

**Human Organization: The human body is cellular but these cells are made up of atoms. So to understand the workings of the body we must understand the different molecules, cells, and tissues that make them up.**

Overarching Essential Questions	Overarching Enduring Understandings	
<ul style="list-style-type: none"> <li>• How do we locate and discuss the structures of the human body in a way that is understandable?</li> <li>• How are the chemicals of the body organized into the cells?</li> <li>• How is the body organized into the cells that are the structures and functions of the human being?</li> <li>• How are tissues organized into the body membranes that are found in all the systems of the body.</li> </ul>	<p>Anatomy and physiology has a special language that helps avoid confusion when discussing areas of the body?</p> <p>The organic molecules are found in the human body. These carbohydrates, proteins, nucleic acids and fats are all carbon based molecules that have different structures and functions all important to the health of the human being?</p> <p>These organic molecules are organized into the organelles of the different cell types found in the human body.</p> <p>These cells are arranged into tissues that cover the inside and outside of the body.</p>	
Student Learning Objectives		
<i>What students should be able to do after instruction.</i>		<i>Evidence Statements</i>
<b>Use proper anatomical terminology to describe body directions, surfaces and planes. Verbally describe or demonstrate these anatomical positions.</b>		
Compare and contrast the different organic molecules in order to build understanding of the interrelatedness of structure and function.		<b>HS-LS1-6</b>
Identify the different cell types found in the human body and compare and contrast their structures and functions.		<b>HS-LS1-2</b>
<b>Compare and contrast the different tissue types found in the of the body and discuss how the cells making up the tissue work together make the body healthy.</b>		<b>HS-LS1-2</b>

The Student Learning Objectives above were developed using the following elements from the NRC document [A Framework for K-12 Science Education](#):

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<ul style="list-style-type: none"> <li>Construct the different types of organic molecules</li> <li>Using a microscope identify the different organelles.</li> <li>Using a microscope compare and contrast the different types of tissues.</li> </ul>	<ul style="list-style-type: none"> <li>LS1.A: Structure and Function- Systems of specialized cells within organisms help them perform the essential functions of life.</li> </ul>	<ul style="list-style-type: none"> <li>Systems and System Models –Understand that the cell is a system whose balance is maintained by its components.(HS-LS1-2), (HS-LS1-4)</li> <li>Structure and Function- Understanding the components of the cells and tissues and the jobs they do. (HS-LS1-1)</li> <li>Stability and Change- The components of the cells and tissues work together to maintain the health of the cell and the tissues(HS-LS1-3)</li> </ul>

Embedded English Language Arts/Literacy and Mathematics
<p><i>English Language Arts/Literacy –</i></p> <p><i>WHST.9-12.5 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. (HS-LS1-6)</i></p> <p><i>WHST.9-12.9 Draw evidence from informational texts to support analysis, reflection, and research. (HS-LS-1-1),(HS-LS1-6)</i></p>

Three-Dimensional Teaching and Learning
<p>The human body is chemical at its simplest level and these chemicals are organized into cells and tissues. The SEP’s, DCI’s and CCC’s integrate this unit because they call us organize at the molecular level and build from there to the level of tissue and on to our first system the integumentary system.</p>

Prior Learning

- Atomic structure
- Cytology
- Cell processes
- Microscope technique

**• Part A:**

Concepts	Formative Assessment
<ul style="list-style-type: none"> <li>• How do scientists accurately discuss and understand the structures the human body and the functions of these structure using specific terminology?</li> </ul>	<p><i>Students who understand the concepts are able to:</i></p> <ul style="list-style-type: none"> <li>• Demonstrate mastery of the anatomical positions verbally and/or by demonstrating it on their own body.</li> <li>• Compare and contrast the regions, directions and planes of the human body using flashcards and models.</li> <li>• Integrate and correctly name the body cavities with organs found in each.</li> <li>• Demonstrate the different planes of the body with fruit dissection.</li> </ul>

**Part B:**

Concepts	Formative Assessment
<ul style="list-style-type: none"> <li>• How are the chemicals of the body organized into the cells that are the units of structure and function and how do these cells compare with each other.</li> </ul>	<p><i>Students who understand the concepts are able to:</i></p> <p>Compare and contrast the different organic molecules found in the cells</p> <p>Examine different body cells and differentiate one from another.</p> <p>Compare and contrast the different cell structures and relate the different structures to the jobs these cells do.</p>

**Part C:**

Concepts	Formative Assessment
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How are tissues organized into the body membranes that are found in all the systems of the body primarily the skin which is our first body system.

*Students who understand the concepts are able to:*

- Examine different tissue types and classify the tissue types.
- Compare and contrast the structures of the different tissues relating the similarities and differences to their locations and the jobs they do.
- Examine the structures of the skin tissue identifying the components of the skin and their functions.

**Modifications:** *Teachers identify the modifications that they will use in the unit. The unneeded modifications can then be deleted from the list.(See NGSS Appendix D)*

- *Reinforcement packet*
- *One on one conferencing*
- *504s and IEPs will be consulted and followed.*
- *Case managers will be brought in to maximize learning.*
- Videos for reinforcement to maximize learning for ELL students
- Concept Maps and quizzes evaluate topics as the unit progresses

### **Leveraging English Language Arts/Literacy and Mathematics**

#### ***English Language Arts/Literacy-***

Precis of articles will be done by students.

Text and additional writings will be assigned to students.

Read and comprehend complex laboratory instructions.

Write formal lab reports

**Samples of Open Education Resources for this unit:**

Bozeman Videos  
Quia testing  
Google Classroom  
Online flashcards of structures.

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## Appendix

<b>Differentiation</b>	
<b>Enrichment</b>	<ul style="list-style-type: none"><li>● Utilize collaborative media tools</li><li>● Provide differentiated feedback</li><li>● Opportunities for reflection</li><li>● Encourage student voice and input</li><li>● Model close reading</li><li>● Distinguish long term and short term goals</li></ul>
<b>Intervention &amp; Modification</b>	<ul style="list-style-type: none"><li>● Utilize “skeleton notes” where some required information is already filled in for the student</li><li>● Provide access to a variety of tools for responses</li><li>● Provide opportunities to build familiarity and to practice with multiple media tools</li><li>● Leveled text and activities that adapt as students build skills</li><li>● Provide multiple means of action and expression</li><li>● Consider learning styles and interests</li><li>● Provide differentiated mentors</li><li>● Graphic organizers</li></ul>

<b>ELLs</b>	<ul style="list-style-type: none"><li>● Pre-teach new vocabulary and meaning of symbols</li><li>● Embed glossaries or definitions</li><li>● Provide translations</li><li>● Connect new vocabulary to background knowledge</li><li>● Provide flash cards</li><li>● Incorporate as many learning senses as possible</li><li>● Portray structure, relationships, and associations through concept webs</li><li>● Graphic organizers</li></ul>
<b>21st Century Skills</b>	
<ul style="list-style-type: none"><li>● Creativity</li><li>● Innovation</li><li>● Critical Thinking</li><li>● Problem Solving</li><li>● Communication</li><li>● Collaboration</li></ul>	
<b>Integrating Technology</b>	
<ul style="list-style-type: none"><li>● Chromebooks</li><li>● Internet research</li><li>● Online programs</li><li>● Virtual collaboration and projects</li><li>● Presentations using presentation hardware and software</li></ul>	