

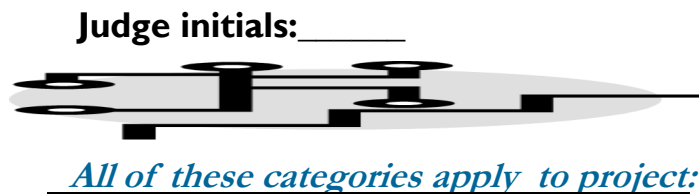
# Science Fair / Next-Gen STEM Showcase criterion checklist

Grade level: \_\_\_\_\_ Project # \_\_\_\_\_  
 Project title: \_\_\_\_\_

Rate *one* of these *first three* categories (**science, engineering or technology**); cross out the other two categories:

30	Scientific thought	/30
3	Clearly states problem and makes a scientific claim to investigate.	
3	Limits the problem enough to realistically solve it (scientists identify important problems <i>which they can solve</i> ).	
3	Procedures for answering a question/solving a problem link scientific claim to evidence which is possible to gather.	
3	Clearly recognizes and defines key variables in gathering/ using evidence to support scientific claim.	
3	Recognizes the need for necessary "controls" and uses them correctly.	
3	Produces adequate data (evidence) to support conclusions about his/her claim.	
3	Recognizes data's limitations in analyzing and interpreting it.	
3	Shows and explains how project relates to other research.	
3	Has an idea of what future research may be necessary to support or refute scientific claim.	
3	Cites scientific literature instead of only popular literature (i.e., local newspapers, Reader's Digest).	

or	30	Engineering design goals	/30
	5	Clearly defines problem and objective using criteria and constraints which realistic solutions have to meet.	
	5	Relates objective to a user's needs, based on criteria for realistic solutions (modeling).	
	5	Solves problem within constraints (economic, technical, etc.) while also meeting criteria of possible users.	
	5	Shows how his/her solution can lead to the successful design or build of an "end product."	
	5	Solution significantly improves upon previous alternatives.	
	5	Optimizes solution by systematically testing and refining performance under conditions of normal use.	
or	30	Technology goals	/30
	5	Clearly and concisely defines specific, consistent goals in using a suitable process to solve a problem .	
	5	Tells an engaging story using accurate content in solving the problem, while using media/sound/animation to enhance communication.	
	5	Applies an existing design to more efficiently and effectively meet a users' needs in solving problem.	
	5	Builds a working end product of high technical quality (purposeful visual/ audio layout, enhancements, editing, etc.).	
	5	Explains why and how solution serves its intended purpose.	
	5	Tests solution to make sure it works under various conditions.	



30	Creative ability	/30
5	Makes a claim by asking questions, approaching problems and analyzing /interpreting data in a creative way.	
5	Gathers evidence to support claim by using, constructing and/or designing equipment in a creative or original way.	
10	Answers questions in an original way by obtaining evidence from creative research to support the investigation of his/her claim.	
10	Creatively solves problems in an efficient and reliable way. No points are awarded for "gadgets" having nothing to do with solving problems for student's claim.	

15	Thoroughness	/15
3	Purposefully completes project consistent with project's original intent, in showing how scientific evidence supports the scientific claim.	
2	Completely addresses the problem.	
2	Bases conclusions upon <i>multiple</i> experiments/trials, where appropriate, rather than only one experiment or trial.	
2	Project notes are complete, reflecting any necessary computations and/or evidence which form the basis of any arguments and conclusions .	
2	Articulates other approaches or theories in solving or addressing the problem.	
2	Spends extensive/moderate/minimal time completing the project.	
2	Familiar with scientific literature relevant to project.	

15	Skill	/15
5	Owns the relevant skills (lab, computation, design or observational) to obtain data (evidence) supporting claim or solution.	
4	Completes project with minimal help from parents, teachers, scientists/engineers in a lab based at home/classroom/school/ university/corporation.	
3	Largely completes project independently, under minimal or limited adult supervision.	
3	Obtains equipment independently by building it, by borrowing it or by directly gaining access to a laboratory.	
10	Clarity	/10
3	Clearly explains project purpose, procedures, and conclusions, showing how evidence connects to his/her claim. Student argues why other claims are not appropriate, using evidence to support his/her reasoning.	
1	Provides written materials which reflect or summarize understanding of the research.	
1	Presents important phases of the project in an orderly, sequential manner.	
1	Clearly presents data (scientific evidence) supporting claim.	
1	Clearly presents the results.	
1	Project display explains the project well.	
1	Presents ideas in a straight-forward way, without relying upon tricks or gadgets.	
1	Performs all the project work without help.	



**Judges award all points/section or none.**