

Objectives

Pupils should be taught about:

Design

- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Make

- select from and use a range of tools and equipment to perform practical tasks
- select from and use a wide range of materials and components, including construction materials and textiles according to their characteristics

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

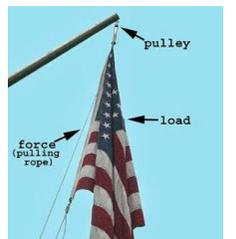
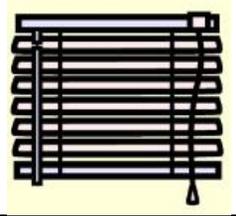
Technical Knowledge

- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

In Context

This will be linked to the history topic of Cadburys. The children will create a pulley system to raise a flag for the opening of a chocolate factory.

Existing Products

<p>Flag/flagpole</p> 	<p>Flagpoles use pulleys in order to hoist the flag up or to bring it down. You pull the string on the pulley and the flag runs up or down the pole.</p>
<p>Blinds</p> 	<p>Blinds on windows operate using a pulley system to move the blinds up and down. You pull the cord on the blinds and the pulley system causes the blinds to open or close.</p>

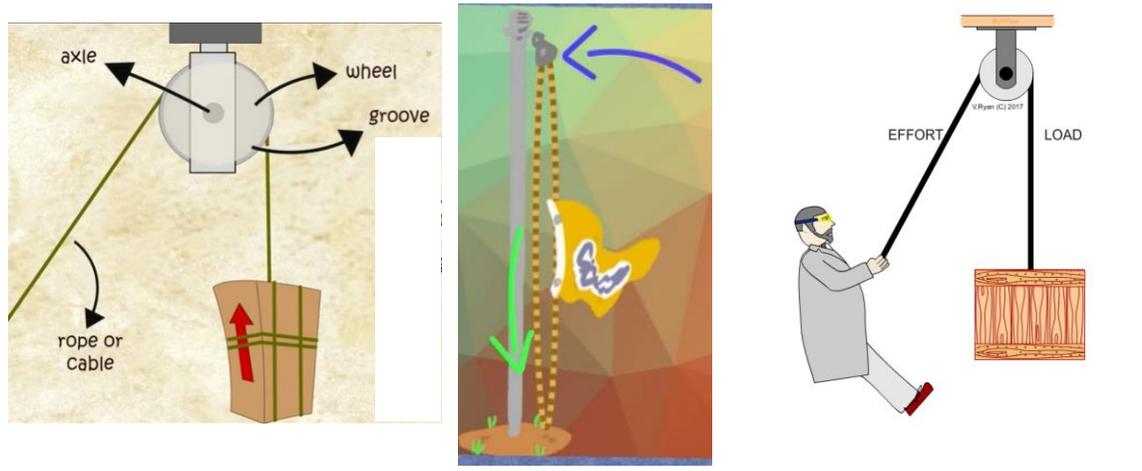
Key Vocabulary

Pulley	is a simple machine. It is made from a wheel on a fixed axle, with a groove along the edges to guide a rope or cable.
Simple machine	have few or no moving parts. They make work easier.
Complex machine	a machine made up of two or more simple machines that make your work easier to do.
Force	A force is always a push, pull, or a twist, and it affects objects by pushing them up, pulling them down, pushing them to a side, or by changing their motion or shape in some other way.
Load	The object you're lifting.
Axel	the rod that goes right through the very centre of the wheel to help it move and stay in place.

Designing

You will need to use what you have found out about simple machines and pulleys. As part of the design process, you will sketch and label different ideas. You will also plan the main stages of making using a checklist.

Making and Evaluating



- How well does your pulley system work?
- Are you able to raise the flag easily?
- What did you find most difficult?
- What would you improve? Why?