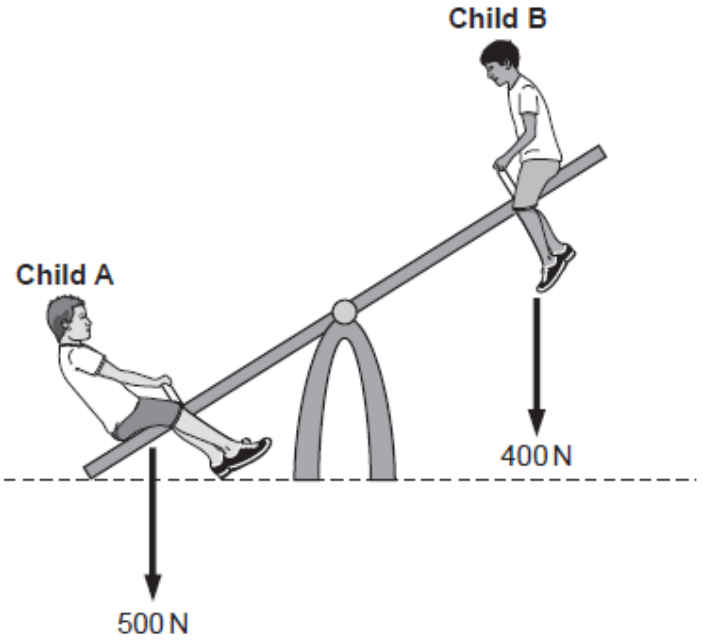
Oxford Cambridge and RSA

GCSE Physics A (Gateway)

J249/01 Physics A P1-P4 and P9 (Foundation Tier)

Question Set 6

1 **(a)** Two children play on a seesaw.



Both children sit **2 m** from the pivot

(i) Calculate the clockwise and anti-clockwise moments around the pivot when the seesaw is horizontal.

Clockwise moment = 400 × 2 = 800 ..... N m

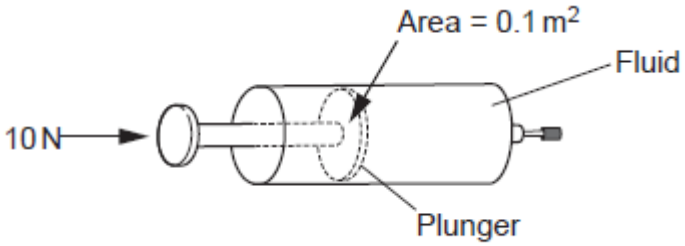
Anti-clockwise moment = 500 × 2 = 1000 ..... N m **[3]**

(ii) Calculate where **Child A** should sit to balance the seesaw.

$\frac{800}{500} = \frac{8}{5} = 1.6$

Answer = 1.6 m ..... **[3]**

(b) A student tries to compress the fluid in a sealed syringe with a force of 10 N.



The area of the end of the syringe is 0.1 m^2.

(i) Calculate the pressure in the fluid..

Pressure = $\frac{F}{A} = \frac{10}{0.1} = 100$

Answer = 100 ..... Pa

[3]

(ii) Write down the direction of the force produced by the fluid on the plunger.

[1]

Perpendicular to the plunger

Total Marks for Question Set 6: 10