



Can you hear me?

What is the threshold for human hearing?



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Question

- ➔ Does age or gender affect frequency a human can hear?



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Title:

Problem Question:

Independent Variable:

Dependent Variable:

Control Variable:

Control Group: (May not have for every experiment.)

Data Table

Graph

Data Analysis

Set up
your 4
Square

Procedure

3500 Hz will be our control group.

1. Go to www.thesciencequeen.net Click on student resources>physics>Can you hear me.
2. Adjust the volume on your phone/computer for proper playback of the tones. Use headphones.
3. Do your test in the quietest room available. Background noises will interfere with the sounds you are trying to hear, and may change your threshold values.
4. Play the 3500 Hz sequence and adjust the volume so that you hear only the first 18 or 19 levels in the sequence. There are 25 levels in the file, so this means that you have adjusted the volume so that levels 20-25 are below your threshold of hearing.
5. Write down the number of levels you can hear in the 3500 Hz sequence, and **leave the volume setting unchanged for all of the other files.**
6. Listen to each file and count the number of tones you can hear. Do 3 trials for each frequency.
7. Get your partner's average data.



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Procedure - How to get adult data

1. If you want, you can have your parents do this test. They only have to listen to each frequency once.
2. If they are not available, you can click on the Adult Data Link on my website.
3. Pick two adult data sets, record them on your paper & then average them.

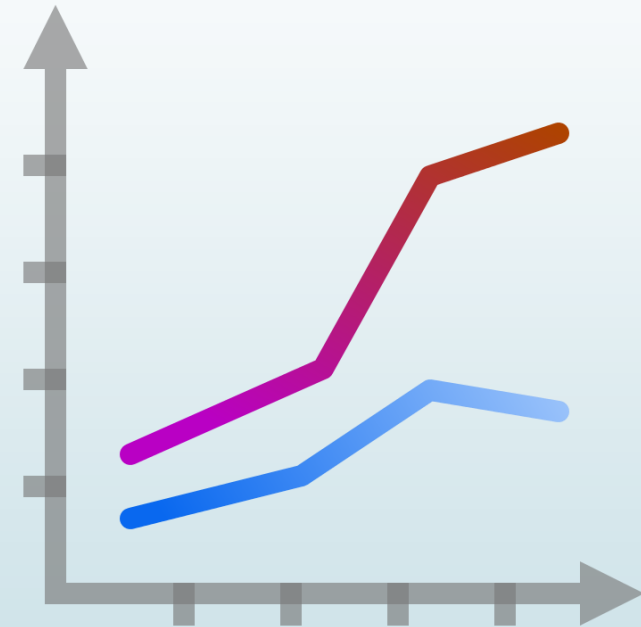


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Graph

1. You will create a double line graph.
2. X- Axis should be frequencies
3. Y-Axis should be the number of beeps heard.



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After graphing data

► Data Analysis

Summarize your graph in paragraph form (qualitative and quantitative)

- “The graph shows the effect of (IV) on (DV)”
- Discuss highs/lows (“the fastest time was . . .” / “the slowest time was . . .”)
- Trends/Patterns:
 - *positive (both increase together)*
 - *negative (as one increases, the other decreases)*
 - *no trend (no real pattern is evident)*

► CERC

- Claim (Answer your hypothesis)
- Evidence (How did you know that your hypo was correct?)
- Reasoning: Why do you think that happened?
- Conclusion



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