Heating Water

Aim:

* To show how the temperature of water changes whilst being heated over time
* To accurately draw a line graph

Materials:

* 250mL beaker
* Measuring cylinder
* Thermometer
* Stop watch
* Heat proof mat
* Bunsen Burner
* Matches
* Tripod
* Gauze mat
* Retort stand
* Bosshead and Clamp

Method:

1. Using a measuring cylinder, measure 100mL of water and pour into the beaker
2. Set up the equipment shown in the diagram below (make sure the thermometer is not touching the bottom of the beaker)
3. Measure and record the initial temperature of the water at 0 minutes
4. Light the Bunsen burner – yellow flame (be sure that the Bunsen burner is not under the beaker)
5. Change the flame to blue and place the Bunsen burner under the beaker while another person starts the stop watch
6. Measure and record the temperature of the water every minute for 10 minutes



Results:

1. Complete the following table

|  |  |  |  |
| --- | --- | --- | --- |
| Time (min) | Temperature (◦C) | Time (min) | Temperature (◦C) |
| 1 |  | 6 |  |
| 2 |  | 7 |  |
| 3 |  | 8 |  |
| 4 |  | 9 |  |
| 5 |  | 10 |  |

1. Draw a line graph displaying the change of water temperature over time



Temperature (◦C)

Time (minutes)

Discussion:

1. What are we measuring in this experiment
2. Identify if the data collected is qualitative or quantitative
3. Describe how the temperature of the water changes over time
4. Use your graph to estimate the water temperature 4.5 minutes after heating started
5. Predict the temperature that the water would have reached 11 minutes after heating started

Conclusion: Write one sentence relating back to your aim