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SCIENCE

LESSON-07

CHAPTER: 8 Winds, Storms and Cyclones

Today's Air pressure

Air pressure changes over time and form place to place. It depends on many factors such as the height of a place, temperature and amount of moisture. With increasing height, the air pressure drops constantly. At greater heights, the air pressure is lower, because there is less air above that is weighing it down.

The density of air reduces with height. So at higher altitudes, the amount of air weighing down on an area is much less than that weighing down on the same area at a lower altitude. This can be compared to the weight of the pile of blankets. If 1,000 blankets are piled up one above the other, the total weight at the bottom of the pile will be substantial.

The low density of air on high mountains with reduced amount of oxygen in it, makes breathing difficult. That is the reason why mountaineers have to carry oxygen cylinder when they go on high mountains.

Air pressure also depends on the amount of water vapour present in it. Moist air are humid air is lighter or less dense than dry air and hence exerts less pressure. This is because a water molecule (H_2O) weighs less than both, an oxygen molecule (O_2) and a nitrogen molecule (N_2).

Thus, if nitrogen and oxygen are replaced with water vapour and exerts less pressure. That is the reason why air rich in water vapour marks low pressure areas, which often brings unsettled weather and rain whereas regions of dry air mark fair weather areas and high pressure.