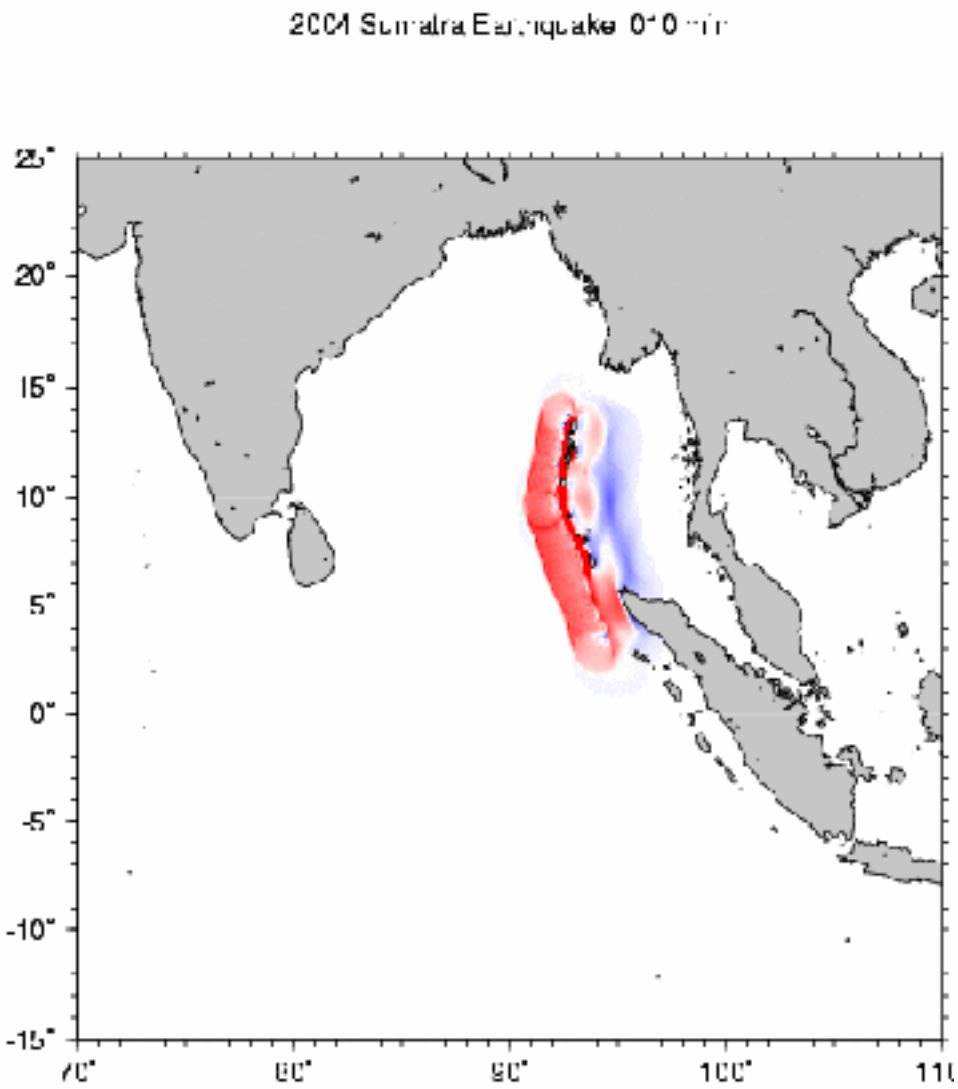
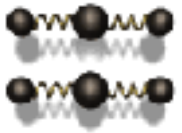
Sound



Tsunami caused by Sumatra earthquake

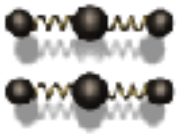
Sound: Definitions

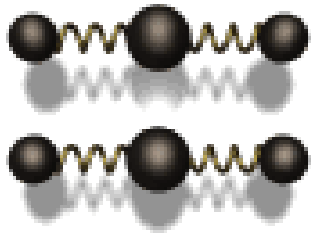
- **Vibration** (**V**) – Back and forth motion.



- **Frequency** (**F**) – The number of vibrations something makes in one second.

- **Amplitude** (**A**)– The size of the vibration.

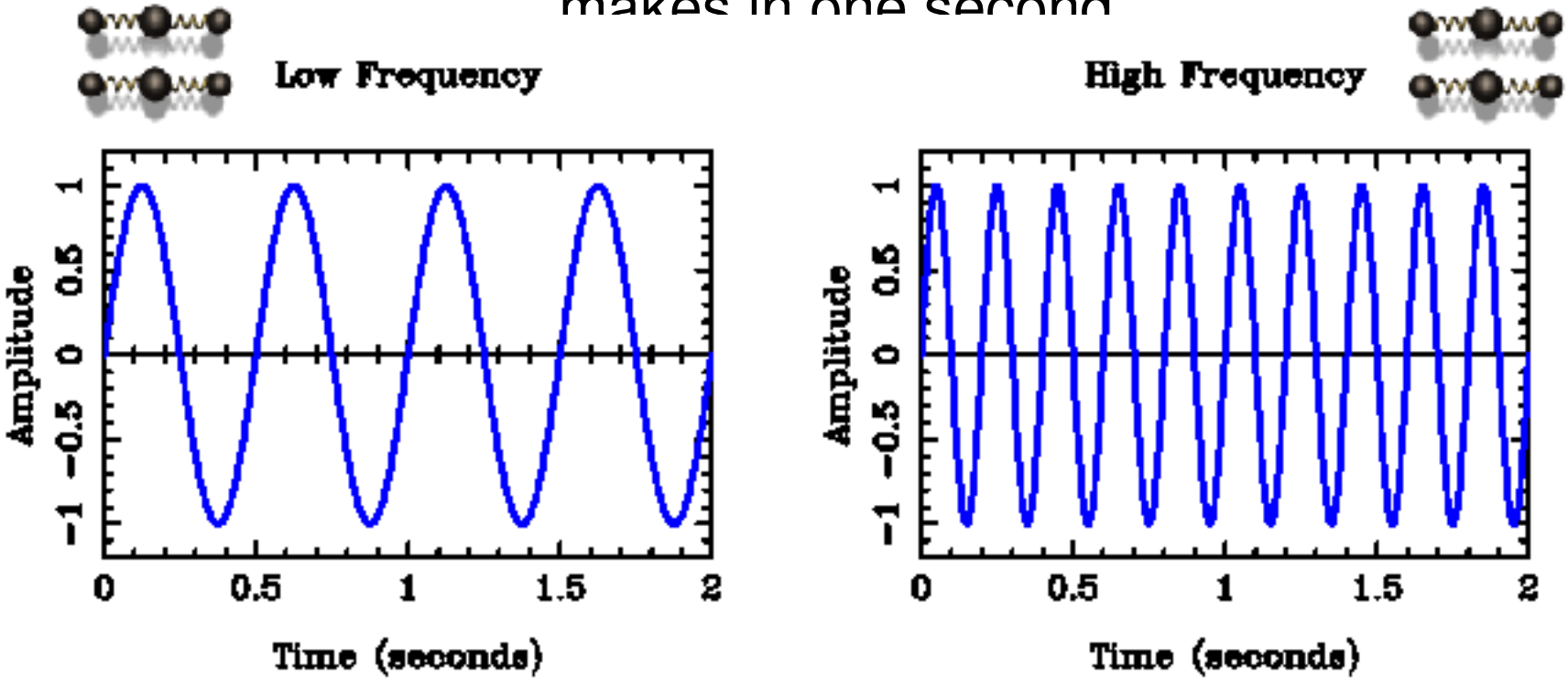




- **Resonance** – Large vibrations when something is pushed at its natural frequency

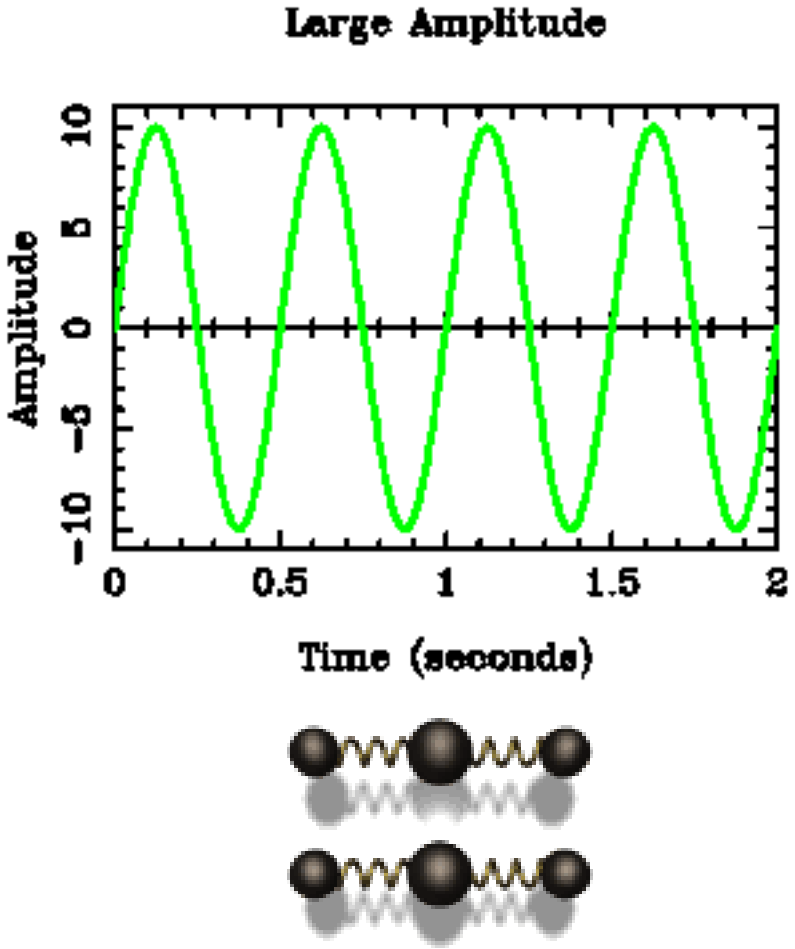
Sound: Frequency

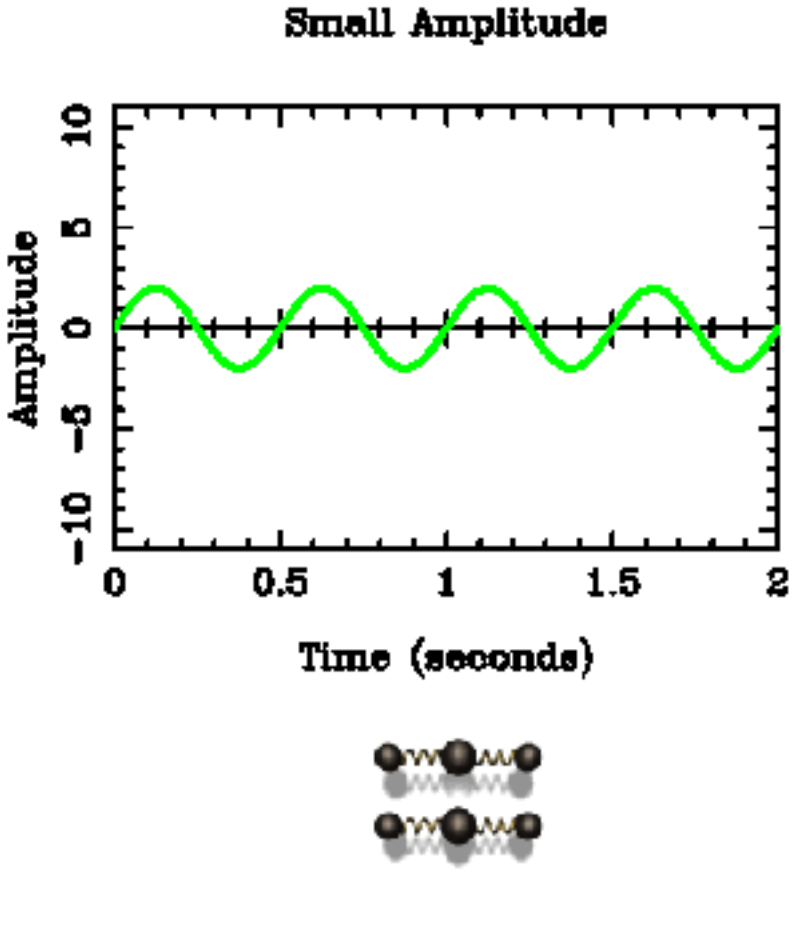
- **Frequency** (**F**) – The number of vibrations something makes in one second



Sound: Amplitude

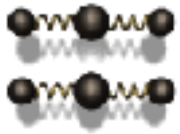
- **Amplitude** (**A**)– The size of the vibration.



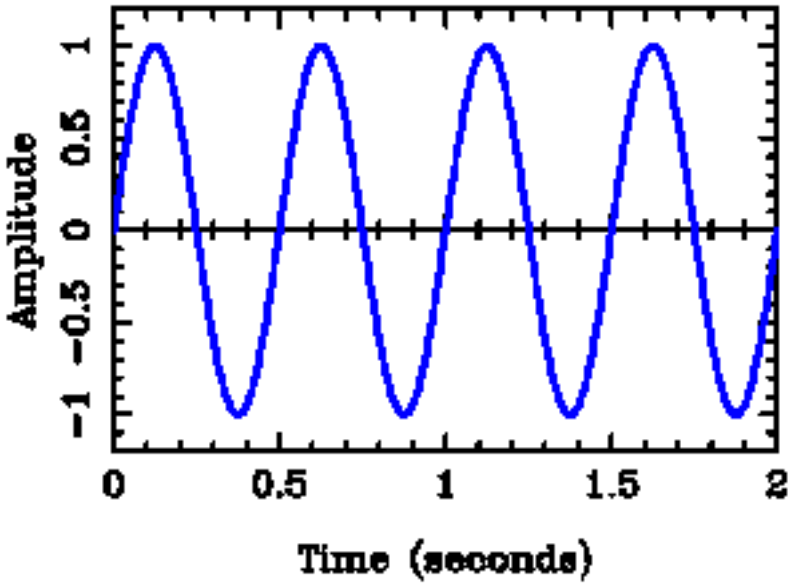


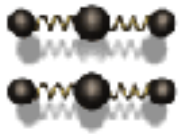
Sound: Frequency

- **Frequency** (**F**) – The number of vibrations something makes in one second

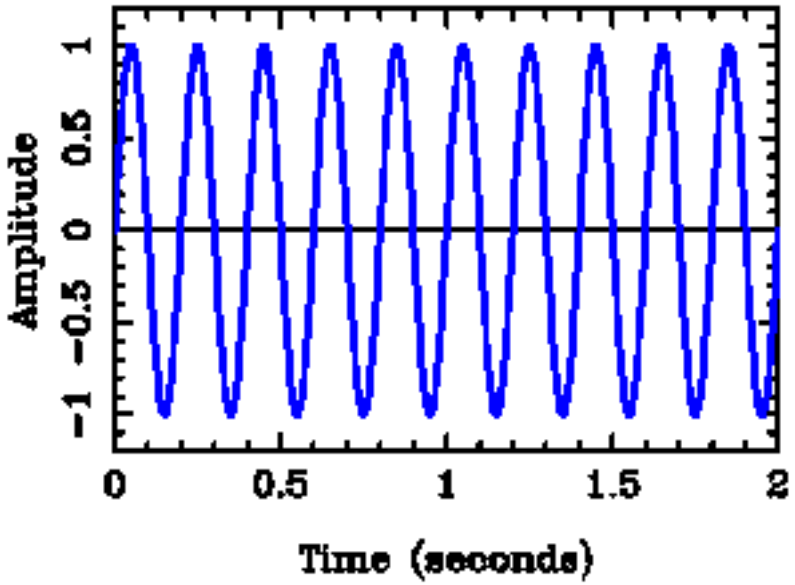


Low Frequency





High Frequency



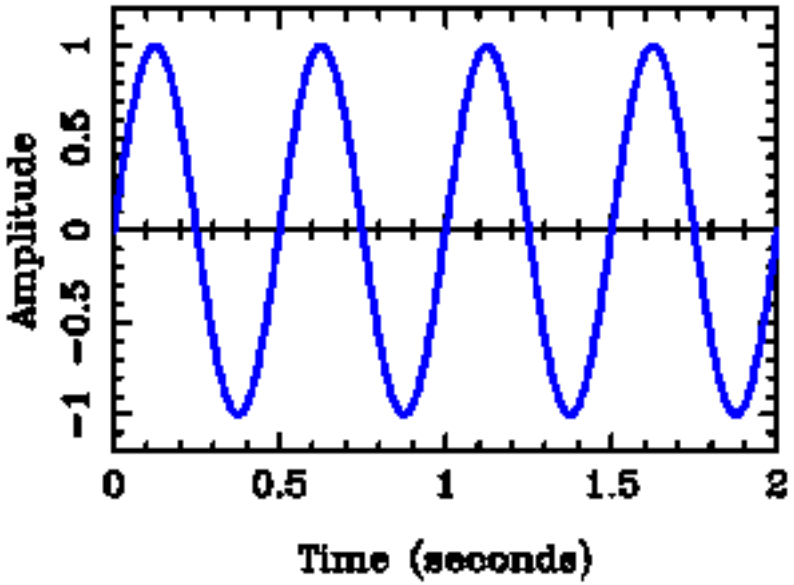
What's the Frequency?

F = V / T = ?

Sound: Frequency

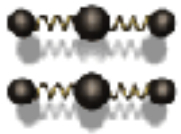
- **Frequency** (**F**) – The number of vibrations something makes in one second.

Low Frequency

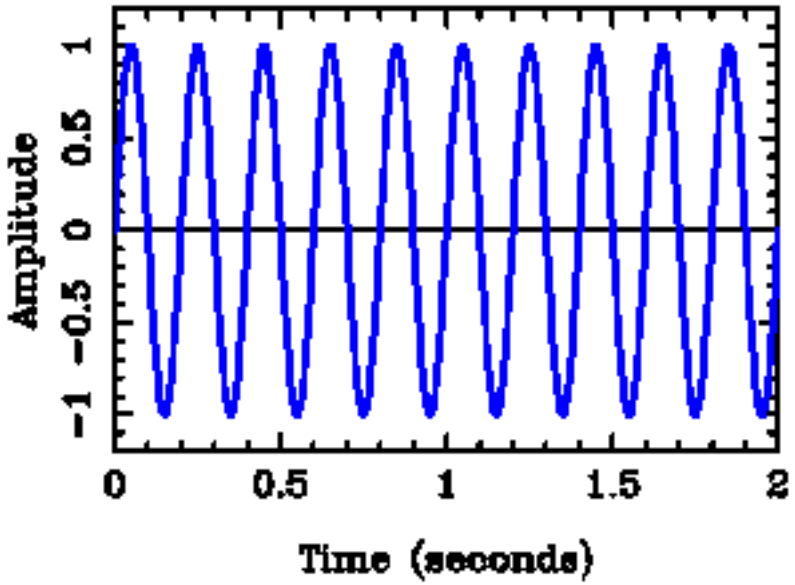


What's the Frequency?

F = **V** / **T** = 4 / 2 = 2



High Frequency

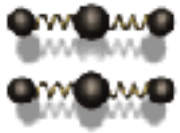


What's the Frequency?

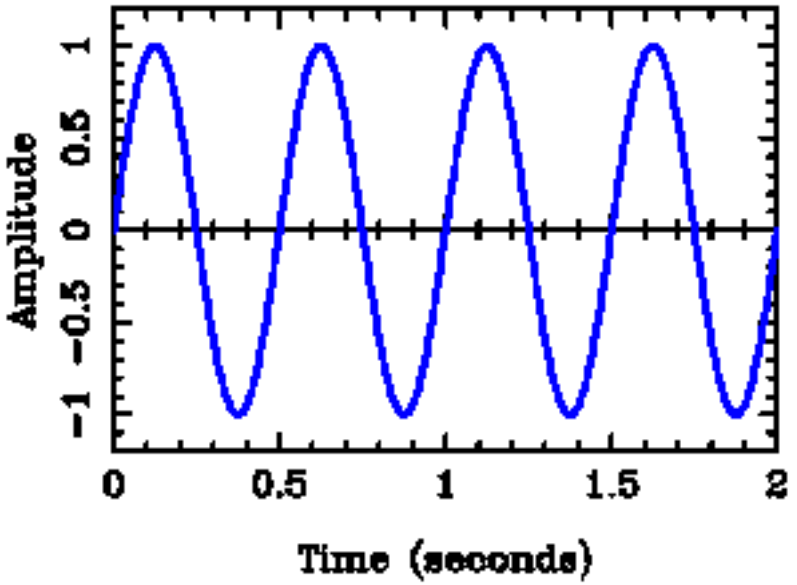
F = **V** / **T** = ?

Sound: Frequency

- **Frequency** (F) – The number of vibrations something makes in one second

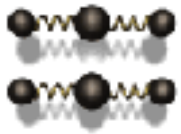


Low Frequency

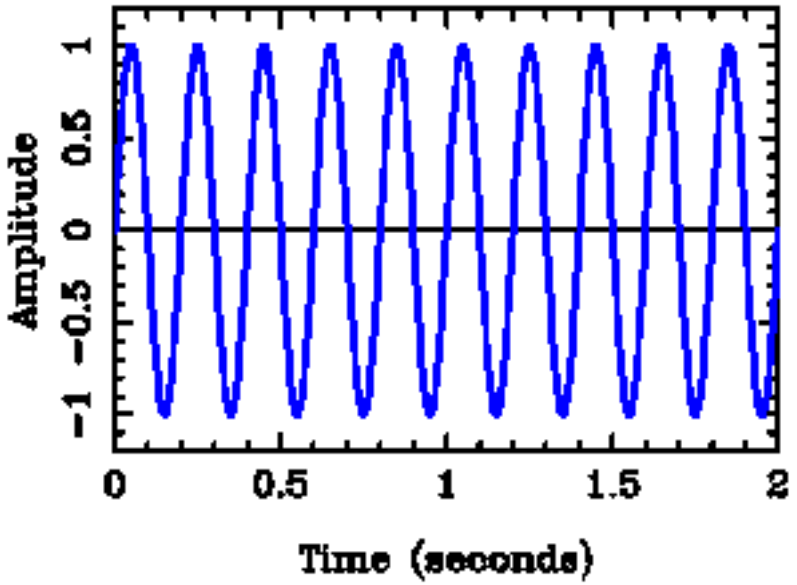


What's the Frequency?

F = **V** / **T** = 4 / 2 = 2



High Frequency

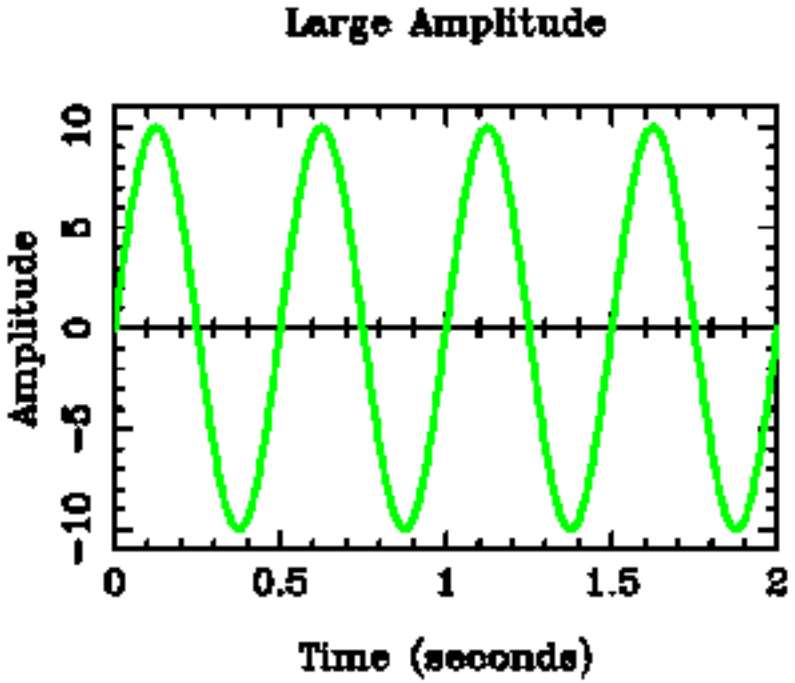


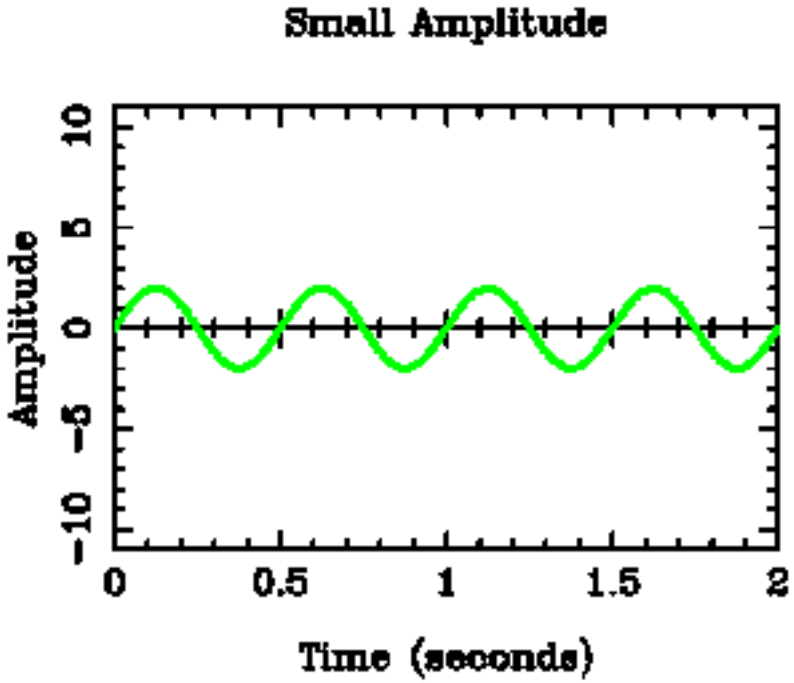
What's the Frequency?

F = **V** / **T** = 10 / 2 = 5

Sound: Amplitude

- **Amplitude** (**A**)– The size of the vibration.



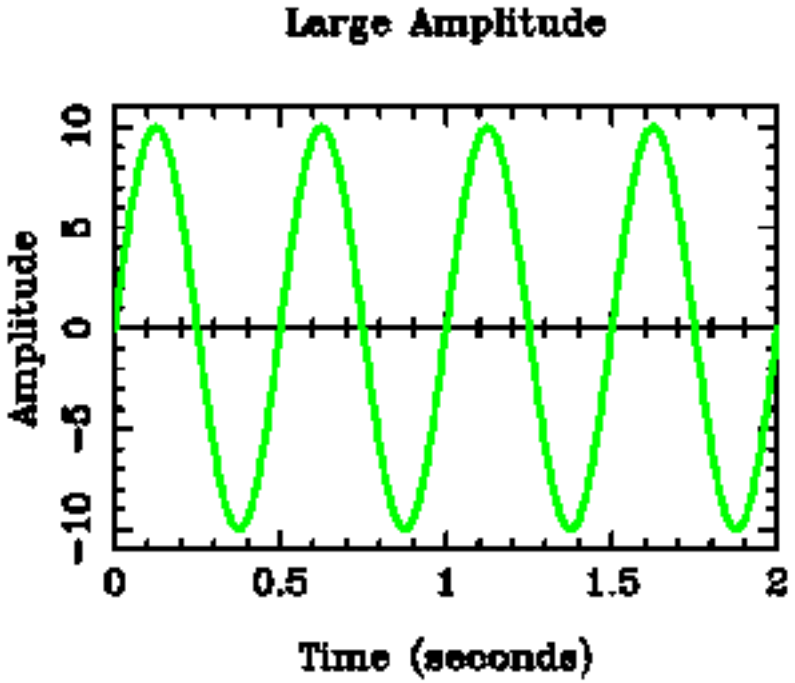


Whats the Amplitude?

A = ?

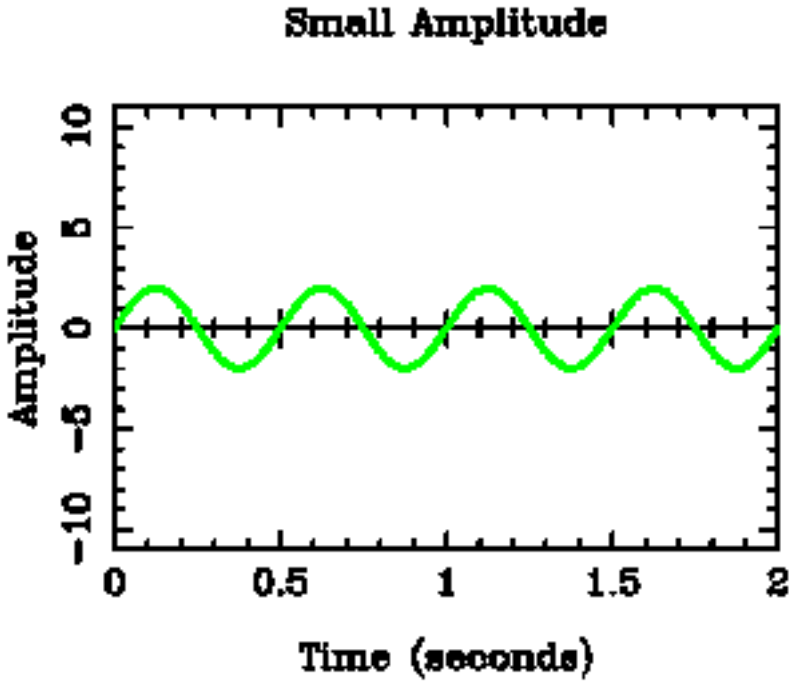
Sound: Amplitude

- **Amplitude** (**A**)– The size of the vibration.



Whats the Amplitude?

A = 10

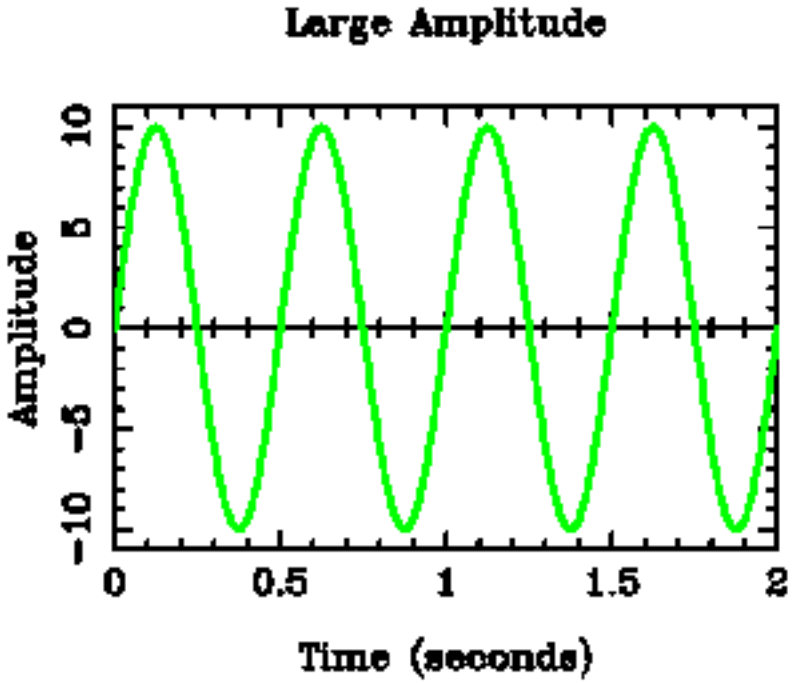


Whats the Amplitude?

A = ?

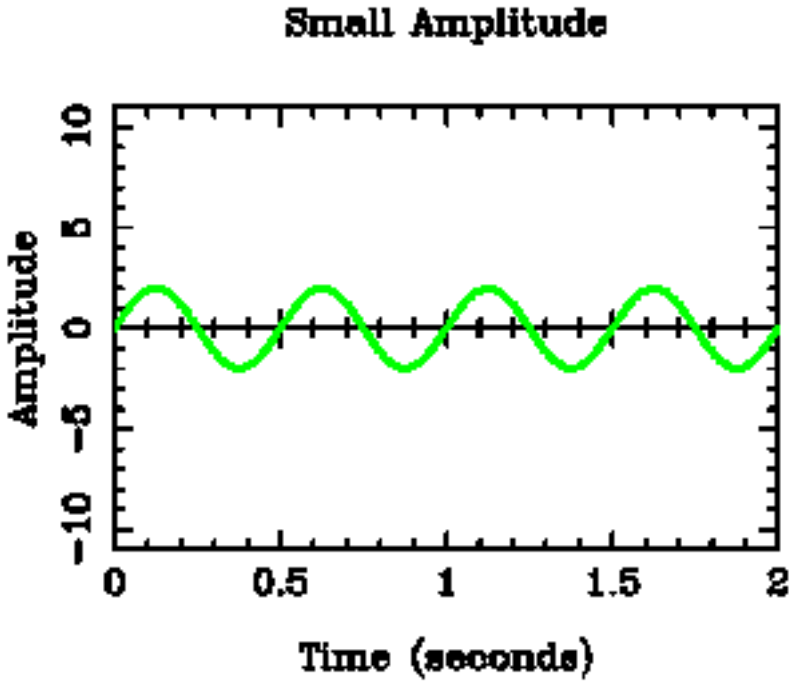
Sound: Amplitude

- **Amplitude** (**A**)– The size of the vibration.



Whats the Amplitude?

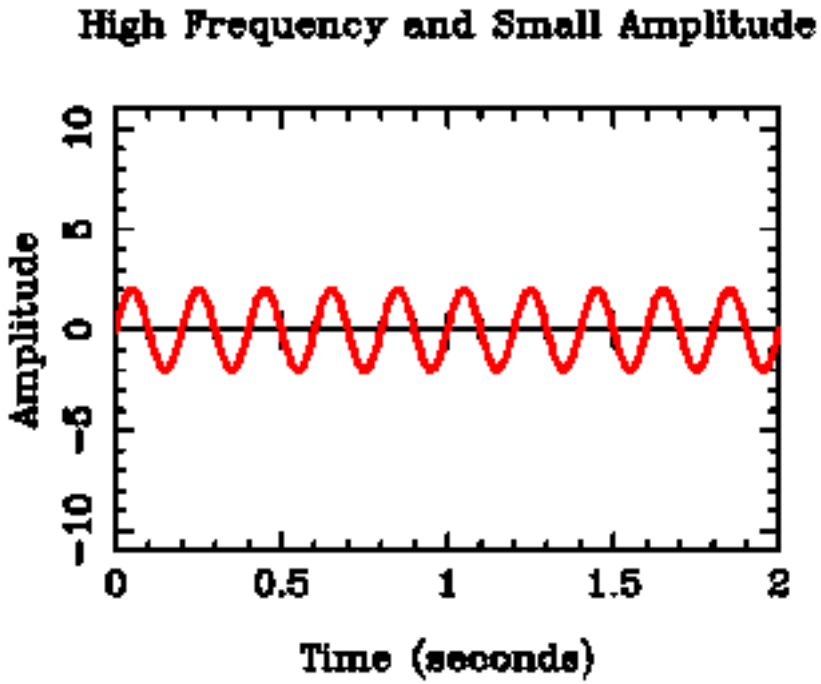
A = 10

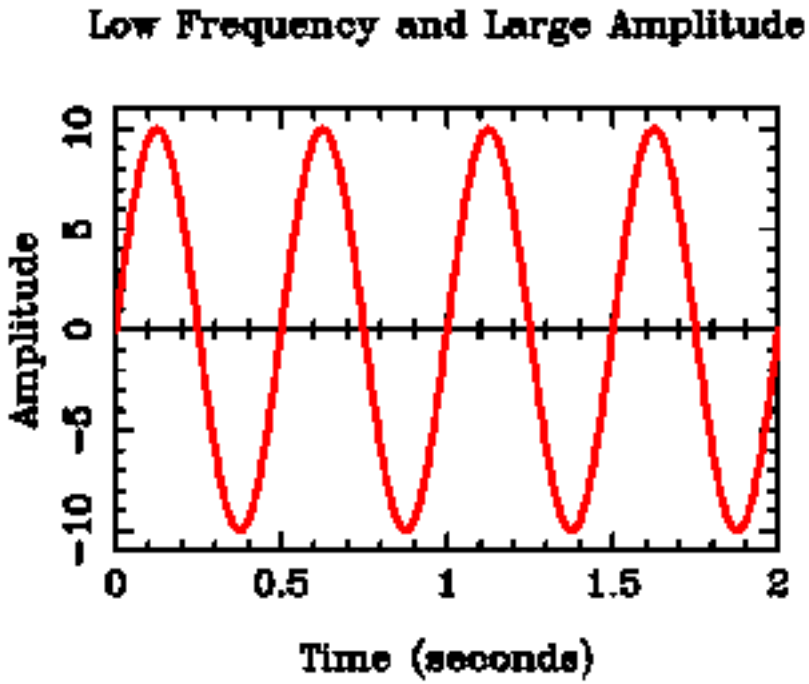


Whats the Amplitude?

A = 2

Sound: Frequency and Amplitude

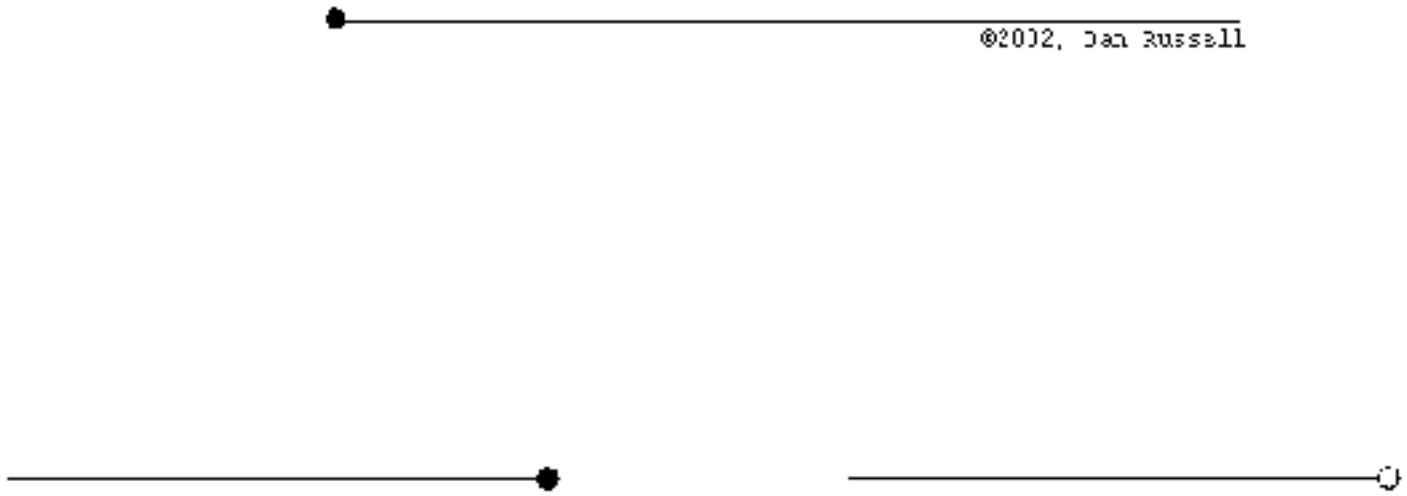




"Soft and High Pitch"

"LOUD and Low Pitch"

Sound: Traveling Pulse

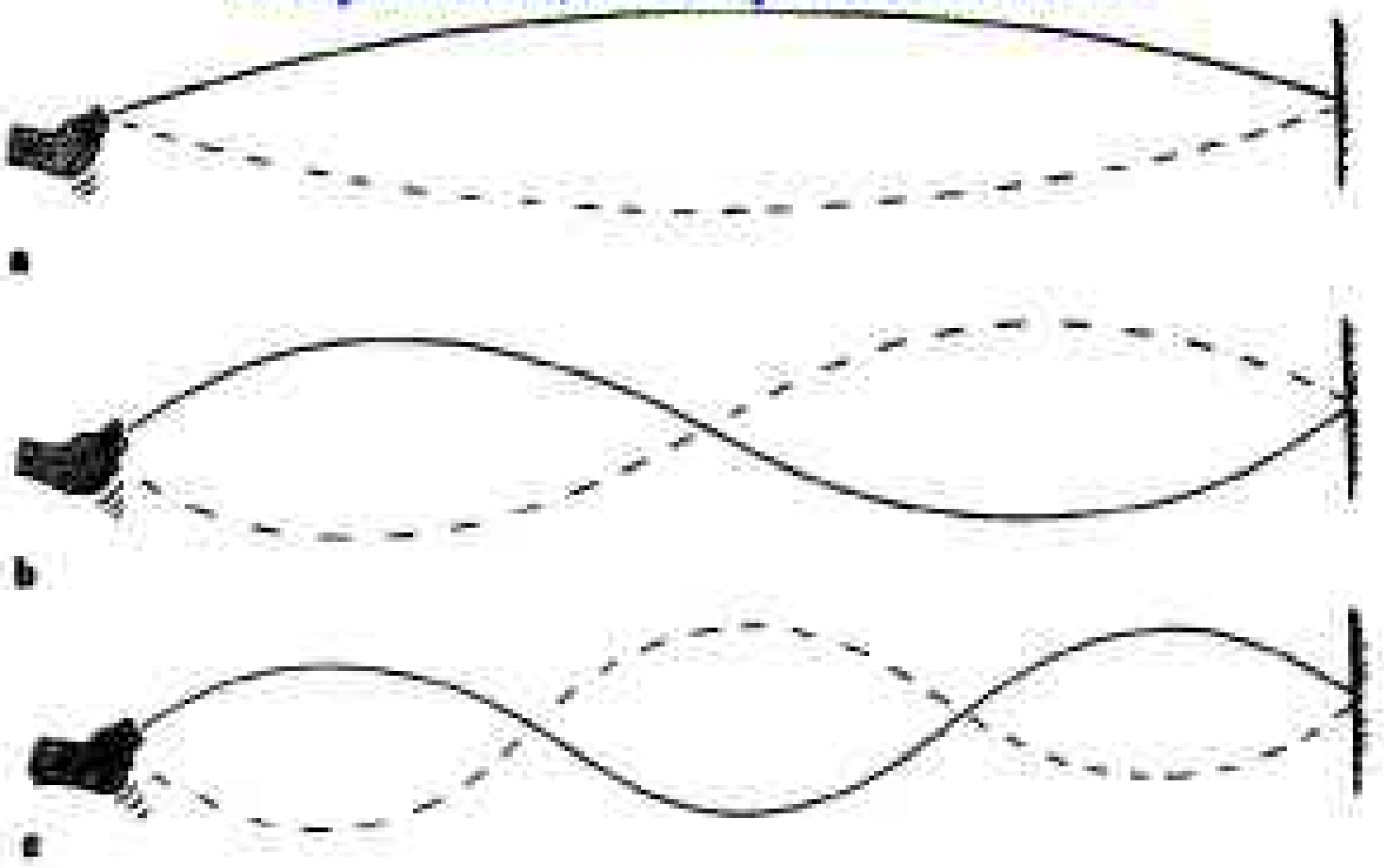


Sound: Resonance

- **Resonance** – Large vibrations when something is pushed at its natural frequency

Standing Waves

When the string vibrates at these natural frequencies, these patterns form:



Sound: Review