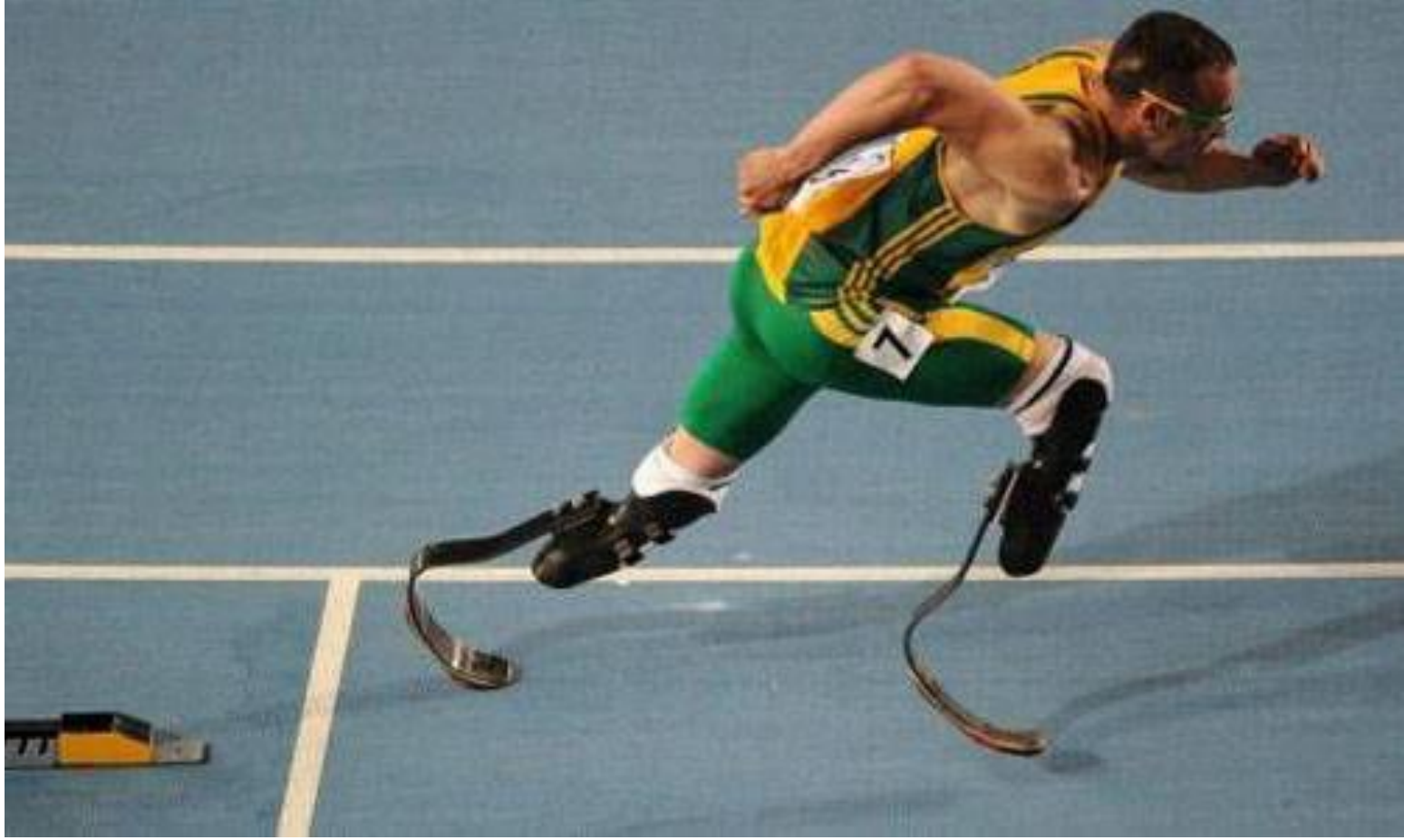
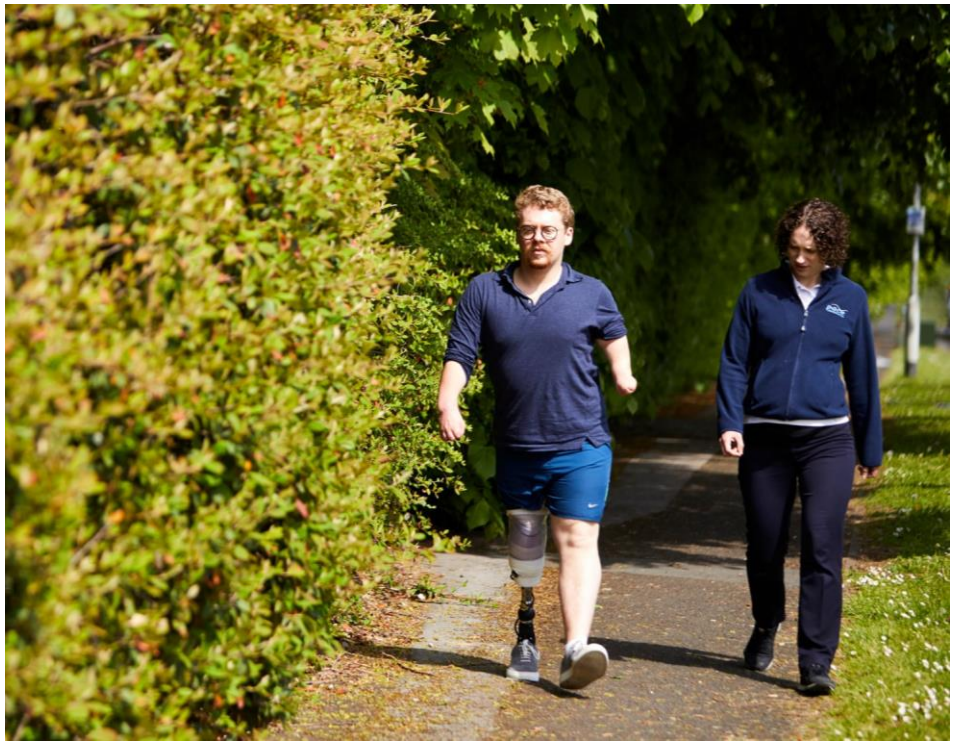


BIOMEDICAL ENGINEERING

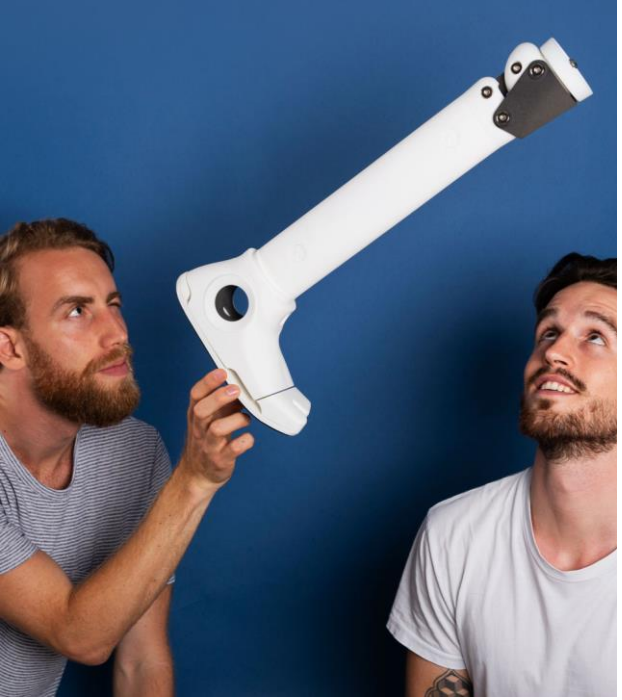
Prosthetic Legs

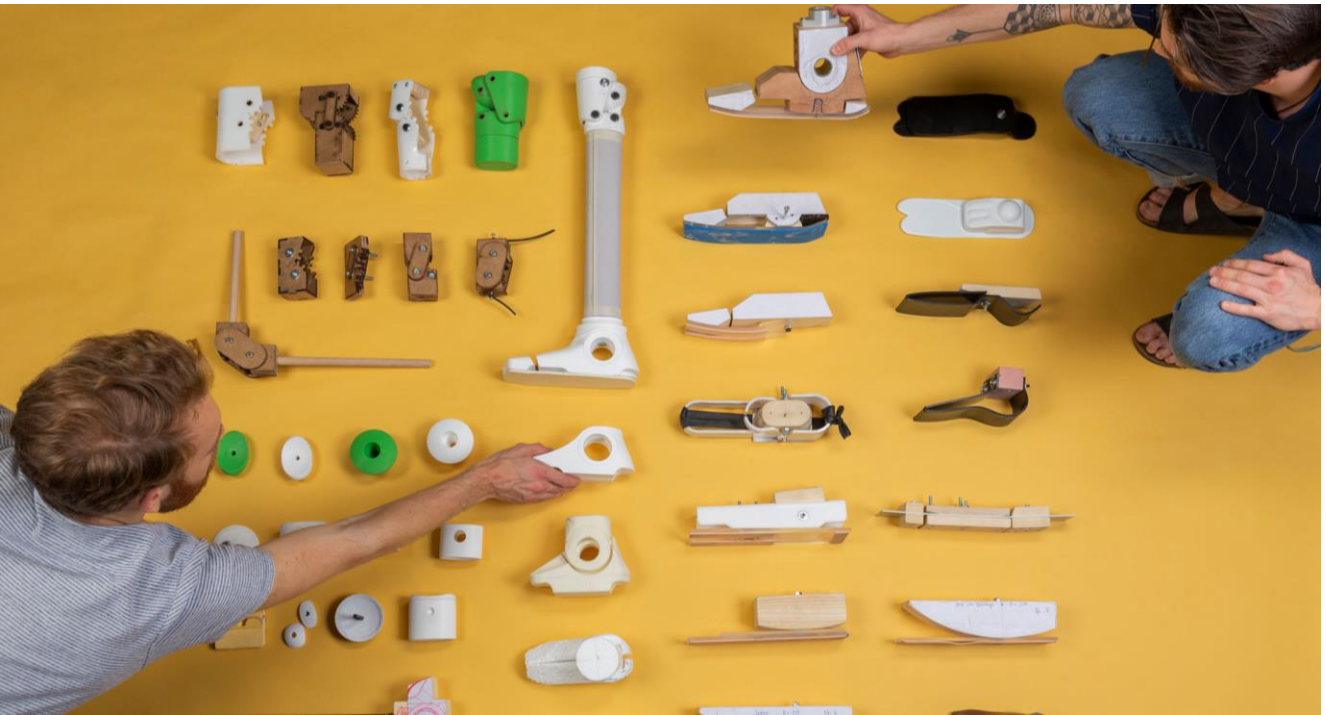


DESIGN CRITERIA: HIGH PERFORMANCE SPORTS VS. EVERYDAY USE

Designs optimised for different success criteria:

- Weight
- Material properties
- Ability to handle different loading patterns
- Ease of attachment/detachment
- Cost
- Lifelikeness





PROJECT CIRCLEG: FOR AMPUTEES IN DEVELOPING COUNTRIES

Design criteria:

- Low cost
- Local production
- Requires minimal resources
- Adaptable

YOUR TASK

Design and build an artificial lower leg from the knee joint down, using the materials provided.

- The artificial legs will assessed based on how far your team can walk on them comfortably, and how little they weigh.
- Want $\frac{distance\ walked}{weight\ of\ leg}$ to be high
- Use a sponge to cushion where the knee rests on the artificial leg.
- Think about your design criteria before you start building!