



Assessment

4 - (Excellent)	All criteria (procedures, steps and details) are met or followed.
3 - (Good)	Most criteria are met, with only a few errors.
2 - (Fair)	Many criteria are not met, and/or work has many errors.
1 - (Poor)	Most criteria are not met.
0 - (No Effort)	No effort was made to meet criteria.

NASA Exploration Design Challenge Design Evaluation Rubric

Category

Design Project Notebook:

The steps of the design process are identified and explained in detail.

(___/36)

The problem to be solved is stated clearly.

(___/4)

Conditions or restrictions of the solution are acknowledged and addressed.

(___/4)

Important information about space radiation was considered in the design of the solution.

(___/4)

Background research includes information about past and present radiation shielding materials.

(___/4)

Viable solutions are identified during brainstorming.

(___/4)

Strengths and weaknesses of each solution are clearly delineated.

(___/4)

The reasons the team chose and did not choose possible solutions are clearly identified.

(___/4)

Sketches clearly depict the chosen design.

(___/4)

Evidence that the design has been redesigned shows an understanding of the iterative engineering design process.

(___/4)

Content and Technical Application:

Designs reflect science, technology and mathematical concepts.

(___/36)

Design is feasible and based on accurate applications of science and mathematical concepts.

(___/4)

Explanation includes evidence of research to support science and mathematical concepts.

(___/4)

Design integrates cutting-edge technology.

(___/4)

Submitted images clearly illustrate the design.

(___/4)

Submitted images include labels to describe and explain the science and mathematical concepts supporting the design.

(___/4)

The design and supporting documentation clearly show an understanding of the Orion EFT-1 flight trajectory and the associated radiation environments.

(___/4)

All materials in the design are approved for spacecraft IntraVehicular Activity.

(___/4)

Modeling software is used to clearly illustrate the design.

(___/4)

Modeling software is used to emphasize the science and mathematical concepts supporting the design.

(___/4)

Teamwork:

Project shows evidence of collaboration from all team members.

(___/20)

Mission patch or logo reflects the team.

(___/4)

The Design Project Notebook includes a description of the mission patch.

(___/4)

Project elements include contributions from all team members.

(___/4)

Reflections from students document individual and team responsibilities.

(___/4)

Task interdependency and systems engineering are discussed.

(___/4)

Innovation

(___/8)

Evaluators may award up to eight additional points for unique and exceptional work

(Total)

_____/100