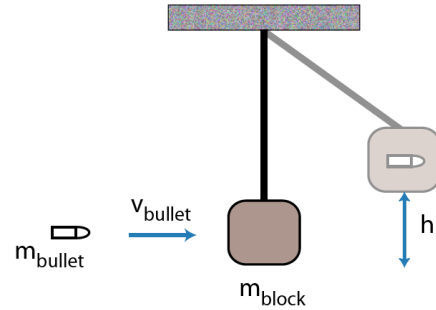


## Energy and Momentum

1. A bullet of mass  $m_b$  is fired into a block of mass  $M_{bl}$ . After it embeds in the block, the block (plus bullet) rise to a maximum height of  $h$ . Find the initial speed of the bullet.



2. A bike helmet—basically a shell of hard, crushable foam—is tested by being strapped onto a 5.0 kg headform and dropped from a height of 2.0 m onto a hard anvil. What force is encountered by the headform if the impact crushes the foam by 3.0 cm?

