

A Helping Hand – Civil War Prosthetics

SUBJECT	TEACHER	GRADE	DATE
American Studies Unit: Civil War Lesson: Prosthetics	NMCWM	04/08	Drafted: 5/4/2020

TIME REQUIRED

30/45 Minutes

OVERVIEW

During the Civil War, there were around 60,000 amputations performed over the course of the four year conflict. The damage caused by Civil War bullets, or Minié balls, often left surgeon with no choice but to amputate the limbs of injured soldiers in their efforts to save lives. Following the war, thousands of veterans who had suffered amputations were in need of artificial limbs, and thus the modern prosthetic industry was born.

One innovator in the prosthetic industry was James Hanger, who was wounded in one of the first battles of the war. Just 18 at the time of his leg amputation at the Battle of Philippi, Hanger developed a new homemade prosthetic made out of long narrow pieces of wood and rubber tendons. His design was drastically different than the traditional stiff peg legs of the era. Hanger's prosthetic included hinges around the knee and ankle, thus allowing him a more natural gait. Though he could not know it at the time, this innovation revolutionized the field of prosthetics. Hanger received a U.S. patent for his designs and founded the J.E. Hanger Company which remains at the forefront of prosthetic and orthotic innovation today. Prosthetics, however, had limitations. For veterans with an arm amputation, no inconspicuous prosthetic existed. The best options were prosthetic arms with hooks which could be customized with attachable eating utensils. However, many veterans with a missing arm preferred an empty sleeve to a metal hook.

Prosthetics were important for mobility and for amputees to become inconspicuous in civilian society. The federal government subsidized artificial limbs for documented Union soldiers who suffered an amputation. Washington would provide an artificial limb or a financial commutation of up to seventy-five dollars. Because they had engaged in rebellion, Confederate veterans were not eligible for federal subsidies for artificial limbs. Some former Confederate states like North Carolina and Virginia funded their own artificial limb programs to

provide Confederate veterans with their own prosthetic limbs. This activity is designed to explain the impact of the Civil War on the prosthetic industry in the 19th century and today.

PHASES	4 TH GRADE	SECONDARY
CURRICULAR STANDARDS	SS.400.50.03.c Analyze regional differences in the Civil War and its effects on people in Maryland.	SS.AS1.80.01 Identify and explain the impact of key events & figures of the Civil War. SS.AS1.80.05 Explain how the Civil War caused technological change and medical advancements in America.
OBJECTIVE(S)	Students will explore and explain the evolution of the prosthetic industry from the Civil War to today.	Students will explore and explain the evolution of the prosthetic industry from the Civil War to today and how technology will improve prosthetics in the years to come.
INFORMATION REQUIRED	Amputation Prosthetics	Amputation Prosthetics
ACTIVITY	<p>Engage: What materials do you think an artificial limb would be made from in the 1860s? Remember, most of the materials we use today like plastic, aluminum, etc. didn't exist at the time. How do you think they are different from those made today?</p> <p>Explore: Worksheet Appendix A</p> <p>Explain: What are the differences between the two Civil War era leg prosthetics? Which do you think soldiers would prefer? How are the two Civil War era leg prosthetics different from the modern ones? How</p>	<p>Engage: What do you think are some of the differences between prosthetic limbs from the Civil War era and those used today?</p> <p>Explore: Worksheet Appendix B</p> <p>Explain: Examine the Civil war era prosthetics. Now search online for their modern counterparts (Suggested site: https://www.spsco.com/by-product-type/prosthetics.html). How do the modern prosthetics compare and contrast with their Civil War era counterparts? How has technology improved the</p>

	<p>are they similar? What are the differences between Civil War-era and modern arm prosthetics? How are they similar?</p> <p>Elaborate: Design your own Civil War era or modern limb for a soldier who has lost an arm or leg. Explain how it works and how it will help the soldier.</p>	<p>construction of prosthetics? What do you think prosthetics will look like 100 years from now?</p> <p>Elaborate: Design your own Civil War era or modern prosthetic limb for a soldier. Include what materials are used, how it operates, and how it would help the soldier in everyday life.</p>
EVALUATION/ CLOSING	<p>Why was the demand for prosthetics so high following the Civil War? What impact did it have on soldiers' lives? How do you think artificial limbs today compare and contrast to those made in the 1860s?</p>	<p>What impact did the Civil War have on the prosthetics industry? How has the manufacture of artificial limbs changed from the 1860s to today? In what ways are they similar?</p>

REQUIREMENTS

- This can be adapted to students needs as necessary.

MATERIALS

- Worksheets attached

NOTES

This lesson can be done digitally in Microsoft Word or Google Docs. This can be modified so that students can use creative writing techniques or answer and meet certain requirements. Students may use any free drawing program such as paint for the elaborate portion, or draw by hand and scan.

Appendix A



Civil War era leg prosthetic



Civil War era leg prosthetic



Modern Leg Prosthetics



Modern Leg prosthetic

Appendix A (Continued)



Civil War soldier with arm prosthetics. Notice the hooks in place of hands.



Two eating utensil attachments for arm prosthetics.

Appendix A (Continued)

Go to this site and look at the different kinds of prosthetics made for arms today – these are all made by Hanger, Inc., which was founded by a Civil War soldier who lost his leg:

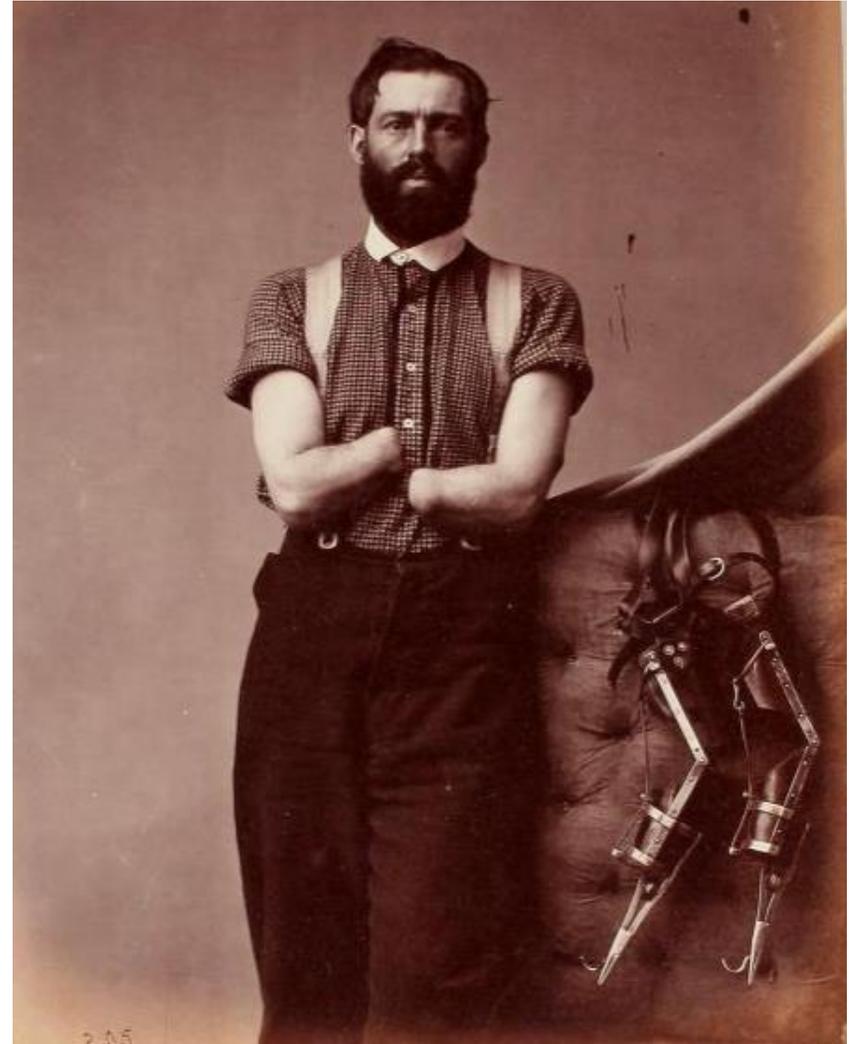
Hands - <https://www.spsco.com/by-product-type/prosthetics.html>

Wrists - <https://www.spsco.com/by-product-type/prosthetics/upper-extremity/wrists.html>

Elbows - <https://www.spsco.com/by-product-type/prosthetics/upper-extremity/elbow.html>

Forearms - <https://www.spsco.com/by-product-type/prosthetics/upper-extremity/prefab-forearms.html>

Appendix B



Appendix B (Continued)



Attachable eating utensils for arm prosthetics

Additional Resources from the National Museum of Civil War Medicine:

- [J.E. Hanger and the Growth of the Prosthetic Industry](#) – One of the first casualties of the Civil War went on to found one of the largest prosthetic limb companies, which still exists today. Read his story here
- [Disability in the Civil War](#) – Director of Interpretation Jake Wynn interviews Dr. Sarah Handley-Cousins about the perception of disability during and after the Civil War
- [Civil War Prosthetics](#) – Find out what happened after the amputation for many soldiers in this examination of prosthetics of the Civil War
- [Left-Handed Penmanship Contests](#) – Dr. Allison M. Johnson writes about the importance of left-handed penmanship contests held for Civil War amputees after the war.

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