

Mission Mangalyaan

LEARNING OBJECTIVES

- Making the students understand the important role of science and technology in our lives. India has taken rapid strides in science, particularly space exploration.
- Learning about India's ISRO (Indian Space Research Organisation), established in 1969, and its role in spearheading the country's space programme. Thanks to ISRO, today India is among an elite group of countries that can launch spacecraft into the orbit of another planet space on its own. It is the only country to succeed in launching a spacecraft (Mangalyaan) into the orbit of another planet on its first attempt.
- Understanding, too, the rapid developments made by India in the field of science and technology in recent years. The tech industry in India is one of the fastest-growing tech hubs in the world.
- Learning about the rapid developments in computer science and technology –the tech industry in India is one of the fastest-growing tech hubs in the world.
- The impact these changes have on our lives – digital books, online classes, services such as banking, businesses, shopping, etc. How much of our lives (and the world we live in) will be physical/virtual in the future? Also, the role of artificial intelligence (AI) now and in the future, virtual reality, etc.
- Outcome: Cultivating a scientific temper.
- Grammar: Simple, continuous and perfect tenses of the three main tenses – the present, past and future; Adverbs and their kinds (time, frequency, degree); position and order of adverbs.
- Listening, understanding, reading, speaking, pronouncing and writing correctly.
- Building a vocabulary, spellings, meanings, finding words relating to Mars, examination from a word grid, pronunciation of selected words, punctuation, writing a paragraph.

➤ Explain the question. Let the students discuss in class. Tell them some of India's milestones in space technology and exploration. Ask them how we as a country stand to benefit from exploring the other planets in our solar system. Then let answer the question orally on their own. Check and assess their responses.	Get Set!
➤ The lesson is about Mangalyaan, India's indigenously built spacecraft that was sent to study Mars. It describes the Mars mission – its genesis, the planning, the objectives, the challenges and they were overcome, the launch of the spacecraft, the payload it carried, the images it sent of the Red planet, and the many records it was able to set in its incredible space odyssey.	Read and Enjoy

	<ul style="list-style-type: none"> Ask the students to take turns to read aloud the lesson – explain it as they read and ask questions to check and assess their level of understanding. For example: What does the Mangalyaan mission mean for India and for the world? Which countries have attempted missions to Mars in the past and how is India's mission different from them? What is remarkable about Mangalyaan's achievements? Also, make sure the students understand the background so that they can relate to the lesson better. Explain the words and terms used in more detail, if required.
Read and Understand	<ul style="list-style-type: none"> Exercises A, B, C and D: Discuss the exercises. Then ask the students to write their answers in their books/notebooks. It is advisable to check and assess their work individually.
Think and Answer	<ul style="list-style-type: none"> Exercise A: Read and explain the question and discuss it in class. Then ask the students to write the answer. Check and assess their work individually.
Grammar Spot	<ul style="list-style-type: none"> Use the board to explain direct and indirect/reported speech. Ask the students questions and tell them to reply. Then ask another pair of students what was just said – both the question and the answer. This kind of oral interaction will give them a feel of direct and indirect speech before you begin to explain the rules. Use the given examples and also your own, and ask the students to think of examples too and write them on the board. This will clearly show the differences. Five sentences can be written on the board without punctuation, and ask the students to correct them. You can tell them the changes between the two forms of speech– comma, quotation marks, full stop/question mark/exclamation mark. Also discuss grammatical changes–addition of 'that'; change to suitable past tense; change in verb [e.g., 'said' → 'told'; 'will' → 'would'; 'shall' → 'should']; change in personal pronoun. Discuss Exercises A and B orally first and then the students can do them in the class. Use the board to explain adverbs. Grammar Adverbs add something to verbs – how/in what manner; where; when; how frequently; and to what degree some action was done/or what was or had. Kinds of adverbs – manner, place, time, frequency and degree. Ask questions apart from the examples to get answers from the students using adverbs – examples: happily; everywhere; daily; often; very; etc. This kind of oral interaction will show them how they are already using adverbs. Use the given examples and also your own, and ask the students to think of examples too and write them on the board. Discuss Exercises A and B orally first and then the students can do them in the class.

☞ Exercise A: Explain the exercise and then let the students find the words in the grid on their own. They can check their own work.	Word Wise
☞ Exercise A: Read the passage at least twice, or ask the students to read it. Then ask them to select the correct answers.	Listen and Learn
☞ Exercise A: Ask the students at random to enact the given conversation. Check them for correct presentation and pronunciation.	Converse and Connect
☞ Explain the question so that the students are clear on what they have to speak about. Also, let them discuss with their partners. Then, let them use their imagination and speak to the class.	Speak and Express
☞ Exercise A: Say each word aloud and ask the class to follow. Differentiate the way the words are pronounced. Draw attention to the phonetic symbols. Ensure the students pronounce the words correctly.	Pronunciation Practice
☞ Exercise A: Discuss the question in class, giving basic information about all the planets in our solar system. Explain how each planet is unique in its own way. Then, let the students write the paragraph on their own. Check and assess their work individually.	Write Well
☞ Let the students look up the meanings of the given words. Also, let them write the sentences. Then, do the exercise on the blackboard and let the students check their work in pairs.	Dictionary Skills
☞ Exercise A: Give the students sufficient time and guide them on how to get the information required to do the project. Then let them do it on their own. Guide them, if required. It is advisable to check and assess their work individually. ☞ Exercise A: Make sure the students have the required material to make the chart. They can use newspapers, magazines and the Internet to find out more about the Indian astronauts.	Project Work/AIL Activity
☞ Explain why developing and nurturing scientific temper is important, both for individuals and for nations. Having the right temperament leads to a progressive outlook in life. ☞ Exercise A: Read the points and let the students take turns reading them so that they are clear what they mean. Explain in case of doubt or if more elaboration is needed.	Values and Life Skills