

Quest Lesson Guide: Upgrade Rover's Power Supply

Pillar: SCIENCE	Concept: Power and Energy	Code: PS1.3	Level: 1
Summary: Upgrade rover's power supply.			
STEAM Integration: Engineering (Making)			
Learning Objectives			
Students will learn about...		Students will learn to...	
Identify different components involved in a system (natural).		Differentiate between different power sources. Select and add a power source to a vehicle.	

Quest Introduction:

Craft a power core to upgrade your rover so it has more energy capacity for longer missions.

Students upgrade the Rover's power supply by crafting a Power Core to replace the Battery



Fun Facts:

Energy is used to do everything! There are many different types of energy from different power sources. Your body makes energy from the food you eat, robots like me use batteries for electrical energy. Most of the world's energy comes from coal, gas, oil and nuclear. These are all non-renewable energy because the world will eventually run out. Eeek!

Unlike coal, gas, oil and nuclear, renewable energy comes from sources that won't run out like the sun, wind and earth. Renewable energy sources like solar, wind, tidal and thermal can be used over and over again. They are also called "clean" or "green" because renewable energies don't pollute the air and water. This is great for the planet!

In-Game Assessment:

The students earn XP in the following badges: 1. Energy – 25% 2. Machines 101 – 25%	Related in-game quiz that tests concepts: 1. Quiz: Power & Energy
---	--

Formative Assessment:

Once the student finished a quest, you can also assess them based n 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:
