

Challenges of Living on Mars

Name:

Date:

INQUIRY

ISS astronauts exercise 2 hours daily to stop muscle loss. Mars has only 38% gravity. What happens to the human body?

Discuss with your partner. Write your initial ideas below:

Key Vocabulary

Term	Definition
Radiation	Harmful energy from the Sun and cosmic rays.
Bone atrophy	Weakening of bones in low gravity.
MOXIE	NASA device that produces oxygen from Mars CO ₂ .

Part A — The Five Challenges

1. Name the 5 deadly challenges of living on Mars. For each, explain WHY it's dangerous and ONE possible solution. [10 marks]

Part B — Human Body

2. Explain how 38% gravity would affect: (a) bones (b) muscles (c) blood flow (d) the heart over 2 years on Mars. [4 marks]

Part C — Psychology

3. A Mars crew of 6 will be isolated for 3 years. Communication delay: up to 24 minutes each way. Describe 3 psychological challenges and how you would address each. [3 marks]