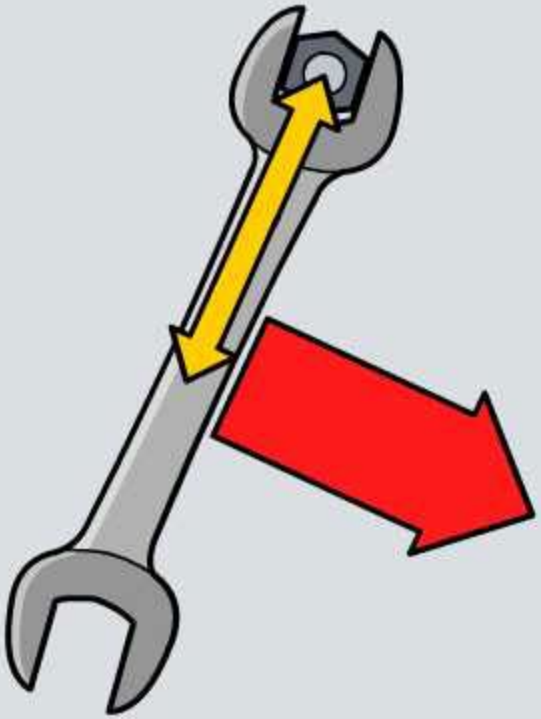
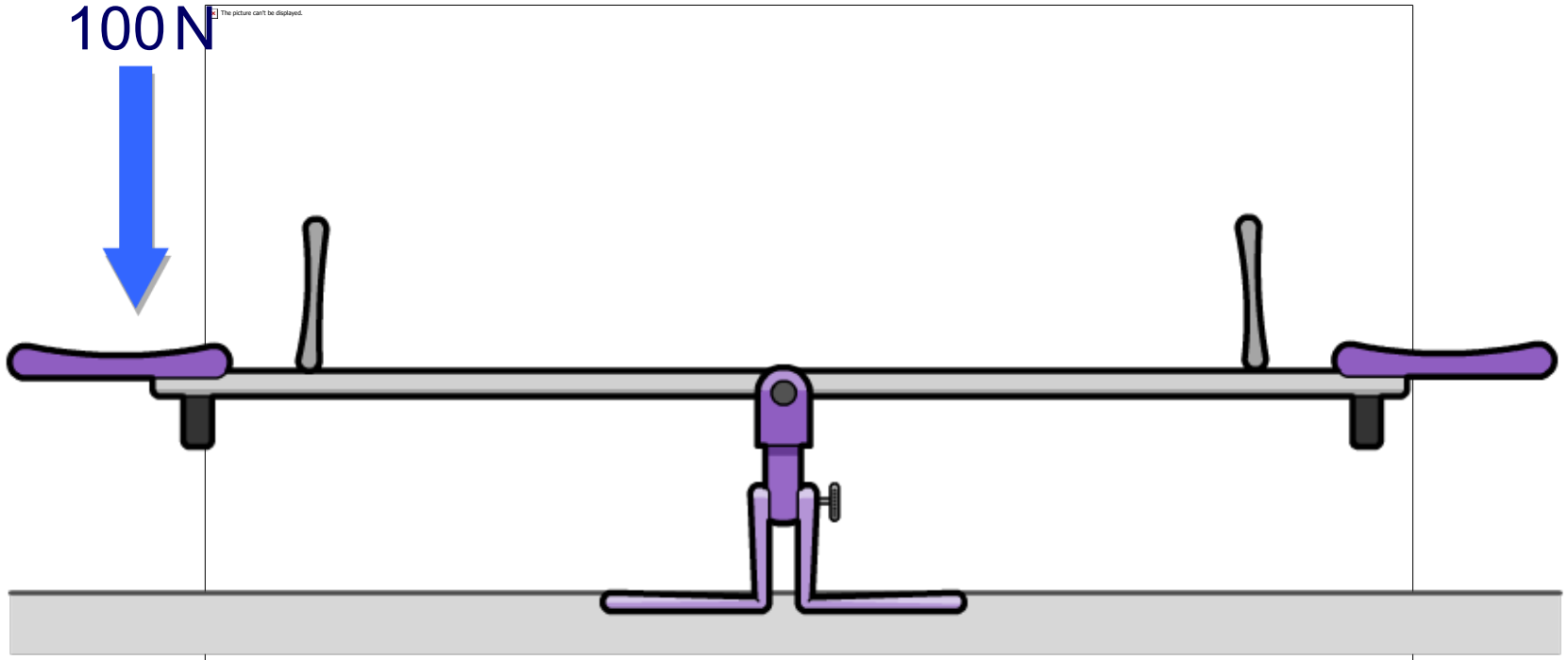
Moments



Force and rotation

A force acting on an object can cause it to turn around a pivot.

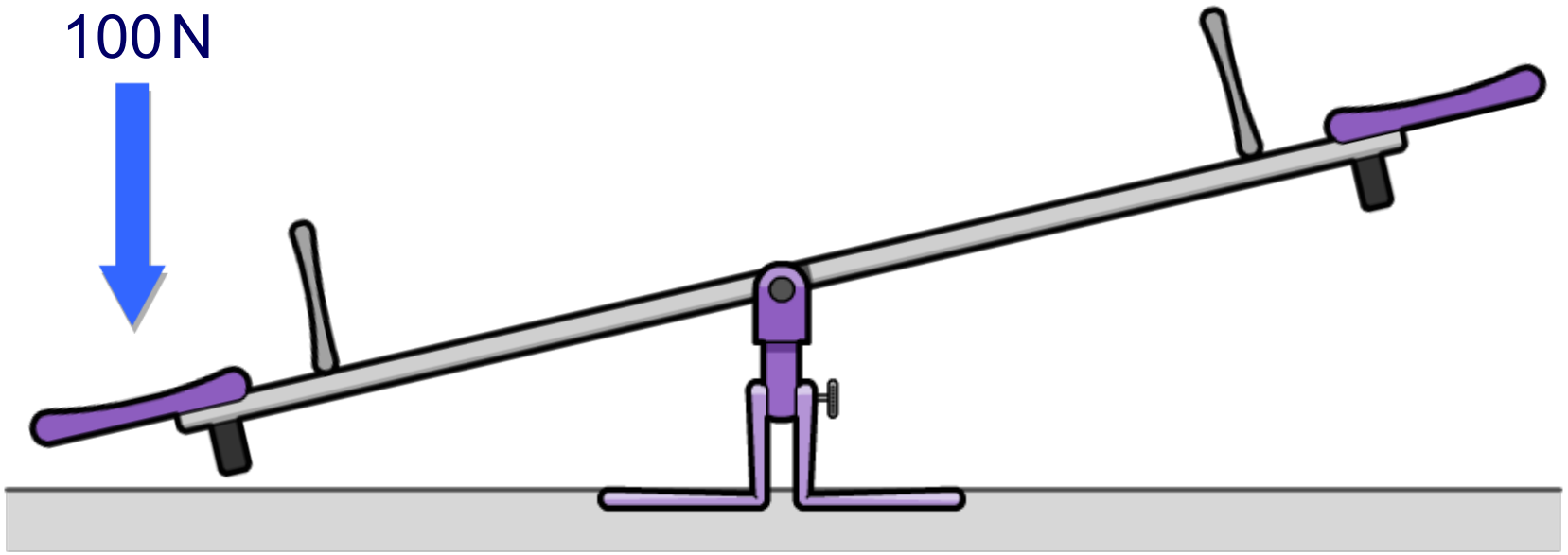


What happens to the see-saw when a force is applied on the left-hand side?

Does the see-saw turn? If so, clockwise or counterclockwise?

Force and rotation – a moment

The left-hand side of the see-saw moves downwards when a force is applied to it – this is a counterclockwise turn.

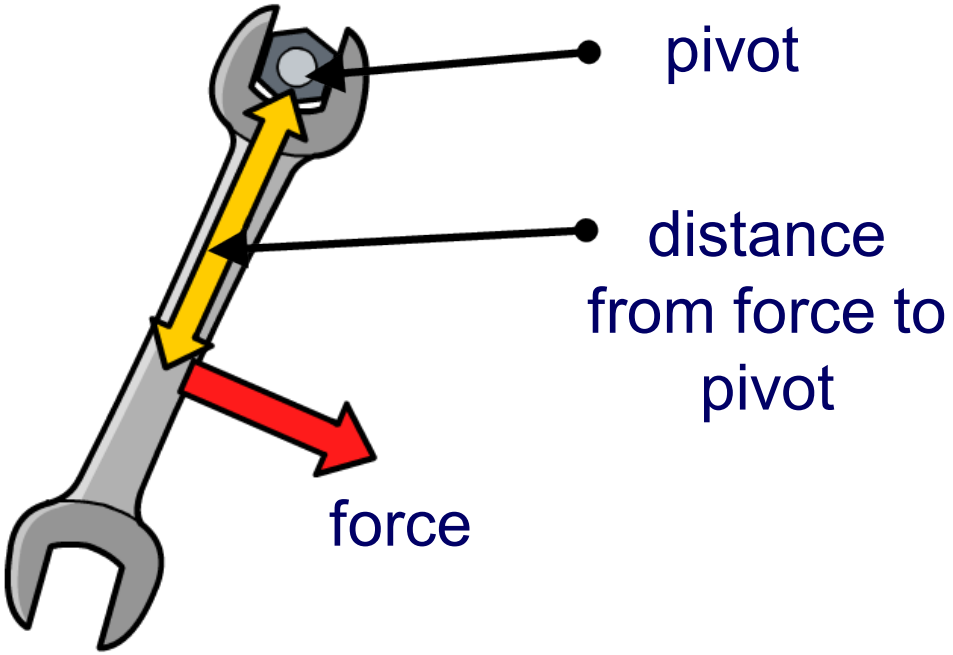


The turning effect of a force is called a **moment**.

Using moments

A wrench is a lever that can be used to unscrew a nut.

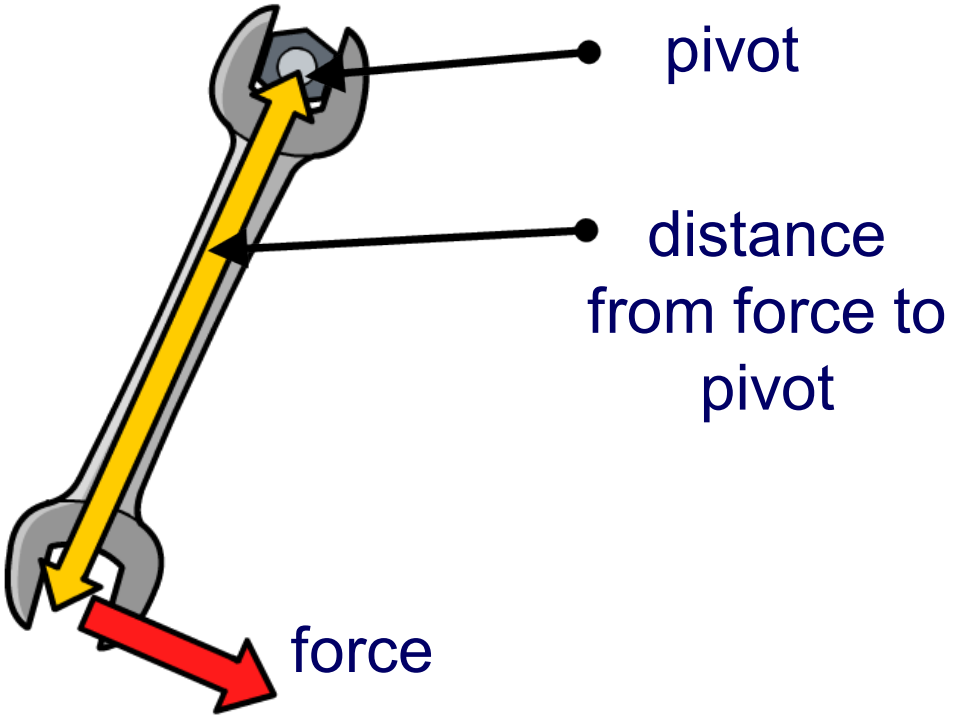
The spanner exerts a moment or turning force on the nut.



If the moment is big enough, it will unscrew the nut.
If not, there are two ways of increasing the moment.

Using moments – increasing the moment

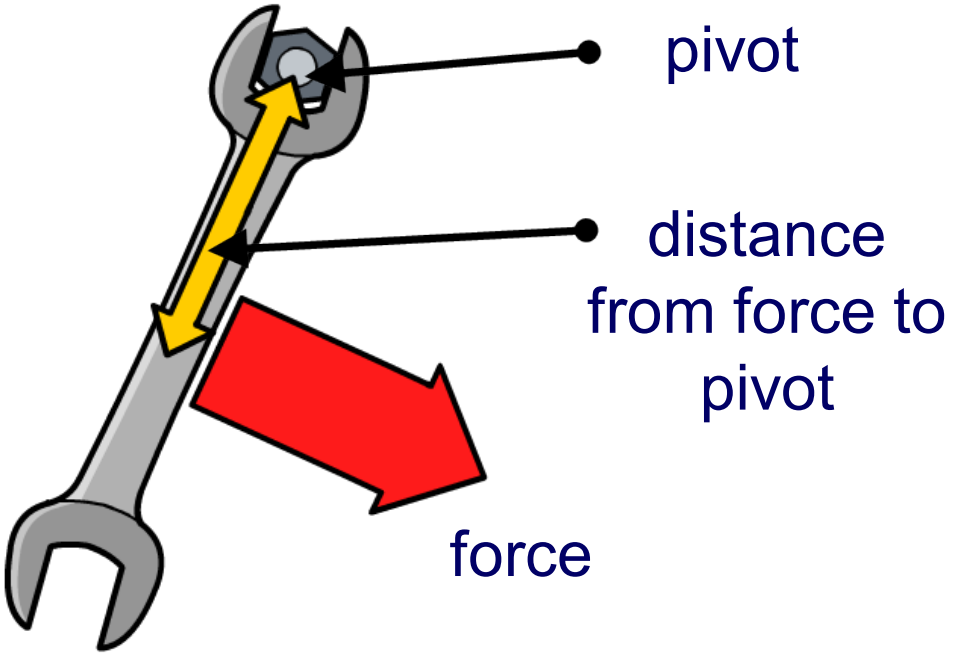
1. Increase the **distance** from the force to the pivot – apply the force at the end or use a longer wrench.



If the same force is applied over a **greater distance**, a **larger moment** is produced.

Using moments – increasing the moment

2. Increase the **force** applied – push/pull harder or get someone stronger to do it!



If a **greater force** is applied over the same distance, a **larger moment** is produced.