HOMESCHOOL SCIENCE EXPERIMENT

TESTING WHICH MATERIALS ARE BEST FOR REDUCING NOISE POLLUTION

Name: _____

Date: _____

Grade: _____

QUESTION

Which materials reduce the most noise?

HYPOTHESIS

I think _____

will reduce the most noise because

_____

_____

MATERIALS

- Smartphone with decibel meter app
- Bluetooth speaker or alarm clock
- Cardboard box (open on one side)
- Measuring tape
- The materials to test (see ideas below)
- Notebook and pencil

Material Ideas to Test:

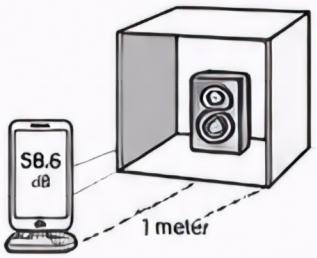
- Foam sheet
- Felt
- Cotton batting
- Thick towel
- Carpet sample
- Corrugated cardboard
- Bubble wrap
- Cork board
- Heavy curtain

SAFETY FIRST

- Keep the speaker volume at a safe level.
- Do not place the speaker near your ears.
- Ask an adult for help if needed.

PROCEDURE

1. Place the speaker inside the cardboard box, facing out of the open side.
2. Set the speaker to the same volume for every test.
3. Place your phone (decibel meter app) on a stand or stack of books 1 meter (3 feet) in front of the box, at the same height as the opening.
4. Measure and record the baseline noise level with NO material in the box.
5. Cover the inside of the box (top, sides, and back) with one material.
6. Measure and record the noise level again.
7. Repeat steps 5–6 for each material. Keep the setup, distance, and volume the same each time.
8. Compare the results to find which material reduces the most noise.



RESULTS

Material	Noise Level (dB) Baseline (No Material)	Noise Level (dB) With Material	Noise Reduction (dB) (Baseline – With Material)	Rank (1 = Best)
Baseline (No Material)		—		

ANALYSIS

1. Which material reduced the most noise? _____
2. Which material reduced the least noise? _____
3. What patterns do you notice about the materials that worked best?

   _____

   _____
4. Why do you think some materials worked better than others?

   _____

   _____

CONCLUSION

What did you learn from this experiment?

_____

_____

_____

_____

_____

_____

THINK FURTHER: How could these materials be used to reduce noise pollution in homes, schools, or communities?