**11th May, 2020 JESUS AND MARY SCHOOL & COLLEGE MODULE 1**

**CLASS – 9**

**GEOGRAPHY**

**The Earth as a planet**

**Topic 1- The earth: A Unique planet**

**Note – Read the following explanation and answer the questions on them.**

The earth is one of the eight planets revolving around the sun. The earth is the third planet away from the Sun, Mercury and Venus being the first and second planet from the sun. it is situated at a distance of about 150 million kilometers from the sun. The orbit of the earth around the sun lies between those of Venus and Mars.

**Earth a unique planet in the solar system**:

* It is the only planet having life on it.
* It is a home to a large variety of life forms ranging from microscopic plants and animal organisms to the largest of trees and animals.
* It is the planet which has atmosphere. The living organisms inhabit not only the solid crust of the earth but also they live in the oceans and atmosphere. In this chapter we shall study the shape and size of the earth and the conditions which are favourable. For the evolution of life on earth.

**SHAPE OF THE EARTH**

In the olden days it was believed that the earth is flat. Due to this belief the sailors were afraid of travelling to far-off places thinking that they would slip into the bottomless ocean from the edge of the earth. The belief about the flat shape of the earth was changed through the work of ancient scholars like Pythagoras, Aristotle, Ptolemy, Aryabhatta and Copernicus. Pythagoras is believed to have been the first to hypothesize that the shape of the earth is spherical. With the assumption of its spherical shape, Columbus, an Italian sailor, was the first practical person to accept the idea of earth’s spherical shape: Eratosthenes calculated the correct circumference of the earth.

**Statistical data of the earth**

* Age- 4550 million years
* Weight- 6000 billion tones
* Equatorial diameters-12756km
* Equatorial circumference-40076km
* Average temperature-17**°C**
* Rotation period- 23hours 56min, 4.09 seconds
* Revolution period- 365 days 6 hours

**WORKSHEET**

Q1. How many planets are there in our solar system?

Q2. What is the third planet from the sun?

Q3. What is the distance between the earth and the sun?

Q4. Which planet is the nearest to the sun?

Q5. Which planet is nearest to the earth?

Q6. Is sun a planet or a star? Why?

Q7. Which is the only planet having life on it?

Q8. Name any two ancient scholars.

Q9. What is the rotation period of the earth?

Q10. Mention any three important features of the earth that make it a planet suitable for life.

Q11. What is the shape of the earth?

**Topic-2 The Earth’s atmosphere**

The Earth’s atmosphere is a layer of gases surrounding the planet earth and retained by the earth’s gravity. It contains roughly 78.08% .nitrogen, 20.95% oxygen, 0.93% argon, 0.038% carbon dioxide and trace amounts of other gasses. It has a variable amount (average 1%) of water vapour too. This mixture of gases is commonly known as air. The atmosphere protects life on Earth by absorbing ultraviolet solar radiation and reducing the temperature extremes between day and night.

**Importance of atmosphere**

The atmosphere also acts as a protective layer around the earth keeping temperature variations between day and night withina tolerable range. It also absorbs the harm full ultraviolet radiation coming from the sun. The atmosphere of the earth absorbs the terrestrial radiation emitted by the earth during the day and thus keeps the earth warm during night.

Nitrogen helps in keeping the atmosphere cool and it is also one of the most important nutrients needed by plants. Carbon dioxide is also necessary for plant life on the earth. Presence of all these elements in the earth’s atmosphere has made evolution of life possible here.

**WORKSHEET**

Q1. What is the importance of the atmosphere of the earth?

Q2. What is the atmosphere made of?

Q3. Which gas has least percentage in air?

Q4. What is the importance of nitrogen?

Q5. What is the composition and structure of atmosphere?

Q6. Name any one variable composition of the atmosphere.

Q7. What is called air?

Q.8 Draw a pie chart using the following data.

1. Nitrogen - 78%
2. Oxygen - 21%
3. Argon - 0.93%
4. Carbon dioxide – 0.03%
5. Other gases - 0.04%

**Topic 3 Biosphere**

The physical environment of the earth is made up of three important realms-the atmosphere, hydrosphere and lithosphere. These three realms meet in a narrow zone called biosphere. Biosphere makes earth a unique planet in the solar system. All living beings on the earth need energy to live. The most important continuous source of energy in the biosphere is the sun. On the average the earth receives about 2g. Calorie of energy per sq. cm. per minute. This amount is equivalent to about 500 million tons of coal. The plants take the energy of the sun to synthesize food through photosynthesis. Photosynthetic plants can thus meet their energy requirements themselves. Therefore, they are called primary producers or autotrophs. Most of the animals, on the other hand, have to depend upon either plants or other animals for their energy supply. They are, therefore, called consumers or heterotrophs. The animals which consume plant material to meet their energy requirements are called primary consumers or herbivores. The animals consuming herbivorous animals to obtain energy are called secondary consumers or carnivores. All organisms in the biosphere are linked together through food chains. Food chains are thus a means of energy flow in the biosphere. Through these linkages the energy synthesized by plants is passed on to the herbivores which in turn, they pass it on to the carnivores. Upon their death carnivores become food for decomposers. This flow of energy is the basis of maintenance of life in the biosphere. Biosphere is often divided into smaller units called ecosystems.

**WORKSHEET**

Q1. What is meant by biosphere?

Q2. Give two examples of autotrophs.

Q3. Name three important realms of biosphere.

Q4. What are the examples of secondary consumers?

Q5. What animal is a primary consumer?

Q6. Define the following terms:

1. Herbivores
2. Carnivores
3. Primary producers
4. Primary consumers
5. Secondary consumers

Q7. Distinguish between the following.

1. Primary producers & Primary consumers
2. Primary consumers & Secondary consumers
3. Ecosystem & Biosphere

**Note: - Answer these questions in old copies which will be checked when the school re-opens.**

**Please consider it Important.**