

**Diffraction****Checklist statement**

✓

I can describe the appearance of the diffraction pattern from a single slit using monochromatic light. ☐

I can describe the appearance of the diffraction pattern from a single slit using white light. ☐

I can explain qualitatively how the width of the central diffraction maximum depends on wavelength and slit width. ☐

I can describe plane transmission diffraction gratings at normal incidence. ☐

I can apply $d \sin \theta = n\lambda$, define all terms and know their standard units. ☐

I can describe applications of diffraction gratings. ☐

Refraction at a Plane Surface**Checklist statement**

✓

I can define refractive index and apply $n = \frac{c}{c_s}$, defining all terms and their standard units. ☐

I can recall that the refractive index of air is approximately 1. ☐

I can apply Snell's law $n_1 \sin \theta_1 = n_2 \sin \theta_2$, defining all terms and their standard units. ☐

I can describe total internal reflection. ☐

I can apply $\sin \theta_c = \frac{n_2}{n_1}$, defining all terms and their standard units. ☐

I can describe fibre optics, including the function of the cladding. ☐

I can describe step-index optical fibres. ☐

I can explain material dispersion and modal dispersion. ☐

I can explain the principles and consequences of pulse broadening and absorption in optical fibres. ☐