National 5 Assignment  
Latent heat of vaporisation Guide Sheet: B

Nat

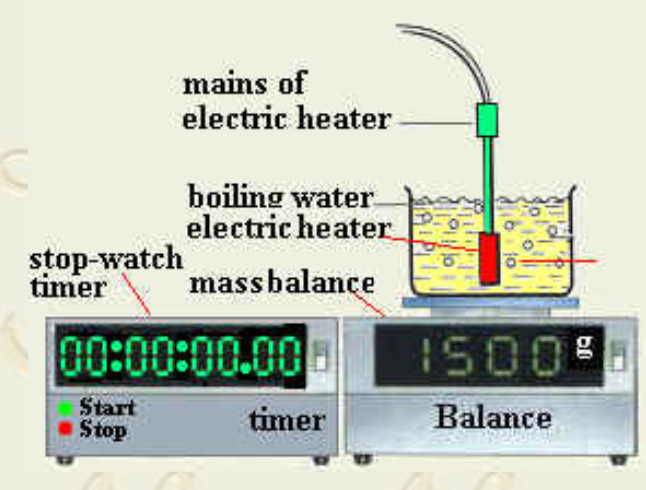
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A close up of a toy

Description automatically generated

**To determine the specific latent heat of vaporisation of water.**

*This experiment is only suitable if a graph can be plotted.*

**Apparatus**

Beaker, water, lagging, electric heater

stopwatch, balance.

**Instructions:**

* Sent up the apparatus as shown in the diagram.
* Place a quantity of water in the container.
* Measure and record the mass of the water and container.
* Place the electric heater in water placed in container.
* Switch on the heater
* Turn on the stop-watch when the water is boiling.
* Regularly note the time and record the mass of water and container "
* Repeat these steps.
* Find the mass of the evaporated water.
* Use your data to determine the specific latent heat of vaporisation of water.
* The energy required to evaporate 1 kg of boiling water is the specific latent heat of vaporisation of water.

**Risk Assessment**

* Safety googles must be worn.
* Electrical wiring must be checked.
* Do not move the equipment when once set up.
* Have access to the plug so that the heater can be switched off.
* ***Check with SSERC that this experiment is suitable.***
* The heater could be connected to a joulemeter and the energy recorded every few minutes and the mass lost recorded.
* Do not allow too much water to boil so that the heater breaks.

*Diagram from*

[*http://ramadan.50megs.com/IGC\_Exp\_2Y\_HeatOfVaporization.htm#:~:text=Turn%20on%20the%20stop%2Dwatch,of%20water%20as%20%22M2%22&text=Find%20the%20mass%20of%20the,vaporization%20from%20Lv%3Dpt%2Fm*](http://ramadan.50megs.com/IGC_Exp_2Y_HeatOfVaporization.htm#:~:text=Turn%20on%20the%20stop%2Dwatch,of%20water%20as%20%22M2%22&text=Find%20the%20mass%20of%20the,vaporization%20from%20Lv%3Dpt%2Fm)

**Mrsphysics takes no responsibility for any health and safety. It is the responsibility of the teacher and student to risk assess any practical activity they complete!**

**Sept 2023**