Waves

Specification reference	Checklist questions	
3.3.1.1	Can you explain oscillation of particles in terms of amplitude, frequency, wavelength, speed, phase, and phase difference?	☐
3.3.1.1	Can you explain that phase difference may be measured as angles (radians and degrees) or as fractions of a cycle?	☐
3.3.1.2	Can you explain the nature of longitudinal and transverse waves, including sound, electromagnetic waves, and waves on a string?	☐
3.3.1.2	Can you describe the direction of displacement of particles/fields relative to the direction of energy propagation?	☐
3.3.1.2	Can you recall that all electromagnetic waves travel at the same speed in a vacuum?	☐
3.3.1.2	Can you explain polarisation as evidence for the nature of transverse waves?	☐
3.3.1.2	Can you apply your knowledge of polarisers to explain the function of Polaroid material and the alignment of aerials for transmission and reception?	☐
3.3.1.3	Can you define stationary waves?	☐
3.3.1.3	Can you describe nodes and antinodes on strings?	☐
3.3.1.3	Can you use the formula $f = \dfrac{1}{2l}\sqrt{\dfrac{T}{\mu}}$ for first harmonic?	☐
3.3.1.3	Can you describe the formation of stationary waves by two waves of the same frequency travelling in opposite directions?	☐
3.3.1.3	Can you draw a diagram to explain the formation of stationary waves?	☐

Specification reference	Checklist questions	
3.3.1.3	Can you describe stationary waves formed on a string and those produced with microwaves and sound waves?	☐
3.3.1.3	Can you describe stationary waves on strings in terms of harmonics?	☐
3.3.1.3	Have you carried out an investigation into how the frequency of stationary waves on a string varies with length, tension, and mass per unit length of the string?	☐