

Teaching notes

This resource can be used in a variety of ways.

Suggested activities

Cut up all of the cards and give out to pairs or small groups.

- Ask the students to name the different parts of the electromagnetic spectrum.
- Ask students to group the cards into piles depending on the type of radiation they refer to.

Give students a set of five cards.

- Students could each be given five cards to hold up when the teacher calls out a type of radiation.
- Group the cards so that there is an odd one out in each pile. The students decide which one is the odd one.
- Ask students to group the cards beginning with the shortest wavelength or the lowest frequency etc.
- Ask students to list the different parts of the spectrum used in the activity.
- Which type of electromagnetic radiation is not mentioned and where would it go on the spectrum?

There are two interactive activities to accompany this resource.

Which part of the electromagnetic spectrum?

used to treat tumours (radiotherapy)



ozone layer



17th century telescope



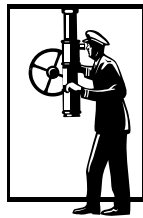
barcode reader



thermal imaging camera



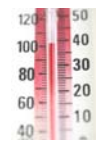
periscope



banknote security mark



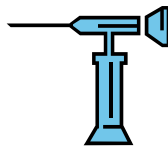
measured with a thermometer



images of the skeleton of Tutankhamun



endoscope



TV remote control



Geiger-Müller tube



melanin



luggage security scanning at airports



mobile phone



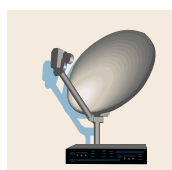
visible to pollinating insects (but not to humans)



speed camera



satellite dish on a house



to sterilise food (irradiation)



used to investigate old oil paintings



Which part of the electromagnetic spectrum?

Answers

| | | | |
|---|--|--|--|
| used to treat tumours (radiotherapy) gamma radiation | ozone layer ultraviolet | 17 th century telescope visible light | barcode reader visible (laser) light |
| thermal imaging camera infrared | periscope visible light | banknote security mark ultraviolet | measured with a thermometer infrared |
| images of the skeleton of Tutankhamun X-rays | endoscope visible light or infrared | TV remote control infrared | Geiger-Müller tube gamma radiation |
| melanin ultraviolet | luggage security scanning at airports X-rays | mobile phone microwaves | visible to pollinating insects (but not to humans) ultraviolet |
| speed camera microwaves | satellite dish on a house microwaves | to sterilise food (irradiation) gamma radiation | used to investigate old oil paintings X-rays |

The electromagnetic spectrum

Starting with longest wavelength / lowest frequency:

radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma radiation

Examples of radio waves are missing from the cards.