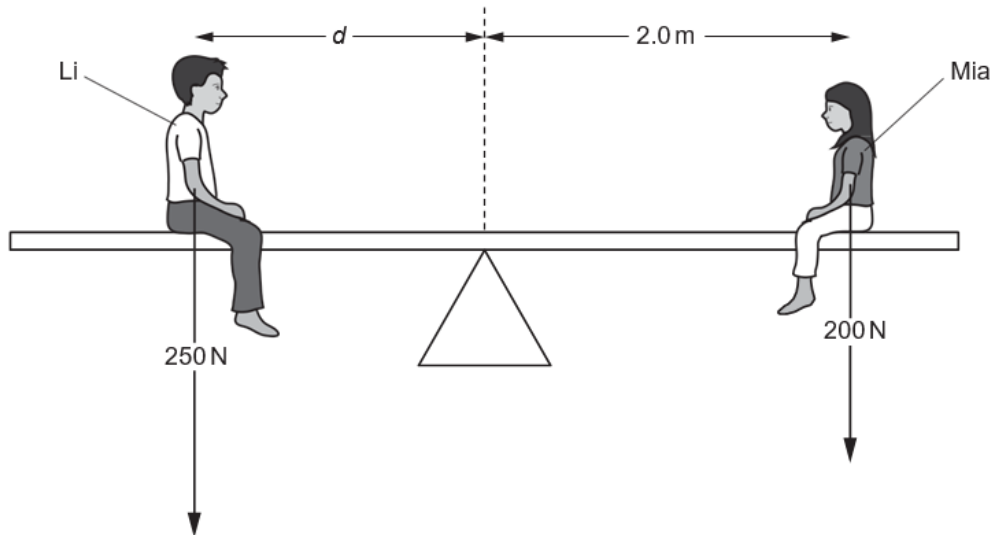


GCSE Physics B (Twenty First Century Science)
J259/01 Breadth in Physics (Foundation Tier)

Question Set 5

1 The figure shows Li and Mia balanced on a see-saw.



(a) Mia weighs 200 N.

Calculate the moment of Mia's weight about the centre of the see-saw.

$$\begin{aligned} \text{Moments} &= \text{Force} \times \text{distance perpendicular to force} \\ &= 200 \times 2 \\ &= 400 \text{ Nm} \end{aligned}$$

Moment = 400 Nm

[3]

(b) Li weighs 250 N.

To balance Mia as shown in the diagram, he needs to sit at a distance d from the centre of the see-saw.

Calculate the distance d .

To balance : Anticlockwise moments = clockwise moments

$$\text{Mia (CW)} : 400 \text{ Nm}$$

$$\text{Li (ACW)} : 250 \times d$$

$$400 = 250d \quad d = \frac{400}{250} = 1.6 \text{ m}$$

Distance d = 1.6 m [3]

Total Marks for Question Set 5: 6

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