

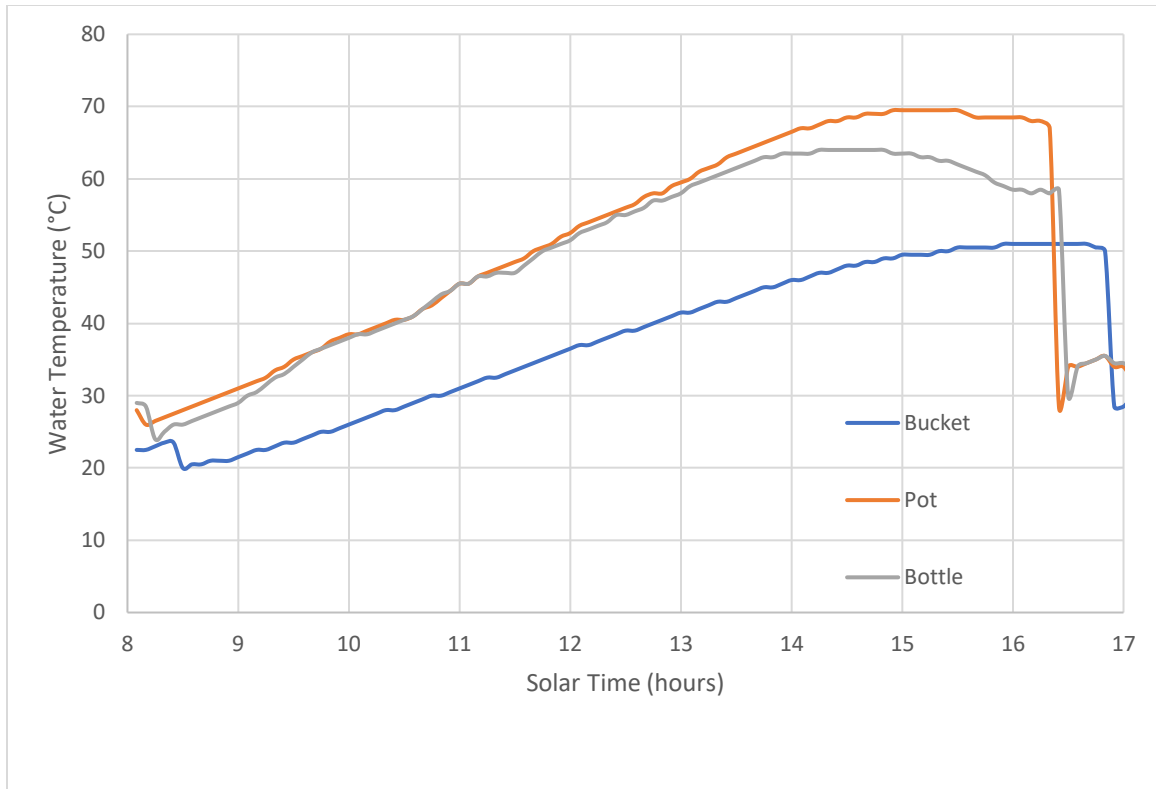
Pre-heated Water for Cooking

Water to be used for cooking can be preheated in the collector using the pot in which cooking will occur. The best arrangement is shown in the figure below. It is important that the pot have a lid, preferably a transparent one, or a layer of clear plastic can be placed over the top of the pot. There is a brick under the pot, allowing more heat to get to the bottom of the pot. The results are shown later in the graph, but 70°C can be achieved.



This photo shows the arrangement of a pot with 5 liters of water, to be used for cooking. Water could also be used for making tea, or other tasks not requiring boiling water.

The figure below shows the temperature of the pot on water on a sunny day, (the red line). It reached 70°C 3 hours after solar noon. This is more than halfway to the boiling point, thus reducing the time and fuel energy required to attain boiling. For task that don't require boiling water, such as brewing tea, the water could be used as is.



This shows the temperature vs. time curves for water containers of various sizes. Note that the pot achieved 70° C, more than halfway to the boiling point.

Several pot heating designs were tested briefly, and the best results are given here. It's possible that even better results could be obtained, since pot heating was mostly an offshoot of the main testing. As always, the Solar Household Energy Bank is designed to perform several tasks at the same time, water for cooking can be pre-heated, while water for washing is also heated, and while grain or wood are dried.