

# Synchrotron Investigations

## 3.2 Investigating the electromagnetic spectrum

### Electromagnetic spectrum explorer learning object exercises

This section will allow the students to use the interactive *Electromagnetic spectrum explorer* to investigate the relationships between the velocity, wavelength, frequency, and energy of electromagnetic radiation. This section consists of an introductory exercise followed by two tasks.

Please note:

- When students select data from the *Electromagnetic spectrum explorer* ensure they only select data from small range of the spectrum (for example select values within the same power of 10).
- DO NOT attempt to get students to graph manually. Feedback received from trial schools has stated that this is too difficult for students.
- It may assist your students to review measurements and SI units. Some common measurements are listed below.

Quantity	Unit	Symbol	Symbol of compound unit
mass	kilogram	kg	-
length	metre	m	-
time	second	s	-
velocity	metre per second	$\text{m s}^{-1}$	-
force	Newton	N	$\text{kg m s}^{-2}$

The Western Australian formula and constants sheet for physics can be found at [http://www.curriculum.wa.edu.au/pages/syllabus\\_manuals/volumes/VII\\_science/physics.htm](http://www.curriculum.wa.edu.au/pages/syllabus_manuals/volumes/VII_science/physics.htm)

