

Cumberland Valley Amateur Radio Club Award for Radio Excellence	Senior (9-12) Level	Project #	Project Name
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Component	Level 1	Level 2	Level 3	Level 4	Score															
Exhibit Type	Partnered Exhibit			Individual Exhibit																
	0			5																
Display Presentation	Simple & visually balanced? Attracts & captures attention? Backboards, table, & artifacts have unity? Colors coordinated & suitable? Clear & understandable?																			
	3	4	5	6	7	8	9	10												
Display Craftsmanship	Neatly and carefully done? Writing, grammar, & spelling understandable and correct? Lettering clear? Layout complete, logical, easy to follow, & self-explanatory?																			
	3	4	5	6	7	8	9	10												
Research Notebook	Notebook or Journal is well organized? Entries dated? Clear, concise, & neat? Summarizes actual work, noting successes & failures? Includes bibliography?																			
	3	4	5	6	7	8	9	10												
Experiment Investigation by rigorous control of variables to test one or more hypotheses	Duplicating known experiment to test previously confirmed hypotheses.		Extending known experiment by changing its procedure, data collection, or analysis.		New approach to design of (or modified application of existing) experiment with control of some variables.					New experimental approach to a research problem with control of most significant variables.										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Problem How well is the problem stated?	No problem statement.			Incomplete.			Complete, well-written.			Complete, articulate, & clear.										
	0			1			2			3										
Hypothesis Is it testable & verifiable?	No hypothesis.			Incomplete.			Present, but not completely testable.			Well-written and testable hypothesis.										
	0			1			2			3										
Design A plan to test hypothesis?	No overall plan.			Partial plan.			Sufficient plan.			Exemplary plan.										
	0			1			2			3										
Procedures A process to test hypothesis?	Experimental procedures not listed.			Incomplete or not listed step-by-step.			Complete and listed step-by-step.			Qualitatively & quantitatively listed step-by-step.										
	0			1			2			3										
Variables Are variables identified & controlled?	No variables listed or controlled.			Variables listed, but not controlled.			Variables listed, some controlled.			Variables carefully described & controlled										
	0			1			2			3										
Apparatus Items described; used properly?	No materials or equipment identified; Items used unsafely.			Items used safely; not appropriately identified.			Items used safely and appropriately identified.			Items carefully described with use above expectations.										
	0			1			2			3										
Measurements Quantity of data, trials, methods?	No quantitative data collected.			Insufficient data collected.			Sufficient data collected.			Data collection above expectations.										
	0			1			2			3										
Precision * Is data precision understood & presented?	No data presented.			Partial or unclear presentation; incorrect precision.			Sufficient, clear, & visually accurate presentation; reasonable precision.			Exceeds expectations; error & statistical analysis, confidence intervals.										
	0			1			2			3										
Analysis Is data properly understood & applied?	No interpretation of data results supplied.			Partial (or incorrect) interpretation.			Correct & appropriate interpretation.			Comprehensive & significant interpretation.										
	0			1			2			3										
Conclusion Is there support for conclusions?	No conclusions.			Incomplete conclusions.			Apparent conclusions.			Significant, inherent, insightful conclusions.										
	0			1			2			3										

* **Data Precision:** Do the charts, tables, graphs, etc. properly present the data? Consider use of statistics, error analysis, and significant figures. Do final/calculated values contain the same amount of precision as the weakest measurements?

Total Score
