ACADEMIC PHYSICS

Unit 1 Waves

Lesson – Basics of Waves

1. I can explain wave behavior as it relates to energy transport in one dimension.
2. I can explain the difference between a periodic wave and a pulse.
3. I can distinguish between mechanical and electromagnetic waves and give examples of each.
4. I can distinguish between longitudinal and transverse waves and give examples of each.
5. I can define the terms frequency, wavelength, period, velocity, and amplitude.
6. I can explain the mathematical relationship between velocity, frequency (or period) and wavelength by calculating one quantity when given the other two.
7. I can the explain the behavior of a wave as it travels from one medium to another including the concepts of inverted and upright reflections, transmission to the new medium and change in speed (wavelength).
8. I can explain the principle of superposition and be able to complete drawings showing the result of two waves meeting.
9. I can explain the origin of standing waves and identify nodes and antinodes on such a wave.
10. I can calculate the wavelength of standing waves based on the spacing of the nodes and antinodes.

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| ACTIVITY | TIME ALLOTMENT |
| Outside Reading Reference: Chapter 1. | HW |
| Outside Reading Reference: Chapter 14, p 327-340. | HW |
| **HW -BOOK** ; p. 344: 2-6, 8, 11, 14, 15, 24-26, 28,  32-42 even | HW |
| Slinky Lab | 2 |
| **HW** - Vocabulary Worksheet | HW |
| **HW** - Wave Problem WS | HW |
| Waves Notes | 2 |
| **HW -** Superposition WS | HW |
| Review | 1 |
| **TEST** | 1 |
| TOTAL | 6 |

Wave Problems WS

* 1. 20m
  2. 5s, 0.2Hz, 4m/s
  3. 6.25m/s
  4. 6.67m/s
  5. 3.21m/s
  6. 0.75m, 2.3e-3s
  7. 0.575m, 1.67e-3s, 1035m

Pg 346

32. 10s

34. a. 0.29m/s b. 0.21s

36. 6.0e-7m

38. a. 1.5e3m/s b. 1.00e-6s c. 1.00e-6s

40. 1350m

42. 4.2m/s