

Abstract Submitted  
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**Building a Low Cost Solar Oven: An Opportunity to Teach Thermodynamics**<sup>1</sup> ANA NOGUEIRA, None — We suggested building a solar oven using cardboard boxes, glass wool and metal plate as part of a school project permeated by the discussion of physical concepts. The main topics addressed are from the heat and thermodynamics areas, and for these themes we followed the standard books used in high school. We can work in a practical manner with the thermometer, along with the concept of temperature, measuring the temperature of the oven when cooking. To discuss how the oven works, we introduce the concept of heat as an energy flow of a body with a higher temperature to one with lower temperature. Threads as heat capacity and specific heat of a substance are introduced, also discussing the use of glass wool, which function is to prevent heat exchange from the oven's interior with the environment. It is possible to demonstrate the three forms of heat transfer using the solar oven, and how the greenhouse effect is harnessed. One can discuss topics such as electromagnetic radiation, black-body radiation and the Stefan-Boltzmann law. We surveyed the response curve of our oven and an estimate of its total solar energy absorption efficiency. The development of this project allows a good understanding of the operation principles of a solar oven.

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