WJEC Wales Physics GCSE

SP2.4: Moments

Practical Flashcards

Outline the basic steps of the practical.

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1. Pivot the metre rule (with a hole at the 50 cm mark) on the clamp stand using a pin and cork.
2. Add plasticine to one end so that it is balanced.
3. Use a cotton loop to attach a 200 g mass at 10 cm.
4. Add a 400 g mass to the other side, starting at the end, and record the distance of the second mass from the pivot that causes the ruler to balance.
5. Repeat with different masses and distances.

How do you calculate the moment that each mass produces? Give appropriate units.

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Moment = 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 a mass is hung at the 10 cm mark, what is the distance used to calculate the moment?

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40 cm since the length required is the distance between the mass and pivot, and the pivot is at the 50 cm mark.

How do you calculate the force that each mass produces?

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Force = Mass x Gravitational field strength

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.

What safety precaution should be taken when carrying out this experiment?

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Avoid standing with your feet directly below the ruler and masses in case a mass falls.