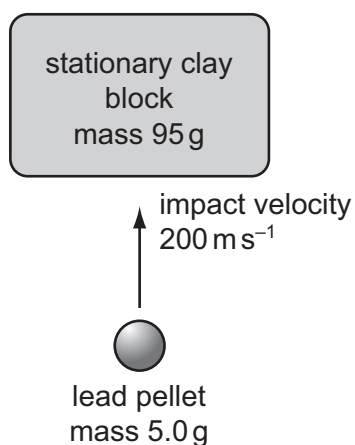**14** A lead pellet is shot vertically upwards into a clay block that is stationary at the moment of impact but is able to rise freely after impact.

The pellet hits the block with an initial velocity of $200\,\mathrm{m\,s^{-1}}$. It embeds itself in the block and does not emerge.

How high above its initial position will the block rise?
(Mass of pellet = $5.0\,\mathrm{g}$; mass of clay block = $95\,\mathrm{g}$.)

A   5.1 m   **B**   5.6 m   **C**   10 m   **D**   2000 m

Space for working