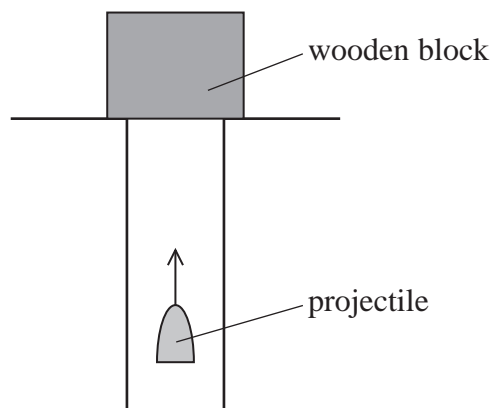


A projectile of mass 65 g is fired vertically upwards into a stationary wooden block of mass 2.400 kg, as shown.



- (a) The projectile becomes embedded in the block. They both move vertically upwards through a vertical displacement of 55 cm before momentarily coming to rest.

Calculate the energy dissipated as the projectile hits the block.

(6)

Energy dissipated = .....

- (b) Explain how the principle of conservation of energy applies to this collision.

(2)

**(Total for Question 7 = 8 marks)**