



CLASS: V

Subject: Social Studies

Date: 22/06/2020

Topic: Solar and Lunar Eclipse

Time Limit: 30 Mins

Worksheet No. :14

[Copy the questions following the notes and solve them on a sheet of paper date wise. Keep the worksheets ready in a file to be submitted on the opening day.]

Whenever an opaque body comes between a source of light and another object, a shadow is cast across that object. For example, if you go outside and stand facing away from the Sun, you will notice that your body will cast a shadow across the ground. In the same way, heavenly bodies too cast shadows. Let us see what happens when the Moon casts a shadow on the Earth, or the Earth casts a shadow on the Moon.

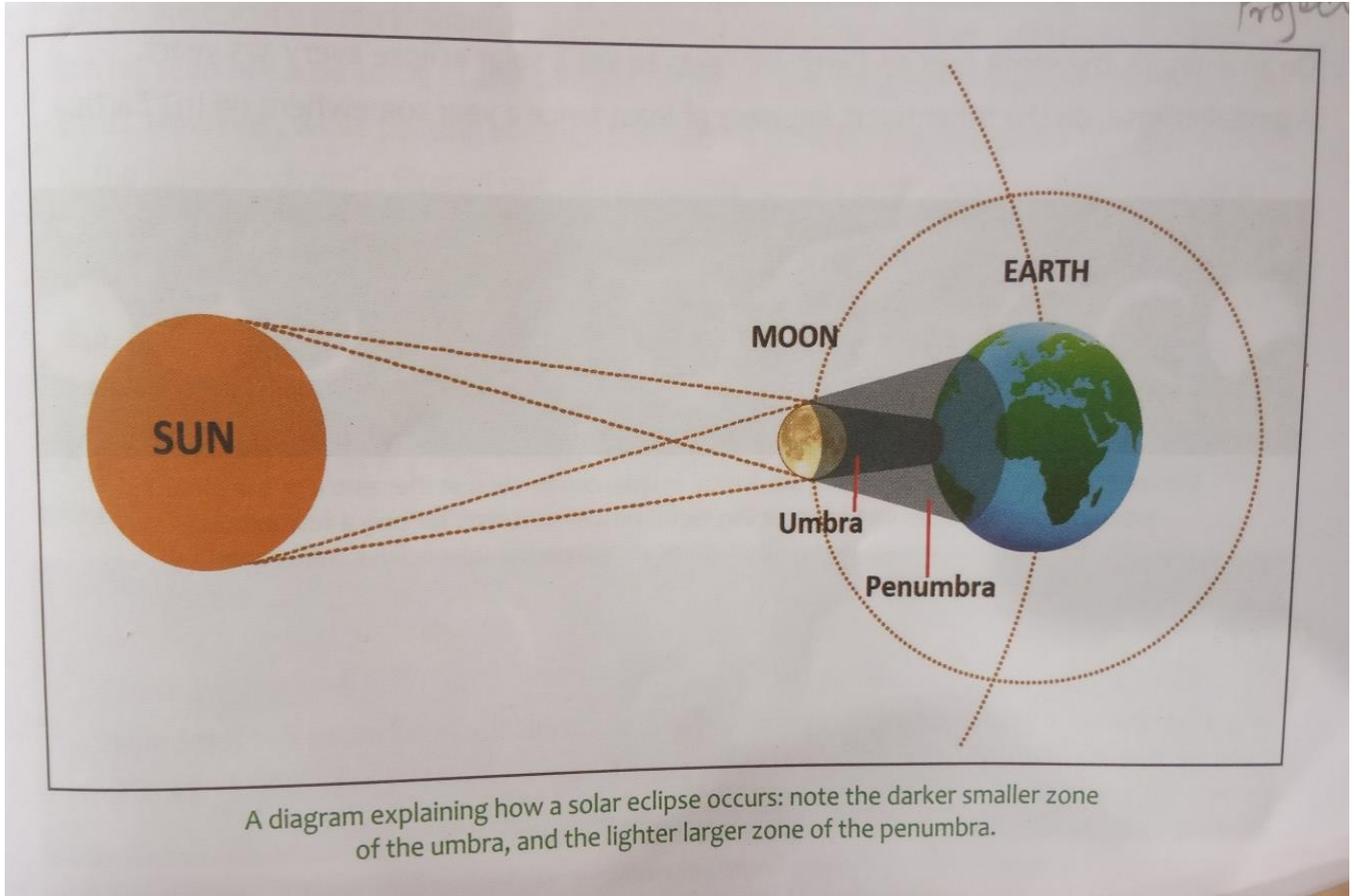
ECLIPSE

The Sun, as we know, is the source of light in the Solar System. The Moon and the Earth shine due to the reflected light of the Sun. When one heavenly body, like the Earth or the Moon, casts a shadow on another heavenly body by blocking the Sun's light from reaching it, **eclipse** is caused. There are two kinds of eclipses that we can see from the Earth – **solar eclipse** and **lunar eclipse**.

Solar Eclipse

When the Moon comes between the Sun and the Earth, it blocks out the light of the Sun, and casts a shadow on a part of the Earth, causing a **solar eclipse**. The shadow cast by the Moon on the Earth is of two types—a dark shadow, known as **umbra**; and a lighter one, known as **penumbra**. No light reaches the area covered by the umbra, while faint light reaches the area covered by the penumbra.

Solar eclipses can occur only when the Sun, the Moon and the Earth are placed in one straight line. This straight placement is rare, because, unlike the orbit of the Earth, the orbit of the Moon is tilted. Thus, the path of the Moon's orbit crosses the Earth's orbit only twice a year. Solar eclipses occur only during daylight.



Types of Solar eclipses

There are two types of solar eclipses.

- When the Sun is fully blocked or covered by the Moon, it is called a **total solar eclipse**. A total solar eclipse can only be seen from a small area on the Earth—the area which falls within the Moon's umbra. The Sun, the Moon and the Earth have to be in a perfectly straight line for this to happen. During a total eclipse, the sky becomes dark, as if night has fallen. But it lasts for just a few minutes.
- When only a part of the Sun is covered by the Moon, it is called a **partial solar eclipse**. A partial solar eclipse occurs in two ways. During a total solar eclipse, the parts of the Earth lying in the penumbra can see a partial solar eclipse. A partial eclipse also occurs when the Sun, the Moon and the Earth are not in a perfectly straight line, as a result of which the Moon only partly covers the Sun. During a partial eclipse, the sky darkens just a little.

A total solar eclipse is a rare occurrence because it is only once in a few years that the Sun, the Moon and the Earth get aligned into a perfectly straight line. Even when it does occur, a total solar eclipse can be witnessed by only a few people, because:

- The umbra covers a very small area on the Earth's surface, and very few places fall in its path
- You have to be on the side of the Earth experiencing daylight when the eclipse happens

On an average, the same spot on Earth only gets to see a solar eclipse every 375 years.

A partial eclipse, on the other hand, happens at least twice a year somewhere on the Earth.

ASSIGNMENT

Write True/False and rewrite the correct ones.

1. A solar eclipse occurs when the Sun passes between the Moon and the Earth.
2. Mani was able to see only a partial solar eclipse because his town fell in the path of the Moon's umbra.
3. During a total solar eclipse, the Sun, the Moon and the Earth all lie in a perfectly straight line.

Choose the correct option:

1. An object which is neither transparent nor clear is called:
 - a) a liquid
 - b) opaque
 - c) umbra
 - d) an eclipse
2. When one celestial body casts a shadow on another celestial body, it is known as:
 - a) an eclipse
 - b) an umbra
 - c) an axis
 - d) a rotation
3. During a solar eclipse, the shadow of the Moon covers:
 - a) a part of the Sun
 - b) a part of the Earth
 - c) the entire Sun
 - d) the entire Earth
4. The darker smaller zone of the shadow cast by a celestial object where no light reaches, is called the:
 - a) umbra
 - b) penumbra
 - c) opaque
 - d) dark zone

Answer the following:

1. What is an eclipse?
2. Draw and label the diagram of a solar eclipse.
3. Differentiate between a total and a partial solar eclipse.