

## Quest Lesson Guide: Build a Lunar Rover

<b>Pillar:</b> SCIENCE	<b>Concept:</b> Simple and Complex Machines	<b>Code:</b> ES1.1	<b>Level:</b> 1
<b>Summary:</b> Build a lunar rover.			
<b>STEAM Integration:</b> Engineering (Making)			
<b>Learning Objectives</b>			
<b>Students will learn about...</b>		<b>Students will learn to...</b>	
Understands the purpose of simple machines and the common types.		Identify individual parts of machines. Craft basic machine parts. Use basic machines suitable to solve specific problems.	

### Quest Introduction:

Walking is great exercise but too slow! Build an all-terrain Lunar Rover to explore the world in quick time. Keep an eye out for new quests and resources!

### *Students build a working Lunar Rover*



### Fun Facts:

LET'S ROLL! A Lunar Rover is a battery powered all-terrain low gravity vehicle first used during the Apollo moon missions in 1971 and 1972. Also called a Moon Buggy, rovers are four-wheel drive machines. This means they can cross all types of terrain and change direction quickly. The original Apollo rovers are still on the moon! WHOA!

Machines can be super complex, like a robot or helicopter, or very simple, like a can opener, a ramp or a wheel. Simple machines are made up of just one or two moving parts and can make work easier by creating a mechanical advantage. This means less force is needed to do the work thanks to the design of the machine. Cool, huh?

**In-Game Assessment:**

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

**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:**

---

---

---

---