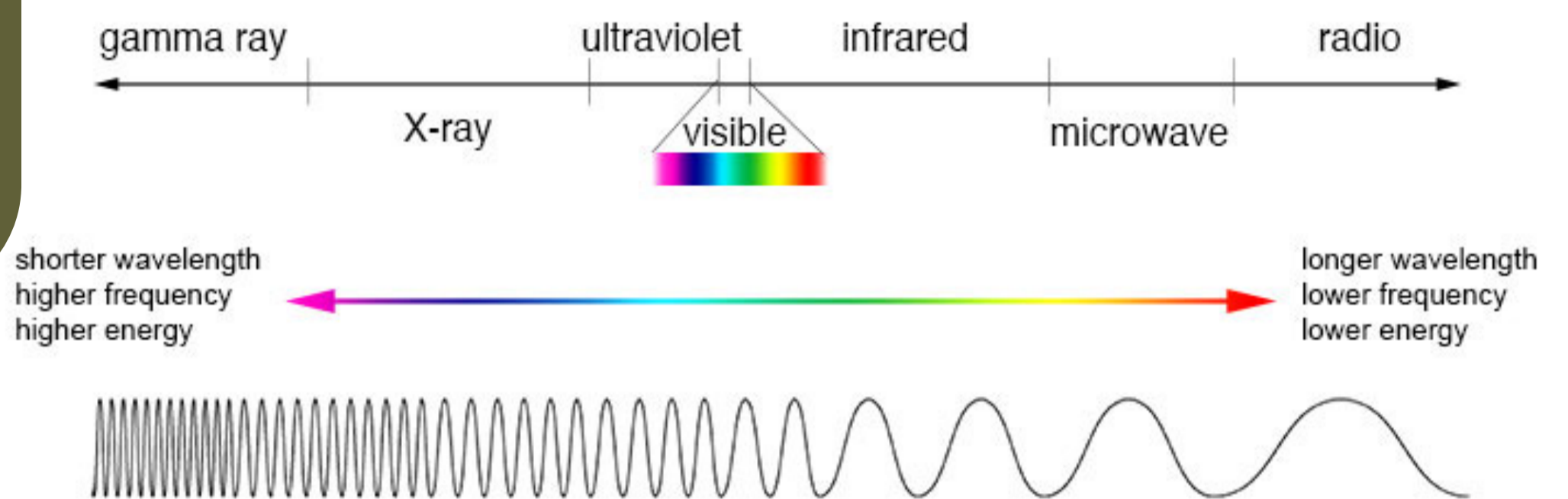


Waves are found everywhere in everyday life. Their main job is to **move energy** from one place to another. This is done by causing a **disturbance** in a medium.

A wave on the ocean travels through water, and a sound wave travels through the air. But the **medium** (air and water) overall **does not move**, only the wave moves.

Electromagnetic waves are special, they can transport their energy **without a medium** to travel in. The amount of energy the wave is carrying relates to what **type of wave** it is

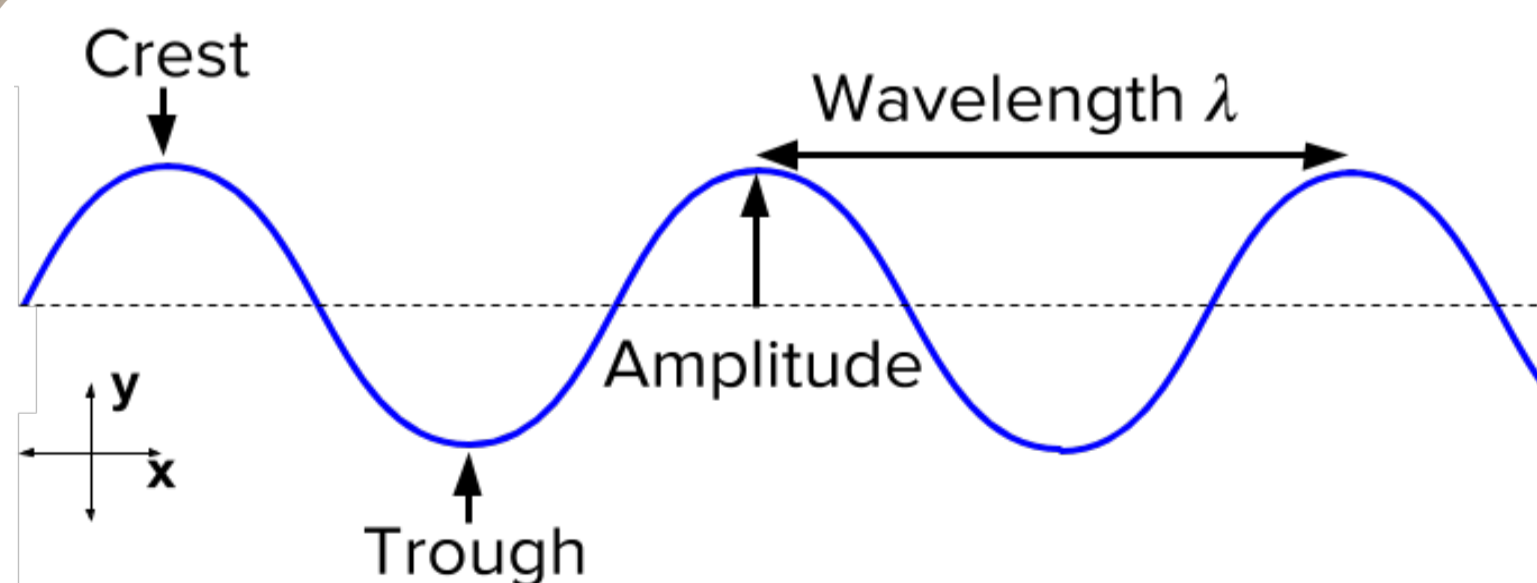


The electromagnetic spectrum is a spectrum on which all types of electromagnetic energy lies. This energy travels in waves which can range from the very small wavelengths of **gamma rays** to **radio waves** with wavelengths of hundreds of meters.

# WHAT ARE RADIO WAVES?

We use or are exposed to parts of the electromagnetic spectrum every day. In the middle of the spectrum we have **visible light**, everything that we see is due to this tiny section of the spectrum.

Waves with smaller wavelengths are classed as **ionizing radiation**, such as ultraviolet (UV) from the Sun, X-rays which we use to see our bones, and Gamma rays that are made in nuclear reactions. These types of EM radiation are dangerous in large quantities



On the other side of the spectrum, we have **longer wavelengths** which are not harmful to humans. Infrared radiation is what toasts your bread in a toaster, microwaves have a special wavelength that heats up water so we can use them to heat our food.

Radio waves are waves with the **longest wavelength**. Radio waves revolutionized how humans **communicate across the world**, allowing messages to be sent to far away places almost instantly.