

21.2: Introduction

Torque is force acting at a distance, tending to cause rotation around a point. The point about which the object rotates, the pivot point, is called the fulcrum. When force is applied perpendicular to a lever arm, the amount of torque depends on the perpendicular force (F) applied and the length of the lever arm (d) through which the force acts.

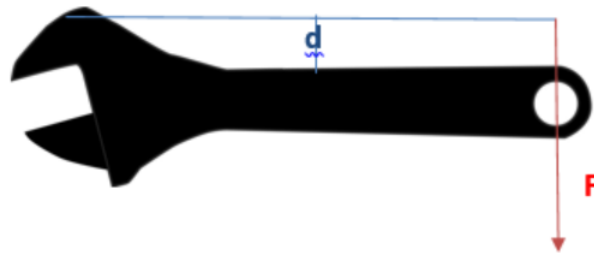


Figure 21.2.1

Torque:

$$\tau = Fd$$

Weight Force:

$$W = mg$$

The amount of torque on one side of a fulcrum is equal and opposite to the amount of torque on the other side of the fulcrum. This can allow a see-saw to be balanced if the two people sit at the correct distances from the pivot point.

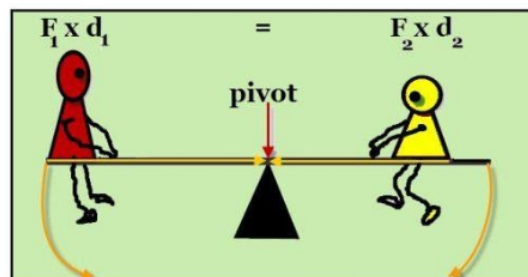


Figure 21.2.2

$$\tau_1 = -\tau_2$$

Although the torque on each side of the pivot point is equal, the amount of force on each side of the pivot can be very different.

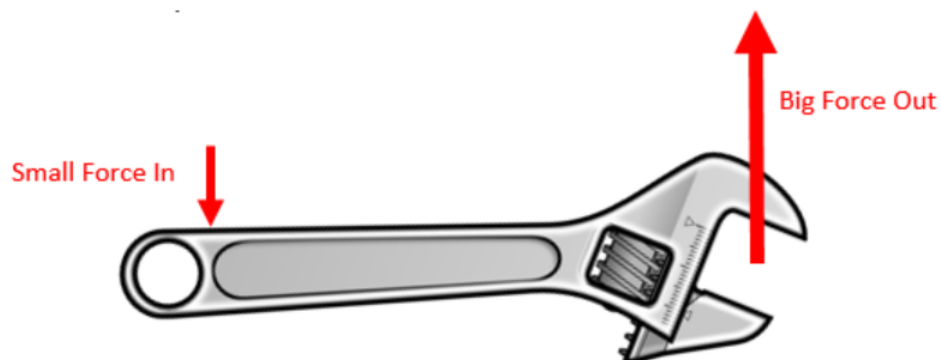


Figure 21.2.3

Contributors and Attributions

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