

Lab report: Heat, thermal and kinetic energy.

After taking careful notes from lecture and recording data from the Kinetic Energy lab (throwing tennis balls), the student should write up a two-three page report (included labeled diagrams wherever possible) which includes the following sections:

1. A short introductory discussion of how heat and an objects temperature are related to kinetic energy.
2. A drawing showing how we collected our data (i.e., showing the placement of the ‘pitcher’ and the ‘catcher’ and the associated Parabolic flight path and the ‘simplified’ Semi-circle that we used to approximate it. This drawing should show both the diameter of the semi-circle as well as the resulting radius.
3. A math section showing how you started with the measured diameter and the measured time of flight to determine what the velocity of the ball was (measured in meters per second).
4. A math section showing how you determined what the final kinetic energy of the ball must have been (assuming the mass of the tennis ball was 0.050 kg)
5. A short introduction to the concept of work as well as a drawing showing where you did ‘work’ to accelerate the ball. This drawing should also show the distance over which you did the work. From this, show how you can determine what the average Force (measured in Newtons) must have been.
6. Finally, a section using pictures and words how the concept of Kinetic Energy is related to an objects final temperature measured in Kelvin, as well as how Kelvin relates to Celsius.

Grading rubric

Did you complete the assignment? All of the required steps? Did you go beyond?

How well did you communicate your ideas? Using words, pictures, diagrams?

Was your data/analysis accurate? Is the calculations/descriptions correct?

Were you creative in your writing? Drawings? Organization?

Does your final product/report/poster look clean, organized and professional?

5	4	3	2	1
5	4	3	2	1
5	4	3	2	1
5	4	3	2	1
5	4	3	2	1

Your score _____ / 23 possible