

ESL vocab for Physics:

mechanical advantage: the ratio of output force to input force for a given machine

[how much easier the machine makes the work **feel**]

ideal mechanical advantage: the mechanical advantage of a machine if all of the input force is converted into output force;

[in a lab, with no rust or friction, how much would the machine help]

actual mechanical advantage: the mechanical advantage of a machine in real-world applications; equal to ideal mechanical advantage minus force lost to friction, slippage, and distortion

[when I measure the forces with a scale, how much force went into the machine, and how much really came out]

work: the result when a force moves an object a certain distance

[when a push or a pull moves an object]

energy: the ability to apply a force to move an object a distance

[having enough Joules to push a thing some distance]

MA = effort arm length (m)

load arm length (m) *levers

MA = input distance (m)

output distance (m) **pulleys, levers, rope, chain,

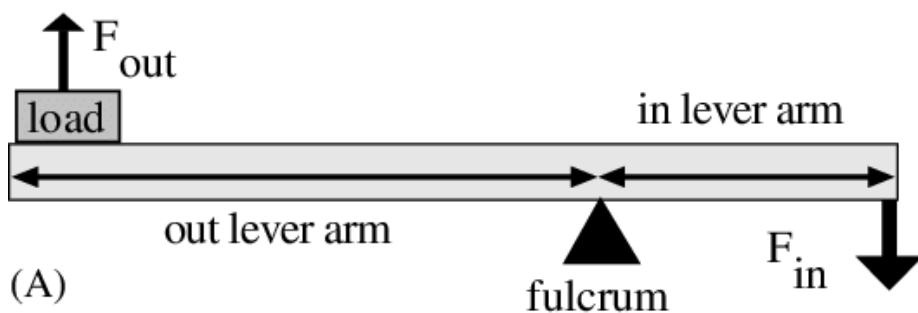
AMA = measured output force (N)

measured input force (N) **spring scale

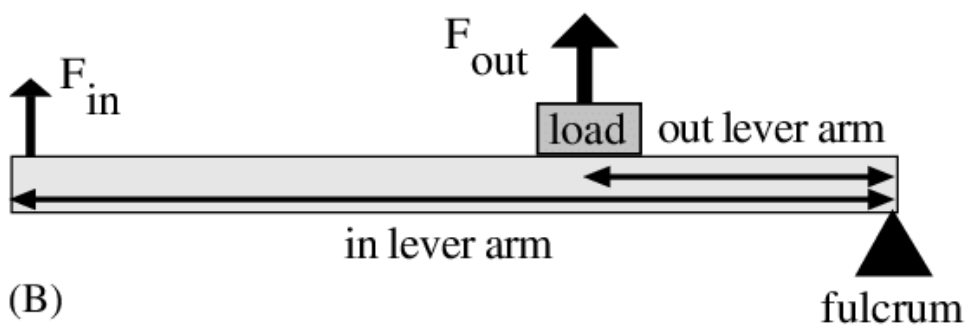
Work = Force (N) x Distance(m) $W = Fd$

1 N•m = 1 joule = a measure of work

First-order lever



Second-order lever



Third-order lever

