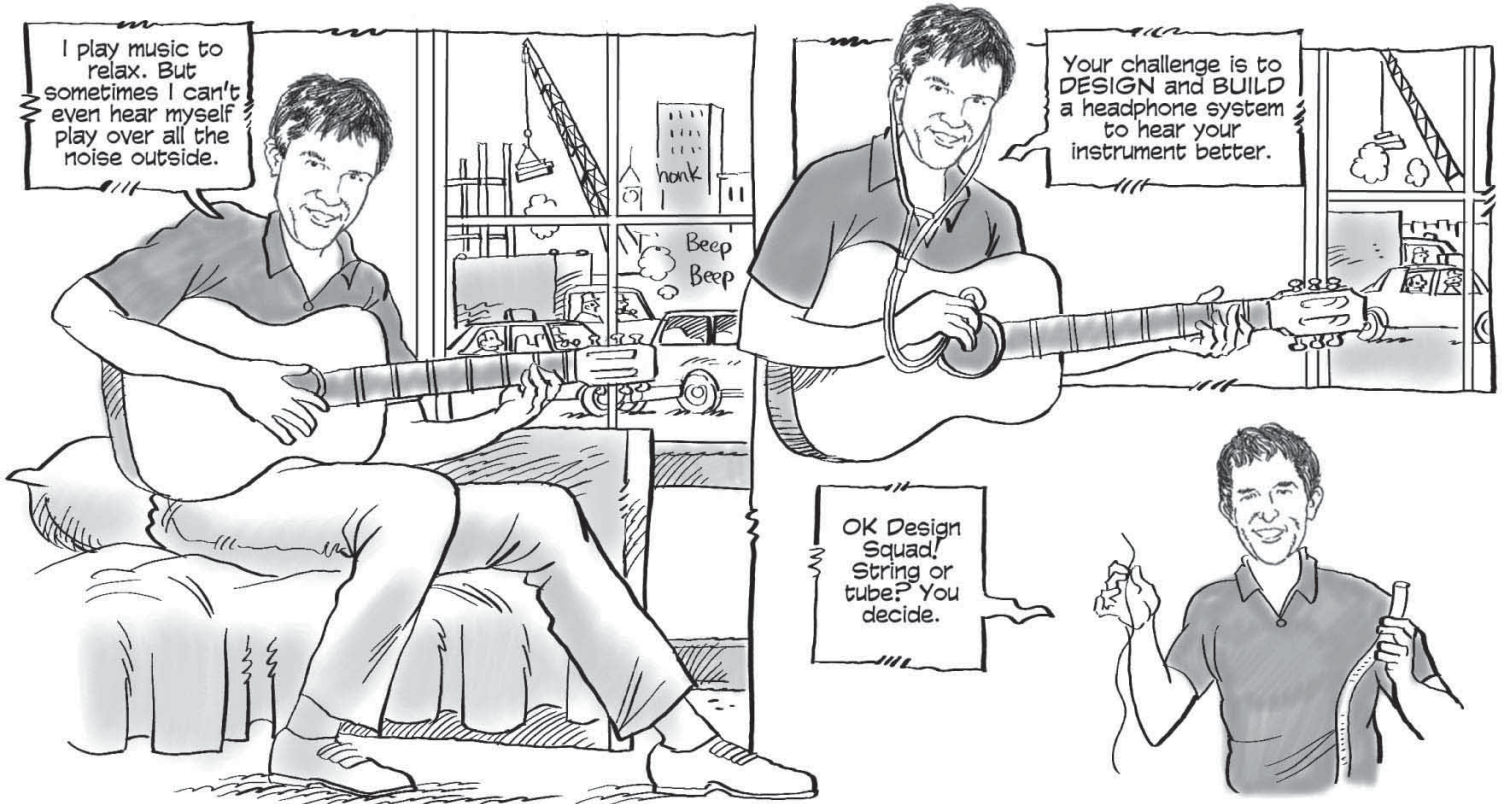


HEADPHONE HELPER



as built on TV
pbs.org/designsquad



Your challenge is to DESIGN and BUILD a headphone system to hear your instrument better.

OK Design Squad! String or tube? You decide.



BRAINSTORM

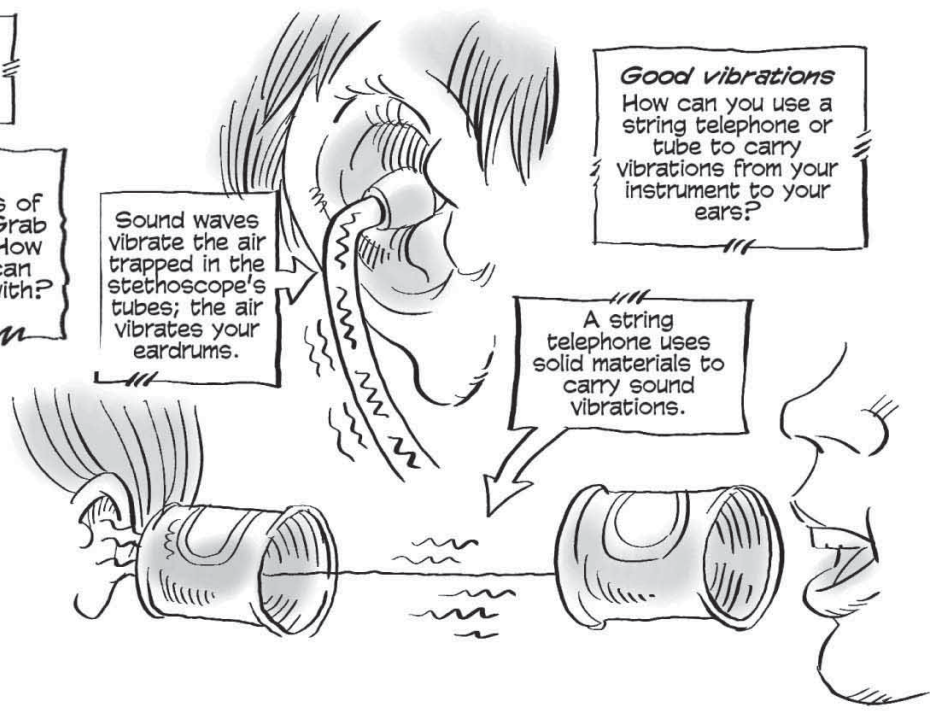


There are lots of ways to go. Grab some paper. How many ideas can you come up with?

Sound waves vibrate the air trapped in the stethoscope's tubes; the air vibrates your eardrums.

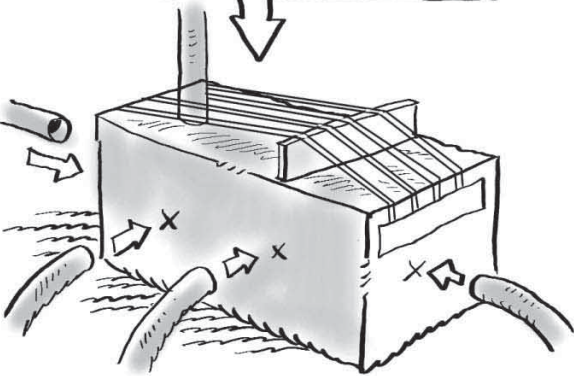
Good vibrations
 How can you use a string telephone or tube to carry vibrations from your instrument to your ears?

A string telephone uses solid materials to carry sound vibrations.



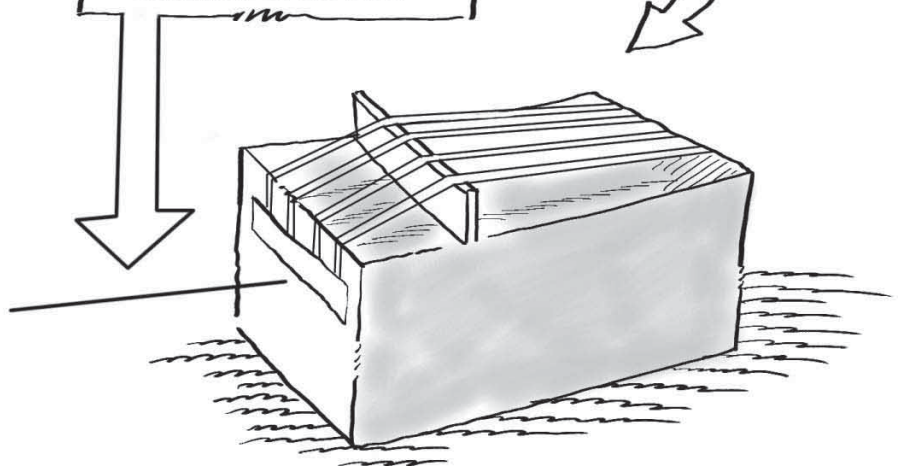
DESIGN AND BUILD

Attaching the tube
Will you cut a hole and put the tube inside the box or attach it to the box surface?



Keep the string tight

A string telephone's string needs to be very tight. How can you keep it tight without lifting the instrument off the table?



Tip: Catch the vibrations
You'll want to transmit as much of the vibration as possible. Find where your instrument is vibrating the most.

TEST AND REDESIGN

Lighten the load
Is there extra tape, a thick bridge, or anything else reducing how well your instrument vibrates?



Sounds like a front row seat at a rock concert!



PBS. Watch DESIGN SQUAD on PBS or online at pbs.org/designsquad.

Major funding for Design Squad provided by



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