check Your
		Understanding #5)
(iii) analyze scientific	Introduction to Anatomy &	Introduction to Anatomy &
explanations and solutions by	Physiology OLS:	Physiology OLS:
using experimental testing so	29 (Step 7: Deriving Conclusions	445 (In the Lab #1)
as to encourage critical	from the Results)	
thinking by the student	30 (Types of Research)	
(iv) analyze scientific	Introduction to Anatomy &	Introduction to Anatomy &
explanations and solutions by	Physiology OLS:	Physiology OLS:
using observational testing so	29 (Step 7: Deriving Conclusions	445 (In the Lab #1)
as to encourage critical	from the Results)	
thinking by the student	24 (Engineering Practices)	
(v) evaluate scientific	Introduction to Anatomy &	Introduction to Anatomy &
explanations and solutions by	Physiology OLS:	Physiology OLS:
using empirical evidence so as	28-29 (Step 4: Collecting the Data	37 (Analyze and Apply #5)
to encourage critical thinking	and Step 5: Analyzing and	44 (Thinking Critically #2)
by the student	Evaluating the Data with	309 (In the Lab #1)
	Statistical Tools)	
	29 (Step 7: Deriving Conclusions	
	from the Results)	
(-2)	24 (Engineering Practices)	Industrial Action 6
(vi) evaluate scientific	Introduction to Anatomy &	Introduction to Anatomy &
explanations and solutions by	Physiology OLS:	Physiology OLS:
using logical reasoning so as	29 (Step 7: Deriving Conclusions	44 (Thinking Critically #2)
to encourage critical thinking by the student	from the Results) 26-31 (The Scientific Method)	445 (In the Lab #1)
(vii) evaluate scientific	Introduction to Anatomy &	Introduction to Anatomy &
explanations and solutions by	Physiology OLS:	Physiology OLS:
using experimental testing so	29 (Step 7: Deriving Conclusions	37 (Analyze and Apply #9)
as to encourage critical	from the Results)	445 (In the Lab #1)
thinking by the student	non the Results)	TTO (III UIC LAD #1)
(viii) evaluate scientific	Introduction to Anatomy &	Introduction to Anatomy &
explanations and solutions by	Physiology OLS:	Physiology OLS:
using observational testing so	29 (Step 7: Deriving Conclusions	445 (In the Lab #1)
as to encourage critical	from the Results)	461 (In the Lab #1)
thinking by the student	24 (Engineering Practices)	44 (Thinking Critically #2)
(ix) critique scientific	Introduction to Anatomy &	Introduction to Anatomy &
explanations and solutions by	Physiology OLS:	Physiology OLS:
using empirical evidence so as	26-31 (The Scientific Method)	45 (Communicating about
9		Anatomy & Physiology #2)
	<u>l</u>	, matering or myolology #Z]



Breakout	Narrative	Activity
to encourage critical thinking	29 (Step 7: Deriving Conclusions	37 (Analyze and Apply #9)
by the student	from the Results)	44 (Thinking Critically #2)
(x) critique scientific	Introduction to Anatomy &	Introduction to Anatomy &
explanations and solutions by	Physiology OLS:	Physiology OLS:
using logical reasoning so as	29 (Step 7: Deriving Conclusions	37 (Analyze and Apply #9)
to encourage critical thinking	from the Results)	45 (Communicating about
by the student	26-31 (The Scientific Method)	Anatomy & Physiology #2)
(xi) critique scientific	Introduction to Anatomy &	Introduction to Anatomy &
explanations and solutions by	Physiology OLS:	Physiology OLS:
using experimental testing so	29 (Step 7: Deriving Conclusions	44 (Thinking Critically #2)
as to encourage critical	from the Results)	37 (Analyze and Apply #9)
thinking by the student		
(xii) critique scientific	Introduction to Anatomy &	Introduction to Anatomy &
explanations and solutions by	Physiology OLS:	Physiology OLS:
using observational testing so	29 (Step 7: Deriving Conclusions	45 (Communicating about
as to encourage critical	from the Results)	Anatomy & Physiology #2)
thinking by the student	26-31 (The Scientific Method)	

Standard 5B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists and engineers as related to the content; and

Breakout	Narrative	Activity
(i) relate the impact of past	Introduction to Anatomy &	Introduction to Anatomy &
research on scientific thought	Physiology OLS:	Physiology OLS:
including research	31-35 (The Impact of Scientific	37 (Analyze and Apply #2)
methodology	and Technological Research)	
(ii) relate the impact of past	Introduction to Anatomy &	Introduction to Anatomy &
research on scientific thought	Physiology OLS:	Physiology OLS:
including cost-benefit analysis	31-35 (The Impact of Scientific	30 (Taking It Further #3)
	and Technological Research)	
	26 (Step 1: Identifying a	
	Research Question, 2nd	
	paragraph)	
(iii) relate the impact of past	Introduction to Anatomy &	Introduction to Anatomy &
research on scientific thought	Physiology OLS:	Physiology OLS:
including contributions of	31-35 (The Impact of Scientific	37 (In the Lab #2)
diverse scientists as related to	and Technological Research)	
the content		
(iv) relate the impact of past	Introduction to Anatomy &	Introduction to Anatomy &
research on scientific thought	Physiology OLS:	Physiology OLS:
including contributions of	31-35 (The Impact of Scientific	36 (Check Your Understanding
diverse engineers as related to	and Technological Research)	<u>#3)</u>
the content		
(v) relate the impact of past	Introduction to Anatomy &	Introduction to Anatomy &
research on society including	Physiology OLS:	Physiology OLS:
research methodology	250 (What Research Tells Us	250 (Taking It Further)
	about Studying the Brain)	



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Breakout	Narrative	Activity
	515 (What Research Tells Us	
	about Antibody-Based Drugs)	
(vi) relate the impact of past	Introduction to Anatomy &	Introduction to Anatomy &
research on society including	Physiology OLS:	Physiology OLS:
cost-benefit analysis	26 (Step 1: Identifying a	30 (Taking It Further #3)
	Research Question, 2nd	
	paragraph)	
(vii) relate the impact of past	Introduction to Anatomy &	Introduction to Anatomy &
research on society, including	Physiology OLS:	Physiology OLS:
contributions of diverse	418 (3rd paragraph, starting "In	122 (Taking It Further)
scientists as related to the	the past, sickle cell")	37 (In the Lab #2)
content	122 (What Research Tells Us	
	about the Danger of Indoor	
	Tanning)	
(viii) relate the impact of past	Introduction to Anatomy &	Introduction to Anatomy &
research on society, including	Physiology OLS:	Physiology OLS:
contributions of diverse	418 (3rd paragraph, starting "In	122 (Taking It Further)
engineers as related to the	the past, sickle cell")	402 (Taking It Further)
content	270 (What Research Tells Us	
	about Peripheral Nerve Injury	
(i.) -4 - 4 - i4 - f4	Repair)	Interesting to Augustonic O
(ix) relate the impact of current	Introduction to Anatomy &	Introduction to Anatomy &
research on scientific thought	Physiology OLS:	Physiology OLS:
including research	33-35 (20th-Century Scientists,	36 (Check Your Understanding
methodology	Looking Ahead)	#3)
(x) relate the impact of current	Introduction to Anatomy &	Introduction to Anatomy &
research on scientific thought	Physiology OLS:	Physiology OLS:
including cost-benefit analysis	26 (Step 1: Identifying a Research Question, 2nd	36 (Check Your Understanding #3)
	-	30 (Taking It Further #3)
	paragraph)	608 (Thinking Critically #5)
(xi) relate the impact of current	Introduction to Anatomy &	Introduction to Anatomy &
research on scientific thought	Physiology OLS:	Physiology OLS:
including contributions of	33-35 (20th-Century Scientists,	36 (Check Your Understanding
diverse scientists as related to	Looking Ahead)	#3)
the content	<u>Looking Ancady</u>	<u>#0]</u>
(xii) relate the impact of	Introduction to Anatomy &	Introduction to Anatomy &
current research on scientific	Physiology OLS:	Physiology OLS:
thought including contributions	33-35 (20th-Century Scientists,	36 (Check Your Understanding
of diverse engineers as related	Looking Ahead)	#3)
to the content	270 (What Research Tells Us	
	about Peripheral Nerve Injury	
	Repair)	
(xiii) relate the impact of	Introduction to Anatomy &	Introduction to Anatomy &
current research on society	Physiology OLS:	Physiology OLS:
including research	33-35 (20th-Century Scientists,	36 (Check Your Understanding
methodology	Looking Ahead)	#3)
	69 (What Research Tells Us	69 (Taking It Further)
	about mRNA COVID Vaccines)	



Breakout	Narrative	Activity
(xiv) relate the impact of	Introduction to Anatomy &	Introduction to Anatomy &
current research on society	Physiology OLS:	Physiology OLS:
including cost-benefit analysis	30 (What Research Tells Us	30 (Taking It Further #3)
	about Research	36 (Check Your Understanding
		<u>#3)</u>
(xv) relate the impact of	Introduction to Anatomy &	Introduction to Anatomy &
current research on society	Physiology OLS:	Physiology OLS:
including contributions of	33-35 (20th-Century Scientists,	36 (Check Your Understanding
diverse scientists as related to	Looking Ahead)	<u>#3)</u>
the content	81 (What Research Tells Us	264 (Taking It Further)
	about Artificial Tissues, Organs,	
	and Wearables)	
(xvi) relate the impact of	Introduction to Anatomy &	Introduction to Anatomy &
current research on society	Physiology OLS:	Physiology OLS:
including contributions of	33-35 (20th-Century Scientists,	36 (Check Your Understanding
diverse engineers as related to	Looking Ahead)	#3)
the content		

Standard 5C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) or health science field in order to investigate careers.

Breakout	Narrative	Activity
(i) research STEM careers	Introduction to Anatomy &	Introduction to Anatomy &
	Physiology OLS:	Physiology OLS:
	38-39 (Planning for a Health-	89 (Planning for a Health-Related
	Related or STEM Career)	Career) (also in the Career Corner
	88-89 (Career Corner feature)	features at the end of Chapters 3-
	(also at the end of Chapters 3-15)	<u>15)</u>
(ii) explore resources in order	Introduction to Anatomy &	Introduction to Anatomy &
to investigate STEM careers	Physiology OLS:	Physiology OLS:
	88-89 (Career Corner feature)	89 (Planning for a Health-Related
	(also at the end of Chapters 3-15)	Career) (also in the Career Corner
		features at the end of Chapters 3-
		<u>15)</u>

6: Human body organization. The student demonstrates an understanding of the anatomic and physiological basis of life and the ability to explain the interdependence of structure and function in biological systems. The student is expected to:

Standard 6A: distinguish between the six levels of structural organization in the human body, including chemical, cellular, tissue, organ, system, and organism, and explain their interdependence;



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Breakout	Narrative	Activity
(i) distinguish between the six	Introduction to Anatomy &	Introduction to Anatomy &
levels of structural	Physiology OLS:	Physiology OLS:
organization in the human	12-15 (Structural and Functional	15 (Check Your Understanding
body, including chemical,	Organization of the Body)	<u>#1)</u>
cellular, tissue, organ, system,		42 (Lesson 1.2, Learning Key
and organism		Terms and Concepts #1, #2)
(ii) explain their [chemical,	Introduction to Anatomy &	Introduction to Anatomy &
cellular, tissue, organ, system,	Physiology OLS:	Physiology OLS:
and organism]	12 (Structural and Functional	15 (Check Your Understanding
interdependence	Organization of the Body, 6th	<u>#1)</u>
	paragraph ("These	
	organizational")	

Standard 6B: identify and use appropriate directional terminology when referring to the human body, including directional terms, planes, body cavities, and body quadrants;

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Breakout	Narrative	Activity
(viii) use appropriate	Introduction to Anatomy &	Introduction to Anatomy &
directional terminology when	Physiology OLS:	Physiology OLS:
referring to the human body,	7 (Quadrants and Regions)	557 (Clinical Case Study)
including body quadrants	8 (Figure 1.5)	11 (Analyze and Apply #3)

Standard 6C: identify and describe the major characteristics of living organisms, including response to stimuli, growth and development, homeostasis, cellular composition, metabolism, reproduction, and the ability to adapt to the environment;

Breakout	Narrative	Activity
(i) identify the major characteristics of living organisms, including response to stimuli (ii) list the major characteristics	Introduction to Anatomy & Physiology OLS: 12 (last bullet on page "Response to stimuli") Introduction to Anatomy &	Introduction to Anatomy & Physiology OLS: 15 (Check Your Understanding #3) Introduction to Anatomy &
of living organisms, including growth and development	Physiology OLS: 15 (4th bullet on page ("Growth and development"))	Physiology OLS: 15 (Check Your Understanding #3)
(iii) identify the major characteristics of living organisms, including homeostasis	Introduction to Anatomy & Physiology OLS: 15 (2nd bullet on page ("Homeostasis"))	Introduction to Anatomy & Physiology OLS: 15 (Check Your Understanding #3)
(iv) identify the major characteristics of living organisms, including cellular composition	Introduction to Anatomy & Physiology OLS: 12 (first bullet at bottom of page "Cellular composition")	Introduction to Anatomy & Physiology OLS: 15 (Check Your Understanding #3)
(v) identify the major characteristics of living organisms, including metabolism	Introduction to Anatomy & Physiology OLS: 15 (3rd bullet "Metabolism")	Introduction to Anatomy & Physiology OLS: 15 (Check Your Understanding #3)
(vi) identify the major characteristics of living organisms, including reproduction	Introduction to Anatomy & Physiology OLS: 15 (5th bullet "Reproduction")	Introduction to Anatomy & Physiology OLS: 15 (Check Your Understanding #3)
(vii) identify the major characteristics of living organisms, including the ability to adapt to the environment	Introduction to Anatomy & Physiology OLS: 15 (1st bullet "Ability to adapt to the environment")	Introduction to Anatomy & Physiology OLS: 15 (Check Your Understanding #3)
(viii) describe the major characteristics of living organisms, including response to stimuli	Introduction to Anatomy & Physiology OLS: 12 (last bullet on page "Response to stimuli")	Introduction to Anatomy & Physiology OLS: 15 (Check Your Understanding #3)
(ix) describe the major characteristics of living organisms, including growth and development	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS: 15 (Check Your Understanding #3)



Breakout	Narrative	Activity
	15 (4th bullet on page ("Growth and development"))	
(x) describe the major characteristics of living organisms, including homeostasis	Introduction to Anatomy & Physiology OLS: 15 (2nd bullet on page ("Homeostasis"))	Introduction to Anatomy & Physiology OLS: 15 (Check Your Understanding #3)
(xi) describe the major characteristics of living organisms, including cellular composition	Introduction to Anatomy & Physiology OLS: 12 (first bullet at bottom of page "Cellular composition")	Introduction to Anatomy & Physiology OLS: 15 (Check Your Understanding #3)
(xii) describe the major characteristics of living organisms, including metabolism	Introduction to Anatomy & Physiology OLS: 15 (3rd bullet "Metabolism")	Introduction to Anatomy & Physiology OLS: 15 (Check Your Understanding #3)
(xii) describe the major characteristics of living organisms, including metabolism	Introduction to Anatomy & Physiology OLS: 15 (3rd bullet "Metabolism")	Introduction to Anatomy & Physiology OLS: 15 (Check Your Understanding #3)
(xiii) describe the major characteristics of living organisms, including reproduction	Introduction to Anatomy & Physiology OLS: 15 (5th bullet "Reproduction")	Introduction to Anatomy & Physiology OLS: 15 (Check Your Understanding #3)
(xiv) describe the major characteristics of living organisms, including the ability to adapt to the environment	Introduction to Anatomy & Physiology OLS: 15 (1st bullet "Ability to adapt to the environment")	Introduction to Anatomy & Physiology OLS: 15 (Check Your Understanding #3)

Standard 6D: research and describe negative and positive feedback loops as they apply to homeostasis; and

Breakout	Narrative	Activity
(i) research negative feedback	Introduction to Anatomy &	Introduction to Anatomy &
loops as they apply to	Physiology OLS:	Physiology OLS:
homeostasis	16 (Negative Feedback)	19 (In the Lab #2)
	322 (Hormones and	
	Homeostasis)	
(ii) research positive feedback	Introduction to Anatomy &	Introduction to Anatomy &
loops as they apply to	Physiology OLS:	Physiology OLS:
homeostasis	16 (Positive Feedback)	19 (Analyze and Apply #1)
(iii) describe negative	Introduction to Anatomy &	Introduction to Anatomy &
feedback loops as they apply	Physiology OLS:	Physiology OLS:
to homeostasis	16 (Negative Feedback)	18 (1st Check Your Understanding
	321 (2nd paragraph on page)	#1)
	330 (2nd paragraph on page)	



Breakout	Narrative	Activity
(iv) describe positive feedback	Introduction to Anatomy &	Introduction to Anatomy &
loops as they apply to	Physiology OLS:	Physiology OLS:
homeostasis	16 (Positive Feedback)	18 (1st Check Your Understanding
	638 (Childbirth, 3rd paragraph)	#1)
		640 (Analyze and Apply #2)

Standard 6E: research and identify the effects of the failure to maintain homeostasis as it relates to common diseases in each of the body systems.

Breakout	Narrative	Activity
(i) research the effects of the	Introduction to Anatomy &	Introduction to Anatomy &
failure to maintain	Physiology OLS:	Physiology OLS:
homeostasis as it relates to	600 (Chronic Kidney Disease)	44 (Thinking Critically #2)
common diseases in each of	381 (Asthma)	42 (Lesson 1.2, Thinking Critically
the body systems.	420 (Polycythemia)	#2)
		18 (1st Check Your Understanding
		#2)
(ii) identify the effects of the	Introduction to Anatomy &	Introduction to Anatomy &
failure to maintain	Physiology OLS:	Physiology OLS:
homeostasis as it relates to	168 (Homeostatic Calcium	18 (1st Check Your Understanding
common diseases in each of	<u>Imbalances)</u>	#4)
the body systems.	214 (Overuse Injuries)	324 (Analyze and Apply #5)
	338 (Hyperfunction of the Pituitary	
	Gland)	

7: Histology. The student demonstrates the ability to analyze the structure and function of eukaryotic cells in relation to the formation of tissue. The student is expected to:

Standard 7A: define tissue and identify the four primary tissue types, their subdivisions, and functions;

Breakout	Narrative	Activity
(i) define tissue	Introduction to Anatomy &	Introduction to Anatomy &
	Physiology OLS:	Physiology OLS:
	12 (Structural and Functional	15 (Check Your Understanding
	Organization of the Body, 3rd	#2)
	paragraph ("The smallest	
	building")	
(ii) identify the four primary	Introduction to Anatomy &	Introduction to Anatomy &
tissue types	Physiology OLS:	Physiology OLS:
	12 (Structural and Functional	15 (Check Your Understanding
	Organization of the Body, 3rd	<u>#2)</u>
	paragraph ("The smallest	
	building")	



Breakout	Narrative	Activity
(iii) identify [the] subdivisions	Introduction to Anatomy &	Introduction to Anatomy &
[of the four primary tissue	Physiology OLS:	Physiology OLS:
types]	76-86 (Lesson 2.3: Tissues)	85 (Check Your Understanding
		#2)
		95 (Lab Investigations #3)
(iv) identify [the] functions [of	Introduction to Anatomy &	Introduction to Anatomy &
the four primary tissue types]	Physiology OLS:	Physiology OLS:
	76-86 (Lesson 2.3: Tissues)	79 (Check Your Understanding
		#3)
		84 (Check Your Understanding
		#1)
		94 (Thinking Critically #1)

Standard 7B: compare epithelial tissue and connective tissue in terms of cell arrangement and interstitial materials;

Breakout	Narrative	Activity
(i) compare epithelial tissue	Introduction to Anatomy &	Introduction to Anatomy &
and connective tissue in terms	Physiology OLS:	Physiology OLS:
of cell arrangement	76-84 (Epithelial Tissue,	94 (Lesson 2.3 Thinking Critically
	Connective Tissue)	<u>#1)</u>
		95 (Lab Investigations #3)
(ii) compare epithelial tissue	Introduction to Anatomy &	Introduction to Anatomy &
and connective tissue in terms	Physiology OLS:	Physiology OLS:
of interstitial materials	76-84 (Epithelial Tissue,	94 (Lesson 2.3 Thinking Critically
	Connective Tissue)	<u>#1)</u>
		87 (In the Lab #1)
		93 (Lesson 2.3 Learning Key
		Terms and Concepts #8)

Standard 7C: describe the process of tissue repair involved in the normal healing of a superficial wound; and

Breakout	Narrative	Activity
(i) describe the process of	Introduction to Anatomy &	Introduction to Anatomy &
tissue repair involved in the	Physiology OLS:	Physiology OLS:
normal healing of a superficial	86 (Wound Healing and Tissue	86 (2nd Check Your
wound	Repair)	Understanding (#1, #2)
		87 (Know and Understand #8)
		94 (Lesson 2.3 Learning Key
		Terms and Concepts #14)

Standard 7D: describe the general metabolic pathways of carbohydrates, lipids, and proteins.



Breakout	Narrative	Activity
(i) describe the general	Introduction to Anatomy &	Introduction to Anatomy &
metabolic pathways of	Physiology OLS:	Physiology OLS:
carbohydrates	48-49 (Carbohydrates)	50 (Taking It Further)
	50 (What Research Tells Us	49 (Check Your Understanding
	about Glycogen Storage	<u>questions)</u>
	<u>Diseases</u>)	91 (Thinking Critically #3)
	532 (paragraph immediately	
	above "Proteins" head)	
(ii) describe the general	Introduction to Anatomy &	Introduction to Anatomy &
metabolic pathways of lipids	Physiology OLS:	Physiology OLS:
	52-55 (Lipids)	55 (Check Your Understanding
		<u>questions)</u>
(iii) describe the general	Introduction to Anatomy &	Introduction to Anatomy &
metabolic pathways of proteins	Physiology OLS:	Physiology OLS:
	51-52 (Proteins)	52 (Check Your Understanding
		questions)
		91 (Thinking Critically #2)

8: Skeletal system. The student analyzes the relationships between the anatomical structures and physiological functions of the skeletal system. The student is expected to:

Standard 8A: identify and differentiate between the axial skeleton and appendicular skeleton;

Breakout	Narrative	Activity
(i) identify the axial skeleton	Introduction to Anatomy &	Introduction to Anatomy &
	Physiology OLS:	Physiology OLS:
	142 (Lesson 4.2 introductory	151 (Know and Understand #1)
	paragraph)	151 (In the Lab #1)
(ii) identify the appendicular	Introduction to Anatomy &	Introduction to Anatomy &
skeleton	Physiology OLS:	Physiology OLS:
	152 (Lesson 4.3 introductory	156 (Check Your Understanding
	paragraph)	<u>#1)</u>
		181 (Lesson 4.3 Learning Key
		Terms and Concepts #1)
(iii) differentiate between the	Introduction to Anatomy &	Introduction to Anatomy &
axial skeleton and	Physiology OLS:	Physiology OLS:
appendicular skeleton	142 (Lesson 4.2 introductory	181 (Lesson 4.3 Thinking Critically
	paragraph)	<u>#1)</u>
	152 (Lesson 4.3 introductory	
	paragraph)	

Standard 8B: identify the types of joints, including gliding, hinge, pivot, saddle, and ball and socket, and describe the movements of each;



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Breakout	Narrative	Activity
(i) identify the types of joints,	Introduction to Anatomy &	Introduction to Anatomy &
including gliding	Physiology OLS:	Physiology OLS:
	162 (Freely Movable Joints)	164 (Know and Understand #4, In
	163 (Figure 4.31)	<u>the Lab #1)</u>
(ii) identify the types of joints,	Introduction to Anatomy &	Introduction to Anatomy &
including hinge	Physiology OLS:	Physiology OLS:
	162 (Freely Movable Joints)	164 (In the Lab #1)
	163 (Figure 4.31)	
(iii) identify the types of joints,	Introduction to Anatomy &	Introduction to Anatomy &
including pivot	Physiology OLS:	Physiology OLS:
	162 (Freely Movable Joints)	164 (In the Lab #1)
	163 (Figure 4.31)	
(iv) identify the types of joints,	Introduction to Anatomy &	Introduction to Anatomy &
including saddle	Physiology OLS:	Physiology OLS:
	162 (Freely Movable Joints)	164 (In the Lab #1)
	163 (Figure 4.31)	
(v) identify the types of joints,	Introduction to Anatomy &	Introduction to Anatomy &
including ball and socket	Physiology OLS:	Physiology OLS:
	162 (Freely Movable Joints)	164 (In the Lab #1)
	163 (Figure 4.31)	
(vi) describe the movements of	Introduction to Anatomy &	Introduction to Anatomy &
each [joint, including gliding]	Physiology OLS:	Physiology OLS:
	162 (Freely Movable Joints)	164 (In the Lab #2)
(vii) describe the movements	Introduction to Anatomy &	Introduction to Anatomy &
of each [joint, including hinge]	Physiology OLS:	Physiology OLS:
	162 (Freely Movable Joints)	164 (In the Lab #2)
(viii) describe the movements	Introduction to Anatomy &	Introduction to Anatomy &
of each [joint, including pivot]	Physiology OLS:	Physiology OLS:
	162 (Freely Movable Joints)	164 (In the Lab #2)
(ix) describe the movements of	Introduction to Anatomy &	Introduction to Anatomy &
each [joint, including saddle]	Physiology OLS:	Physiology OLS:
	162 (Freely Movable Joints)	164 (In the Lab #2)
(x) describe the movements of	Introduction to Anatomy &	Introduction to Anatomy &
each [joint, including ball and	Physiology OLS:	Physiology OLS:
socket]	162 (Freely Movable Joints)	164 (In the Lab #2)
1		

Standard 8C: identify and locate the anatomy of bone, including spongy and compact tissue, epiphysis, diaphysis, medullary cavity, periosteum, bone marrow, and endosteum;

Breakout	Narrative	Activity
(i) identify the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
bone, including spongy tissue	Physiology OLS:	Physiology OLS:
	133-134 (Organization of Bones)	141 (Know and Understand #2)
	80 (Figure 2.27)	141 (In the Lab #2)



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Breakout	Narrative	Activity
(ii) identify the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
bone, including spongy	Physiology OLS:	Physiology OLS:
compact tissue (NOTE: We	133-134 (Organization of Bones)	141 (Know and Understand #2)
are interpreting this as	80 (Figure 2.27)	
"compact bone")		
(iii) identify the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
bone, including epiphysis	Physiology OLS:	Physiology OLS:
	136, (2nd full paragraph and	141 (Know and Understand #3)
	Figure 4.4)	180 (Lesson 4.1 Learning Key
		Terms and Concepts #5)
(iv) identify the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
bone, including diaphysis	Physiology OLS:	Physiology OLS:
	135 (Anatomical Structure of	141 (Know and Understand #3)
	Long Bones)	141 (In the Lab #2)
(,,);double, the	136 (Figure 4.4)	Introduction to Accessors 0
(v) identify the anatomy of	Introduction to Anatomy &	Introduction to Anatomy & Physiology OLS:
bone, including medullary	Physiology OLS:	
cavity	133 (Storage, 2nd paragraph) 136 (Figure 4.4)	141 (In the Lab #2) 137-138 (Life Span Review
	137 (Life Span Development:	questions)
	Bones)	<u>questions)</u>
(vi) identify the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
bone, including periosteum	Physiology OLS:	Physiology OLS:
bone, moldang penosteam	135 (Anatomical Structure of	140 (1st Check Your
	Long Bones)	Understanding #1)
	136 (Figure 4.4)	141 (Know and Understand #3)
(vii) identify the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
bone, including bone marrow	Physiology OLS:	Physiology OLS:
, 3	133 (Storage, 2nd paragraph)	133 (Check Your Understanding
	136 (Figure 4.4)	#2)
		141 (In the Lab #2)
(viii) identify the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
bone, including endosteum	Physiology OLS:	Physiology OLS:
	136, (1st full paragraph and	140 (1st Check Your
	<u>Figure 4.4)</u>	<u>Understanding #2)</u>
		141 (Know and Understand #3)
(ix) locate the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
bone, including spongy and	Physiology OLS:	Physiology OLS:
compact tissue	138 (Figure 4.7)	141 (Know and Understand #2)
	135 (Check Your Understanding	141 (Analyze and Apply #3)
	#3, #4)	
(x) locate the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
bone, including epiphysis	Physiology OLS:	Physiology OLS:
	136 (Figure 4.4)	141 (Know and Understand #3)
(vi) loogte the grant-rank	Introduction to Assets was 0	141 (In the Lab #2)
(xi) locate the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
bone, including diaphysis	Physiology OLS:	Physiology OLS:
	136 (Figure 4.4)	141 (Know and Understand #3) 141 (In the Lab #2)
		141 (III the Lab #2)



Breakout	Narrative	Activity
(xii) locate the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
bone, including medullary	Physiology OLS:	Physiology OLS:
cavity	136 (Figure 4.4)	141 (In the Lab #2)
(xiii) locate the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
bone, including periosteum	Physiology OLS:	Physiology OLS:
	136 (Figure 4.4)	141 (Know and Understand #3)
(xiv) locate the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
bone, including bone marrow	Physiology OLS:	Physiology OLS:
	136 (Figure 4.4)	141 (In the Lab #2)
		133 (Check Your Understanding
		<u>#2)</u>
(xv) locate the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
bone, including bone marrow	Physiology OLS:	Physiology OLS:
	136 (Figure 4.4)	141 (In the Lab #2)
	<u>133 (Storage)</u>	
(xvi) locate the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
bone, including endosteum	Physiology OLS:	Physiology OLS:
	136 (1st full paragraph)	140 (1st Check Your
	136 (Figure 4.4)	<u>Understanding #2)</u>
		141 (Know and Understand #3)

Standard 8D: explain the major physiological functions of the skeletal system;

Breakout	Narrative	Activity
(i) explain the major	Introduction to Anatomy &	Introduction to Anatomy &
physiological functions of the	Physiology OLS:	Physiology OLS:
skeletal system	132-133 (Functions of the	133 (Check Your Understanding
	Skeletal System)	#1)
		141 (Know and Understand #1)

Standard 8E: describe the role of osteoblasts, osteocytes, and osteoclasts in bone growth and repair;

Breakout	Narrative	Activity
(i) describe the role of	Introduction to Anatomy &	Introduction to Anatomy &
osteoblasts in bone growth	Physiology OLS:	Physiology OLS:
	137 (Life Span Development:	137 (Life Span Review #1, 2)
	Longitudinal Growth,	140 (1st Check Your
	Circumferential Growth)	<u>Understanding #4)</u>
	84 (Bone)	141 (Analyze and Apply #1)
	80 (Figure 2.27)	
(ii) describe the role of	Introduction to Anatomy &	Introduction to Anatomy &
osteocytes in bone growth	Physiology OLS:	Physiology OLS:
	137 (Life Span Development:	137 (Life Span Review #5)
	Osteoblasts and Osteoclasts)	
	133 (Composition of Bones)	



Breakout	Narrative	Activity
(iii) describe the role of	Introduction to Anatomy &	Introduction to Anatomy &
osteoclasts in bone growth	Physiology OLS:	Physiology OLS:
	137 (Life Span Development:	140 (1st Check Your
	Osteoblasts and Osteoclasts)	<u>Understanding #4)</u>
		141 (Analyze and Apply #1)
(iv) describe the role of	Introduction to Anatomy &	Introduction to Anatomy &
osteoblasts in bone repair	Physiology OLS:	Physiology OLS:
	140 (Remodeling of Bones)	140 (1st column Check Your
	137 (Lifespan Development, 1st	<u>Understanding #4)</u>
	paragraph on page)	141 (Analyze and Apply #1)
(v) describe the role of	Introduction to Anatomy &	Introduction to Anatomy &
osteocytes in bone repair	Physiology OLS:	Physiology OLS:
	137 Osteoblasts and Osteoclasts,	137 (Life Span Review #5)
	1st paragraph)	
(vi) describe the role of	Introduction to Anatomy &	Introduction to Anatomy &
osteoclasts in bone repair	Physiology OLS:	Physiology OLS:
	140 (Remodeling of Bones)	141 (Analyze and Apply #1)
	137 (Lifespan Development, 1st	140 (1st column Check Your
	paragraph on page)	<u>Understanding #4)</u>

Standard 8F: identify and describe the different types of fractures such as compound, complete, simple, spiral, greenstick, hairline, transverse, and comminuted; and

Breakout	Narrative	Activity
(i) identify the different types of	Introduction to Anatomy &	Introduction to Anatomy &
fractures	Physiology OLS:	Physiology OLS:
	<u>165-167 (Fractures)</u>	168 (Check Your Understanding
	166 (Figure 4.33)	<u>#1)</u>
(ii) describe the different types	Introduction to Anatomy &	Introduction to Anatomy &
of fractures	Physiology OLS:	Physiology OLS:
	165-167 (Fractures)	168 (Check Your Understanding
		<u>#1)</u>

Standard 8G: identify and describe common diseases and disorders of the skeletal system such as scoliosis, osteoporosis, and bone cancer.

Breakout	Narrative	Activity
(i) identify common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the skeletal system	Physiology OLS:	Physiology OLS:
-	170 (Bone Cancer)	170 (Check Your Understanding
	168-169 (Osteoporosis)	<u>#1, #3)</u>
(ii) identify common disorders	Introduction to Anatomy &	Introduction to Anatomy &
of the skeletal system	Physiology OLS:	Physiology OLS:
-	165-168 (Common Bone Injuries)	168 (Check Your Understanding
		<u>questions)</u>
(iii) describe common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the skeletal system	Physiology OLS:	Physiology OLS:



Breakout	Narrative	Activity
	170 (Bone Cancer)	170 (Check Your Understanding
	168-169 (Osteoporosis)	#1, #3 <u>)</u>
(iv) describe common	Introduction to Anatomy &	Introduction to Anatomy &
disorders of the skeletal	Physiology OLS:	Physiology OLS:
system	165-168 (Common Bone Injuries)	168 (Check Your Understanding
		questions)

9: Integumentary system. The student analyzes the relationships between the anatomical structures and physiological functions of the integumentary system. The student is expected to:

Standard 9A: identify and describe the structures of the integumentary system, including layers of the skin, accessory organs within each layer, and glandular components in each layer;

Breakout	Narrative	Activity
(i) identify the structures of the	Introduction to Anatomy &	Introduction to Anatomy &
integumentary system,	Physiology OLS:	Physiology OLS:
including layers of the skin	102-105 (Anatomy of the Skin)	105 (Check Your Understanding
		<u>questions)</u>
		127 (Lesson 3.2 Learning Key
		Terms and Concepts #3)
		128 (Lesson 3.2 Thinking Critically
		<u>#3)</u>
(ii) identify the structures of the	Introduction to Anatomy &	Introduction to Anatomy &
integumentary system,	Physiology OLS:	Physiology OLS:
including accessory organs	105-108 (Appendages of the	108 (Check Your Understanding
within each layer	Skin)	<u>#1)</u>
		128 (Lesson 3.2 Learning Key
		Terms and Concepts #7)
(iii) identify the structures of	Introduction to Anatomy &	Introduction to Anatomy &
the integumentary system,	Physiology OLS:	Physiology OLS:
including glandular	105, 107 (Sudoriferous Glands,	108 (Check Your Understanding
components in each layer;	Sebaceous Glands)	<u>#2)</u>
(iv) describe the structures of	Introduction to Anatomy &	Introduction to Anatomy &
the integumentary system,	Physiology OLS:	Physiology OLS:
including layers of the skin	102-105 (Anatomy of the Skin)	<u>109 (In the Lab #1)</u>
(v) describe the structures of	Introduction to Anatomy &	Introduction to Anatomy &
the integumentary system,	Physiology OLS:	Physiology OLS:
including accessory organs	105-108 (Appendages of the	109 (In the Lab #2)
within each layer	Skin)	
(vi) describe the structures of	Introduction to Anatomy &	Introduction to Anatomy &
the integumentary system,	Physiology OLS:	Physiology OLS:
including glandular	105, 107 (Sudoriferous Glands,	109 (Know and Understand # 6)
components in each layer;	Sebaceous Glands)	109 (Analyze and Apply #4)

Standard 9B: describe the factors that can contribute to skin color;



Breakout	Narrative	Activity
(i) describe the factors that can	Introduction to Anatomy &	Introduction to Anatomy &
contribute to skin color	Physiology OLS:	Physiology OLS:
	101 (Functions of the	105 (Check Your Understanding
	Integumentary System, last	<u>#3)</u>
	paragraph on page)	127 (Lesson 3.2 Learning Key
	104 Epidermis, 5th paragraph)	Terms and Concepts #5)
	108 (What Research Tells Us	109 (Analyze and Apply #3)
	about Health in Skin Color)	

Standard 9C: describe and explain the process of tissue repair and scar formation; and

Breakout	Narrative	Activity
(i) describe the process of	Introduction to Anatomy &	Introduction to Anatomy &
tissue repair	Physiology OLS:	Physiology OLS:
	86 (Wound Healing and Tissue	86 (2nd Check Your
	Repair)	<u>Understanding (#2)</u>
	111 (Decubitus ulcers, 5th and	
	6th paragraphs)	
(ii) describe the process of	Introduction to Anatomy &	Introduction to Anatomy &
scar formation	Physiology OLS:	Physiology OLS:
	86 (Wound Healing and Tissue	87 (Know and Understand #8)
	Repair)	
	110 (Skin Injuries)	
(iii) explain the process of	Introduction to Anatomy &	Introduction to Anatomy &
tissue repair	Physiology OLS:	Physiology OLS:
	86 (Wound Healing and Tissue	86 (2nd Check Your
	Repair)	<u>Understanding #2)</u>
	111 (Decubitus ulcers, 5th and	
	6th paragraphs)	
(iv) explain the process of scar	Introduction to Anatomy &	Introduction to Anatomy &
formation	Physiology OLS:	Physiology OLS:
	501 (Figure 12.10)	87 (Know and Understand #8)

Standard 9D: identify and describe common diseases and disorders of the integumentary system such as skin cancer and psoriasis.

Breakout	Narrative	Activity
(i) identify common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the integumentary system	Physiology OLS:	Physiology OLS:
	112-117 (Infections of the Skin	117 (Check Your Understanding
	and Membranes)	questions)
	120-121 (Cancers of the Skin)	121 (Check Your Understanding
		questions)
		123 (Know and Understand #7)
(ii) identify common disorders	Introduction to Anatomy &	Introduction to Anatomy &
of the integumentary system	Physiology OLS:	Physiology OLS:
_	110-112 (Skin Injuries)	



Breakout	Narrative	Activity
	117-120 (Inflammatory Conditions	112 (Check Your Understanding
	of the Skin and Membranes)	questions)
		120 (Check Your Understanding
		<u>questions)</u>
		123 (Know and Understand #6)
(iii) describe common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the integumentary system	Physiology OLS:	Physiology OLS:
	112-117 (Infections of the Skin	117 (Check Your Understanding
	and Membranes)	<u>questions)</u>
(iv) describe common	Introduction to Anatomy &	Introduction to Anatomy &
disorders of the integumentary	Physiology OLS:	Physiology OLS:
system	110-112 (Skin Injuries)	112 and 120 (Check Your
	117-120 (Inflammatory Conditions	<u>Understanding questions</u>)
	of the Skin and Membranes)	123 (In the Lab #1)
		123 (Know and Understand #6,
		Analyze and Apply #1)

10: Muscular system. The student analyzes the relationships between the anatomical structures and physiological functions of the muscular system. The student is expected to:

Standard 10A: explain the major physiological functions of the muscular system, including voluntary movement, involuntary movement, heat production, and maintaining posture;

Breakout	Narrative	Activity
(i) explain the major	Introduction to Anatomy &	Introduction to Anatomy &
physiological functions of the	Physiology OLS:	Physiology OLS:
muscular system, including	186 (Skeletal Muscle)	188 (Check Your Understanding
voluntary movement		#1, #2 <u>)</u>
		226 (Lesson 5.1 Thinking Critically
		<u>#1)</u>
(ii) explain the major	Introduction to Anatomy &	Introduction to Anatomy &
physiological functions of the	Physiology OLS:	Physiology OLS:
muscular system, including	186-187 (Smooth Muscle)	188 (Check Your Understanding
involuntary movement		<u>#1, #2)</u>
		226 (Lesson 5.1 Thinking Critically
		<u>#1)</u>
(iii) explain the major	Introduction to Anatomy &	Introduction to Anatomy &
physiological functions of the	Physiology OLS:	Physiology OLS:
muscular system, including	190 (The Production of Heat)	190 (Check Your Understanding
heat production		<u>#2)</u>
		191 (Analyze and Apply #3)
(iv) explain the major	Introduction to Anatomy &	Introduction to Anatomy &
physiological functions of the	Physiology OLS:	Physiology OLS:
muscular system, including	186 (Skeletal Muscle)	191 (Analyze and Apply #3)
maintaining posture		191 (Know and Understand #2)



Standard 10B: explain the coordination of muscles, bones, and joints that allows movement of the body, including the methods of attachment of ligaments and tendons;

Breakout	Narrative	Activity
(i) explain the coordination of muscles that allows movement of the body, including the methods of attachment of ligaments	Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle, last paragraph) 189 (Tension and Types of Skeletal Muscle Contraction, 3rd paragraph)	Introduction to Anatomy & Physiology OLS: 163 (Check Your Understanding #2) 181 (Lesson 4.4 Thinking Critically #3)
(ii) explain the coordination of muscles that allows movement of the body, including the methods of attachment of tendons	Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle, last paragraph) 189 (Behavioral Properties, 3rd paragraph)	Introduction to Anatomy & Physiology OLS: 163 (Check Your Understanding #2) 181 (Lesson 4.4 Learning Key Terms and Concepts #6) 181 (Lesson 4.4 (Thinking Critically #3)
(iii) explain the coordination of bones that allows movement of the body, including the methods of attachment of ligaments	Introduction to Anatomy & Physiology OLS: 155 (The Wrist and Hand, 2nd paragraph) 186 (Skeletal Muscle, last paragraph) 189 (Tension and Types of Skeletal Muscle Contraction, 3rd paragraph)	Introduction to Anatomy & Physiology OLS: 181 (Lesson 4.4 Thinking Critically #3)
(iv) explain the coordination of bones that allows movement of the body, including the methods of attachment of tendons	Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle, last paragraph)	Introduction to Anatomy & Physiology OLS: 181 (Lesson 4.4 Learning Key Terms and Concepts #6) 181 (Lesson 4.4 Thinking Critically #3)
(v) explain the coordination of joints that allows movement of the body, including the methods of attachment of ligaments	Introduction to Anatomy & Physiology OLS: 162 (Freely Movable Joints) 163 (Articular Tissues)	Introduction to Anatomy & Physiology OLS: 163 (Check Your Understanding #2)
(vi) explain the coordination of joints that allows movement of the body, including the methods of attachment of tendons	Introduction to Anatomy & Physiology OLS: 162 (Freely Movable Joints) 163 (Articular Tissues) 189 (Tension and Types of Skeletal Muscle Contraction, 3rd paragraph)	Introduction to Anatomy & Physiology OLS: 163 (Check Your Understanding #2)

Standard 10C: examine common characteristics of muscle tissue, including excitability, contractibility, extensibility, and elasticity;



Breakout	Narrative	Activity
(i) examine common	Introduction to Anatomy &	Introduction to Anatomy &
characteristics of muscle	Physiology OLS:	Physiology OLS:
tissue, including excitability	189 (Behavioral Properties, 2nd paragraph)	191 (Know and Understand #4)
(ii) examine common	Introduction to Anatomy &	Introduction to Anatomy &
characteristics of muscle	Physiology OLS:	Physiology OLS:
tissue, including contractibility	189 (Behavioral Properties, 3rd	190 (Check Your Understanding
	paragraph)	#1)
		191 (Know and Understand #4)
		473 (Analyze and Apply #3)
(iii) examine common	Introduction to Anatomy &	Introduction to Anatomy &
characteristics of muscle	Physiology OLS:	Physiology OLS:
tissue, including extensibility	189 (Behavioral Properties, 1st	191 (Know and Understand #3)
	paragraph)	
(iv) examine common	Introduction to Anatomy &	Introduction to Anatomy &
characteristics of muscle	Physiology OLS:	Physiology OLS:
tissue, including elasticity	189 (Behavioral Properties, 1st	191 (Know and Understand #3)
	paragraph)	

Standard 10D: identify and describe the appearance, innervation, and function of the three muscle types, including cardiac, skeletal, and smooth;

Breakout	Narrative	Activity
(i) identify the appearance of	Introduction to Anatomy &	Introduction to Anatomy &
the three muscle types,	Physiology OLS:	Physiology OLS:
including cardiac	187 (Figure 5.1C)	191 (Analyze and Apply #1)
	188 (Cardiac Muscle)	
(ii) identify the appearance of	Introduction to Anatomy &	Introduction to Anatomy &
the three muscle types,	Physiology OLS:	Physiology OLS:
including skeletal	195-196 (Skeletal Fiber Types)	196 (Check Your Understanding
	187 (Figure 5.1A)	<u>#3)</u>
	186 (Skeletal Muscle)	188 (Check Your Understanding
		#3)
		191 (Know and Understand #1)
(iii) identify the appearance of	Introduction to Anatomy &	Introduction to Anatomy &
the three muscle types,	Physiology OLS:	Physiology OLS:
including smooth	187 (Figure 5.1B)	191 (Analyze and Apply #1)
	186-187 (Smooth Muscle)	
(iv) identify the innervation of	Introduction to Anatomy &	Introduction to Anatomy &
the three muscle types,	Physiology OLS:	Physiology OLS:
including cardiac	441-444 (Internal and External	443 (Check Your Understanding
	Control of the Heart, The	<u>questions)</u>
	Conduction System)	444 (Check Your Understanding
	188 (Cardiac Muscle)	<u>questions)</u>
		445 (Analyze and Apply questions)



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Breakout	Narrative	Activity
(v) identify the innervation of	Introduction to Anatomy &	Introduction to Anatomy &
the three muscle types,	Physiology OLS:	Physiology OLS:
including skeletal	186 (Skeletal Muscle)	196 (Check Your Understanding
S	192-194 (The Motor Unit)	<u>questions)</u>
		194 (Check Your Understanding
		<u>questions)</u>
(vi) identify the innervation of	Introduction to Anatomy &	Introduction to Anatomy &
the three muscle types,	Physiology OLS:	Physiology OLS:
including smooth	186-187 (Smooth Muscle)	234 (Check Your Understanding
	540 (Muscularis Externa)	#4)
()	Internal and an American C	237 (Know and Understand #1)
(vii) identify the function of	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy &
the three muscle types,	188 (Cardiac Muscle)	Physiology OLS: 188 (Check Your Understanding
including cardiac	188 (Cardiac Muscle)	#2)
(viii) identify the function of	Introduction to Anatomy &	Introduction to Anatomy &
the three muscle types,	Physiology OLS:	Physiology OLS:
including skeletal	186 (Skeletal Muscle)	188 (Check Your Understanding
including skeletal		#2)
(ix) identify the function of the	Introduction to Anatomy &	Introduction to Anatomy &
three muscle types, including	Physiology OLS:	Physiology OLS:
smooth	186-187 (Smooth Muscle)	188 (Check Your Understanding
		<u>#2)</u>
(x) describe the appearance of	Introduction to Anatomy &	Introduction to Anatomy &
the three muscle types,		Dhysiology Ol S:
the three muscle types,	Physiology OLS:	Physiology OLS:
including cardiac	188 (Cardiac Muscle)	87 (In the Lab #2)
including cardiac	188 (Cardiac Muscle) 432-435 (Anatomy of the Heart)	87 (In the Lab #2) 191 (Know and Understand #2)
including cardiac (xi) describe the appearance	188 (Cardiac Muscle) 432-435 (Anatomy of the Heart) Introduction to Anatomy &	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy &
including cardiac (xi) describe the appearance of the three muscle types,	188 (Cardiac Muscle) 432-435 (Anatomy of the Heart) Introduction to Anatomy & Physiology OLS:	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy & Physiology OLS:
including cardiac (xi) describe the appearance	188 (Cardiac Muscle) 432-435 (Anatomy of the Heart) Introduction to Anatomy &	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2)
including cardiac (xi) describe the appearance of the three muscle types,	188 (Cardiac Muscle) 432-435 (Anatomy of the Heart) Introduction to Anatomy & Physiology OLS:	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) 196 (Check Your Understanding
including cardiac (xi) describe the appearance of the three muscle types,	188 (Cardiac Muscle) 432-435 (Anatomy of the Heart) Introduction to Anatomy & Physiology OLS:	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) 196 (Check Your Understanding questions)
including cardiac (xi) describe the appearance of the three muscle types, including skeletal	188 (Cardiac Muscle) 432-435 (Anatomy of the Heart) Introduction to Anatomy & Physiology OLS:	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) 196 (Check Your Understanding questions) 200 (Know and Understand #2, #6)
including cardiac (xi) describe the appearance of the three muscle types, including skeletal (xii) describe the appearance	188 (Cardiac Muscle) 432-435 (Anatomy of the Heart) Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle)	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) 196 (Check Your Understanding questions)
including cardiac (xi) describe the appearance of the three muscle types, including skeletal (xii) describe the appearance of the three muscle types,	188 (Cardiac Muscle) 432-435 (Anatomy of the Heart) Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle) Introduction to Anatomy &	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) 196 (Check Your Understanding questions) 200 (Know and Understand #2, #6) Introduction to Anatomy &
including cardiac (xi) describe the appearance of the three muscle types, including skeletal (xii) describe the appearance	188 (Cardiac Muscle) 432-435 (Anatomy of the Heart) Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle) Introduction to Anatomy & Physiology OLS:	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) 196 (Check Your Understanding questions) 200 (Know and Understand #2, #6) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2)
including cardiac (xi) describe the appearance of the three muscle types, including skeletal (xii) describe the appearance of the three muscle types,	188 (Cardiac Muscle) 432-435 (Anatomy of the Heart) Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle) Introduction to Anatomy & Physiology OLS: 186-187 (Smooth Muscle) 546 (4th paragraph on page) Introduction to Anatomy &	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) 196 (Check Your Understanding questions) 200 (Know and Understand #2, #6) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) Introduction to Anatomy &
including cardiac (xi) describe the appearance of the three muscle types, including skeletal (xii) describe the appearance of the three muscle types, including smooth	188 (Cardiac Muscle) 432-435 (Anatomy of the Heart) Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle) Introduction to Anatomy & Physiology OLS: 186-187 (Smooth Muscle) 546 (4th paragraph on page) Introduction to Anatomy & Physiology OLS:	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) 196 (Check Your Understanding questions) 200 (Know and Understand #2, #6) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) Introduction to Anatomy & Physiology OLS:
including cardiac (xi) describe the appearance of the three muscle types, including skeletal (xii) describe the appearance of the three muscle types, including smooth (xiii) describe the innervation	188 (Cardiac Muscle) 432-435 (Anatomy of the Heart) Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle) Introduction to Anatomy & Physiology OLS: 186-187 (Smooth Muscle) 546 (4th paragraph on page) Introduction to Anatomy & Physiology OLS: 441-444 (Internal and External	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) 196 (Check Your Understanding questions) 200 (Know and Understand #2, #6) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) Introduction to Anatomy &
including cardiac (xi) describe the appearance of the three muscle types, including skeletal (xii) describe the appearance of the three muscle types, including smooth (xiii) describe the innervation of the three muscle types,	188 (Cardiac Muscle) 432-435 (Anatomy of the Heart) Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle) Introduction to Anatomy & Physiology OLS: 186-187 (Smooth Muscle) 546 (4th paragraph on page) Introduction to Anatomy & Physiology OLS: 441-444 (Internal and External Control of the Heart, The	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) 196 (Check Your Understanding questions) 200 (Know and Understand #2, #6) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) Introduction to Anatomy & Physiology OLS:
including cardiac (xi) describe the appearance of the three muscle types, including skeletal (xii) describe the appearance of the three muscle types, including smooth (xiii) describe the innervation of the three muscle types,	188 (Cardiac Muscle) 432-435 (Anatomy of the Heart) Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle) Introduction to Anatomy & Physiology OLS: 186-187 (Smooth Muscle) 546 (4th paragraph on page) Introduction to Anatomy & Physiology OLS: 441-444 (Internal and External Control of the Heart, The Conduction System)	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) 196 (Check Your Understanding questions) 200 (Know and Understand #2, #6) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) Introduction to Anatomy & Physiology OLS:
including cardiac (xi) describe the appearance of the three muscle types, including skeletal (xii) describe the appearance of the three muscle types, including smooth (xiii) describe the innervation of the three muscle types, including cardiac	188 (Cardiac Muscle) 432-435 (Anatomy of the Heart) Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle) Introduction to Anatomy & Physiology OLS: 186-187 (Smooth Muscle) 546 (4th paragraph on page) Introduction to Anatomy & Physiology OLS: 441-444 (Internal and External Control of the Heart, The Conduction System) 188 (Cardiac Muscle)	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) 196 (Check Your Understanding questions) 200 (Know and Understand #2, #6) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) Introduction to Anatomy & Physiology OLS: 445 (In the Lab #1, #2)
including cardiac (xi) describe the appearance of the three muscle types, including skeletal (xii) describe the appearance of the three muscle types, including smooth (xiii) describe the innervation of the three muscle types, including cardiac	Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle) Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle) Introduction to Anatomy & Physiology OLS: 186-187 (Smooth Muscle) 546 (4th paragraph on page) Introduction to Anatomy & Physiology OLS: 441-444 (Internal and External Control of the Heart, The Conduction System) 188 (Cardiac Muscle) Introduction to Anatomy &	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) 196 (Check Your Understanding questions) 200 (Know and Understand #2, #6) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) Introduction to Anatomy & Physiology OLS: 445 (In the Lab #1, #2)
including cardiac (xi) describe the appearance of the three muscle types, including skeletal (xii) describe the appearance of the three muscle types, including smooth (xiii) describe the innervation of the three muscle types, including cardiac (xiv) describe the innervation of the three muscle types,	Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle) Introduction to Anatomy & Physiology OLS: 186-187 (Smooth Muscle) Introduction to Anatomy & Physiology OLS: 186-187 (Smooth Muscle) 546 (4th paragraph on page) Introduction to Anatomy & Physiology OLS: 441-444 (Internal and External Control of the Heart, The Conduction System) 188 (Cardiac Muscle) Introduction to Anatomy & Physiology OLS:	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) 196 (Check Your Understanding questions) 200 (Know and Understand #2, #6) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) Introduction to Anatomy & Physiology OLS: 445 (In the Lab #1, #2) Introduction to Anatomy & Physiology OLS:
including cardiac (xi) describe the appearance of the three muscle types, including skeletal (xii) describe the appearance of the three muscle types, including smooth (xiii) describe the innervation of the three muscle types, including cardiac	Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle) Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle) Introduction to Anatomy & Physiology OLS: 186-187 (Smooth Muscle) 546 (4th paragraph on page) Introduction to Anatomy & Physiology OLS: 441-444 (Internal and External Control of the Heart, The Conduction System) 188 (Cardiac Muscle) Introduction to Anatomy &	87 (In the Lab #2) 191 (Know and Understand #2) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) 196 (Check Your Understanding questions) 200 (Know and Understand #2, #6) Introduction to Anatomy & Physiology OLS: 87 (In the Lab #2) Introduction to Anatomy & Physiology OLS: 445 (In the Lab #1, #2)



Breakout	Narrative	Activity
		200 (Know and Understand #1-#3)
(xv) describe the innervation	Introduction to Anatomy &	Introduction to Anatomy &
of the three muscle types, including smooth	Physiology OLS: 186-187 (Smooth Muscle)	Physiology OLS: 234 (Check Your Understanding
	232 (1st introductory paragraph)	#4) 237 (In the Lab #1)
(xvi) describe the function of the three muscle types, including cardiac	Introduction to Anatomy & Physiology OLS: 188 (Cardiac Muscle)	Introduction to Anatomy & Physiology OLS: 191 (Know and Understand #2)
(xvii) describe the function of the three muscle types, including skeletal	Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle)	Introduction to Anatomy & Physiology OLS: 191 (Know and Understand #2) 191 (In the Lab #4)
(xviii) describe the function of the three muscle types, including smooth	Introduction to Anatomy & Physiology OLS: 186-187 (Smooth Muscle)	Introduction to Anatomy & Physiology OLS: 191 (Know and Understand #2)
	446 (Blood Vessel Layers) 540 (Muscularis Externa)	570 (Lesson 13.2, Thinking Critically #1)

Standard 10E: examine the microscopic anatomy of a muscle fiber, including sarcomere, actin, and myosin;

Breakout	Narrative	Activity
(i) examine the microscopic anatomy of a muscle fiber, including sarcomere	Introduction to Anatomy & Physiology OLS: 194 (Contractions of the Sarcomeres)	Introduction to Anatomy & Physiology OLS: 194 (Check Your Understanding #1)
(ii) examine the microscopic anatomy of a muscle fiber, including actin	Introduction to Anatomy & Physiology OLS: 194 (Contractions of the Sarcomeres)	Introduction to Anatomy & Physiology OLS: 194 (Check Your Understanding #1)
(iii) examine the microscopic anatomy of a muscle fiber, including myosin	Introduction to Anatomy & Physiology OLS: 194 (Contractions of the Sarcomeres)	Introduction to Anatomy & Physiology OLS: 194 (Check Your Understanding #1)

Standard 10F: describe the mechanisms of muscle contraction at the neuromuscular junction;

Breakout	Narrative	Activity
(i) describe the mechanisms of	_	Introduction to Anatomy &
muscle contraction at the	Physiology OLS:	Physiology OLS:
neuromuscular junction		



Breakout	Narrative	Activity
	192-194 (Generating Action	194 (Check Your Understanding
	Potentials)	<u>#2)</u>

Standard 10G: name, locate, and describe the action of major voluntary muscles in regions of the body, including the head and neck, trunk, upper extremity, and lower extremity;

Breakout	Narrative	Activity
(i) name the action of major voluntary muscles in regions of the body, including the	Introduction to Anatomy & Physiology OLS: 201-203 (Directional Motions)	Introduction to Anatomy & Physiology OLS: 210 (Check Your Understanding
head and neck	203-204 (Head and Neck Muscles) 205 (Figure 5.17)	#1)
(ii) name the action of major voluntary muscles in regions of the body, including the trunk	Introduction to Anatomy & Physiology OLS: 201-203 (Directional Motions) 204 (Trunk Muscles) 207 (Figure 5.20)	Introduction to Anatomy & Physiology OLS: 210 (Check Your Understanding #2) 211 (Know and Understand #5)
(iii) name the action of major voluntary muscles in regions of the body, including the upper extremity	Introduction to Anatomy & Physiology OLS: 201-203 (Directional Motions) 204-205 (Upper Limb Muscles) 208 (Figure 5.22)	Introduction to Anatomy & Physiology OLS: 210 (Check Your Understanding #3) 211 (Analyze and Apply #3) 211 (In the Lab #2)
(iv) name the action of major voluntary muscles in regions of the body, including the lower extremity	Introduction to Anatomy & Physiology OLS: 201-203 (Directional Motions) 205, 209-210 (Lower Limb Muscles) 210 (Figure 5.24)	Introduction to Anatomy & Physiology OLS: 210 (Check Your Understanding #4) 211 (Analyze and Apply #3)
(v) locate the action of major voluntary muscles in regions of the body, including the head and neck	Introduction to Anatomy & Physiology OLS: 204 (Figure 5.16) 205 (Figure 5.17)	Introduction to Anatomy & Physiology OLS: 210 (Check Your Understanding #1)
(vi) locate the action of major voluntary muscles in regions of the body, including the trunk	Introduction to Anatomy & Physiology OLS: 206 (Figure 5.19) 207 (Figure 5.20)	Introduction to Anatomy & Physiology OLS: 211 (Know and Understand #5)
(vii) locate the action of major voluntary muscles in regions of the body, including the upper extremity	Introduction to Anatomy & Physiology OLS: 207 (Figure 5.21) 208 (Figure 5.22)	Introduction to Anatomy & Physiology OLS: 203 (Check Your Understanding #3, #4)
(viii) locate the action of major voluntary muscles in regions	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:



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Breakout	Narrative	Activity
of the body, including the	209 (Figure 5.23)	203 (Check Your Understanding
lower extremity	210 (Figure 5.24)	#3, #4)
(ix) describe the action of major voluntary muscles in regions of the body, including the head and neck	Introduction to Anatomy & Physiology OLS: 203-204 (Head and Neck Muscles) 205 (Figure 5.17)	Introduction to Anatomy & Physiology OLS: 210 (Check Your Understanding #1) 211 (In the Lab #4)
(x) describe the action of major voluntary muscles in regions of the body, including the trunk	Introduction to Anatomy & Physiology OLS: 204 (Trunk Muscles) 207 (Figure 5.20)	Introduction to Anatomy & Physiology OLS: 211 (In the Lab #4)
(xi) describe the action of major voluntary muscles in regions of the body, including the upper extremity	Introduction to Anatomy & Physiology OLS: 204-205 (Upper Limb Muscles) 208 (Figure 5.22)	Introduction to Anatomy & Physiology OLS: 211 (Analyze and Apply #1, #2) 211 (In the Lab #4)
(xii) describe the action of major voluntary muscles in regions of the body, including the lower extremity	Introduction to Anatomy & Physiology OLS: 205, 209-210 (Lower Limb Muscles) 210 (Figure 5.24)	Introduction to Anatomy & Physiology OLS: 211 (Know and Understand #4) 211 (In the Lab #4)

Standard 10H: identify and describe common diseases and disorders of the muscular system such as muscle strains and muscular dystrophy; and

Breakout	Narrative	Activity
(i) identify common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the muscular system	Physiology OLS:	Physiology OLS:
	219-220 (Myasthenia Gravis,	220 (Check Your Understanding
	Amyotrophic Lateral Sclerosis)	<u>#2, #4)</u>
	218-219 (Muscular Dystrophy)	221 (Know and Understand #9)
(ii) identify common disorders	Introduction to Anatomy &	Introduction to Anatomy &
of the muscular system	Physiology OLS:	Physiology OLS:
,	212-217 (Common Muscle	217 (Check Your Understanding
	Injuries, Overuse Injuries)	<u>questions)</u>
	219 (Hernia)	221 (Know and Understand #3)
(iii) describe common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the muscular system	Physiology OLS:	Physiology OLS:
,	219-220 (Myasthenia Gravis,	220 (Check Your Understanding
	Amyotrophic Lateral Sclerosis)	<u>#1)</u>
	Introduction to Anatomy &	Introduction to Anatomy &
	Physiology OLS:	Physiology OLS:
	218-219 (Muscular Dystrophy)	221 (Analyze and Apply #3)
		228 (Communicating about
		Anatomy & Physiology #4)



Breakout	Narrative	Activity
(iv) describe common	Introduction to Anatomy &	Introduction to Anatomy &
disorders of the muscular	Physiology OLS:	Physiology OLS:
system	212-217 (Common Muscle	228 (Communicating about
System	<u>Injuries, Overuse Injuries)</u>	Anatomy & Physiology #3)
	219 (Hernia)	214 (Check Your Understanding
		<u>questions)</u>

Standard 10I: analyze and describe the effects of pressure, movement, torque, tension, and elasticity on the human body.

Breakout	Narrative	Activity
(i) analyze the effects of	Introduction to Anatomy &	Introduction to Anatomy &
pressure on the human body	Physiology OLS:	Physiology OLS:
	21 (Pressure)	43 (Thinking Critically #2)
		45 (Lab Investigations #3)
(ii) analyze the effects of movement on the human	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
body	20 (Basic Kinetic Concepts)	25 (Analyze and Apply #1)
	189-190 (Tension and Types of	
	Skeletal Muscle Contraction)	
(iii) analyze the effects of torque on the human body	Introduction to Anatomy & Physiology OLS: 21 (Torque)	Introduction to Anatomy & Physiology OLS: 42 (Lesson 1.3 Learning Key Terms and Concepts #3) 43 (Thinking Critically #1)
(iv) analyze the effects of	Introduction to Anatomy &	Introduction to Anatomy &
tension on the human body	Physiology OLS:	Physiology OLS:
,	21-22 (Directional Force	25 (In the Lab #2)
	<u>Distribution within the Body)</u>	
	81 (Tension, Compression, and	
	Elasticity	
(v) analyze the effects of	Introduction to Anatomy &	Introduction to Anatomy &
elasticity on the human body	Physiology OLS:	Physiology OLS:
country on one name of a,	81 (Tension, Compression, and	140 (1st Check Your
	<u>Elasticity)</u>	<u>Understanding #5)</u>
	189 (Behavioral Properties)	
(vi) describe the effects of pressure on the human body	Introduction to Anatomy & Physiology OLS: 21 (Pressure)	Introduction to Anatomy & Physiology OLS: 45 (Lab Investigations #3)
(vii) describe the effects of	Introduction to Anatomy &	Introduction to Anatomy &
movement on the human	Physiology OLS:	Physiology OLS:
body	21-23 (Forces and Injury to the	25 (Analyze and Apply #1)
body	Human Body)	
(viii) describe the effects of torque on the human body	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:



Breakout	Narrative	Activity
	<u>21 (Torque)</u>	45 (Lab Investigations #3)
(ix) describe the effects of tension on the human body	Introduction to Anatomy & Physiology OLS: 21-22 (Directional Force Distribution within the Body)	Introduction to Anatomy & Physiology OLS: 25 (In the Lab #2)
(x) describe the effects of elasticity on the human body	Introduction to Anatomy & Physiology OLS: 81 (Tension, Compression, and Elasticity	Introduction to Anatomy & Physiology OLS: 140 (1st Check Your Understanding #5)

11: Nervous system. The student analyzes the relationship between the anatomical structures and physiological functions of the nervous system. The student is expected to:

Standard 11A: summarize and distinguish between the major physiological functions of the nervous system, including sensation, integration, and motor response;

Breakout	Narrative	Activity
(i) summarize the major	Introduction to Anatomy &	Introduction to Anatomy &
physiological functions of the	Physiology OLS:	Physiology OLS:
nervous system, including	232 (1st introductory paragraph)	234 (Check Your Understanding
sensation		<u>#5)</u>
(ii) summarize the major	Introduction to Anatomy &	Introduction to Anatomy &
physiological functions of the	Physiology OLS:	Physiology OLS:
nervous system, including	232 (2nd introductory paragraph)	234 (Check Your Understanding
integration		<u>#5)</u>
(iii) summarize the major	Introduction to Anatomy &	Introduction to Anatomy &
physiological functions of the	Physiology OLS:	Physiology OLS:
nervous system, including	232 (1st and 2nd introductory	234 (Check Your Understanding
motor response	paragraphs)	<u>#5)</u>
(iv) distinguish between the	Introduction to Anatomy &	Introduction to Anatomy &
major physiological functions	Physiology OLS:	Physiology OLS:
of the nervous system,	232 (introductory paragraphs)	234 (Check Your Understanding
including sensation,		<u>#5)</u>
integration, and motor		
response		

Standard 11B: identify the senses and explain their relationship to nervous system;



Breakout	Narrative	Activity
(i) identify the senses	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
	232 (1st introductory paragraph) 281 (Chapter 7 introduction)	237 (Analyze and Apply #1)
(ii) explain [the] relationship [of the senses] to nervous system	Introduction to Anatomy & Physiology OLS: 232 (2nd introductory paragraph)	Introduction to Anatomy & Physiology OLS: 237 (Analyze and Apply #1)

Standard 11C: investigate and explain the interdependence between the cranial and spinal nerves with the special senses of vision, hearing, smell, and taste;

Breakout	Narrative	Activity
(i) investigate the	Introduction to Anatomy &	Introduction to Anatomy &
interdependence between the	Physiology OLS:	Physiology OLS:
cranial and spinal nerves with	285 (Vision)	315 (Communicating about
the special sense of vision		Anatomy & Physiology #3)
		286 (Check Your Understanding
		<u>questions)</u>
(ii) investigate the	Introduction to Anatomy &	Introduction to Anatomy &
interdependence between the	Physiology OLS:	Physiology OLS:
cranial and spinal nerves with	295 (1st paragraph on page)	315 (Communicating about
the special sense of hearing		Anatomy & Physiology #3)
(iii) investigate the	Introduction to Anatomy &	Introduction to Anatomy &
interdependence between the	Physiology OLS:	Physiology OLS:
cranial and spinal nerves with	302 (Anatomy and Physiology of	315 (Lab Investigations #3)
the special sense of smell	the Olfactory Sense)	315 (Communicating about
'		Anatomy & Physiology #3)
(iv) investigate the	Introduction to Anatomy &	Introduction to Anatomy &
interdependence between the	Physiology OLS:	Physiology OLS:
cranial and spinal nerves with	306 (Gustation)	315 (Communicating about
the special sense of taste		Anatomy & Physiology #3)
		308 (Check Your Understanding
		<u>#2)</u>
(v) explain the	Introduction to Anatomy &	Introduction to Anatomy &
interdependence between the	Physiology OLS:	Physiology OLS:
cranial and spinal nerves with	285 (Vision)	286 (Check Your Understanding
the special sense of vision		<u>questions)</u>
(vi) explain the	Introduction to Anatomy &	Introduction to Anatomy &
interdependence between the	Physiology OLS:	Physiology OLS:
cranial and spinal nerves with	295 (1st paragraph on page)	315 (Communicating about
the special sense of hearing		Anatomy & Physiology #3)
(vii) explain the	Introduction to Anatomy &	Introduction to Anatomy &
interdependence between the	Physiology OLS:	Physiology OLS:



Breakout	Narrative	Activity
cranial and spinal nerves with	Introduction to Anatomy &	315 (Communicating about
the special sense of smell	Physiology OLS:	Anatomy & Physiology #3)
'	302 (Anatomy and Physiology of	
	the Olfactory Sense)	
(viii) explain the	Introduction to Anatomy &	Introduction to Anatomy &
interdependence between the	Physiology OLS:	Physiology OLS:
cranial and spinal nerves with	306 (Gustation)	315 (Communicating about
the special senses of taste		Anatomy & Physiology #3)

Standard 11D: describe the anatomy of the structures associated with the senses, including vision, hearing, smell, taste, and touch;

Breakout	Narrative	Activity
(i) describe the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
the structures associated with	Physiology OLS:	Physiology OLS:
the senses, including vision	282-285 (Anatomy of the Eye)	285 (Check Your Understanding
, ,	285 (Vision)	<u>questions)</u>
		286 (Check Your Understanding #1)
(ii) describe the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
the structures associated with	Physiology OLS:	Physiology OLS:
the senses, including hearing	293-295 (Anatomy of the Ear)	295 (Check Your Understanding
	295-296 (Hearing)	<u>questions)</u>
		297 (Check Your Understanding #3,
		#4)
(iii) describe the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
the structures associated with	Physiology OLS:	Physiology OLS:
the senses, including smell	302-304 (Anatomy and	305 (Check Your Understanding #1,
l and consect, marketing content	Physiology of the Olfactory	<u>#4)</u>
	<u>Sense)</u>	
(iv) describe the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
the structures associated with	Physiology OLS:	Physiology OLS:
the senses, including taste	306 (Gustation)	308 (Check Your Understanding
,		questions)
(v) describe the anatomy of	Introduction to Anatomy &	Introduction to Anatomy &
the structures associated with	Physiology OLS:	Physiology OLS:
the senses, including touch	256-258 (Sensory Receptors of	258 (Check Your Understanding #4)
	Touch)	127 (Lesson 3.2 Learning Key Terms
	102 (2nd paragraph)	and Concepts #2)
	104 (6th paragraph on page	278 (Analyzing and Evaluating Data
	("Merkel cells", and Dermis)	<u>#2)</u>

Standard 11E: identify the anatomical and physiological divisions of the peripheral nervous system and central nervous system;



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Breakout	Narrative	Activity
(i) identify the anatomical	Introduction to Anatomy &	Introduction to Anatomy &
divisions of the peripheral	Physiology OLS:	Physiology OLS:
nervous system	232-233 (Two Major Divisions)	234 (Check Your Understanding
		<u>#2)</u>
		276 (Lesson 6.1 Thinking Critically
		<u>#1)</u>
(ii) identify the anatomical	Introduction to Anatomy &	Introduction to Anatomy &
divisions of the central	Physiology OLS:	Physiology OLS:
nervous system	232 (Two Major Divisions)	234 (Check Your Understanding
	245 (The Brain)	<u>#1)</u>
	251 (The Spinal Cord)	251 (Check Your Understanding
		<u>questions)</u>
		275 (Lesson 6.1 Learning Key
		Terms and Concepts #1)
(iii) identify the physiological	Introduction to Anatomy &	Introduction to Anatomy &
divisions of the peripheral	Physiology OLS:	Physiology OLS:
nervous system	233-234 (Types of Efferent	234 (Check Your Understanding
·	Nerves)	<u>#3, #4)</u>
	253-261 (Lesson 6.4: Functional	258 (Check Your Understanding
	Anatomy of the Peripheral	<u>questions)</u>
	Nervous System)	260 (Check Your Understanding
		<u>questions)</u>
(iv) identify the physiological	Introduction to Anatomy &	Introduction to Anatomy &
divisions of the central	Physiology OLS:	Physiology OLS:
nervous system	245-252 (Lesson 6.3: Functional	251 (1st Check Your
,	Anatomy of the Central Nervous	<u>Understanding #2-#5)</u>
	<u>System)</u>	251 (2nd Check Your
		<u>Understanding #1, #2)</u>

Standard 11F: explain the glial cells within the central nervous system and peripheral nervous system and their associated functions;

Breakout	Narrative	Activity
(i) explain the glial cells within the central nervous system	Introduction to Anatomy & Physiology OLS: 235-236 (Neuroglia)	Introduction to Anatomy & Physiology OLS: 236 (Check Your Understanding #1)
(ii) explain the glial cells within the peripheral nervous system	Introduction to Anatomy & Physiology OLS: 235-236 (Neuroglia)	Introduction to Anatomy & Physiology OLS: 236 (Check Your Understanding #2)
(iii) explain [the] associated functions [of glial cells within the central nervous system]	Introduction to Anatomy & Physiology OLS: 235-236 (Neuroglia)	Introduction to Anatomy & Physiology OLS: 236 (Check Your Understanding #1)



Breakout	Narrative	Activity
		237 (Know and Understand #7)
(iv) explain [the] associated	Introduction to Anatomy &	Introduction to Anatomy &
functions [of glial cells within	Physiology OLS:	Physiology OLS:
the peripheral nervous	235-236 (Neuroglia)	236 (Check Your Understanding
system]		<u>#2)</u>

Standard 11G: analyze the functional and structural differences between gray and white matter relative to neurons;

Breakout	Narrative	Activity
(i) analyze the functional	Introduction to Anatomy &	Introduction to Anatomy &
differences between gray and	Physiology OLS:	Physiology OLS:
white matter relative to	258 (Autonomic Nervous System,	252 (Know and Understand #1, #6)
neurons	2nd paragraph)	
1.00.0.0	251 (The Spinal Cord)	
	248 (Brainstem)	
(ii) analyze the structural	Introduction to Anatomy &	Introduction to Anatomy &
differences between gray and	Physiology OLS:	Physiology OLS:
white matter relative to	255 (Spinal Nerves and Nerve	251 (2nd Check Your
neurons	<u>Plexuses)</u>	Understanding #1, #2)
Treat ons	234 (Neurons, 4th paragraph)	
	251 (The Spinal Cord)	

Standard 11H: distinguish between the types of neurons and explain the initiation of a nerve impulse during resting and action potential;

Breakout	Narrative	Activity
(i) distinguish between the types of neurons	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
3,600 31 110 311	234-235 (Neurons)	237 (Know and Understand #6)
		237 (Analyze and Apply #5)
(ii) explain the initiation of a nerve impulse during resting potential	Introduction to Anatomy & Physiology OLS: 238 (Action Potentials)	Introduction to Anatomy & Physiology OLS: 244 (Analyze and Apply #3)
(iii) explain the initiation of a nerve impulse during action potential	Introduction to Anatomy & Physiology OLS: 238-239 (Action Potentials)	Introduction to Anatomy & Physiology OLS: 239 (Check Your Understanding #2) 276 (Lesson 6.2 Thinking Critically #1)



Standard 11I: categorize the major neurotransmitters by chemical and physical mechanisms; and

Breakout	Narrative	Activity
(i) categorize the major	Introduction to Anatomy &	Introduction to Anatomy &
neurotransmitters by chemical	Physiology OLS:	Physiology OLS:
mechanisms	241 (Figure 6.8)	244 (Know and Understand #8)
- Theoriams The		243 (Check Your Understanding
		#2, #6)
(ii) categorize the major	Introduction to Anatomy &	Introduction to Anatomy &
neurotransmitters by physical	Physiology OLS:	Physiology OLS:
mechanisms	241 (Figure 6.8)	244 (Know and Understand #8)
The charms in a		243 (Check Your Understanding
		#5)

Standard 11J: identify and describe common diseases and disorders of the nervous system such as epilepsy, neuralgia, Parkinson's disease, and Alzheimer's disease.

Breakout	Narrative	Activity
(i) identify common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the nervous system	Physiology OLS:	Physiology OLS:
· ·	266-268 (Meningitis, Acute	271 (Know and Understand #5)
	Flaccid Myelitis, Multiple	271 (Analyze and Apply #5)
	<u>Sclerosis)</u>	
	269 (Dementia and Alzheimer's	
	<u>Disease)</u>	
(ii) identify common disorders	Introduction to Anatomy &	Introduction to Anatomy &
of the nervous system	Physiology OLS:	Physiology OLS:
·	262-266 (Injuries to the Brain and	266 (Check Your Understanding
	Spinal Cord)	<u>#1, #2)</u>
	268-269 (Epilepsy, Parkinson's	269 (Check Your Understanding
	<u>Disease</u>	<u>#3)</u>
(iii) describe common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the nervous system	Physiology OLS:	Physiology OLS:
· ·	266-268 (Meningitis, Acute	269 (Check Your Understanding
	Flaccid Myelitis, Multiple	<u>#1, #2)</u>
	<u>Sclerosis)</u>	271 (Know and Understand #3)
	269 (Dementia and Alzheimer's	271 (In the Lab #3)
	<u>Disease)</u>	
(iv) describe common	Introduction to Anatomy &	Introduction to Anatomy &
disorders of the nervous	Physiology OLS:	Physiology OLS:
system	262-266 (Injuries to the Brain and	266 (Check Your Understanding
'	Spinal Cord)	<u>#3)</u>
	268-269 (Epilepsy, Parkinson's	271 (Know and Understand #1)
	<u>Disease</u>	271 (In the Lab #4)



12: Endocrine system. The student analyzes the relationships between the anatomical structures and physiological functions of the endocrine system. The student is expected to:

Standard 12A: identify and locate the nine glands associated with the endocrine system, including the ovaries, testes, pineal gland, pituitary gland, thyroid gland, parathyroid glands, thymus, pancreas, and adrenal glands;

Breakout	Narrative	Activity
(i) identify the nine glands	Introduction to Anatomy &	Introduction to Anatomy &
associated with the endocrine	Physiology OLS:	Physiology OLS:
system, including the ovaries	318 (Endocrine Glands)	336 (Check Your Understanding
	335 (Gonads)	<u>#3)</u>
		319 (Check Your Understanding
		<u>#1)</u>
		337 (Analyze and Apply #7)
(ii) identify the nine glands	Introduction to Anatomy &	Introduction to Anatomy &
associated with the endocrine	Physiology OLS:	Physiology OLS:
system, including the testes	318 (Endocrine Glands)	319 (Check Your Understanding
, ,	335 (Gonads)	<u>#1)</u>
		337 (Analyze and Apply #7)
(iii) identify the nine glands	Introduction to Anatomy &	Introduction to Anatomy &
associated with the endocrine	Physiology OLS:	Physiology OLS:
system, including the pineal	318 (Endocrine Glands)	336 (Check Your Understanding
gland	334 (Pineal Gland)	<u>#2)</u>
		319 (Check Your Understanding
		<u>#1)</u>
(iv) identify the nine glands	Introduction to Anatomy &	Introduction to Anatomy &
associated with the endocrine	Physiology OLS:	Physiology OLS:
system, including the pituitary	318 (Endocrine Glands)	329 (Check Your Understanding
gland	325-329 (Pituitary Gland)	questions)
		319 (Check Your Understanding
		#1)
(v) identify the nine glands	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy &
associated with the endocrine	318 (Endocrine Glands)	Physiology OLS: 330 (Check Your Understanding
system, including the thyroid	329-330 (Thyroid Gland)	questions)
gland	<u>329-330 (111)1010 Glaffu)</u>	
		319 (Check Your Understanding
Little and Links and the second second	Introduction to Anatomy 9	#1) Introduction to Anatomy &
(vi) identify the nine glands	Introduction to Anatomy & Physiology OLS:	Physiology OLS:
associated with the endocrine	318 (Endocrine Glands)	331 (Check Your Understanding
system, including the	330-331 (Parathyroid Glands)	#2)
parathyroid glands	330 331 (Faratriy) old Glarius)	319 (Check Your Understanding
		#1)
		<u>#1</u>



Breakout	Narrative	Activity
(vii) identify the nine glands	Introduction to Anatomy &	Introduction to Anatomy &
associated with the endocrine system, including the thymus	Physiology OLS:	Physiology OLS:
	318 (Endocrine Glands)	319 (Check Your Understanding
(viii) identify the pine glands	334 (Thymus) Introduction to Anatomy &	#1) Introduction to Anatomy &
(viii) identify the nine glands associated with the endocrine	Physiology OLS:	Physiology OLS:
system, including the	318 (Endocrine Glands)	333 (2nd Check Your
pancreas	333 (Pancreas)	Understanding #1, #2)
paricieas		319 (Check Your Understanding
		<u>#1)</u>
(ix) identify the nine glands	Introduction to Anatomy &	Introduction to Anatomy &
associated with the endocrine	Physiology OLS: 318 (Endocrine Glands)	Physiology OLS: 333 (1st Check Your
system, including the adrenal	331-333 (Adrenal Glands)	Understanding #1, #2)
glands	331-333 (Adrenar Glands)	319 (Check Your Understanding
		#1)
(x) locate the nine glands	Introduction to Anatomy &	Introduction to Anatomy &
associated with the endocrine	Physiology OLS:	Physiology OLS:
system, including the ovaries	319 (Figure 8.1)	336 (Check Your Understanding
system, merauma me erumes		<u>#2)</u>
		319 (Check Your Understanding
		<u>#1)</u>
(xi) locate the nine glands	Introduction to Anatomy &	Introduction to Anatomy &
associated with the endocrine	Physiology OLS: 319 (Figure 8.1)	Physiology OLS: 329 (Check Your Understanding
system, including the testes	319 (Figure 8.1)	questions)
		319 (Check Your Understanding
		#1)
(xii) locate the nine glands	Introduction to Anatomy &	Introduction to Anatomy &
associated with the endocrine	Physiology OLS:	Physiology OLS:
system, including the pineal	319 (Figure 8.1)	336 (Check Your Understanding
gland		<u>#2)</u>
		319 (Check Your Understanding
		<u>#1)</u>
(xiii) locate the nine glands	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
associated with the endocrine system, including the pituitary	319 (Figure 8.1)	329 (Check Your Understanding
gland	325 (Pituitary Gland)	questions)
giariu		319 (Check Your Understanding
		#1)
(xiv) locate the nine glands	Introduction to Anatomy &	Introduction to Anatomy &
	Dhysiology Ol S:	
associated with the endocrine	Physiology OLS:	Physiology OLS:
associated with the endocrine system, including the thyroid	319 (Figure 8.1)	330 (Check Your Understanding
associated with the endocrine	1	



Breakout	Narrative	Activity
(xv) locate the nine glands associated with the endocrine system, including the parathyroid glands	Introduction to Anatomy & Physiology OLS: 319 (Figure 8.1) 330 (Parathyroid Glands)	Introduction to Anatomy & Physiology OLS: 331 (Check Your Understanding #1)
(xvi) locate the nine glands associated with the endocrine system, including the thymus	Introduction to Anatomy & Physiology OLS: 319 (Figure 8.1)	Introduction to Anatomy & Physiology OLS: 336 (Check Your Understanding #1)
(xvii) locate the nine glands associated with the endocrine system, including the pancreas	Introduction to Anatomy & Physiology OLS: 319 (Figure 8.1) 333 (Pancreas)	Introduction to Anatomy & Physiology OLS: 333 (2nd Check Your Understanding #1, #2) 319 (Check Your Understanding #1)
(xviii) locate the nine glands associated with the endocrine system, including the adrenal glands	Introduction to Anatomy & Physiology OLS: 319 (Figure 8.1) 332 (Figure 8.10)	Introduction to Anatomy & Physiology OLS: 333 (1st Check Your Understanding #1, #2) 319 (Check Your Understanding #1)

Standard 12B: compare and contrast endocrine and exocrine glands and identify the glands associated with each;

Breakout	Narrative	Activity
(i) compare and contrast endocrine and exocrine glands	Introduction to Anatomy & Physiology OLS: 318-319 (Anatomy of the Endocrine System)	Introduction to Anatomy & Physiology OLS: 319 (Check Your Understanding #2)
(ii) identify the glands associated with [endocrine glands]	Introduction to Anatomy & Physiology OLS: 318 (Endocrine Glands)	Introduction to Anatomy & Physiology OLS: 319 (Check Your Understanding #1)
(iii) identify the glands associated with [exocrine glands]	Introduction to Anatomy & Physiology OLS: 319 (Exocrine Glands)	Introduction to Anatomy & Physiology OLS: 351 (Lesson 8.1 Learning Key Terms and Concepts #1, #3)

Standard 12C: describe the hormones associated with each endocrine gland;



Breakout	Narrative	Activity
(i) describe the hormones associated with each	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
endocrine gland	325-337 (Lesson 8.2: Major	337 (Know and Understand #1-
g	Endocrine Organs)	#15, Analyze and Apply #1-#7, In
		the Lab activities #1-#4)

Standard 12D: research the impact of the endocrine systems on homeostatic mechanisms and other body systems such as the integration between the hypothalamus and the pituitary gland;

Breakout	Narrative	Activity
(i) research the impact of the endocrine systems on	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
homeostatic mechanisms	322-323 (Hormones and	324 (Analyze and Apply #5)
	<u>Homeostasis)</u>	323 (Check Your Understanding
	331 (Figure 8.9)	<u>#4)</u>
	334 (Figure 8.11)	352 (Thinking Critically #3, #4)
(ii) research the impact of the endocrine systems on other	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
body systems	325 (Hypothalamus)	325 (Check Your Understanding
	322 (Hypothalamic Control of	<u>#1, #2)</u>
	Body Temperature)	337 (Know and Understand #1)
	327 (Figure 8.6)	

Standard 12E: research the impact of the endocrine systems on homeostatic mechanisms and other body systems such as the integration between the hypothalamus and the pituitary gland;

Breakout	Narrative	Activity
(i) explain how the endocrine	Introduction to Anatomy &	Introduction to Anatomy &
glands are regulated, including	Physiology OLS:	Physiology OLS:
neural control	320 (Neural Control)	323 (Check Your Understanding
		<u>#1)</u>
		324 (Analyze and Apply #4)
		352 (Thinking Critically #2)
(ii) explain how the endocrine	Introduction to Anatomy &	Introduction to Anatomy &
glands are regulated, including	Physiology OLS:	Physiology OLS:
hormonal control	320-321 (Hormonal Control)	323 (Check Your Understanding
	319 (Hormones)	<u>#1)</u>
	325-336 (Lesson 8.2 Major	324 (In the Lab #3)
	Endocrine Organs (each organ	352 (Thinking Critically #2)
	has a section on hormonal	337 (Know and Understand #1-
	control))	#15, Analyze and Apply #1-#7, In
		the Lab activities #1-#4)



Breakout	Narrative	Activity
(iii) explain how the endocrine	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
glands are regulated, including humoral control	321 (Humoral Control)	323 (Check Your Understanding #1) 352 (Thinking Critically #2)

Standard 12F: identify and describe common diseases and disorders of the endocrine system such as hypothyroidism, pancreatic cancer, and diabetes.

Breakout	Narrative	Activity
(i) identify common diseases of the endocrine system	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
	344-346 (The Pancreas and	346 (Check Your Understanding
	<u>Diabetes Mellitus)</u>	<u>#1)</u>
		347 (Know and Understand #4)
(ii) identify common disorders of the endocrine system	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
	338-340 (Pituitary Disorders)	340 (Check Your Understanding
	340-341 (Thyroid Disorders)	<u>#1, #2)</u>
	341-342 (Parathyroid Disorders)	341 (Check Your Understanding
		<u>#1, #2)</u>
(iii) describe common diseases of the endocrine system	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
	344-346 (The Pancreas and	346 (Check Your Understanding
	<u>Diabetes Mellitus</u>)	<u>#2)</u>
		347 (Analyze and Apply #4, #5)
(iv) describe common disorders of the endocrine	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
system	338-340 (Pituitary Disorders)	347 (Analyze and Apply #1)
,	340-341 (Thyroid Disorders)	353 (Lesson 8.3 Learning Key
	341-342 (Parathyroid Disorders)	Terms and Concepts #1)

13: Urinary system. The student analyzes the relationships between the anatomical structures and physiological functions of the urinary system. The student is expected to:

Standard 13A: identify and describe the anatomical structures and functions of the urinary system, including the kidney, ureters, bladder, and urethra;



Breakout	Narrative	Activity
(i) identify the anatomical	Introduction to Anatomy &	Introduction to Anatomy &
structures of the urinary	Physiology OLS:	Physiology OLS:
system, including the kidney	574-578 (Anatomy of the Kidney)	578 (Check Your Understanding
		questions)
(1)	Introduction to Ametonic O	579 (Know and Understand #4, #6)
(ii) identify the anatomical	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
structures of the urinary	588 (Ureters)	579 (In the Lab #1)
system, including the ureters	<u>300 (0100013)</u>	607 (Lesson 14.2 Learning Key
		Terms and Concepts #10)
(iii) identify the anatomical	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
structures of the urinary	588 (Urinary Bladder)	589 (Figure 14.9 caption question)
system, including the bladder	<u> </u>	602 (Know and Understand #9)
(iv) identify the anatomical structures of the urinary	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
system, including the urethra	588 (Urethra)	588 (Check Your Understanding
system, including the drethra		#2)
(v) identify the anatomical functions of the urinary	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
system, including the kidney	580-588 (Urine Formation)	588 (Check Your Understanding
system, including the kluney		questions)
		592 (Know and Understand #1)
		607 (Lesson 14.2 Learning Key
		Terms and Concepts #6)
(vi) identify the anatomical	Introduction to Anatomy &	Introduction to Anatomy &
functions of the urinary	Physiology OLS:	Physiology OLS:
system, including the ureters	588 (Ureters)	607 (Lesson 14.2 Learning Key
(::) : 1 .:6 .:1	Introduction to Anatomy 9	Terms and Concepts #10)
(vii) identify the anatomical	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
functions of the urinary	588 (Urinary Bladder)	607 (Lesson 14.2 Learning Key
system, including the bladder		Terms and Concepts #11)
(viii) identify the anatomical	Introduction to Anatomy &	Introduction to Anatomy &
functions of the urinary	Physiology OLS:	Physiology OLS:
system, including the urethra	588 (Urethra)	592 (Know and Understand #7)
(ix) describe the anatomical	Introduction to Anatomy &	Introduction to Anatomy &
structures of the urinary	Physiology OLS:	Physiology OLS:
system, including the kidney	574-578 (Anatomy of the Kidney)	579 (Know and Understand #1, #2)
,		579 (In the Lab #1)
		609 (Lab Investigations #1)
(x) describe the anatomical	Introduction to Anatomy &	Introduction to Anatomy &
structures of the urinary	Physiology OLS:	Physiology OLS: 591 (Check Your Understanding
system, including the ureters	588 (Ureters)	#1)
	1	<u>#1]</u>



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Breakout	Narrative	Activity
(xi) describe the anatomical structures of the urinary system, including the bladder	Introduction to Anatomy & Physiology OLS: 588 (Urinary Bladder)	Introduction to Anatomy & Physiology OLS: 588 (Check Your Understanding #1)
(xii) describe the anatomical structures of the urinary system, including the urethra	Introduction to Anatomy & Physiology OLS: 588 (Urethra)	Introduction to Anatomy & Physiology OLS: 602 (Know and Understand #9)
(xiii) describe the anatomical functions of the urinary system, including the kidney	Introduction to Anatomy & Physiology OLS: 580-588 (Urine Formation)	Introduction to Anatomy & Physiology OLS: 592 (Know and Understand #2-#4) 592 (Analyze and Apply #2) 592 (In the Lab #1)
(xiv) describe the anatomical functions of the urinary system, including the ureters	Introduction to Anatomy & Physiology OLS: 588 (Ureters)	Introduction to Anatomy & Physiology OLS: 591 (Check Your Understanding #1)
(xv) describe the anatomical functions of the urinary system, including the bladder	Introduction to Anatomy & Physiology OLS: 588 (Urinary Bladder)	Introduction to Anatomy & Physiology OLS: 590 (Figure 14.10 caption question) 592 (Know and Understand #6) 607 (Lesson 14.2 Thinking Critically #3)
(xvi) describe the anatomical functions of the urinary system, including the urethra	Introduction to Anatomy & Physiology OLS: 588 (Urethra)	Introduction to Anatomy & Physiology OLS: 607 (Lesson 14.2 Thinking Critically #3)

Standard 13B: compare and contrast the anatomical structures and describe the functions of the male and female urinary system;

Breakout	Narrative	Activity
(i) compare and contrast the	Introduction to Anatomy &	Introduction to Anatomy &
anatomical structures of the	Physiology OLS:	Physiology OLS:
male and female urinary	588 (Urethra)	589 (Figure 14.9 caption
system	623 (Ducts of the Female	questions)
System	Reproductive System, 2nd	
	paragraph)	
	589 (Figure 14.9)	
	601 (Urinary Tract Infection)	
(ii) describe the functions of	Introduction to Anatomy &	Introduction to Anatomy &
the male urinary system	Physiology OLS:	Physiology OLS:
	573 (Chapter introduction)	622 (Analyze and Apply #4)
	621 (Male Reproductive	588 (1st Check Your
	Physiology)	Understanding #1-#6)



Breakout	Narrative	Activity
	623 (Ducts of the Female	
	Reproductive System, 2nd	
	paragraph)	
(iii) describe the functions of the female urinary system	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
and remain armany system	573 (Chapter introduction)	588 (1st Check Your
	574 (Lesson 14.1 introduction)	<u>Understanding #1-#6)</u>
	580 (Lesson 14.2 introduction)	577 (Figure 14.3 caption question)

Standard 13C: summarize and illustrate the structures, functions, and types of nephrons;

Breakout	Narrative	Activity
(i) summarize the structures	Introduction to Anatomy &	Introduction to Anatomy &
of nephrons	Physiology OLS:	Physiology OLS:
	575-578 (The Nephron)	578 (1st Check Your
		<u>Understanding, #3-#5)</u>
(ii) summarize the functions of	Introduction to Anatomy &	Introduction to Anatomy &
nephrons	Physiology OLS:	Physiology OLS:
	575-578 (The Nephron)	579 (Know and Understand #8)
	580-586 (Urine Formation)	578 (2nd Check Your
		<u>Understanding, #2)</u>
		588 (1st Check Your
		<u>Understanding #1-#6)</u>
(iii) summarize the types of	Introduction to Anatomy &	Introduction to Anatomy &
nephrons	Physiology OLS:	Physiology OLS:
·	575 (The Nephron, 2nd	579 (Know and Understand #7)
	<u>paragraph)</u>	
(iv) illustrate the structures of	Introduction to Anatomy &	Introduction to Anatomy &
nephrons	Physiology OLS:	Physiology OLS:
·	577 (Figure 14.3)	577 (Figure 14.3 caption
		<u>questions)</u>
		609 (Lab Investigations #1)
(v) illustrate the functions of	Introduction to Anatomy &	Introduction to Anatomy &
nephrons	Physiology OLS:	Physiology OLS:
·	577 (Figure 14.3)	592 (In the Lab #1)
	585 (Figure 14.7)	
(vi) illustrate the types of	Introduction to Anatomy &	Introduction to Anatomy &
nephrons	Physiology OLS:	Physiology OLS:
	577 (Figure 14.3)	607 Lesson 14.1 Thinking Critically
		<u>#1)</u>
		607 (Lesson 14.1 Learning Key
		Terms and Concepts #5)



Standard 13D: examine the methods of fluid balance and homeostasis in the urinary system, including fluid intake and output;

Breakout	Narrative	Activity
(i) examine the methods of fluid balance in the urinary	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
system, including fluid intake	587 (Antidiuretic Hormone)	603 (Analyze and Apply #6)
	17 (What Research Tells Us about	609 (Lab Investigations #2)
	Homeostatic Mechanisms during	
	<u>Distance Running</u>)	
(ii) examine the methods of fluid balance in the urinary	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
system, including fluid output	582 (Pressure Controls, last	592 (In the Lab #2)
system, meraamig mara saspar	paragraph)	603 (Analyze and Apply #4, #6)
	596 (Diabetes)	609 (Lab Investigations #2)
(iii) examine the methods of	Introduction to Anatomy &	Introduction to Anatomy &
fluid homeostasis in the	Physiology OLS:	Physiology OLS:
urinary system, including fluid	586-587 (Hormonal Regulation of	588 (1st Check Your
intake	<u>Urine Volume and Composition)</u>	<u>Understanding #1-#6)</u>
	574 (Lesson 14.1 introduction)	
(iv) examine the methods of fluid homeostasis in the	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
urinary system, including fluid	586-587 (Hormonal Regulation of	588 (1st Check Your
output	<u>Urine Volume and Composition)</u>	Understanding #1-#6)
5 5 5 5 5 5 5	574 (Lesson 14.1 introduction)	

Standard 13E: analyze the composition of urine and the process of urine formation, including filtration, reabsorption, and secretion;

Breakout	Narrative	Activity
(i) analyze the composition of	Introduction to Anatomy &	Introduction to Anatomy &
urine	Physiology OLS:	Physiology OLS:
	593-594 (Assessing Renal	594 (Check Your Understanding
	<u>Function</u>)	<u>questions)</u>
		603 (Analyze and Apply #4)
		608 (Analyzing and Evaluating
		Data questions)
(ii) analyze the process of	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
urine formation, including	580-582 (Filtration)	588 (1st Check Your
filtration	594 (Glomerular Filtration Rate)	Understanding #1, #2)
		592 (Know and Understand #2, #3)
		609 (Lab Investigations #1)



Breakout	Narrative	Activity
(iii) analyze the process of urine formation, including,	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
reabsorption	582-584 (Reabsorption)	588 (1st Check Your
·		<u>Understanding, #3, #4)</u>
		607 (Lesson 14.2 Thinking
		Critically #1)
		607 (Lesson 14.2 Learning Key
		Terms and Concepts #7)
(iv) analyze the process of urine formation, including	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
secretion	584-585 (Secretion)	588 (1st Check Your
		<u>Understanding, #4, #6)</u>
		607 (Lesson 14.2 Learning Key
		Terms and Concepts #9)

Standard 13F: describe the relationship between the nervous system, renal system, and muscular system before and during micturition; and

Breakout	Narrative	Activity
(i) describe the relationship	Introduction to Anatomy &	Introduction to Anatomy &
between the nervous system,	Physiology OLS:	Physiology OLS:
renal system, and muscular	588-590 (Urine Excretion)	591 (Check Your Understanding
system before micturition		<u>#1)</u>
(ii) describe the relationship	Introduction to Anatomy &	Introduction to Anatomy &
between the nervous system,	Physiology OLS:	Physiology OLS:
renal system, and muscular	590-591 (step 5 and following	591 (Check Your Understanding
system during micturition	paragraph)	<u>#2)</u>
System daming infectantion		592 (Know and Understand #6)

Standard 13G: identify and describe common diseases and disorders of the urinary system such as chronic kidney disease, kidney stones, urinary tract infections, and renal cancer.

Breakout	Narrative	Activity
(i) identify common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the urinary system	Physiology OLS:	Physiology OLS:
, ,	595 (Figure 14.12)	602 (Check Your Understanding
	<u>596-598 (Diabetes)</u>	<u>#6)</u>
	600 (Chronic Kidney Disease)	602 (Know and Understand #3, #4,
	601-602 (Urinary Tract Infections)	<u>#5)</u>
		603 (Analyze and Apply #2)
(ii) identify common disorders	Introduction to Anatomy &	Introduction to Anatomy &
of the urinary system	Physiology OLS:	Physiology OLS:
, , , , , , , , , , , , , , , , , , , ,	595 (Figure 14.12)	



Breakout	Narrative	Activity
	600 (Kidney Stones)	602 (Check Your Understanding
	599 (What Research Tells Us	#1, #4, #5 <u>)</u>
	about Paired Kidney Transplants)	608 (Thinking Critically #2)
		599 (Taking It Further)
(iii) describe common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the urinary system	Physiology OLS:	Physiology OLS:
, , , , , , ,	595 (Figure 14.12)	602 (Know and Understand #9)
	596-598 (Diabetes)	603 (In the Lab #2)
	600-602 (Chronic Kidney Disease,	608 (Lesson 14.3 Thinking
	<u>Urinary Tract Infections)</u>	Critically #3)
(iv) describe common	Introduction to Anatomy &	Introduction to Anatomy &
disorders of the urinary	Physiology OLS:	Physiology OLS:
system	595 (Figure 14.12)	602 (Know and Understand #8)
3,300	599 (What Research Tells Us	608 (Lesson 14.3 Thinking
	about Paired Kidney Transplants)	Critically #2, #5)

14: Cardiovascular system. The student analyzes the relationships between the anatomical structures and physiological functions of the cardiovascular system. The student is expected to:

Standard 14A: identify the major functions of the cardiovascular system, including transport, maintaining homeostasis, and immune response;

Breakout	Narrative	Activity
(i) identify the major functions	Introduction to Anatomy &	Introduction to Anatomy &
of the cardiovascular system,	Physiology OLS:	Physiology OLS:
including transport	432 (Lesson 11.1 introduction)	440 (Know and Understand #1)
(ii) identify the major	Introduction to Anatomy &	Introduction to Anatomy &
functions of the	Physiology OLS:	Physiology OLS:
cardiovascular system,	432 (Lesson 11.1 introduction)	440 (Know and Understand #1)
including maintaining		
homeostasis		
(iii) identify the major	Introduction to Anatomy &	Introduction to Anatomy &
functions of the	Physiology OLS:	Physiology OLS:
cardiovascular system,	432 (Lesson 11.1 introduction)	440 (Know and Understand #1)
including immune response		

Standard 14B: compare and contrast the anatomical structure of arteries, arterioles, capillaries, venules, and veins;



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Breakout	Narrative	Activity
(i) compare and contrast the anatomical structure of	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
arteries, arterioles, capillaries, venules, and veins;	446-449 (Blood Vessels: The Transport Network)	449 (Check Your Understanding #1-#5)
		461 (Analyze and Apply #1) 479 (Lesson 11.3 Thinking
		<u>Critically #2)</u>

Standard 14C: investigate and illustrate how systemic circulation transports blood, gasses, and nutrients from the heart to the internal anatomy of the heart, including tissue layers, chambers, and valves, and external anatomy of the heart, including coronary vessels;

Breakout	Narrative	Activity
(i) investigate how systemic circulation transports blood	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
from the heart to the internal	446-447 (Blood Vessel Layers) 449-454 (Systemic Circulation,	449 (Check Your Understanding #1)
anatomy of the heart, including tissue layers	Cardiac Circulation)	461 (Know and Understand #1)
molading closure layers	434 (Layers of the Heart)	479 (Lesson 11.3 Learning Key
(ii) investigate how systemic circulation transports blood from the heart to the internal anatomy of the heart, including chambers	Introduction to Anatomy & Physiology OLS: 435-436 (Blood Flow through the Heart) 432-433 (The Four Chambers of the Heart)	Introduction to Anatomy & Physiology OLS: 440 (In the Lab #1)
(iii) investigate how systemic circulation transports blood from the heart to the internal anatomy of the heart, including valves	Introduction to Anatomy & Physiology OLS: 435-436 (Blood Flow through the Heart) 433-434 (The Heart Valves)	Introduction to Anatomy & Physiology OLS: 435 (Check Your Understanding #2, #3) 461 (Know and Understand #2)
(iv) investigate how systemic circulation transports gasses from the heart to the internal anatomy of the heart, including tissue layers	Introduction to Anatomy & Physiology OLS: 435-436 (Blood Flow through the Heart) 449-450 (Systemic Circulation)	Introduction to Anatomy & Physiology OLS: 440 (Know and Understand #4) 440 (Analyze and Apply # 1)
(v) investigate how systemic circulation transports gasses from the heart to the internal anatomy of the heart, including chambers	Introduction to Anatomy & Physiology OLS: 449-451 (Systemic Circulation) 435-436 (Blood Flow through the Heart)	Introduction to Anatomy & Physiology OLS: 440 (In the Lab #1)
(vi) investigate how systemic circulation transports gasses from the heart to the internal	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS: 440 (Know and Understand #3)



Breakout	Narrative	Activity
anatomy of the heart,	435-436 (Blood Flow through the	440 (Analyze and Apply # 1)
including valves	<u>Heart)</u>	
(vii) investigate how systemic circulation transports	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
nutrients from the heart to	435-436 (Blood Flow through the	449 (Check Your Understanding
the internal anatomy of the	<u>Heart)</u>	<u>#1)</u>
heart, including tissue layers		461 (Know and Understand #1)
		479 (Lesson 11.3 Learning Key
		Terms and Concepts #1, #2, #3)
(viii) investigate how systemic	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
circulation transports	435-436 (Blood Flow through the	440 (In the Lab #1)
nutrients from the heart to	Heart)	440 (III tile Edd II I)
the internal anatomy of the	<u>ricury</u>	
heart, including chambers	Introduction to Anatomy 9	Introduction to Anatomy 9
(ix) investigate how systemic circulation transports	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
nutrients from the heart to	435-436 (Blood Flow through the	440 (Know and Understand #3)
the internal anatomy of the	<u>Heart)</u>	440 (Analyze and Apply # 1)
heart, including valves		
(x) investigate external	Introduction to Anatomy &	Introduction to Anatomy &
anatomy of the heart,	Physiology OLS:	Physiology OLS:
including coronary vessels	454 (Figure 11.19)	456 (Check Your Understanding
,	451-454 (Cardiac Circulation)	<u>#3)</u>
	467-469 (Coronary Artery	473 (Analyze and Apply #6)
	<u>Disease)</u>	
(xi) illustrate how systemic	Introduction to Anatomy &	Introduction to Anatomy &
circulation transports blood	Physiology OLS: 435 (Figure 11.4)	Physiology OLS: 440 (In the Lab #1)
from the heart to the internal	455 (Figure 11.4)	440 (III the Lab #1)
anatomy of the heart,		
including tissue layers	Internal and an American C	Later de di se de Ameter de O
(xii) illustrate how systemic	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
circulation transports blood	435 (Figure 11.4)	440 (In the Lab #1, #3)
from the heart to the internal	435 (Figure 11.4)	440 (III the Lab #1, #3)
anatomy of the heart,		
including chambers	Interestination to Augustania 0	Interestination to Ametonic O
(xiii) illustrate how systemic	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
circulation transports blood from the heart to the internal	433 (Figure 11.2)	433 (Figure 11.2 caption
	435 (Figure 11.4)	questions)
anatomy of the heart,		<u></u>
including valves	Introduction to Anatomy 9	Introduction to Anatomy 9
(xiv) illustrate how systemic	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
circulation transports gasses	448 (Figure 11.13)	440 (In the Lab #1)
from the heart to the internal		2 (
anatomy of the heart,		
including tissue layers		



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Breakout	Narrative	Activity
(xv) illustrate how systemic	Introduction to Anatomy &	Introduction to Anatomy &
circulation transports gasses	Physiology OLS:	Physiology OLS:
from the heart to the internal	448 (Figure 11.13)	440 (In the Lab #1, #3)
anatomy of the heart,		
including chambers		
(xvi) illustrate how systemic	Introduction to Anatomy &	Introduction to Anatomy &
circulation transports gasses	Physiology OLS:	Physiology OLS:
from the heart to the internal	448 (Figure 11.13)	433 (Figure 11.2 caption
anatomy of the heart,		<u>questions)</u>
including valves		
(xvii) illustrate how systemic	Introduction to Anatomy &	Introduction to Anatomy &
circulation transports	Physiology OLS:	Physiology OLS:
nutrients from the heart to	448 (Figure 11.13)	440 (In the Lab #1)
the internal anatomy of the		
heart, including tissue layers		
(xviii) illustrate how systemic	Introduction to Anatomy &	Introduction to Anatomy &
circulation transports	Physiology OLS:	Physiology OLS:
nutrients from the heart to	448 (Figure 11.13)	440 (In the Lab #1, #3)
the internal anatomy of the		
heart, including chambers		
(xix) illustrate how systemic	Introduction to Anatomy &	Introduction to Anatomy &
circulation transports	Physiology OLS:	Physiology OLS:
nutrients from the heart to	448 (Figure 11.13)	433 (Figure 11.2 caption
the internal anatomy of the		<u>questions)</u>
heart, including valves		
(xx) illustrate external	Introduction to Anatomy &	Introduction to Anatomy &
anatomy of the heart,	Physiology OLS:	Physiology OLS:
including coronary vessels	454 (Figure 11.19)	440 (In the Lab #1)

Standard 14D: describe the relationship between blood flow and blood pressure, including systolic and diastolic pressure, pulse pressure, and mean arterial pressure;

Breakout	Narrative	Activity
(i) describe the relationship	Introduction to Anatomy &	Introduction to Anatomy &
between blood flow and blood	Physiology OLS:	Physiology OLS:
pressure, including systolic	436 (Cardiac Cycle)	440 (In the Lab #4)
pressure	458 (Measuring Blood Pressure)	459 (Check Your Understanding
pressure		#4)
		458 (Figure 11.24 caption
		question)
(ii) describe the relationship	Introduction to Anatomy &	Introduction to Anatomy &
between blood flow and blood	Physiology OLS:	Physiology OLS:
	436 (Cardiac Cycle)	440 (In the Lab #4)



Breakout	Narrative	Activity
pressure, including diastolic	458 (Measuring Blood Pressure)	478 (Thinking Critically #4)
pressure		
(iii) describe the relationship between blood flow and blood pressure, including pulse	Introduction to Anatomy & Physiology OLS: 456 (Checking Your Pulse)	Introduction to Anatomy & Physiology OLS: 461 (Analyze and Apply #1, #3)
pressure		
(iv) describe the relationship between blood flow and blood pressure, including mean	Introduction to Anatomy & Physiology OLS: 436 (Cardiac Cycle)	Introduction to Anatomy & Physiology OLS: 481 (Lab Investigations #3)
arterial pressure		439 (Check Your Understanding #3) 440 (Analyze and Apply #4)

Standard 14E: compare and contrast coronary, pulmonary, and systemic circulation, and describe the major vessels of each;

Breakout	Narrative	Activity
(i) compare and contrast	Introduction to Anatomy &	Introduction to Anatomy &
coronary, pulmonary, and	Physiology OLS:	Physiology OLS:
systemic circulation	449-456 (Circulation: Moving	479 (Lesson 11.3 Learning Key
,	Blood around the Body)	Terms and Concepts #7, #8)
		481 (Lab Investigations #2)
		456 (Check Your Understanding
		#3)
(ii) describe the major vessels	Introduction to Anatomy &	Introduction to Anatomy &
of [coronary circulation]	Physiology OLS:	Physiology OLS:
	451-454 (Cardiac Circulation)	456 (Check Your Understanding
	454 (Figure 11.19)	#2, #3)
		479 (Lesson 11.3 Learning Key
		Terms and Concepts #7)
(iii) describe the major vessels	Introduction to Anatomy &	Introduction to Anatomy &
of [pulmonary circulation]	Physiology OLS:	Physiology OLS:
, ,	449 (Pulmonary Circulation)	456 (Check Your Understanding
		<u>#1)</u>
		461 (Know and Understand #3)
(iv) describe the major vessels	Introduction to Anatomy &	Introduction to Anatomy &
of [systemic circulation]	Physiology OLS:	Physiology OLS:
,	449-454 (Systemic Circulation)	461 (Know and Understand #4)
		481 (Communicating about
		Anatomy & Physiology #1)
		456 (Check Your Understanding
		#2)
		<u>::=1</u>



Standard 14F: illustrate how the PQRST waves of an electrocardiogram (EKG) demonstrate the conduction of electricity through the structures of the heart;

Breakout	Narrative	Activity
(i) illustrate how the PQRST	Introduction to Anatomy &	Introduction to Anatomy &
waves of an	Physiology OLS:	Physiology OLS:
electrocardiogram (EKG)	443-444 (The Conduction	442 (Figure 11.7 caption question)
demonstrate the conduction	<u>System)</u>	444 (Check Your Understanding
of electricity through the	442 (Figure 11.7)	<u>questions)</u>
structures of the heart		

Standard 14G: describe the relationship between the cardiovascular system, nervous system, and muscular system in regulating cardiac output; and

Breakout	Narrative	Activity
(i) describe the relationship	Introduction to Anatomy &	Introduction to Anatomy &
between the cardiovascular	Physiology OLS:	Physiology OLS:
system, nervous system, and	441-443 (Internal and External	445 (Analyze and Apply #1)
muscular system in regulating	Control of the Heart)	443 (Check Your Understanding
cardiac output		<u>questions)</u>
caraide output		445 (Know and Understand #1)

Standard 14H: identify and describe common diseases and disorders of the cardiovascular system such as heart disease, myocardial infarction, ischemia, and hypertrophic cardiomyopathy.

Breakout	Narrative	Activity
(i) identify common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the cardiovascular system	Physiology OLS:	Physiology OLS:
,	466-469 (Diseases of the	469 (Check Your Understanding
	<u>Arteries)</u>	<u>questions)</u>
	471-472 (Peripheral Vascular	
	<u>Disease (PVD)</u>	
(ii) identify common disorders	Introduction to Anatomy &	Introduction to Anatomy &
of the cardiovascular system	Physiology OLS:	Physiology OLS:
, , , , , , , , , , , , , , , , , , , ,	463-466 (Cardiac Dysrhythmias,	465 (Check Your Understanding
	Valve Abnormalities,	#1, #2 <u>)</u>
	Inflammatory Conditions)	466 (Check Your Understanding
	469-472 (Other Cardiovascular	#1, #2)
	Diseases and Disorders)	473 (Know and Understand #1, #2,
		#3)
(iii) describe common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the cardiovascular system	Physiology OLS:	Physiology OLS:



Breakout	Narrative	Activity
	466-469 (Diseases of the	469 (Check Your Understanding
	<u>Arteries)</u>	questions)
	471-472 (Peripheral Vascular	473 (Analyze and Apply #6)
	Disease (PVD)	
(iv) describe common	Introduction to Anatomy &	Introduction to Anatomy &
disorders of the	Physiology OLS:	Physiology OLS:
cardiovascular system	463-466 (Cardiac Dysrhythmias,	473 (Analyze and Apply #2)
Sararovascarar system	Valve Abnormalities,	481 (Communicating about
	<u>Inflammatory Conditions)</u>	Anatomy & Physiology #2, #3, #4)
	469-472 (Other Cardiovascular	472 (Check Your Understanding
	<u>Diseases and Disorders)</u>	questions)

15: Lymphatic system. The student analyzes the relationships between the anatomical structures and physiological functions of the lymphatic system and understands the immune response. The student is expected to:

Standard 15A: evaluate the interaction of the lymphatic system with other body systems such as the circulatory system;

Breakout	Narrative	Activity
(i) evaluate the interaction of the lymphatic system with	Introduction to Anatomy & Physiology OLS: 484 (Lesson 12.1 introduction)	Introduction to Anatomy & Physiology OLS: 493 (Know and Understand #1)
other body systems		488 (Check Your Understanding #1, #2)
		524 (Lesson 12.1 Learning Key Terms and Concepts #1, #3)

Standard 15B: describe the structure and function of the lymphatic organs and explain how lymph moves through the body;

Breakout	Narrative	Activity
(i) describe the structure of	Introduction to Anatomy &	Introduction to Anatomy &
the lymphatic organs	Physiology OLS:	Physiology OLS:
, p	488-492 (Lymphatic Cells,	492 (Check Your Understanding
	Tissues, and Organs)	<u>#2, #4)</u>
		493 (Know and Understand #5)
(ii) describe function of the	Introduction to Anatomy &	Introduction to Anatomy &
lymphatic organs	Physiology OLS:	Physiology OLS:
,,paus organis	484-486 (Lymph Formation and	524 (Thinking Critically #1)
	<u>Flow)</u>	493 (In the Lab #1)
	486-488 (Lymph Drainage)	493 (Analyze and Apply #3)



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Breakout	Narrative	Activity
(iii) explain how lymph moves	Introduction to Anatomy &	Introduction to Anatomy &
through the body	Physiology OLS:	Physiology OLS:
	484-486 (Lymph Formation and	488 (Check Your Understanding
	Flow)	<u>#4)</u>
	486-488 (Lymph Drainage)	524 (Thinking Critically #2)

Standard 15C: identify and describe the role and function of the immune cells, including T cells and B cells, within the lymphatic system structures;

Breakout	Narrative	Activity
(i) identify the role of the	Introduction to Anatomy &	Introduction to Anatomy &
immune cells, including T cells,	Physiology OLS:	Physiology OLS:
within the lymphatic system	488-489 (Lymphatic Cells)	493 (Know and Understand #6)
structures	490 (Lymph Nodes)	509 (2nd Check Your
	505 (Lymphocytes)	<u>Understanding, #1)</u>
(ii) identify the role of the	Introduction to Anatomy &	Introduction to Anatomy &
immune cells, including B	Physiology OLS:	Physiology OLS:
cells, within the lymphatic	488-489 (Lymphatic Cells)	505 (Check Your Understanding
system structures	504 (Immune System Cells)	<u>#1)</u>
	506 (Plasma Cells)	493 (Know and Understand #6)
(iii) identify the function of the	Introduction to Anatomy &	Introduction to Anatomy &
immune cells, including T cells,	Physiology OLS: 509 (Cellular Immunity)	Physiology OLS: 509 (2nd Check Your
within the lymphatic system	-	
structures	498-499 (Interferons)	Understanding, #2)
(,)	Introduction to Ametows 0	493 (Know and Understand #6)
(iv) identify the function of the	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
immune cells, including B	488-489 (Lymphatic Cells)	493 (Know and Understand #6)
cells, within the lymphatic	504 (Immune System Cells)	524 (Lesson 12.1 Learning Key
system structures	506 (Plasma Cells)	Terms and Concepts #7)
(v) describe the role of the	Introduction to Anatomy &	Introduction to Anatomy &
• •	Physiology OLS:	Physiology OLS:
immune cells, including T cells,	488-489 (Lymphatic Cells)	493 (Know and Understand #6)
within the lymphatic system	490 (Lymph Nodes)	509 (2nd Check Your
structures	504 (Figure 12.12)	Understanding, #1)
(vi) describe the role of the	Introduction to Anatomy &	Introduction to Anatomy &
immune cells, including B	Physiology OLS:	Physiology OLS:
cells, within the lymphatic system structures	488-489 (Lymphatic Cells)	493 (Know and Understand #6)
	504 (Immune System Cells)	524 (Lesson 12.1 Learning Key
	506 (Plasma Cells)	Terms and Concepts #7)
(vii) describe the function of	Introduction to Anatomy &	Introduction to Anatomy &
the immune cells, including T	Physiology OLS:	Physiology OLS:
cells, within the lymphatic	509 (Cellular Immunity)	509 (2nd Check Your
system structures	498-499 (Interferons)	<u>Understanding, #2)</u>
2,212 31. 4014. 23		493 (Know and Understand #6)



Breakout	Narrative	Activity
(viii) describe the function of	Introduction to Anatomy &	Introduction to Anatomy &
the immune cells, including B	Physiology OLS:	Physiology OLS:
cells, within the lymphatic	488-489 (Lymphatic Cells)	493 (Know and Understand #6)
system structures	504 (Immune System Cells)	524 (Lesson 12.1 Learning Key
	506 (Plasma Cells)	Terms and Concepts #7)

Standard 15D: identify and determine antigens associated with ABO blood typing, including Rhesus (Rh) factor;

Breakout	Narrative	Activity
(i) identify antigens associated with ABO blood typing,	Introduction to Anatomy & Physiology OLS: 409-411 (Lesson 10.2: Blood	Introduction to Anatomy & Physiology OLS: 412 (Know and Understand #2, #5,
including Rhesus (Rh) factor	Types)	<u>#6)</u>
		412 (In the Lab #1, #2)
		427 (Lesson 10.2 Thinking
		Critically #1, #2)
(ii) determine antigens associated with ABO blood	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
typing, including Rhesus (Rh)	409-411 (Lesson 10.2: Blood	411 (1st Check Your
factor	<u>Types)</u>	<u>Understanding, #1)</u>
		411 (2nd Check Your
		<u>Understanding, #1)</u>
		427 (Lesson 10.2 Thinking
		Critically #2)

Standard 15E: summarize the ways the body protects and defends against disease, including inflammation, barrier defenses, and active and passive immunity;

Breakout	Narrative	Activity
(i) summarize the ways the	Introduction to Anatomy &	Introduction to Anatomy &
body protects against disease,	Physiology OLS:	Physiology OLS:
including inflammation	501 (Figure 12.10)	500 (2nd Check Your
	500 (Inflammatory Response)	Understanding, #1)
		501 (Figure 12.10 caption
		<u>question)</u>
(ii) summarize the ways the	Introduction to Anatomy &	Introduction to Anatomy &
body protects against disease,	Physiology OLS:	Physiology OLS:
including barrier defenses	496-497 (Physical Barriers)	497 (Check Your Understanding
merading barrier defenses		#1)
		502 (Know and Understand #2)
		525 (Lesson 12.2 Thinking
		Critically #1)



Breakout	Narrative	Activity
(iii) summarize the ways the body protects against disease, including active and passive	Introduction to Anatomy & Physiology OLS: 509 (1st paragraph)	Introduction to Anatomy & Physiology OLS: 509 (1st Check Your Understanding, #2)
immunity (iv) summarize the ways the body defends against disease, including inflammation	Introduction to Anatomy & Physiology OLS: 500 (Inflammatory Response) 501 (Figure 12.10)	Introduction to Anatomy & Physiology OLS: 500 (2nd Check Your Understanding #1, #2) 501 (Figure 12.10 caption question)
(v) summarize the ways the body defends against disease, including barrier defenses	Introduction to Anatomy & Physiology OLS: 496-497 (Physical Barriers)	Introduction to Anatomy & Physiology OLS: 497 (Check Your Understanding #1) 502 (Know and Understand #2) 525 (Lesson 12.2 Thinking Critically #1)
(vi) summarize the ways the body defends against disease, including active and passive immunity	Introduction to Anatomy & Physiology OLS: 509 (1st paragraph)	Introduction to Anatomy & Physiology OLS: 509 (1st Check Your Understanding #2)

Standard 15F: describe the role of antigens and antibodies in the immune response; and

Breakout	Narrative	Activity
(i) describe the role of	Introduction to Anatomy &	Introduction to Anatomy &
antigens in the immune	Physiology OLS:	Physiology OLS:
response	503-510 (Lesson 12.3: Specific	511 (Know and Understand #1)
	<u>Defenses)</u>	511 (Analyze and Apply #1-#3)
	504 (Antigens)	504 (Check Your Understanding
		#1, #2 <u>)</u>
(ii) describe the role of	Introduction to Anatomy &	Introduction to Anatomy &
antibodies in the immune	Physiology OLS:	Physiology OLS:
response	506-508 (Antibodies)	509 (1st Check Your
	509 (1st paragraph)	<u>Understanding #2)</u>
	498 (Complement System)	511 (Analyze and Apply #1)
		515 (Taking It Further)

Standard 15G: identify and describe common diseases and disorders associated with the lymphatic and immune systems such as inherited or acquired immunodeficiencies, autoimmune diseases, and lymphomas.



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Breakout	Narrative	Activity
(i) identify common diseases	Introduction to Anatomy &	Introduction to Anatomy &
associated with the lymphatic	Physiology OLS:	Physiology OLS:
system	512-514 (Cancer and Lymph	514 (Check Your Understanding
	Nodes)	<u>#2)</u>
	513 (Figure 12.18)	526 (Thinking Critically #1,# 2)
(ii) identify common disorders	Introduction to Anatomy &	Introduction to Anatomy &
associated with the lymphatic	Physiology OLS: 513 (Figure 12.18)	Physiology OLS: 519 (In the Lab #4)
system		<u> </u>
(iii) describe common diseases	Introduction to Anatomy &	Introduction to Anatomy &
associated with the lymphatic	Physiology OLS: 512-514 (Cancer and Lymph	Physiology OLS:
system		519 (Analyze and Apply #1)
	Nodes)	514 (Check Your Understanding
(iv) describe servers	Introduction to Anatomy &	#1) Introduction to Anatomy &
(iv) describe common	Physiology OLS:	Physiology OLS:
disorders associated with the	513 (Figure 12.18)	519 (In the Lab #4)
lymphatic system	Introduction to Anatomy &	Introduction to Anatomy &
(v) identify common diseases	Physiology OLS:	Physiology OLS:
associated with the immune	517 (HIV and AIDS)	516 (Check Your Understanding
system	513 (Figure 12.18)	#1-#3)
	<u>515 (1.154)</u>	517 (2nd Check Your
		Understanding #2)
(vi) identify common disorders	Introduction to Anatomy &	Introduction to Anatomy &
associated with the immune	Physiology OLS:	Physiology OLS:
system	516-517 (Autoimmune Disorders)	519 (Analyze and Apply #2, 3, 4)
System	514-516 (Allergies)	517 (1st Check Your
	513 (Figure 12.18)	Understanding #1)
(vii) describe common diseases associated with the	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
immune system	517 (HIV and AIDS)	516 (Check Your Understanding
initialic system	513 (Figure 12.18)	#1-#3)
		517 (2nd Check Your
		Understanding #1)
(viii) describe common disorders associated with the	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
	516-517 (Autoimmune Disorders)	517 (1st Check Your
immune system	514-516 (Allergies)	Understanding #2)
	513 (Figure 12.18)	519 (Know and Understand #8)
	2-5 (1.18a.c 12.120)	one promote and officerotation in

16: Digestive system. The student analyzes the relationships between the anatomical structures and physiological functions of the digestive system. The student is expected to:

Standard 16A: examine the anatomical structures and function of the alimentary canal and accessory organs;



Breakout	Narrative	Activity
(i) examine the anatomical structures of the alimentary canal	Introduction to Anatomy & Physiology OLS: 537 (Lesson 13.2 introduction) 539-541 (Layers of the GI Tract) 541-555 (Digestive Organs and Their Functions)	Introduction to Anatomy & Physiology OLS: 539 (Check Your Understanding #1-#3) 541 (Check Your Understanding #1, #2) 556 (Know and Understand #2, In the Lab #2)
(ii) examine the anatomical function of the alimentary canal	Introduction to Anatomy & Physiology OLS: 537 (Lesson 13.2 introduction) 539-541 (Layers of the GI Tract) 541-555 (Digestive Organs and Their Functions)	Introduction to Anatomy & Physiology OLS: 556 (Know and Understand #1) 556 (Analyze and Apply #1) 556 (In the Lab #2)
(iii) examine the anatomical structures of the accessory organs	Introduction to Anatomy & Physiology OLS: 543 (Salivary Glands) 549-552 (Liver and Gallbladder) 552-553 (Pancreas)	Introduction to Anatomy & Physiology OLS: 556 (In the Lab #2) 538 (Figure 13.7 caption question)
(iv) examine the anatomical function of the accessory organs	Introduction to Anatomy & Physiology OLS: 543 (Salivary Glands) 549-552 (Liver and Gallbladder) 552-553 (Pancreas)	Introduction to Anatomy & Physiology OLS: 556 (In the Lab #2) 555 (Check Your Understanding #5, #6) 556 (Analyze and Apply #4, #5)

Standard 16B: compare and contrast mechanical and chemical digestive processes;

Breakout	Narrative	Activity
(i) compare and contrast mechanical and chemical	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
digestive processes	538 (1st and 2nd paragraphs)	556 (In the Lab #3)
angestive processes		569 (Lesson 13.1 Learning Key
		Terms and Concepts #3)

Standard 16C: evaluate the modes by which energy is processed and stored within the body, including ingestion, propulsion, absorption, and elimination; and

Breakout	Narrative	Activity
(i) evaluate the modes by	Introduction to Anatomy &	Introduction to Anatomy &
which energy is processed	Physiology OLS:	Physiology OLS:
within the body, including	537-538 (Activities of Digestion)	555 (Check Your Understanding
ingestion	542 (1st paragraph)	<u>#1)</u>



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Breakout	Narrative	Activity
(ii) evaluate the modes by	Introduction to Anatomy &	Introduction to Anatomy &
which energy is processed	Physiology OLS:	Physiology OLS:
within the body, including	537-538 (Activities of Digestion)	539 (Figure 13.8 caption question)
propulsion	547 (Segments of the Small	570 (Lesson 13.2 Thinking
propulsion	Intestine)	Critically #1)
	553 (Large Intestine)	569 (Lesson 13.2 Learning Key
		Terms and Concepts #3)
(iii) evaluate the modes by	Introduction to Anatomy &	Introduction to Anatomy &
which energy is processed	Physiology OLS:	Physiology OLS:
within the body, including	537-538 (Activities of Digestion)	565 (Analyze and Apply #6)
absorption	549 (Absorption from the Small	561 (Check Your Understanding
	Intestine into the Blood)	#3)
(iv) evaluate the modes by	Introduction to Anatomy &	Introduction to Anatomy &
which energy is processed	Physiology OLS:	Physiology OLS:
within the body, including	537-538 (Activities of Digestion)	570 (Lesson 13.2 Thinking
elimination	553 (Large Intestine)	Critically #3)
	554-555 (Rectum, Anal Canal,	
	and Anus)	
(v) evaluate the modes by	Introduction to Anatomy &	Introduction to Anatomy &
which energy is stored within	Physiology OLS:	Physiology OLS:
the body, including absorption	537-538 (Activities of Digestion)	565 (Analyze and Apply #6)
	549 (Absorption from the Small	561 (Check Your Understanding
	Intestine into the Blood)	<u>#3)</u>

Standard 16D: identify and describe common diseases and disorders of the digestive system such as gallstones, Crohn's disease, irritable bowel syndrome, and gastroesophageal reflux disorder.

Breakout	Narrative	Activity
(i) identify common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the digestive system	Physiology OLS:	Physiology OLS:
,	558 (Figure 13.22)	565 (Know and Understand #5, #8)
	557-561 (Diseases of the GI Tract)	565 (Analyze and Apply #4, #5)
	561-564 (Diseases and Disorders	570 (Lesson 13.3 Learning Key
	of the Accessory Organs)	Terms and Concepts #5, #6)
(ii) identify common disorders	Introduction to Anatomy &	Introduction to Anatomy &
of the digestive system	Physiology OLS:	Physiology OLS:
,	558 (Figure 13.22)	561 (Check Your Understanding
	560 (Constipation and Diarrhea)	<u>#4)</u>
	<u>562-563 (Gallstones)</u>	565 (Know and Understand #7)
(iii) describe common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the digestive system	Physiology OLS:	Physiology OLS:
	558 (Figure 13.22)	570 (Lesson 13.3 Thinking
	557-561 (Diseases of the GI Tract)	Critically #1)



Breakout	Narrative	Activity
	561-564 (Diseases and Disorders	571 (Analyzing and Evaluating
	of the Accessory Organs)	<u>Data #1-#5)</u>
(iv) describe common disorders of the digestive	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
system	558 (Figure 13.22)	563 (Check Your Understanding
3,555	560 (Constipation and Diarrhea)	<u>#3)</u>
	<u>562-563 (Gallstones)</u>	565 (Analyze and Apply #6)
		565 (In the Lab #1)

17: Respiratory system. The student analyzes the relationships between the anatomical structures and physiological functions of the respiratory system. The student is expected to:

Standard 17A: identify and sequence the anatomical structures and functions of the respiratory system;

Breakout	Narrative	Activity
(i) identify the anatomical structures of the respiratory	Introduction to Anatomy & Physiology OLS: 358-364 (Lesson 9.1: Anatomy of	Introduction to Anatomy & Physiology OLS: 362 (Check Your Understanding
system	the Respiratory System)	#1) 364 (Check Your Understanding
/**\	Introduction to Anatomy 9	#1) 365 (In the Lab #1)
(ii) identify the anatomical functions of the respiratory	Introduction to Anatomy & Physiology OLS: 358-364 (Lesson 9.1: Anatomy of	Introduction to Anatomy & Physiology OLS: 362 (Check Your Understanding
system	the Respiratory System)	<u>#2, #5)</u>
		364 (Check Your Understanding #2) 365 (Analyze and Apply #4, #6)
(iii) sequence the anatomical structures of the respiratory	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
system	358-361 (The Upper Respiratory Tract) 362-364 (The Lower Respiratory	365 (In the Lab #1)
(iv) sequence the anatomical functions of the respiratory	Tract) Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
system	358-364 (Lesson 9.1: Anatomy of the Respiratory System) 366-368 (Respiration)	365 (In the Lab #1)



Standard 17B: compare and contrast the functions of upper and lower respiratory tract;

Breakout	Narrative	Activity
(i) compare and contrast the	Introduction to Anatomy &	Introduction to Anatomy &
functions of upper and lower	Physiology OLS:	Physiology OLS:
respiratory tract	358-361 (The Upper Respiratory	365 (Analyze and Apply #6)
respiratory tract	Tract, 1st paragraph)	
	362-364 (The Lower Respiratory	
	Tract, 1st paragraph)	

Standard 17C: describe the physiology of respiration, including internal and external respiration and gas exchange;

Breakout	Narrative	Activity
(i) describe the physiology of respiration, including internal	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
respiration	366 (Respiration)	449 (Check Your Understanding
	449 (Capillaries)	<u>#4)</u>
	396 (Figure 10.1)	479 (Lesson 11.3 Thinking
		Critically #2)
(ii) describe the physiology of respiration, including external	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
respiration	366-368 (Respiration)	368 (Check Your Understanding
	368-370 (Control of Breathing)	<u>#1-#3)</u>
		370 (Check Your Understanding
		<u>#1-#5)</u>
		374 (Analyze and Apply #1, #2)
(iii) describe the physiology of respiration, including gas	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
exchange	366 (Respiration)	449 (Check Your Understanding
	449 (Capillaries)	<u>#4)</u>
	447 (Figure 11.11)	479 (Lesson 11.3 Thinking
		Critically #2)

Standard 17D: describe the relationship between the respiratory and cardiovascular systems during pulmonary circulation;

Breakout	Narrative	Activity
(i) describe the relationship	Introduction to Anatomy &	Introduction to Anatomy &
between the respiratory and	Physiology OLS:	Physiology OLS:
cardiovascular systems during	449 (Pulmonary Circulation)	461 (Know and Understand #3)
pulmonary circulation	370 (Peripheral Chemoreceptors)	390 (Lesson 9.2 Thinking Critically
paintenary encaration		#1, #2 <u>)</u>



Standard 17E: investigate factors that affect respiration, including exercise and environmental changes such as altitude; and

Breakout	Narrative	Activity
(i) investigate factors that affect respiration, including	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
exercise	368-370 (Control of Breathing)	393 (Lab Investigations #1)
CACTOISC		382 (Taking It Further #2)
		390 (Lesson 9.2 Learning Key
		Terms and Concepts #9)
(ii) investigate factors that	Introduction to Anatomy &	Introduction to Anatomy &
affect respiration, including	Physiology OLS:	Physiology OLS:
environmental changes	368-370 (Control of Breathing)	393 (Lab Investigations #1, #2)
eeeeeeee.	323 (1st and 2nd paragraphs)	

Standard 17F: identify and describe common diseases of the respiratory system such as asthma, emphysema, pneumonia, viruses, and allergies.

Breakout	Narrative	Activity
(i) identify common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the respiratory system	Physiology OLS:	Physiology OLS:
	375-384 (Lesson 9.3: Respiratory	385 (Know and Understand #1)
	<u>Disorders and Diseases</u>)	377 (Check Your Understanding
		<u>#2, #3)</u>
		381 (Check Your Understanding
		#3)
(ii) describe common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the respiratory system	Physiology OLS:	Physiology OLS:
	375-384 (Lesson 9.3: Respiratory	378 (Check Your Understanding
	<u>Disorders and Diseases)</u>	<u>#2)</u>
		381 (Check Your Understanding
		<u>#1, #2)</u>
		385 (Know and Understand #7)

18: Reproductive system. The student analyzes the relationships between the anatomical structures and physiological functions of the reproductive system. The student is expected to:

Standard 18A: explain embryological development of cells, tissues, organs, and systems;



Breakout	Narrative	Activity
(i) explain embryological	Introduction to Anatomy &	Introduction to Anatomy &
development of cells	Physiology OLS:	Physiology OLS:
·	615 (Embryonic and Fetal	638 (1st Check Your
	<u>Development)</u>	<u>Understanding #2)</u>
	634-636 (From Fertilization to	641 (In the Lab #2)
	<u>Implantation)</u>	
(ii) explain embryological	Introduction to Anatomy &	Introduction to Anatomy &
development of tissues	Physiology OLS:	Physiology OLS:
	615 (Embryonic and Fetal	640 (Know and Understand #6)
	<u>Development)</u>	641 (In the Lab #2)
	636-638 (Development of the	
	Embryo, Placenta, and Fetus)	
(iii) explain embryological	Introduction to Anatomy &	Introduction to Anatomy &
development of organs	Physiology OLS:	Physiology OLS:
	615 (Embryonic and Fetal	640 (Analyze and Apply #1)
	<u>Development)</u>	641 (In the Lab #2)
	636-638 (Development of the	
	Embryo, Placenta, and Fetus)	
(iv) explain embryological	Introduction to Anatomy &	Introduction to Anatomy &
development of systems	Physiology OLS:	Physiology OLS:
,	615 (Embryonic and Fetal	638 (1st Check Your
	<u>Development)</u>	<u>Understanding #4)</u>
	636-638 (Development of the	641 (In the Lab #2)
	Embryo, Placenta, and Fetus)	

Standard 18B: describe and examine the location, structure, and functions of the internal and external female and male reproductive organs and accessory glands;

Breakout	Narrative	Activity
(i) describe the location of the internal female reproductive organs	Introduction to Anatomy & Physiology OLS: 624 (Figure 15.7)	Introduction to Anatomy & Physiology OLS: 632 (Know and Understand #1, #3)
-	625 (Figure 15.8)	656 (Lesson 15.3 Thinking Critically #2)
(ii) describe the structure of the internal female reproductive organs	Introduction to Anatomy & Physiology OLS: 623 (The Ovaries) 623-625 (Ducts of the Female Reproductive System)	Introduction to Anatomy & Physiology OLS: 627 (Check Your Understanding #2) 632 (Know and Understand #5, #6)
(iii) describe the functions of the internal female reproductive organs	Introduction to Anatomy & Physiology OLS: 623-625 (The Ovaries, Ducts of the Female Reproductive System)	Introduction to Anatomy & Physiology OLS: 627 (Check Your Understanding #5) 632 (Know and Understand #7, #8) 632 (Analyze and Apply #5)



Breakout	Narrative	Activity
(iv) describe the location of	Introduction to Anatomy &	Introduction to Anatomy &
the external female	Physiology OLS:	Physiology OLS:
reproductive organs	626 (Figure 15.9)	626 (Figure 15.9 caption question)
(v) describe the structure of	Introduction to Anatomy &	Introduction to Anatomy &
the external female	Physiology OLS:	Physiology OLS:
reproductive organs	626 (The External Genitalia)	632 (Know and Understand #6)
(vi) describe the functions of	Introduction to Anatomy &	Introduction to Anatomy &
the external female	Physiology OLS:	Physiology OLS:
reproductive organs	626 (The External Genitalia)	657 (Lesson 15.3 Thinking
		Critically #4)
(vii) describe the location of	Introduction to Anatomy &	Introduction to Anatomy &
the female accessory glands	Physiology OLS:	Physiology OLS:
	626 (Figure 15.9)	627 (Check Your Understanding
(.:::) describe the color of the	627 (Figure 15.10)	#2)
(viii) describe the structure of	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
the female accessory glands	626 (External Genitalia, 3rd	627 (Check Your Understanding
	paragraph)	#2)
	627 (The Mammary Glands)	632 (In the Lab #1)
(ix) describe the functions of	Introduction to Anatomy &	Introduction to Anatomy &
the female accessory glands	Physiology OLS:	Physiology OLS:
the remaie accessory gianus	626 (External Genitalia, 3rd	632 (Know and Understand #7)
	paragraph)	632 (In the Lab #1)
	627 (The Mammary Glands)	627 (Check Your Understanding
		#5)
(x) describe the location of the	Introduction to Anatomy &	Introduction to Anatomy &
internal male reproductive	Physiology OLS:	Physiology OLS:
organs	619 (Figure 15.4)	622 (Know and Understand #4)
		619 (Figure 15.4 caption question)
(xi) describe the structure of	Introduction to Anatomy &	Introduction to Anatomy &
the internal male reproductive	Physiology OLS:	Physiology OLS:
organs	619-620 (Ducts of the Male	621 (1st Check Your
	Reproductive System)	Understanding #1)
/ **\ days the the forest and	618 (Scrotum and Testes)	622 Know and Understand #2)
(xii) describe the functions of	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
the internal male reproductive	619-620 (Ducts of the Male	622 (Analyze and Apply #3)
organs	Reproductive System)	622 (In the Lab #2)
	618 (Scrotum and Testes)	orr (in the raw ii/)
(xiii) describe the location of	Introduction to Anatomy &	Introduction to Anatomy &
the external male	Physiology OLS:	Physiology OLS:
reproductive organs	619 (Figure 15.4)	622 (Analyze and Apply #3)
(xiv) describe the structure of	Introduction to Anatomy &	Introduction to Anatomy &
the external male	Physiology OLS:	Physiology OLS:
reproductive organs	618 (Scrotum and Testes)	622 (Know and Understand #2)
reproductive organs	618-619 (Penis)	622 (Analyze and Apply #3)



Introduction to Anatomy & Physiology OLS: 618 (Scrotum and Testes) 618-619 (Penis) 621 (Sexual Response)	Breakout	Narrative	Activity
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reproductive organis			
	reproductive organs	<u></u>	Critically #4)



Breakout	Narrative	Activity
(xxv) examine the location of	Introduction to Anatomy &	Introduction to Anatomy &
the female accessory glands	Physiology OLS:	Physiology OLS:
	626 (Figure 15.9)	627 (Check Your Understanding
()	627 (Figure 15.10)	#2)
(xxvi) examine the structure of	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
the female accessory glands	626 (The External Genitalia, 3rd	627 (Check Your Understanding
	paragraph)	#2)
	627 (The Mammary Glands)	632 (In the Lab #1)
(xxvii) examine the functions	Introduction to Anatomy &	Introduction to Anatomy &
of the female accessory glands	Physiology OLS:	Physiology OLS:
of the female decessory glands	626 (The External Genitalia, 3rd	632 (Know and Understand #7)
	paragraph)	627 (Check Your Understanding
	627 (The Mammary Glands)	<u>#5)</u>
		632 (In the Lab #1)
(xxviii) examine the location of	Introduction to Anatomy &	Introduction to Anatomy &
the internal male reproductive	Physiology OLS:	Physiology OLS:
organs	619 (Figure 15.4)	622 (Know and Understand #4)
	Introduction to Arratages 0	619 (Figure 15.4 caption question)
(xxix) examine the structure of	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
the internal male reproductive	619-620 (Ducts of the Male	621 (1st Check Your
organs	Reproductive System)	Understanding #1)
	618 (Scrotum and Testes)	622 Know and Understand #2)
(xxx) examine the functions of	Introduction to Anatomy &	Introduction to Anatomy &
the internal male reproductive	Physiology OLS:	Physiology OLS:
organs	619-620 (Ducts of the Male	622 (Analyze and Apply #3)
	Reproductive System)	622 (In the Lab #2)
	618 (Scrotum and Testes)	
(xxxi) examine the location of	Introduction to Anatomy &	Introduction to Anatomy &
the external male	Physiology OLS:	Physiology OLS:
reproductive organs	619 (Figure 15.4)	622 (Analyze and Apply #3)
(xxxii) examine the structure	Introduction to Anatomy &	Introduction to Anatomy & Physiology OLS:
of the external male	Physiology OLS: 618 (Scrotum and Testes)	622 (Know and Understand #2)
reproductive organs	618-619 (Penis)	622 (Analyze and Apply #3)
(xxxiii) examine the functions	Introduction to Anatomy &	Introduction to Anatomy &
of the external male	Physiology OLS:	Physiology OLS:
reproductive organs	618 (Scrotum and Testes)	622 (Analyze and Apply #3)
	618-619 (Penis)	
	621 (Sexual Response)	
(xxxiv) examine the location of the male accessory glands	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
the male decessory gianas	620 (Figure 15.5)	621 (1st Check Your
		<u>Understanding #1)</u>
		622 (Know and Understand #4)



Breakout	Narrative	Activity
(xxxv) examine the structure of the male accessory glands	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
or the male accessory grantas	620 (Accessory Glands and	621 (1st Check Your
	<u>Semen)</u>	<u>Understanding #1)</u>
(xxxvi) examine the functions of the male accessory glands	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
distribution and distribution of the second	620 (Accessory Glands and	622 (Know and Understand #3)
	Semen)	621 (2nd Check Your
		<u>Understanding #1)</u>

Standard 18C: describe and compare the process of oogenesis and spermatogenesis;

Breakout	Narrative	Activity
(i) describe the process of oogenesis	Introduction to Anatomy & Physiology OLS: 627-628 (Oogenesis)	Introduction to Anatomy & Physiology OLS: 631 (Check Your Understanding #1)
(ii) describe the process of spermatogenesis	Introduction to Anatomy & Physiology OLS: 621 (Sperm Formation)	Introduction to Anatomy & Physiology OLS: 621 (2nd Check Your Understanding #1)
(iii) compare the process of oogenesis and spermatogenesis	Introduction to Anatomy & Physiology OLS: 627 (Oogenesis, 1st paragraph)	Introduction to Anatomy & Physiology OLS: 622 (Analyze and Apply #2)

Standard 18D: research and discuss the physiological effects of hormones on the stages of the menstrual cycle;

Breakout	Narrative	Activity
(i) research the physiological	Introduction to Anatomy &	Introduction to Anatomy &
effects of hormones on the	Physiology OLS:	Physiology OLS:
stages of the menstrual cycle	629 (Figure 15.11)	631 (Check Your Understanding
stages of the mensulation of the	628-631 (The Menstrual Cycle)	#4)
		632 (Know and Understand #9)
		632 (Analyze and Apply #4)
(ii) discuss the physiological	Introduction to Anatomy &	Introduction to Anatomy &
effects of hormones on the	Physiology OLS:	Physiology OLS:
stages of the menstrual cycle	629 (Figure 15.11)	632 (Analyze and Apply #3)
stages of the menstraar cycle	628-631 (The Menstrual Cycle)	

Standard 18E: identify and distinguish the hormones involved in maturation and development throughout the life cycle, including puberty, gestation, and menopause; and



involved in maturation, including puberty Size Check Ch	Breakout	Narrative	Activity
including puberty 35 (Life Span Development: The Endocrine System) 105 (Life Span Development, The Integumentarry System, 3rd and 4th paragraphs) 636 (1st four paragraphs) 631 (Life Span Development, The Introduction to Anatomy & Physiology OLS: 636 (1st four paragraphs) 631 (Life Span Development; The Introduction to Anatomy & Physiology OLS: 636 (1st four paragraphs) 631 (Life Span Development; The Introduction to Anatomy & Physiology OLS: 631 (Life Span Development; Female Reproductive System) (iv) identify the hormones involved in maturation, including puberty (v) identify the hormones involved in development throughout the life cycle, including gestation (v) identify the hormones involved in development throughout the life cycle, including gestation (v) identify the hormones involved in development throughout the life cycle, including gestation (vi) identify the hormones involved in development throughout the life cycle, including gestation (vi) identify the hormones involved in development throughout the life cycle, including gestation (vi) identify the hormones involved in development throughout the life cycle, including gestation (vi) identify the hormones involved in maturation, including puberty (vi) identify the hormones involved in maturation, including puberty (vi) identify the hormones involved in maturation, including puberty (vi) identify the hormones involved in maturation, including puberty (vii) idistinguish the hormones involved in maturation, including puberty (viii) distinguish the hormones involved in maturation, including puberty (viii) distinguish the hormones involved in maturation, including gestation (viii) distinguish the hormones involved in maturation, including gestation (viii) distinguish the hormones involved in maturation, including gestation (viii) distinguish the hormones involved in maturation, including gestation (viii) distinguish the hormones involved in maturation, including gestation (viii) distinguish the hormones involved in maturation, including	(i) identify the hormones	Introduction to Anatomy &	
335 (Life Span Development: The Endocrine System) 105 (Life Span Development, The Integumentary System, 3rd and 4th paragraphs) 105 (Life Span Development, The Introduction to Anatomy & Physiology OLS: 636 (1st four paragraphs) 638 (Childbirth) 240 (Know and Understanding #2) 105 (Life Span Development: The Endocrine System) 105 (Life Span Development: The Integumentary System, 3rd and 4th paragraphs) 105 (Life Span Development: The Integumentary System) 105 (Life Span Development: The Integumentary System) 105 (Life Span Development: The Integument throughout the life cycle, including gestation 638 (Childbirth) 335 (Life Span Development: The Integumentary System) 105 (Life Span Development: The Integumentary System)	involved in maturation,		
Endocrine System 105 (Life Span Development, The Integumentary System, 3rd and 4th paragraphs) Introduction to Anatomy & Physiology OLS: 636 (1st four paragraphs) 638 (Childbirth) 638 (Childbirth) 638 (Childbirth) 638 (Childbirth) 638 (Childbirth) 639 (Check Your Understanding #2) 631 (Life Span Development: Female Reproductive System) Introduction to Anatomy & Physiology OLS: 632 (Analyze and Apply #3) Introduction to Anatomy & Physiology OLS: 616 (Puberty) 335 (Life Span Development: The Endocrine System) 105 (Life Span Development: Thoughout the life cycle, including gestation 638 (Childbirth) 638 (Life Span Development: The Integumentary System, 3rd and 4th paragraphs) 638 (Childbirth) 638 (Life Span Development: The Integumentary System, 3rd and 4th paragraphs) 638 (Life Span Development: The Introduction to Anatomy & Physiology OLS: 636 (Lesson 15.1 Learning Key Terms and Concepts #6) 100 (Life Span Development: The Introduction to Anatomy & Physiology OLS: 636 (Lesson 15.1 Learning Key Terms and Concepts #6) 100 (Life Span Development: The Introduction to Anatomy & Physiology OLS: 636 (Life Span Development: Female Reproductive System) 638 (Childbirth) 638 (Life Span Development: Female Reproductive System) 638 (Life Span Development: Female Reproductive System) 639 (Check Your Understanding #2) 640 (Know and Understand #4, #5) 640 (Know and Understand #4, #5) 639 (Check Your Understanding #2) 640 (Know and Understand #4, #5) 640	including puberty		
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Breakout	Narrative	Activity
		640 (Know and Understand #4, #5)
(ix) distinguish the hormones involved in maturation, including menopause	Introduction to Anatomy & Physiology OLS: 631 (Life Span Development: Female Reproductive System)	Introduction to Anatomy & Physiology OLS: 631 (Life Span Review #2) 632 (Analyze and Apply #3)
(x) distinguish the hormones involved in development throughout the life cycle, including puberty	Introduction to Anatomy & Physiology OLS: 616 (Puberty) 335 (Life Span Development: The Endocrine System) 105 (Life Span Development, 3rd and 4th paragraphs)	Introduction to Anatomy & Physiology OLS: 616 (Check Your Understanding #2) 656 (Lesson 15.1 Learning Key Terms and Concepts #6)
(xi) distinguish the hormones involved in development throughout the life cycle, including gestation	Introduction to Anatomy & Physiology OLS: 636 (1st four paragraphs) 638 (Childbirth)	Introduction to Anatomy & Physiology OLS: 639 (Check Your Understanding #2) 640 (Know and Understand #4, #5)
(xii) distinguish the hormones involved in development throughout the life cycle, including menopause	Introduction to Anatomy & Physiology OLS: 631 (Life Span Development: Female Reproductive System)	Introduction to Anatomy & Physiology OLS: 631 (Life Span Review #2) 632 (Analyze and Apply #3)

Standard 18F: identify and describe common diseases and disorders of the reproductive system such as sexually transmitted diseases and cancers of the female and male reproductive systems.

Breakout	Narrative	Activity
(i) identify common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the reproductive system	Physiology OLS:	Physiology OLS:
	644-647 (Sexually Transmitted	647 (Check Your Understanding
	<u>Infections</u>)	<u>#3)</u>
	647-650 (Cancers of the	650 (Check Your Understanding
	Reproductive Systems)	<u>#2)</u>
		651 (Know and Understand #6, #7)
(ii) identify common disorders	Introduction to Anatomy &	Introduction to Anatomy &
of the reproductive system	Physiology OLS:	Physiology OLS:
,	642-644 (Infertility)	644 (Check Your Understanding
		<u>#1)</u>
		651 (Know and Understand #2)
(iii) describe common diseases	Introduction to Anatomy &	Introduction to Anatomy &
of the reproductive system	Physiology OLS:	Physiology OLS:
	644-647 (Sexually Transmitted	647 (Check Your Understanding
	<u>Infections)</u>	<u>#1, #2)</u>
	647-650 (Cancers of the	651 (In the Lab #1)
	Reproductive Systems)	



Breakout	Narrative	Activity
(iv) describe common	Introduction to Anatomy &	Introduction to Anatomy &
disorders of the reproductive system	Physiology OLS: 642-644 (Infertility)	Physiology OLS: 644 (Check Your Understanding
		<u>#2, #3, #4)</u>
		651 (Know and Understand #1)

18: Emerging technologies. The student identifies emerging technological advances in science and healthcare treatment and delivery. The student is expected to:

Standard 19A: research and discuss advances in science and medicine at the organ and tissue level such as bionics and wearable monitoring technologies; and

Breakout	Narrative	Activity
(i) research advances in	Introduction to Anatomy &	Introduction to Anatomy &
science at the organ level	Physiology OLS:	Physiology OLS:
	36 (2nd paragraph)	36 (Check Your Understanding #3)
	81 (What Research Tells Us about	45 (Communicating about
	Artificial Tissues, Organs, and	Anatomy & Physiology #2)
	<u>Wearables)</u>	465 (Taking It Further)
(ii) research advances in	Introduction to Anatomy &	Introduction to Anatomy &
medicine at the organ level	Physiology OLS:	Physiology OLS:
	36 (2nd paragraph)	36 (Check Your Understanding #3)
	81 (What Research Tells Us about	45 (Communicating about
	Artificial Tissues, Organs, and	Anatomy & Physiology #2)
	<u>Wearables)</u>	465 (Taking It Further)
	596 (Diabetes Mellitus, 7th	
	paragraph)	
(iii) research advances in	Introduction to Anatomy &	Introduction to Anatomy &
science at the tissue level	Physiology OLS:	Physiology OLS:
	81 (What Research Tells Us about	174 (Taking It Further #1)
	Artificial Tissues, Organs, and	
	<u>Wearables)</u>	
	174 (What Research Tells Us	
	about Bone Tissue Engineering)	
(iv) research advances in	Introduction to Anatomy &	Introduction to Anatomy &
medicine at the tissue level	Physiology OLS:	Physiology OLS:
	81 (What Research Tells Us about	174 (Taking It Further #1)
	Artificial Tissues, Organs, and	
	<u>Wearables)</u>	
(v) discuss advances in science	Introduction to Anatomy &	Introduction to Anatomy &
at the organ level	Physiology OLS:	Physiology OLS:
	36 (2nd paragraph)	36 (Check Your Understanding #3)
		45 (Communicating about
		Anatomy & Physiology #2)



Breakout	Narrative	Activity
	81 (What Research Tells Us about	465 (Taking It Further)
	Artificial Tissues, Organs, and	
	<u>Wearables)</u>	
(vi) discuss advances in	Introduction to Anatomy &	Introduction to Anatomy &
medicine at the organ level	Physiology OLS:	Physiology OLS:
	36 (2nd paragraph)	36 (Check Your Understanding #3)
	81 (What Research Tells Us about	45 (Communicating about
	Artificial Tissues, Organs, and	Anatomy & Physiology #2)
	<u>Wearables)</u>	465 (Taking It Further)
	596 (Diabetes Mellitus, 7th	
	paragraph)	
(vii) discuss advances in	Introduction to Anatomy &	Introduction to Anatomy &
science at the tissue level	Physiology OLS:	Physiology OLS:
	81 (What Research Tells Us about	174 (Taking It Further #1)
	Artificial Tissues, Organs, and	
	<u>Wearables)</u>	
	<u>Wearables)</u> 174 (What Research Tells Us	
(viii) discuss advances in	174 (What Research Tells Us	Introduction to Anatomy &
(viii) discuss advances in medicine at the tissue level	174 (What Research Tells Us about Bone Tissue Engineering)	Introduction to Anatomy & Physiology OLS:
	174 (What Research Tells Us about Bone Tissue Engineering) Introduction to Anatomy &	
	174 (What Research Tells Us about Bone Tissue Engineering) Introduction to Anatomy & Physiology OLS:	Physiology OLS:

Standard 19B: research and describe advances in science and medicine at the cellular level such as stem cells and gene therapy.

Breakout	Narrative	Activity
(i) research advances in science at the cellular level	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
Science de the central level	174 (What Research Tells Us	174 (Taking It Further #1)
	about Bone Tissue Engineering)	423 (In the Lab #2)
	270 (What Research Tells Us	423 (Analyze and Apply #4)
	about Peripheral Nerve Injury	
	Repair)	
(ii) research advances in medicine at the cellular level	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:
	402 (What Research Tells Us	402 (Taking It Further)
	about Bioengineering Red Blood	420 (Taking It Further #1)
	Cells to Create an Unlimited	648 (Taking It Further)
	Supply)	
	648 (What Research Tells Us	
	about Stem Cells and Gene	
	Therapy)	



Breakout	Narrative	Activity
	420 (What Research Tells Us	
	about Extending Life Expectancy	
	of Patients with Sickle Cell	
	<u>Disease)</u>	
(iii) describe advances in	Introduction to Anatomy &	Introduction to Anatomy &
science at the cellular level	Physiology OLS:	Physiology OLS:
	174 (What Research Tells Us	174 (Taking It Further #1)
	about Bone Tissue Engineering)	423 (In the Lab #2)
	270 (What Research Tells Us	423 (Analyze and Apply #4)
	about Peripheral Nerve Injury	
	Repair)	
(iv) describe advances in	Introduction to Anatomy &	Introduction to Anatomy &
medicine at the cellular level	Physiology OLS:	Physiology OLS:
	402 (What Research Tells Us	402 (Taking It Further)
	about Bioengineering Red Blood	420 (Taking It Further #1)
	Cells to Create an Unlimited	648 (Taking It Further)
	Supply)	
	648 (What Research Tells Us	
	about Stem Cells and Gene	
	Therapy)	