
Weather or Not to Play

Background

Does weather have an effect on your tennis game? Do tennis balls bounce better on a hot day or a cold one? What about humidity? How about air pressure?

Problem Statement

What is the effect of temperature, air pressure and humidity on the bounce of a tennis ball?

Hypothesis

Formulate your hypothesis based on the problem statement:

Equipment:

Weather station consisting of:

Thermometer

Barometer

Hygrometer

A meter stick

A tennis ball

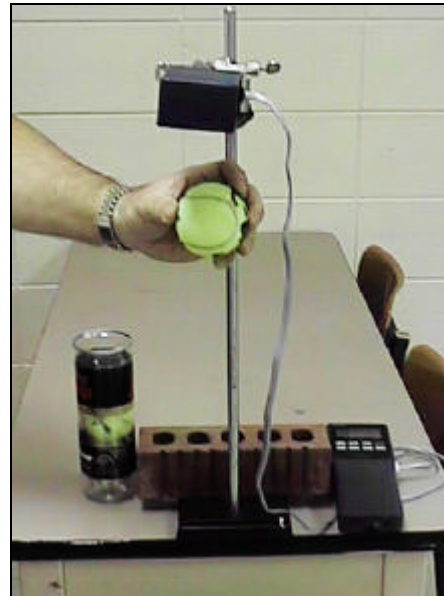
Casio EA100 Data Analyzer

Casio CFX-9850G Color Graphing

Calculator

Motion Detector probe

Square of particle board



Procedure

1. Attach the motion detector to the sonic port on the electronic data collection device.
2. Position the motion detector about 8 feet above the floor, aimed downward.
3. Connect the calculator to the electronic data-collection device; turn on the electronic data-collection device; turn on the calculator.
4. Select the program BOUNCE and press ENTER to start the program.
5. Say "Go" and then drop the ball
6. Use the program to record the height of the tennis balls' bounce.
7. Make a data table in which you record the date, temperature, humidity, air pressure and the height of the bounce.
8. Repeat for 7-10 days
9. Graph your results.

Data

1. Did the tennis balls bounce higher on hot days?

2. Did the tennis balls bounce higher on humid days?

3. Did the tennis balls bounce higher on days with higher air pressure? _____

Results

State your interpretation of your graphical data. _____

Conclusions

Relate your conclusions to your original hypothesis.
