

Year
5

Design and Technology

Making a Model Pulley System

Our Changing Planet

Key learning

Know what a pulley system is. Investigate existing products that use pulley systems.

Understand how a pulley system works by using different weights and different heights.

Demonstrate how a pulley system works using K'Nex.

Use annotated sketches to design a scaled down pulley system to lift heavy objects.

Use the design sketches and a range of suitable tools to create a model pulley system to meet the design brief.

Evaluate and improve the model. Present the findings of the project.

Design Brief

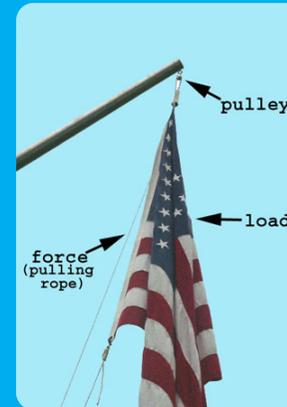
Create a model Pulley System to be used to lift Solar Panel equipment to roof tops of high buildings.

Health and Safety

- Tie back long hair
- Roll up your sleeves
- Walk safely and calmly around the classroom
- Keep your work and floor area clear
- Work one to one with an adult when using the saw
- Hold scissors and other equipment appropriately
- Wear sensible shoes when working with weights
- Wear an apron or other protective clothing



Existing products that use Pulley Systems

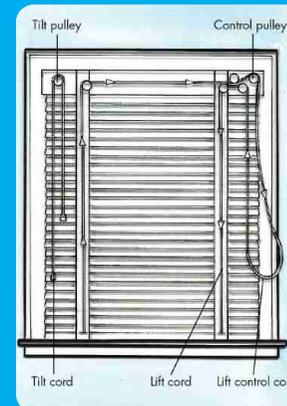
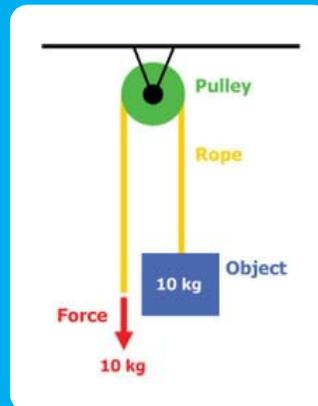


Flag poles

Flag poles use pulleys in order to hoist the flag up or down. You pull the string on the pulley and the flag runs up and down the pole.

All about pulleys

www.youtube.com/watch?v=r3Ru1zZjvug



Blinds

Blinds on windows operate with a pulley system to move the blinds up and down.

You pull the cord on the pulley systems which moves them blind in the direction you want it to go.

Key skills and related vocabulary:

Pulley: A wheel with a grooved rim around which a cord passes, which acts to change the direction of a force applied to the cord and is used to raise heavy weights.

Structure: A building or other object constructed from several parts.

Sustainability: Avoidance of the depletion of natural resources in order to maintain an ecological balance.

Design: A plan or drawing produced to show the look and function or workings of a building, garment, or other object before it is made.

Annotated sketch: a detailed sketch that is labelled with critical dimensions, notes, and symbols.

Assemble: Fit together the separate component parts of (a machine or other object).

Materials: The matter from which a thing is or can be made. For example.; cloth, plastic, rubber, metal.

Prototype: A prototype is a sample, model, or release of a product built to test a concept or process.