The amazing string radio

The string radio might usefully accompany a lesson on sound and string telephones and requires a transistor radio, string, glue and ear defenders.

Cut a piece of plastic from the outer casing of a transistor radio and glue a long piece of string to the loudspeaker cone. Ask a volunteer to make a knot in the end of the string and hold it between their teeth, with the string taut. Then ask the volunteer to don ear defenders so that they are unable to hear sound waves travelling through the air from the radio.

Amazingly they will be able to ‘hear’ the sound vibrations which pass along the string through teeth and bone to the ears. Rubbing the string between your fingers should also be ‘heard’ by the volunteer.

To maintain an acceptable level of hygiene, cut the knot off the string after each person has used the equipment.

This idea is described in *Vacuum Bazookas, Electric Rainbow Jelly, and 27 Other Saturday Science Projects* by Neil Downie (2001, Princeton University Press).

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Teaching Strategy

Lens diagrams and PowerPoint

The line drawing and animation facilities in PowerPoint and its ready availability make it a useful tool for students to use to generate interest and comprehension of lens diagrams. I find the following sequence works well; it is no more than a ray drawing program would do and serves as an introduction to the students drawing the ray diagrams by hand. The student brief is to produce an animated slide that demonstrates the sequence required to locate an image position for an object with a converging lens. The role reversal of learner as teacher has many