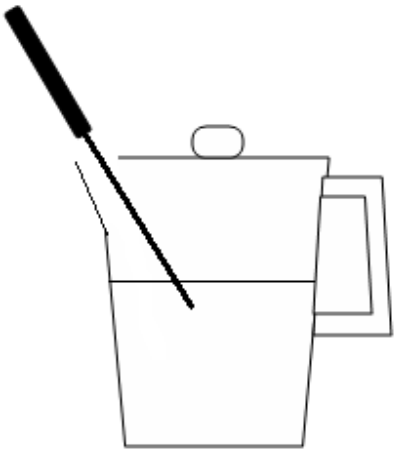
Practical 6 Specific Heat Capacity

Introduction

In this experiment the specific heat capacity of water will be determined by heating different quantities of water in an electric kettle. The method used is far from ideal, try to think of ways to make your result as accurate as possible and modify the method as appropriate (don't forget to write about these modifications in your report).

Method

Pour some water into the electric kettle and determine it's mass. Switch on the kettle and measure the *rate of temperature rise* using a temperature sensor connected to the computer. Repeat the procedure with at least 5 different masses of water. Enter your results into an appropriate table.



Theory

The rate of temperature rise of the kettle $\Delta T/\Delta t$ is related to the power of the kettle, P by the following equation:

$$P = mc\left(\frac{\Delta T}{\Delta t}\right)$$

Where

m = Mass of water

c = Specific heat capacity of water

Find out the power rating of the kettle then using a graphical method find the specific heat capacity of the water.