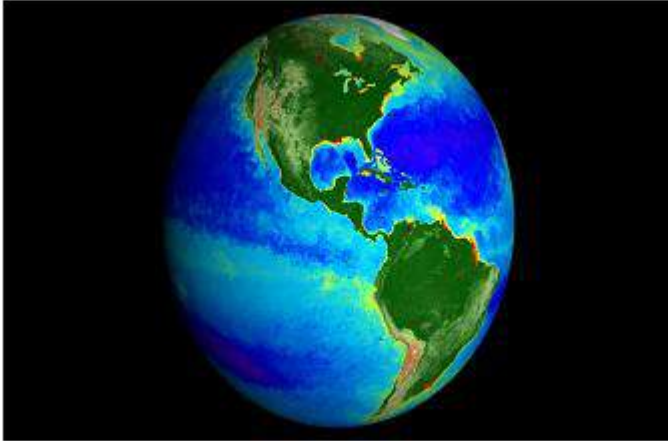


## STRAIGHT FROM THE HEART

**Q1. What do you think the earth looks like? Make a drawing of the earth in your notebook.**

**Answer:** The earth looks like a sphere in shape. Here is the picture of earth:



## WHAT DO YOU THINK

**Q1. If the earth is round like a globe, how is it that we do not fall off?**

**Answer:** Due to the gravitational pull from the earth towards itself that is why we won't fall down.

**Q2. Do the people in Argentina stand upside down?**

**Answer:** No they don't stand upside down. There is no concept like standing upwards or downwards, everything is relative.

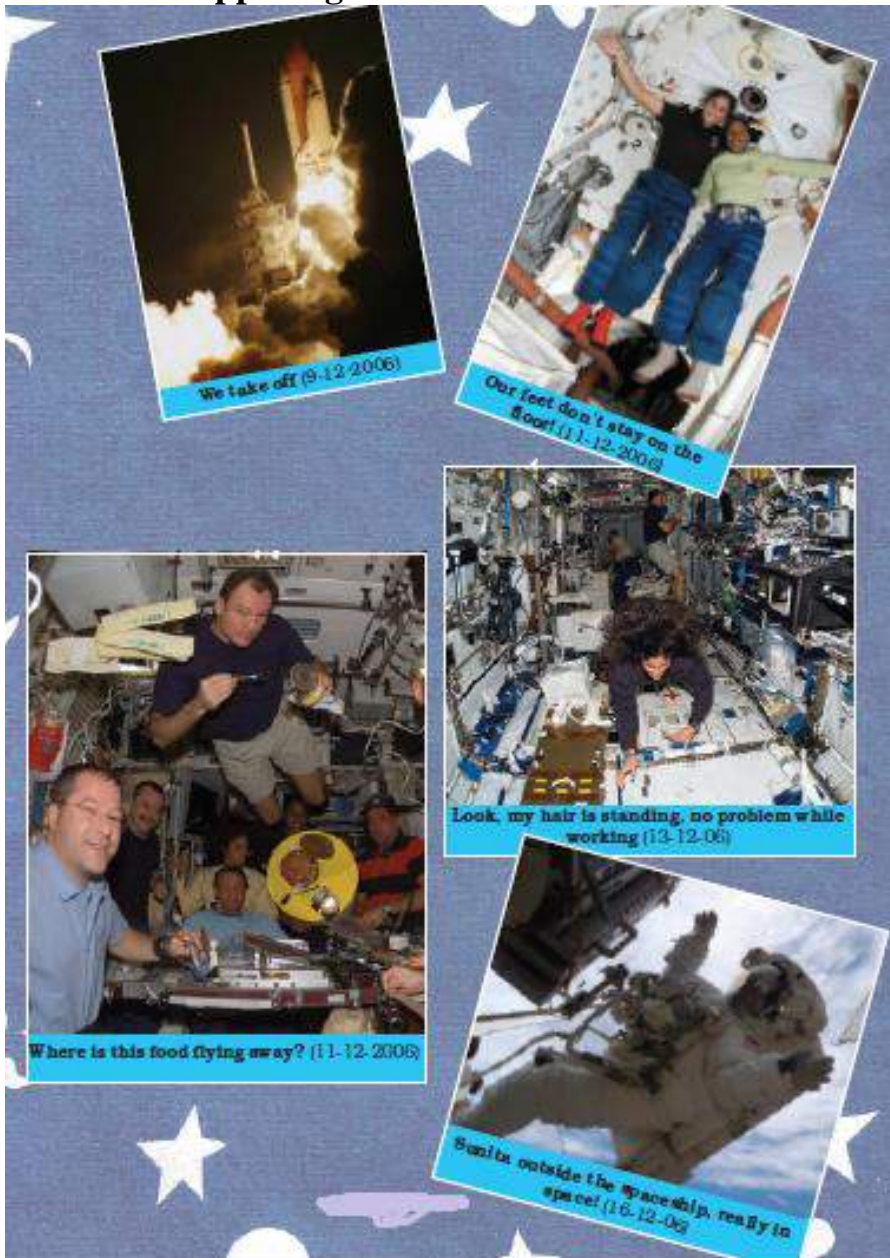
## LOOK AT THE PHOTOGRAPH AND WRITE



**Q1. Can you think why Sunita's hair was standing?**

**Answer:** Sunita's hair was standing because she was in space and there is zero gravity which makes everything float.

**Q2. Look at Sunita's photographs and the dates written on each of them. Write what all is happening and when?**



**Answer:**

Date	Event
09-12-2006	The spacecraft is taking off
11-12-2006	Astronauts are floating inside the

	spacecraft
11-12-2006	Astronauts are having food
13-12-2006	Sunita is in her work mode
16-12-2006	Sunita is roaming outside the spacecraft

## CLASSROOM BECOMES A SPACESHIP

**Q1. Close your eyes. Imagine that your class is a spaceship. Zooo...m – in 10 minutes you have entered in space. Your spaceship is now going around the earth. Now say:**

**- Are you able to sit at one place?**

**Answer:** No I am not able to sit in one place, everyone seems floating inside the spacecraft.

**- What about your hair?**

**Answer:** My hair too seems standing up.

**- Oh, look ... where are your bags and books going?**

**Answer:** My books and bags are floating inside the spacecraft.

**- And what is your teacher doing? Where is her chalk?**

**Answer:** My teacher too is floating inside the spacecraft and trying to catch the chalk which is also floating.

**- How did you eat your food during the break? How did you drink water? What happened to the ball that you threw up?**

**Answer:** To eat our food we had to grab the food items and have. The water was in the form of blobs we had to suck them in. The ball which we threw up was also floating.

## ISN'T IT AMAZING?

**Q1. Can you now say why Sunita's hair kept standing?**

**Answer:** Due to the zero gravity in the space Sunita's hair kept standing.

**Q2. Think why water flows downwards on any slope. On mountains too water flows downwards, not upwards.**

**Answer:** The earth has the gravitational force, due to the earth's gravitational force the water flows down the mountain.

## MAGIC 1 – A TINY PAPER RACES A COIN

**Q1. Take a 5 rupee coin and a small piece of paper. The paper should be about one-fourth the size of the coin.**

**- Hold the coin in one hand and the paper in the other. Drop them at the same time.**

**What happened?**

**- Now place the tiny paper on the coin and drop them. What happened this time?**

**Surprised!**

**Answer:** When dropping the coin in one hand and the paper in the other, the coin reaches the ground faster than the paper.

When placing the tiny paper on the coin and dropping them together, both reaches the ground at the same time.

## MAGIC 2 – A MOUSE LIFTS AN ELEPHANT

**Q1. To play this you will need a small stone, a bigger stone (lemon-sized), a thick roll of paper (which can be made with layers of papers), mouse and an elephant made of paper.**

**- Take a string about 2 feet long.**

**- At one end of the string tie the small stone. Stick or tie the mouse to the stone.**

**- Put the string into the roll of paper.**

**- At the other end of the string tie the bigger stone and stick the elephant.**

**- Hold the roll of paper and move your hand to rotate the small stone.**

**- Who is pulling whom? You will be surprised! The mouse lifts the elephant!**

**How did this magic happen?**

**Answer:** When the small stone i.e., the mouse rotates, it creates a force due to which the bigger stone i.e., the elephant is being pulled up.

## LOOK AT THIS PHOTOGRAPH AT TELL





**Q1. Can you see India?**

**Answer:** Yes I can see India on the globe.

**Q2. Can you recognize any other place?**

**Answer:** Yes I can recognize Sri Lanka on the globe.

**Q3. Where is the sea?**

**Answer:** Blue colour on the globe indicates water.

**Q4. Do you find anything similar between the globe and this picture of the earth? In what ways are they different?**

**Answer:** Similarities between the globe and the earth is that, we can identify which part is land and which part is sea. But it is difficult to identify a particular country or a city in the globe.

**Q5. Do you think Sunita could make out Pakistan, Nepal and Burma separately, when she saw the earth from space?**

**Answer:** No it is difficult to identify these countries, since no particular country can be visible from space.

## LOOK AT THE GLOBE IN YOUR SCHOOL AND TELL



**Q1. Can you find India?**

**Answer:** Yes we can easily find India.

**Q2. Where all do you find the sea?**

**Answer:** The blue coloured part is the sea.

**Q3. Which countries can you see?**

**Answer:** I can see all the countries like India, USA, Australia, South Africa, China, Germany, Europe etc.

**Q4. Can you see some of the countries with which India plays cricket matches? For example: England, Australia, Pakistan, Bangladesh and South Africa.**

**Answer:** Yes I can see all these countries.

**Q5. What else can you see on the globe?**

**Answer:** Apart from sea and countries, I can see islands, mountains etc. on the globe.

## LOOK AT THE MAP OF YOUR COUNTRY AND TELL

**Q1. Can you find the state in which you live? Write its name on the map.**

**Answer:** Yes I can find Karnataka the place I live in.

**Q2. Which are the states next to the state you live in?**

**Answer:** The states next to Karnataka are Maharashtra, Telangana, Andhra Pradesh, Tamil Nadu, Kerala and Goa.

**Q3. Have you been to any other state?**

**Answer:** Yes, I had been to Maharashtra, Telangana, Andhra Pradesh, Tamil Nadu states.

**Q4. Shahmir thinks that there are lines drawn on the ground between the states.**

**What do you think?**

**Answer:** I think these lines are just on the map and not in real.

## LOOK AT THE SKY

**Q1. Why don't you try to do the same with a coin? How many centimeters away from the eye did you keep the coin to hide the moon?**

**Answer:** To hide the moon completely we have to keep the coin at a distance of 25 centimeters away from the eye.




## THINK

**Q1. Do you think the moon is flat like the coin or round like a ball?**

**Answer:** I think the moon is round like a ball.

**Q2. Look at the moon tonight and draw what it looks like. Look and draw again after one week, and then after 15 days.**

**Answer:**

Today's Date	Date after a week	Date after 15 days
1-2-2020  WAXING CRESCENT	8-2-2020  FULL MOON	16-2-2020  LAST QUARTER

Here are the phases of moon:



### FIND OUT

**Q1. When is the next full moon? At what time will the moon rise on this day? What does the moon look like on this day? Draw it.**

**Answer:** Next full moon is on 8<sup>th</sup> of this month. It rises just after the sun sets. The moon looks like complete white circle.



**Q2. What are the festivals related to the moon?**

**Answer:** Festivals related to full moon are, Karwa Chauth, Holi, Eid etc.



**Q3. At night look at the sky carefully for 5 minutes.**

– What could you see?

**Answer:** At night I could see the moon and the stars.

– Did you see anything moving in the sky? What do you think it could be? A star or a shooting star or a satellite (satellites are used for the TV, telephones and for weather reports). Find out more about this.

**Answer:** Yes I saw something moving in the sky, may be it could be a shooting star since it crosses of faster. In case if it would be satellite, it would move very slowly.

### LOOK AT THE TABLE AND TELL

**Q1. Given below are the times at which the moon rises and sets in Delhi (on the given days).**

Date	Time of moonrise (hours : minutes)	Time of moonset (hours : minutes)
28.10.2007	19 : 16	08 : 50
29.10.2007	20 : 17	10 : 03
30.10.2007	21 : 22	11 : 08
31.10.2007	22 : 29	12 : 03

- On 28 October the moon came out at \_\_\_ minutes past \_\_\_ o'clock.

- On 29 October the moon came out at \_\_\_ minutes past \_\_\_ o'clock.

- On 29 October there was a difference of \_\_\_ hours and \_\_\_ minutes in the time of the moon rise (as compared to 28 October).

**Answer:**

- On 28 October the moon came out at 16 minutes past 7 o'clock.

- On 29 October the moon came out at 17 minutes past 8 o'clock.

- On 29 October there was a difference of 1 hour and 1 minute in the time of the moon rise (as compared to 28 October).

**Q2. If you saw the moon rising at 7 pm today, would you see it at the same time tomorrow?**

**Answer:** No the moon rises on different timings on different days.

**Q3. On 31 October the time of setting of the moon is given as 12:03. Have you ever seen the moon at 12 in the afternoon? Why don't we easily see the moon or stars during the day?**

**Answer:** No I have not seen the moon at 12 in the afternoon. Due to the sunlight during the day dominates, hence we cannot see the moon or stars during the day.

### AN INTERESTING PHOTOGRAPH!



**A spaceship went to the moon. This photograph of the earth was clicked from the surface of the moon. See how the earth is looking. Can you see the surface of the moon? Do you have some questions after looking at this picture? Write down those questions and discuss them in the class.**

**Answer:** Yes I can see the surface of the moon is clearly visible. There are a few question running in my mind:

- Who clicked this picture?
- How could they land on the moon?
- How was there experience seeing the earth from moon?
- Does water or air exists on the moon?

### WHAT WE HAVE LEARNT

**Q1. Why do children always slide down the slide and not slide up? If this slide were there in Sunita's spacecraft, would children slide like this? Why?**

**Answer:** Due to the gravitational force by the earth usually children slide down and cannot slide up. If this slide was at Sunita's spacecraft then children would not enjoy since there is zero gravity and children cannot slide instead they would float.

**Q2. Why do we see stars mostly at night?**

**Answer:** We see stars only at night because there is no sunlight at night.

**Q3. Looking at earth from the space, Sunita said, “Different countries cannot be seen as separate from here. These lines are on paper. They are made by us.” What do you understand by this?**

**Answer:** Humans have created the boundary lines indeed it's not for the nature. So from the space we cannot identify a particular country or a city, just for human understanding they have drawn the lines and separated the countries.

