

SCOP Atmosphere

Layers of the Atmosphere

Exosphere	the highest part (“exo”: outer), past 435 miles above sea level
Thermosphere	55–435 miles above sea level gets name from a sudden increase in air temperature at this level
Mesosphere	30–55 miles above sea level (“meso”: middle) — characterized by a sudden drop in temperature
Stratosphere	7–30 miles above sea level; contains the ozonosphere (ozone layer), which absorbs UV rays
Troposphere	lowest part of the atmosphere (up to 7 miles above sea level), thinner near the poles the part of the atmosphere where weather takes place.

Cloud Types

Cumulus	“heap” or “pile”; fluffy cotton-like, flat bottomed, and low altitude
Stratus	“spread out” — flat on top and bottom, responsible for making cloudy days
Cirrus	“curl” — appear as curls of cotton (actually ice crystals) — found at high altitude
Nimbus	“rainstorm” — storm clouds
Cumulonimbus	frequently accompanied by heavy precipitation, lightning, heavy winds, and occasionally hail.

Storm Types

Blizzard	considerable blowing/falling snow; visibility less than 1/4 mile; very high winds
Cyclone	Area of low pressure around which winds blow counter-clockwise (in the Northern Hemisphere)
Flash Flood	Flood that occurs within hours of heavy rain, dam bursting, or ice jam release.
Funnel Cloud	Rotating, cone shaped air column extending from the base of clouds.
Gale	Winds with speeds between 39 mph and 54 mph.
Hurricane	Widespread, intense low-pressure area in the tropics; high winds. Named for Carribean storm god.
Monsoon	Seasonal wind usually occurring in the warm season. Often accompanied by heavy, persistent rain.
Thunderstorm	Local storm with tall clouds, heavy rain, thunder and lightning.
Tornado	A funnel cloud that extends to the ground. Usually associated with cumulonimbus clouds.
Typhoon	Western Pacific hurricane.

Precipitation Types

Freezing Rain	Rain that freezes on contact with surfaces.
Hail	Concentric layered spheres or lumps of ice.
Sleet	Small translucent ice pellets, usually bounce off of a hard surface
Snow	Ice particles in complex hexagonal patterns. Occurs when the surface temperature is below 36°F.

Related Terms

Alberta Clipper	low-pressure winter system, develops in or near Alberta and moves into the U.S. with 2-4” snow
cloud seeding	dropping solid particles of CO ₂ or AgI into cool clouds that are heavy with moisture; moisture collects around the particles, and becomes heavy enough to fall.
dew point	the temperature at which water vapor in the air condenses into a liquid
fog	a cloud with its base at the surface of the Earth
front	The area of contact and transition between two air masses, usually of different temperatures. Called “warm” or “cold” based on which type of air is advancing, or “stationary” if neither.
frost	Small, thin ice crystals that develop when a layer of air cools to condensation by contact with a surface below freezing.
knot	unit of speed equal to 1 nautical mile per hour, or 1.15 mph
NOAA	National Oceanic and Atmospheric Administration; the division of the Department of Commerce that oversees the National Weather Service.
smog	a mixture of smoke and fog in the atmosphere; very unhealthy.
el Niño	a surge of warm water from the Peru current off of South America every 5-8 years, usually in late December (hence “el Niño”; the Christ child).

Composition of Earth’s Atmosphere (approximate percentages)

Nitrogen (N ₂)	75%
Oxygen (O ₂)	20%
Carbon Dioxide (CO ₂)	3%
Inert Gases	1%