Japan to bring Phobos soil to Earth

LEVEL A2/B1


Photo: SpaceX / Unsplash

I. WARM-UP

1. What do you know about Mars and its moons?
2. Would you like to travel to space? Why or why not?
3. How can space missions help life on Earth?

II. KEY VOCABULARY

mission
A planned trip with a clear goal

launch
To send a rocket or spacecraft into space

rocket
A vehicle that flies into space using powerful engines

sample
A small piece taken to study and test

orbit
To move around a planet or star in a path

rover
A small robot vehicle that moves on a moon or planet

analyse
To study something carefully to learn from it

international
Involving more than one country

III. READING

Japan's space agency Jaxa is preparing the MMX mission to bring samples from Phobos, a small moon of Mars. The spacecraft will launch on an H3 rocket. The whole mission is expected to take five years. If scientists analyse the soil, they get clues about how Phobos and its sister moon, Deimos, formed.

It may also give hints about the origins of life in our solar system. The plan is to reach Mars around August 2027. Then the craft will orbit and study Phobos for about three years. After that, it will collect samples and return to Earth in 2031. Phobos is about 27 km wide.

It orbits about 6,000 km from Mars and circles the planet three times a day. The mission is international. Partners include Nasa and European teams. A small rover from France and Germany will land on Phobos to help choose places to collect soil.

Reading text adapted from reporting by **The Guardian***: "Japan to launch world-first mission to...". Original article linked at theenglishwire.com.*

IV. COMPREHENSION QUESTIONS

1. What is the main goal of the MMX mission?
2. Which rocket will carry the spacecraft?
3. When is the spacecraft planned to reach Mars?
4. How long will the mission study Phobos before returning?
5. Which countries built the small rover for Phobos?

V. DISCUSSION

1. Why do countries cooperate on space missions?
2. What questions would you ask if you met a space scientist?
3. Which part of this mission sounds most difficult? Why?
4. Would you visit Mars or a moon first? Give one reason.

VI. GRAMMAR FOCUS

Zero conditional

Use If + present simple, present simple for facts and general results: when the first part is true, the second is always true too.

"If a moon is small, **its gravity is weak**.*"*
"If the rover finds ice, **teams analyse it**.*"*

VII. GRAMMAR EXERCISE

Complete each sentence with the present simple to make the zero conditional.

1. If dust is loose, the rover (slip) ___ a little. _____
2. If rocks are sharp, teams (change) ___ the route. _____
3. If sensors fail, engineers (check) ___ the system. _____
4. If skies are clear, the rocket (launch) ___ safely. _____
5. If samples are heavy, robots (move) ___ slowly. _____

Teacher's Notes

TEACHERS ONLY

These notes are designed to help you get the most out of this lesson. Please do not share this page with students.


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I. LESSON GUIDE

- Timing: 8–10 minutes warm-up, 8 minutes vocabulary, 10–12 minutes reading, 10 minutes comprehension, 8–10 minutes grammar, 10 minutes discussion.
- Pre-teach names and terms students may see: Jaxa, MMX, Phobos, Deimos, rover, rocket, analyse.
- Reading: set a gist task (what, where, when). Then scan for numbers (5 years, 2027, 2031, 6,000 km, 27 km) and partners (Nasa, European teams). Pair-check before whole-class feedback.
- Differentiation: stronger students summarise the timeline; others match facts to headings (goal, tools, dates, partners).

II. DISCUSSION FACILITATION TIPS

1. Elicit examples of shared costs or skills. Prompt for Nasa, Europe from the text.
2. Have students note one clear question, then compare in pairs before sharing.
3. If answers are short, ask what could go wrong at each stage of the plan.
4. Do a quick show of hands, then pair students with different choices to explain reasons.

III. EXTENSION ACTIVITIES

Writing: In pairs, write a 60-word press update for MMX on the day it reaches Mars in 2027.

Presentation: Make a 1-minute poster talk explaining why Phobos is a good place to collect samples.

IV. ANSWER KEY OVERVIEW

Comprehension questions: short factual answers from the text.

Grammar exercise: Zero conditional

Discussion: open-ended. Accept any reasonable ideas supported by examples and reasoning.

Answer Key

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IV. COMPREHENSION QUESTIONS

1. What is the main goal of the MMX mission?
   To bring samples from Phobos back to Earth.
2. Which rocket will carry the spacecraft?
   The H3 rocket.
3. When is the spacecraft planned to reach Mars?
   Around August 2027.
4. How long will the mission study Phobos before returning?
   About three years.
5. Which countries built the small rover for Phobos?
   France and Germany.

V. DISCUSSION

Open answers. Accept any reasonable ideas supported by examples and reasoning.

VII. GRAMMAR EXERCISE

Complete each sentence with the present simple to make the zero conditional.

1. If dust is loose, the rover ___ a little. **slips**
2. If rocks are sharp, teams ___ the route. **change**
3. If sensors fail, engineers ___ the system. **check**
4. If skies are clear, the rocket ___ safely. **launches**
5. If samples are heavy, robots ___ slowly. **move**

VI. GRAMMAR FOCUS

Key point: Use If + present simple, present simple for facts and general results: when the first part is true, the second is always true too. (Examples constructed.)

"If a moon is small, **its gravity is weak**.*"*
"If the rover finds ice, **teams analyse it**.*"*