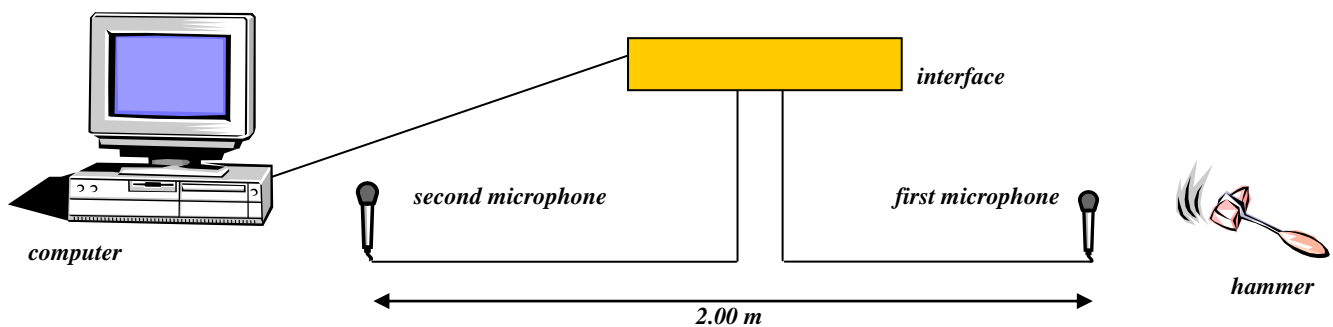


Dalkeith High School
S3 Physics home learning
Speed of Sound

1. A pupil reads about an experiment that can be carried out to measure the speed of sound in air

When the hammer hits the metal block a sound wave is produced. The computer is used to measure the time it takes for the sound wave to travel from one microphone to the other. The computer will display the time taken for the sound to travel this distance or it can be used to calculate the speed of sound directly.



The pupil carried out the experiment, and the time measured was 0.006 s.

- (a) What other information does the computer need to calculate the speed of sound for her?
- (b) Find the speed of sound using the pupil's results.
- (c) The pupil found that the speed was not calculated properly when the experiment was done close to a wall. Suggest a reason for this.
2. Give an example which shows that the speed of sound in air is **less** than the speed of light in air?
3. Sound travels in air at 340m/s. How far does it travel in 5s?
4. A wave has a wavelength of 12m and a frequency of 6Hz.
- (a) Calculate the wave speed.
- (b) How far does the wave travel in 1 minute?