

PULLEYS AND CAMS

What is a Pulley?

A pulley is a wheel on a fixed axle with a groove in it to guide a rope or cable.

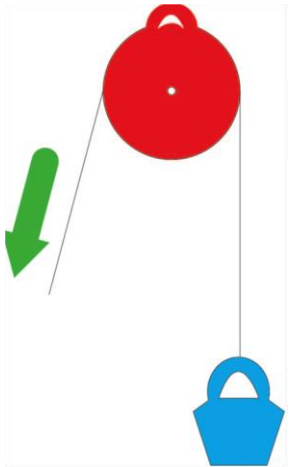
The rope or cable is attached to the object you want to lift and looped over the pulley so that the end of the rope is hanging down on the other side. The pulley change the direction of the force needed to lift the object or the amount of force that is need to lift an object.

In everyday life they are used in lifts, in wells, on building sites and in weight lifting machines in the gym.

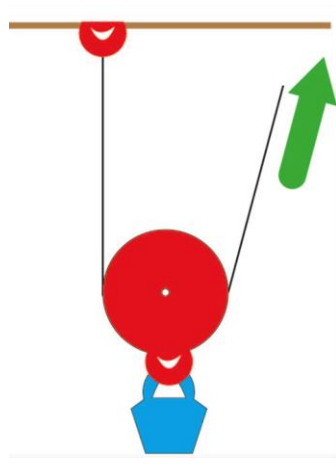
Types of Pulley

- **Fixed:** The wheel is secured to a single position. The force required is the same but you can lift the object from a different angle.
- **Moveable:** The wheel moves, the direction of force stays the same but the amount of force needed is much less. It is then easier to lift.
- **Compound:** A fixed and a moveable pulley. This means that you can change both the amount and direction of force needed however, the amount of pulling required is greater.
- **Complex:** Contains multiple wheels and axles. Reduce the amount of force needed but requires longer lengths of rope.

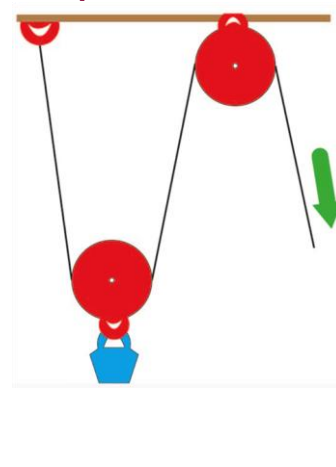
Fixed



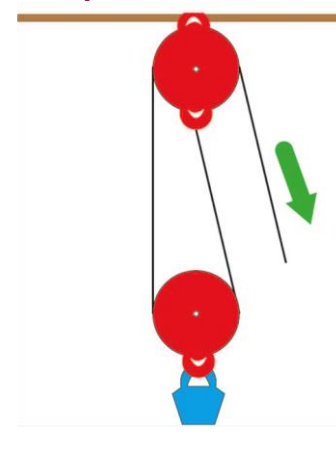
Moveable



Compound



Complex



Cams

