1.1

* Waves transfer energy
  + A **wave** is a disturbance that transfers energy from one place to another
    - Can transfer energy over distance without moving matter the entire distance
    - Forces can start a disturbance and send waves through materials
      * Rope wave
      * Water wave
      * Earthquake wave
    - **Medium** – any substance that a wave moves through
    - **Mechanical waves** – waves that transfer energy through matter
  + Waves can be classified by how they move
    - **Transverse wave** – the direction in which the wave travels is perpendicular, or at right angles, to the direction of the disturbance
    - **Longitudinal waves** – the wave travels in the same direction as the disturbance

1.2

* Waves have measurable properties
  + Waves have amplitude, wavelength, and frequency
    - **Crest** – the highest point, or peak of the wave
    - **Trough** – the lowest point or valley of the wave
    - **Amplitude** – the distance between a line through the middle of a wave and a crest or trough
    - **Wavelength** – the distance from one wave crest to the very next wave crest
    - **Frequency** – number of wavelengths passing a fixed point in a certain amount of time
  + Wave speed can be measured
    - Speed = wavelength \* frequency
    - S = ƛ \* *f*

1.3

* Waves behave in predictable ways
  + Waves interact with materials
    - **Reflection** – bouncing back of a wave after it strikes a barrier
    - **Refraction** – the bending of a wave as it enters a new medium at an angle other than 90 degrees
    - **Diffraction** – the spreading out of waves through an opening or around the edge of an obstacle
  + Waves interact with other waves