

SOUND REPRODUCTION

Vibrations and Waves (Revision from CI unit in Y10)

Know that sound waves are longitudinal waves produced by vibrations
Know the difference between transverse and longitudinal waves
Be able to describe the movement of waves in ropes, water and in springs
Know that there is no transfer of matter when sound or electromagnetic waves are transmitted
Know the relationship between amplitude and loudness for sound waves
Know the relationship between pitch and frequency for sound waves
Understand the relationship between velocity, wavelength and frequency

Magnets, Electromagnets and Motors

Know that an electric current through a wire produces a magnetic field near the wire
Know that a force acts on a current-carrying conductor in a magnetic field
Know that an electric motor has current-carrying coils, which rotate between the poles of a magnet
Understand the need for, and action of, a commutator

Digital and Analogue

Know that information can be conveyed by digital or analogue signals
Understand that analogue signals can have any amplitude, but that digital signals can have only two values of amplitude
Know that a varying analogue signal can be converted into a series of digital signals and vice versa
Understand that the sampling frequency must be greater than the highest analogue frequency sampled
Understand that digital recording and transmission of information results in less loss of information than the use of analogue recording and transmission.
Advantages of digital recording and transmission
Know that digital transmission can carry more information than analogue transmission