STEM 8: RESCUE & REHABILITATION
EXTENSION

PROSTHETICS
RESEARCH PROJECT

RAF 100

raf100schools.org.uk

For injured service personnel, prosthetics are used to replace limbs such as arms or legs, or smaller body parts, such as a hand or foot. In this activity you will carry out your own research into what makes a good prosthetic.

DOUGLAS BADER

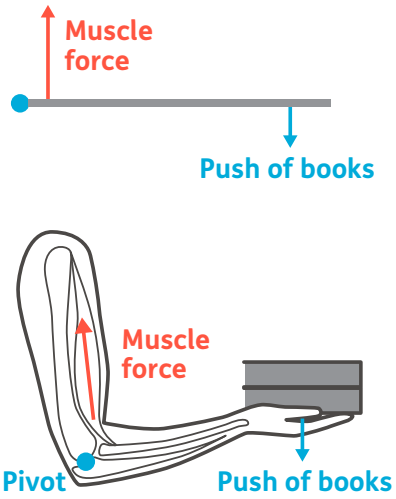
One of the most famous RAF personnel to have a prosthetic fitted was Douglas Bader. Research his life to find out more about his achievements.

WHAT YOU NEED TO DO

Design and make a model of your prosthetic

Things to think about:

- What movement should a prosthetic have?
- Should it be as close as possible to the movement of a natural limb, or is it better to focus on some specific important functions?
- How can you attach a prosthetic limb so that it is comfortable?
- What mechanisms can be used to produce movement?
- What forces act on the prosthesis and on the person and what is the effect of these forces?



Suggest a material for your prosthetic

Things to think about:

- What material properties are important when designing a prosthetic limb?
- What materials might you want to investigate?

Useful terms for describing materials:

- Density
- Strength
- Elasticity

HEALTH AND SAFETY

IF YOU CARRY OUT A PRACTICAL INVESTIGATION YOU NEED TO THINK ABOUT THE PROCEDURES, EQUIPMENT AND SUBSTANCES YOU ARE USING. DO ANY OF THESE PRESENT ANY RISKS? WHAT COULD GO WRONG AND HOW SERIOUS WILL IT BE? THINK ABOUT WHAT STEPS YOU WILL TAKE TO REDUCE ANY RISKS.