

The Pulley

Another simple machine that is related to the wheel and axle is the pulley. The pulley has a wheel and axle built into it. There are two kinds of pulleys.

One is called a fixed pulley, which means that the pulley is attached to something. The object being moved is attached to one end of a rope. The rope is fed through the pulley, and then a force is used to pull on the other end of the rope. The fixed pulley doesn't make the work easier. What it does do is change the direction of the effort to lift the object.

The other kind of pulley is called a movable pulley. In this case, the pulley moves with the object being lifted. The pulley is lifted with the load, and because of the way the rope is used, it only takes half the effort to lift something. For example, this block of wood weighs 240 grams. It only takes 120 grams of effort to lift it.

More than one pulley can be used together to make it very easy to lift something that has a great weight. This is called a block and tackle. This tower crane uses a combination of pulleys to lift heavy buckets of cement through the top of tall buildings. Each supporting cable or rope gives a mechanical advantage, making the work easier.
