



BIOMEDICAL AND MECHANICAL ENGINEERING WITH DR ELLIOTT ROUSE

TALKING POINTS

KNOWLEDGE

1. What is a prosthesis?
2. What does 'open source' mean?

COMPREHENSION

3. Can you explain the benefits of the VSPA foot?

APPLICATION

4. How is Elliott hoping to apply his expertise in the future?

ANALYSIS

5. What are some of the problems with traditional prostheses designs?
6. What are the motives behind Elliott's work?

EVALUATION

8. How important has collaboration been in this research?
9. How important is it that the Bionic Leg is an open-source project?

CREATIVITY

10. What advances do you think biomedical and mechanical engineering will lead to in the future?
11. If you were designing a prosthesis or exoskeleton, what would be some aspects that might drive the design? (For example, how much effort it can provide, or how fast it can move.)

ACTIVITIES YOU CAN DO AT HOME OR IN THE CLASSROOM

DESIGN A ROBOT TO HELP WITH AN EVERYDAY TASK

Sketch a design for a robot that could help with an everyday task in your life. This could be for anything from making a cup of tea to helping you put your shoes on. Make a list of specifications that your robot would need to have to be good at this job. Which of these do you think would be the most challenging to achieve if you really built this robot? You can find out more about building and programming robots here:

<https://www.ponoko.com/blog/how-to-make/designing-and-building-a-robot/>

MORE RESOURCES

Interested in what you could build at school? Have a look at some of Elliott's work with schools here:

<http://www.elliottjrouse.com/educational-outreach-2/>

Take a tour of Elliott's Neurobionics lab. The team will be posting some very cool educational activities here, too:

<https://neurobionics.robotics.umich.edu>

Want to see more opportunities to learn about engineering at the University of Michigan? Look at this website:

<https://ceo.umich.edu/>