



**2018 Sec 3 Advanced Physics**  
**Rubric for Team-based Investigation in Physics (TIP)**

**Project Title:** .....

**Members (Name & Class):**

1. .... ( )

2. .... ( )

3. .... ( )

**Teacher:** Mr M Shone

Components	Approaching Expectations	Meeting Expectations	Exceeding Expectations
	[1]	[2]	[3]
<b>1. Presentation Content (15)</b>			
<ul style="list-style-type: none"> <li>Literature research (theory)</li> </ul>	<ul style="list-style-type: none"> <li>Attempts to provide some background of the research area, but with poor reference &amp; citation.</li> </ul>	<ul style="list-style-type: none"> <li>Provides a good idea of the background of the research area with reference &amp; citation.</li> </ul>	<ul style="list-style-type: none"> <li>Provides an excellent idea of the background of the research area with good <b>reference &amp; citation</b>.</li> </ul>
<ul style="list-style-type: none"> <li>Research question/problem</li> </ul>	<ul style="list-style-type: none"> <li>Attempts to provide a research question/problem, but not clear/focused.</li> </ul>	<ul style="list-style-type: none"> <li>Generates a clear research question/problem.</li> </ul>	<ul style="list-style-type: none"> <li>Generates a research question/problem which is clear and focused for effective investigation.</li> </ul>
<ul style="list-style-type: none"> <li>Approach (experimental method)</li> </ul>	<ul style="list-style-type: none"> <li>Attempts to apply suitable procedures to investigate the question/problem, but variables and procedures not clearly described.</li> </ul>	<ul style="list-style-type: none"> <li>Carries out one experiment to investigate the question/problem, but variables or procedures not clearly described.</li> </ul>	<ul style="list-style-type: none"> <li>Carries out at least 2 experiments, with well-defined variables and clear procedures to investigate the question/problem.</li> </ul>
<ul style="list-style-type: none"> <li>Results &amp; analysis (tabulation, graphs, tools for analysis)</li> </ul>	<ul style="list-style-type: none"> <li>Attempts to collect, present and analyze the data, but lacks clarity.</li> </ul>	<ul style="list-style-type: none"> <li>Collects and presents the data with some clarity.</li> <li>Attempts to use suitable tools to analyze the data</li> </ul>	<ul style="list-style-type: none"> <li>Collects and presents the data clearly for easy understanding.</li> <li>Uses suitable tools effectively to analyze the data</li> </ul>
<ul style="list-style-type: none"> <li>Conclusion (connections between experimental results &amp; theory)</li> </ul>	<ul style="list-style-type: none"> <li>Attempts a conclusion, with no clear suggestion(s) for improvement.</li> <li>No attempt to connect experimental results to theory</li> </ul>	<ul style="list-style-type: none"> <li>Provides a conclusion with suggestions for improvement.</li> <li>Provides some connections between experimental results and theory</li> </ul>	<ul style="list-style-type: none"> <li>Provides a valid conclusion, including limitations and plans for future improvement.</li> <li>Provides clear connections between experimental results and theory</li> <li>Suggests possible applications of knowledge gained</li> </ul>

Components	Approaching Expectations	Meeting Expectations	Exceeding Expectations
	[1]	[2]	[3]
<b>2. Presentation (6)</b>			
<ul style="list-style-type: none"> <li>Organization</li> </ul>	<ul style="list-style-type: none"> <li>Attempts to organize the content of the presentation, but the content is sometimes unclear.</li> </ul>	<ul style="list-style-type: none"> <li>Organizes the content of the presentation fairly clearly.</li> </ul>	<ul style="list-style-type: none"> <li>Organizes the content of the presentation clearly and logically.</li> </ul>
<ul style="list-style-type: none"> <li>Communication</li> </ul>	<ul style="list-style-type: none"> <li>Attempts to communicate the key ideas, but the ideas are sometimes unclear.</li> <li>Attempts to engage the audience with little success.</li> </ul>	<ul style="list-style-type: none"> <li>Communicates most of the key ideas in a coherent manner.</li> <li>Engages the attention of the audience some of the time.</li> </ul>	<ul style="list-style-type: none"> <li>Communicates all the key ideas in a clear and coherent manner.</li> <li>Engages the attention of the audience most of the time.</li> </ul>

Components	Approaching Expectations	Meeting Expectations	Exceeding Expectations
	[1]	[2]	[3]
<b>3. Individual reflections (3)</b>			
Personal reflection <ul style="list-style-type: none"> <li>Reflective thinking</li> <li>Analysis</li> <li>Making connections</li> </ul>	<ul style="list-style-type: none"> <li>Describes the learning activities, but not your learning processes.</li> <li>Attempts to analyze your learning experience, but is unclear about its value.</li> <li>Attempts to show connection(s) between your learning experience and the project, but is unclear.</li> </ul>	<ul style="list-style-type: none"> <li>Explains your own thinking about your learning processes.</li> <li>Analyzes your learning experience and its value.</li> <li>Shows connections between your learning experience and the project.</li> </ul>	<ul style="list-style-type: none"> <li>Explains your own thinking and learning processes, as well as implications for future learning.</li> <li>Analyzes your learning experience in-depth and the value of this learning.</li> <li>Clearly shows multiple connections between your learning experience and the project.</li> </ul>

## Summary of Assessment Rubric

<b>Components</b>	<b>Criteria</b>	<b>Maximum scores</b>	<b>Actual score</b>
<b>1. Presentation content</b> <i>(slides submitted after presentation)</i>	• Literature research (theory)	15	
	• Research question/problem		
	• Approach (experimental method)		
	• Results & analysis		
	• Conclusion		
<b>2. Presentation</b>	• Organization	6	
	• Communication		
<b>3. Individual Reflections</b>	• Reflective thinking, analysis, making connections	3	
<b>4. Time Management</b>	• Meeting all deadlines on time	1	
	<b>Total score</b>	<b>25</b>	

Graded by: Mr M Shone

Date: .....