

NYCSEF – Rubric for different levels of student research

	Project Background – Rationale	Hypothesis – Research Question	Experimentation Design – Materials and Methods	Results – Data Analysis	Conclusions – Discussion of Findings
Level 1: BEGINNING RESEARCH	<ul style="list-style-type: none"> • May use text book , encyclopedias or internet for references • Sources not cited in the body of the paper • Content driven (or tied to the curriculum) • Rationale not stated or unclear 	<ul style="list-style-type: none"> • May formulate hypothesis, but it is not based on observation or research • May stem from teacher-guided class activity. 	<ul style="list-style-type: none"> • Experiment does not test hypothesis • Short term - may be completed within one class period • May not have control • Methods are not original • May be experiment from lab manual • May be repeat of classic experiment (e.g. Mendel’s tall/short pea plants) 	<ul style="list-style-type: none"> • No data – research plan only • An answer (outcome driven) – might already be known • No representations of data (e.g. graphs) • Limited analysis of data. • No statistical analysis • No discussion of significance of findings 	<ul style="list-style-type: none"> • Results are restated • May be reference to hypothesis, but no discussion of why it was or wasn’t supported • No discussion of implications or significance of the findings • No indication of problems that arose, and how to solve them • No indication of areas for further research • No indication of next steps
Level 2: INTERMEDIATE RESEARCH	<ul style="list-style-type: none"> • May use some journal articles and/or recent literature • Sources may be cited in the body of the paper • Content usually based on curriculum • Rationale presented superficially 	<ul style="list-style-type: none"> • Able to formulate a hypothesis (research question) based on observation 	<ul style="list-style-type: none"> • Experiment does test hypothesis • Short or long term • Has control • Methods may be modification of previously published materials 	<ul style="list-style-type: none"> • Answer (research driven) is not already known • One or two representations of data • Limited data analysis • Statistics may be used • Little discussion of significance 	<ul style="list-style-type: none"> • Contains reference to hypothesis, and limited discussion of why it was or wasn’t supported • May be limited discussion of implications or significance • May be some indication of problems • May provide limited plans for future research and next steps
Level 3: ADVANCED RESEARCH	<ul style="list-style-type: none"> • Uses recent scientific journals and/or other primary sources • Sources are cited in the body of the paper • There is a significance or purpose to the rationale • usually original research /new research (fringe science) 	<ul style="list-style-type: none"> • Derived from background research or current research studies. 	<ul style="list-style-type: none"> • Experiment tests hypothesis • Open ended • Long term • Methods are original, or are a modification of previously published materials • Results are reproducible (more than 1 trial) 	<ul style="list-style-type: none"> • Answer (research driven) is not already known • Multiple representations of data are shown • Statistics are used as part of the data analysis • Extensive discussion of significance of the findings 	<ul style="list-style-type: none"> • Contains reference to hypothesis, and discussion of why it was or wasn’t supported • Discussion of implications or significance of the findings • Discussion of problems that arose, and how they could be solved • Discusses areas for further research and next steps