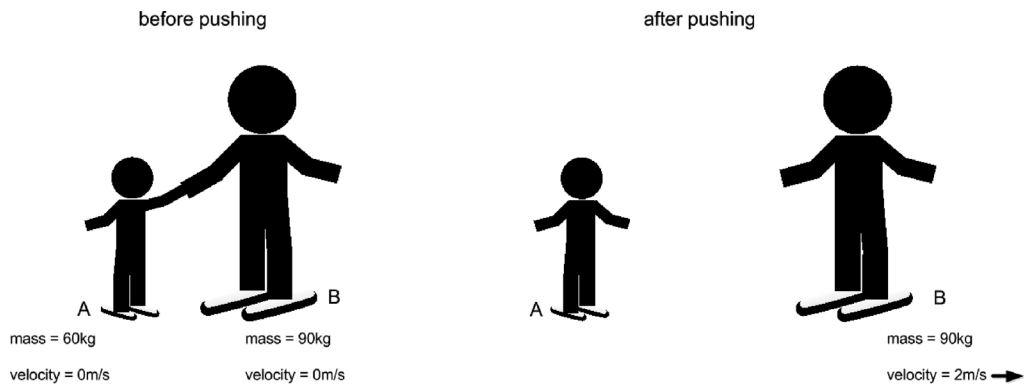


GCSE Physics A (Gateway)
J249/03 Physics A P1-P4 and P9 (Higher Tier)

Question Set 22

Two ice skaters **A** and **B**, at rest, start together on the ice.

The ice skaters push apart and they move off in opposite directions.



- (a) State the law of conservation of momentum.

total momentum before = total momentum after
 a collision a collision [1]

- (b) Calculate the velocity of skater A after pushing.

Use the information and your knowledge of momentum to help

$$\begin{aligned}
 (60 \times 0) + (90 \times 0) &= 60v + 90(2) \\
 0 &= 60v + 180 \\
 \frac{-180}{60} &= v \rightarrow v = -3 \text{ ms}^{-1}
 \end{aligned}$$

[2]

Total Marks for Question Set 22: 3

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