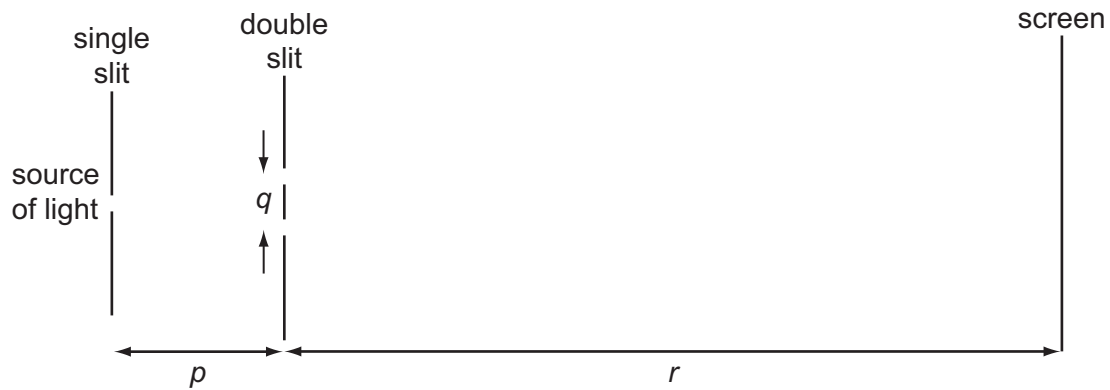


- 28 A teacher sets up the apparatus shown to demonstrate a two-slit interference pattern on the screen.



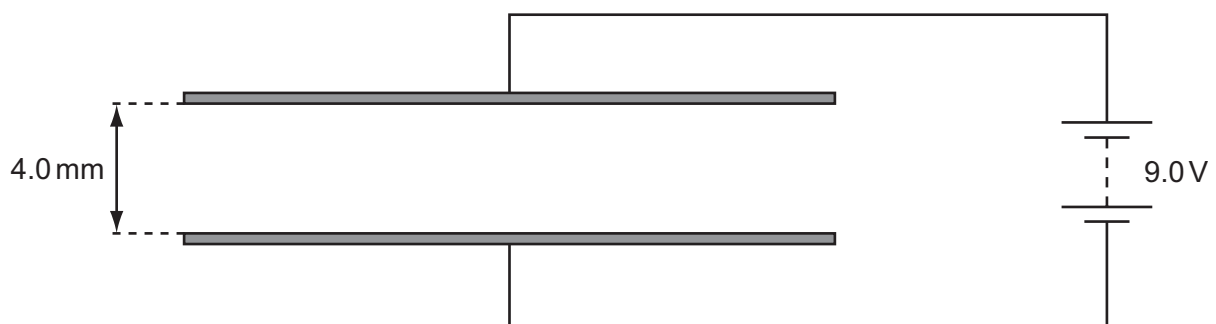
Which change to the apparatus will increase the fringe spacing?

- A decreasing the distance p
 - B decreasing the distance q
 - C decreasing the distance r
 - D decreasing the wavelength of the light
- 29 A parallel beam of white light is incident normally on a diffraction grating. It is noted that the second-order and third-order spectra partially overlap.

Which wavelength in the third-order spectrum appears at the same angle as the wavelength of 600 nm in the second-order spectrum?

- A 300 nm
- B 400 nm
- C 600 nm
- D 900 nm

- 30 The diagram shows a pair of metal plates 4.0 mm apart connected to a 9.0 V battery.



What is the electric field between the plates?

- A $4.4 \times 10^{-4} \text{ NC}^{-1}$
- B $3.6 \times 10^{-2} \text{ NC}^{-1}$
- C 36 NC^{-1}
- D $2.3 \times 10^3 \text{ NC}^{-1}$