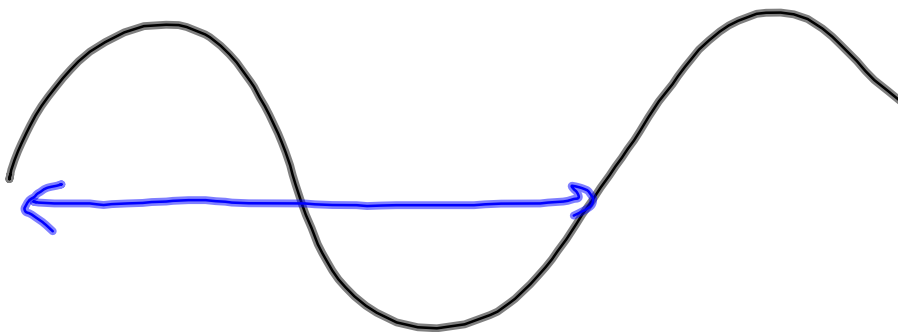


# Wavelength

distance along the wave until it repeats

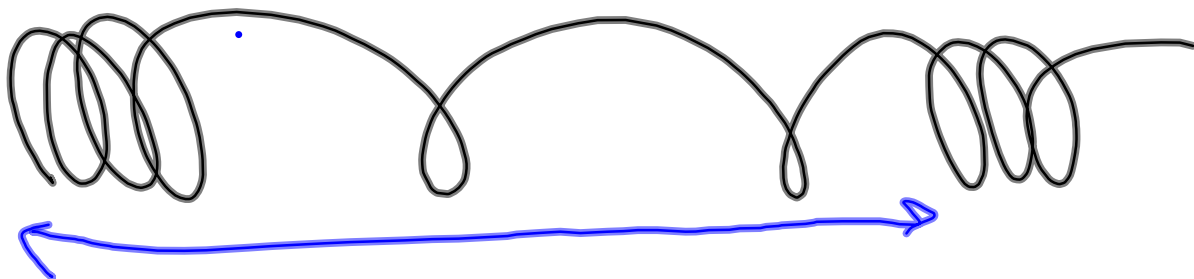


**Units?**

*meters*  

---

*wave*



## Frequency & Wavelength

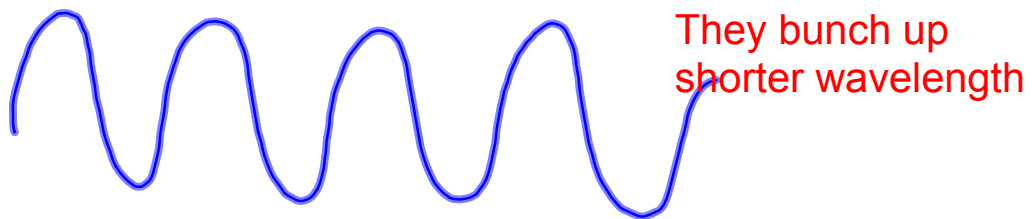
**Frequency** x **Wavelength** = ?

$$\frac{\cancel{\text{waves}}}{\text{second}} \times \frac{\text{meters}}{\cancel{\text{wave}}} = \text{m/s}$$

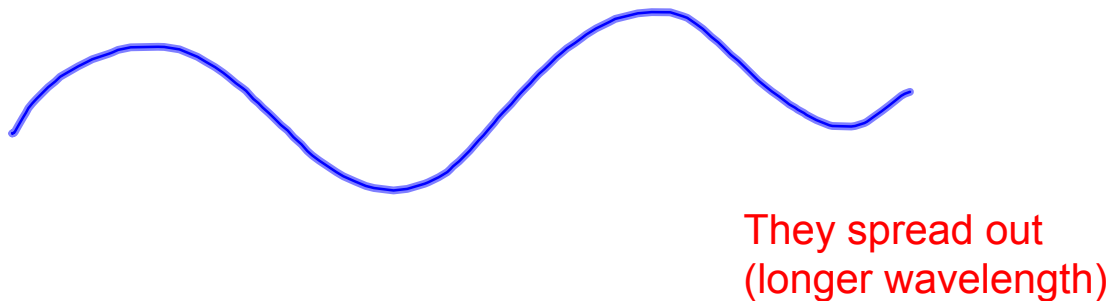
Speed!

## What determines the speed of a wave?

Try sending them at high frequency



Try sending them at low frequency



**But they don't go any faster**

**You can't make the waves go faster  
by creating them faster (at a higher  
frequency)**

**So what determines the speed of a wave?**

## **The Medium!**

To change the speed of a wave, you have to change what it's traveling through

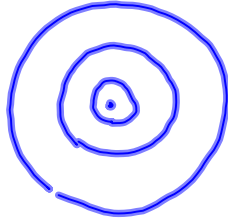
**Water waves**  
depth of the water affects speed

**Slinky waves**  
mass & tension of the slinky

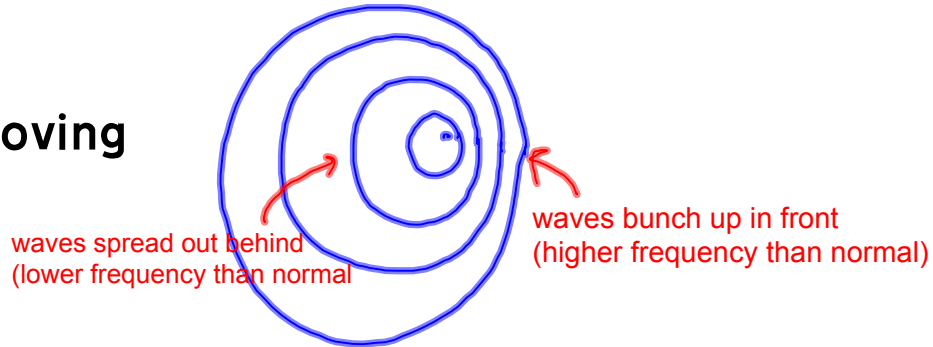
**Sound & Light... ?**

# WHEN A SOURCE OF WAVES MOVES

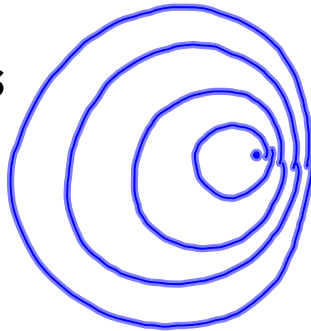
stationary



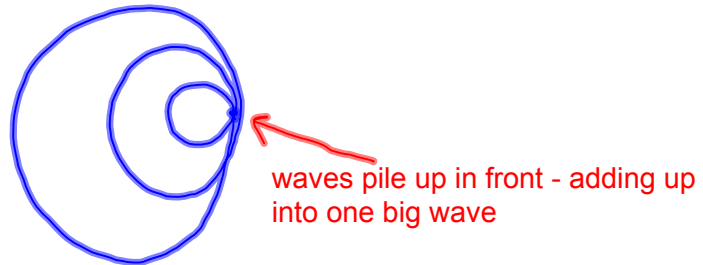
moving



moving almost as fast as the waves



moving as fast as the waves



moving faster than the waves

