Common Rubric
For Engineering Design Notebooks

Rubric for Engineering Design Notebooks (EDN).

Note: Judges will only choose some categories to assess each team's Engineering Design Notebook.

	EDN Goals	4	3	2	1
0. EDN Organization					
	0.1 Structured. Includes Table of Contents, Glossary & Appendix so readers can easily find key elements of EDN as well as resources researched (citations) & vocabulary learned.	**Thorough** organization utilizes defined sections.	Basic...	Minimal...	No...
	0.2 Readability. Notebook answers potential questions of reviewers. Highly readable notebooks are thorough, clear, legible & detailed (e.g. length & date of tasks documented) and provide summary updates when needed.	**All** questions reviewer might pose are clearly answered.	Most...	Few...	No...
1. Explore					
	1.1 Problem Statement. Accurately articulates, in their own words, the design objective (includes success criteria, constraints)	**Specific** articulation of problem, success criteria, constraints	Basic...	Weak...	No...
	1.2 Depth of Free exploration. Prior knowledge, brainstorming & hands-on exploration documented.	**Numerous** examples of brainstorming and hands-on exploration observations.	Regular...	Few...	No...
	1.3 Research in STEM. Explores how math & science concepts inform project (e.g. math formulas, laws of physics, etc.), and how they might optimize their design considering the variables and constants involved.	**Clear** documentation of math & science concepts considered.	Basic...	Scant...	No...
	1.4 Research in Design. Evaluates aspects of other designs that might be utilized or modified in this design (e.g. shape, functionality, efficiency, impact, cost, or other design parameters).	**Clear** analysis of other design pros/cons.	Basic...	Scant...	No...
2. Design					
	2.1 Design rationales. Includes clear rationales throughout notebook on design choices (materials used, modifications, etc.). Choices are predominately based on data from past trials, research and design considerations rather than trial & error.	**Thorough** rationales given (based on data or research) for each design choice.	Basic...	Scant...	No...
	2.2 Design plan. Prior to testing, team articulates project plan timeline, testing procedure & performance prediction (or hypothesis).	**Detailed** articulation of testing procedure & performance prediction or hypothesis.	Basic...	Scant...	No...
	2.3 Design sketching and/or photos. Prior & during build, team sketches 2-D or 3-D perspective drawings.	**Numerous** representations of each design iteration.	Regular...	Scant...	No...
3. Test					
	3.1 Observation. Clearly reflected through data & written observations (tables, graphs, labeled drawings, etc.).	**Numerous** presentation of relevant quantitative & qualitative data, graphs, charts that follow design progression.	Regular...	Scant...	No...
	3.2 Reflection/Analysis. Assesses pros and cons of design/materials, testing procedure, etc. Returns to restatement of purpose. Applies test results and analysis to pose a theory, recommend and argue for a next step, predict a design impact, or draw an insightful conclusion.	**Detailed** reflection shows how design considerations and logic flowing from research, test analysis, etc.	Basic...	Scant...	No...
	3.3. Team Assessment. Notebook shows evidence of team self-assessment, peer assessment, design status presentations to various audiences, etc.	**Detailed** entries show assessment of team's design process as evidenced by notebook.	Basic…	Scant…	No…
4. Overall Use of Design Process					
	4.1 Use of Engineering Design Process and/or Scientific Method is carefully & consistently documented so that steps are logically & sequentially connected.	**Consistent**, high-quality documentation of all aspects of design process	Occasional	Scant…	No...
	Column Totals (for selected categories)				

Comments/Suggestions:

Total:

× **?**

Final Score (out of ?)