

Weather or not

HUMIDITY

Humidity is the moisture content of the air. There two most commonly referred to types of humidity are *absolute humidity* and *relative humidity*. When people use the term "humidity," they usually mean relative humidity.

Absolute humidity is how much moisture is in the air. Technically, it's the actual mass of water vapor per unit volume of natural air. How much moisture that really is depends on temperature. Hotter air holds more moisture than cooler air.

Relative humidity is the percentage of moisture in the air until it's fully saturated. Technically, it's the ratio of the actual water vapor content of the air to its total capacity at any given temperature.

High relative humidity tends to exaggerate the "feeling" of temperature -- cold air/high humidity "feels" colder than it is, and hot air/high humidity "feels" hotter than it is. Both feelings are uncomfortable.

This is because cold air/high humidity increases the conduction of heat from the body, and we feel colder. And hot air/high humidity increases conduction of heat to the body, so we feel hotter. It also feels hotter because our perspiration can't evaporate and cool us off if the air is already full of moisture and can't take any more.

Low relative humidity has the opposite effect – it makes temperatures "feel" not as bad, modifying the effect of temperature extremes on the human body.

SEA BREEZE

A sea breeze develops when a difference in air temperature over the land and water develops.

Wind is generally created by a difference in air pressure, which is created by a difference in temperature. A sea breeze develops when the air temperature over land is different than the air temperature over water.

Suppose the air temperature over land is in the upper 80's while the air temperature over the Gulf is in the 70's. The warm air over land will rise, creating a mini area of lower air pressure. The cooler air over the Gulf will sink, creating a mini area of higher pressure (it "presses down" on the water as it sinks, creating higher pressure).

Because air moves from high pressure to low pressure, the air will move from over the Gulf to the lower pressure area over land: a sea breeze develops.

CLOUDS

A cloud is a mass of minute particles of water or ice that is suspended in the air. It usually forms when air containing water vapor is cooled below the dew point and the resulting moisture condenses into droplets on microscopic dust particles in the atmosphere.

Weather is called **cloudless** (no clouds), **clear** (<30% clouded), **partly cloudy** (30 to 70% clouded), **cloudy** (>70% clouded), or **overcast** (all clouds). In aviation, the base of any cloud cover is called the *ceiling*.

There are four main divisions of clouds: high clouds, intermediate clouds, low clouds, and vertical development clouds.

High clouds (20,000 feet and up)

- *cirrus* (detached clouds of delicate appearance, usually white in color without shading, composed entirely of ice crystals)
- *cirrocumulus* (composed of small white flakes or very small globular masses, arranged in groups, lines, or ripples)
- *cirrostratus* (thin, whitish, veil-like, sometimes giving the entire sky a milky appearance but which don't blur the outlines of the sun or moon)

Intermediate clouds (6,500–20,000 feet)

- *altocumulus* (a layer or patches composed of flattened globular masses arranged in groups, lines, or waves)
- *altostratus* (like a thick gray veil through which the sun or moon show vaguely)

Low clouds (ground level to 6,500 feet)

- *stratocumulus* (a layer or patches of fairly large globular masses or flakes, soft and gray with darker parts, arranged in groups, lines or rolls)
- *stratus* (uniform layer resembling fog but not resting on the ground)
- *nimbostratus* (nearly uniform, dark gray layer without shape and usually producing continuous rain or snow)

Vertical development clouds (1,600–20,000+ feet)

- *cumulus* (thick detached cloud, generally associated with fair weather with a horizontal base and dome-shaped upper surface resembling a head of cauliflower)
- *cumulonimbus* (thunderstorm cloud, heavy masses of great vertical development whose summits rise in the form of mountains or towers, upper parts often spreading out in the shape of an anvil.