Engineering Design Playground Project – Student Rubric

Category	Extensive Evidence	Convincing Evidence	Limited Evidence	No Evidence
Key Concept	Your design is clearly guided by a specific scientific or engineering principle, with detailed explanation and strong justification.	Your design shows a clear connection to a scientific or engineering principle and some justification..	A principle is referenced but not clearly explained or connected to the design.	No principle is identified or applied.
Design Requirements	Requirements are clearly defined (e.g., safety, accessibility, age group, environment), with strong alignment to user needs	Most requirements are defined and somewhat aligned with user needs	Some requirements are mentioned, but connection to user needs is unclear.	Requirements are missing or unrelated to user needs.
Brainstorming & Sketch	Multiple well-thought-out sketches are provided with justifications for final design choice	More than one sketch is provided and a design is chosen with some reasoning..	One basic sketch is provided; little reasoning for the final design.	No sketches or unclear design process..
Sustainability & Safety	The design includes multiple eco-friendly materials/processes and clearly shows at least two well-justified safety features.	The design includes at least one sustainability element and two safety features.	One safety or sustainability element is included, but not well explained.	No evidence of safety or sustainability.
Prototype Creation	The prototype is complete, neat, and includes distinct features aligned with the team's design plan and goals.	The prototype is mostly complete and includes most planned features.	The prototype is incomplete or lacks several important features.	No prototype was built or it is unrelated.
Feedback & Iteration	Feedback from peers or tools is well-documented; multiple meaningful improvements were made and clearly explained.	Feedback is used to make at least one specific improvement to the design.	Feedback is mentioned, but no real change is evident in the design	No feedback is used or mentioned.

Prototype Project Checklist

Key Concept	Extensive Evidence
Key Concept & Research	❒ Your design includes at least one key scientific or engineering principle. ❒ You have evidence or reasoning for each major design decision.
Design	❒ You clearly defined what the playground must include (features, safety, accessibility, etc.). ❒ Your design reflects real user needs.
Brainstorming & Sketch	❒ Your team sketched multiple design ideas. ❒ You selected one design and justified your choice.
Sustainability & Safety	❒ You considered eco-friendly materials or processes. ❒ You included at least two safety features in your design. ❒ You can explain how it is safe.
Prototype	❒ You used multiple materials (e.g., cardboard, tape). ❒ Your prototype includes distinct parts (e.g., swings, slides). ❒ Shows clear purpose
Feedback & Iteration	❒ You presented your plan and received feedback. ❒ You made at least one change based on feedback. ❒ You can explain those changes.