

LESSON NO. 25



RIDE ON A SPACE CRAFT

During the day time, if we look at the sky with just our eyes, we can see the sun and the clouds. Sometimes a faint moon, aeroplane, birds, kites, etc. are also seen. During a clear night we can see usually the moon and the stars, etc. If you look at the clear nights frequently, you might recognise even a planet by its motion. Stars and planets are different things. All the planets circle the sun like the Earth. The stars are farther away from the planets. Most of the stars are large, hot, bright and shine like the sun.

Do you know what is Earth's atmosphere ?

In simple words, Earth's atmosphere is the mixture of gases that surrounds the Earth. It is difficult to say where the Earth's atmosphere begins. The Earth's atmosphere simply becomes thinner and thinner with the increasing of distance from the Earth's surface. Generally, the conditions of space begin at about 13,700 metre (45, 000 feet) above the Earth's surface. Above this level, human beings need scaled, pressurized suits or cabin for breathing. Everything becomes weightlessness.

Human beings explore the space for knowing more about the Earth, the solar system, the universe beyond and more and more. One of the most important reasons for space travel or mission is our own curiosity. They have always wanted to travel to distant planets and space. With the advancement of science and technology mankind has succeeded in doing so.

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A number of space missions have been made for different purposes by different countries.

What things can you see at the sky with just your eyes during day time?

What is space ?

Why do men explore the space ?

On the 29th of July, 1969, the American Astronaut, Neil Armstrong stepped onto the surface of the moon. A few minutes later he was joined by astronaut Edwin E. Aldrin Jr. A third astronaut, Michael Collins, remained in the orbit above them in the command module “**Columbia**” of Apollo- 11 spacecraft.

He was the first person to set foot on the moon.

Name the astronaut who first landed on the moon?

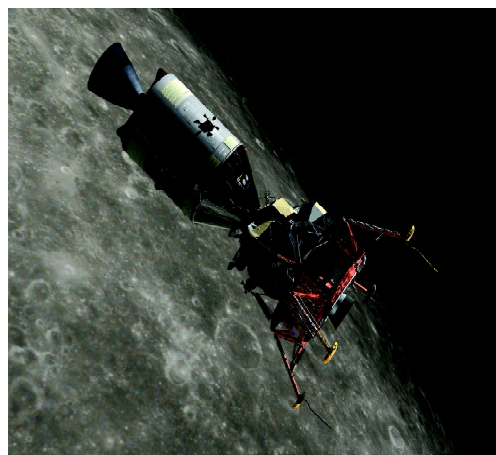
Who is Michael Collins?



Armstrong



Aldrin



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Since the Apollo 11 mission, human beings have performed a number of space missions. Unmanned spacecrafts have landed on the moon, Venus, Mars and Eros. Such missions have benefitted a lot to human kind.

Squadron Leader Rakesh Sharma of the Indian Air Force was the first Indian to fly into the space. He was born on the 13th January, 1949 in Patiala in Punjab. He flew into the space in 1984 as a part of a joint programme between the Indian Space Research Organization (ISRO) and the Soviet Intercosmos Space Programme. He spent 8 days in the space.



Rakesh Sharma in his space suit

While he was in the space, the then Indian Prime Minister, Indira Gandhi asked Rakesh Sharma how India is seen from the space.

“The reply was Saare Jahan se Achha”.

Imagine yourself that you are flying in a spacecraft, away from the Earth’s atmosphere. If your Prime Minister asked you about what you see from there, what would be your answer ?

Briefly relate the story of Rakesh Sharma’s space mission.

Who said “ Saare Jahan Se Achha” to whom from the space ?

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Rakesh Sharma was awarded “Hero of Soviet union” on his return from the space. And the Government of India honoured him by awarding “Ashok Chakra’. He retired as a wing commander.

What is Ashok Chakra?

Kalpana Chawla was the first Indian woman landed in the space. She was an Indian born– American Astronaut. She was also an specialist in space shuttle mission. She was killed along with 5 other crew members of the Columbian space Shuttle STS–107 when it exploded after its re-entry into the Earth’s atmosphere on the 1st February, 2003.



Kalpana in her space suit

Kalpana Chawla was born on the 1st July, 1961 at Karnal in Haryana. She got aeronautical engineering degree from the Punjab Engineering College in 1982. After that Kalpana moved to the United States of America and got a master’s degree in Aerospace engineering from the University of Texas in 1984. In 1988, she got her doctorate degree in Aerospace engineering from the University of Colorado. In the same year she joined the NASA (National Aeronautics and Space Administration).

Kalpana Chawla became a naturalized citizen of the United States of America and married Jean-Pierre Harrison, a flying Instructor. Kalpana also got Flying instructor’s licence and Commercial Pilot’s Licence.



Kalpana Chawla in the

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Kalpana entered NASA's astronaut programme in 1994 and she was selected for space flight in 1996. Her first flight mission to space began on the 19th November, 1997 as a part of the 6 - astronaut crew that flew the space shuttle - Columbia Flight STS- 87.

On her first mission, Kalpana Chawla travelled over 6.5 million miles in 252 orbits of the Earth and stayed more than 375 hours in space.

State the achievements of Kalpana Chawla.

What is the full form of the NASA ?

Sunita Williams was born on the 19th September, 1965 in Euclid, Ohio. She was a NASA astronaut. Sunita was assigned to the International Space Station as a member of the Expedition- 14 and then joined the Expedition- 15. She is the second woman of Indian origin to have been selected for a space mission after Kalpana Chawla. Sunita Williams holds some records for female space travellers. Her records are the longest space flight - 195 days, number of space walks - 29 hours and 17 minutes. Sunita Williams returned on the 23 rd June, 2007 after her successful space mission.



Sunita Williams

ACTIVITY

1. *Mention briefly the space mission of Sunita Williams.*
2. *Visit a planetarium. Share your experience in the class room.*