

Science – Golf Ball Bounce Experiment

Definition: 1 : knowledge about the natural world that is based on facts learned through experiments and observation. 2 : an area of study that deals with the natural world (as biology or physics)

Thermodynamics - the branch of physical science that deals with the relations between heat and other forms of energy (such as mechanical, electrical, or chemical energy), and, by extension, of the relationships between all forms of energy.

Did you know that there is a relationship between the temperature of a golf ball and how far it will travel? Let's find out what that relationship is!

For this experiment you will need:

- Two identical bouncy balls (or tennis balls, golf balls)
 - *IF USING GOLF BALLS:* try and find a hard, durable surface like concrete to perform experiment, golf balls can damage flooring!
 - Measuring tape or yardstick ruler
 - Poster board or pieces of white paper
 - Writing utensil
1. Place one ball in the freezer, while keeping the other at room temperature, wait 15-20 minutes for ball in the freezer to cool.
 2. Pick a height to drop the ball straight down (roughly 4-5 feet) and estimate as close as you can how high the ball bounces. You may need a partner for this to help! Ask a sibling, parent, or relative!
 3. Re-bounce the ball 5 times total to get an accurate measurement.
 - a. Make sure to drop the ball from the exact same height for each drop and each ball!
 4. Take the ball that was in the freezer and record how high that ball bounces on 5 different drops.
 5. Average the 5 measurements for each ball. (Add all 5 measurements and divide by 5 for the average for that ball)
 6. **Answer the following questions:**
 - a. **What is the difference between the two balls?**
 - b. **What conclusion can you make from these results?**