

## The Electromagnetic Spectrum

**Objectives:** To name each of the bands of the electromagnetic spectrum, and put them in order of frequency or wavelength.

The velocity of light waves is about 300000000m/s, covering the 94 million miles from the Sun to the Earth in about 8 minutes. They are part of a “*family*” of waves called the electromagnetic spectrum that all travel at this velocity, which is related to their wavelengths and frequencies by the equation:

$$v = f \times l$$

where  $v$  is velocity,  $f$  is frequency in Hertz and  $l$  is wavelength in Metres.

You have sets of cards with the names of each part or “band” of the electromagnetic spectrum. Working in groups of three, match them with the cards describing their uses and risks, then put them in order of decreasing wavelength.

Finished already?! Discuss these questions in your groups:

Only one band is visible to our eyes, can other animals see more?

How do you think the energy of the waves varies with wavelength and frequency?

We can control light with lenses and mirrors. What about the other bands?

Two of the bands look fairly harmless at first. Do they have any dangers?