

# Bionic Dreams

## 1. Question & Research Task

In Rodman Philbrick's 1993 book, *Freak the Mighty*, the character Kevin suffers from Morquio Syndrome. While Kevin's ideas about medical technology and bionics may have sounded like a dream or science fiction when the book was originally published, science has advanced to the extent that some of his ideas are becoming a reality.

**In this Slam Dunk, you will conduct brief, focused research to respond to the inquiry question:**

How have recent developments in the field of bionics advanced human health?



Keahi Seymour invented bionic boots that allow him to travel at 25 mph, which is slightly below Usain Bolt's record 28 mph. Click the image to launch the video about his invention.

Image Source: [Discovery Education](#), by subscription

## 2. Information Sources

Choose two or more of the information sources linked here to complete the Student Activity on Slide 3.

*When required, please see teacher/librarian for login information.*

- [Bionic Eyes and Blind Patients](#) video
- [Bionic limbs](#) video
- [Robotic Sleeve Keeps Heart Pumping](#) video
- [3D Printing - Helping Improve Health Outcomes](#) video
- [Boy sees color for the first-time](#) video
- [3D Printed artificial heart](#) text
- [Brick by Brick, Teen Build Own Prosthetic Arm](#)



Click the image above to launch a video describing an investigational method to assist paralyzed patients with movement using the power of thought.

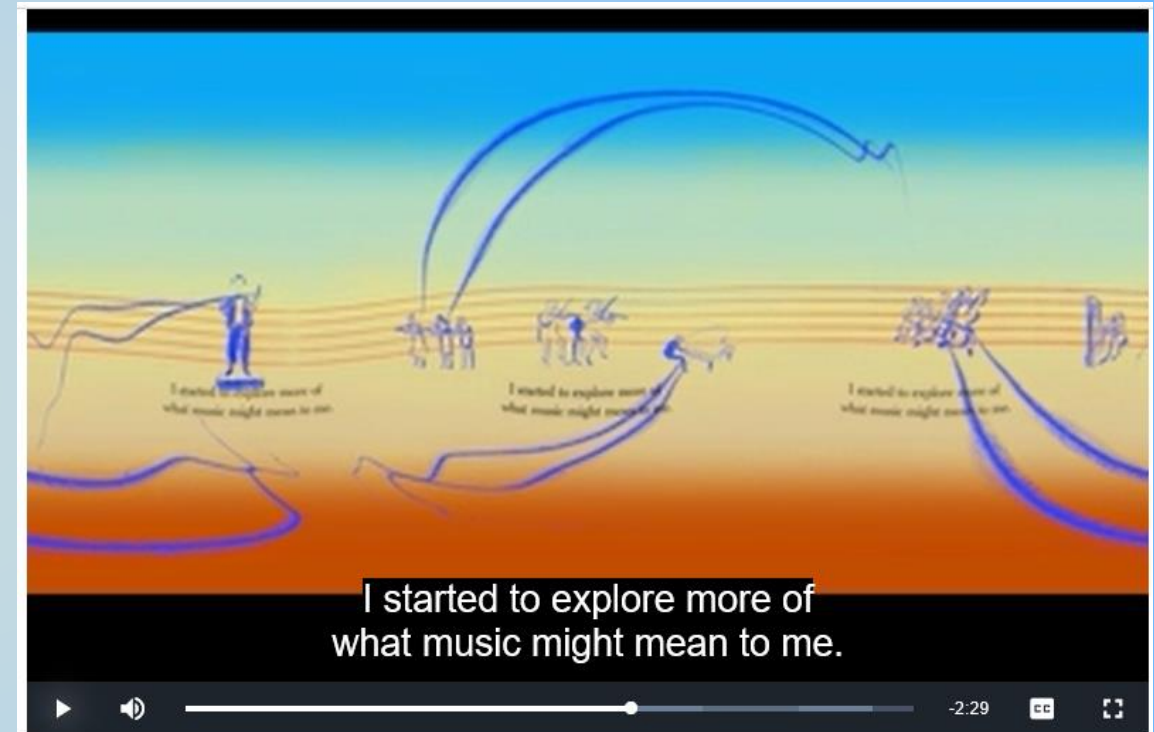
Image Source: [Discovery Education](#), by subscription.

### 3. Student Activity

Conduct brief research into recent developments in the field of bionics to advance human health using the links on slide 2.

Then, compose an informational essay OR create a presentation to share your findings.

Use [this organizer](#) to record your findings from the research or from the presentations of your classmates.



Click the link to launch a video about listening to music while wearing cochlear implants.



## 4. Assessment Activity

Explain how these medical advances may have helped Kevin manage his disability and affected his life. Your response may take any of the following formats:

- Written paragraph
- Audio or Video recording
- A digital tool suggested by your teacher/librarian



Photo of two people with bionic arms shaking hands.

Image Source: [Discovery Education](#), by subscription

## 5. Enrichment Activities



An image of three men with bionic limbs racing in a track meet.

Image Source: [Discovery Education](#), by subscription

Athletes have successfully competed in the Paralympic Games.

- Should we continue to have separate athletic competitions like the Olympics and Paralympics?
- Or should able-bodied and disabled athletes compete together?
- What ethical problems may arise?

Explore the issue using several of these links:

- [Should the Paralympics and Olympics be combined?](#) Text
- [Why they are still separate events](#) text
- [Can disabled athletes outcompete able-bodied athletes?](#) Text
- [Paralympic Classifications](#) text
- [Paralympic Sports 2020](#)
- [Are Paralympians Gaming the System?](#)

Select a position on this issue. Then, write a brief paragraph explaining your point of view.



# 6. Teacher Resources

## Learning Standards Alignment

### MCCR Standards for ELA Grades 6-8

**RI.1.** Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

**W.7.** Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

**AASL Standards Framework for Learners** Inquire: Build new knowledge by inquiring, thinking critically, identifying problems, and developing strategies for solving problems.

Think: Learners display curiosity and initiative by:

I.A.2 Recalling prior and background knowledge as context for new meaning.

Create: Learners engage with new knowledge by following a process that includes:

I.B.1 Using evidence to investigate questions. I.B.3 Generating products that illustrate learning.

Share: Learners adapt, communicate, and exchange learning products with others in a cycle that includes:

I.C.1 Interacting with content presented by others.

Grow: Learners participate in an ongoing inquiry-based process by:

I.D.2 Engaging in sustained inquiry.

### **P21 Framework: 21<sup>st</sup> Century Student Outcomes**

**3. Information, Media & Technology Skills: Information Literacy:** Access information efficiently and effectively; Use information accurately and creatively for the issue or problem at hand.

**ICT Literacy:** Use technology as a tool to research, organize, evaluate and communicate information.

## SLIDE NAVIGATION

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### Grade 6 Content Area: ELA

**Objective:** Students will be conduct brief, focused research in order to connect real world scientific advancements to literature.

**Time Frame:** One to two 45-minute sessions, or research assigned for homework and the sharing and assessment as classwork

### Differentiation strategies for this lesson:

- Have students use learning supports provided in BCPS Digital Content found in the [Apps Portal](#). Refer to [Digital Content Snapshot/Support pages](#) as needed.

### Notes to the teacher:

- Collaborate with your school library media specialist to plan and implement this lesson.
- Provide students with login information as needed to authenticate BCPS Digital Content. Login information is available on the **BCPS Digital Content** page found via the [Apps Portal](#)
- Some videos in this lesson may not be closed-captioned; however, other text-based resources are provided.
- ***Consider creating a VoiceThread for students to share their responses to the Assessment.***