

# OCR (B) Chemistry A-Level

## OZ7 - Energy and Matter

### Flashcards

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# How do electromagnetic waves interact with orbital electrons?



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UV and visible light waves are absorbed by the electrons in the shells of atoms, these electrons will be excited to a higher energy level, this can sometimes cause bonds to be broken.



What is the relation between the wavelength and frequency of an electromagnetic wave?



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$$\lambda = \frac{c}{f}$$

$c$  = the speed of light =  $3 \times 10^8 \text{ ms}^{-1}$

$f$  = the frequency of the e.m. wave in Hz

$\lambda$  = the wavelength of the e.m. wave in m



# How is the energy of an electromagnetic wave calculated?



How is the energy of an electromagnetic wave calculated?

$$E = hf$$

$E$  = the energy of the wave in J

$f$  = the frequency of the wave in Hz

$h$  = the planck constant =  $6.63 \times 10^{-34}$

