

Can You Hear Me Now?

Problem: How can we use basic materials to amplify the sound from an electronic device?

Materials: You will receive a budget of \$_____ to purchase supplies from the supply list. Make sure to not waste any materials or you may run out of money!

Task:

1. Create a design proposal that contains the following information:
 - a. A diagram of your proposed design with basic measurements (**Each student turns in a final drawing**)
 - b. A list of materials and their cost. Use the *Materials Sheet* to budget items.
2. Build your device with the materials you purchased to the specifications of your design proposal.
3. Test your device and measure the increase of decibels. Your goal is to increase the sound by _____.
4. Sketch other group's devices and take data readings of their sound amplification.

Conclusion:

1. Did your device meet the amplification goal? Why or why not?
2. What possible improvements could you make to the design?
3. After observing other students, which devices seemed to work better? Which materials were used? How were the devices designed?

	Science Criterion		Design Criterion	
Criterion C: Processing and Evaluating	iv. discuss the validity of the method		i. construct a logical plan, which outlines the efficient use of time and resources , sufficient for peers to be able to follow to create the solution	
0	Doesn't meet any of the criteria below		Doesn't meet any of the criteria below	
1-2 50-60	iv. state the validity of the method based on an outcome of a scientific investigation, with limited success	Iv. Conclusion is incomplete, missing multiple answers, or does not answer the questions	i. create an incomplete plan which is missing many steps so peers can't follow to make the solution	I. Diagram is missing most details
3-4 70-75	iv. state the validity of the method based on an outcome of a scientific investigation	Iv. Conclusion is complete, but with vague answers lacking detail of the outcome and future changes	i. outlines each step in a plan that contains some details, resulting in peers having difficulty following the plan to make the solution	I. Diagram includes some details, but is missing some requirements or difficult to read
5-6 83-88	iv. outline the validity of the method based on an outcome of a scientific investigation	Iv. Conclusion is complete with sufficient detail describing outcome and future changes	i. constructs a plan, which considers time and resources, sufficient for peers being able to follow the plan to create the solution	I. Diagram includes sufficient detail, including labels, measurements, and supplies
7-8 95-100	iv. discuss the validity of the method based on an outcome of a scientific investigation	Iv. Conclusion shows extra depth describing outcome and future changes with incorporation of wave vocabulary and concepts	i. constructs a logical plan, which outlines the efficient use of time and resources, sufficient for peers to be able to follow to create the solution	I. Diagram includes extra detail, including multiple views and exact measurements