**Study Notes for Topic 1) Waves, Particles and Energy Transfer**

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| 1. **Explain, in terms of the particle model, the processes underlying convection and conduction of heat energy.**
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| 1. define the terms conduction and convection
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| 1. recall the arrangement and behaviour of particles in a solid, liquid and gas (particle model)
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| 1. using the particle model explain the processes which allow heat to be transferred by conduction and convection
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| 1. give examples of heat transfer by conduction and convection
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| 1. WS - design your own experiment (Questioning and Predicting)
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| 1. **Describe** [**qualitatively**](http://syllabus.bos.nsw.edu.au/glossary/sci/qualitative/?ajax)**, using the wave model, the features of waves including wavelength, frequency and speed**
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| 1. describe the properties of a wave
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| 1. compare longitudinal waves and transverse waves, providing an example of each
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| 1. draw a wave diagram, labelling the wavelength and amplitude
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| 1. define the frequency and speed of a wave
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| 1. given diagrams identify the wave with the greatest wavelength, frequency and amplitude
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| 1. Solve problems using the wave equation
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| 1. **Explain, using the particle model, the transmission of sound in different mediums.**
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| 1. classify a sound wave as a longitudinal wave
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| 1. link volume and pitch to the amplitude and frequency of a sound wave
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| 1. using the particle model, explain why sound doesn’t travel through a vacuum and travels fastest through a solid
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| 1. identify and label the main parts of the ear: outer ear, eardrum, ossicles, cochlea, auditory nerve
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| 1. describe how energy is transferred/transformed in the ear
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