8. TRIAL 1

Trial Diary **TRIAL #1** **DATE: 12-21-25**

Time at **beginning** of trial – 5:00 PM

Time at **end** of trial – 5:29 PM

- ☐ **Independent variables**: Four different materials to soundproof | Wood, Aluminum Foil, Foam, Fabric
- ☐ **Dependent variables**: The amount of decibels each material scores.
- ☐ **Control**: The volume and type of sound played in each experiment. The same cardboard box that the sound will be placed in.

Brief summary of what happened in your experiment.

For Trial 1 I tested Foam,Wood,Fabric,and Aluminum Foil. First I tested the Foam Boards then recorded 57.3 DB. Next I tested the wood and that recorded as 61.8 DB.Then I tested Fabric the same way I tested everything else and that recorded as 48.9 DB. Lastly i tested Aluminum Foil which recorded as 50.7 DB.

What were your results?

My results were that the regular sound without any soundproofing was 85.5 DB.. The Wood did the least effective, which recorded at about 60 DB. The Fabric however did the best covering about more than half the sound that was played and the fabric recorded 48.9 DB. Meaning that in

Trial 1 the worst recorded at 61.8 DB, and the best recorded at 48.9 DB. When you do this experiment you test the numbers and whichever one is the lowest gets 1st Place.

Is this what you expected would happen?

No this is not what I expected because foam is dense and thick, it is also a little porous which does make sound go through the foam. I thought that it would not be as big of a problem, but it was not the best soundproofing material. The foam got recorded at 57.3 DB. which was the 2nd least effective one of the four materials.

8. TRIAL 2

Trial Diary **TRIAL #2** **DATE: 12/28\25**

Time at **beginning** of trial –3:00PM

Time at **end** of trial – 3:27 PM

- ☐ **Independent variables**: Four different materials to soundproof | Wood, Aluminum Foil, Foam, Fabric
- ☐ **Dependent variables**: The amount of decibels each material scores.
- ☐ **Control**: The volume and type of sound played in each experiment. The same cardboard box that the sound will be placed in.

Brief summary of what happened in your experiment.

In this trial I tested the same materials as last time Foam,Wood,Fabric,and Aluminum Foil. Like the other experiment, fabric was the most effective material and was recorded at 44.5 DB. This time Foam was the least

effective material which was recorded at 55.8 DB. Then 50.5 DB was wood which was the least effective in trial 1.

What were your results?

My results included the fabric was the best soundproofing material according to the decibel reader. The least effective material was 55.8 DB. Like I included in my “What were your results?” In trial 1 I explained that you would want the smallest number to give it 1st place. In short, The foam did the Least effective which was recorded at 55.8 DB. and the fabric did the best which was recorded at 44.5 DB.

Is this what you expected would happen? I had the same expectation as the last trial. I expected that the fabric would be the best. My expectation was that the fabric would be the best insulator because it proved itself in the last trial over my inquiry about the foam was gonna do the best but again this time it did just as bad as it did in the last trial. So that's why I expected the fabric to do the best.

8. TRIAL 3

Trial Diary **TRIAL #3** **DATE: 1\4\26**

Time at **beginning** of trial – 8:26 AM

Time at **end** of trial 9:00 Am

Variables:

- ☐ **Independent variables**: Four different materials to soundproof | Wood, Aluminum Foil, Foam, Fabric
- ☐ **Dependent variable**s: The amount of decibels each material scores.
- ☐ **Control**: The volume and type of sound played in each experiment. The same cardboard box that the sound will be placed in.

Brief summary of what happened in your experiment.

This time I recorded everything the same way I did all the other trials. This time all the results were the same outcomes. The Foam turned out to be the least effective material which was recorded at 61.8 DB. And the fabric was the most effective one which was recorded at 44.2

What were your results?

My results include the same outcomes as the Trial 1 and 2. The foam is the least effective out of all of the soundproofing materials which was recorded at 61.8 DB. The most effective material we used was the fabric which was recorded at 44.2 over half of the sound without any soundproofing materials.

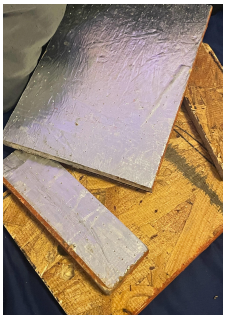
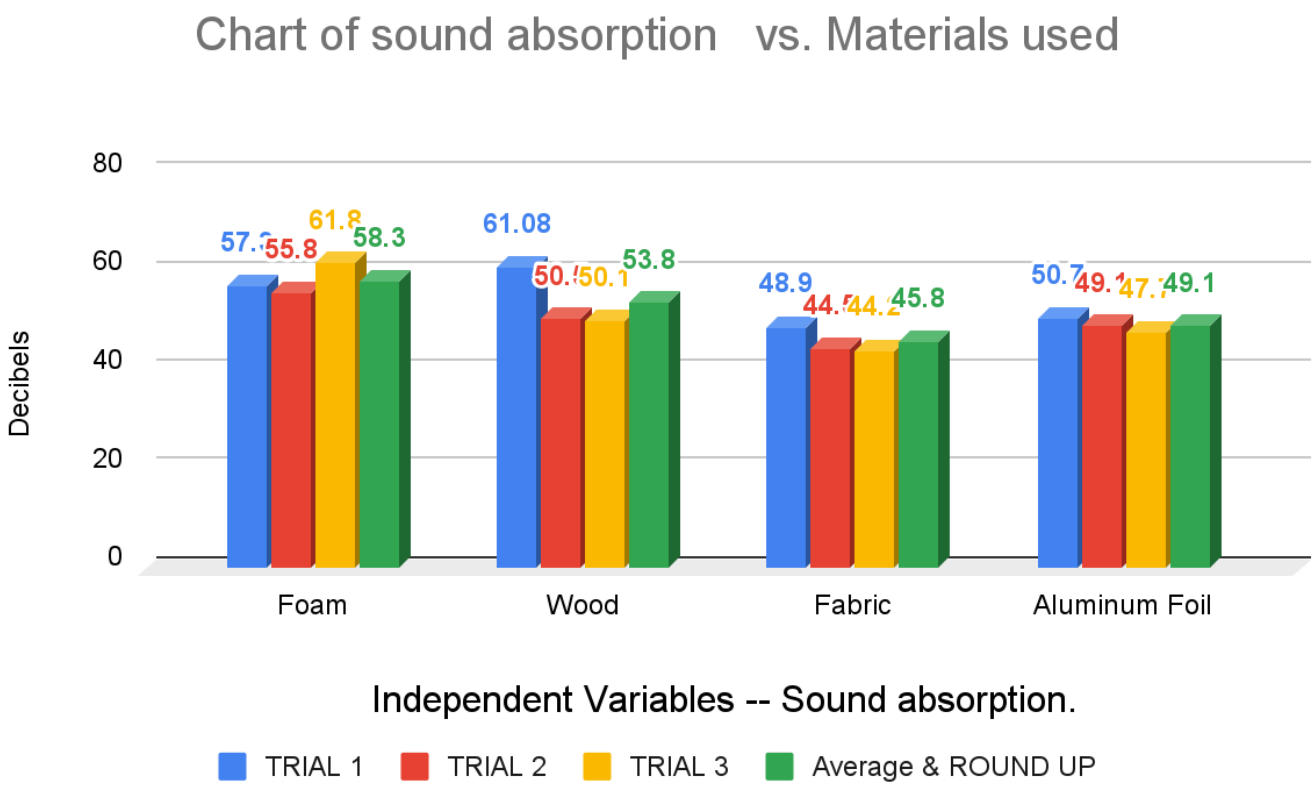
Is this what you expected would happen? This is what I expected because all of the outcomes concluded with the fabric being the best material for soundproofing so I expected that it would keep its title as first place. Of course the material that was the least effective was the foam because it proved that it was bad at soundproofing since the first trial.

This is what I expected because all of the outcomes concluded with the fabric being the best material for soundproofing so I expected that it would keep its title as first place. Of course the material that was the least effective was the foam because it proved that it was bad at soundproofing since the first trial.

Independent	TRIAL 1	TRIAL 2	TRIAL 3	Average & ROUND UP
Foam	57.3	55.8	61.8	58.3
Wood	61.08	50.5	50.1	53.8
Fabric	48.9	44.5	44.2	45.8
Aluminum Foil	50.7	49.1	47.7	49.1

Title of Data Table: Chart of sound absorption vs. Materials used

PICTURES:

First : Cut the wood	**2nd : Measure**	**3rd: Program the meter**	**4th: Gather Materials**	**5th: Gather Materials**
				
6th: Gather Materials	**7th: Gather Materials**	**8th: Acquire speaker**	**9th: Acquire the box**	

Data Graph from Google Sheets