



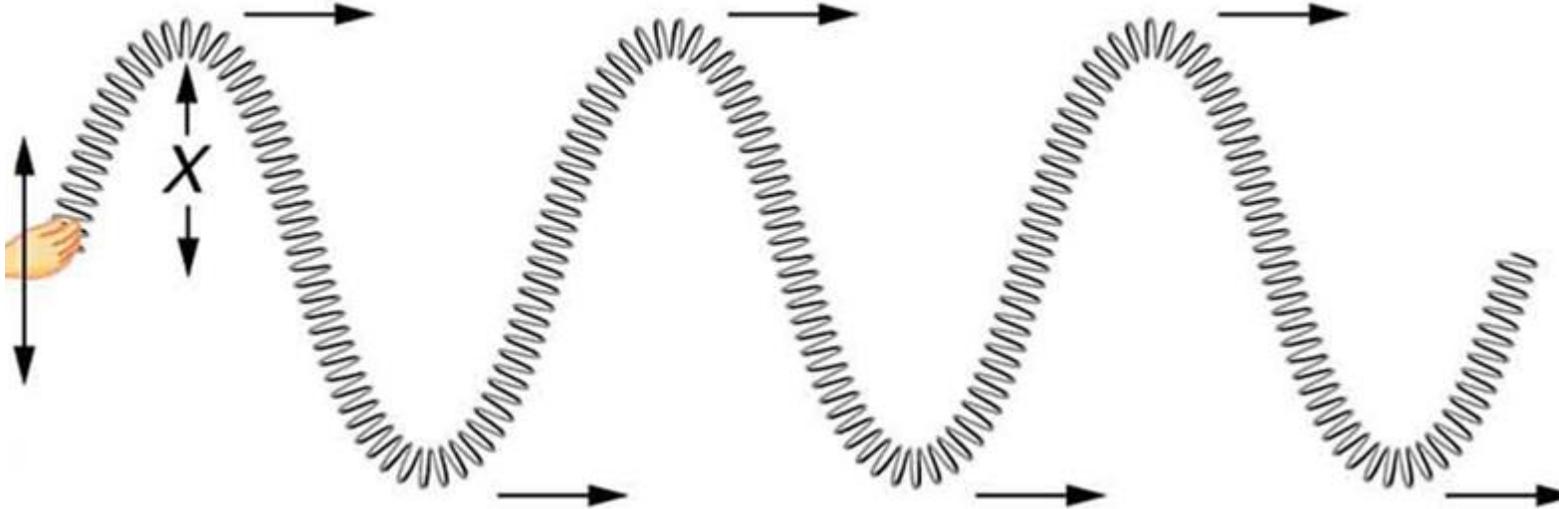
# Spring Coil Waves

## Part 02

Transverse Waves Intro

Crest, Trough, Wavelength, Amplitude, Frequency

**Transverse waves** are waves where the disturbance moves perpendicular to the direction of the wave.



## Wave Terms

### Amplitude

The maximum distance between the crest or trough from the point of equilibrium. In sound, the higher amplitude, the louder the sound

### Frequency

Number of crests or troughs per a unit of time. The higher this number, the shorter, the faster and more energetic the wavelength. In sound, the higher the pitch. Lower Frequency means a longer, slower and less energetic wave. In sound, the pitch is lower,

### Wavelength

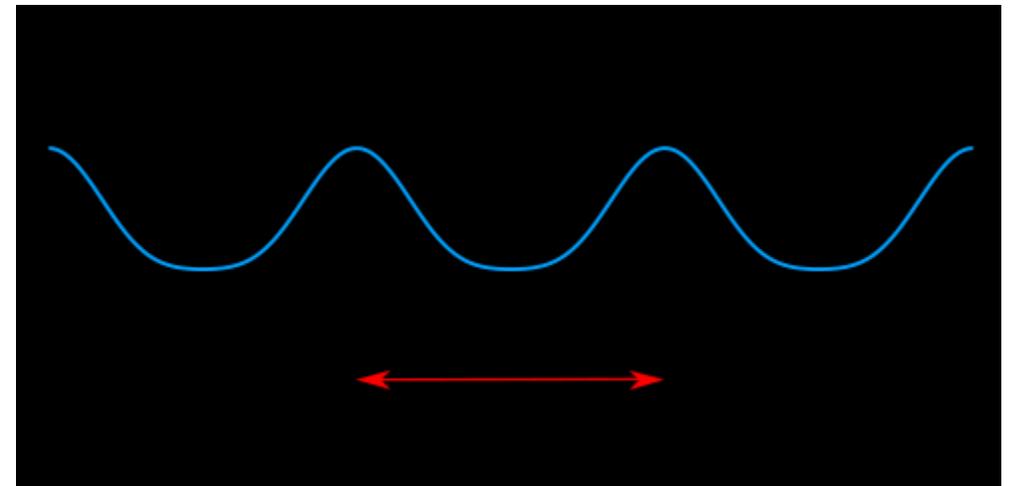
the distance between adjacent identical parts of a wave. Example: distance from crest to crest or trough to trough

### Crest

the opposite of a trough, so the maximum or highest point in a cycle.

### Trough

the opposite of a crest, so the minimum or lowest point in a cycle.





Questions:

1. How are longitudinal and transverse waves different?
2. If the music is too loud, what do you ask to lower, the amplitude or frequency?
3. Which causes a higher pitch, 2 waves per second or 5 waves per second?
4. What does a crest become after the wave reflects (bounces back)?



## Waves in the Torah

### Tehillim 42:8

ח תהום-אל-תהום קורא, לקול צנוריה;  
כל-משבריה וגליה, עלי עברו.

Deep calleth unto deep at the voice of Thy cataracts;  
all Thy waves and Thy billows are gone over me.

### Iyov 38:11

יא ואמר--עד-פה תבוא, ולא תסיף; ופא-ישית, בגאון גליה.

And said: 'Thus far shalt thou come, but no further; and here shall thy proud waves be stayed'?

### Yonah 2:4

ד ותשליכני מצולה בלבב ימים, ונהר יסבבני; כל-משבריה וגליה, עלי עברו.

For Thou didst cast me into the depth, in the heart of the seas, and the flood was round about me; all Thy waves and Thy billows passed over me.

