**Unit 6 LA A & B Help Sheet**

**Title**

**Aims & Objectives**

Is the aim of this investigations is to ….. (general aim will come from your title).

How could the results of the experiment be applied to a real life context.

**Introduction/Scientific background**

Discuss the scientific principles behind your chosen topic using at least 3 different sources. You should include relevant formulas, mechanisms and diagrams.

Discuss why your sources are relevant to your chosen project and make judgements on the quality and validity of the sources & information therein.

Find at least 2 experimental methods related to your chosen topic & evaluate the different methods that you have considered for your investigation and explain why the method that you have selected is suitable. Discuss potential limitations of the project (e.g. time, resources, facilities, accuracy of any graduated apparatus or limitations of instruments/sensors.)

Write a hypothesis for your investigation and justify the hypothesis you have chosen, using and referencing your literature review.

Make sure you reference all sources using the Harvard referencing system.

**Method**

Detailed, bullet pointed method explaining how to complete the experiment, including any relevant diagrams and risk assessment.

Include contingency plans and remedial actions to deal with any possible issues e.g. time constraints, if a sensor/instrument stopped working or depleted resources, discuss any changes you have made from the original method from your research. Or justify why no changes were made.

You should include a copy of your requisition form & a timeline for completing your practical, with contingencies, during the practical week.

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Time | Task | Expected outcome |
|  |  |  |  |
|  |  |  |  |

**Unit 6 LA C & D Help Sheet**

**During experiment;**

Create a suitable results table for your raw data and attach to the back of the work log. Both of these are to be used during the experiment.

**Report**

Your report should be word processed and using excel for graphs and tables. It should be written in the third person and past tense, using the following headings and order.

**Title**

**Aim/objectives**

**Introduction**

Copy through the introduction from last assignment.

**Hypothesis**

**Results**

Make sure you perform suitable statistical analysis on your data such calculating the mean and standard deviation. Make sure you perform repeats, also verify your results with appropriate third-party sources

* results with justifications of approximations and accuracy used
* an analysis of results
* a comparison of results with published data
* valid conclusions from primary and secondary data

**Graphs /Statistical analysis**

* an evaluation of the effectiveness of your choice of statistical methods or graphs/calculations.

**Conclusion**

* a justification of whether the original hypothesis is supported by the results and conclusions or not, modifying or rewriting of your hypothesis, where appropriate

using information from research and practical work

* a justification of the choice of experimental and data analysis techniques used as a means of increasing accuracy, reliability and validity

**Evaluation**

* an evaluation of the practical aspects, results and conclusions of the project, including discussion of the limitations of the project
* the strengths and weaknesses of alternative approaches that were or could be used
* any proposed improvements in accuracy, reliability and validity, and recommendations for further research
* a discussion of the importance and evaluation of the skills you developed, critically reflecting on your: time management and organisation, adherence to standards and protocols, collaboration, responding to and giving feedback, use of available resources, effective communication and personal responsibility, resourcefulness and initiative

**Bibliography**