Worksheet 2.4.2 Sound systems

1 School sound system >

A school hall is being fitted with a sound amplification system so that people at the back can hear what’s being said on the stage, even by people with quiet voices. There is a microphone on a stand on the stage, connected to an amplifier at the side and linked to loudspeakers half way down the hall.

What is the function of:

1. The microphones? ………………………………………………………………………………….
2. The amplifier? ………………………………………………………………………………….
3. The loudspeakers? ………………………………………………………………………………….

2 How loudspeakers transmit sound >>

Mr Jenkins is showing his class how a loudspeaker makes a noise. He gets a loudspeaker and lays it down so that the cone is pointing upwards. He then puts some tiny plastic beads in the cone and wires the loudspeaker up to a device. He arranges the supply of electricity so that the loudspeaker makes a low steady note – and all the little beads start jumping up and down.

1. Why does this happen?

1. Why do the beads need to be really small?

1. He then takes the beads out of the loudspeaker and turns it so it is facing away from the class. When he turns the system on again everyone can still hear it very clearly. Why is this?

3 The shape of your ear >>>

Your ear is a bit like a microphone – it picks up vibrations in the air and turns them into electrical signals that travel along nerves. Why doesn’t it look like a microphone though?