

Quest Lesson Guide: Give Your Rover More Power

Pillar: SCIENCE	Concept: Power and Energy	Code: PS1.4	Level: 1
Summary: Give your rover more power.			
STEAM Integration: Engineering (Making)			
Learning Objectives			
Students will learn about...		Students will learn to...	
Learn about objects that require different power sources.		Differentiate between different power sources. Select and add a power source to a vehicle.	

Quest Introduction:

Upgrade your rover with dual engines so it has more power. Connect another power source for the extra energy needed, then add solar panels to recharge on the go!

Students add another engine to the Rover to give it more power



Fun Facts:

Everything needs a power source to supply energy for activities or work. Some activities need more energy than others because the work being done is greater. Two engines working together will be more powerful than one engine, but will require more energy too.

Batteries come in all sizes and turn chemical energy into electrical energy. Space probes and robots use rechargeable batteries that can be refilled with energy from solar panels that capture the sun's energy and convert it to electricity. Did you know the sun's energy hitting the earth could power everything on the planet? We just need to learn how to properly harness it!

In-Game Assessment:

The students earn XP in the following badges: 1. Energy – 25% 2. Motion & Matter – 25%	Related in-game quiz that tests concepts: 1. Quiz: Power & Energy
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Formative Assessment:

Once the student finished a quest, you can also assess them based on observation and discussion, and according to the following scale. If assessing a student's partially completed project, use the "Notes" section. In this case, assess the child based on their understanding of the projected learning outcomes and how effectively they implemented them on the part of the project they did complete.

5	4	3	2	1
Complete Achievement of goal/task/ understanding	Mostly Complete Achievement of goal/task/ understanding	Partially Complete Achievement of goal/task/ understanding	Very Incomplete Achievement of goal/task/ understanding	Did Not Complete goal/task/ understanding

Notes:
