

## Built It

**Problem:** Choose one of the following problems:

- Design and build cell phone speakers
- Design and build a sound proof box to hold one or more cell phones during class
- Design and build noise blocking headphones
- Design and build another acoustic device of your choice and approved by the teacher.

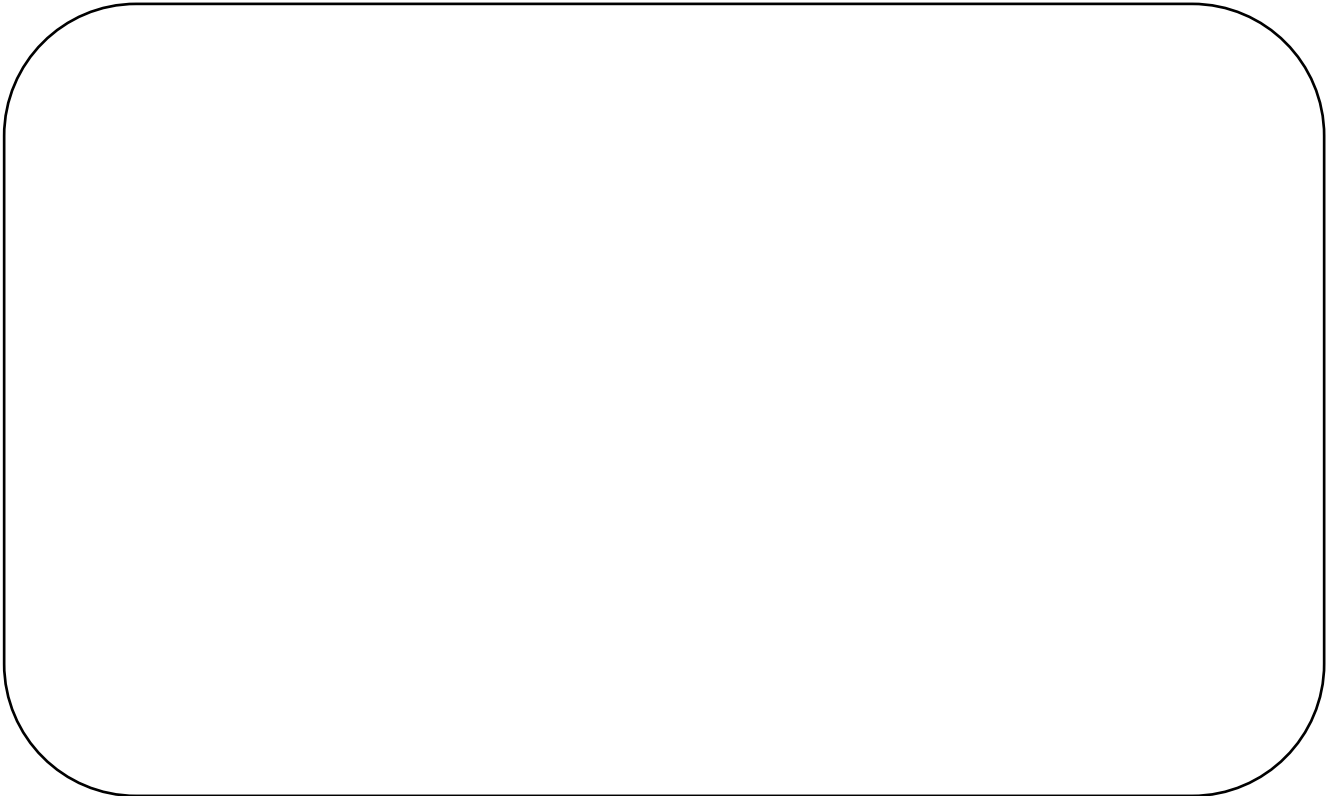
**Research:** What information from the Explore investigations and Explain interactive lesson can you use to solve the problem?



**Brainstorm:** Come up with at least 3 ideas for solving the problem. Draw pictures or describe the idea with words. Use extra paper if needed.



**Plan:** Select one idea to build. Draw and label a diagram. Make a list of the materials and tools you will need. Get approval from the teacher before moving to the next step.



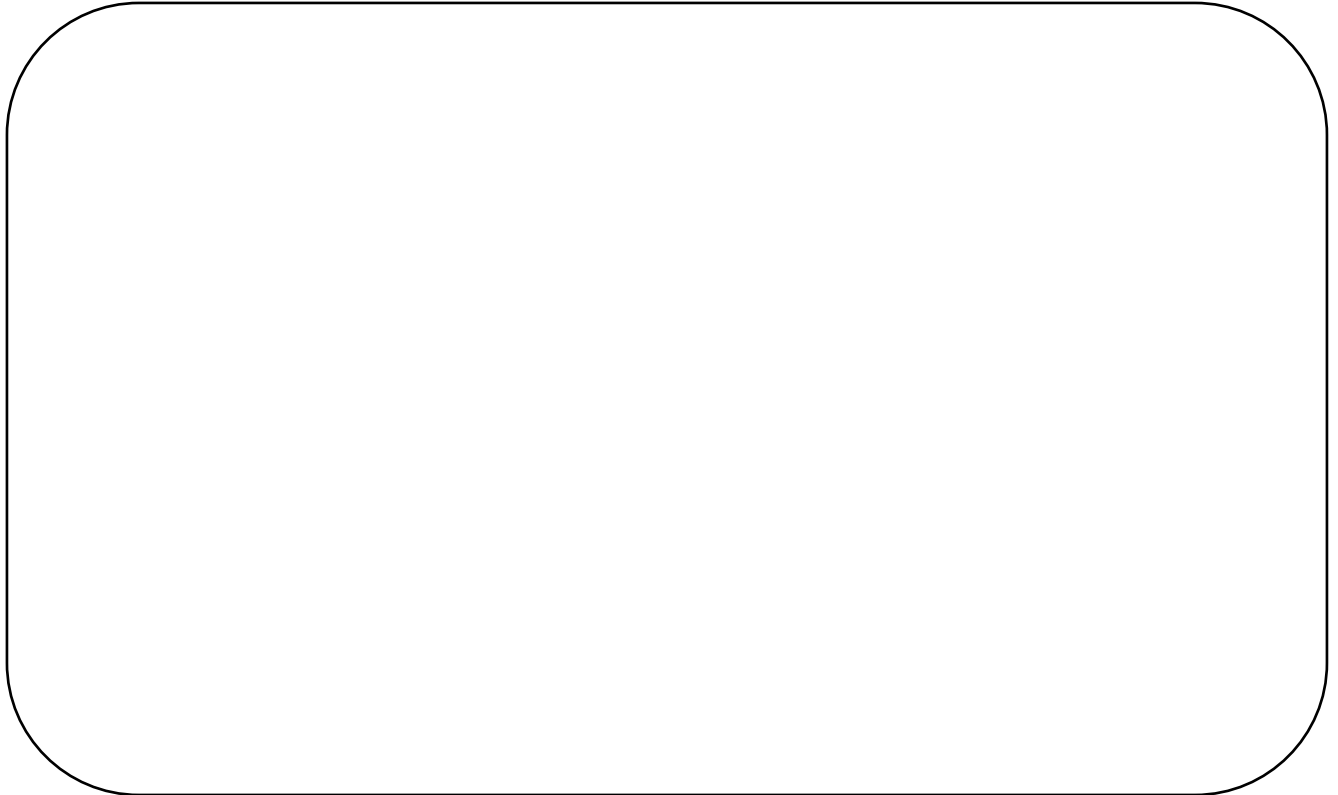
**Create:** Build the solution. Make adjustments to the plan as needed and describe them below.



**Conclusions:** Test your solution to make sure it meets the requirements.

- Amplify the sound from cell phone speakers.
- Block the sound from cell phones
- Block sounds to your ears and is easy to put on and take off

Record how you tested your device and the results of the test here.



**Discussion:** On the back of this page describe how you used your knowledge of sound in designing, constructing and testing your device. Include the reasons for

- The materials you chose.
- The shape(s) you made the device.
- The method you chose to test your device.