

The Effects Of Sound On The Water Cycle



Introduction

I wanted to do this project because I wanted to combine my love of music with my interest in weather. There is a lot of noise in cities and other highly populated places, this is called noise pollution. I thought that the sound waves would distort the air molecules and interfere with the water cycle. I decided to test my hypothesis and here's what I found.

Research Question

What are the effects of different sound frequencies on the water cycle?

Hypothesis

I believe that the lower frequency will evaporate more quickly because of the longer wavelengths.



Materials

- Styrofoam cooler(s)
- Fish bowl pebbles
- Small container(s)
- Speaker
- Sound generator
- Water
- Plastic wrap
- Acoustic foam
- Packing peanuts
- I used a Labquest for the sound generator

By: Chowan Student

Results and Discussion

300 hertz - had 0 precipitation
 1200 hertz - had 0 precipitation
 Control - had 0 precipitation

There was no condensation or water on the plastic. If I were to do this project again, I would run it for a longer amount of time, and I would give it more light energy. I would've liked to do more research on the similarities and differences of sound and rain. For now I think I did well and learned new things along the way.

Frequencies	Week 1	Week 2	Week 3
300Hz	0.00		
1200Hz		0.00	
Control			0.00

Method

I started out with 250 ml. of water under 300 hertz at 25% amplitude in the Styrofoam box with the speaker over it. Then, I did another 250 ml. under 1200 hertz at 25% amplitude under the same conditions. A control with no sound was used but it was still put into the Styrofoam box just like the other two. I ran each test for a full school week in a room for a whole school day and unplugged everything at the end of the school day. Unfortunately the control was only done for 4 days and I did not have enough time to do it for a full five

Conclusion

In the end my hypothesis was not proven.

References and Acknowledgements

1. <https://en.wikipedia.org/wiki/Frequency>

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