

Mastering Mechanics: Levers and Pulleys with Max and Kit

Get Moving with Mechanics! Simple machines make heavy work feel light as a feather.

- A lever uses a rigid beam resting on a fulcrum. The closer the load is to the pivot, the less effort is required to lift it.
- Pulleys are wheels with a groove for a rope. Using a fixed pulley changes the direction of your effort, making it easier to pull downwards to lift an object upwards.
- Combining multiple pulleys creates a block and tackle system, which significantly reduces the amount of force needed to hoist heavy items.
- Levers are classified into three 'classes' depending on the positioning of the effort, the load, and the fulcrum (the pivot point).
- Simple machines do not change the total amount of work done, but they allow us to apply force over a greater distance to make the task feel easier.

Did you know? Did you know that Archimedes, a brilliant ancient Greek mathematician, once famously claimed that if he had a lever long enough and a place to stand, he could move the entire Earth? While that is just a theory, it shows the incredible power of a well-placed fulcrum!

Key vocabulary: Fulcrum · Load · Effort · Pivot · Mechanical Advantage · Tension · Pulley · Force