

## 8. Our Universe

### Let us assess

#### 1. Question

We determine asterism based on the stars seen in the background of the moon.

- What is meant by the word 'asterism'?
- In a calendar, 27 December is recorded as Thiruvathira. What does it mean?

#### Answer

(a) The time taken by the moon to move  $\frac{1}{27^{\text{th}}}$  of its path of revolution is called asterism. It is a star pattern that may be contained within a single constellation or consists of stars belonging to different constellation.

For example: The Big and Little Dippers

(b) Thiruvathira is a star.

#### 2. Question

What is a zodiac? How many days does the sun take to pass a zodiac?

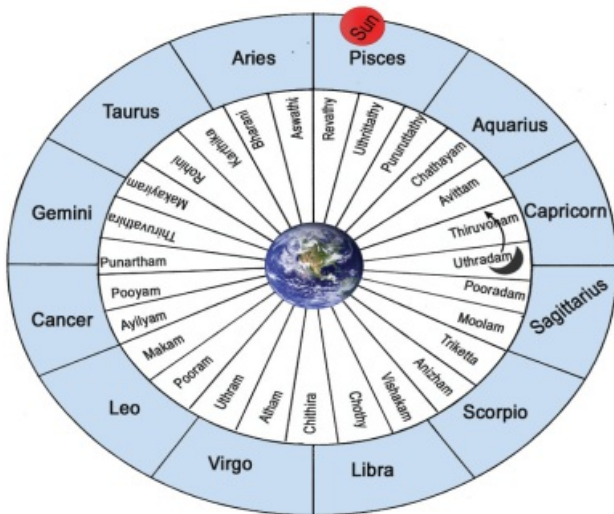
#### Answer

The zodiac is an area of the sky that extends approximately  $8^{\circ}$  north or south of the ecliptic, the apparent path of the Sun across the celestial sphere over the course of the year.

There are total 12 divisions of zodiacs:

Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricorn, Aquarius, Pisces

Sun takes almost 30 days to pass a zodiac sign.



#### 3. Question

Which are the areas where artificial satellites are used?

#### Answer

The areas where artificial satellites are used:

- Communication
- Fisheries wealth (Agriculture)
- Defence
- Natural Resources
- Weather Forecasts

- Forest Wetlands
- Transports (Air, Water, Land)
- Space Research

## Extended activities

### 2. Question

Prepare a paper on the achievements India has made in the field of space science and present it in the class.

### Answer

- In 1975, Aryabhata was launched by India. It was India's first satellite into space.
- On 15th February 2017, ISRO managed to create a world record of launching 104 satellites by using the Polar Satellite Launch Vehicle in a single mission! Out of 104, 101 were foreign satellites. The launch included India's own earth observation satellite Cartosat-2 series.
- In 1983, ISRO launched Indian National Satellite System which helped them in the field of telecommunications, meteorology, broadcasting along with the rescue operations.
- India is the first country to be able to reach Mars in the very first attempt made. The budget for Mars Orbiter Mission (Mangalyaan) was approx 450 crores which makes it the least expensive mission to Mars in 2014.
- In 2014, GSLV-MK3 was launched by ISRO in December which carried three astronauts to space. This could carry approx four tonnes of load.
- 22nd October 2008 marked the launch of a lunar mission. The mission's aim was to understand the chemical characteristics and topography of Moon. Chandrayaan even managed to hoist the Indian flag on the moon.
- In 2015, ISRO launched 1440 kg of the load which marked the heaviest commercial mission.
- Built at a low cost of 95 crores, the Reusable Launch Vehicle by ISRO was meant to reduce the cost of satellites by reusing the space shuttles.
- Indian Regional Navigation Satellite System consisted of a group of seven satellites which aimed to build India's own navigation system.

### 3. Question

Look at the address written by a boy.

..... Name  
 ..... Class, Division  
 ..... Name of School  
 ..... Sub District  
 ..... Education District  
 ..... District Kerala

India Asia The earth Solar system Milky Way The Universe

..... ?

Each of you try to write which part of the universe it would be. Discuss your position in the whole universe.

### Answer

- Riya Saini
- 12<sup>th</sup> A
- Kendriya Vidyalaya
- Sama

- Vadodara
- Gujarat
- India
- Asia
- The Earth
- The Solar System
- Milky Way Galaxy
- The Universe

(\* You are advised to use your own name and locations. This is just an example)

#### **4. Question**

"My earth, Our earth, I will not take part in any activity to pollute it."

Find more such slogans and popularize them.

#### **Answer**

- a) "Celebrate earth day every day as living is impossible without earth."
- b) "Earth is our home and we are living in very dirty home. Join together to make it clean and safe."
- c) "Those who put themselves before nature will always fall."
- d) "Some things never leave. Go Green, Go Clean!"
- e) "Without earth no birth!"