

NCERT Solution
Winds, Storms and Cyclones

Exercise

1. Fill the missing word in the blank spaces in the following statements:

- (a) Wind is _____ air.
- (b) Winds are generated due to _____ heating on the earth.
- (c) Near the earth's surface _____ air rises up whereas _____ air comes down.
- (d) Air moves from a region of _____ pressure to a region of _____ pressure.

Answer:

- (a) Wind is moving air.
- (b) Winds are generated due to uneven heating on the earth.
- (c) Near the earth's surface warm air rises up whereas cooler air comes down.
- (d) Air moves from a region of high pressure to a region of low pressure.

2. Suggest two methods to find out wind direction at a given place.

Answer:

Method 1:

We can find the wind direction using a Wind Vane or Weather Vane or Weather Cock. It consists of a flat metallic sheet generally cut into shape of a cock or arrow which is mounted on disk and free to move around a axial shaft and point in the direction of wind . They are typically used as an architectural ornament to the highest point of a building.

Method 2: We can find the direction of light wind using smoke from Incense stick i.e. agarbatties. The direction of smoke will indicate the wind direction.

3. State two experiences that made you think that air exerts pressure.

(other than those given in the text).

Answer:

1. Pumping the air into cycle: We use air pump to fill the air into cycle tyres. In pumping, air inside the pump cylinder get pressed by the moving the piston down and subsequently forced

inside the cycle tyre tube through a valve. If we just close the outlet of pump with a finger, then it is very difficult to move the piston rod further down to other end as pressed air has no place to go and exert pressure on the piston thus preventing its further down movement.

2. Filling air in a football: A football filled fully with air takes shape of a sphere which is very difficult to press and can even support the weight of a player.

4. You want to buy a house. Would you like to buy a house having windows but no ventilators? Explain your answer.

Answer:

We would not buy a house having windows but no ventilators, as there will be no cross ventilation of air inside the room. Fresh cool air entering the room through window gets heated through human and other household activities like breathing, cooking and become lighter. This warm air rises up inside the room. If there is no ventilator near the roof, the warm air will have no passage to leave as the level of window is quite low from the level of warm air. As result, increase the room temperature as well as humidity inside leading to human discomfort.

5. Explain why holes are made in hanging banners and hoardings.

Answer :

The banner and hoarding generally have a large surface area and are put outside in open where they may subject to varying air pressure depending on wind conditions. If wind pressure is high, then air will exert a great amount of pressure on the banners or hoarding causing it to flutter or blown away. To prevent this, holes are made in hanging banner and hording, through which air pressure gets leaked causing less damage or fluttering to banners or hoarding.

6. How will you help your neighbours in case cyclone approaches your village/town?

Answer :

In case cyclone approaches our village or town, we can help our neighbours in following way:

- We should not ignore the warnings issued by the meteorological department through TV, radio, or newspapers.
- Never ignore the warning given by media against cyclones.
- Avoid driving on a road filled it water, it might have got damaged because of cyclone.
- Do not touch fallen and broken power lines.
- Keep ready the phone numbers of all emergency services like police, fire brigade, and medical centers if you are staying in a cyclone hit area :
- Do not drink water that could be contaminated. Always store drinking water for emergencies.
- Do not touch wet switches and fallen power lines.

- Do not go out just for the sake of fun.
- Do not pressurise the rescue force by making undue demands.
- Cooperate and help your neighbours and friends

7. What planning is required in advance to deal with the situation created by a cyclone?

Answer :

With help of satellites and radars, Cyclone alert or Cyclone watch is issued 48 hours in advance of any expected storm and a Cyclone warning is issued 24 hrs in advance. The message is broadcast every hour or half hour when a cyclone is nearer the coast. We should not ignore the warnings issued by the meteorological department through TV, radio, or newspapers.

We should make necessary arrangements to shift the essential household goods, domestic animals and vehicles, etc. to safer places.

8. Which one of the following place is unlikely to be affected by a cyclone?

- (i) Chennai (ii) Mangaluru (Mangalore)
(iii) Amritsar (iv) Puri

Answer :

- (i) Chennai

The whole coastline of India is vulnerable to cyclones, particularly the east coast. The west coast of India is less vulnerable to cyclonic storms both in terms of intensity and frequency of the cyclones. As Chennai lies in the east coast therefore is more vulnerable to cyclone.

9. Which of the statements given below is correct?

- (i) In winter the winds flow from the land to the ocean.
(ii) In summer the winds flow from the land towards the ocean.
(iii) A cyclone is formed by a very high-pressure system with very high-speed winds revolving around it.
(iv) The coastline of India is not vulnerable to cyclones.

Answer:

Correct statement: (i) In winter the winds flow from the land to the ocean.