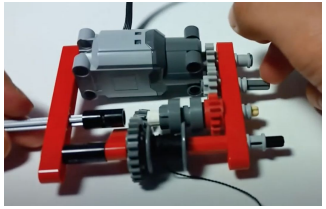
Year 6 Design & Technology Knowledge Organiser

Autumn 2: Gears & Pulleys

Key Methods

We will be using gears and pulleys for building mechanisms to make our winches work.
We will also be making electrical circuits to power motors to operate our winches.

<u>Top Tips:</u>
Remember to regularly test your construction as you build it. Does it work at each stage?



Key Vocabulary

Motor
Pulley
Drive Belt
Gear
Rotation
Spindle
Driver
Follower
Ratio
Transmit
Axle
Power

Learning Intentions:

- ❏ To understand how gears and pulleys operate
- ❏ To construct a circuit that includes a motor and a switch
- ❏ To use a motor to power gears and pulleys
- ❏ To design a motorised winch for lifting a pen or pencil
- ❏ To make a motorised winch
- ❏ To evaluate how successful my motorised winch was

Prior Learning:

- ❏ Experience of axles, axle holders and wheels that are fixed or free moving.
- ❏ Basic understanding of electrical circuits
- ❏ An understanding how to strengthen/stiffen structures

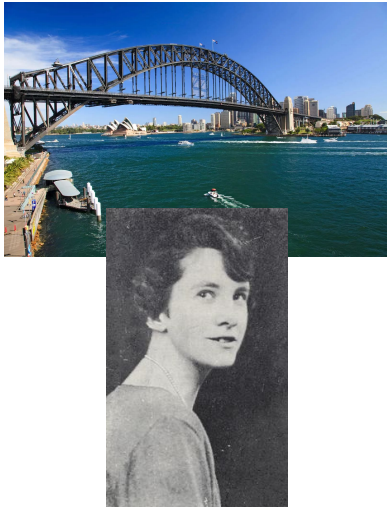
Project overview:

We will be learning how gears and pulleys work. We will be using this knowledge to design, make and evaluate our own winch for lifting a small object from floor level to table level.

Focus Designer/Focus Design element:

Dorothy Donaldson Buchanan (Civil Engineer)

Dorothy Buchanan was one of the first women in th UK to become a Civil Engineer. Projects that she worked on include the Sydney Harbour Bridge in Australia, the Tyne Bridge in Newcastle, England and the Lambeth Bridge in London.



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