## Grades 9-12

## **Unit 4 - Transport**

## New Jersey Learning Standards 2022-2023

Established 2016-2017 Revised 2018-2019 Revised 2020-2021 Revised 2021-2022 **Revised 2022-2023** 

## Content Area: Science (NJSLS-S) Grades K - 12 Grade: 9-12

Marking Period		L T	Recommended Instructional Days			
3		Anatomy & Physiology Unit 4: Transport		25 days		
NJSLS - Science:		NJSLS - Science:				
From Molecules to Organisms: Structures and Processes	HS-LS1-2 to illustration organization that provide multicellu Statement at the organism neural stim interacting depending elastic tiss regulate an amount of circulatory Boundary: include int the molecul level.] HS-LS1-3 investigati feedback molecular Examples include he exercise, s moisture a	Develop and use a model e the hierarchical on of interacting systems de specific functions within lar organisms. [Clarification : Emphasis is on functions nism system level such as otake, water delivery, and movement in response to nuli. An example of an g system could be an artery on the proper function of ue and smooth muscle to nd deliver the proper 'blood within the ' system.] [Assessment Assessment does not teractions and functions at alar or chemical reaction Plan and conduct an on to provide evidence that mechanisms maintain is. [Clarification Statement: of investigations could art rate response to nd temperature, and root	Recommended Act Interdisciplinary Con Experiences to Explo	tivities, Investigations, mections, and/or Student ore NJSLS-S within Unit		

	development in response to water	
	levels.] [Assessment Boundary:	
	Assessment does not include the	
	cellular processes involved in the	
	feedback mechanism.]	
FOUNDATION	FOUNDATION	
Disciplinary:	Disciplinary:	
Core Idea	Statement	
<ul> <li>Structure and Function</li> <li>Growth and Development of Organisms</li> <li>Organization for Matter and Energy Flow in Organisms</li> </ul>	<ul> <li>Multicellular organisms have a hierarchical structural organization, in which any one system is made up of numerous parts and is itself a component of the next level</li> <li>Feedback mechanisms maintain a living system's internal conditions within certain limits allowing it to remain alive and functional organizational organizational external</li> </ul>	<ul> <li>Essential Ouestion/s:</li> <li>What are the important structures of the human body?</li> <li>How do the structures of the human body interact to maintain homeostasis?</li> <li>How does structure relate to function?</li> <li>Why is blood essential in the human body?</li> <li>How is blood moved through the body?</li> <li>What factors affect cardiovascular health?</li> </ul>
	conditions change	<ul> <li>A look at Caleers in the Amed Health Fletds.</li> <li>Laboratory Everying Diood Calls (APT)</li> </ul>
FOUNDATION Science and Engineering Practices: <i>Core Idea</i>	FOUNDATION Science and Engineering Practices: Statement	<ul> <li>Laboratory Exercise - Blood Cells ARI</li> <li>Laboratory Exercise - Structure of the Heart SCI</li> <li>Laboratory Exercise - The Cardiac Cycle TECH</li> <li>Laboratory Exercise - Blood Vessels SCI</li> <li>Laboratory Exercise - Pulse Rate and Blood Pressure SCI</li> </ul>
<ul> <li>Developing and Using Models</li> <li>Planning and Carrying Out Investigations</li> <li>Constructing Explanations and Designing Solutions</li> </ul>	<ul> <li>and Using Models</li> <li>Develop and/or use a model based on evidence to illustrate the relationships between systems or between componen of a system.</li> </ul>	<ul> <li>Laboratory Exercise - Major Arteries and Veins SCI</li> <li>Lab Exercise - Lymphatic System and Immunity ART</li> <li>POGIL Activities for Introductory Anatomy and Physiology Courses         <ul> <li>"Heart Valves and the Cardiac Cycle"</li> <li>"Electrical Activity in the Heart"</li> </ul> </li> <li>Case Study: "Vector Borne Diseases"</li> <li>Engineering Activity - Create a tool that corrects artery blockages. YouTube video: A Machine That Can Remove Cholesterol Plaques</li> </ul>

FOUNDATIONFOUNDATIONCrosscutting Concepts:Crosscutting Concepts:Core IdeaStatement		Interdisciplinary Connections - English Language Arts				
<ul> <li>Systems and System Model</li> <li>Energy and Matter</li> <li>Structure and Function</li> <li>Stability and Change</li> </ul>	<ul> <li>Models can be used to simulate systems and interactions including energy, matter, and information flows within and between systems at different scales</li> <li>Feedback can stabilize or destabilize a system</li> </ul>	<ul> <li>WHST.9-12.7 - Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.</li> <li>WHST.11-12.8 - Gather relevant information from multiple authoritative print and digital sources, using advanced searches affectively assess the strengths and limitations of each sources.</li> </ul>				
Social and Emotional Learning:     Social and Emotional Learning:       Competencies     Sub-Competencies		in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of				
<ul> <li>Self-Awareness</li> <li>Self-Management</li> <li>Social Awareness</li> <li>Responsible Decision-Making</li> <li>Relationship Skills</li> </ul>	<ul> <li>Recognize one's personal traits, strengths, and limitations</li> <li>Recognize the importance of self-confidence in handling daily tasks and challenges.</li> <li>Recognize the skills needed to establish and achieve personal and educational goals.</li> <li>Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals.</li> <li>Demonstrate an understanding of the need for mutual respect when viewpoints differ.</li> <li>Demonstrate an awareness of the expectations for social interactions in a variety of settings.</li> <li>Develop, implement, and model effective problem-solving and critical thinking skills.</li> </ul>	<ul> <li>ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.</li> <li>SL.11-12.5 - Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.</li> <li>Interdisciplinary Connections - Mathematics</li> <li>MP.4 - Model with Mathematics</li> </ul>				

Utilize positive communicat and social skills to interact effectively with others     Assessments (Formative)     To show evidence of meeting the standard/s, students will successfully     angage within:			Assessmen w evidence of meeting the co.	ts (Summative) standard/s, students will successfully mplete:	
<ul> <li>Formative Assessments:</li> <li>Diagnostic tests used to modify teaching and learning activities to improve student attainments</li> <li>Lesson check/review</li> <li>Lab Assignments checks</li> </ul>		Benchma • D Summativ • L • P • P • C Alternativ • L	rks: vistrict Assessment ve Assessments: esson Quizzes nd of unit/chapter tests erformance tasks rojects case Studies ve Assessments ab practical		
	Differentiated Student Access to Content: Teaching and Learning Resources/Materials				
Core Resources	Alternate Core Resources IEP/504/At-Risk/ESL	C	ELL ore Resources	Gifted & Talented Core Resources	
<ul> <li>Relevant safety and personal protective equipment</li> <li>Necessary chemicals and laboratory equipment</li> <li>Microscopes</li> <li>Prepared human anatomy histology slides</li> <li>Blood pressure cuff</li> <li>Pulse oximeter</li> <li>Stethoscope</li> <li>Blood typing kit</li> </ul>	<ul> <li>In addition to Core Resources:</li> <li>unlabeled diagrams for additional practice</li> <li>Other anatomy &amp; physiology textbooks, lab workbooks, visual reference books</li> </ul>	In addition to Scie dict	o Core Resources: ence word-word ionary	In addition to Core Resources: • Learning extensions provided in labs.	

Supplemental Resources							
Technology: • Chromebook • Smartboard							
Other:							
Differentiated Student Access to Content: Recommended <i>Strategies &amp; Techniques</i>							
Core Resources	Alternate Core Resources IEP/504/At-Risk/ESL	ELL Core Resources	Gifted & Talented Core				
<ul> <li>Deliver instruction utilizing various learning styles to include auditory, visual, and tactile/kinesthetics.</li> <li>Provide individual instruction as needed</li> </ul>	<ul> <li>Utilize a multi-sensory (VAKT) approach during instruction</li> <li>Provide alternate presentations of skills by varying the method (repetition, simple</li> </ul>	<ul> <li>Extend time requirements</li> <li>Preferred seating</li> <li>Positive reinforcement</li> <li>Check often for understanding/review</li> <li>Oral/visual directions/prompts when necessary</li> </ul>	<ul> <li>Create an enhanced set of introductory activities</li> <li>Integrate active teaching/learning opportunities</li> <li>Incorporate authentic components</li> </ul>				

Content Area: Science (NJSLS-S) Gr	Dev. Date:	
Grade: 9-12	July 2022	
<ul> <li>explanations, additional examples, modeling, etc.)</li> <li>Modify test content and/or format</li> <li>Allow students to retake tests for additional credit</li> <li>Provide additional times and preferential seating as needed, review, restate and repeat directions, provide study guides, and/or break assignments into segments of shorter tasks.</li> <li>Deliver instruction utilizing varied learning styles including audio, visual, and tactile/kinesthetic, provide individual instruction as needed, modify assessments and/or rubrics, repeat instructions as needed</li> </ul>	<ul> <li>Supplemental materials including use of an online bilingual dictionary, and modified assessment and/or rubric.</li> </ul>	<ul> <li>Propose interest based extension activities</li> <li>Connect student to related talent development opportunities</li> </ul>

	Disciplinary Concept: Career Awareness and Planning			
NJSLS CAREER READINESS, LIFE LITERACIES & KEY SKILLS	Core Ideas:	<ul> <li>With a growth mindset, failure is an important part of success.</li> <li>Innovative ideas or innovation can lead to career opportunities.</li> <li>Collaboration with individuals with diverse experiences can aid in the problem-solving process, particularly for global issues where diverse solutions are needed.</li> <li>Cultivating online reputations for employers and academia requires separating private and professional digital identities.</li> <li>Advanced search techniques can be used with digital and media</li> </ul>		

	resources to locate information and to check the credibility and the expertise of sources to answer questions, solve problems, and inform the decision-making.		
Performance Expectations:	<ul> <li>9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a).</li> <li>9.4.12.CI.2: Identify career pathways that highlight personal talents, skills, and abilities (e.g., 1.4.12prof.CR2b, 2.2.12.LF.8).</li> <li>9.4.12.CI.3: Investigate new challenges and opportunities for personal growth, advancement, and transition (e.g., 2.1.12.PGD.1).</li> <li>9.4.12.DC.6: Select information to post online that positively impacts personal image and future college and career opportunities.</li> <li>9.4.12.IML.2: Evaluate digital sources for timeliness, accuracy, perspective, credibility of the source, and relevance of information, in media, data, or other resources (e.g., NJSLSA.W8, Social Studies Practice: Gathering and Evaluating Sources.</li> </ul>		
Career Readiness, Life Literacies, & Key Skills Practices			
• Discuss different types of careers in the medical field and describe the skills associated with those careers			

New Jersey Legislative Statutes and Administrative Code (place an "X" before each law/statute if/when present within the curriculum map)								
x	Amistad Law: N.J.S.A. 18A 52:16A-88	Holocaust Law: N.J.S.A. 18A:35-28	x	LGBT and Disabilities Law: N.J.S.A. 18A:35-4.35	х	Diversity & Inclusion: <i>N.J.S.A. 18A:35-4.36a</i>		Standards in Action: <i>Climate Change</i>