



IB SCIENCES INTERNAL ASSESSMENT MARKING FORM

FOR FIRST EXAMS MAY 2016

* This indicator should only be applied when appropriate to the investigation.

PERSONAL ENGAGEMENT

The extent to which the student engages with topic exploration and personalization. Personal engagement recognized in different attributes and skills (*ex. addressing personal interests or showing evidence of independent thinking, creativity or initiative in the designing, implementation or presentation of the investigation*)

0	1	2
<p>The student's report does not reach a standard described by the descriptors (right)</p>	<p>The evidence of personal engagement with the exploration is limited with little independent thinking, initiative or creativity.</p> <p>The justification for research question and/or the investigation topic choice does not demonstrate personal significance, interest or curiosity.</p> <p>There is little evidence of <i>personal input and initiative</i> in the designing, implementation or presentation of the investigation.</p>	<p>The evidence of personal engagement with the exploration is clear with significant independent thinking, initiative or creativity.</p> <p>The justification for research question and/or the investigation topic choice demonstrates personal significance, interest or curiosity.</p> <p>There is evidence of <i>personal input and initiative</i> in the designing, implementation or presentation of the investigation.</p>

EXPLORATION

Establishing the scientific context for the work, states a clear and focused research question and uses concepts and techniques appropriate to the Diploma Program level. Where appropriate, assesses awareness of safety, environmental, and ethical considerations.

0	1 - 2	3 - 4	5 - 6
<p>The student's report does not reach a standard described by the descriptors (right)</p>	<p><i>Investigation topic</i> is identified; <i>Research question</i> of some relevance is stated but not focused</p> <p><i>Background information</i> is superficial or of limited relevance and does not aid the understanding of context of the investigation.</p> <p><i>Investigation methodology</i> is appropriate: addresses research question to a very limited extent; few of the significant factors that may influence the relevance, reliability and sufficiency of the collected data considered.</p> <p>Limited awareness of the <i>significant safety, ethical or environmental issues relevant to the investigation methodology*</i></p>	<p><i>Investigation topic</i> is identified; <i>Research question</i> is relevant but not fully focused</p> <p><i>Background information</i> is mainly appropriate, relevant and aids the understanding of the context of the investigation.</p> <p><i>Investigation methodology</i> is mainly appropriate: addresses the research question with limitations; some of the significant factors that may influence the relevance, reliability and sufficiency of the collected data considered.</p> <p>Some awareness of the <i>significant safety, ethical or environmental issues relevant to the investigation methodology*</i></p>	<p><i>Investigation topic</i> is identified; <i>Research question</i> is relevant, fully focused and clear</p> <p><i>Background information</i> is entirely appropriate, relevant and enhances the understanding of the context of the investigation.</p> <p><i>Investigation methodology</i> is highly appropriate: addresses research question; All or nearly all significant factors that may influence the relevance, reliability and sufficiency of the collected data considered.</p> <p>Full awareness of the <i>significant safety, ethical or environmental issues relevant to the investigation methodology*</i></p>

ANALYSIS

Selecting, recording, processing and **interpretation** of data: 1) relevant to research question 2) supports the conclusion.

0	1 - 2	3 - 4	5 - 6
<p>The student's report does not reach a standard described by the descriptors (right)</p>	<p>Insufficient relevant raw data to support a valid research question conclusion</p> <p>Some basic data processing is carried out; too inaccurate/ insufficient to validate conclusion</p> <p>Little evidence for <i>impact of measurement uncertainty</i> on the analysis considered</p> <p><i>Processed data</i> incorrectly or insufficiently interpreted resulting in <i>conclusion</i> being invalid or very incomplete.</p>	<p>Relevant but incomplete <i>quantitative</i> and <i>qualitative raw data</i> to support a simple or partial valid research question conclusion</p> <p>Appropriate and sufficient data processing is carried out; could broadly validate conclusion with significant inaccuracies and inconsistencies</p> <p>Some evidence for <i>impact of measurement uncertainty</i> on the analysis considered</p> <p><i>Processed data</i> interpreted so that a broadly valid but incomplete or limited conclusion to the re-search question can be deduced.</p>	<p>Sufficient relevant <i>quantitative</i> and <i>qualitative raw data</i> supports a detailed and valid research question conclusion</p> <p>Appropriate and sufficient data processing is carried out with the accuracy required to validate conclusion, fully consistent with the <i>experimental data</i></p> <p>Full and appropriate consideration of the impact of <i>measurement uncertainty</i> on the analysis.</p> <p><i>Processed data</i> correctly interpreted so that a completely valid and detailed conclusion to the research question can be deduced.</p>

EVALUATION

Investigation and results discussion linked with research question and the accepted scientific context.

0	1 - 2	3 - 4	5 - 6
<p>The student's report does not reach a standard described by the descriptors (right)</p>	<p><i>Conclusion</i> is outlined; not relevant to the research question nor supported by data</p> <p><i>Conclusion</i> makes superficial comparison to accepted scientific context.</p> <p><i>Strengths & weaknesses</i> outlined; restricted to an account of the practical or procedural issues faced. (Ex. limitations of the data and sources of error)</p> <p>Outline of very few <i>realistic & relevant suggestions</i> to improve and extend the investigation.</p>	<p><i>Conclusion</i> is described; relevant to the research question and supported by the data</p> <p><i>Conclusion</i> is described; makes some relevant <i>comparison</i> to accepted scientific context</p> <p><i>Strengths & weaknesses</i> described; some awareness of methodological issues* involved in establishing the conclusion. (Ex. limitations of the data & sources of error)</p> <p>Description of some <i>realistic & relevant suggestions</i> to improve and extend the investigation.</p>	<p><i>Conclusion</i> is described and justified; relevant to research question and supported by data</p> <p><i>Conclusion</i> is correctly described and justified; relevant <i>comparison</i> to accepted scientific context</p> <p><i>Strengths & weaknesses</i> discussed; clear understanding of methodological issues* involved in establishing the conclusion. (Ex. limitations of the data & sources of error)</p> <p>Discussion of <i>realistic & relevant suggestions</i> to improve and extend the investigation.</p>

COMMUNICATION

Investigation supports effective communication of the focus, process and outcomes.

0	1 - 2	3 - 4
<p>The student's report does not reach a standard described by the descriptors (right)</p>	<p><i>Presentation of investigation</i> unclear; difficult to understand the focus, process and outcomes</p> <p>Poor, unclear report structure: necessary information on focus, process and outcomes is missing/incoherent or disorganized presentation</p> <p><i>Understanding of investigation focus, process and outcomes</i> obscured by the presence of inappropriate/ irrelevant information</p> <p>Many errors in use of <i>subject specific terminology & conventions*</i> which hamper understanding</p>	<p><i>Presentation of the investigation</i> is clear. Errors do not hamper understanding of focus, process and outcomes</p> <p>Clear report structure: necessary information on focus, process and outcomes is present and presented coherently</p> <p>Report is relevant and concise; facilitates a ready <i>understanding of the investigation focus, process and outcomes</i></p> <p><i>Subject specific terminology & conventions</i> are appropriate and correct. Errors do not hamper understanding</p>