

Snow



Snow is the solid form of water that crystallizes in the atmosphere and, falling to the Earth, covers, permanently or temporarily, about 23 percent of the Earth's surface. Snow falls at sea level poleward of latitude 35° N and 35° S, though on the west coast of continents it generally falls only at higher latitudes. Close to the equator, snowfall occurs exclusively in mountain regions—at elevations of about 4,900 metres (16,000 feet) or higher.



Snow cover has a significant effect on climate and on plant, animal, and human life. By increasing the reflection of solar radiation and interfering with the conduction of heat from the ground, it induces a cold climate. The low heat conduction protects small plants from the effects of the lowest winter temperatures; on the other hand, the late

disappearance of snow in the spring delays the growth of plants. When snow melts in the spring, the resulting runoff feeds rivers and supplies water for irrigation and other human enterprises. Heavy snowfalls can severely hinder transportation in variable moderate climates but provides a firm surface for travel in remote Arctic, Antarctic, and mountainous areas, using traditional dogsleds or snowshoes or modern snowmobiles.

Snowflakes are formed by crystals of ice that generally have a hexagonal pattern, often beautifully intricate. The size and shape of the crystals depend mainly on the temperature and the amount of water vapour available as they develop. At temperatures above about $-40\text{ }^{\circ}\text{C}$ ($-40\text{ }^{\circ}\text{F}$), ice crystals form around minute particles of dust or chemical substances that float in the air; at lower temperatures, crystals form directly from water vapour. If the air is humid, the crystals tend to grow rapidly, develop branches, and clump together to form snowflakes. In colder and drier air, the particles remain small and compact. Frozen precipitation has been classified into seven forms of snow crystals and three types of particles—graupel (granular snow pellets, also called soft hail), sleet (partly frozen ice pellets), and hail (hard spheres of ice).

The texture and density of fallen snow undergo constant change. Snow on the ground tends to become increasingly dense, and, where it survives spring and summer melting for years, it may turn into ice and form a glacier. On hillsides when temperature changes reduce the coherence of snow particles in the snow cover, gravity and viscosity may overcome friction, causing snow slides and avalanches.

Britannica School, Encyclopædia Britannica, 14 Apr. 2016.
school.eb.com/levels/high/article/snow/68389. Accessed 30 Nov. 2020.