

**➤ Main Ideas, Key Points, Questions:**

*After watching the video segment, write down key points, main ideas, and big questions.*

**➤ Objective(s):**

- *Determine the wavelength, amplitude, period, and frequency of waves from graphs and/or data.*
- *Recognize the characteristics of a wave that allow it to be classified as mechanical or electromagnetic, and as longitudinal or transverse.*
- *Relate wave motion to the simple harmonic motion of a pendulum and a spring.*

**➤ Notes:**

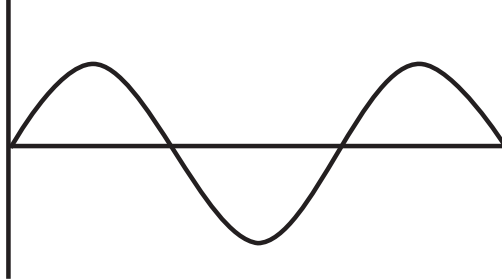
*During the video segment, use words, phrases, or drawings to take notes.*

**➤ Summary:**

*After watching the video segment, write at least three sentences explaining what you learned. You may ask yourself: "If I was going to explain this to someone else, what would I say?"*

Answer the following.

1. Label one wavelength on the diagram below:



2. How is the frequency of a wave determined?

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3. What is the period of a wave?

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4. How are the frequency and period of a wave related to each other?

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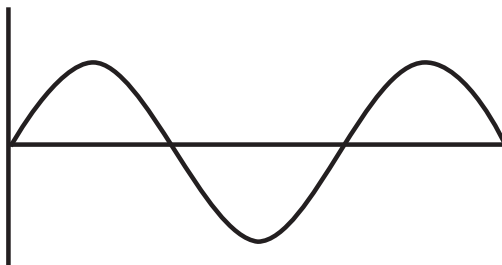
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5. The period of oscillation of a pendulum depends upon which two variables?

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6. Label the amplitude of the wave on the diagram below:



**Answer the following.**

7. What does a mechanical wave require in order to transfer energy?

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8. Which type of wave does not require a medium through which to travel?

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9. The speed of mechanical waves depend upon the \_\_\_\_\_ through which they travel.

10. How does the direction of vibration of a longitudinal wave compare to its direction of motion?

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11. How do the direction of vibration and the direction of motion of a transverse wave compare?

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12. What quantity relates to the stiffness of a spring?

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13. How is the force required to stretch a spring related to the spring constant and the distance the spring is stretched?

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14. What is the equation for the potential energy stored in a spring when it is stretched or compressed?