4.P.4B.3 Sound Communication Indicator Assessment

Name: _____

1. Speaking tubes have been used on boats and in houses. A person speaks into one end of the speaking tube. Someone listens at the other end.

What design problem would speaking tubes best solve?

A. A person's voice needs to be much softer.
B. A person needs to be heard by everyone in a large crowd.
C. A person needs to be heard by someone far away or in another room.
D. A person's voice needs to be much louder.

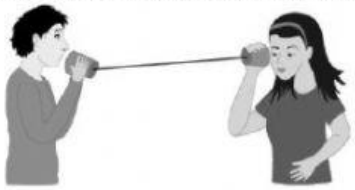
2. If you and your friend were on the moon, you could not hear him – even when he shouted. Why would no sound reach you from your friend?

A. The moon is smaller than the earth and does not transmit vibrations as well.
B. The moon does not have solids, liquids, and gases which are all needed for sound.
C. The moon craters block the vibrations from being transmitted.
D. The moon has no air to transmit the vibrations.

3. Kristina wants to make the volume of her radio louder, but her volume control knob is broken. What is the best way to do this?

A. Move the radio further away
B. Move the radio closer
C. Change the station
D. Put in a CD

4. Two students make a string telephone using aluminum cans and a string. They try to communicate with each other by holding the string telephone stretched, as shown in the image.

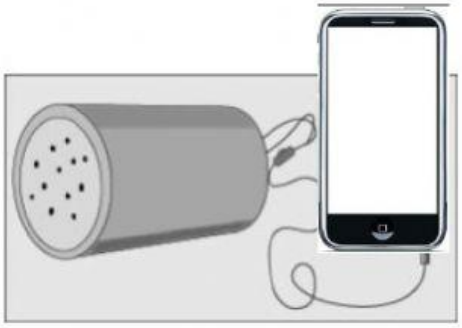


One student notices that the other student's voice is unclear and difficult to hear. How can the students modify their string telephone so that the voices are clearer and louder?

A. Use a thinner string.
B. Put slack in the string.
C. Use a thicker string.
D. Increase the length of the string.

5. A student is listening to music using earphones. She wants to design a device so she can listen to music at a distance without using earphones. The student follows the set of instructions listed.

1. Pierce some holes at the bottom of a dry, aluminum soda can.
2. Plug in the earphones to the MP3 player, and turn it on.
3. Put the earphones in the can through the mouth, and secure the earphones using a piece of tape.
4. Place the device on the table, and adjust the sound.



The student wants to improve the design to increase the volume of the sound. Which question should the student explore to improve the design of the device?

A. How far away should the device be placed from the MP3 player?
B. Should the device be tested indoors or outdoors?
C. How many songs should be played to check the sound?
D. What other materials can be used to make the device?