

## Chapter 11 – Waves and the Doppler Effect

### Learning Grid

| Wave and the Doppler Effect | Questions                                                                                                                                                 | Answers |      |       |      |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------|-------|------|
|                             | Define a wave.                                                                                                                                            |         |      |       |      |
|                             | What is a transverse wave? Include an annotated diagram showing the key parts of a wave.                                                                  |         |      |       |      |
|                             | What is a longitudinal wave? Include an annotated diagram.                                                                                                |         |      |       |      |
|                             | Explain what each of the following quantities are, including their symbol and unit:<br>(i) Wavelength<br>(ii) Frequency<br>(iii) Amplitude<br>(iv) Period | (i)     | (ii) | (iii) | (iv) |

| Wave and the Doppler Effect | Questions                                                                                               | Answers |
|-----------------------------|---------------------------------------------------------------------------------------------------------|---------|
|                             | What is the relationship between energy carried by a wave and its amplitude?                            |         |
|                             | What is the equation for the speed of a wave? Include what each variable means and its associated unit. |         |
|                             | Give three real-world examples of waves and state if they are transverse or longitudinal.               |         |
|                             | What is the Doppler effect? Use an annotated diagram to explain your answer.                            |         |
|                             | What is the Doppler effect equation? Include what each variable represents and its associated unit.     |         |
|                             | Give two applications of the Doppler effect.                                                            |         |