

APPENDIX 6: ASSESSMENT RUBRICS

Rubric for the Assessment of Class Presentations

Student Name(s) _____ Topic/Title _____		Performance Levels			
		Level 1	Level 2	Level 3	Level 4
Criteria	Content	<input type="checkbox"/> No understanding of the topic was evident. <input type="checkbox"/> Student(s) did not relate the material presented to their own experiences.	<input type="checkbox"/> Basic understanding of the topic was evident. <input type="checkbox"/> Student(s) did not relate the material presented to their own experiences.	<input type="checkbox"/> Good understanding of the topic. <input type="checkbox"/> Knowledge is thorough and detailed. <input type="checkbox"/> Student(s) attempted to relate the material presented to their own experiences.	<input type="checkbox"/> Excellent depth of understanding is evident. <input type="checkbox"/> Student(s) presented material that was additional to what was required. Excellent research. <input type="checkbox"/> Student(s) showed how the material presented relates to their own experiences.
	Interest and Enthusiasm	<input type="checkbox"/> Little interest and enthusiasm for the topic was displayed in the presentation.	<input type="checkbox"/> Some interest and enthusiasm was evident in the presentation. <input type="checkbox"/> The class was not very interested or enthusiastic.	<input type="checkbox"/> The presenters were clearly interested in their topic and their enthusiasm was quite evident. <input type="checkbox"/> The class was noticeably attentive during the presentation.	<input type="checkbox"/> The interest and enthusiasm of the presenter(s) were exceptional. <input type="checkbox"/> The class was keenly attentive during the presentation.
	Clarity and Organization of Material	<input type="checkbox"/> The information presented was confusing.	<input type="checkbox"/> The information was somewhat vague. <input type="checkbox"/> There was some organization.	<input type="checkbox"/> The information was clearly presented. <input type="checkbox"/> The presentation was well organized.	<input type="checkbox"/> All information was relevant and clearly presented. <input type="checkbox"/> The presentation was extremely well organized. <input type="checkbox"/> Main points were emphasized and reinforced with appropriate examples.
	Use of Visual Aids	<input type="checkbox"/> Visual aids were not used.	<input type="checkbox"/> Visual aids were used. <input type="checkbox"/> Visual aids were not well done. <input type="checkbox"/> Visual aids used were somewhat relevant to the presentation.	<input type="checkbox"/> Visual aids were used. <input type="checkbox"/> Visual aids were quite well done. <input type="checkbox"/> Visual aids were relevant to the presentation.	<input type="checkbox"/> Strong visual aids were used. <input type="checkbox"/> Visual aids were extremely well done with colour, clarity, and care. <input type="checkbox"/> Visual aids were designed to emphasize and strengthen the presentation and were successful.

* Teachers are reminded that this rubric would vary with the assignment and format of the presentation.

Rubric for the Assessment of a Research Project

Student Name(s) _____ Topic/Title _____

Criteria	Performance Levels			
	Level 1	Level 2	Level 3	Level 4
Source of Information	<input type="checkbox"/> Student(s) used only one source of information.	<input type="checkbox"/> Student(s) used two sources of information.	<input type="checkbox"/> Student(s) used a variety of sources.	<input type="checkbox"/> Student(s) used a wide variety of sources in a unique manner.
Information Collected	<input type="checkbox"/> The information collected was not relevant.	<input type="checkbox"/> The information collected was relevant to the topic but was not blended into a cohesive piece.	<input type="checkbox"/> The information collected was relevant to the topic and was somewhat organized into a cohesive piece.	<input type="checkbox"/> The information collected was relevant to the topic and was carefully organized into a cohesive piece of research.
Organization of Material	<input type="checkbox"/> The information collected was not organized.	<input type="checkbox"/> The information was somewhat organized.	<input type="checkbox"/> The information was organized and contained recognizable sections.	<input type="checkbox"/> The information was organized and contained recognizable sections that included an introduction, a main body with supporting evidence, and a conclusion that summarized the report.
Presentation of Material	<input type="checkbox"/> The report was handwritten, contrary to established guidelines.	<input type="checkbox"/> The report was neatly handwritten. <input type="checkbox"/> The report contained a bibliography that was not correctly formatted.	<input type="checkbox"/> The report was typed. <input type="checkbox"/> The report contained graphics. <input type="checkbox"/> The report contained a bibliography that was not correctly formatted.	<input type="checkbox"/> The report was typed and appropriately formatted. <input type="checkbox"/> The report contained a title page. <input type="checkbox"/> The report contained relevant graphics. <input type="checkbox"/> The report contained a complete, correctly formatted bibliography.

Rubric for the Assessment of a Decision-Making Process Activity

Student Name(s) _____ Topic/Title _____

Criteria	Performance Levels			
	Level 1	Level 2	Level 3	Level 4
Identification of STSE Issue	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) cannot identify an STSE issue without assistance. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) have a basic understanding that an issue could have STSE implications, not necessarily differentiating among the four areas. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) have a good understanding of a connection between an issue and its STSE applications. <input type="checkbox"/> Some evidence of awareness of an individual response. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) have excellent depth and sensitivity in connecting an issue with its STSE implications. <input type="checkbox"/> A level of social responsibility is demonstrated.
Evaluates Current Research on Issue	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) are able to access a small amount of current research, with no evaluation of that research evident. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) demonstrate some ability to recognize the positions taken in the research data, with no clear evaluative statements. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) have secured an array of research, narrow in its scope, but clearly identify the positions taken. <input type="checkbox"/> Student(s) can offer personal opinions on issue, not necessarily evaluation. 	<ul style="list-style-type: none"> <input type="checkbox"/> All acquired research of student(s) is current, relevant, and from a variety of perspectives. <input type="checkbox"/> Student(s) demonstrate insight into the stated positions, and can frame an evaluation.
Formulates Possible Options	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) are unable to clearly identify the possible options. <input type="checkbox"/> Student(s) can form options that are not clearly connected to the problem to be solved. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) can offer at least one feasible option connected to the problem. <input type="checkbox"/> Student(s) can offer other options that may be more or less related directly to the problem. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) develop at least two feasible options that are internally consistent, and directly address the problem. <input type="checkbox"/> Student(s) recognize that some options will fail. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) display a level of sophistication of feasible options that is beyond expectations. <input type="checkbox"/> All options demonstrate a reasonable chance of succeeding at being chosen.
Identifies Projected Impacts	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) are not able to foresee the possible consequences of the options selected. <input type="checkbox"/> There appears to be a naïve awareness of consequences. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) identify potential impacts of decisions taken in a vague or insubstantial way. <input type="checkbox"/> Most of the feasible options are viewed as having projected impacts. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) can identify potential impacts of decisions taken in an organized way. <input type="checkbox"/> All the feasible options are viewed as having projected impacts: some beneficial, some not. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) are capable of offering a cost/benefits/risks analysis of each feasible solution. <input type="checkbox"/> Student(s) can construct an organized report that clearly outlines the impacts of each option.

* Teachers are reminded that the above criteria are suggestions only, and will be adapted according to the needs of the assignment. It is preferable if this rubric is modified in consultation with the students, leading to clarity of purpose.

Rubric for the Assessment of a Decision-Making Process Activity (continued)

Student Name(s) _____		Topic/Title _____		
Criteria	Performance Levels			
	Level 1	Level 2	Level 3	Level 4
Selects an Option and Makes a Decision	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) are unable to come to a decision that clearly connects with the problem to be solved. <input type="checkbox"/> Student(s) require direction from the outside to make a choice. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) can identify a feasible option, but are faced with the inability to clearly decide on a plan. <input type="checkbox"/> Student(s) still require outside influences to stand by a decision to proceed. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) clearly select an option, decide on a course of action, but others can identify that a better course of action remains untried. <input type="checkbox"/> Student(s) recognize potential safety concerns. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) collaboratively perform a thorough analysis of all options. <input type="checkbox"/> Student(s) make a firm decision that is justified by the research base and recognize most of the safety concerns.
Implements the Decision	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) are unable to fully implement the decision, but the opportunity to modify it remains. <input type="checkbox"/> Student(s) show a lack of clarity in their decisions to proceed. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) implement the decision with a recognition that not all details are laid out in advance. <input type="checkbox"/> Student(s) demonstrate some lack of clarity in having a plan for implementation. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) implement with some visible clarity of purpose. <input type="checkbox"/> Student(s) demonstrate confidence that the plan will be one that can be of a scientific inquiry approach. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) implement a plan with visible clarity of purpose, backed by the research base. <input type="checkbox"/> Student(s) clearly demonstrate that the plan will be one that can be carried to completion as inquiry.
Identifies and Evaluates Actual Impacts of Decision	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) are unable to clearly recognize more than one possible actual impact. <input type="checkbox"/> Student(s) cannot effectively evaluate the effects of the decision(s) taken. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) can clearly recognize more than one possible actual impact for the decision taken. <input type="checkbox"/> Student(s) cannot effectively evaluate the effects of the decision(s) taken in most instances. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) are able to recognize and comment upon the actual impacts observed. <input type="checkbox"/> Student(s) exhibit some ability in evaluating the impacts of the decision. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) are able to recognize and comment deeply upon the actual impacts observed, noting unforeseen or unique outcomes. <input type="checkbox"/> Student(s) exhibit facility in evaluating the impacts of the decision.
Reflects on the Decision Making and Implementation of a Plan	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) begin to demonstrate an awareness of the need to review the plan. <input type="checkbox"/> Student(s) demonstrate a reluctance to consider a re-evaluation of the plan. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) reflect and intend to communicate the results of the implementation plan. <input type="checkbox"/> Student(s) have some difficulty in how to proceed with a re-evaluation of the problem-solving plan. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) reflect upon and communicate the results of the implementation plan. <input type="checkbox"/> Student(s) recognize how to proceed with a re-evaluation of the problem-solving plan. 	<ul style="list-style-type: none"> <input type="checkbox"/> Student(s) demonstrate that a higher order synthesis was visible in the reflection process. <input type="checkbox"/> Student(s) exhibit evidence of a sophisticated environmental awareness that informs this post-implementation period.

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Lab Report Assessment

Project Title _____ Date _____

Team Members _____

Area of Interest	Possible Points	Self	Teacher
<p>Formulates Testable Questions: Question is testable and focussed with cause-and-effect relationship identified.</p>			
<p>Formulates a Prediction/Hypothesis: Independent and dependent variables are identified and the prediction/hypothesis clearly identifies a cause-and-effect relationship between these two variables.</p>			
<p>Creates a Plan: All steps are included and clearly described in a logical sequence. All required materials/equipment are identified. Safety considerations are addressed; major intervening variables are controlled.</p>			
<p>Conducts a Fair Test and Records Observations: There is evidence of repeated trials and the inclusion of all data. Detailed data are recorded, and appropriate units are used; data are recorded in a clear/well-structured/appropriate format for later reference.</p>			
<p>Interprets and Evaluates Results: Patterns/trends/discrepancies are identified. Strengths and weaknesses of approach and potential sources of error are identified. Changes to the original plan are identified and justified.</p>			
<p>Draws a Conclusion: Conclusion explains cause-and-effect relationship between dependent and independent variables; alternative explanations are identified; hypothesis is supported or rejected.</p>			
<p>Makes Connections: Potential applications are identified and/or links to area of study are made.</p>			
<p>Total Points</p>			

Observation Checklist—Scientific Inquiry: Conducting a Fair Test

Student Name(s) _____ Topic/Title _____

Note: A group of students can be selected as a focus for observation on a given day, and/or one or more of the observational areas can be selected as a focus. The emphasis should be on gathering cumulative information over a period of time.

Names	Safe Work Habits (workspace, handling equipment, goggles, disposal)	Ensuring Accuracy/ Reliability (repeating measurements/ experiments)	Observing and Recording (carried out during experiment)	Follows a Plan	Evidence of Perseverance and/or Confidence	Comments

Rubric for Student Presentation

Criteria	Performance Levels			
	Level 1	Level 2	Level 3	Level 4
Organization	<input type="checkbox"/> Presentation shows poor organization and lack of preparation.	<input type="checkbox"/> Presentation shows signs of organization but some parts do not seem to fit the topic.	<input type="checkbox"/> Presentation is organized, logical, and interesting.	<input type="checkbox"/> Presentation is very well organized, logical, interesting, and lively.
Preparation	<input type="checkbox"/> Some student preparation is shown.	<input type="checkbox"/> A fair amount of student preparation is shown.	<input type="checkbox"/> An adequate amount of student preparation is shown.	<input type="checkbox"/> A great deal of student preparation is shown.
Content	<input type="checkbox"/> Small amount of material presented is related to the topic.	<input type="checkbox"/> Some material presented is not related to the topic.	<input type="checkbox"/> Almost all material presented is related to the topic.	<input type="checkbox"/> All material in the presentation is related to the topic.
Language	<input type="checkbox"/> Language used is hard to follow and understand.	<input type="checkbox"/> Some language used is hard to follow and understand.	<input type="checkbox"/> Most language used is easy to follow and understand.	<input type="checkbox"/> Language used is well chosen and easy to follow and understand.
Format	<input type="checkbox"/> Poor use of aids and support materials (diagrams, overheads, maps, pictures); does not support the topic.	<input type="checkbox"/> Adequate use of aids and support materials; most support the topic.	<input type="checkbox"/> Good use of aids and support materials; almost all support the topic.	<input type="checkbox"/> Excellent use of aids and support materials; all aids support the topic.
Delivery	<input type="checkbox"/> Many words are unclear; voice is monotonous; spoken too quickly or slowly; no pausing for emphasis; voice is too low to be heard easily.	<input type="checkbox"/> Some words are unclear; voice is somewhat varied; spoken too quickly at times; some pausing for emphasis; voice is sometimes too low to be heard easily.	<input type="checkbox"/> Most words are clear; voice is often varied, interesting, generally spoken at the correct speed; frequent pausing for emphasis; voice is loud enough to be heard easily.	<input type="checkbox"/> Words are clear; voice is frequently varied, interesting, generally spoken at the correct speed; effective pausing for emphasis; voice is loud enough to be heard easily.
Audience	<input type="checkbox"/> Audience is not involved or interested.	<input type="checkbox"/> Audience is somewhat involved, sometimes interested.	<input type="checkbox"/> Audience is involved and interested.	<input type="checkbox"/> Audience is very involved and interested.

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Rubric for Research Skills

Student Name(s) _____ Topic/Title _____

Research Skills	Performance Levels			
	Level 1	Level 2	Level 3	Level 4
Ability to formulate questions to identify problems for research purposes	<input type="checkbox"/> Shows limited ability	<input type="checkbox"/> Shows some ability	<input type="checkbox"/> Shows general ability	<input type="checkbox"/> Shows consistent and thorough ability
Ability to locate relevant primary and secondary sources of information	<input type="checkbox"/> Unable to locate	<input type="checkbox"/> Somewhat able to locate	<input type="checkbox"/> Generally able to locate	<input type="checkbox"/> Always or almost always able to locate
Ability to locate and record relevant information from a variety of sources	<input type="checkbox"/> Unable to locate and record	<input type="checkbox"/> Somewhat able to locate	<input type="checkbox"/> Generally able to locate and record	<input type="checkbox"/> Always or almost always able to locate and record
Ability to organize information related to identified problem(s)	<input type="checkbox"/> Shows limited ability	<input type="checkbox"/> Shows some ability	<input type="checkbox"/> Shows general ability	<input type="checkbox"/> Shows consistent and thorough ability
Ability to analyze and synthesize information related to identified problems	<input type="checkbox"/> Shows limited ability	<input type="checkbox"/> Shows some ability	<input type="checkbox"/> Shows general ability	<input type="checkbox"/> Shows consistent and thorough ability
Ability to communicate results of inquiries using a variety of appropriate presentation forms (oral, media, written, graphic, pictorial, other)	<input type="checkbox"/> Unable to communicate	<input type="checkbox"/> Somewhat able to communicate	<input type="checkbox"/> Generally able to communicate	<input type="checkbox"/> Always or almost always able to communicate

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