**BTEC Assignment Brief**

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| **Qualification** | | BTEC Level 3 National Diploma in Applied Science  BTEC Level 3 National Extended Diploma in Applied Science |
| **Unit number and title** | | **Unit 6: Investigative Project** |
| **Learning aim(s)** (For NQF only) | | **C:** Safelyundertake the project, collecting, analysing and presenting the results  **D:** Review the investigative project using correct scientific principles |
| **Assignment title** | | Project Implementation and Review |
| **Assessor** | | W. Osman, M. Hickey, D. Obatomi |
| **Issue date** | | 06/03/2023 |
| **Hand in deadline** | | 27/03/2023 |
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| **Vocational Scenario or Context** | | You work in a research and development lab. Your supervisor has decided it is time for you to manage your own project.  Based on advice from your supervisor and your own interest within the field of chemistry, biology or physics, you have successfully undertaken the literature research to produce an investigative project proposal and plan based on your proposal.  You will now carry out your plan and then review your project. |
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| **Task 1** | | You must safely undertake the project ensuring you:   * demonstrate practical skills in assembling relevant apparatus or equipment * adhere to health and safety risk analysis, and PPE and COSHH requirements during practical investigation. * transfer, handle and use equipment and materials skilfully * use equipment, instruments, sensors and techniques for taking measurements * demonstrate accurate observation skills * adhere to relevant legislation, such as Good Laboratory Practice, Good Manufacturing Practice and Good Clinical Practice * accurately collect, analyse and present the results from the practical methods in your plan using safe working practices * record results with accuracy, integrity and precision * maintain working laboratory logbooks and record keeping * organise practical data using class intervals and tallying * use data processing and analysis techniques * use correct units for experimental quantities * assess your experimental accuracy, reliability and precision * validate the methods you use in terms of fitness for purpose and repeatability * validate the results in terms of repeatability and of the source and magnitude of errors in readings taken   You must then write a report evaluating the conclusions and skills developed from your investigative project.  It must include:   * the use of correct structure, format, scientific terminology and be written in the past tense and third person * 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 * an evaluation of the effectiveness of your choice of statistical methods or graphs/calculations. * a justification of whether the original hypothesis is supported by the results and conclusions or not, modifying or rewriting of your hypothesis , where appropriate * an assessment of 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 * 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 * an explanation of how the skills you developed enabled you to meet the project aims, identifying areas for improvement and how to achieve them. * an appendix of references and bibliography, using a standard referencing system e.g. Harvard |
| **Checklist of evidence required** | | * Evaluative report of the investigative project * Observation reports of practical work * Laboratory logbook and diary * Photos of assembled equipment/apparatus |
| **Criteria covered by this task:** | | |
| Unit/Criteria reference | To achieve the criteria you must show that you are able to: | |
| **CD.D3** | Evaluate the conclusions of the investigative project and its practical  aspects, discussing limitations, improvements and recommendations for  further study. | |
| **CD.D4** | Evaluate the skills developed in the investigative project undertaken and suggest areas for improvement. | |
| **C.M4** | Justify the choice of experimental and data analysis techniques used  as a means of increasing accuracy, reliability and validity. | |
| **D.M5** | Produce a report using findings, correct scientific terminology, protocol and formatting and drawing valid conclusions. | |
| **D.M6** | Discuss the importance of skills developed in the investigative project undertaken to achieve aims. | |
| **C.P4** | Demonstrate practical skills to assemble relevant apparatus/equipment and materials, and carry out the project using safe working practices. | |
| **C.P5** | Accurately collect, analyse and present the results obtained. | |
| **D.P6** | Produce a report using findings, scientific terminology and protocol  appropriately and drawing conclusions | |
| **D.P7** | Summarise skills developed in the investigative project undertaken. | |
| **Sources of information to support you with this Assignment** | | Level 3 Applied Science Text book Pearson  <http://intobiology.org.uk/planning-an-investigation/>  <http://www.rsc.org/learn-chemistry/resource/listing?searchtext=&filter=all&fSubject=SUB000C1220&fLevel=LEV00000005>  <http://www.fao.org/docrep/x5307e/x5307e06.htm> |
| **Other assessment materials attached to this Assignment Brief** | |  |