

# Chapter 1: Our Earth and Our Solar System

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## CAN YOU TELL ? [PAGE 3]

### Can you tell ? | Q 1 | Page 3

**Look at the picture of the solar system and answer the following question.**

Which planet is nearest to the sun?

## SOLUTION

Mercury.

### Can you tell ? | Q 2 | Page 3

**Look at the picture of the solar system and answer the following question.**

At what position is the earth from the sun?

## SOLUTION

The earth from the sun is at the third position.

### Can you tell ? | Q 3 | Page 3

**Look at the picture of the solar system and answer the following question.**

Which planet is placed between the earth and Mercury?

## SOLUTION

Venus.

### Can you tell ? | Q 4 | Page 3

**Look at the picture of the solar system and answer the following question.**

Name the planets beyond the orbit of Mars in serial order.

## SOLUTION

- Jupiter
- Saturn
- Uranus
- Neptune

### Can you tell ? | Q 5 | Page 3

**Look at the picture of the solar system and answer the following question.**

Which planet is furthest from the sun?

## SOLUTION

Neptune.

## CAN YOU TELL ? [PAGE 3]

### Can you Tell ? | Q 1 | Page 3

**In which direction do these things fall?**

Leaves, flowers, fruits from a tree.

#### SOLUTION

Due to the force of gravity. all the things fall towards the earth's surface.

### Can you Tell ? | Q 2 | Page 3

**In which direction do these things fall?**

Rocks that come loose from a hillside.

#### SOLUTION

Due to the force of gravity. all the things fall towards the earth's surface.

### Can you Tell ? | Q 3 | Page 3

**In which direction do these things fall?**

Rain falling from the sky.

#### SOLUTION

Due to the force of gravity. all the things fall towards the earth's surface.

## EXERCISES [PAGE 5]

### Exercises | Q 1 | Page 5

What's the solution?

One of the asteroids has fallen out of its place in the asteroid belt and is hurtling towards the sun. Our earth is in its way and there is all likelihood of a collision. What can be done to prevent this collision?

#### SOLUTION

The first act to save the earth can be attacking the asteroid with the help of missile. A missile can break an asteroid into smaller pieces. The second way is to change the path of an advancing asteroid. For changing the path of the asteroid, spaceship or missile can be used to push the asteroid aside. Space shuttle fitted with mirrors can be used. so that the reflected sunrays from such mirror can be bombarded on the asteroid. This will create the pressure on the asteroid and its advancing path can be changed.

By use of laser rays. the surface of asteroid can be subjected to evaporation. This will create change in the mass of asteroid. We can also send extra material on the asteroid from the earth. Such change in the mass of asteroid changes the orbit and the path of the asteroid. By placing a space shuttle in vicinity of this asteroid, the gravitational force could be created. This can also change the speed and path of the asteroid. Astronomy and astrophysics are so much advanced now that even if such threat exists in future, we can easily protect our earth inhabitants well in advance.

### Exercises | Q 2. (1) | Page 5

#### Use your brain power!

What will happen to our solar system if the sun were to suddenly disappear?

#### **SOLUTION**

#### **If the sun suddenly disappears-**

1. There would be darkness everywhere.
2. All the plants will die as they will not be able to perform photosynthesis.
3. All the planets would stop revolving.
4. The cycle of day and night would come to a halt.
5. There will not be weeks or months any more.
6. There will be uniformly only one season, seasonal changes will come to an end.
7. All the equipment which work on solar energy will not work anymore.
8. There will not be any heat and the entire earth will be cold.
9. The water cycle would stop as the water bodies will not evaporate forming water vapour and then clouds, and thus there will be no rains.
10. Germs would grow at a rapid pace everywhere on the earth and this will result into outbreak of many diseases.

### Exercises | Q 2. (2) | Page 5

#### Use your brain power!

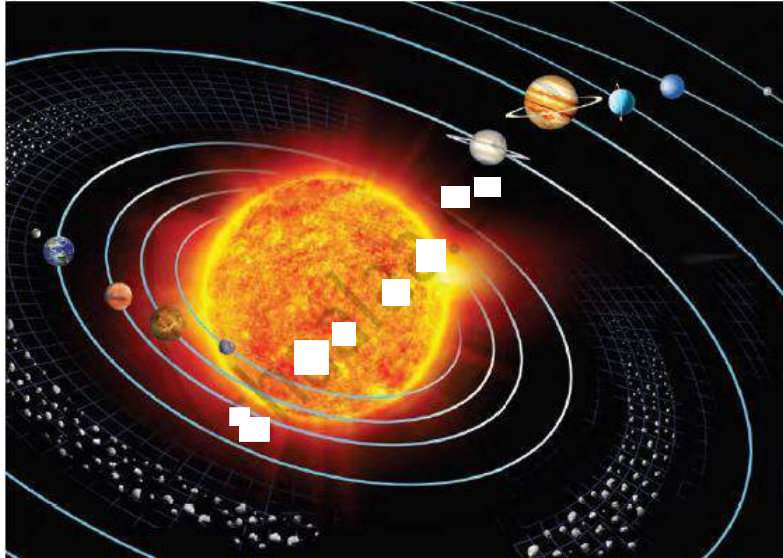
Suppose you want to give your address to a friend you have on the planet Mars. How will you write your address if you want them to understand exactly where you live?

#### **SOLUTION**

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Naveen, Babubagwe Road,  
Malad (West), Mumbai-400 095,  
State of Maharashtra, India. Continent of Asia, Earth. (3rd planet) Solar system, Milky way.

### Exercises | Q 3 | Page 5

In the picture below, correct the sequence of the planets from the sun.



### **SOLUTION**

In the above picture Mars and Earth's positions are interchanged. Similarly, the sequence of Jupiter and Saturn is also changed. Therefore, the wrong sequence in the picture is Mercury, Venus, Mars, Earth, Saturn, Jupiter, Uranus and Neptune. The correct sequence should be: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.

### **Exercises | Q 4. (a) | Page 5**

**Who am I?**

You can see me from the earth but the lighted part of me that you see changes every day.

### **SOLUTION**

You can see me from the earth but the lighted part of me that you see changes every day. - **Moon**

### **Exercises | Q 4. (b) | Page 5**

**Who am I?**

I have my own light. It is only from me that the planets get light and heat.

### **SOLUTION**

I have my own light. It is only from me that the planets get light and heat. - **Sun**

### **Exercises | Q 4. (c) | Page 5**

**Who am I?**

I turn around myself, around a planet and also around a star.

### **SOLUTION**

I turn around myself, around a planet and also around a star. - **Satellite**

**Exercises | Q 4. (d) | Page 5**

**Who am I?**

I turn around myself and revolve around the sun.

**SOLUTION**

I turn around myself and revolve around the sun. - **Planet**

**Exercises | Q 4. (e) | Page 5**

**Who am I?**

No other planet has a living world like mine.

**SOLUTION**

No other planet has a living world like mine. - **Earth**

**Exercises | Q 4. (f) | Page 5**

**Who am I?**

I am the nearest star to the earth.

**SOLUTION**

I am the nearest star to the earth. - **Sun**

**Exercises | Q 5. (a) | Page 5**

For what purpose are rockets used in space travel?

**SOLUTION**

Space launch technology is used to send the spacecraft in outer space against the force of gravity. It requires tremendous amount of energy to launch the spacecraft which is thousands of tons in weight. This energy is obtained through burning of ample quantity of fuel present in the rocket. Thus rockets are used to launch the spacecraft in space travel.

**Exercises | Q 5. (b) | Page 5**

What information do man-made satellites provide?

**SOLUTION**

Man-made satellites provide useful information on agriculture, environment, weather forecasting, searching for water and minerals from the earth. Such information can be used to make maps. Man-made satellites are also used for telecommunications.