

Getting to the Core



4th Grade Mini-Unit of Study Sewed Up His Heart

Teacher's Guide First Edition

Sewed Up His Heart – 4th Grade Mini-Unit Lesson Planner – 8 days

	Lesson 1	Lesson 1	Lesson 2	Lesson 2
Preparing the Learner	The Heart Song		Novel Ideas: Pioneer	
Interacting with the Text	Video: Parts of the Heart First View Second View - Label parts of the heart (diagram) Optional Pictorial Brace Map The Heart Song – replay. Students may sketch alongside the lyrics.	Informational Text: The Human Heart Focus on text structure • Whole group first read • Collaborative/partner decide on text structure & create Thinking Map	Anchor Text: Sewed Up His Heart First Read: Pages 226-231 Text dependent questions Reflection Homework	 Review Reflection Second Read: Pages 232- 237 Text dependent questions Homework
Extending the Understanding		Students write a brief summary using information from their map		Reflection

		Performance Task	Performance Task
Review timeline in Medicine: Past & Present Informational Text: X-ray Create Map Quick Write Homework		Review reflection from previous day	
	 Note-taking Guide Pair- Square Collaborative Academic Conversation Reflection Homework 	 Jigsaw article on Dr. Dan. Take notes Share out Teacher facilitated discussion 	What was Dr. Dan's greatest accomplishment? Why? Support with evidence from sources.
	Connect BI & EQ in a Quick		Unit closure: BI & EQ
		 Pair- Square Collaborative Academic Conversation Reflection Homework 	 Pair- Square Collaborative Academic Conversation Reflection Homework Take notes Share out Teacher facilitated discussion



Information, Media and Technology:

Information Literacy

Media Literacy

Unit Title	t Title: Sewed Up His Heart		
Grade Le	vel/Course:	4th grade ELA	Time Frame: 2 weeks
,	•	nderstanding): nade in medical knowledge	Big Idea: (Enduring Understanding):
			I
Essential Questions: What discoveries have made the mode what relevance do natural remedie. What personal qualities are necessary		What relevance do natural remedie	· · · · · · · · · · · · · · · · · · ·
		Instructional Ac	tivities: Activities/Tasks
21st Century Skills:	Critical Thir	nd Innovation: nking & Problem Solving tion & Collaboration tinnovation	



Information.	Communications	& Technology Literacy
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Essential
Academic
Language:

Tier II: prostration, immaculate, intern, eminent, colleague, suture, coronary artery, meticulously, irrigated, interracial, complication, fatal, asepsis, condemnation, pericardium

Tier III: right atrium, left atrium, right ventricle, left ventricle, mitral valve, pulmonar valve, aortic valve, tricuspid valve, septum, cardiac muscle, pericardium, myocardium, anesthesia, incision, examination, cautious, cartilage, sternum, catgut

What pre-assessment will be given? Ask students to do a quick write to outline or highlight the advances in medicine they learn about in the previous story. Additionally, students should state and defend their opinion as to what they think is the most important advance in medicine they have learned about thus far.

How will pre-assessment guide instruction?

Teacher should use this as a way to revisit the Big Idea and essential questions, and validate students' thinking as they progress throughout the story. In addition, this provides a scaffold for the performance task

End of Performance Task: Write an opinion paper about Dr. Dan's greatest accomplishment and defend your claim with evidence from sources.

Standards:	Assessment of Standards (include formative and
	summative)

Content Standard(s): Construct an argument that plants and animals have internal and external structures that function to support

Students will be able to identify the parts of the heart and explain the importance of each.



survival, growth, behavior and reproduction. (Clarification statement: examples of structures could include thorns, stems, roots, colored petals, heart, stomach, lung, brain, and skin.

Common Core Learning Standards Taught and Assessed (include one or more standards for one or more of the areas below. Please write out the complete text for the standard(s) you include.) What assessment(s) will be utilized for this unit? (include the types of both formative assessments (F) that will be used throughout the unit to inform your instruction and the summative assessments (S) that will demonstrate student mastery of the standards.)

What does the assessment tell us?

Bundled Reading Literature Standard(s):

Reading Literature

- 4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- 4.2 Determine a theme of a story, drama, or poem from details in the text; summarize the text.
- 4.3 Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g. a character's thoughts, words, or actions)
- 4.4 Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology.
- 4.10 By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the end of the high range.

- F: Assessed informally through discussions and quick writes
- S: Assessed formally during labeling of diagram
- F: Assessed informally through observation
- F: Assess formally and informally through conversation and participation
- F: Ask and answer text dependent questions citing evidence to support their answer from "Sewed Up His Heart."
- S: Students will use evidence from the text to assign a character trait to Dr. Dan and support with evidence.
- F: Students will engage in discussions based on the events in the story, demonstrating their understanding of the text.
- F: Vocabulary strategies will be used to determine the meaning of academic language

Do students correctly answer questions in pairs and small groups and refer to the text when doing so?

Are student gaining an understanding of unfamiliar language by using vocabulary strategies and collaborative talk during close read? Are students able to connect the advances



		in medicine to the story about Dr. Dan?
Bundled Reading Informational Text Standard(s): 1. Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. 2. Determine the main idea of a text; recount the key details and explain how they support the main idea. 3. Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. 4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area. 7. Use information gained from illustrations (e.g. maps, photographs) and the words in a text to demonstrate	S: Assessed formally through quick write and labeling of the heart. F: Vocabulary strategies will be used to determine the meaning of academic language.	Can students recognize text structure and create an appropriate Thinking Map to demonstrate their thinking? Can students express in writing, the connection between the expository texts and the literature? Can students connect the informational text

Bundled Foundational Skill(s) Standard(s): *(K-5 only)*

understanding of the text.

- 4.3 Know and apply grade level phonics and word analysis skills in decoding words.
 - a. Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g. roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context.
- 4.4 Read with sufficient accuracy and fluency to support comprehension.

- F: Assessed informally during reading of text independently, with a partner, and whole class
- F: Listen and respond to individual and collaborativ groups.
- F: Students closely read passages and discuss answers with partners/groups.
- S: Students respond to journal prompts in the form of a first person narrative, demonstrating understanding of text.

Are students able to read and comprehend grade level text?

to the literature?



- a. Read on-level text with purpose and understanding.
- b. Read on-level prose and poetry orally and with accuracy, appropriate rate, and expression on successive readings.
- c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.
- S: Students assign a character trait and support with evidence.
- S: Students write an argumentative piece defending their claim on the most important contribution to medicine

Bundled Writing Standard(s):

- 4.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
 - a. introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer's purpose.
 - b. Provide reasons that are supported by facts and details.
 - c. Link opinion and reasons using word phrases.
 - d. Provide a concluding statement or section related to the opinion presented.
- 4.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
 - a. Introduce a topic clearly and group related information in paragraphs and sections including formatting, illustrations, and multimedia when useful to aiding comprehension.
 - b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
 - c.Link ideas within categories of information using words and phrases.
 - d. Use precise language and domain specific vocabulary to inform about or explain the topic.

- S: Students respond to journal prompts in the form of a first person narrative, demonstrating understanding of text.
- S: Students assign a character trait and support with evidence.
- S: Students write an argumentative piece defending their claim on the most important contribution to medicine.

Can students effectively express their opinions in writing?

Can students support their ideas in writing using evidence from the text?

Can students write an effective journal entry from the first person point of view demonstrating their understanding of the prompt?



- e. Provide a concluding statement or section related to the information or explanation presented.
- 4.3 Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
 - a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally.
 - b. Use dialogue and description to develop experiences and events to show the responses of characters to situations.
 - c. Use a variety of transitional words and phrases to manage the sequence of events.
 - d. Use concrete words and phrases and sensory details to convey experiences and events precisely.
 - e. Provide a conclusion that follows from the narrated experiences or events.
- 4.4 Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience.
- 4.5 With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.
- 4.6 With some guidance and support from adults, use technology, including the internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single setting.
- 4.8 Recall relevant information from experiences or gather relevant information from print and digital sources; take notes, paraphrase, and categorize information, and provide a list of sources.
- 4.9 Draw evidence from literary and informational text to support analysis, reflection, and research.
 - a. Apply grade 4 reading standards to literature (e.g.,
 - "Describe in depth a character, setting, or event in a story



or drama, drawing on details in the text [e.g., a character's thoughts, words, or actions].").

b. Apply grade 4 reading standards to informational text (e.g., "explain how an author uses reasons and evidence to support particular points in a text").

Bundled Speaking and Listening Standard(s):

- 4.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
 - a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information about the topic to explore ideas under discussion.
 - b. Follow agreed upon rules for discussions and carry out assigned roles.
 - c. Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and line to the remarks of others.
 - d. Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.
- 4.2. Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

- F: Students participate in collaborative conversation around a given topic.

 Are students able to work in groups and
- F: Students work in partners to answer text dependent questions.

Are students able to work in groups and communicate their ideas effectively?

Can students use linguistic patterns appropriately when needing additional support to answer questions and communicate ideas?



Bundled Language Standard(s):

- 4.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- a. Use interrogative, relative pronouns (who, whose, whom, which, that) and relative adverbs (where, when, why) b. Form and use the progressive verb tenses.
 - c. Use modal auxiliries to convey various conditions.
- d. Order adjectives within sentences according to conventional patterns. e. Form and use prepositional phrases.
- f. Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons.
 - g. Correctly use frequently confused words.
- 4.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
 - a. use correct capitalization
- b. use commas and quotation marks to mark a direct speech and quotations from a text.
- c. use a comma before a coordinating conjunction in a compound sentence. Spell grade appropriate words correctly, consulting references as needed.
- 4.3. Use knowledge of language and its conventions when writing, speaking, reading, or listening.
 - a. choose words and phrases to convey ideas precisely.
- b. choose punctuation for effect. differentiate between contexts that call for formal English and situations where informat discourse is appropriate.
- 4. 4. Determine or clarify the meaning of unknown and multiple meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies.
 - a. Use context as a clue to the meaning of a word or phrase.
- b. Use common grade appropriate Greek and Latin affixes and roots as clues to the meaning of a word.
- c. Consult reference materials, both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases.

- F: Discuss vocabulary strategies during close reading and viewing of video.
- F: Participate in collaborative conversations and express ideas clearly and effectively.
- S: Respond to journal prompts as assigned by teacher

Can students determine the meaning of unknown words by using close reading strategies, vocabulary strategies, and during partner discussion?

Can students effectively communicate their ideas effectively?

Can students use correct grammar and punctuation when writing?



 4.5 Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. a. Explain the meaning of simple similies and metaphors in context. b. Recognize and explain the meaning of common idioms, adages, and proverbs. c. Demonstrate understanding of words by relating them to their opposites and to words with similar but not identical meanings. 4.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions emotions, or states of being. 	

Resources/Materials:	Complex Texts to be used Informational Text(s) Titles:	The Human Heart article, Dr. Daniel Hale Williams article, X-rays article
	Literature Titles: Sewed Up 1	His Heart
	Primary Sources:	
	Media/Technology: Online G	ooru unit materials
	Other Materials: Student jou	rnal, student "Doctor's Notes" journal



Interdisciplinary Connections:	Cite several interdisciplinary or cross-content connections made in this unit of study (i.e. math, social studies, art, etc.)
	Science

Differentiated Instruction:	Based on desired student outcomes, what instructional variation will be used to address the needs of English Learners by language proficiency level?	Based on desired student outcomes, what instructional variation will be used to address the needs of students with special needs, including gifted and talented?
	QTEL strategies, 3 moments in a lesson, and appropriate scaffolds will be recommended based on the needs of students.	Special Needs: Materials offered in the differentiation folder on Gooru GATE: Materials offered in the differentiation folder on Gooru



Unit:	Grade	Duration:
	Level/Course:	
Lesson: 1	4	2 days

Big Idea: Great advances have been made in medical knowledge throughout time. Essential Ouestion:

- What discoveries have made the most significant advances in medicine?
- What relevance do natural remedies hold in today's scientific world?
- What personal qualities are necessary to become an effective healer?

Common Core and Content Standards

NGSS: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior and reproduction. (Clarification statement: examples of structures could include thorns, stems, roots, colored petals, heart, stomach, lung, brain, and skin.

Reading Literature

- 4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
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Language



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	,
	related to the topic. c.Link ideas within categories of information using words and phrases. d. Use precise language and domain specific vocabulary to inform about or explain the topic. e. Provide a concluding statement or section related to the information or explanation presented. 4.3 Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally. b. Use dialogue and description to develop experiences and events to show the responses of characters to situations. c. Use a variety of transitional words and phrases to manage the sequence of events. d. Use concrete words and phrases and sensory details to convey experiences and events precisely. e. Provide a conclusion that follows from the narrated experiences or events. 4.4 Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. 4.5 With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. 4.6 With some guidance and support from adults, use technology, including the internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single setting. 4.8 Recall relevant information from experiences or gather relevant information from print and digital sources; take notes, paraphrase, and categorize information, and provide a list of sources. 4.9 Draw evidence from literary and informational text to support analysis, reflection, and research. a. Apply grade 4 reading standards to literature (e.g., "Describe in depth a character; setting, or event in a story or drama, drawing on details in the text [e.g., a character's thoughts, words, or actions]."). b. Apply grade 4 reading standards to liter
Materials/ Resources/ Lesson Preparation	The Heart Song, Video - Parts of the Heart Note-taking guide



Objectives	Content: Students will be able to identify and label the parts of the heart	Language: Students will appropriately use domain-specific language and identify the parts of the heart	
Depth of Knowledge Level	□ Level 1: Recall x Level 2: Skill/Concept		
	x Level 3: Strategic Thinking • Level 4: Extended Thinking		
College and Career Ready Skills	x 1. Demonstrating independence x 2. Building strong content knowledge x 3. Responding to varying demands of audience, task purpose, and discipline x4. Comprehending as well as critiquing x 5. Valuing evidence x 6. Using technology and digital media strategically and capably o 7. Coming to understand other perspectives and culture		

Common Core Instructional
Shifts

x Building knowledge through content-rich nonfiction texts
x Reading and writing grounded from text
x Regular practice with complex text and its academic vocabulary



Academic Vocabulary		KEY WORDS ESSENTIAL TO UNDERSTANDING	WORDS WORTH KNOWING
	PROVIDES TEACHER SIMPLE EXPLANATION		
	STUDENTS FIGURE OUT THE MEANING		right atrium, left atrium, right ventricle, left ventricle, mitral valve, pulmonary valve, aortic valve, tricuspid valve, septum, cardiac muscle, pericardium, myocardium

Pre-teaching Considerations	
CCSS Foundational Standards (K-5 only)	Continue Open Court Green Section

Lesson Delivery

Instructional Methods	Check method(s) used in the lesson:		
	□ Modeling □ Guided Practice □ Collaboration		
Witthous	□ Independent Practice □ Guided Inquiry □ Reflection		



Preparing the Learner	 <u>Day 1</u> 1. Play "The Heart Song" for students, pointing out that the song identifies the importance of the function of the heart as well as its primary functions.
Interacting with the text/Concept:	Day 1 2. Video - "Parts of the Heart" - first view, unencumbered 3. Students watch the video a second time and label the parts of the heart on the diagram. Optional: teacher creates a pictorial of the heart in addition to the diagram. 4. Help students create a Brace Map to illustrate the whole to part relationship of the parts of the heart. 5. Listen to the song again, reminding students to make notes on labeled heart or song lyrics in order to make connections between the two tasks. Day 2 6. Distribute expository text on "The Human Heart" to students. 7. Have students skim and scan the article. 8. Review structures of text with students. (remind them that authors organize information in many ways; ask/answer questions, main idea and details, sequencing, cause and effect, etc.) 9. Read the article once with students, modeling and facilitating good comprehension strategies. 10. Have students work in collaborative groups to decide on the structure of this text. 11. Once they have decided on the structure, have students work in groups to create a Thinking Map that demonstrates their understanding of the structure of this text.
Extending Understanding	12. Have students write a brief summary using the information from their Thinking Map.

Differentiated Instruction:	English Learners:	Students Who Need Additional Support: Access differentiation folder on Gooru for	Accelerated Learners: Access Differentiation folder on Gooru for
		additional scaffolds and activities.	additional activities



Ε	Lesson Reflection		
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esson Con Continuum	Teacher Reflection Evidenced by Student Learning/ Outcomes		
Con			

Lyrics to Heart Song

Music: Ho Hey, by the Lumineers

```
(Pump)
(Blood)
(Pump)
(Blood)
(Pump) Let's start with atrium right
(Blood) Carbon dioxide is high
(Pump) Blood moves down to ventricle
(Blood) Pumping this blood to the lungs
(Pump) Oxygen poor blood
(Blood)
(Pump)
(Blood) Onto the left atrium
(Pump) All this blood has oxygen
(Blood) Moving in right from the lungs
(Pump) Down to ventricle it pumps
(Blood) Aorta sends out blood
(Pump)
 2,3
Heart muscles relax-filling up with blood it's in your heart
Atria contract fill the ventricles contract to
(Pump)
(Blood)
(Pump)
(Blood)
```

(Pump) Group of cells makes heart contract

(Blood) Pacemakers they're called in fact

(Pump) Gets info adjusting rate

(Blood) Oxygen your body needs

(Pump) The heart beating

(Blood)

(Pump) Exercise faster heartbeat

(Blood)

Heart muscles relax filling up with blood it's in your heart Atria contract fill the ventricles contract to heart pump

Blood, we need it now
The heart's a pump
So blood goes in and out

Heart muscles relax filling up with blood it's in your heart Atria contract fill the ventricles contract to

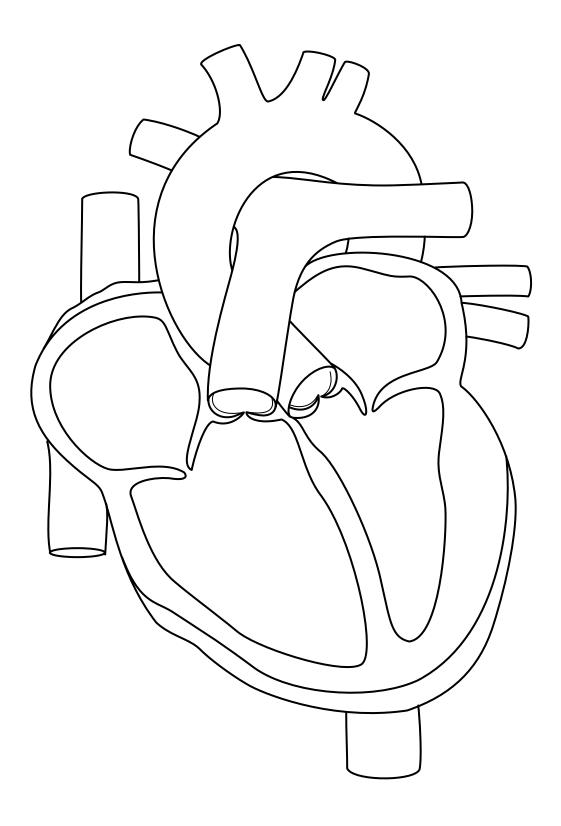
(Pump)

(Blood)

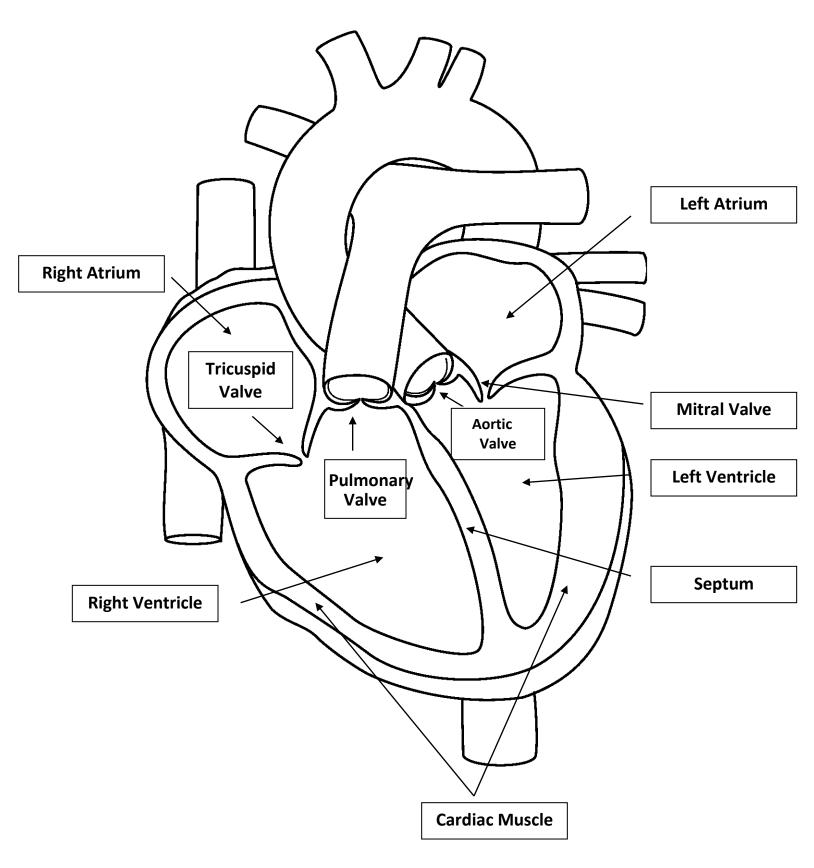
(Pump)

(Blood)

The Parts of the Heart



The Parts of the Heart



Parts of the Heart

Thinking Map Activity

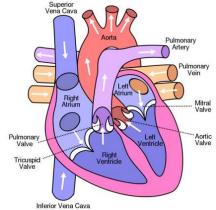
Directions: You are a science teacher at the neighborhood school. Tomorrow you will explain the parts of the heart to your students. Decide which Thinking Map you would use to best meet your purpose. Organize the parts of the heart on the map. Explain why you chose your map and build it in the space below.		

The Human Heart

The human heart is a fist-sized, muscular organ that is hollow. Its job is to pump blood through the body's network of blood vessels. The heart, blood, and blood vessels are part of the circulatory system, which supplies all the body's cells with the oxygen and nutrients they need, and removes waste products. The heart has chambers, valves, arteries, and veins -- and a complex electrical system keeps everything working smoothly and makes the heart beat.

An Introduction to the Human Heart

In order to understand diseases that affect the human heart, it's important to know how the heart normally works. The human heart is a hollow, muscular organ about the size of a fist. Its job is to pump blood through a network of blood vessels. These vessels form a loop, which starts at the heart, goes out through your body,



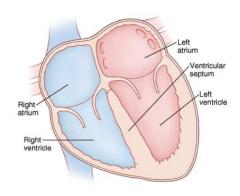
and then ends back at the heart again. Together, the heart, blood, and blood vessels are part of the circulatory system, which does two of the most important jobs in the body:

- It carries oxygen and nutrients to all of your cells
- It picks up carbon dioxide and other waste products that your body produces so they can be disposed of.

The Chambers of the Heart

The inside of a normal human heart is divided into four chambers:

- The right atrium
- The left atrium
- The right ventricle
- The left ventricle.



The Heart Valves

In a healthy human heart, there are valves that keep blood flowing in one direction (see first diagram). When they open, they only let the right amount of blood through, and then they close to prevent blood from flowing backward in between beats.

The circulatory loop begins with blood entering the right atrium of the heart. When the heart beats, blood flows from the right atrium into the right ventricle through a valve.

From the right ventricle, blood flows through another valve and then to the lungs, where it picks up oxygen. From the lungs, it flows back into the left atrium of the heart and through the mitral valve into the left ventricle. From the left ventricle, blood is pumped through the aortic valve and into the aorta, where it goes out to the rest of the body, bringing oxygen and nutrients to your cells.

For the human heart to work right, each of the four chambers must contract, or squeeze, at just the right time. Your heart has an electrical system that helps coordinate this timing.

More Facts About the Heart

The Arteries

The arteries are major blood vessels connected to the human heart:

- The pulmonary artery carries blood pumped from the right side of the heart to the lungs to pick up a fresh supply of oxygen.
- The aorta is the main artery that carries oxygen-rich blood pumped from the left side of the heart out to the body.
- The coronary arteries are the other important arteries attached to the heart. They carry oxygen-rich blood to the heart muscle, which must have its own blood supply to function.

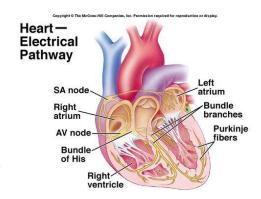
The Veins

The veins are major blood vessels connected to the human heart:

- The pulmonary veins carry oxygen-rich blood from the lungs to the left side of the heart so it can be pumped out to the body
- The venae cavae are two large veins that carry oxygen-poor blood from the body back to the heart.

The Electrical Pathways in the Human Heart

There is a group of cells in the right atrium called the SA, or sinoatrial, node. It's also known as the "pacemaker." This pacemaker produces an electrical signal that spreads out over the muscles of both atria, causing the chambers to contract and push blood into the ventricles. The electrical signal travels so fast that it causes both chambers to contract uniformly.



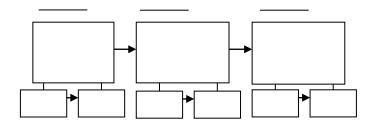
But this signal can't continue on to the ventricles because they are insulated from the atria. The only way the signal can get there is through another group of cells in the right atrium called the AV (atrioventricular) node. Here, the electrical signal slows down and then continues on to the ventricles. This causes the ventricles to contract, too, but not until the atria do first. The slowing of the signal at the AV node gives the atria time to fill the ventricles with blood before the ventricles contract to push the blood out of the heart.

After the ventricles contract, the signal fades, and the SA node sends out another electrical impulse.

This sequence is what you are hearing when you hear the usual "lub-dup" beat of your heart. Normally, the SA node sends out a signal 60 to 100 times every minute. Notice how this is a smooth process that results in heartbeats that happen at a regular rate and rhythm. This continuous and controlled cycle is called a normal sinus rhythm.

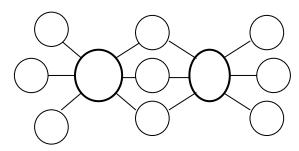
Which Thinking Map matches the structure of the text that the author used?

Flow Map: "How To", Sequence, Chronological order (time)



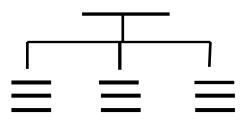
Words you might see: first, second, third, then, next, after, later, finally, at last, before, in the end, earlier

Double Bubble Map: Compare and Contrast



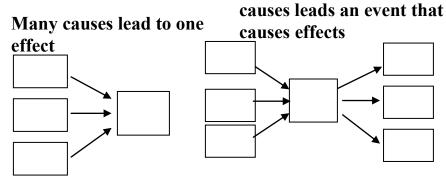
<u>Words you might see</u>: **Same**: also, as well, similarly, so, too, as well **Different:** although, but, even though, however, instead of, yet

Tree Map: Main Idea and Details, Classifying and Categorizing



<u>Words you might see</u>: all about, types, kinds; (there is a main statement and then details that support the main idea that informs.)

Multi-Flow Map: Cause/Effect or "To Explain Why"



Words: because, one reason, another reason, for instance, in fact, for example, since, such as, of course, that is, actually

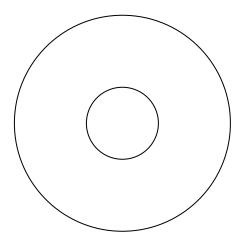
Words: so, as a result, because of this, hence, then, therefore, thus, accordingly, because of _____, we have

Bridge Map: Seeing Relationships – how things remind you of something else



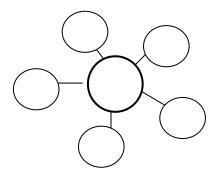
Words you might see: just like, as ____ as, same as, looks like, reminds,

Circle Map: Defining



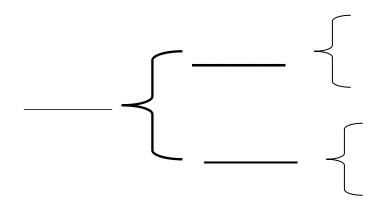
Words you might see: can be defined, is a, has, definition

Bubble Map: Describing a person or place



Words you might see: can be describes, is, has, (lots of adjectives!)

Brace Map: Whole to Parts



<u>Words you might see</u>: parts of, has the following, has (must be physical things that are parts of a whole)

The Human Heart

Text Structure

Directions: With your peers, discuss the structure of this text and decide which Thinking Map would be best to organize the information.

We think the structure of this text is
The Thinking Map we chose to organize the information is
because
Build your map in the space below. If you need additional space, use the back of this page.

The Human Heart

Summary

Directions: Summarize the article, <i>The Human Heart</i> , using the Thinking Map that you created to organize the information.		



Unit:	Grade	Duration:
3	Level/Course:	
Lesson:	4	2 Days
2		

Big Idea: Great advances have been made in medical knowledge throughout time.

Essential Question:

- What discoveries have made the most significant advances in medicine?
- What relevance do natural remedies hold in today's scientific world?
- What personal qualities are necessary to become an effective healer?

Common Core and Content Standards	Reading Literature 4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. 4.2 Determine a theme of a story, drama, or poem from details in the text; summarize the text.
	4.3 Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g. a character's thoughts, words, or actions)
	4.4 Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology.
	4.10 By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the end of the high range.
	Language 4.1 Demonstrate command of the conventions of standard English grammer and usage when writing or smooking
	4.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. a. Use interrogative, relative pronouns (who, whose, whom, which, that) and relative adverbs (where, when, why)
	b. Form and use the progressive verb tenses.c. Use modal auxiliaries to convey various conditions.
	d. Order adjectives within sentences according to conventional patterns. e. Form and use prepositional phrases.

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f. Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons. g. Correctly use frequently confused words.

Speaking & Listening

- 4.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
 - a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation are other information about the topic to explore ideas under discussion.
 - b. Follow agreed upon rules for discussions and carry out assigned roles.
 - c. Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and line to the remarks of others.
 - d. Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.
- 4.2. Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

Writing

- 4.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
 - a. introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer's purpose.
 - b. Provide reasons that are supported by facts and details.
 - c. Link opinion and reasons using word phrases.
 - d. Provide a concluding statement or section related to the opinion presented.
- 4.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
 - a. Introduce a topic clearly and group related information in paragraphs and sections including formatting, illustrations, and multimedia when useful to aiding comprehension.
 - b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples relat to the topic.
 - c.Link ideas within categories of information using words and phrases.
 - d. Use precise language and domain specific vocabulary to inform about or explain the topic.
 - e. Provide a concluding statement or section related to the information or explanation presented.
- 4.3 Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
 - a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally.



	 b. Use dialogue and description to develop experiences and events to show the responses of characters to situations. c. Use a variety of transitional words and phrases to manage the sequence of events. d. Use concrete words and phrases and sensory details to convey experiences and events precisely. e. Provide a conclusion that follows from the narrated experiences or events. 4.4 Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. 4.5 With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, a editing. 4.6 With some guidance and support from adults, use technology, including the internet, to produce and publish writing well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimur of one page in a single setting. 4.8 Recall relevant information from experiences or gather relevant information from print and digital sources; take not paraphrase, and categorize information, and provide a list of sources. 4.9 Draw evidence from literary and informational text to support analysis, reflection, and research. a. Apply grade 4 reading standards to literature (e.g., "Describe in depth a character, setting, or event in a story or drama, drawing on details in the text [e.g., a character's thoughts, words, or actions]."). b. Apply grade 4 reading standards to informational text (e.g., "explain how an author uses reasons and evidence to support particular points in a text").
Materials/ Resources/ Lesson Preparation	Open Court Text "Sewed Up His Heart," Double Entry Journal Text Dependent Questions Student Journal "Doctor's Notes" - found at the end of the student journal. Must be torn out and stapled so students can take home. Conversation placemats (optional) Poster Paper for Novel Ideas Activity

Objectives	Content: Students will work with a partner and independently to read complex text, answer text dependent questions, and identify	Language: Students will use cause and effect language (ex. because, therefore, so, since),
	structure of a complex text.	academic conversation stems, and language to support evidence (ex. On page the author



		said, I know this because the author said).	
Depth of Knowledge Level	□ Level 1: Recall x Level 2: Skill/Concept		
	x Level 3: Strategic Thinking Devel 4: Extended Thinking		
College and Career Ready Skills	x 1. Demonstrating independence x 2. Building strong content knowledge		
	x 3. Responding to varying demands of audience, task purpose, and discipline		
	□ 4. Comprehending as well as critiquing		
	x 5. Valuing evidence		
	□ 6. Using technology and digital media strategically and capably		
	□ 7. Coming to understand other perspectives and culture		
Common Core Instructional	x Building knowledge through content-rich nonfiction texts		
Shifts	x Reading and writing grounded from text		
x Regular practice with complex text and its academic vocabulary		nry	



Academic Vocabulary	KEY WORDS ESSENTIAL TO UNDERSTANDING	WORDS WORTH KNOWING
TEACHER PROVIDES SIMPLE EXPLANATION	prostration, immaculate, intern, eminent, colleague, suture, coronary artery, meticulously, irrigated, interracial	anesthesia, incision
STUDENTS FIGURE OUT THE MEANING	complication, fatal, asepsis, condemnation, pericardium	examination, cautious, cartilage, sternum, catgut

Pre-teaching Considerations	Students learned how to write a journal entry from a character's perspective in the 3rd Grade Unit "Strength of Character." In this unit, they will be asked to write a journal from the perspective of Dr. Dan. Students will have a writing resource in their student journal to help. However, there is no modeled teacher lesson included. Based on student and teacher discretion, a review may be necessary.
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CCSS Foundational Standards	Continua Onon Court Green Section
(K-5 only)	Continue Open Court Green Section

Lesson Delivery

Instructional	Check method(s) used in the lesson:	
Methods	x Modeling	x Guided Practice x Collaboration



x Independent Practice	 Guided Inquiry 	x Reflection
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Preparing the Learner	Day 1 Novel Ideas Only: See directions following lesson. Student activity sheet is included in their journal.
Interacting with the Text/Concept	 Day 1 1. Students read pages 226-231 of "Sewed Up His Heart" unencumbered. As they read, have students complete the Double Entry journal, charting the main points and supporting evidence. Explain to students they will be using this scaffold to help the summarize the text and organize their notes as they read. (Option: have students take the story home and read it as homework. The Double Entry journal is a good way to hold them accountable for their reading). 2. Second read - Students work collaboratively to answer text dependent questions for the first part of the story. Re-read the first paragraph of the story. What kind of figurative language is used? What is the author's purpose in using it? How does it contribute to the setting of the story? The author uses a simile. ("like a sweltering blanket") The author's purpose is to let the reader know how hot and humid the weather was. It helps the reader better understand the setting. Read page 228 again. How did Dr. Dan know that James Cornish had developed complications? Dr. Dan knew he had developed complications because he had serious chest pains, his breathing became labored, he was coughing, and was covered in sweat. How did medical rules create more concern for Dr. Dan? Medical experts repeatedly warned against opening the thorax, the segment of the body containing the heart and lungs. What major decision did Dr. Dan have to make? What decision did he decide on? Cite evidence to support your answer. Dr. Dan needed to make a decision whether to operate and risk the patient dying, causing his reputation to be at risk, or not operating and no one is to blame. Eventually, Dr. Dan decides to operate. On page 230, the author states "Dr. Dan lifted his chin, the way he did when he faced a challenge." What can you infer from this statement? How does the author use figurative language to describe how Dr. Dan faces challenges? Cite evidence to support your answe

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- 3. Reflection: After reading the first part of this story, students answer the question, "After reading about and learning about the many parts and functions of the heart,do you think Dr. Dan should operate on James Cornish? Provide evidence from the texts to support your answer."
- 4. Homework: Students will write in their "Doctor's Notes" booklet found at the back of the student journal. These pages shoul be torn out and stapled so students can take it home. They will respond to the following prompt: "Pretend you are Dr. Dan. You walk into the emergency room and see James Cornish lying on the bed with a knife in his chest. What do you think? What do you do? How do you feel? Make sure to write your journal entry from the first person point of view."

Day 2

- 5. Have students share their reflection from the previous day with a partner or the entire class.
- 6. Students read pages 232-237 of "Sewed Up His Heart" unencumbered. As they read, have students continue to complete the Double Entry journal, charting the main points and supporting evidence. Explain to students they will be using this scaffold to I them summarize the text and organize their notes as they read. (Option: have students take the story home and read it as homework. The Double Entry journal is a good way to hold them accountable for their reading).
- 7. Second read Students work collaboratively to answer text dependent questions for the second part of the story.
 - Read the third paragraph on page 232. Why does the author include questions? Why are these questions important? Cite specific evidence to support your answer.
 - The author includes these questions to illustrate for the reader what might be going on inside Dr. Dan's head. It also illustrates the fact that Dr. Dan was in unchartered territory. He had no idea what was going to happen when he opened the chest.
 - On page 234, the author states "These hands now raced against time to save a life." What does he mean by this?
 - He means that Dr. Dan has only his hands and the tools in front of him to save the life of James Cornish.
 - What complications did James Cornish have after the first surgery?
 - He had a high fever, his pulse was racing, it was difficult to hear his heartbeat, and he was having seizures.
 - Read page 237. How does Dr. Dan show that he is humble? Cite specific evidence.
 - Dr. Dan shows he is humble when he is interviewed. He would rather talk about his interracial hospital than his successful surgery.
 - How did Dr. Dan contribute to advances in medicine? How does this reflect our Big Idea?
 - Dr. Dan contributed to advances in medicine by taking a risk and performing open heart surgery on James Cornish. If he had not done that, other advances may never have been made. This reflects our Big Idea because it contributed to great advances in medical knowledge.
- 8. Homework: in the "Doctor's Notes" booklet. Prompt: "Pretend you are Dr. Dan. What is your biggest fear? What could have gone wrong during the surgery? Why was it such a risk?"



Extending Understanding	-	our partner talk, focused reading of the story, and coloersonal qualities are necessary to become an effect	
Differentiated Instruction:	English Learners:	Students Who Need Additional Support: See Additional Scaffolds available on Gooru	Accelerated Learners: See additional tasks available on Gooru
		Lesson Reflection	
Teacher Reflection Evidenced by Student Learning/ Outcomes			

Novel Ideas Only (QTEL)

This is a fast way of eliciting the knowledge or intuitions that reside in a group about a specific topic. Participants work in teams of four brainstorming responses to a prompt that the teacher has posed. On individual papers, each group member writes down the given heading and prompt, and numbers the page from 1 to 8, as in the example:

Novel Ideas Only <u>Pioneer</u>	
e think the word 'pioneer' can mean	
	think the word 'pioneer' can mean

In this example, the teacher explains that students will have three minutes together to brainstorm possible meanings of the word "pioneer". As each student offers their idea, a second student echoes the idea and all group members add it to their individual lists. It is important that all lists in a group be the same. Students who know more English help those who know less English. It is better for a team to have only one or two different items that are written in the best possible way, that all can agree on, than to have one student write five items while others have fewer or none.

When the three minutes have passed, the teacher asks all students to draw a line under the last item in the group's list. Then all the teams stand, grouping themselves so that each team is distinct from the others. The teacher calls on one student from a group to read the team's ideas. The student starts by reading the prompt, "We think that the word "Pioneer" may mean...", and then adds whatever ideas the team has agreed on. The teacher may keep track of the novel ideas stated by writing them on poster paper. The rest of the class must pay attention because after the first group has presented all of their ideas, the teacher asks them to sit down and calls on a student from another team to add that team"s "novel ideas only." Ideas that have already been presented cannot be repeated.

Scaffolding: schema building, bridging

Novel Ideas Only

<u>Pioneer</u>

We think the word 'pioneer' can mean:

1.	
3.	

Double Entry JournalSewed Up His Heart

Main Points from the Text	Supporting Evidence

Sewed Up His Heart

Text Dependent Questions Part 1

is the author's purpose in using it? How does it contribute to the setting of the story?
2. Read page 228 again. How did Dr. Dan know that James Cornish had developed complications?
3. How did medical rules create more concern for Dr. Dan?
4. What major decision did Dr. Dan have to make? What decision did he decide on? Cite evidence to support your answer.
5. On page 230 the author states "Dr. Dan lifted his chin, the way he did when he faced a challenge." What can you infer from this statement? How does the author use figurative language to describe how Dr. Dan faces challenges? Cite evidence to support your answer.

Sewed Up His Heart Text Dependent Questions Part 2

1. Read the third paragraph on page 232. Why does the author include questions? Why are these questions important? Cite specific evidence to support your answer.
2. On page 234, the author states "These hands now raced against time to save a life." What does he mean by this?
3. What complications did James Cornish have after the first surgery?
4. Read page 237. How does Dr. Dan show that he is humble? Cite specific evidence.
5. How did Dr. Dan contribute to advances in medicine? How does this reflect our Big Idea?

Reflection
Lesson 2, Day 1

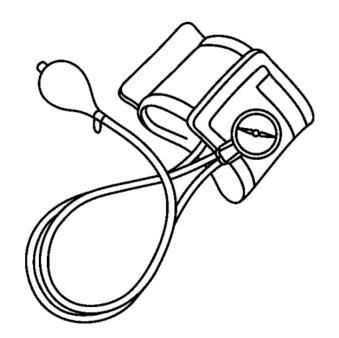
Directions: After learning about the many parts and functions of
the heart, do you think Dr. Dan should operate on James Cornish
without being absolutely certain which area was damaged?
Provide evidence from the text to support your answer.

Reflection

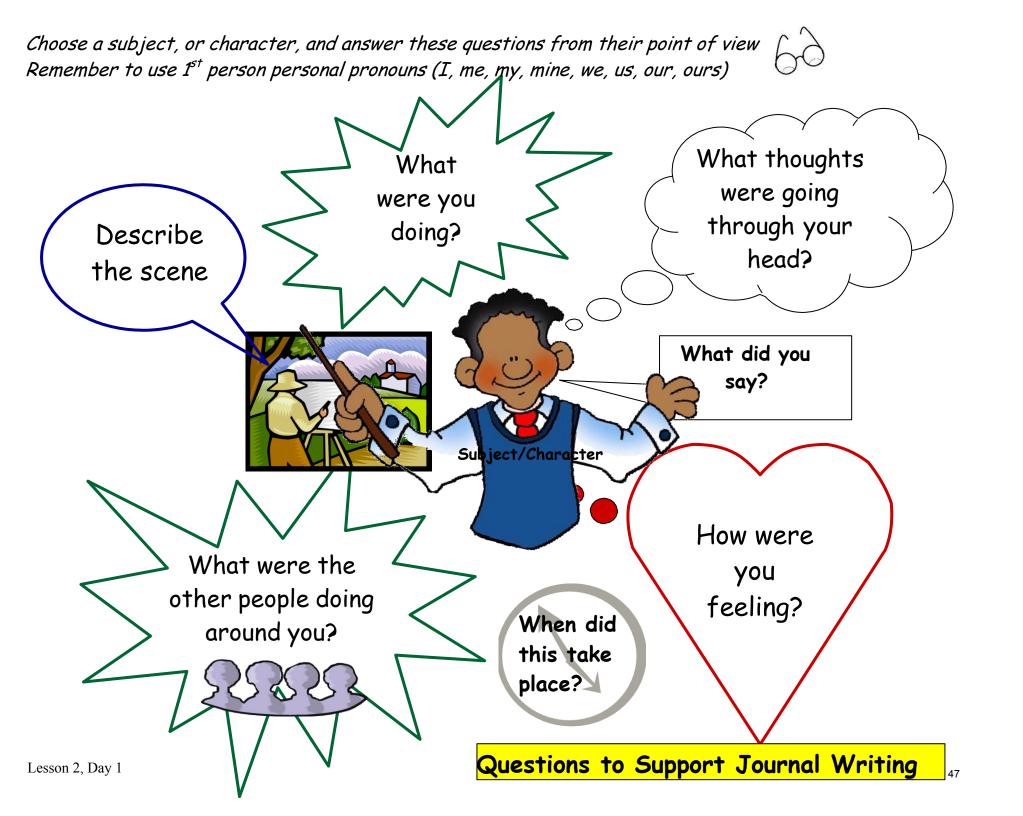
Lesson 2, Day 2

Based on your partner talk, focused reading of the story, and collaborative conversation about Dr. Dan, answer this essential question: What personal qualities are necessary to become an effective healer?			

Doctor's Notes



Dr. _____



Doctor's Journal Day 1

Directions: Pretend you are Dr. Dan. You walk into the emergency room and see James Cornish lying on the bed with a knife in his chest. What do you think? What do you do? How do you feel? Make sure to write your journal entry from the first person point of view.		

Directions:	Pretend you are	Dr. Dan. What	is your biggest	fear? What
could have	gone wrong duri	ng the surgery?	Why was it such	ch a risk?

Doctor's Journal Day 3



Unit: 4	Grade Level/Course:	Duration:
	Level/Course:	
Lesson:	4	2 days
3		

Big Idea: Great advances have been made in medical knowledge throughout time.

Essential Question: What discoveries have made the most significant advances in medicine? What relevance do natural remedies hold in today's scientific world? What personal qualities are necessary to become an effective healer?

Common Core and Content Standards

Reading Literature

- 4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- 4.2 Determine a theme of a story, drama, or poem from details in the text; summarize the text.
- 4.3 Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g. a character's thoughts, words, or actions)
- 4.4 Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology.
- 4.10 By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the end of the high range.

Language

- 4.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
 - a. Use interrogative, relative pronouns (who, whose, whom, which, that) and relative adverbs (where, when, why)
 - b. Form and use the progressive verb tenses.
 - c. Use modal auxiliaries to convey various conditions.
 - d. Order adjectives within sentences according to conventional patterns.
 - e. Form and use prepositional phrases.



f. Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons. g. Correctly use frequently confused words.

Speaking & Listening

- 4.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
 - a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information about the topic to explore ideas under discussion.
 - b. Follow agreed upon rules for discussions and carry out assigned roles.
 - c. Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and line to the remarks of others.
 - d. Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.
- 4.2. Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

Writing

- 4.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
 - a. introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer's purpose.
 - b. Provide reasons that are supported by facts and details.
 - c. Link opinion and reasons using word phrases.
 - d. Provide a concluding statement or section related to the opinion presented.
- 4.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
 - a. Introduce a topic clearly and group related information in paragraphs and sections including formatting, illustrations, and multimedia when useful to aiding comprehension.
 - b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
 - c.Link ideas within categories of information using words and phrases.
 - d. Use precise language and domain specific vocabulary to inform about or explain the topic.
 - e. Provide a concluding statement or section related to the information or explanation presented.
- 4.3 Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
 - a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally.



	b. Use dialogue and description to develop experiences and events to show the responses of characters to situations. c. Use a variety of transitional words and phrases to manage the sequence of events. d. Use concrete words and phrases and sensory details to convey experiences and events precisely. e. Provide a conclusion that follows from the narrated experiences or events. 4.4 Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. 4.5 With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. 4.6 With some guidance and support from adults, use technology, including the internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single setting. 4.8 Recall relevant information from experiences or gather relevant information from print and digital sources; take notes, paraphrase, and categorize information, and provide a list of sources. 4.9 Draw evidence from literary and informational text to support analysis, reflection, and research. a. Apply grade 4 reading standards to literature (e.g., "Describe in depth a character, setting, or event in a story or drama, drawing on details in the text [e.g., a character's thoughts, words, or actions]."). b. Apply grade 4 reading standards to informational text (e.g., " explain how an author uses reasons and evidence to support particular points in a text").
Materials/ Resources/ Lesson Preparation	"Sewed Up His Heart," Dr. Dan expository text, "Medicine: Past and Present," Note-taking outline (to record notes from previous story).

Objectives Content: Students will read and understand complex text, defend claims, and cite supporting evidence to support their claim.	Language: Students will use argumentative language and collaborative conversation sentence stems to defend their claim both written and orally.
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SAUSD Common Core Lesson



Depth of Knowledge Level	x Level 1: Recall	x Level 2: Skill/Concept
	x Level 3: Strategic Thinking	x Level 4: Extended Thinking

College and Career Ready Skills	x 1. Demonstrating independence x 2. Building strong content knowledge x 3. Responding to varying demands of audience, task purpose, and discipline 4. Comprehending as well as critiquing x 5. Valuing evidence 6. Using technology and digital media strategically and capably 7. Coming to understand other perspectives and culture
	□ 7. Coming to understand other perspectives and culture

Common Core Instructional	x Building knowledge through content-rich nonfiction texts
Shifts	x Reading and writing grounded from text
	x Regular practice with complex text and its academic vocabulary

Academic	KEY WORDS	
Vocabulary	ESSENTIAL TO	WORDS WORTH KNOWING
	UNDERSTANDING	

SAUSD Common Core Lesson



(Tier II)		fatal, meticulously	sketchy, pioneering, continuously, dressing
	PROVIDES TEACHER SIMPLE EXPLANATION		
(Tier III)	STUDENTS FIGURE OUT THE MEANING	immaculate, examination, impracticable	condemnation, complications

Pre-teaching Considerations	
CCSS Foundational Standards (K-5 only)	Continue Open Court Green Section

Lesson Delivery

	Check method(s) used in the lesson:
Instructional Methods	x Modeling x Guided Practice x Collaboration
	x Independent Practice - Guided Inquiry x Reflection

SAUSD Common Core Lesson

55



Preparing the Learner	<u>Day 1</u>
	1. Teacher reviews the timeline from "Medicine: Past and Present" from the previous lesson in Open Court lesson, focusing on the timeline and highlighting events before and after Dr. Dan. Note that X-rays happen after Dr. Dan, however it is not discussed in the text. 2. Pass out the expository text on "X-Rays" and have students skim and scan, paying attention to text structure and main idea. 3. Have students independently choose and create an appropriate thinking map to demonstrate their understanding of the structure of this text. 4. Quick write - students should write a brief summary of the article based on the notes in their thinking map. 5. Homework: in the "Doctor's Notes" booklet. Prompt: "Pretend you are Dr. Dan. Knowing that your decision to operate was so
	risky, how do you feel now that it is over?"
Interacting with the Text/Concept	Day 2 6. Using the note-taking guide, students should work in partners to identify the important discoveries and contributions of each of the individuals discussed in <i>Medicine: Past and Present</i> . 7. In order to come to the collaborative academic conversation prepared, students should compare notes with another pair and discuss the importance of each of these people ("pair-square"). 8. Teacher facilitates an academic conversation using the following prompt, "How would the discoveries/contributions of these individuals have affected Dr. Dan?" "Would they have made a difference?" 6. Students should work on building on one another's ideas, agreeing and disagreeing respectfully, and asking each other to clarify their ideas. 7. Students should have their academic conversation mats available for additional scaffolds if needed. 8. Reflection/Homework: In your journal, summarize the conversation from class today highlighting the person whom you think made the most important contribution. (This may be used as a formative assessment)
Extending the Understanding	7. Teacher facilitates a brief discussion on the Big Idea and Essential questions; what have we been able to answer and what have we learned from these texts? 8. Reflection: Discuss the Big Idea and choose one essential question to write about.

Differentiated Instruction:	C	Students Who Need Additional Support: See Differentiation folder on Gooru for additional scaffolds and activities.	Accelerated Learners: See Differentiation folder on Gooru for additional tasks
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Е		Lesson Reflection
Continuum		
esson	Evidenced by Student Learning/ Outcomes	
Le		

X-Rays

X-rays are particles of electromagnetic radiation. They are used to show doctors what is going on inside your body. An x-ray machine sends out invisible x-ray particles, which pass through your bones. A computer or special film records this and produces pictures of what is happening inside you for your doctor to see.

How are they done?

A film, similar to those used in ordinary photos, is put behind the part of your body that is having the x-ray. The x-ray machine then shoots out a short burst of x-ray particles through your body and onto the film. You should stay as still as you can when the x-ray beam shoots, to make sure that the picture isn't blurred. The film is then developed.

The more x-rays that hit the film, the blacker it is when it is developed. Dense parts of your body block lots of the x-rays from getting through to the film, so they show up white, like your bones, for example. The parts of your body that are hollow or filled with air, like parts of your lungs, show up black. Soft tissues, like your muscles and organs, are grey. The shade of grey depends on how dense they are, so the denser the body part is, the lighter the shade of grey it will be.

What do they show?

X-rays can give your doctors information about lots of different things that are going on in your body. For example, they can show breaks and other problems in your bones, as well as some problems with your joints. X-rays can also show the size and shape of your heart, so they can detect some heart conditions.

An x-ray can be all that is needed to diagnose a problem or see how bad it is. Sometimes though, the doctors need to do more detailed x-rays, called CT scans, or do MRI before they can tell you exactly what's wrong. You will often need CT or MRI if the part of your body being looked at is soft tissue, or organs like your brain or liver.

Are they safe?

There is very little risk with having one x-ray, because the dose of radiation you are given is always the lowest one possible that the doctor needs to get a good picture.

Do they hurt?

X-rays are totally painless. You can't see or feel them!

What happens next?

The developed film is studied by a radiologist - a special type of doctor who is an x-ray expert. The radiologist will make a report and send it to the doctor who asked for the x-ray to be done, and he or she will then discuss the results with you.

The First X-Ray

Without realizing it, Roentgen had become the first person to discover how to use electromagnetic radiation to create the X-ray. The first X-ray is one he took of his wife's hand. Before this, tumors, broken bones and bullets buried within bodies could only be assessed by a doctor's examination. A patient's outcome depended on how skillful the doctor was. Within a month after Roentgen's announcement, doctors were using X-rays.

The X-ray brought about massive changes to society. Doctors, for the first time, could see images of the human heart and brain. By May of 1896, the X-ray had its first medical use, when it was used in Naples to locate bullets in the arm of a soldier wounded in battle. A German doctor would find a tumor in the tibia (part of the leg) of a child. Before long, X-rays would be used to fight cancer (with radiation therapy) as well as discover it.

The X-Ray

Text Structure

Directions: Independently, think about the structure of this text and decide which Thinking Map would be best to organize the information.

The Thinking Map I chose to organize the information is because	,
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page.

The X-Ray

Summary

Directions: Summarize the article, <i>The X-Ray</i> , using the Thinking Map that you created to organize the information.		

Sewed Up His Heart

Collaborative Conversations

1. Using the story, <i>Medicine: Past and Present</i> , discuss how the work/discoveries of the following individuals have affected Dr. Dan? Would they have made a difference?
Hippocrates
William Harvey
Anton van Leeuwenhoek
Louis Pasteur
Joseph Lister

2. How could Alexander Fleming's discovery in 1929 have helped Dr. Dan with his surgery and his patient? (penicillin for internal germ/disease fighting).
3. How would have the invention of the x-ray impacted Dr. Dan's surgery?

Reflection/Homework

Lesson 3, Day 2

Directions: Summarize the conversation from class today, highlighting the person you think made the most important contribution.				



Unit: 4	Grade Level/Course:	Duration:
Lesson:	4	2 Days - Performance Task

Big Idea: Great advances have been made in medical knowledge throughout time.

Essential Question: What discoveries have made the most significant advances in medicine? What relevance do natural remedies hold in today's scientific world? What personal qualities are necessary to become an effective healer?

Common Core and Content Standards

Reading Literature

- 4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- 4.2 Determine a theme of a story, drama, or poem from details in the text; summarize the text.
- 4.3 Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g. a character's thoughts, words, or actions)
- 4.4 Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology.
- 4.10 By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the end of the high range.

Language

- 4.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
 - a. Use interrogative, relative pronouns (who, whose, whom, which, that) and relative adverbs (where, when, why)
 - b. Form and use the progressive verb tenses.
 - c. Use modal auxiliaries to convey various conditions.
 - d. Order adjectives within sentences according to conventional patterns.
 - e. Form and use prepositional phrases.



f. Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons. g. Correctly use frequently confused words.

Speaking & Listening

- 4.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
 - a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information about the topic to explore ideas under discussion.
 - b. Follow agreed upon rules for discussions and carry out assigned roles.
 - c. Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and line to the remarks of others.
 - d. Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.
- 4.2. Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

Writing

- 4.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
 - a. introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer's purpose.
 - b. Provide reasons that are supported by facts and details.
 - c. Link opinion and reasons using word phrases.
 - d. Provide a concluding statement or section related to the opinion presented.
- 4.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
 - a. Introduce a topic clearly and group related information in paragraphs and sections including formatting, illustrations, and multimedia when useful to aiding comprehension.
 - b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
 - c.Link ideas within categories of information using words and phrases.
 - d. Use precise language and domain specific vocabulary to inform about or explain the topic.
 - e. Provide a concluding statement or section related to the information or explanation presented.
- 4.3 Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
 - a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally.



	b. Use dialogue and description to develop experiences and events to show the responses of characters to situations. c. Use a variety of transitional words and phrases to manage the sequence of events. d. Use concrete words and phrases and sensory details to convey experiences and events precisely. e. Provide a conclusion that follows from the narrated experiences or events. 4.4 Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. 4.5 With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. 4.6 With some guidance and support from adults, use technology, including the internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single setting. 4.8 Recall relevant information from experiences or gather relevant information from print and digital sources; take notes, paraphrase, and categorize informational text to support analysis, reflection, and research. a. Apply grade 4 reading standards to literature (e.g., "Describe in depth a character, setting, or event in a story or drama, drawing on details in the text [e.g., a character's thoughts, words, or actions]."). b. Apply grade 4 reading standards to informational text (e.g., "explain how an author uses reasons and evidence to support particular points in a text").
Materials/ Resources/ Lesson Preparation	"Sewed Up His Heart," Dr. Dan expository text, "Medicine: Past and Present," Note-taking outline (to record notes from previous story.

•	rgument supported with evidence from a text.	Language: Students will use argumentative language and collaborative conversation sentence stems to defend their claim both written and orally.
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SAUSD Common Core Lesson



Depth of Knowledge Level	x Level 1: Recall	x Level 2: Skill/Concept
	x Level 3: Strategic Thinking	x Level 4: Extended Thinking

 x 1. Demonstrating independence x 2. Building strong content knowledge x 3. Responding to varying demands of audience, task purpose, and discipline 4. Comprehending as well as critiquing x 5. Valuing evidence 6. Using technology and digital media strategically and capably 7. Coming to understand other perspectives and culture
□ 7. Coming to understand other perspectives and culture

Common Core Instructional	x Building knowledge through content-rich nonfiction texts
Shifts	x Reading and writing grounded from text
	x Regular practice with complex text and its academic vocabulary

Academic	KEY WORDS	
Vocabulary	ESSENTIAL TO	WORDS WORTH KNOWING
	UNDERSTANDING	

SAUSD Common Core Lesson



PROVIDES TEA SIMPLE EXPLAN			
STUDENTS FIGU THE MEANI			
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Pre-teaching Considerations	Pre-teaching Considerations		
CCSS Foundational Standards (K-5 only) Continue Open Court Green Section			
		Lesson Delivery	
Check	k method(s) used in the lesson:	•	

	Check method(s) used	in the lesson:
Instructional Methods	x Modeling	x Guided Practice x Collaboration
Wiemous	x Independent Practic	e O Guided Inquiry x Reflection

Preparing the Learner	<u>Day 1</u>.1. Review reflection from previous day.
	1. Review reflection from previous day.



Interacting with the Text/Concept	 Refer to the students' quick write from yesterday regarding the conversation about the discoveries made in "Medicine Past and Present," and how they would have impacted Dr. Dan. Have them share out with a partner or the entire class. Pass out "Dr. Dan" article. Whole class does a "skim and scan" to gain a basic understanding of the article. Read first page together, modeling "think aloud" strategies. "Jigsaw" the article: Assign groups different sections: 1.) interracial hospital, 2.) first open heart surgery, 3.) administrative skills "60#eqwpygtu" "Teketo kpckqp Groups read their section together, annotating and making notes of important information on the Stop & Jot page in their journal. Groups share out to the entire class Students take notes on the remaining sections (Stop & Jot) as others present information. "Fc{"4"""Vgcej gt "facilitates brief discussion of Dr. Dan's accomplishments Performance Task: Students will write an opinion paper defending what they think was Dr. Dan's greatest accomplishment. They will defend their claim citing evidence from the texts to support their argument.
Extending the Understanding	7. Teacher facilitates a brief discussion on the Big Idea and Essential questions; what have we been able to answer and what have we learned from these texts? 8. Quick write: Discuss the Big Idea and choose one essential question to write about.

Differentiated Instruction: English Learners: Formulaic expressions based on language level. Additional tasks on Gooru.	Students Who Need Additional Support: See Differentiation folder on Gooru for additional scaffolds and activities.	Accelerated Learners: See Differentiation folder on Gooru for additional tasks
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Lesso	SAUSD Common Core	Lesson	70

Dr. Daniel Hale Williams

Daniel Hale Williams was a pioneering heart surgeon at a time in history when technological discoveries were changing the practice of medicine. In 1893, he became the first physician to successfully perform open heart surgery. He did this by entering the chest cavity of a stabbing victim and repairing the heart sac, or pericardium. The young man that operated on, James Cornish, went on to live another fifty years after the surgery.

Williams was also responsible for making quality health care available to urban blacks in Chicago. He opened Provident Hospital, the first interracial hospital in the United States, in 1891. Provident not only improved health care for black citizens, but also provided training and jobs for young black men and women interested in working in the medical field. Later in his career, as chief surgeon for the Freedmen's Hospital in Washington, D.C., Williams improved the hospital's organization and offered both training programs for nurses and positions for doctors.

Early Life

Daniel Hale Williams was the fifth child out of seven. He was born five years before the Civil War began and grew up in Hollidaysburg, Pennsylvania.

Williams's ancestry was mixed on both his mother's and father's side. His mother, Sarah Price Williams, claimed black, white, and Indian ancestry. His grandfather, Daniel Hale Williams I, was an African-American barbershop owner and preacher who had married a Scottish-Irish woman. Williams's father, Daniel Hale Williams II, carried on the barber business. In addition, he fought for more and better education among blacks. He was also active in the Equal Rights League, which worked to gain equal rights for blacks following the Civil War.

In 1867, soon after the family moved to Annapolis, Maryland, Williams's father died of consumption, a respiratory disease. His death caused the large family to separate. Only ten years old, young Williams was sent to Baltimore to live with a family friend and become a shoemaker apprentice. Unhappy in his situation, he ran away. Williams took the train to Rockford, Illinois, to join his mother and sisters.

When his mother returned east, he remained in Illinois and learned the barber's trade. He became friends with a barber, Harry Anderson, who took him in. Williams studied law for a short time following his high school graduation. Then, at the age of 22, he became an apprentice for Dr. Henry Palmer, a local doctor and respected surgeon who had been head of the largest military hospital in the country during the Civil War.

In the late nineteenth century, few doctors went to medical school. Most learned their profession by working as trainees with well-known physicians. Williams served the usual two-year apprenticeship with Dr. Palmer. Instead of opening his own practice, he decided in 1880 to attend Chicago Medical School, which later became the Northwestern University Medical School. After graduating in 1883, he opened an office in Chicago.

The field of medicine experienced a transformation in the 1880s. Williams and other surgeons benefitted from the discoveries of Louis Pasteur in France and Joseph Lister in England. Both men caused a revolution in the medical practice. Pasteur's experiments supported the germ theory of disease. They helped show that microorganisms, like bacteria, are the true cause of many diseases. Lister applied Pasteur's theories and revolutionized surgery by using disinfectants to kill germs when treating wounds. Williams practiced surgery from his office in Chicago, using Lister's principles of surgery by scrubbing his entire room with soap and water. He then sprayed carbolic acid, a strong germ killer, and sterilized all his medical instruments in boiling water and steam to decrease the risk of infection.

Known to his patients and friends as Dr. Dan, Williams soon gained a reputation as a successful surgeon and was appointed to the surgical staff of the South Side Dispensary in Chicago. He also became a clinical instructor and demonstrator in anatomy at the Chicago Medical College. By the late 1880s, Williams had been named the first black surgeon to the City Railway Company and was appointed to the Illinois State Board of Health.

Founded Interracial Hospital

As late as 1890 blacks could not be admitted to hospitals, except charity wards. As well, black doctors were not allowed the opportunity to work in hospitals. Williams started working to establish a hospital that would be managed and staffed by blacks as well as whites. He established the first interracial hospital, the Provident Hospital and Training School Association, in January of 1891. Provident provided a place for young black doctors to practice and trained a new generation of student nurses. The hospital opened in May of 1891, and seven of 175 applicants were accepted for the 18-month nurses' training program.

Performed First Heart Surgery

That same year, a saloon brawl in Chicago brought Williams national attention. A young black man named James Cornish had been stabbed in a neighborhood fight. He was rushed to Provident Hospital with a one-inch knife wound in his chest near

his heart. By the time Williams could administer aid, Cornish had collapsed from loss of blood and shock. Risking his reputation as a surgeon, Williams decided to operate—at that time without benefit of x-rays, blood transfusions, or antibiotics to fight infections. With six physicians witnessing the operation, he opened the patient's chest cavity and saw that the knife used in the stabbing had entered the heart about a tenth of an inch. It had also cut the sac around the heart, known as the pericardium.

Williams decided the heart muscle didn't need sewing up, but he did suture the pericardium. It was a daring operation—the first time a surgeon had successfully entered the chest cavity and surgically explored the heart. Fifty-one days later, Cornish was released from the hospital. Completely recovered, the patient lived for another 50 years, outliving his surgeon by 12 years.

Demonstrated Administrative Skill

Following his historical surgery, Williams applied for the open position of chief surgeon at Freedmen's Hospital in Washington, D.C. The hospital was set up after the Civil War to serve the medical and health needs of freed slaves and other black citizens. It had suffered a decline during the 12-year management of Dr. Charles B. Purvis. Under the administration of President Grover Cleveland, Williams received the position of chief surgeon.

Freedmen's Hospital was threatened by neglect when Williams took over. Five wooden buildings built as emergency barracks served as hospital wards. Funding was much too low, the patient death rate was high, and there were no trained nurses on staff. Williams reorganized the hospital into seven departments, set up pathological and bacterial divisions, introduced modern surgical methods, and built a biracial staff of 20 specialists. Under Williams's direction, Freedmen's offered many black doctors their first chance at a hospital position.

To change Freedmen's image as a hospital only for the very poor, Williams offered open clinics in surgery. He demonstrated and lectured, allowing the public to sit in an amphitheater and observe operations. This drastically new program succeeded in rebuilding the hospital's image. By 1896, the Freedmen's Hospital was admitting five hundred surgical cases a year and Williams had succeeded in significantly reducing the death rate to a record low. According to Dr. William A. Warfield, a student and successor to Dr. Williams who was quoted in *Black Pioneers of Science and Invention*, "Before Dr. Williams came to the hospital in 1894, there was no real surgical department. It can be said that with the arrival of

Dr. Williams, surgical development began in all areas, especially abdominal. He

was laying the foundation for more and better surgical work. By the time he left the hospital, a great push had been given to all branches of surgery."

Continued to Counter Discrimination

Williams resigned from his position as chief surgeon of Freedmen's Hospital in February of 1898. Then, at the age of 42, he married Alice Johnson. The couple returned to Chicago, where Williams continued his position at Provident Hospital. In 1899, he conducted annual surgical clinics at Meharry Medical College in Nashville, which eventually led to the opening of Nashville's first interracial hospital. Williams also went to Atlanta to help organize the National Medical Association (NMA), an alternative organization for blacks, who at the time were not allowed to participate in the American Medical Association. Williams became the NMA's first vice president.

In 1912, Williams was honored with a position as associate attending surgeon at Chicago's St. Luke's Hospital, the largest, wealthiest, and most important hospital in the city. Resigning his post at Provident Hospital, he served at St. Luke's until his retirement from medicine and then lived for several years with his wife in northern Michigan. In 1926, Williams suffered a stroke that left him partially paralyzed and ended his medical career. He died on August 4, 1931, at the age of 75.

Stop & Jot – Dr. Dan Article

Everyone reads introduction and Early Life. In groups of three, jigsaw remaining parts and takes notes.

Founded Interracial Hospital:
Performed First Heart Surgery:
Demonstrated Administrative Skill:

Continued to Counter Discrimination:				
	-			

Sewed Up His Heart

Summative Assessment

Dr. Dan accomplished a great many things in his lifetime. What do you think was his greatest accomplishment? Defend your claim by citing supportive evidence from the texts you've read throughout the unit.		

End of Unit Reflection

Think about the Big Idea and Essential Questions of this unit. Answer as many as you can based on what you learned.