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



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

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 team	Introduction to Anatomy & Physiology OLS: 39 (Communication and Teamwork, 4th paragraph)	Introduction to Anatomy & Physiology OLS: 45 (Lab Investigations #1) 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 health careers related to anatomy and physiology.

Breakout	Narrative	Activity
(i) investigate necessary skills for health careers related to anatomy	Introduction to Anatomy & Physiology OLS: 38-39 (Career Corner) 88-89 (Career Corner feature (also Career Corner features in Chapters 3-15)) v (Precision Exams by YouScience Certification)	Introduction to Anatomy & Physiology OLS: 37 (In the Lab #3) 89 (Planning for a Health-Related Career) (also in the Career Corners for Chapters 3-15) 527 (Communicating about Anatomy & Physiology #4)
(ii) investigate necessary skills for health careers related to physiology	Introduction to Anatomy & Physiology OLS: 88-89 (Career Corner feature (also Career Corner features in Chapters 3-15)) 38-39 (Career Corner)	Introduction to Anatomy & Physiology OLS: 37 (In the Lab #3) 89 (Planning for a Health-Related Career) (also in the Career 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 observations or information from text, phenomena, models, or investigations	Introduction to Anatomy & Physiology OLS: 26-27 (Step 1: Identifying a Research Question) 39 (Communication and Teamwork, 1st paragraph) 30 (Types of Research, 5th paragraph)	Introduction to Anatomy & Physiology OLS: 30 (Taking It Further #1) 347 (In the Lab #1 and #3) 527 (Communicating about Anatomy & Physiology #2)
(ii) define problems based on observations or information from text, phenomena, models, or investigations	Introduction to Anatomy & Physiology OLS: 26-27 (Step 1: Identifying a Research Question) 27-28 (Step 2: Formulating One or More Hypotheses)	Introduction to Anatomy & Physiology OLS: 355 (Lab Investigations #3) 30 (Taking It Further #1)

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



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

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: 28 (Step 4: Collecting the Data) 457 (Measuring Body Temperature) 26 (Goals for Research Questions, 2nd paragraph)	Introduction to Anatomy & Physiology OLS: 44 (Thinking Critically #2) 87 (In the Lab #2)

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



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

Breakout	Narrative	Activity
	29 (Step 8: Disseminating Research Findings)	279 (Communicating about Anatomy & Physiology #4) 382 (Taking It Further #1)
(xiv) organize qualitative data using technology-based reports	Introduction to Anatomy & Physiology OLS: 35-36 (Information Technology in Healthcare)	Introduction to Anatomy & Physiology OLS: 45 (Lab Investigations #3) 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 represent phenomena, systems, processes, or solutions to engineering problems	Introduction to Anatomy & Physiology OLS: 24 (Engineering Practices)	Introduction to Anatomy & Physiology OLS: 60 (In the Lab #2) 75 (In the Lab #1) 191 (In the Lab #5)
(ii) use models to represent phenomena, systems, processes, or solutions to engineering problems	Introduction to Anatomy & Physiology OLS: 27 (Data Sets)	Introduction to Anatomy & Physiology OLS: 571 (Lab Investigations #2) 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 hypotheses, theories, and laws	Introduction to Anatomy & Physiology OLS: 31 (Developing Scientific Theories) 27-28 (Step 2: Formulating One or More Hypotheses)	Introduction to Anatomy & Physiology OLS: 37 (Analyze and Apply #2, 6) 31 (1st Check Your Understanding #2; 2nd Check Your 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 models	Introduction to Anatomy & Physiology OLS: 24 (Engineering Practices)	Introduction to Anatomy & Physiology OLS: 24 (Check Your Understanding #4)
(ii) identify limitations of models	Introduction to Anatomy & Physiology OLS: 24 (Engineering Practices)	Introduction to Anatomy & Physiology OLS: 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 calculations to assess quantitative relationships in data	Introduction to Anatomy & Physiology OLS: 28 (Step 4: Collecting the Data and Step 5: Analyzing and	Introduction to Anatomy & Physiology OLS: 374 (In the Lab #2) 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 designs;	Introduction to Anatomy & Physiology OLS: 29 (Step 7: Deriving Conclusions from the Results)	Introduction to Anatomy & Physiology OLS: 37 (Analyze and Apply #9) 44 (Thinking Critically #2) 445 (In the Lab #1)
(ii) evaluate engineering designs.	Introduction to Anatomy & Physiology OLS: 24 (Engineering Practices)	Introduction to Anatomy & Physiology OLS: 24 (Check Your Understanding #5)

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

Breakout	Narrative	Activity
(v) develop explanations consistent with scientific theories	Introduction to Anatomy & Physiology OLS: 31 (Developing Scientific Theories)	Introduction to Anatomy & Physiology OLS: 75 (In the Lab #3) 37 (Analyze and Apply #2, 6)
(vi) propose solutions supported by data	Introduction to Anatomy & Physiology OLS: 26-31 (The Scientific Method) 31 (Developing Scientific Theories)	Introduction to Anatomy & Physiology OLS: 37 (In the Lab #1) 37 (Analyze and Apply #5)
(vii) propose solutions supported by models	Introduction to Anatomy & Physiology OLS: 24 (Engineering Practices) 27 (Data Sets, 2nd paragraph)	Introduction to Anatomy & Physiology OLS: 229 (Lab Investigations #2, 4) 160 (In the Lab #2)
(viii) propose solutions consistent with scientific ideas	Introduction to Anatomy & Physiology OLS: 26-31 (The Scientific Method)	Introduction to Anatomy & Physiology OLS: 37 (In the Lab #1)
(ix) propose solutions consistent with scientific principles	Introduction to Anatomy & Physiology OLS: 24 (Engineering Practices) 26-31 (The Scientific Method)	Introduction to Anatomy & Physiology OLS: 19 (Know and Understand #2) 36 (Check Your Understanding #2)
(x) propose solutions consistent with scientific theories	Introduction to Anatomy & Physiology OLS: 31 (Developing Scientific Theories)	Introduction to Anatomy & Physiology OLS: 75 (In the Lab #3) 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 individually in a variety of settings	Introduction to Anatomy & Physiology OLS: 29-31 (Step 8: Disseminating Research Findings)	Introduction to Anatomy & Physiology OLS: 44 (Thinking Critically #1) 221 (In the Lab #2) 183 (Lab Investigations #4)
(ii) communicate explanations individually in a variety of formats	Introduction to Anatomy & Physiology OLS: 27 (Defining Research Problems; Data Sets) 29-31 (Step 8: Disseminating Research Findings)	Introduction to Anatomy & Physiology OLS: 228 (Communicating about Anatomy & Physiology #3) 502 (In the Lab #2) 571 (Lab Investigations #2)
(iii) communicate explanations collaboratively in a variety of settings	Introduction to Anatomy & Physiology OLS: 26-31 (The Scientific Method)	Introduction to Anatomy & Physiology OLS: 481 (Lab Investigations #1)
(iv) communicate explanations collaboratively in a variety of formats	Introduction to Anatomy & Physiology OLS: 26-31 (The Scientific Method)	Introduction to Anatomy & Physiology OLS: 30 (Taking It Further #1) 183 (Communicating about Anatomy & Physiology #2)

Breakout	Narrative	Activity
(v) communicate solutions individually in a variety of settings	Introduction to Anatomy & Physiology OLS: 26-31 (The Scientific Method)	Introduction to Anatomy & Physiology OLS: 315 (Communicating about Anatomy & Physiology #1) 374 (Analyze and Apply #3)
(vi) communicate solutions individually in a variety of formats	Introduction to Anatomy & Physiology OLS: 26-31 (The Scientific Method)	Introduction to Anatomy & Physiology OLS: 365 (In the Lab #2) 524 (Thinking Critically #3) 556 (In the Lab #3)
(vii) communicate solutions collaboratively in a variety of settings	Introduction to Anatomy & Physiology OLS: 26-31 (The Scientific Method)	Introduction to Anatomy & Physiology OLS: 445 (In the Lab #1) 129 (Lab Investigations #2)
(viii) communicate solutions collaboratively in a variety of formats	Introduction to Anatomy & Physiology OLS: 26-31 (The Scientific Method)	Introduction to Anatomy & Physiology OLS: 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 scientific argumentation using applied scientific explanations.	Introduction to Anatomy & Physiology OLS: 29 (Step 7: Deriving Conclusions from the Results)	Introduction to Anatomy & Physiology OLS: 392 (Communicating about Anatomy & Physiology #3) 599 (Taking It Further #2)
(ii) engage respectfully in scientific argumentation using empirical evidence.	Introduction to Anatomy & Physiology OLS: 28 (Step 4: Collecting the Data) 29 (Step 7: Deriving Conclusions from the Results)	Introduction to Anatomy & Physiology OLS: 420 (Taking It Further #2) 527 (Communicating about 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;

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

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

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

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

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

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

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;

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

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

Breakout	Narrative	Activity
(i) identify appropriate directional terminology when referring to the human body, including directional terms	Introduction to Anatomy & Physiology OLS: 7 (Directions, Figure 1.3)	Introduction to Anatomy & Physiology OLS: 11 (Analyze and Apply #2, #3) 45 (Communicating about Anatomy & Physiology #1)
(ii) identify appropriate directional terminology when referring to the human body, including planes	Introduction to Anatomy & Physiology OLS: 5-7 (Planes)	Introduction to Anatomy & Physiology OLS: 9 (Check Your Understanding #1, #2) 11 (Analyze and Apply #1) 42 (Thinking Critically #1)
(iii) identify appropriate directional terminology when referring to the human body, [including] body cavities	Introduction to Anatomy & Physiology OLS: 8-9 (Cavities)	Introduction to Anatomy & Physiology OLS: 9 (Check Your Understanding #3) 11 (Know and Understand #3, #4)
(iv) identify appropriate directional terminology when referring to the human body, including body quadrants	Introduction to Anatomy & Physiology OLS: 7 (Quadrants and Regions) 8 (Figure 1.5)	Introduction to Anatomy & Physiology OLS: 2 (HOSA Event Prep)
(v) use appropriate directional terminology when referring to the human body, including directional terms	Introduction to Anatomy & Physiology OLS: 7 (Directions, Figure 1.3)	Introduction to Anatomy & Physiology OLS: 11 (In the Lab #1, #2) 42 (Lesson 1.1, Thinking Critically #2)
(vi) use appropriate directional terminology when referring to the human body, including planes	Introduction to Anatomy & Physiology OLS: 5-7 (Planes)	Introduction to Anatomy & Physiology OLS: 42 (Lesson 1.1, Thinking Critically #3)
(vii) use appropriate directional terminology when referring to the human body, including body cavities	Introduction to Anatomy & Physiology OLS: 8-9 (Cavities)	Introduction to Anatomy & Physiology OLS: 45 (Lab Investigations #1)

Breakout	Narrative	Activity
(viii) use appropriate directional terminology when referring to the human body, including body quadrants	Introduction to Anatomy & Physiology OLS: 7 (Quadrants and Regions) 8 (Figure 1.5)	Introduction to Anatomy & Physiology OLS: 557 (Clinical Case Study) 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	Introduction to Anatomy & Physiology OLS: 12 (last bullet on page "Response to stimuli")	Introduction to Anatomy & Physiology OLS: 15 (Check Your Understanding #3)
(ii) list the major characteristics of living organisms, including growth and development	Introduction to Anatomy & Physiology OLS: 15 (4th bullet on page ("Growth and development"))	Introduction to Anatomy & 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 loops as they apply to homeostasis	Introduction to Anatomy & Physiology OLS: 16 (Negative Feedback) 322 (Hormones and Homeostasis)	Introduction to Anatomy & Physiology OLS: 19 (In the Lab #2)
(ii) research positive feedback loops as they apply to homeostasis	Introduction to Anatomy & Physiology OLS: 16 (Positive Feedback)	Introduction to Anatomy & Physiology OLS: 19 (Analyze and Apply #1)
(iii) describe negative feedback loops as they apply to homeostasis	Introduction to Anatomy & Physiology OLS: 16 (Negative Feedback) 321 (2nd paragraph on page) 330 (2nd paragraph on page)	Introduction to Anatomy & Physiology OLS: 18 (1st Check Your Understanding #1)

Breakout	Narrative	Activity
(iv) describe positive feedback loops as they apply to homeostasis	Introduction to Anatomy & Physiology OLS: 16 (Positive Feedback) 638 (Childbirth, 3rd paragraph)	Introduction to Anatomy & Physiology OLS: 18 (1st Check Your Understanding #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 failure to maintain homeostasis as it relates to common diseases in each of the body systems.	Introduction to Anatomy & Physiology OLS: 600 (Chronic Kidney Disease) 381 (Asthma) 420 (Polycythemia)	Introduction to Anatomy & Physiology OLS: 44 (Thinking Critically #2) 42 (Lesson 1.2, Thinking Critically #2) 18 (1st Check Your Understanding #2)
(ii) identify the effects of the failure to maintain homeostasis as it relates to common diseases in each of the body systems.	Introduction to Anatomy & Physiology OLS: 168 (Homeostatic Calcium Imbalances) 214 (Overuse Injuries) 338 (Hyperfunction of the Pituitary Gland)	Introduction to Anatomy & Physiology OLS: 18 (1st Check Your Understanding #4) 324 (Analyze and Apply #5)

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 & Physiology OLS: 12 (Structural and Functional Organization of the Body, 3rd paragraph ("The smallest building..."))	Introduction to Anatomy & Physiology OLS: 15 (Check Your Understanding #2)
(ii) identify the four primary tissue types	Introduction to Anatomy & Physiology OLS: 12 (Structural and Functional Organization of the Body, 3rd paragraph ("The smallest building..."))	Introduction to Anatomy & Physiology OLS: 15 (Check Your Understanding #2)

Breakout	Narrative	Activity
(iii) identify [the] subdivisions [of the four primary tissue types]	Introduction to Anatomy & Physiology OLS: 76-86 (Lesson 2.3: Tissues)	Introduction to Anatomy & Physiology OLS: 85 (Check Your Understanding #2) 95 (Lab Investigations #3)
(iv) identify [the] functions [of the four primary tissue types]	Introduction to Anatomy & Physiology OLS: 76-86 (Lesson 2.3: Tissues)	Introduction to Anatomy & Physiology OLS: 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 and connective tissue in terms of cell arrangement	Introduction to Anatomy & Physiology OLS: 76-84 (Epithelial Tissue, Connective Tissue)	Introduction to Anatomy & Physiology OLS: 94 (Lesson 2.3 Thinking Critically #1) 95 (Lab Investigations #3)
(ii) compare epithelial tissue and connective tissue in terms of interstitial materials	Introduction to Anatomy & Physiology OLS: 76-84 (Epithelial Tissue, Connective Tissue)	Introduction to Anatomy & Physiology OLS: 94 (Lesson 2.3 Thinking Critically #1) 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 tissue repair involved in the normal healing of a superficial wound	Introduction to Anatomy & Physiology OLS: 86 (Wound Healing and Tissue Repair)	Introduction to Anatomy & Physiology OLS: 86 (2nd Check Your 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 metabolic pathways of carbohydrates	Introduction to Anatomy & Physiology OLS: 48-49 (Carbohydrates) 50 (What Research Tells Us about Glycogen Storage Diseases) 532 (paragraph immediately above "Proteins" head)	Introduction to Anatomy & Physiology OLS: 50 (Taking It Further) 49 (Check Your Understanding questions) 91 (Thinking Critically #3)
(ii) describe the general metabolic pathways of lipids	Introduction to Anatomy & Physiology OLS: 52-55 (Lipids)	Introduction to Anatomy & Physiology OLS: 55 (Check Your Understanding questions)
(iii) describe the general metabolic pathways of proteins	Introduction to Anatomy & Physiology OLS: 51-52 (Proteins)	Introduction to Anatomy & Physiology OLS: 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 & Physiology OLS: 142 (Lesson 4.2 introductory paragraph)	Introduction to Anatomy & Physiology OLS: 151 (Know and Understand #1) 151 (In the Lab #1)
(ii) identify the appendicular skeleton	Introduction to Anatomy & Physiology OLS: 152 (Lesson 4.3 introductory paragraph)	Introduction to Anatomy & Physiology OLS: 156 (Check Your Understanding #1) 181 (Lesson 4.3 Learning Key Terms and Concepts #1)
(iii) differentiate between the axial skeleton and appendicular skeleton	Introduction to Anatomy & Physiology OLS: 142 (Lesson 4.2 introductory paragraph) 152 (Lesson 4.3 introductory paragraph)	Introduction to Anatomy & Physiology OLS: 181 (Lesson 4.3 Thinking Critically #1)

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

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

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

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

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

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

Breakout	Narrative	Activity
(i) explain the major physiological functions of the skeletal system	Introduction to Anatomy & Physiology OLS: 132-133 (Functions of the Skeletal System)	Introduction to Anatomy & Physiology OLS: 133 (Check Your Understanding #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 osteoblasts in bone growth	Introduction to Anatomy & Physiology OLS: 137 (Life Span Development: Longitudinal Growth, Circumferential Growth) 84 (Bone) 80 (Figure 2.27)	Introduction to Anatomy & Physiology OLS: 137 (Life Span Review #1, 2) 140 (1st Check Your Understanding #4) 141 (Analyze and Apply #1)
(ii) describe the role of osteocytes in bone growth	Introduction to Anatomy & Physiology OLS: 137 (Life Span Development: Osteoblasts and Osteoclasts) 133 (Composition of Bones)	Introduction to Anatomy & Physiology OLS: 137 (Life Span Review #5)

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

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 fractures	Introduction to Anatomy & Physiology OLS: 165-167 (Fractures) 166 (Figure 4.33)	Introduction to Anatomy & Physiology OLS: 168 (Check Your Understanding #1)
(ii) describe the different types of fractures	Introduction to Anatomy & Physiology OLS: 165-167 (Fractures)	Introduction to Anatomy & Physiology OLS: 168 (Check Your Understanding #1)

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

Breakout	Narrative	Activity
	170 (Bone Cancer) 168-169 (Osteoporosis)	170 (Check Your Understanding #1, #3)
(iv) describe common disorders of the skeletal system	Introduction to Anatomy & Physiology OLS: 165-168 (Common Bone Injuries)	Introduction to Anatomy & Physiology OLS: 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 integumentary system, including layers of the skin	Introduction to Anatomy & Physiology OLS: 102-105 (Anatomy of the Skin)	Introduction to Anatomy & Physiology OLS: 105 (Check Your Understanding questions) 127 (Lesson 3.2 Learning Key Terms and Concepts #3) 128 (Lesson 3.2 Thinking Critically #3)
(ii) identify the structures of the integumentary system, including accessory organs within each layer	Introduction to Anatomy & Physiology OLS: 105-108 (Appendages of the Skin)	Introduction to Anatomy & Physiology OLS: 108 (Check Your Understanding #1) 128 (Lesson 3.2 Learning Key Terms and Concepts #7)
(iii) identify the structures of the integumentary system, including glandular components in each layer;	Introduction to Anatomy & Physiology OLS: 105, 107 (Sudoriferous Glands, Sebaceous Glands)	Introduction to Anatomy & Physiology OLS: 108 (Check Your Understanding #2)
(iv) describe the structures of the integumentary system, including layers of the skin	Introduction to Anatomy & Physiology OLS: 102-105 (Anatomy of the Skin)	Introduction to Anatomy & Physiology OLS: 109 (In the Lab #1)
(v) describe the structures of the integumentary system, including accessory organs within each layer	Introduction to Anatomy & Physiology OLS: 105-108 (Appendages of the Skin)	Introduction to Anatomy & Physiology OLS: 109 (In the Lab #2)
(vi) describe the structures of the integumentary system, including glandular components in each layer;	Introduction to Anatomy & Physiology OLS: 105, 107 (Sudoriferous Glands, Sebaceous Glands)	Introduction to Anatomy & Physiology OLS: 109 (Know and Understand # 6) 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 contribute to skin color	Introduction to Anatomy & Physiology OLS: 101 (Functions of the Integumentary System, last paragraph on page) 104 Epidermis, 5th paragraph) 108 (What Research Tells Us about Health in Skin Color)	Introduction to Anatomy & Physiology OLS: 105 (Check Your Understanding #3) 127 (Lesson 3.2 Learning Key Terms and Concepts #5) 109 (Analyze and Apply #3)

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

Breakout	Narrative	Activity
(i) describe the process of tissue repair	Introduction to Anatomy & Physiology OLS: 86 (Wound Healing and Tissue Repair) 111 (Decubitus ulcers, 5th and 6th paragraphs)	Introduction to Anatomy & Physiology OLS: 86 (2nd Check Your Understanding #2)
(ii) describe the process of scar formation	Introduction to Anatomy & Physiology OLS: 86 (Wound Healing and Tissue Repair) 110 (Skin Injuries)	Introduction to Anatomy & Physiology OLS: 87 (Know and Understand #8)
(iii) explain the process of tissue repair	Introduction to Anatomy & Physiology OLS: 86 (Wound Healing and Tissue Repair) 111 (Decubitus ulcers, 5th and 6th paragraphs)	Introduction to Anatomy & Physiology OLS: 86 (2nd Check Your Understanding #2)
(iv) explain the process of scar formation	Introduction to Anatomy & Physiology OLS: 501 (Figure 12.10)	Introduction to Anatomy & Physiology OLS: 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 of the integumentary system	Introduction to Anatomy & Physiology OLS: 112-117 (Infections of the Skin and Membranes) 120-121 (Cancers of the Skin)	Introduction to Anatomy & Physiology OLS: 117 (Check Your Understanding questions) 121 (Check Your Understanding questions) 123 (Know and Understand #7)
(ii) identify common disorders of the integumentary system	Introduction to Anatomy & Physiology OLS: 110-112 (Skin Injuries)	Introduction to Anatomy & Physiology OLS:

Breakout	Narrative	Activity
	117-120 (Inflammatory Conditions of the Skin and Membranes)	112 (Check Your Understanding questions) 120 (Check Your Understanding questions) 123 (Know and Understand #6)
(iii) describe common diseases of the integumentary system	Introduction to Anatomy & Physiology OLS: 112-117 (Infections of the Skin and Membranes)	Introduction to Anatomy & Physiology OLS: 117 (Check Your Understanding questions)
(iv) describe common disorders of the integumentary system	Introduction to Anatomy & Physiology OLS: 110-112 (Skin Injuries) 117-120 (Inflammatory Conditions of the Skin and Membranes)	Introduction to Anatomy & Physiology OLS: 112 and 120 (Check Your Understanding questions) 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 physiological functions of the muscular system, including voluntary movement	Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle)	Introduction to Anatomy & Physiology OLS: 188 (Check Your Understanding #1, #2) 226 (Lesson 5.1 Thinking Critically #1)
(ii) explain the major physiological functions of the muscular system, including involuntary movement	Introduction to Anatomy & Physiology OLS: 186-187 (Smooth Muscle)	Introduction to Anatomy & Physiology OLS: 188 (Check Your Understanding #1, #2) 226 (Lesson 5.1 Thinking Critically #1)
(iii) explain the major physiological functions of the muscular system, including heat production	Introduction to Anatomy & Physiology OLS: 190 (The Production of Heat)	Introduction to Anatomy & Physiology OLS: 190 (Check Your Understanding #2) 191 (Analyze and Apply #3)
(iv) explain the major physiological functions of the muscular system, including maintaining posture	Introduction to Anatomy & Physiology OLS: 186 (Skeletal Muscle)	Introduction to Anatomy & Physiology OLS: 191 (Analyze and Apply #3) 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 characteristics of muscle tissue, including excitability	Introduction to Anatomy & Physiology OLS: 189 (Behavioral Properties, 2nd paragraph)	Introduction to Anatomy & Physiology OLS: 191 (Know and Understand #4)
(ii) examine common characteristics of muscle tissue, including contractibility	Introduction to Anatomy & Physiology OLS: 189 (Behavioral Properties, 3rd paragraph)	Introduction to Anatomy & Physiology OLS: 190 (Check Your Understanding #1) 191 (Know and Understand #4) 473 (Analyze and Apply #3)
(iii) examine common characteristics of muscle tissue, including extensibility	Introduction to Anatomy & Physiology OLS: 189 (Behavioral Properties, 1st paragraph)	Introduction to Anatomy & Physiology OLS: 191 (Know and Understand #3)
(iv) examine common characteristics of muscle tissue, including elasticity	Introduction to Anatomy & Physiology OLS: 189 (Behavioral Properties, 1st paragraph)	Introduction to Anatomy & Physiology OLS: 191 (Know and Understand #3)

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 the three muscle types, including cardiac	Introduction to Anatomy & Physiology OLS: 187 (Figure 5.1C) 188 (Cardiac Muscle)	Introduction to Anatomy & Physiology OLS: 191 (Analyze and Apply #1)
(ii) identify the appearance of the three muscle types, including skeletal	Introduction to Anatomy & Physiology OLS: 195-196 (Skeletal Fiber Types) 187 (Figure 5.1A) 186 (Skeletal Muscle)	Introduction to Anatomy & Physiology OLS: 196 (Check Your Understanding #3) 188 (Check Your Understanding #3) 191 (Know and Understand #1)
(iii) identify the appearance of the three muscle types, including smooth	Introduction to Anatomy & Physiology OLS: 187 (Figure 5.1B) 186-187 (Smooth Muscle)	Introduction to Anatomy & Physiology OLS: 191 (Analyze and Apply #1)
(iv) identify the innervation of the three muscle types, including cardiac	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: 443 (Check Your Understanding questions) 444 (Check Your Understanding questions) 445 (Analyze and Apply questions)

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

Breakout	Narrative	Activity
		200 (Know and Understand #1-#3)
(xv) describe the innervation of the three muscle types, including smooth	Introduction to Anatomy & Physiology OLS: 186-187 (Smooth Muscle) 232 (1st introductory paragraph)	Introduction to Anatomy & Physiology OLS: 234 (Check Your Understanding #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) 446 (Blood Vessel Layers) 540 (Muscularis Externa)	Introduction to Anatomy & Physiology OLS: 191 (Know and Understand #2) 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 muscle contraction at the neuromuscular junction	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:

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

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 head and neck	Introduction to Anatomy & Physiology OLS: 201-203 (Directional Motions) 203-204 (Head and Neck Muscles) 205 (Figure 5.17)	Introduction to Anatomy & Physiology OLS: 210 (Check Your Understanding #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:

Breakout	Narrative	Activity
of the body, including the lower extremity	209 (Figure 5.23) 210 (Figure 5.24)	203 (Check Your Understanding #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 of the muscular system	Introduction to Anatomy & Physiology OLS: 219-220 (Myasthenia Gravis, Amyotrophic Lateral Sclerosis) 218-219 (Muscular Dystrophy)	Introduction to Anatomy & Physiology OLS: 220 (Check Your Understanding #2, #4) 221 (Know and Understand #9)
(ii) identify common disorders of the muscular system	Introduction to Anatomy & Physiology OLS: 212-217 (Common Muscle Injuries, Overuse Injuries) 219 (Hernia)	Introduction to Anatomy & Physiology OLS: 217 (Check Your Understanding questions) 221 (Know and Understand #3)
(iii) describe common diseases of the muscular system	Introduction to Anatomy & Physiology OLS: 219-220 (Myasthenia Gravis, Amyotrophic Lateral Sclerosis)	Introduction to Anatomy & Physiology OLS: 220 (Check Your Understanding #1)
	Introduction to Anatomy & Physiology OLS: 218-219 (Muscular Dystrophy)	Introduction to Anatomy & Physiology OLS: 221 (Analyze and Apply #3) 228 (Communicating about Anatomy & Physiology #4)

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

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 pressure on the human body	Introduction to Anatomy & Physiology OLS: 21 (Pressure)	Introduction to Anatomy & Physiology OLS: 43 (Thinking Critically #2) 45 (Lab Investigations #3)
(ii) analyze the effects of movement on the human body	Introduction to Anatomy & Physiology OLS: 20 (Basic Kinetic Concepts) 189-190 (Tension and Types of Skeletal Muscle Contraction)	Introduction to Anatomy & Physiology OLS: 25 (Analyze and Apply #1)
(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 tension on the human body	Introduction to Anatomy & Physiology OLS: 21-22 (Directional Force Distribution within the Body) 81 (Tension, Compression, and Elasticity)	Introduction to Anatomy & Physiology OLS: 25 (In the Lab #2)
(v) analyze the effects of elasticity on the human body	Introduction to Anatomy & Physiology OLS: 81 (Tension, Compression, and Elasticity) 189 (Behavioral Properties)	Introduction to Anatomy & Physiology OLS: 140 (1st Check Your Understanding #5)
(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 movement on the human body	Introduction to Anatomy & Physiology OLS: 21-23 (Forces and Injury to the Human Body)	Introduction to Anatomy & Physiology OLS: 25 (Analyze and Apply #1)
(viii) describe the effects of torque on the human body	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:

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

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

Breakout	Narrative	Activity
(i) identify the senses	Introduction to Anatomy & Physiology OLS: 232 (1st introductory paragraph) 281 (Chapter 7 introduction)	Introduction to Anatomy & Physiology OLS: 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 interdependence between the cranial and spinal nerves with the special sense of vision	Introduction to Anatomy & Physiology OLS: 285 (Vision)	Introduction to Anatomy & Physiology OLS: 315 (Communicating about Anatomy & Physiology #3) 286 (Check Your Understanding questions)
(ii) investigate the interdependence between the cranial and spinal nerves with the special sense of hearing	Introduction to Anatomy & Physiology OLS: 295 (1st paragraph on page)	Introduction to Anatomy & Physiology OLS: 315 (Communicating about Anatomy & Physiology #3)
(iii) investigate the interdependence between the cranial and spinal nerves with the special sense of smell	Introduction to Anatomy & Physiology OLS: 302 (Anatomy and Physiology of the Olfactory Sense)	Introduction to Anatomy & Physiology OLS: 315 (Lab Investigations #3) 315 (Communicating about Anatomy & Physiology #3)
(iv) investigate the interdependence between the cranial and spinal nerves with the special sense of taste	Introduction to Anatomy & Physiology OLS: 306 (Gustation)	Introduction to Anatomy & Physiology OLS: 315 (Communicating about Anatomy & Physiology #3) 308 (Check Your Understanding #2)
(v) explain the interdependence between the cranial and spinal nerves with the special sense of vision	Introduction to Anatomy & Physiology OLS: 285 (Vision)	Introduction to Anatomy & Physiology OLS: 286 (Check Your Understanding questions)
(vi) explain the interdependence between the cranial and spinal nerves with the special sense of hearing	Introduction to Anatomy & Physiology OLS: 295 (1st paragraph on page)	Introduction to Anatomy & Physiology OLS: 315 (Communicating about Anatomy & Physiology #3)
(vii) explain the interdependence between the	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:

Breakout	Narrative	Activity
cranial and spinal nerves with the special sense of smell	Introduction to Anatomy & Physiology OLS: 302 (Anatomy and Physiology of the Olfactory Sense)	315 (Communicating about Anatomy & Physiology #3)
(viii) explain the interdependence between the cranial and spinal nerves with the special senses of taste	Introduction to Anatomy & Physiology OLS: 306 (Gustation)	Introduction to Anatomy & Physiology OLS: 315 (Communicating about 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 the structures associated with the senses, including vision	Introduction to Anatomy & Physiology OLS: 282-285 (Anatomy of the Eye) 285 (Vision)	Introduction to Anatomy & Physiology OLS: 285 (Check Your Understanding questions) 286 (Check Your Understanding #1)
(ii) describe the anatomy of the structures associated with the senses, including hearing	Introduction to Anatomy & Physiology OLS: 293-295 (Anatomy of the Ear) 295-296 (Hearing)	Introduction to Anatomy & Physiology OLS: 295 (Check Your Understanding questions) 297 (Check Your Understanding #3, #4)
(iii) describe the anatomy of the structures associated with the senses, including smell	Introduction to Anatomy & Physiology OLS: 302-304 (Anatomy and Physiology of the Olfactory Sense)	Introduction to Anatomy & Physiology OLS: 305 (Check Your Understanding #1, #4)
(iv) describe the anatomy of the structures associated with the senses, including taste	Introduction to Anatomy & Physiology OLS: 306 (Gustation)	Introduction to Anatomy & Physiology OLS: 308 (Check Your Understanding questions)
(v) describe the anatomy of the structures associated with the senses, including touch	Introduction to Anatomy & Physiology OLS: 256-258 (Sensory Receptors of Touch) 102 (2nd paragraph) 104 (6th paragraph on page ("Merkel cells", and Dermis)	Introduction to Anatomy & Physiology OLS: 258 (Check Your Understanding #4) 127 (Lesson 3.2 Learning Key Terms and Concepts #2) 278 (Analyzing and Evaluating Data #2)

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

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

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 functions [of 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)

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

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

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: 234-235 (Neurons)	Introduction to Anatomy & Physiology OLS: 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 neurotransmitters by chemical mechanisms	Introduction to Anatomy & Physiology OLS: 241 (Figure 6.8)	Introduction to Anatomy & Physiology OLS: 244 (Know and Understand #8) 243 (Check Your Understanding #2, #6)
(ii) categorize the major neurotransmitters by physical mechanisms	Introduction to Anatomy & Physiology OLS: 241 (Figure 6.8)	Introduction to Anatomy & Physiology OLS: 244 (Know and Understand #8) 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 of the nervous system	Introduction to Anatomy & Physiology OLS: 266-268 (Meningitis, Acute Flaccid Myelitis, Multiple Sclerosis) 269 (Dementia and Alzheimer's Disease)	Introduction to Anatomy & Physiology OLS: 271 (Know and Understand #5) 271 (Analyze and Apply #5)
(ii) identify common disorders of the nervous system	Introduction to Anatomy & Physiology OLS: 262-266 (Injuries to the Brain and Spinal Cord) 268-269 (Epilepsy, Parkinson's Disease)	Introduction to Anatomy & Physiology OLS: 266 (Check Your Understanding #1, #2) 269 (Check Your Understanding #3)
(iii) describe common diseases of the nervous system	Introduction to Anatomy & Physiology OLS: 266-268 (Meningitis, Acute Flaccid Myelitis, Multiple Sclerosis) 269 (Dementia and Alzheimer's Disease)	Introduction to Anatomy & Physiology OLS: 269 (Check Your Understanding #1, #2) 271 (Know and Understand #3) 271 (In the Lab #3)
(iv) describe common disorders of the nervous system	Introduction to Anatomy & Physiology OLS: 262-266 (Injuries to the Brain and Spinal Cord) 268-269 (Epilepsy, Parkinson's Disease)	Introduction to Anatomy & Physiology OLS: 266 (Check Your Understanding #3) 271 (Know and Understand #1) 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 associated with the endocrine system, including the ovaries	Introduction to Anatomy & Physiology OLS: 318 (Endocrine Glands) 335 (Gonads)	Introduction to Anatomy & Physiology OLS: 336 (Check Your Understanding #3) 319 (Check Your Understanding #1) 337 (Analyze and Apply #7)
(ii) identify the nine glands associated with the endocrine system, including the testes	Introduction to Anatomy & Physiology OLS: 318 (Endocrine Glands) 335 (Gonads)	Introduction to Anatomy & Physiology OLS: 319 (Check Your Understanding #1) 337 (Analyze and Apply #7)
(iii) identify the nine glands associated with the endocrine system, including the pineal gland	Introduction to Anatomy & Physiology OLS: 318 (Endocrine Glands) 334 (Pineal Gland)	Introduction to Anatomy & Physiology OLS: 336 (Check Your Understanding #2) 319 (Check Your Understanding #1)
(iv) identify the nine glands associated with the endocrine system, including the pituitary gland	Introduction to Anatomy & Physiology OLS: 318 (Endocrine Glands) 325-329 (Pituitary Gland)	Introduction to Anatomy & Physiology OLS: 329 (Check Your Understanding questions) 319 (Check Your Understanding #1)
(v) identify the nine glands associated with the endocrine system, including the thyroid gland	Introduction to Anatomy & Physiology OLS: 318 (Endocrine Glands) 329-330 (Thyroid Gland)	Introduction to Anatomy & Physiology OLS: 330 (Check Your Understanding questions) 319 (Check Your Understanding #1)
(vi) identify the nine glands associated with the endocrine system, including the parathyroid glands	Introduction to Anatomy & Physiology OLS: 318 (Endocrine Glands) 330-331 (Parathyroid Glands)	Introduction to Anatomy & Physiology OLS: 331 (Check Your Understanding #2) 319 (Check Your Understanding #1)

Breakout	Narrative	Activity
(vii) identify the nine glands associated with the endocrine system, including the thymus	Introduction to Anatomy & Physiology OLS: 318 (Endocrine Glands) 334 (Thymus)	Introduction to Anatomy & Physiology OLS: 319 (Check Your Understanding #1)
(viii) identify the nine glands associated with the endocrine system, including the pancreas	Introduction to Anatomy & Physiology OLS: 318 (Endocrine Glands) 333 (Pancreas)	Introduction to Anatomy & Physiology OLS: 333 (2nd Check Your Understanding #1, #2) 319 (Check Your Understanding #1)
(ix) identify the nine glands associated with the endocrine system, including the adrenal glands	Introduction to Anatomy & Physiology OLS: 318 (Endocrine Glands) 331-333 (Adrenal Glands)	Introduction to Anatomy & Physiology OLS: 333 (1st Check Your Understanding #1, #2) 319 (Check Your Understanding #1)
(x) locate the nine glands associated with the endocrine system, including the ovaries	Introduction to Anatomy & Physiology OLS: 319 (Figure 8.1)	Introduction to Anatomy & Physiology OLS: 336 (Check Your Understanding #2) 319 (Check Your Understanding #1)
(xi) locate the nine glands associated with the endocrine system, including the testes	Introduction to Anatomy & Physiology OLS: 319 (Figure 8.1)	Introduction to Anatomy & Physiology OLS: 329 (Check Your Understanding questions) 319 (Check Your Understanding #1)
(xii) locate the nine glands associated with the endocrine system, including the pineal gland	Introduction to Anatomy & Physiology OLS: 319 (Figure 8.1)	Introduction to Anatomy & Physiology OLS: 336 (Check Your Understanding #2) 319 (Check Your Understanding #1)
(xiii) locate the nine glands associated with the endocrine system, including the pituitary gland	Introduction to Anatomy & Physiology OLS: 319 (Figure 8.1) 325 (Pituitary Gland)	Introduction to Anatomy & Physiology OLS: 329 (Check Your Understanding questions) 319 (Check Your Understanding #1)
(xiv) locate the nine glands associated with the endocrine system, including the thyroid gland	Introduction to Anatomy & Physiology OLS: 319 (Figure 8.1) 329 (Thyroid Gland)	Introduction to Anatomy & Physiology OLS: 330 (Check Your Understanding questions) 319 (Check Your Understanding #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 endocrine gland	Introduction to Anatomy & Physiology OLS: 325-337 (Lesson 8.2: Major Endocrine Organs)	Introduction to Anatomy & Physiology OLS: 337 (Know and Understand #1-#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 homeostatic mechanisms	Introduction to Anatomy & Physiology OLS: 322-323 (Hormones and Homeostasis) 331 (Figure 8.9) 334 (Figure 8.11)	Introduction to Anatomy & Physiology OLS: 324 (Analyze and Apply #5) 323 (Check Your Understanding #4) 352 (Thinking Critically #3, #4)
(ii) research the impact of the endocrine systems on other body systems	Introduction to Anatomy & Physiology OLS: 325 (Hypothalamus) 322 (Hypothalamic Control of Body Temperature) 327 (Figure 8.6)	Introduction to Anatomy & Physiology OLS: 325 (Check Your Understanding #1, #2) 337 (Know and Understand #1)

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

Breakout	Narrative	Activity
(iii) explain how the endocrine glands are regulated, including humoral control	Introduction to Anatomy & Physiology OLS: 321 (Humoral Control)	Introduction to Anatomy & Physiology OLS: 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: 344-346 (The Pancreas and Diabetes Mellitus)	Introduction to Anatomy & Physiology OLS: 346 (Check Your Understanding #1) 347 (Know and Understand #4)
(ii) identify common disorders of the endocrine system	Introduction to Anatomy & Physiology OLS: 338-340 (Pituitary Disorders) 340-341 (Thyroid Disorders) 341-342 (Parathyroid Disorders)	Introduction to Anatomy & Physiology OLS: 340 (Check Your Understanding #1, #2) 341 (Check Your Understanding #1, #2)
(iii) describe common diseases of the endocrine system	Introduction to Anatomy & Physiology OLS: 344-346 (The Pancreas and Diabetes Mellitus)	Introduction to Anatomy & Physiology OLS: 346 (Check Your Understanding #2) 347 (Analyze and Apply #4, #5)
(iv) describe common disorders of the endocrine system	Introduction to Anatomy & Physiology OLS: 338-340 (Pituitary Disorders) 340-341 (Thyroid Disorders) 341-342 (Parathyroid Disorders)	Introduction to Anatomy & Physiology OLS: 347 (Analyze and Apply #1) 353 (Lesson 8.3 Learning Key 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 structures of the urinary system, including the kidney	Introduction to Anatomy & Physiology OLS: 574-578 (Anatomy of the Kidney)	Introduction to Anatomy & Physiology OLS: 578 (Check Your Understanding questions) 579 (Know and Understand #4, #6)
(ii) identify the anatomical structures of the urinary system, including the ureters	Introduction to Anatomy & Physiology OLS: 588 (Ureters)	Introduction to Anatomy & Physiology OLS: 579 (In the Lab #1) 607 (Lesson 14.2 Learning Key Terms and Concepts #10)
(iii) identify the anatomical structures of the urinary system, including the bladder	Introduction to Anatomy & Physiology OLS: 588 (Urinary Bladder)	Introduction to Anatomy & Physiology OLS: 589 (Figure 14.9 caption question) 602 (Know and Understand #9)
(iv) identify the anatomical structures of the urinary system, including the urethra	Introduction to Anatomy & Physiology OLS: 588 (Urethra)	Introduction to Anatomy & Physiology OLS: 588 (Check Your Understanding #2)
(v) identify the anatomical functions of the urinary system, including the kidney	Introduction to Anatomy & Physiology OLS: 580-588 (Urine Formation)	Introduction to Anatomy & Physiology OLS: 588 (Check Your Understanding questions) 592 (Know and Understand #1) 607 (Lesson 14.2 Learning Key Terms and Concepts #6)
(vi) identify the anatomical functions of the urinary system, including the ureters	Introduction to Anatomy & Physiology OLS: 588 (Ureters)	Introduction to Anatomy & Physiology OLS: 607 (Lesson 14.2 Learning Key Terms and Concepts #10)
(vii) identify the anatomical functions of the urinary system, including the bladder	Introduction to Anatomy & Physiology OLS: 588 (Urinary Bladder)	Introduction to Anatomy & Physiology OLS: 607 (Lesson 14.2 Learning Key Terms and Concepts #11)
(viii) identify the anatomical functions of the urinary system, including the urethra	Introduction to Anatomy & Physiology OLS: 588 (Urethra)	Introduction to Anatomy & Physiology OLS: 592 (Know and Understand #7)
(ix) describe the anatomical structures of the urinary system, including the kidney	Introduction to Anatomy & Physiology OLS: 574-578 (Anatomy of the Kidney)	Introduction to Anatomy & Physiology OLS: 579 (Know and Understand #1, #2) 579 (In the Lab #1) 609 (Lab Investigations #1)
(x) describe the anatomical structures of the urinary system, including the ureters	Introduction to Anatomy & Physiology OLS: 588 (Ureters)	Introduction to Anatomy & Physiology OLS: 591 (Check Your Understanding #1)

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 anatomical structures of the male and female urinary system	Introduction to Anatomy & Physiology OLS: 588 (Urethra) 623 (Ducts of the Female Reproductive System, 2nd paragraph) 589 (Figure 14.9) 601 (Urinary Tract Infection)	Introduction to Anatomy & Physiology OLS: 589 (Figure 14.9 caption questions)
(ii) describe the functions of the male urinary system	Introduction to Anatomy & Physiology OLS: 573 (Chapter introduction) 621 (Male Reproductive Physiology)	Introduction to Anatomy & Physiology OLS: 622 (Analyze and Apply #4) 588 (1st Check Your 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: 573 (Chapter introduction) 574 (Lesson 14.1 introduction) 580 (Lesson 14.2 introduction)	Introduction to Anatomy & Physiology OLS: 588 (1st Check Your Understanding #1-#6) 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 of nephrons	Introduction to Anatomy & Physiology OLS: 575-578 (The Nephron)	Introduction to Anatomy & Physiology OLS: 578 (1st Check Your Understanding, #3-#5)
(ii) summarize the functions of nephrons	Introduction to Anatomy & Physiology OLS: 575-578 (The Nephron) 580-586 (Urine Formation)	Introduction to Anatomy & Physiology OLS: 579 (Know and Understand #8) 578 (2nd Check Your Understanding, #2) 588 (1st Check Your Understanding #1-#6)
(iii) summarize the types of nephrons	Introduction to Anatomy & Physiology OLS: 575 (The Nephron, 2nd paragraph)	Introduction to Anatomy & Physiology OLS: 579 (Know and Understand #7)
(iv) illustrate the structures of nephrons	Introduction to Anatomy & Physiology OLS: 577 (Figure 14.3)	Introduction to Anatomy & Physiology OLS: 577 (Figure 14.3 caption questions) 609 (Lab Investigations #1)
(v) illustrate the functions of nephrons	Introduction to Anatomy & Physiology OLS: 577 (Figure 14.3) 585 (Figure 14.7)	Introduction to Anatomy & Physiology OLS: 592 (In the Lab #1)
(vi) illustrate the types of nephrons	Introduction to Anatomy & Physiology OLS: 577 (Figure 14.3)	Introduction to Anatomy & Physiology OLS: 607 Lesson 14.1 Thinking Critically #1) 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 system, including fluid intake	Introduction to Anatomy & Physiology OLS: 587 (Antidiuretic Hormone) 17 (What Research Tells Us about Homeostatic Mechanisms during Distance Running)	Introduction to Anatomy & Physiology OLS: 603 (Analyze and Apply #6) 609 (Lab Investigations #2)
(ii) examine the methods of fluid balance in the urinary system, including fluid output	Introduction to Anatomy & Physiology OLS: 582 (Pressure Controls, last paragraph) 596 (Diabetes)	Introduction to Anatomy & Physiology OLS: 592 (In the Lab #2) 603 (Analyze and Apply #4, #6) 609 (Lab Investigations #2)
(iii) examine the methods of fluid homeostasis in the urinary system, including fluid intake	Introduction to Anatomy & Physiology OLS: 586-587 (Hormonal Regulation of Urine Volume and Composition) 574 (Lesson 14.1 introduction)	Introduction to Anatomy & Physiology OLS: 588 (1st Check Your Understanding #1-#6)
(iv) examine the methods of fluid homeostasis in the urinary system, including fluid output	Introduction to Anatomy & Physiology OLS: 586-587 (Hormonal Regulation of Urine Volume and Composition) 574 (Lesson 14.1 introduction)	Introduction to Anatomy & Physiology OLS: 588 (1st Check Your Understanding #1-#6)

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

Breakout	Narrative	Activity
(iii) analyze the process of urine formation, including, reabsorption	Introduction to Anatomy & Physiology OLS: 582-584 (Reabsorption)	Introduction to Anatomy & Physiology OLS: 588 (1st Check Your Understanding, #3, #4) 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 secretion	Introduction to Anatomy & Physiology OLS: 584-585 (Secretion)	Introduction to Anatomy & Physiology OLS: 588 (1st Check Your Understanding, #4, #6) 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 between the nervous system, renal system, and muscular system before micturition	Introduction to Anatomy & Physiology OLS: 588-590 (Urine Excretion)	Introduction to Anatomy & Physiology OLS: 591 (Check Your Understanding #1)
(ii) describe the relationship between the nervous system, renal system, and muscular system during micturition	Introduction to Anatomy & Physiology OLS: 590-591 (step 5 and following paragraph)	Introduction to Anatomy & Physiology OLS: 591 (Check Your Understanding #2) 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 of the urinary system	Introduction to Anatomy & Physiology OLS: 595 (Figure 14.12) 596-598 (Diabetes) 600 (Chronic Kidney Disease) 601-602 (Urinary Tract Infections)	Introduction to Anatomy & Physiology OLS: 602 (Check Your Understanding #6) 602 (Know and Understand #3, #4, #5) 603 (Analyze and Apply #2)
(ii) identify common disorders of the urinary system	Introduction to Anatomy & Physiology OLS: 595 (Figure 14.12)	Introduction to Anatomy & Physiology OLS:

Breakout	Narrative	Activity
	600 (Kidney Stones) 599 (What Research Tells Us about Paired Kidney Transplants)	602 (Check Your Understanding #1, #4, #5) 608 (Thinking Critically #2) 599 (Taking It Further)
(iii) describe common diseases of the urinary system	Introduction to Anatomy & Physiology OLS: 595 (Figure 14.12) 596-598 (Diabetes) 600-602 (Chronic Kidney Disease, Urinary Tract Infections)	Introduction to Anatomy & Physiology OLS: 602 (Know and Understand #9) 603 (In the Lab #2) 608 (Lesson 14.3 Thinking Critically #3)
(iv) describe common disorders of the urinary system	Introduction to Anatomy & Physiology OLS: 595 (Figure 14.12) 599 (What Research Tells Us about Paired Kidney Transplants)	Introduction to Anatomy & Physiology OLS: 602 (Know and Understand #8) 608 (Lesson 14.3 Thinking 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 of the cardiovascular system, including transport	Introduction to Anatomy & Physiology OLS: 432 (Lesson 11.1 introduction)	Introduction to Anatomy & Physiology OLS: 440 (Know and Understand #1)
(ii) identify the major functions of the cardiovascular system, including maintaining homeostasis	Introduction to Anatomy & Physiology OLS: 432 (Lesson 11.1 introduction)	Introduction to Anatomy & Physiology OLS: 440 (Know and Understand #1)
(iii) identify the major functions of the cardiovascular system, including immune response	Introduction to Anatomy & Physiology OLS: 432 (Lesson 11.1 introduction)	Introduction to Anatomy & Physiology OLS: 440 (Know and Understand #1)

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

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

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 from the heart to the internal anatomy of the heart, including tissue layers	Introduction to Anatomy & Physiology OLS: 446-447 (Blood Vessel Layers) 449-454 (Systemic Circulation, Cardiac Circulation) 434 (Layers of the Heart)	Introduction to Anatomy & Physiology OLS: 449 (Check Your Understanding #1) 461 (Know and Understand #1) 479 (Lesson 11.3 Learning Key Terms and Concepts #1, #2, #3)
(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, including valves	435-436 (Blood Flow through the Heart)	440 (Analyze and Apply # 1)
(vii) investigate how systemic circulation transports nutrients 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)	Introduction to Anatomy & Physiology OLS: 449 (Check Your Understanding #1) 461 (Know and Understand #1) 479 (Lesson 11.3 Learning Key Terms and Concepts #1, #2, #3)
(viii) investigate how systemic circulation transports nutrients from the heart to the internal anatomy of the heart, including chambers	Introduction to Anatomy & Physiology OLS: 435-436 (Blood Flow through the Heart)	Introduction to Anatomy & Physiology OLS: 440 (In the Lab #1)
(ix) investigate how systemic circulation transports nutrients from the heart to the internal anatomy of the heart, including valves	Introduction to Anatomy & Physiology OLS: 435-436 (Blood Flow through the Heart)	Introduction to Anatomy & Physiology OLS: 440 (Know and Understand #3) 440 (Analyze and Apply # 1)
(x) investigate external anatomy of the heart, including coronary vessels	Introduction to Anatomy & Physiology OLS: 454 (Figure 11.19) 451-454 (Cardiac Circulation) 467-469 (Coronary Artery Disease)	Introduction to Anatomy & Physiology OLS: 456 (Check Your Understanding #3) 473 (Analyze and Apply #6)
(xi) illustrate how systemic circulation transports blood from the heart to the internal anatomy of the heart, including tissue layers	Introduction to Anatomy & Physiology OLS: 435 (Figure 11.4)	Introduction to Anatomy & Physiology OLS: 440 (In the Lab #1)
(xii) illustrate how systemic circulation transports blood from the heart to the internal anatomy of the heart, including chambers	Introduction to Anatomy & Physiology OLS: 435 (Figure 11.4)	Introduction to Anatomy & Physiology OLS: 440 (In the Lab #1, #3)
(xiii) illustrate how systemic circulation transports blood from the heart to the internal anatomy of the heart, including valves	Introduction to Anatomy & Physiology OLS: 433 (Figure 11.2) 435 (Figure 11.4)	Introduction to Anatomy & Physiology OLS: 433 (Figure 11.2 caption questions)
(xiv) illustrate how systemic circulation transports gasses from the heart to the internal anatomy of the heart, including tissue layers	Introduction to Anatomy & Physiology OLS: 448 (Figure 11.13)	Introduction to Anatomy & Physiology OLS: 440 (In the Lab #1)

Breakout	Narrative	Activity
(xv) illustrate how systemic circulation transports gasses from the heart to the internal anatomy of the heart, including chambers	Introduction to Anatomy & Physiology OLS: 448 (Figure 11.13)	Introduction to Anatomy & Physiology OLS: 440 (In the Lab #1, #3)
(xvi) illustrate how systemic circulation transports gasses from the heart to the internal anatomy of the heart, including valves	Introduction to Anatomy & Physiology OLS: 448 (Figure 11.13)	Introduction to Anatomy & Physiology OLS: 433 (Figure 11.2 caption questions)
(xvii) illustrate how systemic circulation transports nutrients from the heart to the internal anatomy of the heart, including tissue layers	Introduction to Anatomy & Physiology OLS: 448 (Figure 11.13)	Introduction to Anatomy & Physiology OLS: 440 (In the Lab #1)
(xviii) illustrate how systemic circulation transports nutrients from the heart to the internal anatomy of the heart, including chambers	Introduction to Anatomy & Physiology OLS: 448 (Figure 11.13)	Introduction to Anatomy & Physiology OLS: 440 (In the Lab #1, #3)
(xix) illustrate how systemic circulation transports nutrients from the heart to the internal anatomy of the heart, including valves	Introduction to Anatomy & Physiology OLS: 448 (Figure 11.13)	Introduction to Anatomy & Physiology OLS: 433 (Figure 11.2 caption questions)
(xx) illustrate external anatomy of the heart, including coronary vessels	Introduction to Anatomy & Physiology OLS: 454 (Figure 11.19)	Introduction to Anatomy & Physiology OLS: 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 between blood flow and blood pressure, including systolic pressure	Introduction to Anatomy & Physiology OLS: 436 (Cardiac Cycle) 458 (Measuring Blood Pressure)	Introduction to Anatomy & Physiology OLS: 440 (In the Lab #4) 459 (Check Your Understanding #4) 458 (Figure 11.24 caption question)
(ii) describe the relationship between blood flow and blood	Introduction to Anatomy & Physiology OLS: 436 (Cardiac Cycle)	Introduction to Anatomy & Physiology OLS: 440 (In the Lab #4)

Breakout	Narrative	Activity
pressure, including diastolic pressure	458 (Measuring Blood Pressure)	478 (Thinking Critically #4)
(iii) describe the relationship between blood flow and blood pressure, including pulse pressure	Introduction to Anatomy & Physiology OLS: 456 (Checking Your Pulse)	Introduction to Anatomy & Physiology OLS: 461 (Analyze and Apply #1, #3)
(iv) describe the relationship between blood flow and blood pressure, including mean arterial pressure	Introduction to Anatomy & Physiology OLS: 436 (Cardiac Cycle)	Introduction to Anatomy & Physiology OLS: 481 (Lab Investigations #3) 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 coronary, pulmonary, and systemic circulation	Introduction to Anatomy & Physiology OLS: 449-456 (Circulation: Moving Blood around the Body)	Introduction to Anatomy & Physiology OLS: 479 (Lesson 11.3 Learning Key Terms and Concepts #7, #8) 481 (Lab Investigations #2) 456 (Check Your Understanding #3)
(ii) describe the major vessels of [coronary circulation]	Introduction to Anatomy & Physiology OLS: 451-454 (Cardiac Circulation) 454 (Figure 11.19)	Introduction to Anatomy & Physiology OLS: 456 (Check Your Understanding #2, #3) 479 (Lesson 11.3 Learning Key Terms and Concepts #7)
(iii) describe the major vessels of [pulmonary circulation]	Introduction to Anatomy & Physiology OLS: 449 (Pulmonary Circulation)	Introduction to Anatomy & Physiology OLS: 456 (Check Your Understanding #1) 461 (Know and Understand #3)
(iv) describe the major vessels of [systemic circulation]	Introduction to Anatomy & Physiology OLS: 449-454 (Systemic Circulation)	Introduction to Anatomy & Physiology OLS: 461 (Know and Understand #4) 481 (Communicating about Anatomy & Physiology #1) 456 (Check Your Understanding #2)

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 waves of an electrocardiogram (EKG) demonstrate the conduction of electricity through the structures of the heart	Introduction to Anatomy & Physiology OLS: 443-444 (The Conduction System) 442 (Figure 11.7)	Introduction to Anatomy & Physiology OLS: 442 (Figure 11.7 caption question) 444 (Check Your Understanding questions)

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 between the cardiovascular system, nervous system, and muscular system in regulating cardiac output	Introduction to Anatomy & Physiology OLS: 441-443 (Internal and External Control of the Heart)	Introduction to Anatomy & Physiology OLS: 445 (Analyze and Apply #1) 443 (Check Your Understanding questions) 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 of the cardiovascular system	Introduction to Anatomy & Physiology OLS: 466-469 (Diseases of the Arteries) 471-472 (Peripheral Vascular Disease (PVD))	Introduction to Anatomy & Physiology OLS: 469 (Check Your Understanding questions)
(ii) identify common disorders of the cardiovascular system	Introduction to Anatomy & Physiology OLS: 463-466 (Cardiac Dysrhythmias, Valve Abnormalities, Inflammatory Conditions) 469-472 (Other Cardiovascular Diseases and Disorders)	Introduction to Anatomy & Physiology OLS: 465 (Check Your Understanding #1, #2) 466 (Check Your Understanding #1, #2) 473 (Know and Understand #1, #2, #3)
(iii) describe common diseases of the cardiovascular system	Introduction to Anatomy & Physiology OLS:	Introduction to Anatomy & Physiology OLS:

Breakout	Narrative	Activity
	466-469 (Diseases of the Arteries) 471-472 (Peripheral Vascular Disease (PVD))	469 (Check Your Understanding questions) 473 (Analyze and Apply #6)
(iv) describe common disorders of the cardiovascular system	Introduction to Anatomy & Physiology OLS: 463-466 (Cardiac Dysrhythmias, Valve Abnormalities, Inflammatory Conditions) 469-472 (Other Cardiovascular Diseases and Disorders)	Introduction to Anatomy & Physiology OLS: 473 (Analyze and Apply #2) 481 (Communicating about Anatomy & Physiology #2, #3, #4) 472 (Check Your Understanding 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 other body systems	Introduction to Anatomy & Physiology OLS: 484 (Lesson 12.1 introduction)	Introduction to Anatomy & Physiology OLS: 493 (Know and Understand #1) 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 the lymphatic organs	Introduction to Anatomy & Physiology OLS: 488-492 (Lymphatic Cells, Tissues, and Organs)	Introduction to Anatomy & Physiology OLS: 492 (Check Your Understanding #2, #4) 493 (Know and Understand #5)
(ii) describe function of the lymphatic organs	Introduction to Anatomy & Physiology OLS: 484-486 (Lymph Formation and Flow) 486-488 (Lymph Drainage)	Introduction to Anatomy & Physiology OLS: 524 (Thinking Critically #1) 493 (In the Lab #1) 493 (Analyze and Apply #3)

Breakout	Narrative	Activity
(iii) explain how lymph moves through the body	Introduction to Anatomy & Physiology OLS: 484-486 (Lymph Formation and Flow) 486-488 (Lymph Drainage)	Introduction to Anatomy & Physiology OLS: 488 (Check Your Understanding #4) 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 immune cells, including T cells, within the lymphatic system structures	Introduction to Anatomy & Physiology OLS: 488-489 (Lymphatic Cells) 490 (Lymph Nodes) 505 (Lymphocytes)	Introduction to Anatomy & Physiology OLS: 493 (Know and Understand #6) 509 (2nd Check Your Understanding, #1)
(ii) identify the role of the immune cells, including B cells, within the lymphatic system structures	Introduction to Anatomy & Physiology OLS: 488-489 (Lymphatic Cells) 504 (Immune System Cells) 506 (Plasma Cells)	Introduction to Anatomy & Physiology OLS: 505 (Check Your Understanding #1) 493 (Know and Understand #6)
(iii) identify the function of the immune cells, including T cells, within the lymphatic system structures	Introduction to Anatomy & Physiology OLS: 509 (Cellular Immunity) 498-499 (Interferons)	Introduction to Anatomy & Physiology OLS: 509 (2nd Check Your Understanding, #2) 493 (Know and Understand #6)
(iv) identify the function of the immune cells, including B cells, within the lymphatic system structures	Introduction to Anatomy & Physiology OLS: 488-489 (Lymphatic Cells) 504 (Immune System Cells) 506 (Plasma Cells)	Introduction to Anatomy & Physiology OLS: 493 (Know and Understand #6) 524 (Lesson 12.1 Learning Key Terms and Concepts #7)
(v) describe the role of the immune cells, including T cells, within the lymphatic system structures	Introduction to Anatomy & Physiology OLS: 488-489 (Lymphatic Cells) 490 (Lymph Nodes) 504 (Figure 12.12)	Introduction to Anatomy & Physiology OLS: 493 (Know and Understand #6) 509 (2nd Check Your Understanding, #1)
(vi) describe the role of the immune cells, including B cells, within the lymphatic system structures	Introduction to Anatomy & Physiology OLS: 488-489 (Lymphatic Cells) 504 (Immune System Cells) 506 (Plasma Cells)	Introduction to Anatomy & Physiology OLS: 493 (Know and Understand #6) 524 (Lesson 12.1 Learning Key Terms and Concepts #7)
(vii) describe the function of the immune cells, including T cells, within the lymphatic system structures	Introduction to Anatomy & Physiology OLS: 509 (Cellular Immunity) 498-499 (Interferons)	Introduction to Anatomy & Physiology OLS: 509 (2nd Check Your Understanding, #2) 493 (Know and Understand #6)

Breakout	Narrative	Activity
(viii) describe the function of the immune cells, including B cells, within the lymphatic system structures	Introduction to Anatomy & Physiology OLS: 488-489 (Lymphatic Cells) 504 (Immune System Cells) 506 (Plasma Cells)	Introduction to Anatomy & Physiology OLS: 493 (Know and Understand #6) 524 (Lesson 12.1 Learning Key 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, including Rhesus (Rh) factor	Introduction to Anatomy & Physiology OLS: 409-411 (Lesson 10.2: Blood Types)	Introduction to Anatomy & Physiology OLS: 412 (Know and Understand #2, #5, #6) 412 (In the Lab #1, #2) 427 (Lesson 10.2 Thinking Critically #1, #2)
(ii) determine antigens associated with ABO blood typing, including Rhesus (Rh) factor	Introduction to Anatomy & Physiology OLS: 409-411 (Lesson 10.2: Blood Types)	Introduction to Anatomy & Physiology OLS: 411 (1st Check Your Understanding, #1) 411 (2nd Check Your Understanding, #1) 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 body protects against disease, including inflammation	Introduction to Anatomy & Physiology OLS: 501 (Figure 12.10) 500 (Inflammatory Response)	Introduction to Anatomy & Physiology OLS: 500 (2nd Check Your Understanding, #1) 501 (Figure 12.10 caption question)
(ii) summarize the ways the body protects 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)

Breakout	Narrative	Activity
(iii) summarize the ways the body protects 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)
(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 antigens in the immune response	Introduction to Anatomy & Physiology OLS: 503-510 (Lesson 12.3: Specific Defenses) 504 (Antigens)	Introduction to Anatomy & Physiology OLS: 511 (Know and Understand #1) 511 (Analyze and Apply #1-#3) 504 (Check Your Understanding #1, #2)
(ii) describe the role of antibodies in the immune response	Introduction to Anatomy & Physiology OLS: 506-508 (Antibodies) 509 (1st paragraph) 498 (Complement System)	Introduction to Anatomy & Physiology OLS: 509 (1st Check Your Understanding #2) 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.

Breakout	Narrative	Activity
(i) identify common diseases associated with the lymphatic system	Introduction to Anatomy & Physiology OLS: 512-514 (Cancer and Lymph Nodes) 513 (Figure 12.18)	Introduction to Anatomy & Physiology OLS: 514 (Check Your Understanding #2) 526 (Thinking Critically #1, #2)
(ii) identify common disorders associated with the lymphatic system	Introduction to Anatomy & Physiology OLS: 513 (Figure 12.18)	Introduction to Anatomy & Physiology OLS: 519 (In the Lab #4)
(iii) describe common diseases associated with the lymphatic system	Introduction to Anatomy & Physiology OLS: 512-514 (Cancer and Lymph Nodes)	Introduction to Anatomy & Physiology OLS: 519 (Analyze and Apply #1) 514 (Check Your Understanding #1)
(iv) describe common disorders associated with the lymphatic system	Introduction to Anatomy & Physiology OLS: 513 (Figure 12.18)	Introduction to Anatomy & Physiology OLS: 519 (In the Lab #4)
(v) identify common diseases associated with the immune system	Introduction to Anatomy & Physiology OLS: 517 (HIV and AIDS) 513 (Figure 12.18)	Introduction to Anatomy & Physiology OLS: 516 (Check Your Understanding #1-#3) 517 (2nd Check Your Understanding #2)
(vi) identify common disorders associated with the immune system	Introduction to Anatomy & Physiology OLS: 516-517 (Autoimmune Disorders) 514-516 (Allergies) 513 (Figure 12.18)	Introduction to Anatomy & Physiology OLS: 519 (Analyze and Apply #2, 3, 4) 517 (1st Check Your Understanding #1)
(vii) describe common diseases associated with the immune system	Introduction to Anatomy & Physiology OLS: 517 (HIV and AIDS) 513 (Figure 12.18)	Introduction to Anatomy & Physiology OLS: 516 (Check Your Understanding #1-#3) 517 (2nd Check Your Understanding #1)
(viii) describe common disorders associated with the immune system	Introduction to Anatomy & Physiology OLS: 516-517 (Autoimmune Disorders) 514-516 (Allergies) 513 (Figure 12.18)	Introduction to Anatomy & Physiology OLS: 517 (1st Check Your Understanding #2) 519 (Know and Understand #8)

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 digestive processes	Introduction to Anatomy & Physiology OLS: 538 (1st and 2nd paragraphs)	Introduction to Anatomy & Physiology OLS: 556 (In the Lab #3) 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 which energy is processed within the body, including ingestion	Introduction to Anatomy & Physiology OLS: 537-538 (Activities of Digestion) 542 (1st paragraph)	Introduction to Anatomy & Physiology OLS: 555 (Check Your Understanding #1)

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

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

Breakout	Narrative	Activity
	561-564 (Diseases and Disorders of the Accessory Organs)	571 (Analyzing and Evaluating Data #1-#5)
(iv) describe common disorders of the digestive system	Introduction to Anatomy & Physiology OLS: 558 (Figure 13.22) 560 (Constipation and Diarrhea) 562-563 (Gallstones)	Introduction to Anatomy & Physiology OLS: 563 (Check Your Understanding #3) 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 system	Introduction to Anatomy & Physiology OLS: 358-364 (Lesson 9.1: Anatomy of the Respiratory System)	Introduction to Anatomy & Physiology OLS: 362 (Check Your Understanding #1) 364 (Check Your Understanding #1) 365 (In the Lab #1)
(ii) identify the anatomical functions of the respiratory system	Introduction to Anatomy & Physiology OLS: 358-364 (Lesson 9.1: Anatomy of the Respiratory System)	Introduction to Anatomy & Physiology OLS: 362 (Check Your Understanding #2, #5) 364 (Check Your Understanding #2) 365 (Analyze and Apply #4, #6)
(iii) sequence the anatomical structures of the respiratory system	Introduction to Anatomy & Physiology OLS: 358-361 (The Upper Respiratory Tract) 362-364 (The Lower Respiratory Tract)	Introduction to Anatomy & Physiology OLS: 365 (In the Lab #1)
(iv) sequence the anatomical functions of the respiratory system	Introduction to Anatomy & Physiology OLS: 358-364 (Lesson 9.1: Anatomy of the Respiratory System) 366-368 (Respiration)	Introduction to Anatomy & Physiology OLS: 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 functions of upper and lower respiratory tract	Introduction to Anatomy & Physiology OLS: 358-361 (The Upper Respiratory Tract, 1st paragraph) 362-364 (The Lower Respiratory Tract, 1st paragraph)	Introduction to Anatomy & Physiology OLS: 365 (Analyze and Apply #6)

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 respiration	Introduction to Anatomy & Physiology OLS: 366 (Respiration) 449 (Capillaries) 396 (Figure 10.1)	Introduction to Anatomy & Physiology OLS: 449 (Check Your Understanding #4) 479 (Lesson 11.3 Thinking Critically #2)
(ii) describe the physiology of respiration, including external respiration	Introduction to Anatomy & Physiology OLS: 366-368 (Respiration) 368-370 (Control of Breathing)	Introduction to Anatomy & Physiology OLS: 368 (Check Your Understanding #1-#3) 370 (Check Your Understanding #1-#5) 374 (Analyze and Apply #1, #2)
(iii) describe the physiology of respiration, including gas exchange	Introduction to Anatomy & Physiology OLS: 366 (Respiration) 449 (Capillaries) 447 (Figure 11.11)	Introduction to Anatomy & Physiology OLS: 449 (Check Your Understanding #4) 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 between the respiratory and cardiovascular systems during pulmonary circulation	Introduction to Anatomy & Physiology OLS: 449 (Pulmonary Circulation) 370 (Peripheral Chemoreceptors)	Introduction to Anatomy & Physiology OLS: 461 (Know and Understand #3) 390 (Lesson 9.2 Thinking Critically #1, #2)

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

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 of the respiratory system	Introduction to Anatomy & Physiology OLS: 375-384 (Lesson 9.3: Respiratory Disorders and Diseases)	Introduction to Anatomy & Physiology OLS: 385 (Know and Understand #1) 377 (Check Your Understanding #2, #3) 381 (Check Your Understanding #3)
(ii) describe common diseases of the respiratory system	Introduction to Anatomy & Physiology OLS: 375-384 (Lesson 9.3: Respiratory Disorders and Diseases)	Introduction to Anatomy & Physiology OLS: 378 (Check Your Understanding #2) 381 (Check Your Understanding #1, #2) 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 development of cells	Introduction to Anatomy & Physiology OLS: 615 (Embryonic and Fetal Development) 634-636 (From Fertilization to Implantation)	Introduction to Anatomy & Physiology OLS: 638 (1st Check Your Understanding #2) 641 (In the Lab #2)
(ii) explain embryological development of tissues	Introduction to Anatomy & Physiology OLS: 615 (Embryonic and Fetal Development) 636-638 (Development of the Embryo, Placenta, and Fetus)	Introduction to Anatomy & Physiology OLS: 640 (Know and Understand #6) 641 (In the Lab #2)
(iii) explain embryological development of organs	Introduction to Anatomy & Physiology OLS: 615 (Embryonic and Fetal Development) 636-638 (Development of the Embryo, Placenta, and Fetus)	Introduction to Anatomy & Physiology OLS: 640 (Analyze and Apply #1) 641 (In the Lab #2)
(iv) explain embryological development of systems	Introduction to Anatomy & Physiology OLS: 615 (Embryonic and Fetal Development) 636-638 (Development of the Embryo, Placenta, and Fetus)	Introduction to Anatomy & Physiology OLS: 638 (1st Check Your Understanding #4) 641 (In the Lab #2)

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) 625 (Figure 15.8)	Introduction to Anatomy & Physiology OLS: 632 (Know and Understand #1, #3) 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 the external female reproductive organs	Introduction to Anatomy & Physiology OLS: 626 (Figure 15.9)	Introduction to Anatomy & Physiology OLS: 626 (Figure 15.9 caption question)
(v) describe the structure of the external female reproductive organs	Introduction to Anatomy & Physiology OLS: 626 (The External Genitalia)	Introduction to Anatomy & Physiology OLS: 632 (Know and Understand #6)
(vi) describe the functions of the external female reproductive organs	Introduction to Anatomy & Physiology OLS: 626 (The External Genitalia)	Introduction to Anatomy & Physiology OLS: 657 (Lesson 15.3 Thinking Critically #4)
(vii) describe the location of the female accessory glands	Introduction to Anatomy & Physiology OLS: 626 (Figure 15.9) 627 (Figure 15.10)	Introduction to Anatomy & Physiology OLS: 627 (Check Your Understanding #2)
(viii) describe the structure of the female accessory glands	Introduction to Anatomy & Physiology OLS: 626 (External Genitalia, 3rd paragraph) 627 (The Mammary Glands)	Introduction to Anatomy & Physiology OLS: 627 (Check Your Understanding #2) 632 (In the Lab #1)
(ix) describe the functions of the female accessory glands	Introduction to Anatomy & Physiology OLS: 626 (External Genitalia, 3rd paragraph) 627 (The Mammary Glands)	Introduction to Anatomy & Physiology OLS: 632 (Know and Understand #7) 632 (In the Lab #1) 627 (Check Your Understanding #5)
(x) describe the location of the internal male reproductive organs	Introduction to Anatomy & Physiology OLS: 619 (Figure 15.4)	Introduction to Anatomy & Physiology OLS: 622 (Know and Understand #4) 619 (Figure 15.4 caption question)
(xi) describe the structure of the internal male reproductive organs	Introduction to Anatomy & Physiology OLS: 619-620 (Ducts of the Male Reproductive System) 618 (Scrotum and Testes)	Introduction to Anatomy & Physiology OLS: 621 (1st Check Your Understanding #1) 622 Know and Understand #2)
(xii) describe the functions of the internal male reproductive organs	Introduction to Anatomy & Physiology OLS: 619-620 (Ducts of the Male Reproductive System) 618 (Scrotum and Testes)	Introduction to Anatomy & Physiology OLS: 622 (Analyze and Apply #3) 622 (In the Lab #2)
(xiii) describe the location of the external male reproductive organs	Introduction to Anatomy & Physiology OLS: 619 (Figure 15.4)	Introduction to Anatomy & Physiology OLS: 622 (Analyze and Apply #3)
(xiv) describe the structure of the external male reproductive organs	Introduction to Anatomy & Physiology OLS: 618 (Scrotum and Testes) 618-619 (Penis)	Introduction to Anatomy & Physiology OLS: 622 (Know and Understand #2) 622 (Analyze and Apply #3)

Breakout	Narrative	Activity
(xv) describe the functions of the external male reproductive organs	Introduction to Anatomy & Physiology OLS: 618 (Scrotum and Testes) 618-619 (Penis) 621 (Sexual Response)	Introduction to Anatomy & Physiology OLS: 622 (Analyze and Apply #3)
(xvi) describe the location of the male accessory glands	Introduction to Anatomy & Physiology OLS: 620 (Figure 15.5)	Introduction to Anatomy & Physiology OLS: 621 (1st Check Your Understanding #1) 622 (Know and Understand #4)
(xvii) describe the structure of the male accessory glands	Introduction to Anatomy & Physiology OLS: 620 (Accessory Glands and Semen)	Introduction to Anatomy & Physiology OLS: 621 (1st Check Your Understanding #1)
(xviii) describe the functions of the male accessory glands	Introduction to Anatomy & Physiology OLS: 620 (Accessory Glands and Semen)	Introduction to Anatomy & Physiology OLS: 622 (Know and Understand #3) 621 (2nd Check Your Understanding #1)
(xix) examine the location of the internal female reproductive organs	Introduction to Anatomy & Physiology OLS: 624 (Figure 15.7) 625 (Figure 15.8)	Introduction to Anatomy & Physiology OLS: 632 (Know and Understand #1, #3) 656 (Lesson 15.3 Thinking Critically #2)
(xx) examine 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)
(xxi) examine 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)
(xxii) examine the location of the external female reproductive organs	Introduction to Anatomy & Physiology OLS: 626 (Figure 15.9)	Introduction to Anatomy & Physiology OLS: 626 (Figure 15.9 caption question)
(xxiii) examine the structure of the external female reproductive organs	Introduction to Anatomy & Physiology OLS: 626 (The External Genitalia)	Introduction to Anatomy & Physiology OLS: 632 (Know and Understand #6)
(xxiv) examine the functions of the external female reproductive organs	Introduction to Anatomy & Physiology OLS: 626 (The External Genitalia)	Introduction to Anatomy & Physiology OLS: 657 (Lesson 15.3 Thinking Critically #4)

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

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

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

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

Breakout	Narrative	Activity
(i) identify the hormones involved in maturation, including puberty	Introduction to Anatomy & Physiology OLS: 616 (Puberty) 335 (Life Span Development: The Endocrine System) 105 (Life Span Development, The Integumentary System, 3rd and 4th paragraphs)	Introduction to Anatomy & Physiology OLS: 616 (Check Your Understanding #2) 656 (Lesson 15.1 Learning Key Terms and Concepts #6)
(ii) identify the hormones involved in maturation, 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)
(iii) identify 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)
(iv) identify 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: The Integumentary System, 3rd and 4th paragraphs)	Introduction to Anatomy & Physiology OLS: 616 (Check Your Understanding #2) 656 (Lesson 15.1 Learning Key Terms and Concepts #6)
(v) identify 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)
(vi) identify 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)
(vii) distinguish the hormones involved in maturation, including puberty	Introduction to Anatomy & Physiology OLS: 616 (Puberty) 335 (Life Span Development: The Endocrine System) 105 (Life Span Development: The Integumentary System, 2nd column, last paragraph)	Introduction to Anatomy & Physiology OLS: 616 (Check Your Understanding #2) 656 (Lesson 15.1 Learning Key Terms and Concepts #6)
(viii) distinguish the hormones involved in maturation, including gestation	Introduction to Anatomy & Physiology OLS: 636 (1st four paragraphs) 638 (Childbirth)	Introduction to Anatomy & Physiology OLS: 639 (Check Your Understanding #2)

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

Breakout	Narrative	Activity
(iv) describe common disorders of the reproductive system	Introduction to Anatomy & Physiology OLS: 642-644 (Infertility)	Introduction to Anatomy & Physiology OLS: 644 (Check Your Understanding #2, #3, #4) 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 science at the organ level	Introduction to Anatomy & Physiology OLS: 36 (2nd paragraph) 81 (What Research Tells Us about Artificial Tissues, Organs, and Wearables)	Introduction to Anatomy & Physiology OLS: 36 (Check Your Understanding #3) 45 (Communicating about Anatomy & Physiology #2) 465 (Taking It Further)
(ii) research advances in medicine at the organ level	Introduction to Anatomy & Physiology OLS: 36 (2nd paragraph) 81 (What Research Tells Us about Artificial Tissues, Organs, and Wearables) 596 (Diabetes Mellitus, 7th paragraph)	Introduction to Anatomy & Physiology OLS: 36 (Check Your Understanding #3) 45 (Communicating about Anatomy & Physiology #2) 465 (Taking It Further)
(iii) research advances in science at the tissue level	Introduction to Anatomy & Physiology OLS: 81 (What Research Tells Us about Artificial Tissues, Organs, and Wearables) 174 (What Research Tells Us about Bone Tissue Engineering)	Introduction to Anatomy & Physiology OLS: 174 (Taking It Further #1)
(iv) research advances in medicine at the tissue level	Introduction to Anatomy & Physiology OLS: 81 (What Research Tells Us about Artificial Tissues, Organs, and Wearables)	Introduction to Anatomy & Physiology OLS: 174 (Taking It Further #1)
(v) discuss advances in science at the organ level	Introduction to Anatomy & Physiology OLS: 36 (2nd paragraph)	Introduction to Anatomy & Physiology OLS: 36 (Check Your Understanding #3) 45 (Communicating about Anatomy & Physiology #2)

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

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



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