

Introduction

Two short practical activities using light gates.

Speed

Set up a single light gate to measure speed, as if you were going to use an interrupt card, i.e. input a length of 5cm. Give pupils the choice of a 2, 5 or 8 cm interrupt card and ask them which card they would use to record the highest speed on the computer (NB Unless they choose the 5cm card this will not be the actual speed of the card). Depending on the ability of the group you may wish to let pupils each have a turn at this or you may wish to move straight to acceleration.

Acceleration

Set up two light gates to measure acceleration using a single interrupt card of 5cm. Now offer the pupils the choice of the three cards and challenge them to produce the highest acceleration that they can. You might wish to consider getting them to work down how they will achieve this before they start, but it can be quite satisfying if they do not think before they act, particularly for the ego if you challenge them to beat you! They are then likely to just move the card as fast as possible. Of course the trick is to move the card very slowly through the first gate, then move it as fast as possible to and through the next gate. One way of helping this is to turn the card slightly so its effective width is reduced as it passes through the second gate.

Safety

Not applicable.

Lesson outcomes

- Improved understanding of speed and acceleration

Where the activity fits in

QCA Unit 9K Speeding up, and further acceleration work.

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