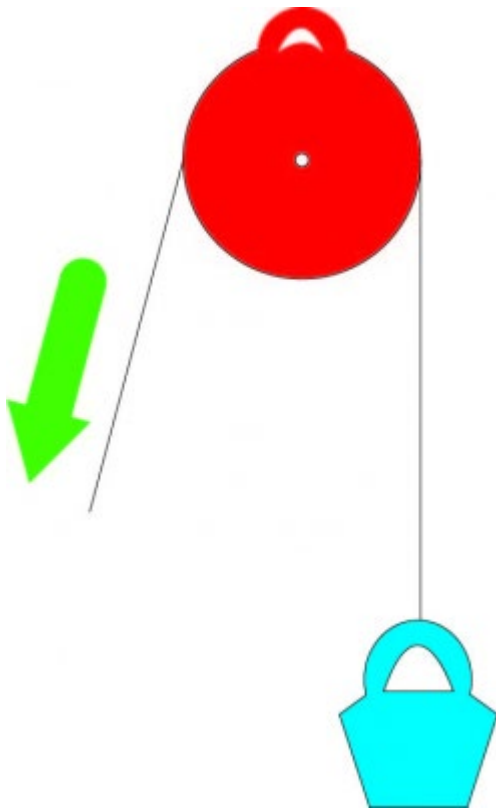
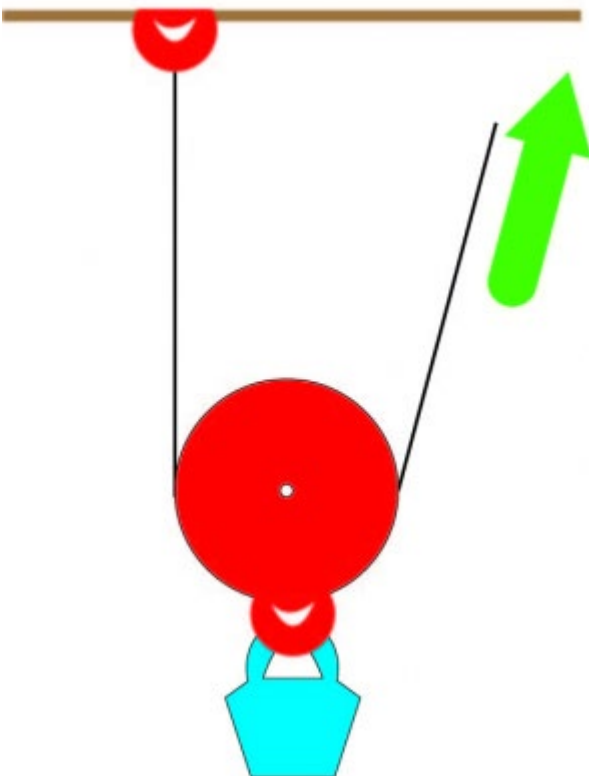


Levers, pulleys and gear box- how to use different types of pulleys



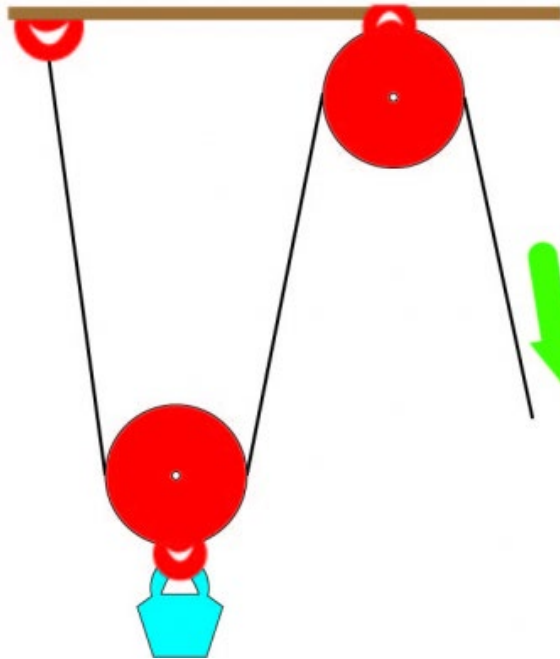
Fixed pulley

With a fixed pulley, the wheel is secured to a single spot. You require the same amount of force to pull the object up as you would if you were lifting it, but the pulley changes the direction of the force. This means that although the object feels as heavy to lift, you can pull it from a much more convenient angle.



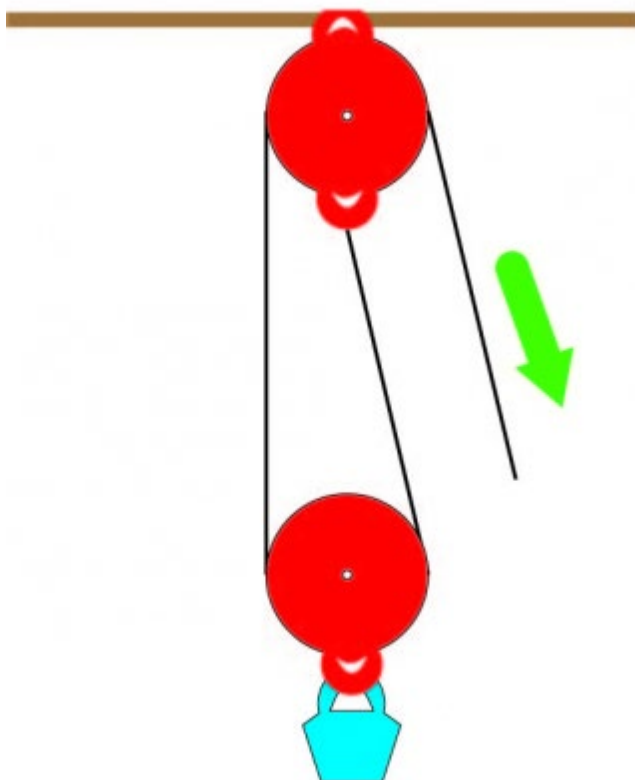
Moveable pulley

With a moveable pulley, the wheel moves when you move the load. With this pulley, the direction of force stays the same, but the magnitude of force changes, so the load feels easier to move.



Compound pulley system

In a compound pulley system, there is a fixed and a movable pulley. This means that you can change both the magnitude and direction of your force. The downside is that you have to do a lot more pulling on the rope!



Complex pulley system

A complex pulley system contains multiple wheels, which may include more than one wheel per axle with the rope weaving through individual wheels and looping back and forth between wheels of different axles. An example of a complex pulley system is a block and tackle. Complex pulley systems can lift heavy loads by reducing the magnitude of the force.

However, a long length of rope is required to achieve this.