

UKS2 – Lesson Plan 3 – Maths

How can we use maths to plan a journey to the Moon?

Aim: To solve real-life maths problems involving time, weight and distance by planning a journey from Earth to the Moon.	Key Words: distance, duration, time, mass, weight, speed, subtraction, multiplication, conversion, scale	Preparation: - Printed “Mission to the Moon” worksheet (includes 5 clear word problems) - Video or image of the Moon landing - Place value chart and calculator (optional) - Rulers and scales for optional extension - Whiteboards/paper for working out
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Prior Learning: Children have experience with:

- Reading and interpreting large numbers
- Using multiplication and division for problem-solving
- Basic unit conversions (e.g. kg to g, hours to minutes)

WC / PT	<u>Warm-up:</u> Ask: “Do you know how far away the Moon is?” Show: Quick clip or image of the Apollo 11 Moon landing. Then share this fact:  <i>The Moon is 384,400 km from Earth.</i> Write this question on the board: <i>If a rocket travels 8,000 km per hour, how long would the journey take?</i> Work it out together using a place value chart or long division.	0-5 mins
WC	<u>Main Teach:</u> Introduce today’s challenge: “You’re part of Mission Control. Use maths to help astronauts get to the Moon safely.” Model how to work through one problem: <i>If each astronaut eats 3 meals a day, how many meals are needed for a 5-day mission with 4 astronauts?</i> Steps: - Multiply meals × days - Multiply by number of astronauts	5-10 mins

I / S	<u>Activity:</u> Mission to the Moon: Maths Challenge Sheet Children work individually or in pairs to solve 5 clear problems: Distance & Speed: The rocket travels 7,500 km/h. How many hours to reach the Moon (384,400 km)? Food Supplies: Each astronaut eats 3 meals per day. How many meals are needed for 5 days and 4 astronauts? Fuel Use: The rocket uses 2,000 litres of fuel every hour. How much fuel will it need for a 48-hour journey? Lunar Weight: An astronaut has a mass of 72kg. On the Moon, gravity is $\frac{1}{6}$ of Earth. What would their weight be? Crate Mass: You load 5 crates weighing 12.5kg each. What is the total mass? Use simple structured layout and calculations with space to show working out.	10-30 mins
I	<u>Extension Challenge:</u> Let children write and solve their own "Moon Mission" problem. E.g. <i>How many oxygen tanks are needed if one lasts 6 hours?</i>	30-35 mins
WC	<u>Plenary:</u> Quick quiz: - What surprised you about planning a Moon mission? - What would happen if your calculations were wrong? Vote: Which maths skill was most important — and why?	35-40 mins

WC – Whole Class

PT – Partner Talk

I – Independent

S - Support

Challenge A	Science Link: Research: How do astronauts prepare for weightlessness?
Challenge B	English Link: Write an astronaut's mission log entry explaining how maths helped them survive the journey!