

Does Mint Actually Cool Things Down?

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8th Grade

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Purpose

The purpose of the project is to see if mint really cools things down, or gives off an sensation. In order to test this, I will take two glasses, one control and one where I will add five mints. Then, I will record the temperature of each cup, every five minutes for thirty minutes. Doing this, I will see if the mints will change the initial temperature of the water.

Question

How does the amount of mints affect the temperature of water?



Background Research

- ❖ Menthol is used in medicine and nasal disorders for its cooling effects on mucous membranes. Also, menthol has a number of noticeable effects on the body, which have led to a variety of therapeutic uses.
- ❖ Menthol stimulates the body's cold receptors, producing a cooling sensation when it is inhaled or applied to the skin.
- ❖ Menthol is only slightly soluble in water, but dissolves easily in many organic solvents, including alcohol.
- ❖ Soluble means able to dissolve. Solvents are substances that dissolve a solute, resulting in a solution.

Variables


The independent variable is the amount of mints. The dependent variable is how the mints affect the temperature of the water.

Some constant variables include the amount of time, the amount of water in each cup, the brand of mints, the size of the cups, and the temperature of water at the start of the experiment.

Hypothesis

If you add five mints to a cup of water, then the temperature of the water will decrease, because the mints will dissolve and mix with the water, causing the temperature to decrease.

Materials

- ❖ Two “8 ounce” cups
 - ❖ Two packs of Mentos
 - ❖ Two cups of water (500,000mg)
 - ❖ One thermometer
 - ❖ One timer
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Procedures

Step 1: Fill two sixteen-ounce cups with one hundred degrees Celsius water, until you reach the line below the rim of the cup.

Step 2: Label each cup: one cup with the words “control cup” and the other with the words “mint water cup.”

Step 3: Add five mints to the cup labeled “mint water cup” and DO NOT add any mints to the cup labeled “control cup.”

Step 4: Start the timer once you add the mints.

Step 5: After five minutes pass, record the temperature of both cups. (Make sure you DO NOT stop the timer.)

Step 6: Record the temperature of the water after each interval of five passes, until you reach thirty minutes. (Intervals: ten, fifteen, twenty, twenty-five, thirty minutes.)

Step 7: Compare the data of both the “control cup” and the “mint water cup.”

Step 8: Create a graph comparing the data of the “control cup” and the “mint water cup.”

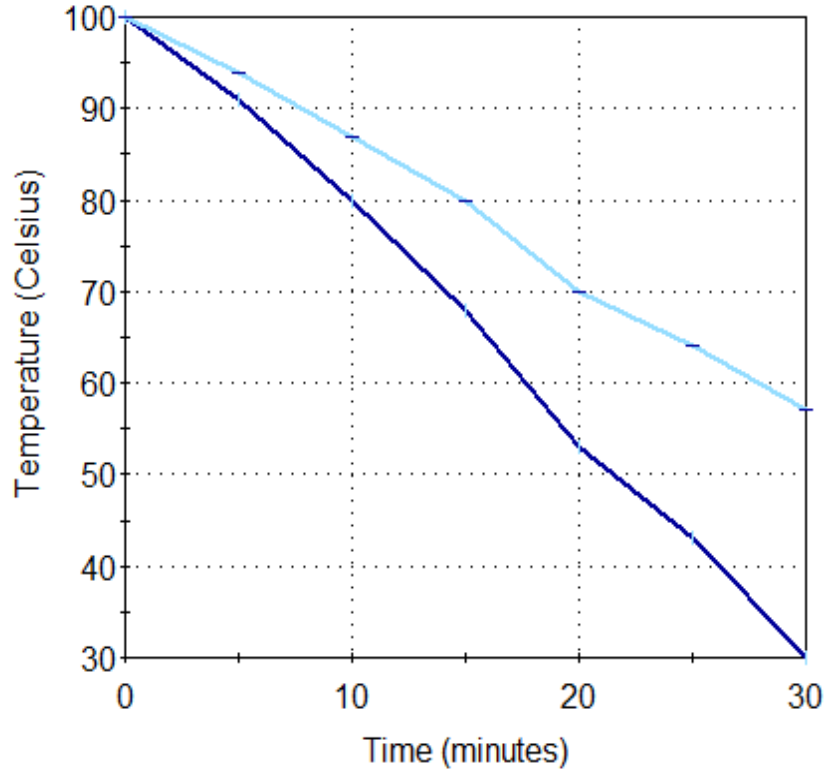
Pictures



Data Table

	Initial Temperature	After 5 minutes	After 10 minutes	After 15 minutes	After 20 minutes	After 25 minutes	After 30 minutes
Minty Water	100 degrees Celsius	91 degrees Celsius	80 degrees Celsius	68 degrees Celsius	53 degrees Celsius	43 degrees Celsius	30 degrees Celsius
Control Water	100 degrees Celsius	94 degrees Celsius	87 degrees Celsius	80 degrees Celsius	70 degrees Celsius	64 degrees Celsius	57 degrees Celsius

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— Minty Water
— Control Water

Data Analysis

Conclusion

My testable question was “How does the amount of mints affect the temperature of water?.” I hypothesized that “If you add five mints to a cup of water, then the amount of water will decrease because the mints will dissolve with the water, causing the temperature to decrease.” I chose this project because I knew I able to retrieve the materials, and I wanted to know it mints really do cool things down, since I eat mints.

The results from my experiment was that the “minty water” cup’s temperature was lower than “control water” cup’s temperature. The temperatures of the “minty water” cup was: 100, 91, 80, 68, 53, 43, and 30. The temperatures of the “control water” cup was: 100, 94, 87, 80, 70, 64, and 57. The central tendencies I used were mean, median, and range. The central tendencies of the “minty water” cup are 66, 68, and 70. The central tendencies of the “control water” cup are 79, 80, and 43. The answer to my testable question is yes, mints do affect the temperature of water because the final temperature of the “control water” cup is 57 degrees Celsius and the final temperature of the “minty water” cup is 30 degrees Celsius. 30 is smaller than 57, proving that mints do affect the temperature of water.

My results are important because they can help doctors with their patients, since menthol (what mints are made of) is used in medicines. I could improve my experiment by completing more trials. Something else I would like to know is does mints affect the temperature of different drinks, other than water.

Works Cited

Source #1: <http://wisegeek.org/what-ismenthol.htm#comments>

Source #2: <http://dictionary.reference.com/browse/menthol>

Source #3: <http://google.com>

Source #4: <http://altemosescience.weebly.com>

