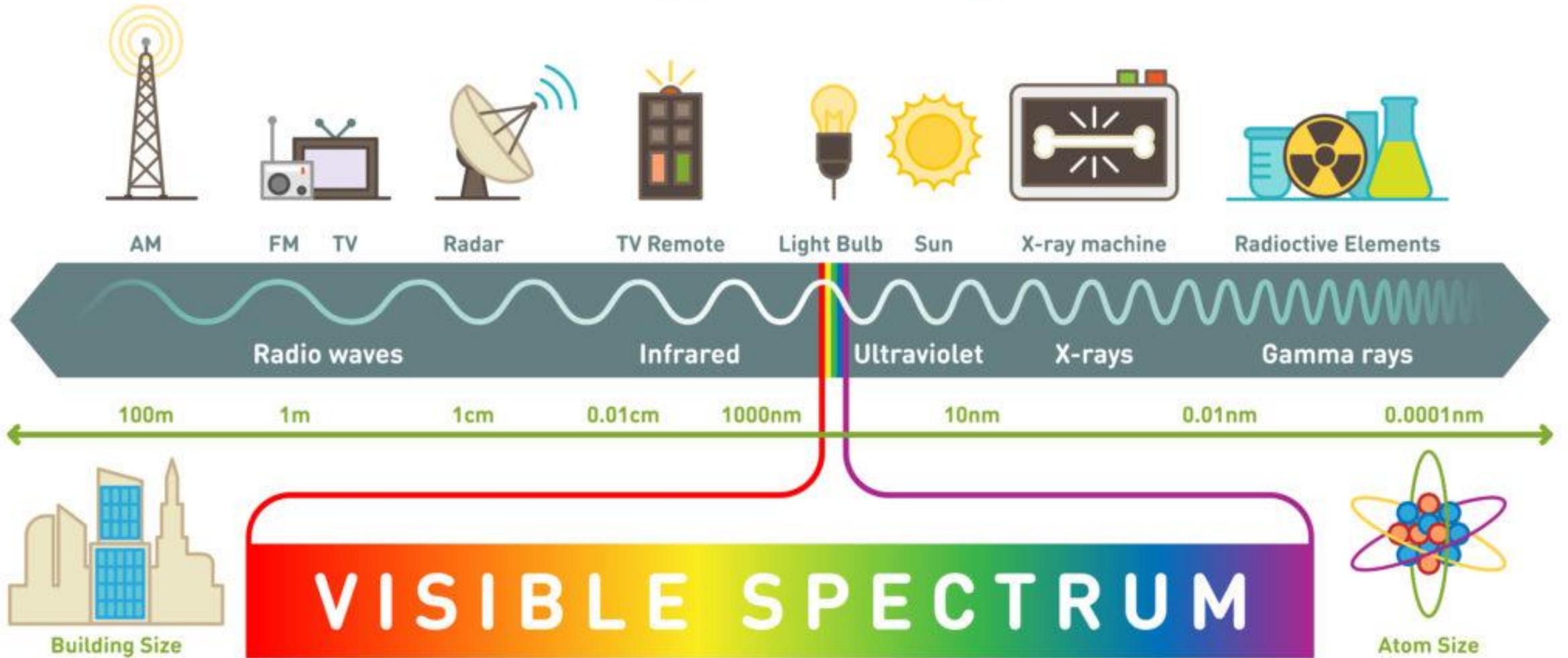


# Spektrum Gelombang Elektromagnetik

- **WHAT IS THE ELECTROMAGNETIC SPECTRUM?**
- The **electromagnetic spectrum** is the name for the different forms of light that are given off by objects in the Universe.
- **Radio waves, microwaves, infrared radiation, visible light, ultraviolet radiation, X-rays and gamma rays** are all types of light, but with different energies!

# Electromagnetic Spectrum



- **WHAT'S THE DIFFERENCE BETWEEN FREQUENCY AND WAVELENGTH?**

- Frequency is the number of waves that pass a point each second. Wavelength is the length of one wave.
- The longer the wavelength the lower the frequency

- **WHAT IS IONISING RADIATION?**

- Ionising radiation can remove an electron from an atom or molecule. These atoms or molecules are then said to be ionised and are unstable.
- **Gamma Rays, X rays** and some types of **UV radiation** are ionising.
- Ionising radiation can lead to changes in the DNA of a cell.

- **ELECTROMAGNETIC SPECTRUM FACTS**

- We can only see visible light.
- Different colours of visible light have different wavelengths.
- Gamma rays and x-rays pass through the body which make them ideal for medical imaging.
- Electromagnetic waves are transverse waves. They vibrate at 90 degrees to the direction the wave travels.
- There are 7 different types of **electromagnetic radiation** but they merge together to form a spectrum.

- The higher the frequency of the EM wave the more dangerous it is to humans.
- Radio waves are not absorbed by the body.
- Most of the UV radiation from the Sun is absorbed by the Earth's atmosphere, but some is absorbed by the skin where it can cause damage to cells on the surface.
- All types of waves in the electromagnetic spectrum travel at the speed of light.

