

**Inquiry Investigations™**  
**Human Biology and Health Issues MODULE - 1287211**  
**Grades: 7-10**

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**Washington D.C. Learning Standards**  
**Science**  
**Grade 7**

CONTENT STANDARD / STRAND	DC.7.1.	Scientific Thinking and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:
STANDARD / ESSENTIAL SKILL	7.1.4.	<p>Recognize testable hypotheses in investigations that pertain to the content under study, and write instructions others can follow in carrying out the investigation.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1:</li> </ul>

		<p>Modeling Kidney Function</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
<p>STANDARD / ESSENTIAL SKILL</p>	<p>7.1.6.</p>	<p>Incorporate circle charts, bar and line graphs, diagrams, scatter plots, and symbols into writing, such as lab or research reports, to serve as visual displays of evidence for claims and/or conclusions.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2:</li> </ul>

		<p>Physical and Microscopic Characteristics of Urine</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> </ul>
CONTENT STANDARD / STRAND	DC.7.2.	Science and Technology: Broad Concept: Although each of the human enterprises of science and technology has a character and history of its own, each is dependent on and reinforces the other. Students:
STANDARD / ESSENTIAL SKILL	7.2.1.	<p>Explain types of technology that are developed and in use such as in agriculture, manufacturing, sanitation, medicine, warfare, transportation, information processing, and communication.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Human Health Issues and Disease</li> </ul>
CONTENT STANDARD / STRAND	DC.7.3.	Biological Classification: Broad Concept: Similarities are used to classify organisms since they may be used to infer the degree of relatedness among organisms. As a basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	7.3.4.	<p>Describe how similarities among organisms are found in external and internal anatomical features, including specific characteristics at the cellular level, such as the number of chromosomes.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A</li> </ul>

		<p>Closer Look at Blood</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Teacher Resource CD: Human Health Issues and Disease</li> <li>• Teacher Resource CD: Human Physiology</li> <li>• Teacher Resource CD: The Human Machine</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
<b>CONTENT STANDARD / STRAND</b>	<b>DC.7.4.</b>	<b>Cell Biology: Broad Concept: All living things are composed of cells, from just one to many quadrillions, whose details usually are visible only through a microscope. As a basis for understanding this concept, students:</b>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>7.4.1.</b>	<p>Investigate and explain that all living things are composed of one or more cells; cells are organisms' basic units of structure and function; and cells come only from existing cells (Theodor Schwann's and Matthias Schleiden's cell theory).</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Teacher Resource CD: Human Physiology</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>7.4.2.</b>	<p>Describe that the way in which cells function is similar in all living organisms.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2:</li> </ul>

		<p>Exploring Transdermal Drug Delivery</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Teacher Resource CD: Human Physiology</li> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	7.4.3.	<p>Explain that in those cells that contain a nucleus (eukaryotic plant and animal cells), the nucleus is the main repository for genetic information.</p> <ul style="list-style-type: none"> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	7.4.7.	<p>Observe and explain that about two-thirds of the mass of a typical cell is accounted for by water, and that water gives cells many of their properties.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Teacher Resource CD: Human Physiology</li> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	7.4.9.	<p>Explain how cells in multicellular organism continually divide to make more cells for growth and repair, and various organs and tissues function to serve the needs of cells for food, air, and waste removal.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>Teacher Resource CD: The Human Machine</li> </ul>
STANDARD / ESSENTIAL SKILL	7.4.11.	<p>Construct a chart and describe that multicellular organisms are organized hierarchically from cells to tissues to organs to organ systems to organisms.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Teacher Resource CD: The Human Machine</li> </ul>
CONTENT STANDARD / STRAND	DC.7.7.	<p>Human Body: Broad Concept: Human beings have body systems for obtaining and providing energy, defense, reproduction, and the coordination of body functions. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	7.7.1.	<p>Describe the specific functions and roles of each major human body system, including digestive, respiratory, excretory, reproductive, circulatory, nervous, endocrine, musculoskeletal, and immune system.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> </ul>

		<ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Teacher Resource CD: Human Physiology</li> <li>• Teacher Resource CD: The Human Machine</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	7.7.2.	<p>Explain that human beings have many similarities and differences, and the similarities make it possible for human beings to donate blood and organs to one another.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is</li> </ul>

		<p>There a Hole in Your Hand?</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Teacher Resource CD: Human Health Issues and Disease</li> <li>• Teacher Resource CD: Human Physiology</li> <li>• Teacher Resource CD: The Human Machine</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	7.7.3.	<p>Explain how the amount of food energy (usually measured in Calories) that a person requires varies with body weight, age, sex, activity level, and metabolic rate.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Teacher Resource CD: Human Physiology</li> </ul>
STANDARD / ESSENTIAL SKILL	7.7.5.	<p>Identify specific examples of how viruses, bacteria, fungi, and more complex parasites may infect the human body and interfere with normal body functions.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> </ul>

		<ul style="list-style-type: none"> <li>Teacher Resource CD: Human Health Issues and Disease</li> </ul>
STANDARD / ESSENTIAL SKILL	7.7.6.	<p>Explain how white blood cells engulf invaders or produce antibodies that attack invaders or mark the invaders for killing by other white blood cells. Know these white cells are part of a larger system that produces 'immunity' or the capacity to resist disease due to pathogens.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>Teacher Resource CD: Human Health Issues and Disease</li> <li>Teacher Resource CD: The Human Machine</li> </ul>
STANDARD / ESSENTIAL SKILL	7.7.7.	<p>Know that antibodies produced in response to an invader can remain for long periods in the system and can fight off subsequent invaders of the same kind.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>Teacher Resource CD: Human Health Issues and Disease</li> <li>Teacher Resource CD: The Human Machine</li> </ul>
STANDARD / ESSENTIAL SKILL	7.7.9.	<p>Research and explain the contributions of key scientists that have studied infection by disease organisms (germs), including Anton van Leeuwenhoek, Louis Pasteur, Joseph Lister, Robert Koch, Dimitri Iwanowski, and Alexander Fleming.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>Teacher Resource CD: Human Health Issues and Disease</li> </ul>
STANDARD / ESSENTIAL SKILL	7.7.10.	<p>Explain how fundamental changes in health practices have resulted from the establishment of the germ theory of disease.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>Teacher Resource CD: Human Health Issues and Disease</li> <li>Teacher Resource CD: Human Physiology</li> </ul>
CONTENT STANDARD / STRAND	DC.7.8.	<p>Ecology: Broad Concept: Organisms in ecosystems exchange energy and nutrients among themselves and with the physical environment. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	7.8.5.	<p>Describe how organisms that eat plants break down the plant structures to produce the materials and energy that they need to survive, and in turn, other organisms consume them.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>Teacher Resource CD: Human Physiology</li> </ul>

Washington D.C. Learning Standards  
Science  
Grade 8

CONTENT STANDARD /	DC.8.1.	<p>Scientific Thinking and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations.</p>
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STRAND		As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:
STANDARD / ESSENTIAL SKILL	8.1.5.	<p>Write clear step-by-step instructions (procedural summaries) for conducting investigations.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> </ul>

		<ul style="list-style-type: none"> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	8.1.6.	<p>Participate in group discussions on scientific topics by restating or summarizing accurately what others have said, asking for clarification or elaboration, and expressing alternative positions.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> </ul>

		<ul style="list-style-type: none"> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	8.1.7.	<p>Use tables, charts, and graphs in making arguments and claims in presentations about lab work.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> </ul>
STANDARD / ESSENTIAL	8.1.12.	Apply simple mathematical models to problems (e.g., formulas such as $F =$

SKILL		<p>ma).</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> </ul>
CONTENT STANDARD / STRAND	DC.8.2.	Structure of Matter: Broad Concept: Elements have distinct macroscopic properties and atomic structures. As a basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	8.2.3.	<p>Using a periodic chart, explain that the atoms of any element are similar to each other, but they are different from atoms of other elements. Know the atoms of a given isotope are identical to each other.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> </ul>
STANDARD / ESSENTIAL SKILL	8.2.5.	<p>Know there are more than 100 elements that combine in a multitude of ways to produce compounds that make up all the living and non-living things in the universe.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> </ul>
CONTENT STANDARD / STRAND	DC.8.3.	Reactions: Broad Concept: Chemical reactions are processes in which atoms are rearranged into different combinations of molecules. As a basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	8.3.6.	<p>Recognize that solutions can be acidic, basic, or neutral depending on the concentration of hydrogen ions in the solution. Understand that because this concentration can vary over a very large range, the logarithmic (each increase of one in the pH scale is an increase of 10 times in concentration) pH scale is used to describe how acidic or basic a solution is.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> </ul>
STANDARD / ESSENTIAL SKILL	8.3.7.	<p>Recognize that indicators of chemical changes include temperature change, the production of a gas, the production of a precipitate, or a color change.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> </ul>
CONTENT STANDARD / STRAND	DC.8.8.	Waves: Broad Concept: Waves have characteristic properties that are common to all types of wave. As a basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	8.8.7.	<p>Recognize that human eyes respond to a narrow range of wavelengths of the electromagnetic spectrum (red through violet) called visible light.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1:</li> </ul>

		<p>Learning How Our Body is Organized and Functions</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Teacher Resource CD: The Human Machine</li> </ul>
STANDARD / ESSENTIAL SKILL	8.8.8.	<p>Summarize how something can be 'seen' when light waves emitted or reflected by an object enter the eye just as something can be 'heard' when sound waves from it enter the ear.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Teacher Resource CD: The Human Machine</li> </ul>

Washington D.C. Learning Standards  
Science  
Grade 9

CONTENT STANDARD / STRAND	DC.ES.1.	<p>Earth Science: Scientific Investigation and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:</p>
STANDARD / ESSENTIAL SKILL	ES.1.4.	<p>Recognize the use and limitations of models and theories as scientific representations of reality.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2:</li> </ul>

		<p>A Closer Look at Blood</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> </ul>
<p>STANDARD / ESSENTIAL SKILL</p>	<p>ES.1.10.</p>	<p>Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on manual graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.)</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2:</li> </ul>

		<p>Exploring Transdermal Drug Delivery</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	ES.1.13.	<p>Apply mathematical relationships involving proportionalities, linear relations, quadratic equations, simple trigonometric relationships, exponential growth and decay laws, and logarithmic relationships to scientific situations.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> </ul>
STANDARD / ESSENTIAL SKILL	ES.1.14.	<p>Recognize the implications of statistical variability in experiments and explain the need for controls in experiments.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> </ul>
CONTENT STANDARD / STRAND	DC.ES.2.	<p>Earth Science: The Universe: Broad Concept: Galaxies are made of billions of stars and form most of the visible mass of the universe. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	ES.2.7.	<p>Describe how elements with an atomic number greater than helium have been formed by nuclear fusion processes in stars.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> </ul>
CONTENT STANDARD / STRAND	DC.B.1.	<p>Biology: Scientific Investigation and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:</p>
STANDARD / ESSENTIAL SKILL	B.1.4.	<p>Recognize the use and limitations of models and theories as scientific representations of reality.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 2:</li> </ul>

		<p>A Closer Look at Blood</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> </ul>
<p>STANDARD / ESSENTIAL SKILL</p>	<p>B.1.6.</p>	<p>Plan and conduct scientific investigations to explore new phenomena, to check on previous results, to verify or falsify the prediction of a theory, and to use a crucial experiment to discriminate between competing theories.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> </ul>

		<ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	B.1.10.	<p>Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on manual graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.)</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> </ul>

		<ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	B.1.11.	<p>Formulate and revise explanations using logic and evidence.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> </ul>

		<ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	B.1.13.	<p>Apply mathematical relationships involving linear and quadratic equations, simple trigonometric relationships, exponential growth and decay laws, and logarithmic relationships to scientific situations.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> </ul>
STANDARD / ESSENTIAL SKILL	B.1.16.	<p>Recognize and deal with the implications of statistical variability in experiments and explain the need for controls in experiments.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> </ul>
CONTENT STANDARD / STRAND	DC.B.2.	<p>Biology: Chemistry of Living Things: Broad Concept: Living things are made of atoms bonded together to form molecules, some of the most important of which are large and contain carbon (i.e., 'organic' compounds). As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	B.2.3.	<p>Describe the central role of carbon in the chemistry of living things because of its ability to combine in many ways with itself and other elements.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Teacher Resource CD: Human Physiology</li> </ul>
STANDARD / ESSENTIAL SKILL	B.2.4.	<p>Know that living things are made of molecules largely consisting of carbon, hydrogen, nitrogen, oxygen, phosphorus, and sulfur.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> </ul>

		<ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Teacher Resource CD: Human Physiology</li> </ul>
STANDARD / ESSENTIAL SKILL	B.2.5.	<p>Know that living things have many different kinds of molecules, including small ones such as water, medium-sized ones such as sugars, amino acids, and nucleotides, and large ones such as starches, proteins, and DNA.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Human Physiology</li> </ul>
STANDARD / ESSENTIAL SKILL	B.2.7.	<p>Explain the hierarchical organization of living things from least complex to most complex (subatomic, atomic, molecular, cellular, tissue, organs, organ system, organism, population, community, ecosystem, biosphere).</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Teacher Resource CD: The Human Machine</li> </ul>
CONTENT STANDARD / STRAND	DC.B.3.	<p>Biology: Cell Biology: Broad Concept: All living things are composed of cells. All the fundamental life processes of a cell are either chemical reactions or molecular interactions. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	B.3.3.	<p>Observe and describe that within the cell are specialized parts for the transport of materials, energy capture and release, waste disposal, and motion of the whole cell or of its parts.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Teacher Resource CD: Human Physiology</li> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	B.3.5.	<p>Demonstrate and explain that cell membranes act as highly selective permeable barriers to penetration of substances by diffusion or active transport.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Teacher Resource CD: Human Physiology</li> </ul>
STANDARD / ESSENTIAL SKILL	B.3.9.	<p>Explain that a complex network of proteins provides organization and shape to cells.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin</li> </ul>

		<p>Cells</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Teacher Resource CD: Human Physiology</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	B.3.12.	<p>Explain how cell activity in a multicellular plant or animal can be affected by molecules from other parts of the organism.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: The Human Machine</li> </ul>
STANDARD / ESSENTIAL SKILL	B.3.13.	<p>Explain why communication and/or interaction are required between cells to coordinate their diverse activities.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Teacher Resource CD: Human Physiology</li> </ul>
CONTENT STANDARD / STRAND	DC.B.4.	<p>Biology: Genetics: Broad Concept: Genes are a set of instructions encoded in the DNA sequence of each organism that specify the sequence of amino acids in proteins characteristic of that organism. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	B.4.9.	<p>Understand and explain that specialization of cells is almost always due to different patterns of gene expression rather than differences in the genes themselves.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: The Human Machine</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
CONTENT STANDARD / STRAND	DC.B.7.	<p>Biology: Mammalian Body: Broad Concept: As a result of the coordinated structures and functions of organ systems, the internal environment of the mammalian body remains relatively stable (homeostatic), despite changes in the outside environment. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	B.7.1.	<p>Explain the major systems of the mammalian body (digestive, respiratory, reproductive, circulatory, excretory, nervous, endocrine, integumentary, immune, skeletal, and muscular) and how they interact with each other.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> </ul>

		<ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Teacher Resource CD: Human Physiology</li> <li>• Teacher Resource CD: The Human Machine</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	B.7.2.	<p>Analyze the complementary activity of major body systems, such as how the respiratory and circulatory systems provide cells with oxygen and nutrients, and remove toxic waste products such as carbon dioxide.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Teacher Resource CD: The Human Machine</li> </ul>
STANDARD / ESSENTIAL SKILL	B.7.3.	<p>Explain how the nervous system mediates communication between different parts of the body and the environment.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> </ul>

		<ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Teacher Resource CD: The Human Machine</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	B.7.4.	<p>Describe that the nervous and endocrine systems maintain overall regulation of optimal conditions within the body by chemical communication.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Teacher Resource CD: The Human Machine</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	B.7.5.	<p>Investigate and cite specific examples of how the mammalian immune system is designed to protect against microscopic organisms and foreign (or non-self) substances from outside the body and against some aberrant (e.g., cancer) cells that arise within.</p>

		<ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>Teacher Resource CD: The Human Machine</li> </ul>
<b>CONTENT STANDARD / STRAND</b>	<b>DC.C.1.</b>	<b>Chemistry: Scientific Investigation and Inquiry: Broad Concept:</b> Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:
<b>STANDARD / ESSENTIAL SKILL</b>	<b>C.1.4.</b>	<p>Recognize the use and limitations of models and theories as scientific representations of reality.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> </ul>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>C.1.10.</b>	<p>Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on manual graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.)</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 3:</li> </ul>

		<p>Is There a Hole in Your Hand?</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	C.1.13.	<p>Apply mathematical relationships involving linear and quadratic equations, exponential growth and decay laws, and logarithmic relationships to scientific situations.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> </ul>
STANDARD / ESSENTIAL SKILL	C.1.14.	<p>Recognize and deal with the implications of statistical variability in experiments and explain the need for controls in experiments.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> </ul>
CONTENT STANDARD / STRAND	DC.C.2.	<p>Chemistry: Properties of Matter: Broad Concept: Physical and chemical properties can be used to classify and describe matter. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	C.2.7.	<p>Classify substances as metal or non-metal, ionic or molecular, acid or base, and organic or inorganic, using formulas and laboratory</p>

		<p>investigations.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> </ul>
<b>CONTENT STANDARD / STRAND</b>	<b>DC.C.3.</b>	<b>Chemistry: Acids and Bases: Broad Concept: Acids, bases, and salts are three classes of compounds that form ions in water solutions. As a basis for understanding this concept, students:</b>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>C.3.2.</b>	<p>Define pH as the negative of the logarithm of the hydrogen (hydronium) ion concentration, and calculate pH from concentration data.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> </ul>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>C.3.3.</b>	<p>Illustrate and explain the pH scale to characterize acid and base solutions: Neutral solutions have pH 7, acids are less than 7, and bases are greater than 7.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> </ul>
<b>CONTENT STANDARD / STRAND</b>	<b>DC.C.11.</b>	<b>Chemistry: Solutions: Broad Concept: Solutions are mixtures of two or more substances that are homogeneous on the molecular level. As a basis for understanding this concept, students:</b>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>C.11.1.</b>	<p>Define solute and solvent.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> </ul>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>C.11.2.</b>	<p>Predict and describe how the temperature, concentration, pressure and surface area of solids affect the dissolving process.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> </ul>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>C.11.4.</b>	<p>Calculate the concentration units of solutions such as molarity, percent by mass or volume, parts per million (ppm), or parts per billion (ppb).</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> </ul>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>C.11.6.</b>	<p>Calculate the theoretical freezing-point depression and boiling-point elevation of an ideal solution as a function of solute concentration.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin</li> </ul>

		Cells
CONTENT STANDARD / STRAND	DC.C.13.	Chemistry: Organic and Biochemistry: Broad Concept: The bonding characteristics of carbon lead to the possibility of many different molecules of many sizes, shapes, and chemical properties. This provides the biochemical basis of life. As a basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	C.13.1.	<p>Explain how the bonding characteristics of carbon lead to a large variety of structures ranging from simple hydrocarbons to complex polymers and biological molecules.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Teacher Resource CD: Human Physiology</li> </ul>
STANDARD / ESSENTIAL SKILL	C.13.3.	<p>Explain that amino acids are the building blocks of proteins.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Teacher Resource CD: Human Physiology</li> </ul>
CONTENT STANDARD / STRAND	DC.P.1.	Physics: Scientific Investigation and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:
STANDARD / ESSENTIAL SKILL	P.1.4.	<p>Recognize the use and limitations of models and theories as scientific representations of reality.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 3 Lab 8 Activity 1:</li> </ul>

		Learning How Pollutants Accumulate in the Lungs
STANDARD / ESSENTIAL SKILL	P.1.10.	<p>Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on manual graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.)</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> </ul>

		<ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	P.1.13.	<p>Apply mathematical relationships involving linear and quadratic equations, simple trigonometric relationships, exponential growth and decay laws, and logarithmic relationships to scientific situations.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> </ul>
STANDARD / ESSENTIAL SKILL	P.1.14.	<p>Recognize and deal with the implications of statistical variability in experiments and explain the need for controls in experiments.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> </ul>
CONTENT STANDARD / STRAND	DC.E.1.	<p>Environmental Science: Scientific Investigation and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:</p>
STANDARD / ESSENTIAL SKILL	E.1.4.	<p>Recognize the use and limitations of models and theories as scientific representations of reality.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> </ul>
STANDARD / ESSENTIAL SKILL	E.1.6.	<p>Plan and conduct scientific investigations to explore new phenomena, to check on previous results, to verify or falsify the prediction of a theory, and to use a crucial experiment to discriminate between competing theories.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 1:</li> </ul>

		<p>Testing Taste Receptors in the Tongue</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
<p>STANDARD / ESSENTIAL SKILL</p>	<p>E.1.10.</p>	<p>Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on manual graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.)</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1:</li> </ul>

		<p>Learning How Our Body is Organized and Functions</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
<p>STANDARD / ESSENTIAL SKILL</p>	<p>E.1.11.</p>	<p>Formulate and revise explanations using logic and evidence.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1:</li> </ul>

		<p>Testing Taste Receptors in the Tongue</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
<p>STANDARD / ESSENTIAL SKILL</p>	<p>E.1.13.</p>	<p>Apply mathematical relationships involving linear and quadratic equations, simple trigonometric relationships, exponential growth and decay laws, and logarithmic relationships to scientific situations.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> </ul>

CONTENT STANDARD / STRAND	DC.E.5.	Environmental Science: Natural Resources: Broad Concept: Numerous Earth resources are used to sustain human affairs. The abundance and accessibility of these resources can influence their use. As a basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	E.5.7.	Identify specific tools and technologies used to adapt and alter environments and natural resources in order to meet human physical and cultural needs. <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> </ul>
CONTENT STANDARD / STRAND	DC.E.8.	Environmental Science: Environmental Quality: Broad Concept: Environmental quality is linked to natural and human-induced hazards, and the ability of science and technology to meet local, national, and global challenges. As a basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	E.8.3.	Describe the historical and current methods of water management and recycling, including the waste treatment practices of landfills, incineration, reuse/recycle and source reduction. <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> </ul>

**Washington D.C. Learning Standards  
Science  
Grade 10**

CONTENT STANDARD / STRAND	DC.ES.1.	Earth Science: Scientific Investigation and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:
STANDARD / ESSENTIAL SKILL	ES.1.4.	Recognize the use and limitations of models and theories as scientific representations of reality. <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> </ul>
STANDARD /	ES.1.10.	Select and use appropriate tools and technology to perform tests, collect

<p>ESSENTIAL SKILL</p>	<p>data, analyze relationships, and display data. (The focus is on manual graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.)</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> </ul>
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		<ul style="list-style-type: none"> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	ES.1.13.	<p>Apply mathematical relationships involving proportionalities, linear relations, quadratic equations, simple trigonometric relationships, exponential growth and decay laws, and logarithmic relationships to scientific situations.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> </ul>
STANDARD / ESSENTIAL SKILL	ES.1.14.	<p>Recognize the implications of statistical variability in experiments and explain the need for controls in experiments.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> </ul>
CONTENT STANDARD / STRAND	DC.ES.2.	<p>Earth Science: The Universe: Broad Concept: Galaxies are made of billions of stars and form most of the visible mass of the universe. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	ES.2.7.	<p>Describe how elements with an atomic number greater than helium have been formed by nuclear fusion processes in stars.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> </ul>
CONTENT STANDARD / STRAND	DC.B.1.	<p>Biology: Scientific Investigation and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:</p>
STANDARD / ESSENTIAL SKILL	B.1.4.	<p>Recognize the use and limitations of models and theories as scientific representations of reality.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> </ul>

STANDARD / ESSENTIAL SKILL	B.1.6.	<p>Plan and conduct scientific investigations to explore new phenomena, to check on previous results, to verify or falsify the prediction of a theory, and to use a crucial experiment to discriminate between competing theories.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> </ul>
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		<ul style="list-style-type: none"> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	B.1.10.	<p>Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on manual graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.)</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> </ul>

		<ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	B.1.11.	<p>Formulate and revise explanations using logic and evidence.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> </ul>

		<ul style="list-style-type: none"> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	B.1.13.	<p>Apply mathematical relationships involving linear and quadratic equations, simple trigonometric relationships, exponential growth and decay laws, and logarithmic relationships to scientific situations.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> </ul>
STANDARD / ESSENTIAL SKILL	B.1.16.	<p>Recognize and deal with the implications of statistical variability in experiments and explain the need for controls in experiments.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> </ul>
CONTENT STANDARD / STRAND	DC.B.2.	<p>Biology: Chemistry of Living Things: Broad Concept: Living things are made of atoms bonded together to form molecules, some of the most important of which are large and contain carbon (i.e., 'organic' compounds). As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	B.2.3.	<p>Describe the central role of carbon in the chemistry of living things because of its ability to combine in many ways with itself and other elements.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Teacher Resource CD: Human Physiology</li> </ul>
STANDARD / ESSENTIAL SKILL	B.2.4.	<p>Know that living things are made of molecules largely consisting of carbon, hydrogen, nitrogen, oxygen, phosphorus, and sulfur.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Teacher Resource CD: Human Physiology</li> </ul>
STANDARD / ESSENTIAL SKILL	B.2.5.	<p>Know that living things have many different kinds of molecules, including small ones such as water, medium-sized ones such as sugars, amino acids, and nucleotides, and large ones such as starches, proteins, and DNA.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Human Physiology</li> </ul>
STANDARD / ESSENTIAL SKILL	B.2.7.	<p>Explain the hierarchical organization of living things from least complex to most complex (subatomic, atomic, molecular, cellular, tissue, organs, organ system, organism, population, community, ecosystem, biosphere).</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> </ul>

		<ul style="list-style-type: none"> <li>Teacher Resource CD: The Human Machine</li> </ul>
<b>CONTENT STANDARD / STRAND</b>	<b>DC.B.3.</b>	<b>Biology: Cell Biology: Broad Concept: All living things are composed of cells. All the fundamental life processes of a cell are either chemical reactions or molecular interactions. As a basis for understanding this concept, students:</b>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>B.3.3.</b>	<p>Observe and describe that within the cell are specialized parts for the transport of materials, energy capture and release, waste disposal, and motion of the whole cell or of its parts.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Teacher Resource CD: Human Physiology</li> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>B.3.5.</b>	<p>Demonstrate and explain that cell membranes act as highly selective permeable barriers to penetration of substances by diffusion or active transport.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Teacher Resource CD: Human Physiology</li> </ul>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>B.3.9.</b>	<p>Explain that a complex network of proteins provides organization and shape to cells.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Teacher Resource CD: Human Physiology</li> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>B.3.12.</b>	<p>Explain how cell activity in a multicellular plant or animal can be affected by molecules from other parts of the organism.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: The Human Machine</li> </ul>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>B.3.13.</b>	<p>Explain why communication and/or interaction are required between cells to coordinate their diverse activities.</p>

		<ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Teacher Resource CD: Human Physiology</li> </ul>
<b>CONTENT STANDARD / STRAND</b>	<b>DC.B.4.</b>	<b>Biology: Genetics: Broad Concept: Genes are a set of instructions encoded in the DNA sequence of each organism that specify the sequence of amino acids in proteins characteristic of that organism. As a basis for understanding this concept, students:</b>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>B.4.9.</b>	<p>Understand and explain that specialization of cells is almost always due to different patterns of gene expression rather than differences in the genes themselves.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: The Human Machine</li> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
<b>CONTENT STANDARD / STRAND</b>	<b>DC.B.7.</b>	<b>Biology: Mammalian Body: Broad Concept: As a result of the coordinated structures and functions of organ systems, the internal environment of the mammalian body remains relatively stable (homeostatic), despite changes in the outside environment. As a basis for understanding this concept, students:</b>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>B.7.1.</b>	<p>Explain the major systems of the mammalian body (digestive, respiratory, reproductive, circulatory, excretory, nervous, endocrine, integumentary, immune, skeletal, and muscular) and how they interact with each other.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> </ul>

		<ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Teacher Resource CD: Human Physiology</li> <li>• Teacher Resource CD: The Human Machine</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	B.7.2.	<p>Analyze the complementary activity of major body systems, such as how the respiratory and circulatory systems provide cells with oxygen and nutrients, and remove toxic waste products such as carbon dioxide.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Teacher Resource CD: The Human Machine</li> </ul>
STANDARD / ESSENTIAL SKILL	B.7.3.	<p>Explain how the nervous system mediates communication between different parts of the body and the environment.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Teacher Resource CD: The Human Machine</li> </ul>

		<ul style="list-style-type: none"> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	B.7.4.	<p>Describe that the nervous and endocrine systems maintain overall regulation of optimal conditions within the body by chemical communication.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>Teacher Resource CD: The Human Machine</li> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	B.7.5.	<p>Investigate and cite specific examples of how the mammalian immune system is designed to protect against microscopic organisms and foreign (or non-self) substances from outside the body and against some aberrant (e.g., cancer) cells that arise within.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>Teacher Resource CD: The Human Machine</li> </ul>
CONTENT STANDARD / STRAND	DC.C.1.	<p>Chemistry: Scientific Investigation and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:</p>
STANDARD / ESSENTIAL SKILL	C.1.4.	<p>Recognize the use and limitations of models and theories as scientific representations of reality.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 2:</li> </ul>

		<p>A Closer Look at Blood</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> </ul>
<p>STANDARD / ESSENTIAL SKILL</p>	<p>C.1.10.</p>	<p>Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on manual graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.)</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2:</li> </ul>

		<p>Exploring Transdermal Drug Delivery</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	C.1.13.	<p>Apply mathematical relationships involving linear and quadratic equations, exponential growth and decay laws, and logarithmic relationships to scientific situations.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> </ul>
STANDARD / ESSENTIAL SKILL	C.1.14.	<p>Recognize and deal with the implications of statistical variability in experiments and explain the need for controls in experiments.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> </ul>
CONTENT STANDARD / STRAND	DC.C.2.	<p>Chemistry: Properties of Matter: Broad Concept: Physical and chemical properties can be used to classify and describe matter. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	C.2.7.	<p>Classify substances as metal or non-metal, ionic or molecular, acid or base, and organic or inorganic, using formulas and laboratory investigations.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> </ul>
CONTENT STANDARD / STRAND	DC.C.3.	<p>Chemistry: Acids and Bases: Broad Concept: Acids, bases, and salts are three classes of compounds that form ions in water solutions. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	C.3.2.	<p>Define pH as the negative of the logarithm of the hydrogen (hydronium) ion concentration, and calculate pH from concentration data.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> </ul>
STANDARD / ESSENTIAL SKILL	C.3.3.	<p>Illustrate and explain the pH scale to characterize acid and base solutions: Neutral solutions have pH 7, acids are less than 7, and bases are greater</p>

		<p>than 7.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> </ul>
<b>CONTENT STANDARD / STRAND</b>	<b>DC.C.11.</b>	<b>Chemistry: Solutions: Broad Concept: Solutions are mixtures of two or more substances that are homogeneous on the molecular level. As a basis for understanding this concept, students:</b>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>C.11.1.</b>	<p>Define solute and solvent.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> </ul>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>C.11.2.</b>	<p>Predict and describe how the temperature, concentration, pressure and surface area of solids affect the dissolving process.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> </ul>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>C.11.4.</b>	<p>Calculate the concentration units of solutions such as molarity, percent by mass or volume, parts per million (ppm), or parts per billion (ppb).</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> </ul>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>C.11.6.</b>	<p>Calculate the theoretical freezing-point depression and boiling-point elevation of an ideal solution as a function of solute concentration.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> </ul>
<b>CONTENT STANDARD / STRAND</b>	<b>DC.C.13.</b>	<b>Chemistry: Organic and Biochemistry: Broad Concept: The bonding characteristics of carbon lead to the possibility of many different molecules of many sizes, shapes, and chemical properties. This provides the biochemical basis of life. As a basis for understanding this concept, students:</b>
<b>STANDARD / ESSENTIAL SKILL</b>	<b>C.13.1.</b>	<p>Explain how the bonding characteristics of carbon lead to a large variety of structures ranging from simple hydrocarbons to complex polymers and biological molecules.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> </ul>

		<ul style="list-style-type: none"> <li>Teacher Resource CD: Human Physiology</li> </ul>
STANDARD / ESSENTIAL SKILL	C.13.3.	<p>Explain that amino acids are the building blocks of proteins.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Teacher Resource CD: Human Physiology</li> </ul>
CONTENT STANDARD / STRAND	DC.P.1.	<p>Physics: Scientific Investigation and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:</p>
STANDARD / ESSENTIAL SKILL	P.1.4.	<p>Recognize the use and limitations of models and theories as scientific representations of reality.</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> </ul>
STANDARD / ESSENTIAL SKILL	P.1.10.	<p>Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on manual graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.)</p> <ul style="list-style-type: none"> <li>Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>Human Biology and Health Issues: Unit 1 Lab 2 Activity 4:</li> </ul>

		<p>Responding to Sound</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	P.1.13.	<p>Apply mathematical relationships involving linear and quadratic equations, simple trigonometric relationships, exponential growth and decay laws, and logarithmic relationships to scientific situations.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> </ul>
STANDARD / ESSENTIAL SKILL	P.1.14.	<p>Recognize and deal with the implications of statistical variability in experiments and explain the need for controls in experiments.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1:</li> </ul>

		Simulating the Transmission of the Ebola Virus
CONTENT STANDARD / STRAND	DC.E.1.	Environmental Science: Scientific Investigation and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:
STANDARD / ESSENTIAL SKILL	E.1.4.	<p>Recognize the use and limitations of models and theories as scientific representations of reality.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> </ul>
STANDARD / ESSENTIAL SKILL	E.1.6.	<p>Plan and conduct scientific investigations to explore new phenomena, to check on previous results, to verify or falsify the prediction of a theory, and to use a crucial experiment to discriminate between competing theories.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> </ul>

		<ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	E.1.10.	<p>Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on manual graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.)</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> </ul>

		<ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	E.1.11.	<p>Formulate and revise explanations using logic and evidence.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 1 Activity 1: Learning How Our Body is Organized and Functions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 1: Testing Taste Receptors in the Tongue</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 2: Thermoreceptors - Responding to Heat and Cold</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 3: Distribution and Sensitivity of Touch Receptors</li> <li>• Human Biology and Health Issues: Unit 1 Lab 2 Activity 4: Responding to Sound</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 1: Exploring the Eye-Brain Connection</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 2: Measuring Vision</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 3: Is There a Hole in Your Hand?</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 4: Photographic Ambiguities</li> </ul>

		<ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 5: Typographic Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 3 Activity 6: Contrast and Color Illusions</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 1: Determining ABO-Rh Blood Type</li> <li>• Human Biology and Health Issues: Unit 1 Lab 4 Activity 2: A Closer Look at Blood</li> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 1: Demonstrating Selective Permeability in Simulated Skin Cells</li> <li>• Human Biology and Health Issues: Unit 2 Lab 6 Activity 2: Exploring Transdermal Drug Delivery</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 1: Modeling Kidney Function</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 2: Physical and Microscopic Characteristics of Urine</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 3: Protein Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 2 Lab 7 Activity 4: Glucose Test of Simulated Urine Samples</li> <li>• Human Biology and Health Issues: Unit 3 Lab 8 Activity 1: Learning How Pollutants Accumulate in the Lungs</li> <li>• Human Biology and Health Issues: Unit 3 Lab 9 Activity 1: Simulating the Transmission of the Ebola Virus</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 2: Measuring Range of Vision</li> <li>• Virtual Laboratory: Identifying Human Tissues</li> </ul>
STANDARD / ESSENTIAL SKILL	E.1.13.	<p>Apply mathematical relationships involving linear and quadratic equations, simple trigonometric relationships, exponential growth and decay laws, and logarithmic relationships to scientific situations.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 4 Lab 10 Activity 1: Measuring Reaction Time</li> </ul>
CONTENT STANDARD / STRAND	DC.E.5.	<p>Environmental Science: Natural Resources: Broad Concept: Numerous Earth resources are used to sustain human affairs. The abundance and accessibility of these resources can influence their use. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	E.5.7.	<p>Identify specific tools and technologies used to adapt and alter environments and natural resources in order to meet human physical and cultural needs.</p> <ul style="list-style-type: none"> <li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li> </ul>
CONTENT STANDARD / STRAND	DC.E.8.	<p>Environmental Science: Environmental Quality: Broad Concept: Environmental quality is linked to natural and human-induced hazards, and the ability of science and technology to meet local, national, and global challenges. As a basis for understanding this concept, students:</p>

STANDARD / ESSENTIAL SKILL	E.8.3.	Describe the historical and current methods of water management and recycling, including the waste treatment practices of landfills, incineration, reuse/recycle and source reduction.  <ul style="list-style-type: none"><li>• Human Biology and Health Issues: Unit 2 Lab 5 Activity 1: Testing for Food Nutrient Content</li></ul>
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