

Theme 6 - Cardiovascular System

Outcomes	Content	Activities/Resources	Assessments
<p>1. Describe the composition of blood.</p> <p>Target Standards 4.S.CC.2a Analyze the main ideas and supporting details presented in diverse media and formats and explain how the ideas clarify a topic, text, or issue under study.</p> <p>4.W.RB.3 Draw evidence from informational texts to support analysis, reflection, and research. OR 4.S.CC.2a if summaries are done orally</p>	<p>What happens when your blood is taken for blood work?</p>	<p>What's inside of blood? (video) Blood Khan Academy</p> <p>Watch this 11 minute video as a class to see what happens when your blood is evaluated. (Consider pausing the video and discussing each segment.) At the end of the video, or after select segments, ask students to summarize the main ideas and key details about the process of analyzing blood.</p> <p>ELL support: Turn on subtitles/closed captions while playing videos.</p>	<p>Completed written summaries OR analysis of group /class summaries demonstrated during discussion</p>
<p>2. Distinguish between different types of blood and use Punnett squares to figure out blood type.</p> <p>Target Standards 4.R.RS.3 Follow precisely a multi-step procedure when carrying out experiments, taking measurements, or performing technical tasks.</p>	<p>What is the difference between the types of blood?</p> <p>Is blood type determined by our parents?</p>	<p>Activity: Use the worksheet “ABO Blood Types” to determine the differences in blood type. Work through the examples together as a class using Punnett squares.</p> <p>For additional classroom practice or to assign as homework, use the worksheet “Blood Types Punnett Squares.”</p>	<p>Use the worksheet “Blood Types Practice” to evaluate students’ understanding of Punnett square concepts.</p>

<p>4.R.CI.10 Use informational texts, internet web sites, and/or technical materials to review and apply information sources for occupational or educational tasks.</p>			
<p>3. Determine how to measure heart rate.</p> <p>Target Standards 4.R.RS.2 Determine the central ideas of a text; provide an accurate summary of the text...</p> <p>2.OA.7 Use multiplication and division to solve word problems in situations involving equal groups, arrays, and measurement quantities...</p>	<p>How do you measure heart rate?</p> <p>How do you calculate heart rate using conversions?</p>	<p>What to Know About Your Heart Rate and Pulse (clevelandclinic.org)</p> <p>This article includes information about target heart rate and ranges by age group. After students have read the article, lead a discussion about the differences between pulse and heart rate. Have students try 3 different places to feel their pulse (neck, wrist, inside of elbow), and lead a discussion about which location is easiest/hardest to find the pulse and why.</p>	<p>“The Beat Goes On”</p> <p>As a whole class, have students measure their heart rates. Use the first page of the worksheet to encourage students to convert beats per minute to beats per hour. Then have students complete page 2 on their own as an assessment.</p>
<p>4. Understand various disorders of the heart.</p> <p>Target Standards 4.S.CC.1e Pose questions that connect the ideas of several speakers and respond to others’ questions and comments with relevant evidence, observations, and ideas.</p>	<p>What are some of the primary disorders of the heart?</p> <ul style="list-style-type: none"> ● Heart Disease ● Heart Attack ● Stroke ● Hypertension ● Coronary Artery Disease 	<p>Use the handout Heart Health Quiz to assess students’ previous knowledge. Have students discuss their answers and use background knowledge and experience to explain their answer choices.</p> <p>Activity: Each student chooses 1 heart condition to research from the Content column to the left. Provide the CDC site and the AHA fact sheets below to students for their research. Students should provide a written summary of their condition that could</p>	<p>Students share their heart condition summaries and share with the class.</p> <p>Consider administering the Heart Health Quiz again to assess learning.</p>

<p>4.R.CI.10 Use informational texts, internet web sites, and/or technical materials to review and apply information sources for occupational or educational tasks.</p> <p>4.W.WL.3 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>		<p>be used in a medical office to provide general information to clients. Post the summaries in the room or share with the class.</p> <p>Heart Disease cdc.gov - Information on heart disease Answers by Heart Fact Sheets: Cardiovascular Conditions American Heart Association - explains various heart conditions, symptoms, and care</p>	
<p>5. Explain the features and functions of the cardiovascular system.</p> <p>Target Standards 4.R.RS.1 Cite specific textual evidence to support analysis of science and technical texts.</p> <p>4.S.CC.1 Engage effectively in a range of collaborative discussions...building on others' ideas and expressing their own clearly</p> <p>4.R.RS.7 Integrate quantitative or technical information expressed in words in a text with a</p>	<p>What are the parts of the cardiovascular system and what is the purpose of each?</p>	<p>https://sciencenotes.org/human-anatomy-worksheets-and-study-guides/ Select worksheets and have students label the cardiovascular system.</p> <p>Activity: Intro to the Circulatory System Use the Intro to the Circulatory System pre-reading questions handout and have students answer the questions about the cardiovascular system before reading the text. Students share their answers in a small group. Ask students to read the text and discuss the answers again. (Answer key for pre-reading questions is here.)</p> <p>Activity: Heart Anatomy Have students label the parts of the heart. (There are two worksheets to choose from: "Heart Anatomy" and Label the Heart.) The use of flashcards may be helpful in</p>	<p>Label the Heart Distribute the unused labeling worksheet and have students complete it independently. To practice this, review with flashcards or use other memorization strategies.</p>

<p>version of the information expressed visually.</p>		<p>understanding the parts of the heart.</p>	
<p>6. Understand the process of blood circulation in the heart.</p> <p>Target Standards 4.S.CC.2a Analyze the main ideas and supporting details presented in diverse media and formats and explain how the ideas clarify a topic, text, or issue under study.</p>	<p>How does blood circulate in the heart?</p>	<p>Circulatory system and the heart (video) Khan Academy As a class, watch the video about how blood circulates in the heart. (Consider pausing the video and discussing each segment.) At the end of the video, or after select segments, ask students to summarize the main ideas and key details about the process of analyzing blood. ELL support: Turn on subtitles/closed captions while playing videos.</p> <p>Activity: The Circulation Game This is an interactive game that requires preparation. The students are challenged to actively deliver oxygen and food to the cells, take carbon dioxide to the lungs, and take all the waste to the kidneys.</p>	<p>Have students complete the worksheet "Circulatory Match." To practice in advance of the assessment, have students create flash cards demonstrating the functions of the heart and quiz each other in pairs.</p>
<p>7. Read and reflect on current issues regarding the heart and the circulatory system.</p> <p>Target Standards 4.R.CI.1c Cite several pieces of textual evidence that most strongly support analysis of what the text says explicitly as well as inferences drawn from the</p>	<p>Does COVID-19 have an effect on the heart?</p>	<p>Activity: Researchers Take a Closer Look at What COVID 19 Does to the Heart This article could be read independently or in pairs and discussed as a group.</p> <p>Comprehension questions to ask orally or assign for independent work: 1. Why does the article suggest long-term research on COVID-19 is necessary? 2. Identify the main goal of the research reported in this article, and identify the data</p>	<p>Completed comprehension questions</p>

<p>text; predict probable outcomes from knowledge of events obtained from a reading selection.</p>		<p>points relevant to that goal. What did the research discover? 3. The research occurred before the availability of COVID-19 vaccines. What is one implication of that fact on this data?</p>	
<p>8. Understand how to perform tests to measure blood pressure.</p> <p>Target Standards 4.R.CI.1a Clarify understanding of non-fictional passages by creating outlines, graphic organizers, logical notes, summaries, or reports.</p>	<p>How do you measure your blood pressure?</p> <p>ELL Support: Consider using these 2 texts at a lower readability level with students if the text and activity for this outcome is inaccessible for them. <u>“What is High Blood Pressure?”</u> <u>“Prevent and Control High Blood Pressure”</u></p>	<p>Activity: Review the handout <u>“Understanding Blood Pressure”</u> with students. They may read independently or in pairs, and they should annotate the article on their second read. Using their annotations, students create either a graphic organizer or outline that summarizes the information from the article. Use the 14 questions at the end of the article as a summative assessment or to guide class discussion. Make sure to review the correct answers.</p> <p>This website offers additional information on blood pressure: https://www.heart.org.</p>	<p>Have students measure their blood pressure for a period of time. If they do not have a device at home, they can visit a pharmacy and measure it for free. Have them complete the worksheet <u>“My Blood Pressure Log.”</u></p>