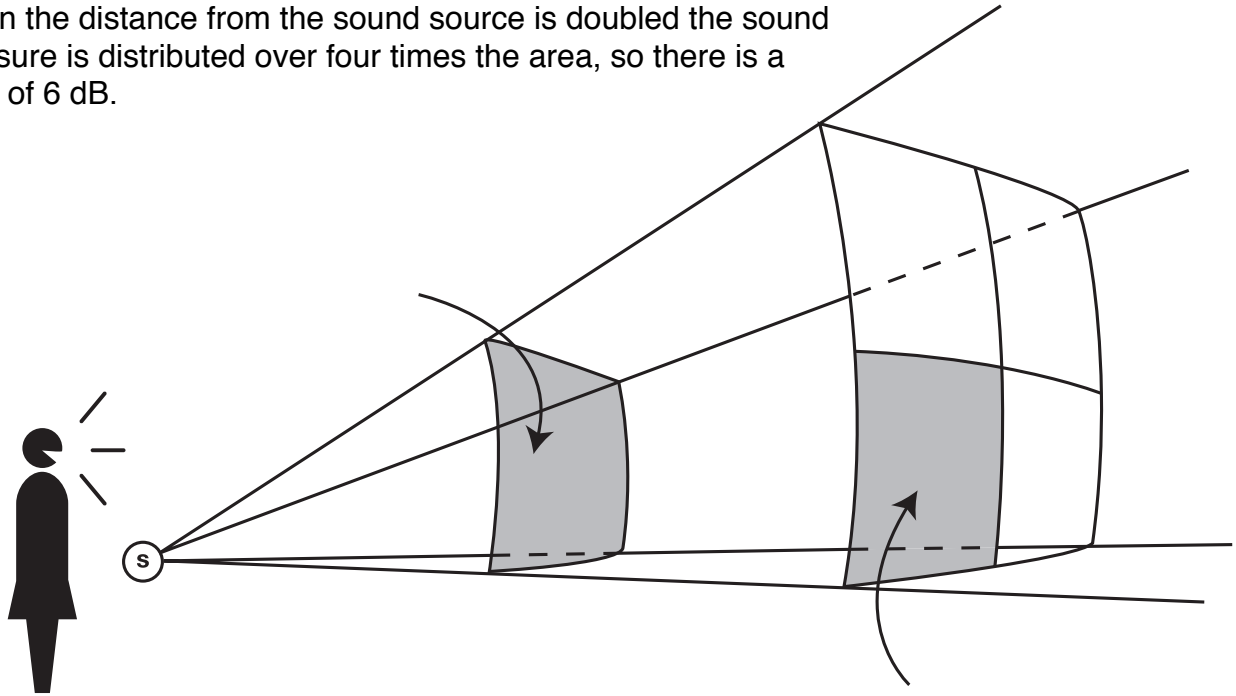


Double the Distance = -6dB

When the distance from the sound source is doubled the sound pressure is distributed over four times the area, so there is a loss of 6 dB.



INVERSE SQUARE RULE

The diagram shows the area of sound pressure at 2 meters relative to 1 meter. The next drop of 6 dB will be at 4 meters, then 8 meters, then 16 meters etc. This does not hold perfectly true indoors because, at a certain point, depending on the size and nature of the room (whether it has highly reflective surfaces such as a gymnasium, or absorbing surfaces such as a movie theatre) the reflected reverberant energy will be equal to the direct sound source energy and the SPL does not drop off, the intelligibility diminishes.