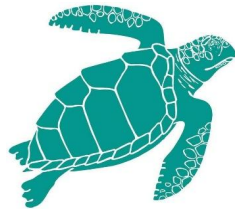




# Sea Turtle Prosthetic Party: Engineering Design Challenge



## KIMBERLY ESCALANTE

Education Coordinator  
(she/her/hers)



[kescalante@seaturtlehospital.org](mailto:kescalante@seaturtlehospital.org)



(w) (910) 329-0222



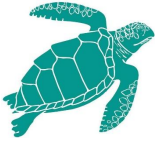
[www.seaturtlehospital.org](http://www.seaturtlehospital.org)



P.O. Box 2095, 302 Tortuga Lane  
Surf City, NC 28445



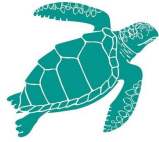
*Karen Beasley*  
**SEA TURTLE RESCUE  
& REHABILITATION CENTER**  
SURF CITY, NC USA



# Vocabulary

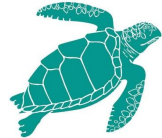


Disability  
Accommodation  
Mobility  
Stability  
Device  
Engineer  
Bioengineering  
Biomedical Engineer  
Prosthesis/Prostheses (pl)  
Prosthetics  
Prototype



# What is a prosthesis?

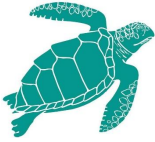




# What is a prosthesis?

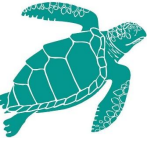






<https://www.youtube.com/watch?v=0nGTVTon8is>

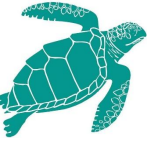
# WPI students create prosthetic flipper for a sea turtle



# Birch Aquarium makes a 3D printed shell for sea turtle

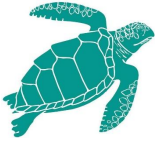


<https://www.youtube.com/watch?v=GxDMYOCutmE>



# Winter the dolphin tests out new new tail

<https://www.youtube.com/watch?v=Fd8imShoulk>



# Farms fit injured animals with prosthetics

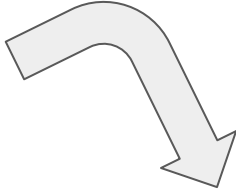


<https://www.youtube.com/watch?v=OnGTVTon8is>





## 1. ASK

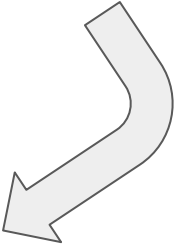
- What are the problems?
  - What are the Constraints?
- 

# The Engineering Design Process

## 2. IMAGINE

- Brainstorm ideas
- Choose the best one

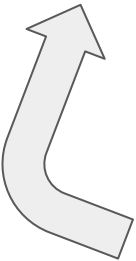
## 3. PLAN

- Draw the diagram
  - Gather needed materials
- 

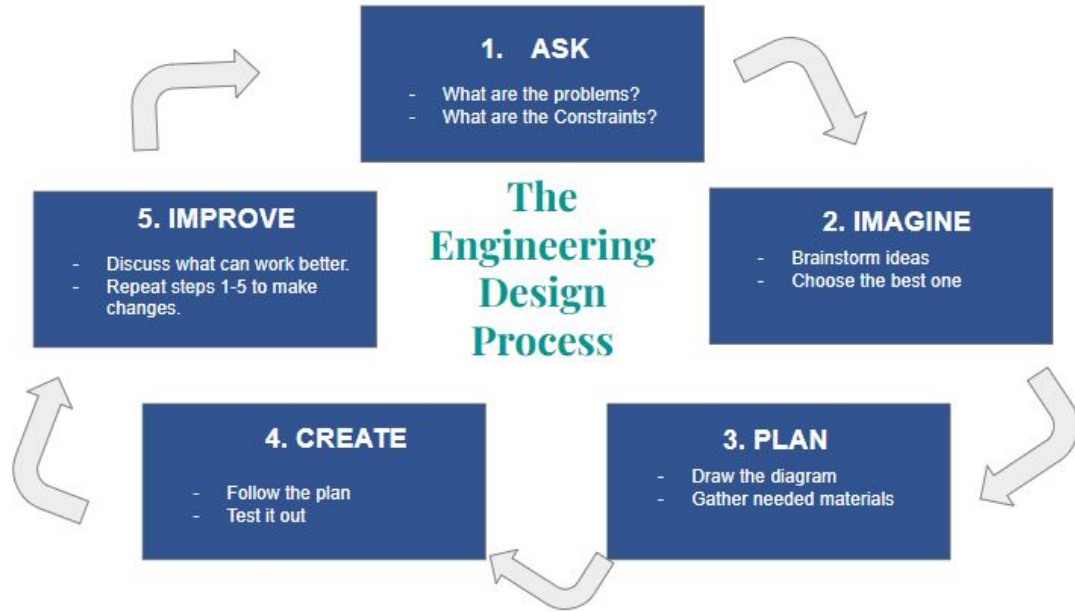
## 4. CREATE

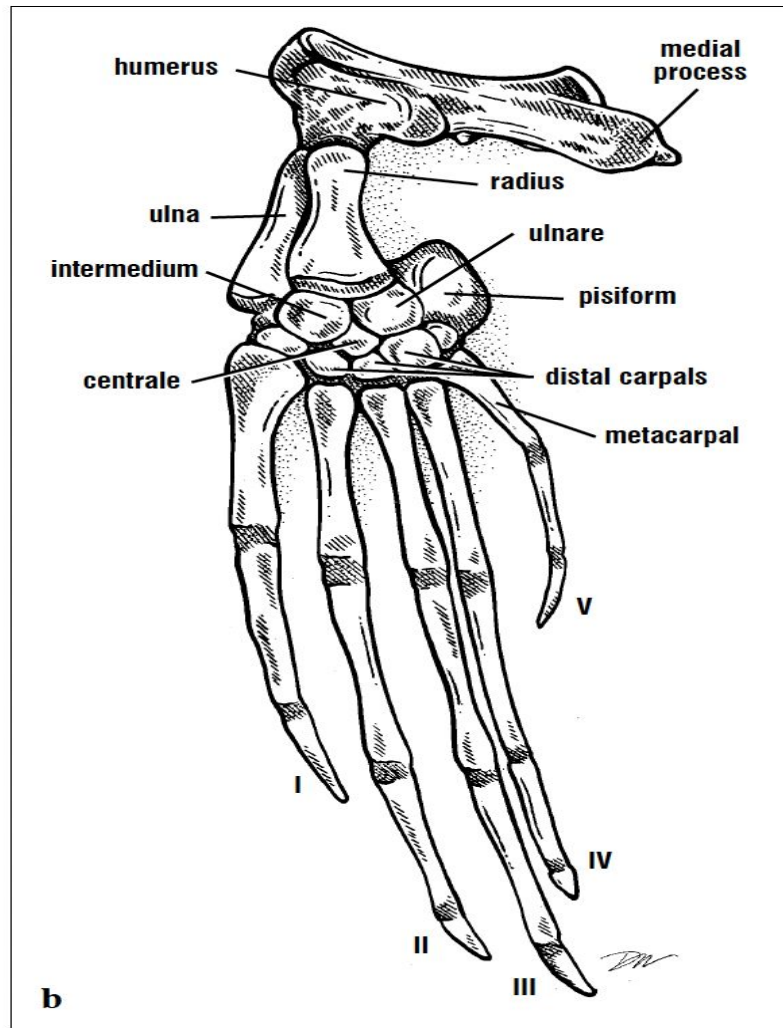
- Follow the plan
  - Test it out
- 

## 5. IMPROVE

- Discuss what can work better.
  - Repeat steps 1-5 to make changes.
- 

- Design a prosthesis for an injured sea turtle.
- Use the worksheet to draw your ideas.
- “Purchase” items from the supply store.
- You are limited to a “budget” of \$10.
- Create and test a prototype.





# Testing and Retesting

- What worked?
- What would you do differently?
- What additional supplies, parts, or materials would you have liked?

