








## Appendix A. – Rubric for Engineering Design Process (EDP)

EDP Step	Novice (0)	Apprentice (1)	Journeyperson (2)	Expert (3)	Level of student knowledge (Score)
<b>Identify the problem (ASK)</b> 	Student/Team does not identify the problem	Student/Team incorrectly identifies the problem	Student/Team identifies part of the problem	Student/Team fully and correctly identifies the problem	
<b>Brainstorm a solution (IMAGINE)</b> 	Student/Team does not identify knowns and unknowns	Student/Team incompletely identifies knowns and unknowns	Student/Team identifies knowns and unknowns using experience but uses no resources	Student/Team completely identifies knowns and unknowns using experience and resources	
<b>Develop a solution (PLAN)</b> 	Student/Team does not brainstorm	Student/Team generates one possible solution	Student/Team provides two possible solutions	Student/Team provides three or more possible solutions	
<b>Create a prototype (CREATE)</b> 	Student/Team does not identify any consequences	Student/Team determines inaccurate or irrelevant consequences	Student/Team identifies consequences accurately	Student/Team identifies consequences accurately and provides a rationale	
<b>Test a prototype (TEST)</b> 	Student/Team does not communicate results	Student/Team shares random results	Student/Team shares organized results, but results are incomplete	Student/Team shares detailed, organized results with class	
<b>Redesign based on data and testing (IMPROVE)</b> 	Student/Team does not contribute to the redesign	Student/Team does not improve the design or address concerns	Student/Team addresses one concern to improve the design	Student/Team addresses two or more test-based concerns to improve the design	
<b>Communicate results from testing (SHARE)</b> 	Student/Team does not communicate results	Student/Team shares random results	Student/Team shares organized results, but results are incomplete	Student/Team shares detailed, organized results with the group	
<b>Total</b>					

Note to educator: You may customize the above rubric to better assess your group of students.

## Appendix B. – Glossary of Key Terms

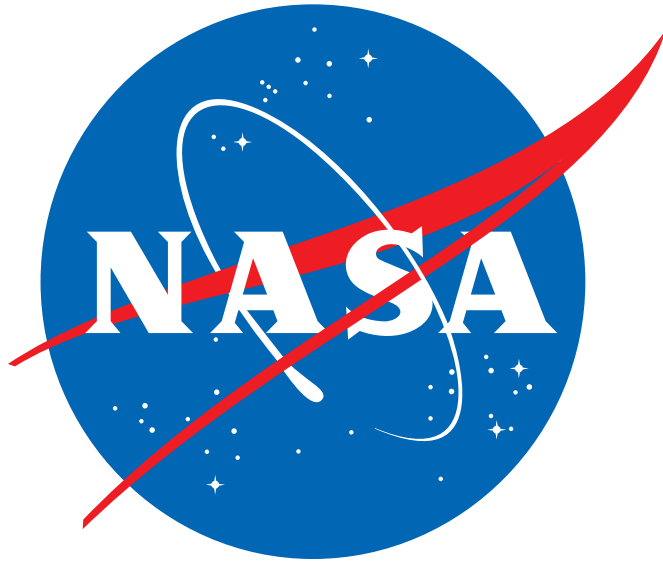
**Icy-regolith** - Ice and regolith mixture found on the Moon.

**Ilmenite** - A mineral composed of iron and titanium oxide. A major resource for oxygen on the Moon.

**In-situ resource utilization (ISRU)** - A practice of generating products with local materials.

**Lunar dust** - A very fine layer of regolith, or fragmented rock material, that is static and adheres to exposed surfaces.

**Regolith** - The loose, fragmental material on the Moon's surface.



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