**IB Grading RubricESS/2012**

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Student Code: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Lab Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Criteria and Aspect** | **Expectation** | **Mark** |
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| **Planning (PL)**  (Must be a student generated question.) |  |  |
| * **Aspect 1**/Defining problem and selecting variables | * Research question must be clearly stated, possibly in the form of a hypothesis * Relevant variables must be clearly stated |  |
| * **Aspect 2**/Controlling Variables | * Relevant variables that need to be controlled should be clearly identified and attempts should be made to minimize their influence where possible |  |
| * **Aspect 3**/Developing Method for Collection of Data | * Develops a method to allow collection of sufficient and relevant data * “Sufficient” will depend on time available and nature of experiment |  |
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| **Data Collection and Processing (DCP)** |  |  |
| * **Aspect 1**/Recording Data | * The recording of data should be independent, even if in groups * Data presentation method is student generated * Data may be qualitative or quantitative * It is essential that students select relevant data for themselves * Correct units and SF should be displayed * Must have a clear layout/presentation of data |  |
| * **Aspect 2**/Processing Data (refers to the manipulation or raw data before it is finally presented) | * Must use an investigation that requires data processing * Students must be given the opportunity to select their own methods of processing the data. |  |
| * **Aspect 3**/Presenting Processed Data (graphs, kite diagrams, maps, charts, flow diagrams, annotated drawings) | * A “best method” of presentation should be chosen to aid data interpretation. * A high level of neatness and precision is required * Proper labels and headings effective to presentation are used * Repetitive presentation should be avoided |  |
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| **Discussion, Evaluation, and Conclusion (DEC)**  (The student should demonstate an ability to coherently discuss the broader significance of their findings) |  |  |
| * **Aspect 1**/Discussing and Reviewing | * Students should review and analyse their results an d consider them in the context of relevant literature |  |
| * **Aspect 2**/Evaluating Procedures(s) and Suggesting Improvements | * Strengths, weaknesses and limitations should be reflected on * Realistic improvements should be suggested. * (procedure, limitations of equipment, use of equipment, management of time, investigation timing, data quality (accuracy and precision) and relevance of data |  |
| * **Aspect 3**/Concluding | * A concise and clear conclusion supported by the evidence form the data and their discussion should be presented. |  |
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| **Personal Skills** |  |  |
| * **Aspect 1**/Carrying Out Techniques | * Show ability to carry out a range of technique competently * Follow instructions * Assemble and use equipment with precision and accuracy |  |
| * **Aspect 2**/Working in a Team | * Recognizing the contributions of others * Equal contribution to team |  |
| * **Aspect 3**/Working safely and Ethically | * Adhere to safe and ethical Working practices * Demonstrate academic integrity (citing sources/avoiding plagerism) * Consider environmental impact (minimize waste, minimize damage to environment) while undertaking investigations) |  |