

The Sun And Shadows

13

UNIT-VI : THE UNIVERSE



The **Sun** is a very big ball of fire. As it is very bright, we cannot look straight at it. It is made of hot glowing gases. It is millions of kilometers away from the Earth. It is about one million times bigger than the Earth. It looks small because it is quite far away. Without it there can be no life on Earth.

Plants need the Sun to make their food. We need the Sun for **heat** and **light**. We cannot live without the Sun. In the morning, the Sun **rises** in the **East**. In the evening the Sun **sets** in the **West**. After the Sun sets, there is **night**. Days are bright and warm. Nights are dark and cool.

SHADOWS



When light is obstructed by any object, a shadow is formed. Stand facing the Sun. You have stopped the Sun's light. Turn your back to the Sun. You see a dark figure on the Earth. This is your **shadow**.

It changes length according to your position before the Sun. Shadows are also formed by moonlight, candle-light and electric light.

Do You Know ?

The Sun will keep shining for at least another five billion years.

CHANGE IN SHADOWS

Shadows are long in the morning and evening. They are shorter at noon when the Sun is above our heads.



Morning time



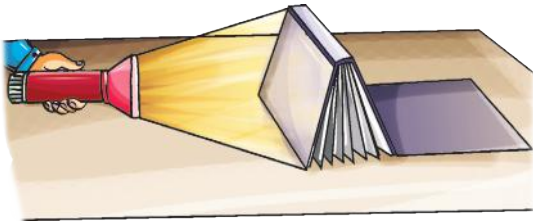
Noon time



Evening time

Test your Self

1. Sun is a hot ball of _____.
2. The sun rises in the _____.
3. Shadow are long in the _____ and _____.



DIRECTIONS OF THE SHADOWS

Keep a book standing on a table. Throw light from the right side. A shadow will be formed on the left side.

Now throw torch light from the left. The shadow is formed towards the right.

Thus the direction of the shadow is opposite to that of the light. The direction of the shadow is not always the same. The length of the shadow is also not always the same.

Activity

- **Ask your friend to trace your shadow in the morning.**
 1. Measure the length of the shadow.
 2. Ask the friend again to trace your shadow at noon.
 3. Measure it again.
- **What do you see?**
 1. How long was your shadow in the morning and how long was it at noon?
 2. You will see that your shadow in the morning is bigger than at noon.





Know the Keywords :

Shadow	:	Dark shape formed when an object blocks the light falling on it.
Heat and Light	:	Forms of energy.
Transparent	:	Objects through which light can pass easily.
Mid-day	:	Middle of the day.



Point to Remember

- The Sun is a big ball of fire and burning gases.
- The Sun is responsible for all the light on the Earth.
- A shadow is formed when something comes in the way of light.
- The size and shape of the shadow depends on the size and shape of the object.
- The shadow of an object is cast on the opposite side of the light.
- Shadows change in length and direction with the change of direction of light.

EXERCISE TIME

A. Multiple choice questions (MCQs).

Tick (✓) the correct option :

1. The sun is a hot ball of _____.

a. fire

☐

b. gases

☐

c. smoke

☐

2. The sun rises in the _____.

a. east

☐

b. north

☐

c. west

☐

3. The shadows are _____ in the morning.

a. smaller

☐

b. longer

☐

c. shorter

☐

4. Shadows are formed on the _____ side of light.

a. same

☐

b. opposite

☐

c. mid

☐

B. Tick (✓) the correct and cross (X) the incorrect ones :

1. The sunrise brings the night.

☐

2. Shadows are short in the morning.

☐

3. We all live on the Earth.

☐

4. The Earth is round like a ball.

☐

C. Fill in the blanks with the given words :

morning, heat, day, fire

1. The Sun is a big ball of _____.
2. Where there is sunlight on the Earth, there is _____.
3. The Sun lights and _____ the Earth.
4. Shadows are long in the _____.

D. Match the following :

- | | |
|-------------------|------------------------------|
| 1. The Sun rises | a. length and direction |
| 2. At noon | b. in the east |
| 3. The Sun sets | c. shortest shadow is formed |
| 4. Shadows change | d. in the west. |

E. Answer the following questions :

1. What is the Sun?

2. When is the shadow shortest under the Sun?

3. When is our shadow longest in the Sun?

4. Why does the size of the shadow change?



Creative Work

- Ask your parents to take you to a place near the sea shore. Take photos of the rising sun and the setting sun. Paste these pictures in your scrapbook and write a few lines about uses of the sun.
- Cut the given shapes. Arrange them in Sun-light and observe the shadows.
- Stand before a lamp and make different shadows.

