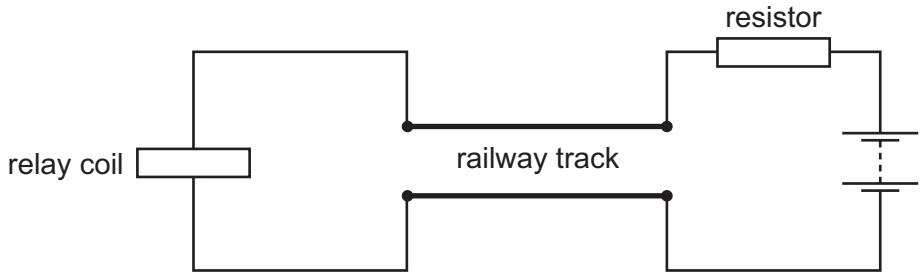
35 The diagram shows a length of track from a model railway connected to a battery, a resistor and a relay coil.



With no train present, there is a current in the relay coil which operates a switch to turn on a light.

When a train occupies the section of track, most of the current flows through the wheels and axles of the train in preference to the relay coil. The switch in the relay turns off the light.

Why is a resistor placed between the battery and the track?

A to limit the heating of the wheels of the train

B to limit the energy lost in the relay coil when a train is present

C to prevent a short circuit of the battery when a train is present

D to protect the relay when a train is present

Space for working