Edexcel GCSE Physics
Topic 9.6P-9.10 - Moments

Flashcards

What is an alternative name for the turning effect of a force?

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A moment.

State the equation used to calculate the moment of a force. Give appropriate units.

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Moment of force = Force x Distance

Moment (Nm), Force (N), Distance (m)

What distance measurement is used when calculating a moment?

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The perpendicular distance from the pivot to the line of action of the force.

If an object is in equilibrium, what can be said about the moments acting on the object?

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The clockwise moments are equal to the anticlockwise moments.
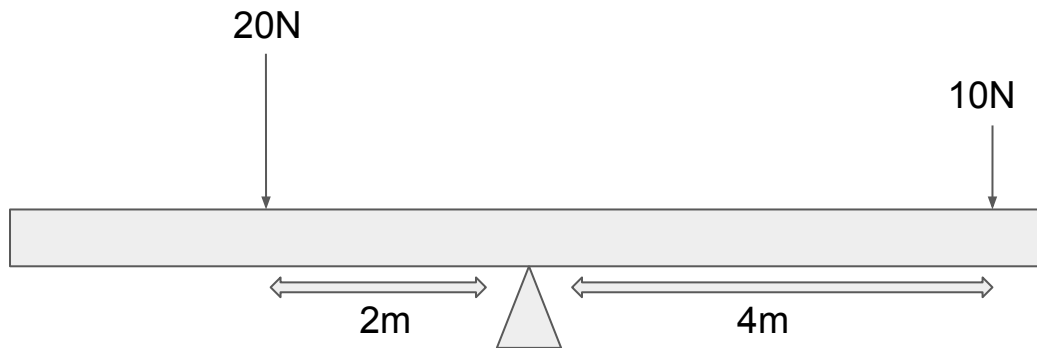
How do levers make use of moments?

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They increase the perpendicular distance of the force from the pivot, so decrease the force needed to produce the same moment.

Will this object rotate? If so in which direction?
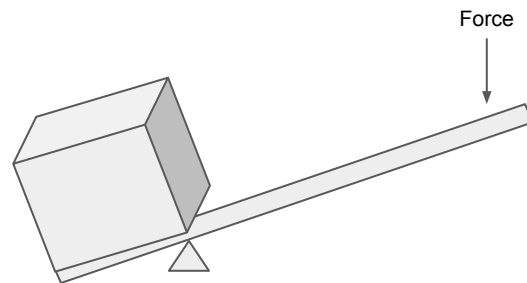

20N

10N

2m

4m

Will this object rotate? If so in which direction?

No. The clockwise and anticlockwise moments are equal, therefore the object remains in equilibrium.
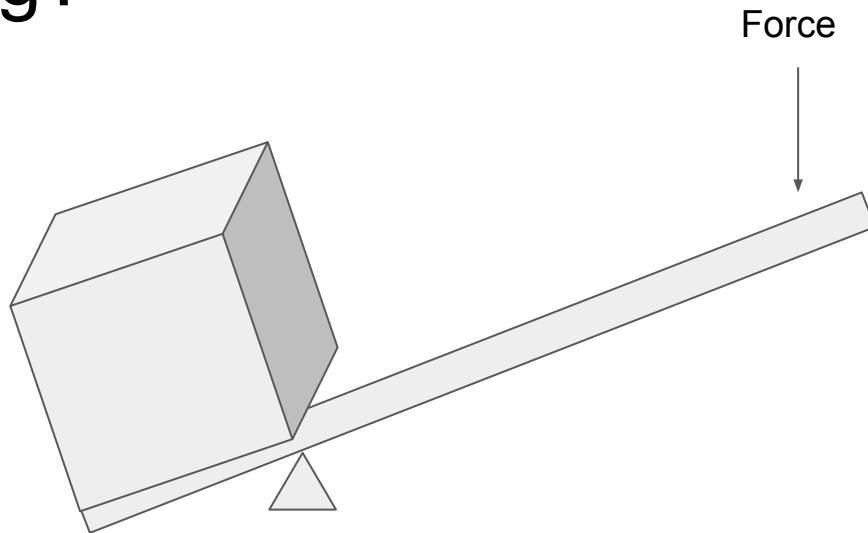
How are levers used to decrease the force required to lift something?

Force

How are levers used to decrease the force required to lift something?

Levers use a pivot point and the concept of moments to reduce the force. The further you are away from the pivot point, the less force you need to lift the object up.

Force

How does lubricating levers/gears improve efficiency?

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There is less resistance; less energy is wasted/dissipated (as heat) overcoming frictional forces.