

## Day 2.2 Warm-Up

A wave has a wavelength of  $\overset{\lambda \text{ nm}}{358 \text{ nanometers}}$ .

1. Calculate the frequency of the wave.
2. Calculate the energy of the wave.

$$\textcircled{1} \quad c = \lambda \nu$$

$$3 \times 10^8 \frac{\text{m}}{\text{s}} = (358 \times 10^{-9} \text{ m}) (\nu)$$

$$\nu = 8.38 \times 10^{14} \frac{1}{\text{s}}$$

$$\frac{358 \text{ nm}}{1 \text{ nm}} \left| \frac{10^{-9} \text{ m}}{1 \text{ nm}} \right.$$

$$\textcircled{2} \quad E = h\nu$$

$$E = (6.626 \times 10^{-34} \text{ J}\cdot\text{s}) (8.38 \times 10^{14} \frac{1}{\text{s}})$$

$$E = 5.55 \times 10^{-19} \text{ J}$$