

Identify the Type of Project			
Project Category (<i>project must meet 2 of the 4 criteria</i>)			
Science _____	Technology _____	Engineering _____	Math _____

Innovation - Develop and evaluate new devices, models, methods in technology, engineering, and Code.

Part 1 - Project Vision

Level 4	Level 3	Level 2	Level 1
Complexity of Experiment			
Integrate several technologies, inventions or design and construct an innovative application that will have human and/or commercial benefit	Design and build innovative technology; or provide adaptations to existing technology or to social or behavioural interventions; extend or create new physical theory. Human benefit, advancement of knowledge, and/or economic applications should be evident	Improve or demonstrate new applications for existing technological systems, social or behavioural interventions, existing physical theories or equipment, and justify them	Build a model or device or device to duplicate existing technology or to demonstrate a well-known physical theory or social/ behavioural intervention
Content Understanding			
Student demonstrates mastery of content understanding and reflects deep understanding of current applications	Student demonstrates content understanding and reflects understanding of current applications	Content explanations is fair, however further attention to detail is required	Inconsistent evidence of content understanding
Creativity			
This highly original project demonstrates a novel approach. It shows resourcefulness and creativity in the design, use of equipment, construction and/or the analysis.	This imaginative project makes creative use of available resources. It is well thought out, and some aspects are above average	The project design is simple with some evidence of student imagination. It uses common resources or equipment. The topic is current or common one.	The project design is simple with little evidence of student imagination. It can be found in books, magazines, or on popular web sites
Innovative use of Technology			
Distinguish use of technology is evident both in product and project design	Use of technology is evident both in project and project design	Technology used simply as a presentation tool rather than integrated within project	Minimal use of technology
Evidence of Problem Solving			
Student uses a complex method of problem solving throughout project	Some problem solving evident	Inconsistent problem solving technique	Minimal use of effective problem solving

Part 2 - Planning the Project

Science Process Skills			
Exceeding - 4	Meeting - 3	Approaching -2	Working Below -1
Testable Question			
	Language of question suggest the design of a device using specific language	Language of question suggest the design of a device but not specific to the parameters	Any other answer
Designing Investigations			
Independently, student perform: <ul style="list-style-type: none"> Procedures have a set of steps to test a single question Procedural design minimizes experimental bias Procedural design uses multiple trials to increase accuracy (if appropriate) Procedures are detailed enough to be repeated by someone else Procedures identify needed equipment and materials Procedures identify relevant measurements and/or observations to be made Procedures have one independent and one dependent variable and is written in a way that controls other major variables Procedures have an experimental group compared to a control group 	Students can independently <ul style="list-style-type: none"> procedures have a set of steps to test a single question procedural design minimizing experimental bias procedures are detailed enough to be repeated by someone else procedure identifies needed equipment and materials procedure identifies relevant measurements and/or observations to be made 	Students can independently <ul style="list-style-type: none"> procedures have a set of steps to test a single question procedures are detailed enough to be repeated by someone else procedure identifies needed equipment and materials procedure identifies relevant measurements and/or observations to be made 	Students require support to perform 3 of the following: <ul style="list-style-type: none"> procedures have a set of steps to test a single question procedures are detailed enough to be repeated by someone else procedure identifies needed equipment and materials procedure identifies relevant measurements and/or observations to be made
		Students may require support with: <ul style="list-style-type: none"> procedural design minimizing experimental bias 	Any other answer

Exceeding - 4	Meeting - 3	Approaching -2	Working Below -1
Collecting and Recording Data			
	Students are recording as many numbers as accurately as possible. They are detailed in their working and accounting for every piece of relevant data possible	Students are recording some numbers and are recording most relevant data	Students are not recording number data as a priority and are focused on irrelevant observations Any other answer
Evaluating Design			
Students identify all relevant flaws that require change and describes how each item will be changed	Students identify all relevant flaws that require change	Student identified one relevant flaw that requires change	Any other answer
Identify and Quantify the Amount of Error from Design			
	Identifies a significant flaw in design that leads to a quantifiable error with a reasonable suggestion for the amount of error	Identifies a significant flaw in design. However, students are not able to quantify or their value is beyond the acceptable range	Any other answer
Conclusions			
<ul style="list-style-type: none"> • Is relevant to initial question • Describes the key factor to the design • Evaluates the usefulness of a constructed design • Must include suggestions to improve experimental design (i.e., efficiency of design or materials) 	<ul style="list-style-type: none"> • Is relevant to initial question • Describes the key factors to the design • Evaluate the usefulness of a constructed design 	<ul style="list-style-type: none"> • Is relevant to initial question • Restates only the recorded results or is a result of flawed reasoning 	Any other answer

Part 3 - Project Presentation

Oral Presentation			
Exceeding - 4	Meeting - 3	Approaching - 2	Working Below - 1
Student gives a clear, logical, enthusiastic presentation about the topics. Student is able to respond to high level thinking questions related to the topic	Student gives a clear, logical, enthusiastic presentation about the topic. Student is able to answer general questions related to the topic	Student gives a somewhat clear/logical presentation about the topic. Student is able to answer rudimentary questions about the topic	Student gives a rehearsed presentation but cannot elaborate much on questions related to the topic.

Visual Display			
Exceeding - 4	Meeting - 3	Approaching - 2	Working Below - 1
The layout of the display flows in a logical manner. The exhibit is attractive and self-explanatory. The most relevant information is what is keyed on.	The layout of the display flows in a logical manner. The exhibit is attractive and self-explanatory	All elements of the scientific method related to the project type are present but display is convoluted. Physical demonstrations distract from key findings	A standard scientific method is displayed but may not include all key science skills and/or a physical demonstration is the focus

Feedback