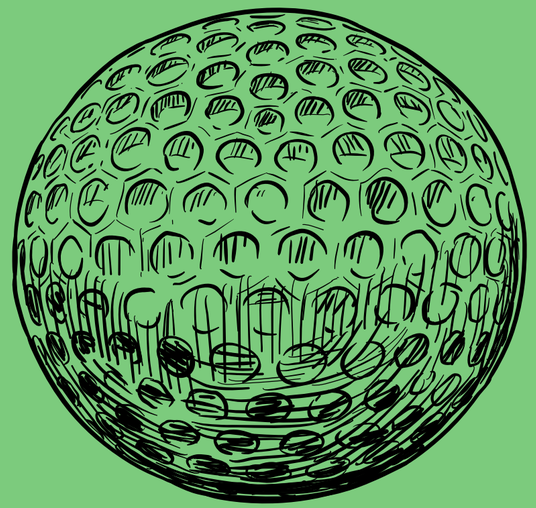


# TEMPERATURE IMPACT ON GOLF BALL ELASTICITY

SCIENCE FAIR PROJECT

# INTRODUCTION:

I chose this project because my favorite sport is golf so I took my hobby and put it in my science fair project so I can enjoy the fun of the project. Also I was also very interested in this type of project.

# RESEARCH:

I researched that if golf balls are different temperatures they would bounce different heights from a certain length. Also if the golf balls are different sizes this project would not turn out like it is supposed to.

# QUESTION:

What would happen if you changed the temperatures in golf balls? Would it effect how high or low the golf ball bounces or would it stay the same?

# HYPOTHESIS:

My Hypothesis, “ If the temperature changes in the golf ball then it will effect how the golf ball bounces.”

# MATERIALS:

- 1 Yard stick, or measuring tape
- 45 identical size golf balls
- pen and paper
- Freezer
- stove
- pot
- water
- pan
- Adult helper

# PROCEDURE:

- Gather 45 identical size golf balls
- Split into 3 groups of 15
- Place 15 golf balls onto a pan and put in to the freezer (-32 degrees) for 2 hours
- Take a pot with water, place 15 golf balls in to the pot left to boil (212 Fahrenheit) for 10 minutes
- Put together the last 15 golf balls left at room temperature (73 degrees)
- Take all 45 golf balls and drop from the height of 3ft
- Record all of the data and observations that you made while doing this experiment.

# PHOTOS OF VARIOUS GOLF BALLS:

Room Temperature
golf balls

Frozen
golf balls

Boiled
golf balls

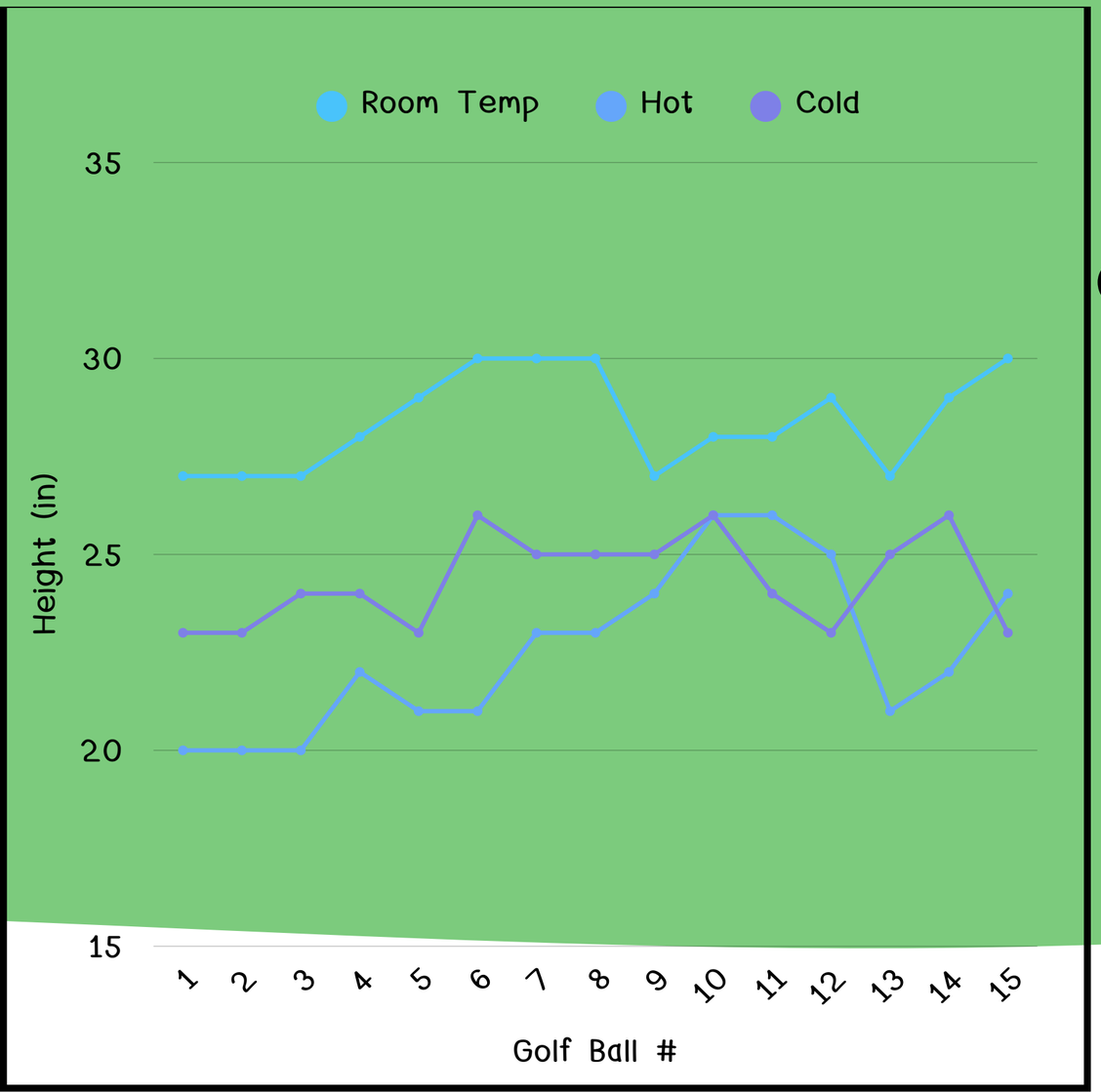
# RESULTS- HEIGHT OF GOLF BALLS

**Cold golf balls:** After dropping each individual cold golf ball, the height of the highest bounce was 26in, and the lowest was 23in, which results to a group average of 24.3in.

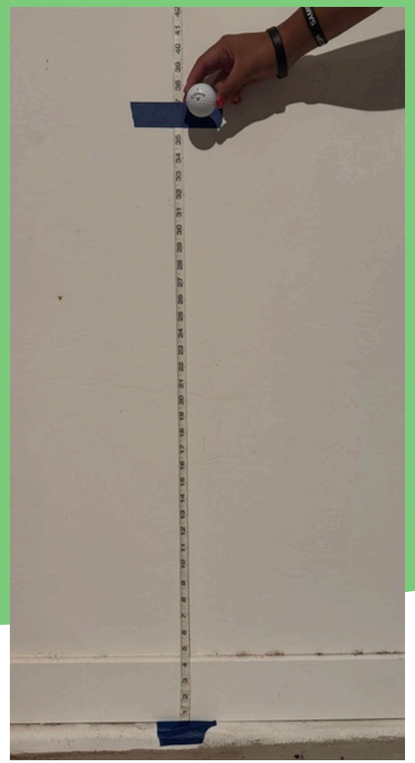
**Hot golf balls:** Next, after dropping the hot golf balls, the highest height was 26in, and the lowest was 20in, which results to a group average of 22.5in.

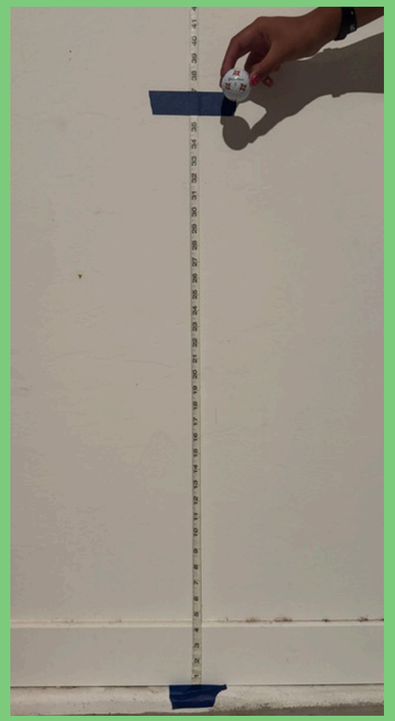
**Room Temperature golf balls:** Lastly, dropping each room temperature golf ball, the highest was 30in, and the lowest was 27in, which results to a group average of 28.4in.

# RESULTS- HEIGHT OF GOLF BALL CHART



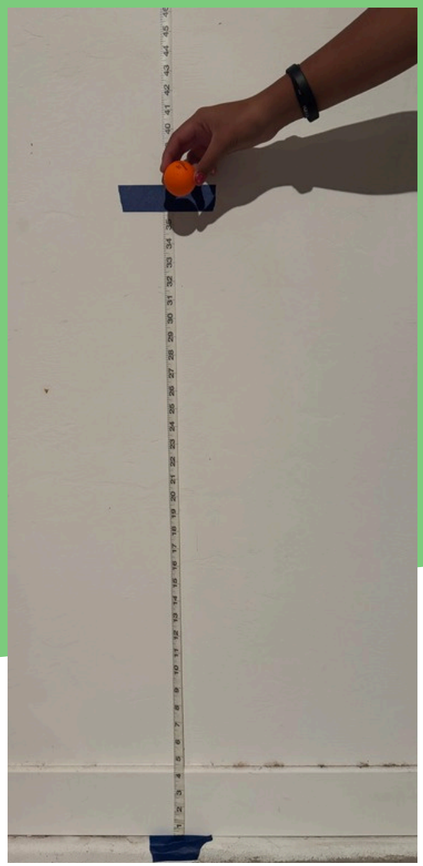

Cold golf ball





Room temperature golf ball

Hot golf ball



# RESULTS:

To answer the question “ Does Temperature affect the way that golf balls bounce.” According to the data that I recorded, yes, the different temperature can affect the way that golf balls bounce. Out of the three temperatures i tested, the one that bounced the highest was Room Temperature. Room Temperature bounced the highest at 30in, while Hot and Cold golf balls were 23in and 20in. Temperature can and will affect the way that golf balls bounce.

# CONCLUSION:

What did I learn: After reviewing my information I learned that depending on what temperature it is, it can still affect the way that the golf balls rebound.

# HOW DOES THIS RELATE TO REAL LIFE:

This can relate to real life by depending on what course you play it could or will affect the way that your golf ball bounces. Some other way it can relate to real life is when a golf ball flies through cold air, it could lose distance because cold air is more dense than warm air.

# IDEAS FOR FUTURE PREFERENCES:

What I would do differently if I were to ever do this project again, I would only put 15 golf balls into the freezer for 1 hour and boil the other 15 golf balls for 5 minutes instead of 10. Lastly, I would extend the 3ft to 5ft to see if it would bounce any differently. The  about 10-15 minutes, so I think I would make it about 7-12 minutes

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