

Troposphere Encyclopedia Article

Troposphere

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Troposphere

From the Greek word *tropos*, meaning turning, troposphere is the zone of moisture-laden storms between the surface and the **stratosphere** above. Because ice crystals must form before precipitation can begin, the troposphere rises to 10–12 mi (16–19 km) over the equator but grades downward to 5–6 mi (8–9 km) over the poles. It is marked by a sharp drop in temperature vertically, averaging 3.5 degrees per 1,000 ft (305 m) because of exponentially decreasing density of air molecules. Actual "lapse" rates vary enormously, ranging from inversions, where temperatures rise and trap pollutants, to steep lapse rates with warm surface air topped by very cold polar air; the latter produces dangerous storms.