

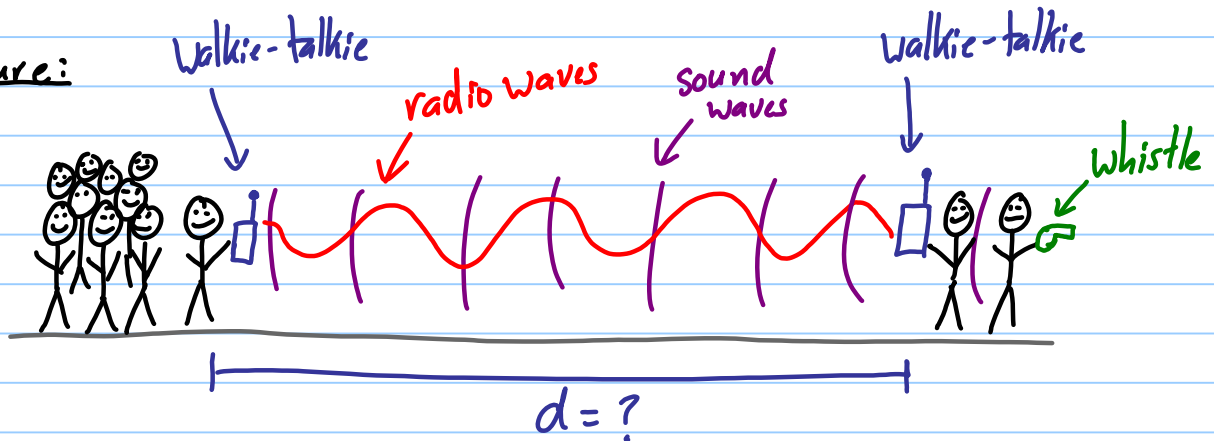
Speed of Sound

Note Title

16/04/2012

Purpose: To measure the speed of sound and compare it to a known value.

Procedure:



- ① Blow whistle into walkie-talkie
- ② Time the difference in whistle sounds.
- ③ Measure distance.

Data:

$$d = 126 \text{ m} \quad t_{\text{avg}} = 0.40 \text{ s}$$

Calculations:

- 1) Calculate our measured speed of sound.
- 2) The actual speed of sound can be found from the formula:
$$v_{\text{sound}} = 331.4 + 0.6T$$
where T is the temperature in degrees Celcius. Find the actual speed of sound based on today's forecasted temperature.
- 3) Calculate the percentage difference between our measured value and the actual value for the speed of sound.
- 4) There are many possible errors associated with this lab. Show that the delay caused by the time of travel of the radio waves is negligible.