Weather Vocabulary

Vocabulary Term	Meaning/Definition
air mass *	large bodies of air that have the similar properties throughout such as temperature, humidity, and air pressure; causes most of the weather
air pressure *	also known as barometric pressure; weight of the air above the surface of the earth; measured by a barometer
air pressure, high	occurs when the air pressure is higher than areas around it; usually means cooler temperatures and drier weather
air pressure, low	occurs when the air pressure is lower than areas around it; usually means warmer temperatures and wet weather
altitude	height or elevation
anchor	to hold, keep fixed
angle of incidence *	angle the sunlight hits the earth, more intensity = warmer; sometimes called the angle of insolation
barometric pressure	atmospheric pressure (normal = 29.92 inches in a column of mercury or 1013 millibars)
climate	weather over a period of time
cloud	tiny water droplets in the atmosphere, formation depend on air mass movement, usually form at frontal boundaries and low pressure areas
cloud cover *	fraction of the sky covered by clouds; data is collected by observation and reported as cloudy, partly cloudy, partly sunny, or clear
cloud: cirrus	high clouds, wispy and look like feathers, means “curl of hair”, composed of ice crystals (higher elevation = colder temperatures), indicates fair to pleasant weather
cloud: cumulonimbus	taller cumulus clouds, often result in thunderstorms; “nimbus” = rain
cloud: cumulus	mid to low level clouds, fluffy and look like cotton, means “heap” or pile”, indicates fair weather
cloud: stratus	lowest clouds, look like layers or a grey blanket that covers the sky, means “to spread out”, results in overcast weather and sometimes produces precipitation; fog is a stratus cloud near the ground
condensation *	when water vapor becomes liquid

conduction *	transfer of thermal energy between objects that are touching
conductor *	any object that allows heat (energy) to pass through quickly
control	part of an experiment that does not change, serves as the standard to compare other observations
convection *	transfer of thermal energy by liquids or gases; land and water hear the air above through convection currents
Coriolis effect	explains why the air curves over the earth (rotating earth); winds in the northern hemisphere curve to the right, winds in the southern hemisphere curve to the left
data *	information
density	amount of matter in an object, cold air is denser than warm air (heavier), warm air rises because it is less dense (not as heavy)
direct sunlight *	sun rays that strike the earth with more intensity near the equator
earth's axis *	imaginary, vertical line through the middle of the earth between the north and south poles; earth rotates around it; tilt of earth's axis: 23.5 degrees
elevation *	the height of something
El Nino *	a natural oscillation (shift) of the warmest surface water near the equator in the Pacific Ocean toward South America; impacts weather around the world
equator *	imaginary line around the middle of the earth; assigned 0 degrees latitude
evaporation *	when liquid becomes water vapor
fog	stratus cloud that touches the ground, can be dense (thick)
forecast	weather predictions
front	forms when two air masses meet; boundaries that separate different air masses
front, cold *	a boundary between two air masses (one warm, one cold), colder air replaces warmer air; usually moves from northwest to southeast; represented by a solid line of triangles on a weather map (triangles point to warmer air); results in cooler weather and high pressure
front, warm *	a boundary between two air masses (one warm, one cold), warmer air replaces cooler air; usually moves from southwest to northeast; represented by a solid line of semicircles on a weather map

	(semicircles point toward the colder air); results in warmer weather and low pressure
front, occluded	when a cold front overtakes a warm front in an atmospheric depression
frontal boundary	where two fronts meet
global wind	when air moves over a vast distance, also known as atmospheric circulations, do not change much
Gulf stream *	a warm water surface current in the Atlantic Ocean that moves from the southern tip of Florida up the east coast and then across the Atlantic
hail	a type of precipitation, lump of ice, forms because when water droplets cycle in the cloud and freeze
heat *	energy that exists in matter
hemisphere *	half of a sphere; the earth is divided into the northern and southern by the equator; earth is divided into the eastern and western hemispheres by the Prime Meridian
high pressure system *	a whirling mass of cool, dry air; because cool air is more dense than warm air, it sinks. High pressure brings fair weather, sunny skies, and light winds. High pressure systems rotate clockwise.
humidity	amount of water vapor in the air (more "sticky" feeling = high humidity; higher humidity = greater chance for rain and storms)
hurricane	a rotating storm system that forms in warm ocean waters, usually increases intensity when crosses warm waters
indirect sunlight *	sun rays that strike the earth with less intensity due to the tilt of the earth and the curvature of the surface
instrument: wind vane	used to measure wind direction
instrument: anemometer	used to measure wind speed (mph)
instrument: barometer	used to measure air pressure
instrument: hygrometer	used to measure humidity
instrument: thermometer	used to measure temperature (degrees Celsius or Fahrenheit)
insulator *	any object that does not allow heat (energy) to pass through easily
jet stream *	a current in the atmosphere located over North America that moves west to east; it changes position north or south seasonally; impacts North Carolina weather by moving weather systems from the west toward North Carolina; fluctuations to the north can bring warmer

	temperatures to North Carolina while its fluctuation to the south can bring cooler temperatures to North Carolina
land breeze *	a convection current where air flows from land to sea during the night, which is a result of land heating and cooling at a faster rate than water
La Nina *	the surface water near the equator in the Pacific Ocean gets cooler; impacts weather around the world
latitude *	location north and south of the equator
leeward	side of the mountain where cooled air sinks and descends, faces away from the wind, air is dry because it is sinking and condensation does not occur; deserts often found on leeward sides of mountains
local wind *	moves across small distances close to the earth's surface, not as predictable because they change with air pressure; examples include sea breezes and land breezes
longitude *	the distance east or west of the Prime Meridian
low pressure system *	a whirling mass of warm, moist air; because warm air is less dense than cool air, it rises and cooler (more dense) air flows underneath. Low pressure brings storms, strong winds, and changing weather. Low pressure systems rotate counterclockwise (like hurricanes in the Atlantic).
meteorologist *	scientist who studies weather patterns and forecasts upcoming weather
meteorology	study of the weather
monsoon	large land-sea breeze, produces much rain
mountain *	a very tall, high, natural place on earth's surface; Mt. Everest is the mountain with the highest altitude (in feet, measured above sea level)
nimbus	means "rain" in Latin, brings precipitation
polar easterlies	occurs between 60 and 90 degrees north, 60 and 90 degrees south; winds blow from east to west
precipitation *	form of water (rain, snow, ice, sleet, hail) that falls from a cloud to the earth; can be measured by a rain gauge
prevailing westerlies *	winds that blow west to east toward the poles in both hemispheres between 30° and 60° latitude; can impact North Carolina weather by moving weather systems from the west toward North Carolina
prevailing winds	move from west to east, typically how most storms move, determine movement of fronts

radiation *	transfer of thermal energy by electromagnetic waves through places without matter; the Sun's radiation warms Earth's air, land, and water
rain shadow effect	lack of precipitation on the leeward side of the mountain
revolution *	orbit; Earth revolves around the Sun in an elliptical orbit; one revolution around the Sun is approximately 365 days (1 year)
rotation *	spin; Earth rotates on its axis; one rotation is approximately 24 hours (1 day)
runoff *	excess water from falling precipitation or melting precipitation that the soil cannot absorb
sea breeze *	a convection current where air flows from sea to land during the day, explains why beaches are usually windy (remember: the land heats up and cools down faster than the water)
sea level *	where the ocean meets the land; assigned zero elevation
seasons *	summer, autumn (fall), winter, and spring
stationary front *	a boundary between two air masses (one warm, one cold) that more or less does not move; a stationary front can wobble back and forth for several hundred miles a day
Sun *	driving force for the weather; warms the air, water, and land of earth
temperature *	measurement of degrees warm or cold; influenced by cloud cover (i.e. generally cooler on cloudy days); measured by a thermometer in degrees Fahrenheit or Celsius
tilt of the Earth *	earth is tilted on its axis at 23.5°; this is the main reason there are seasons on Earth
trade winds *	winds that blow east to west toward the equator between 30°N latitude and 30°S latitude; can impact North Carolina weather by moving a hurricane toward the southeastern United States
transpiration *	water evaporating from the leaves of plants
trend	patterns in weather data
variable	something in an experiment that can be changed
water cycle *	continuous process of water moving from the earth's surface to the atmosphere and back to earth
water vapor *	water in a gas state
weather *	state of the atmosphere at a given time and place; it is described by wind, temperature, cloud cover, moisture in the form of humidity and/or precipitation, and air pressure; changes daily, hourly, and seasonally

weather system *	all part of the weather—temperature, precipitation, air pressure, wind speed, and direction
wind *	air moving horizontally, caused by differences in air pressure from place to place (uneven heating and cooling of the Earth's surface), moves from high to low pressure
wind direction *	reported by the direction from which the wind originates; indicated by a wind vane
wind speed *	changes as air pressure changes; how fast the wind is blowing; measured by an anemometer
windward	side of a mountain the air ascends (goes up), faces toward the wind, precipitation occurs, vegetation is rich