

What is a Pulley?

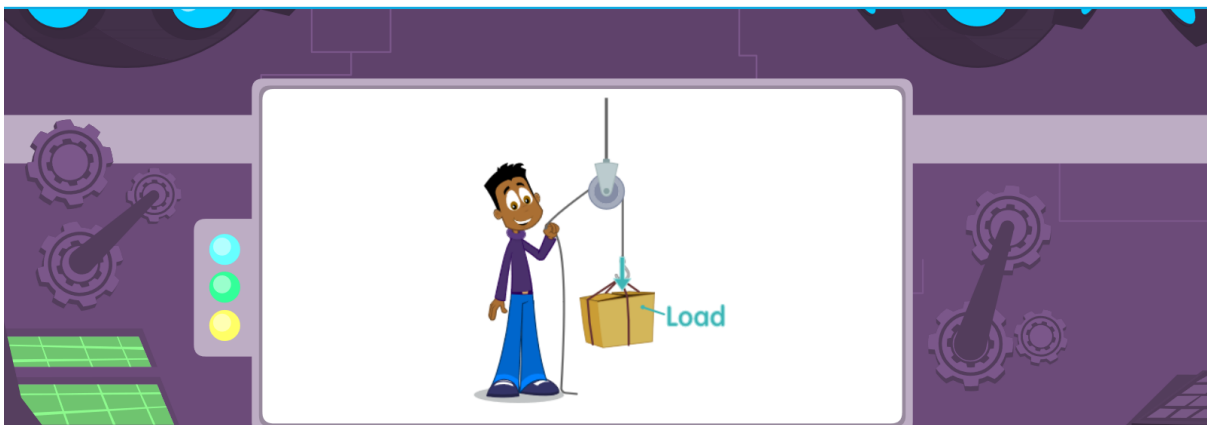
A **pulley** is a simple **mechanism** that is designed to move an object.



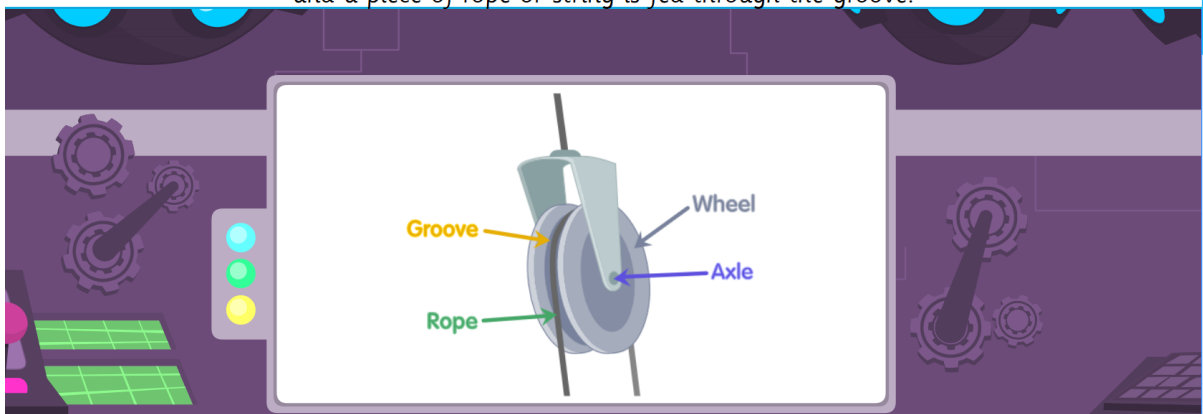
A **mechanism** within a piece of machinery controls and changes the **motion** or **force** that is given out.



The object you are moving is called the **load** and the force you apply is called the **effort**.



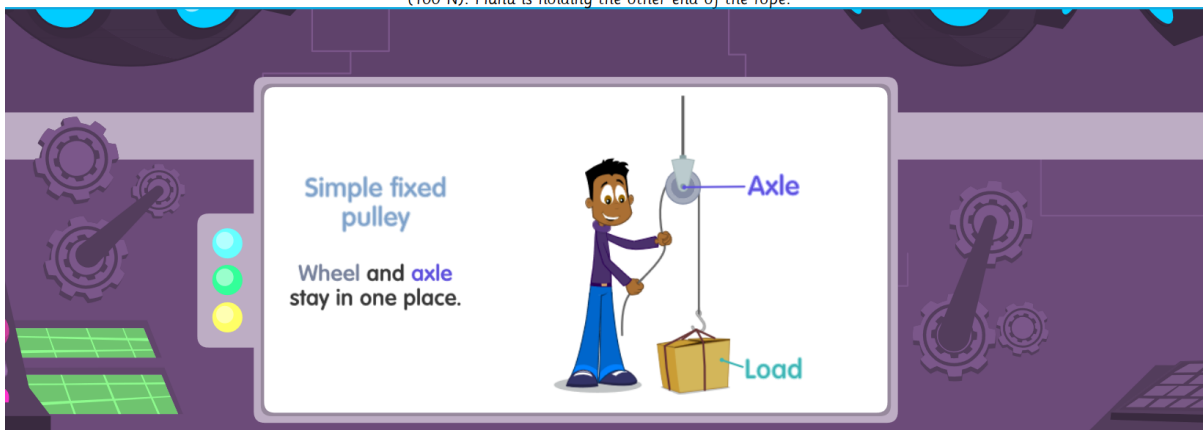
A pulley is made from a wheel with a groove around its circumference. The wheel rotates around an axle and a piece of rope or string is fed through the groove.



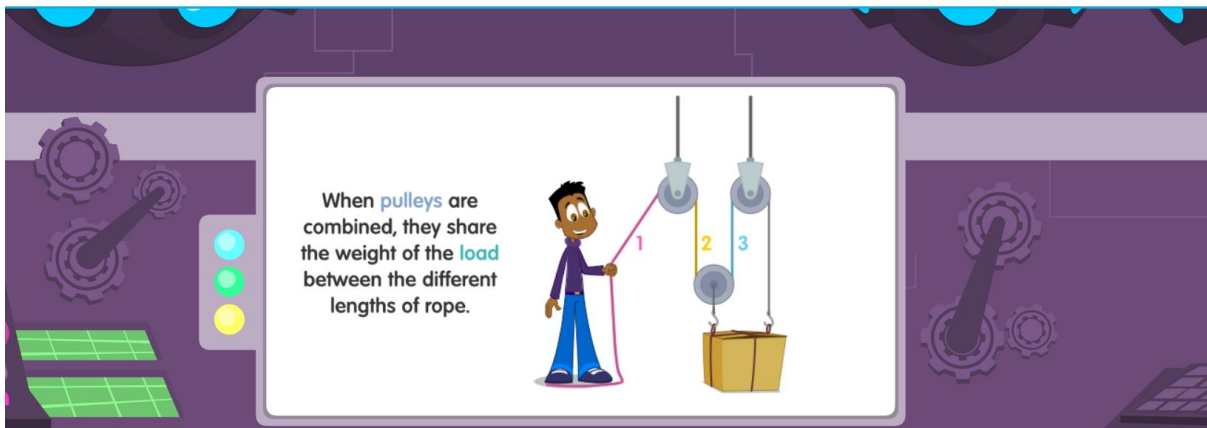
There are three main types of pulley: a fixed pulley, a movable pulley and a combined pulley.



This is a simple fixed pulley. The wheel and axle always stay in one place. The wheel rotates around the axle. Here, the wheel is suspended by its axle from the ceiling. One end of the rope is attached to a load, which has a weight of one hundred newtons (100 N). Manu is holding the other end of the rope.



This is a combined pulley. A combined pulley combines a mixture of fixed and movable pulleys. Any numbers of combinations of pulley can be joined together to make a combined pulley. When pulleys are combined, they share the weight of the load between the different lengths of rope.



Pulleys are made by looping a rope over one or more wheels. They are often used to lift heavy objects: pulling down on one end of the rope creates an upward pull at the other end. Looping the rope over more wheels increases the upward force. Using two wheels means you can lift something twice as heavy using the same force.

