

Math Studies SL Criterion Breakdown

<u>Criterion</u>	<u>Part</u>	<u>Description</u>
A	Select Topic (Title)	<ul style="list-style-type: none"> ● Make it interesting! ● The reader should be able to know 3 things <ul style="list-style-type: none"> ○ Both of variables ○ Your hypothesis if they are related or not.
	Introduction	<ul style="list-style-type: none"> ● Your statement of task should be explicit and clear. <ul style="list-style-type: none"> ○ The reader should be able to know 4 things <ul style="list-style-type: none"> ■ Both of variables ■ Your prediction ■ The math you plan to do in order to prove or disprove your prediction ● Make it like a story. <ul style="list-style-type: none"> ○ Is there a reason you chose these variables? ○ Are you interested in something about them? ○ Explain why you think they should be related.
B	Data & Measurement	<ul style="list-style-type: none"> ● Gather 50 - 100 data points. ● Organize it in a chart & graphs. <ul style="list-style-type: none"> ○ If you are doing Pearson's/Linear Line of Regression you may also include the xy, x^2, y^2, and the averages/totals. You will need them later. ● Make sure your information is relevant. <ul style="list-style-type: none"> ○ If you stated your variable was flight distance, don't collect how far the car traveled.
C	Mathematical Processes	<ul style="list-style-type: none"> ● Do at least 2 simple processes. <ul style="list-style-type: none"> ○ Mean ○ 5 number summary (Min, Q1, Median, Q3, Max) ○ Percentage ○ Probability ● Do at least 2 calculations. <i>They must be done by hand!</i> Use a calculator to check your math. <ul style="list-style-type: none"> ○ Pearson's Moment Correlation Coefficient <ul style="list-style-type: none"> ■ This will tell you the strength of your relationship ○ Linear Regression Equation <ul style="list-style-type: none"> ■ You can use this to find out if your predictions are close to your actual information by looking at the percentage error. ○ Chi-Squared

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D	Interpretation	<ul style="list-style-type: none"> ● Be honest! If your test proves that your hypothesis is wrong, then say it! It is perfectly fine. ● Draw conclusions using ALL of the calculations you did. ● Explain your interpretation. Relate the values to what you collected. <ul style="list-style-type: none"> ○ Are there reasons that your value could be lower than what it should be? ● This is where math meets practicality. Take the conclusion out of the number world and into the real world.
E	Validity	<ul style="list-style-type: none"> ● Why did you use the math you did? ● How valid are the results from the math? ● Did you do it by hand? ● Did you do it by calculator? ● Did you do both to check your work? ● Explain what you did to ensure that your math is perfect.
F	Structure & Communication	<ul style="list-style-type: none"> ● STORY! This needs to flow. ● This is grading on how you can connect math to the real world and how you communicate numbers, but as words and sentences. ● Bibliography including your sources have to be the last page!!! Keep track of your books and websites throughout your project!
G	Notation & Terminology	<ul style="list-style-type: none"> ● Paper contains correct mathematical notation and terminology throughout. <ul style="list-style-type: none"> ○ Make sure that your variables should be explicitly defined.