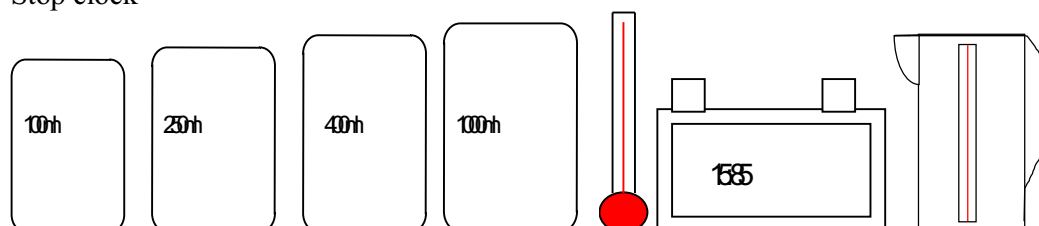


Biology coursework

This experiment is set to show how the temperature loss between an adult, year 7 a toddler and a baby compare, we will use beakers of various sizes to represent the above.

Apparatus:

1-100ml beaker
1-250ml beaker
1-400ml beaker
1-1000ml beaker
Kettle
Thermometer
Stop clock



Method

To carry out this test we will first boil the kettle and fill the 100ml beaker 3/4 full, we will then wait till the water reaches 80 degrees before starting the stop clock, after which the temperature will be taken at 2 minute intervals for 10 minutes.

This procedure will be carried out for each beaker recording our results in a results table.

To keep this test fair we will use the same proportions of water in each beaker (3/4 of beaker full)

For safety anyone participating in the experiment should be stood up, also extra care should be taken due to the handling of boiling water.

We will repeat the test three times to gain accuracy and take the average of the three to plot our final graph of results.

I predict that the smallest beaker will lose heat the fastest, due to the volume of water in the beaker, which is smaller than the the rest meannng temperature loss will happen much quicker.

Results

Test #1

Time in mins	Temp:100ml	Temp:250ml	Temp:400ml	Temp:1000ml
0	80	80	80	80

2	74	76	76	77
4	69	70	72	74
6	65	66	69	72
8	62	64	66	70
10	58	61	63	68

Test #2

Time in mins	Temp:100ml	Temp:250ml	Temp:400ml	Temp:1000ml
0	80	80	80	80
2	74	75	76	77
4	69	71	72	75
6	65	67	69	72
8	62	63	66	70
10	58	61	63	68

Average temperature

Time in mins	Temp:100ml	Temp:250ml	Temp:400ml	Temp:1000ml
0	80	80	80	80
2	74	75.5	76	77
4	69	70.5	72	74.5
6	65	66.5	69	72
8	62	63.5	66	70
10	58	60.5	63	68

Conclusion

In conclusion to the experiment we found that the smallest beaker cooled quicker than the smallest beaker cooled the quickest. We started all the beakers at 80 degrees and timed them for ten minutes, at the end of the ten minutes the smallest beaker was 58 degrees and the largest was 68 degrees. The graph shows a steady decline with each of the beakers, as all temperatures fall in proportion with the size of the beaker (the smaller the beaker the quicker the temperature loss).

There was a relationship between the beakers as when the size of the beaker increased so did the time in which it took for the beaker to cool. In my original prediction i said how i thought the beaker with the smallest volume would cool quickest and I am pleased to say from looking at my graph it seems to be right.

Evaluation

Due to the time limitation we were unable to complete all 3 re-tests which may or

may not of effected our results, if time permitted us to we would further this test carrying out the re-tests planned. Also if i was to repeat this test i would use a wider range of beakers to get a more accurate view of the rate of heat loss between sizes. Also due to the lack of computer equipment the tests have to be carried out by us ourselves this means that there is a certain amount of inaccuracy either through inaccurate reading of the thermometer or through human error with stop clocks.