Winds

Local Winds

Land Breeze-Winds that move from the land to the sea.

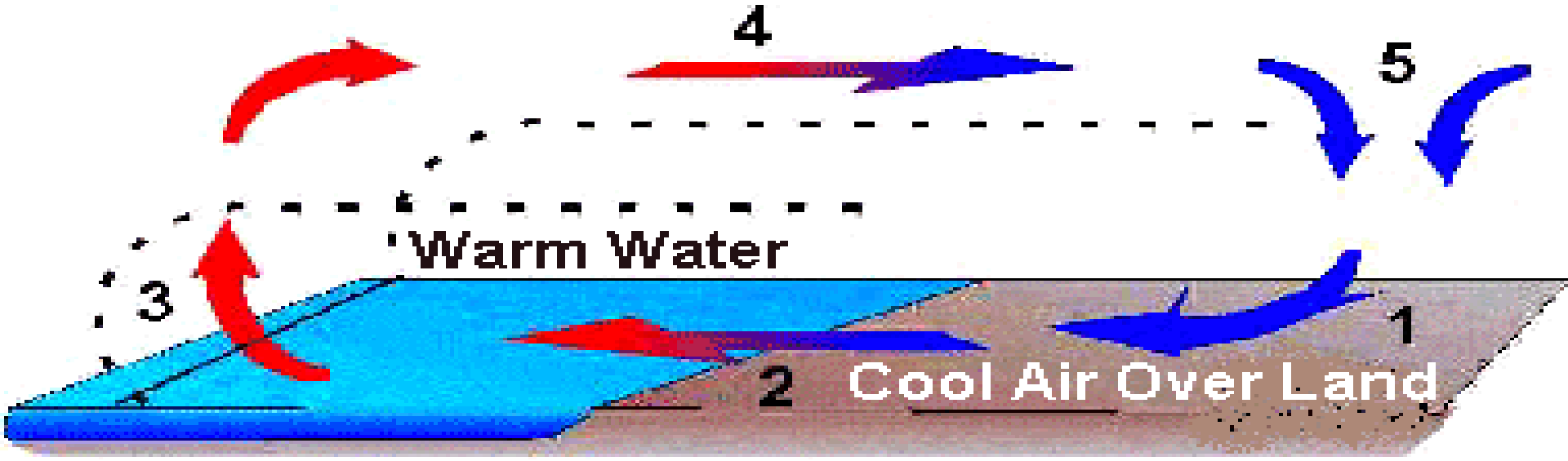
High pressure over land

Low pressure over water

Air moves from High to Low

Evening breeze

Land Breeze Circulation



1. **Cool air over land sinks**
2. **Land Breeze moves out over water**
3. **Relatively warmer water heats air which then rises**
4. **Upper level return sea breeze**
5. **Cool air over land sinks**

Sea Breeze-Air moves from the water to land.

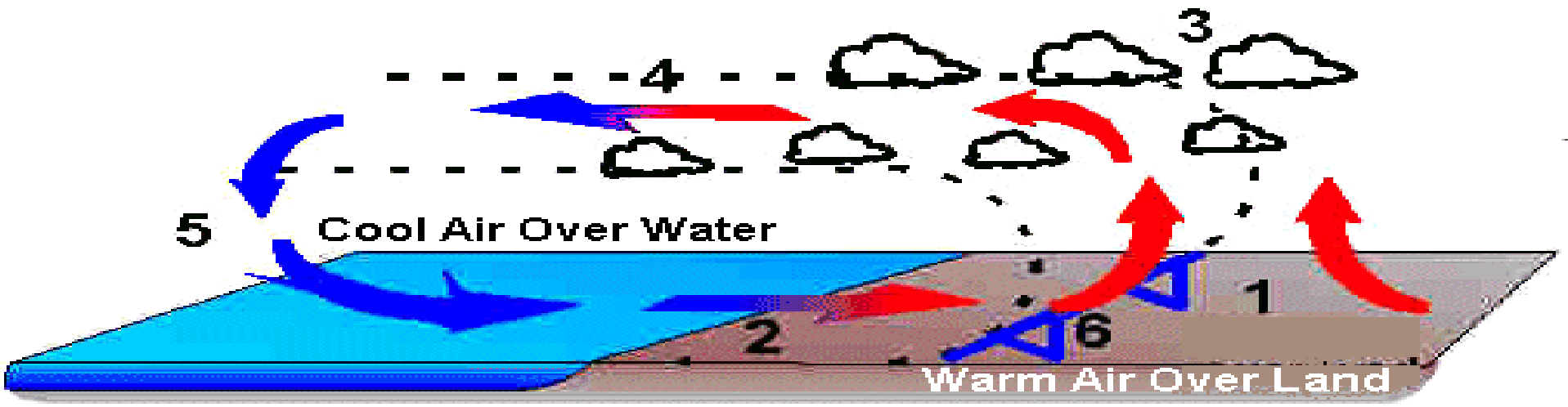
High pressure over water

Low pressure over land

Air move from high to low, from water to land.

Day time breeze

Sea Breeze Circulation

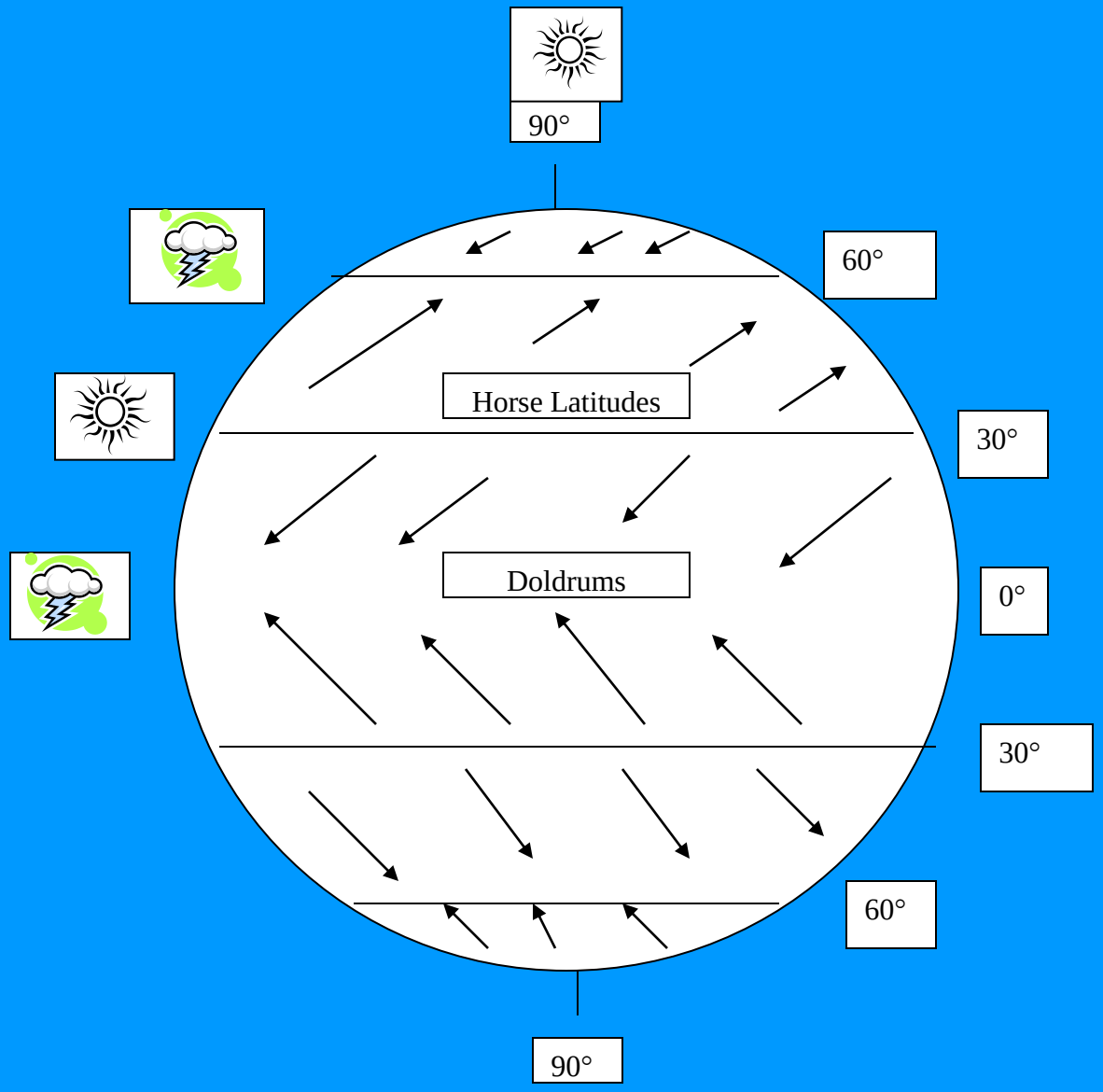


1. **Sea Breeze moves inland**
2. **Cumuli develop aloft and move seaward**
3. **Upper level return land breeze**
4. **Cool air aloft sinks over water**
5. **Sea Breeze (meso-cold) Front**
6. **Warm air over land rises**

Global Winds

Three Cell Model

A global pattern of prevailing wind direction.


90°
60°
Horse Latitudes
30°
Doldrums
0°
30°
60°
90°

Coriolis Effect

Curving of objects, and the **wind** due to the Earth's rotation

N. Hemisphere (right)

S. Hemisphere (left)

Latitude and Pressure

0° Low pressure

30° N and S High pressure

60° N and S Low pressure

90° N and S High pressure

Air Movement and Latitude

0° Upwards

30° Downwards

60° Upwards

90° Downwards

Skies and Latitudes

0° Cloudy, High precipitation

30° Clear, Low precipitation

60° Cloudy, High precipitation

90° Clear, Low precipitation

Latitudes and Winds

0°-30° Trade Winds

30°-60° Prevailing Westerlies

60°-90° Polar Easterlies

Air Masses and Fronts

Air Mass

A large body of air that has a uniform temperature, atmospheric pressure and moisture content.

Atmospheric Pressure

The amount of pressure that our atmospheric gases are pushing onto the surface of the Earth. Is measured using a Barometer. On a weather map, lines connecting points of equal pressure are called isobars.

High/Low Pressure (copy this)

High pressure- Air moving down, associated with good weather.

Symbol- Blue upper case **H**

Low pressure- Air moving up, associated with bad weather

Symbol- Red upper case **L**

Air Mass Types

1. Continental (c)- Formed over land
2. Maritime (m)- Formed over water
3. Polar (P)- Formed near the poles
4. Tropical (T)- Formed near the tropics

Continental Air Masses

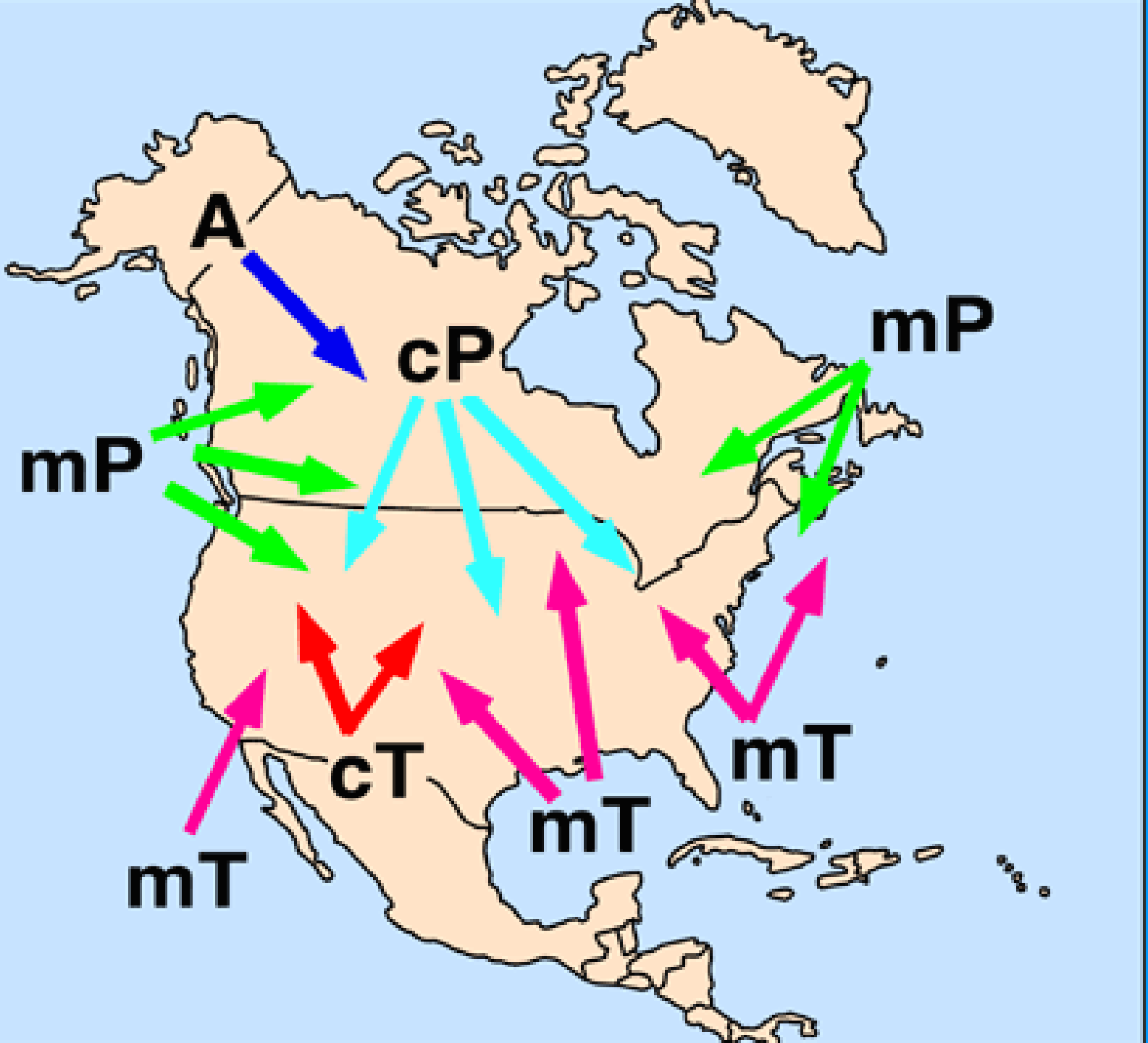
Continental Polar (cP)- Formed near the poles and over land. Cold and dry air.

Continental Tropical (cT)- Formed near the equator and over land. Warm and dry air

Maritime Air Masses

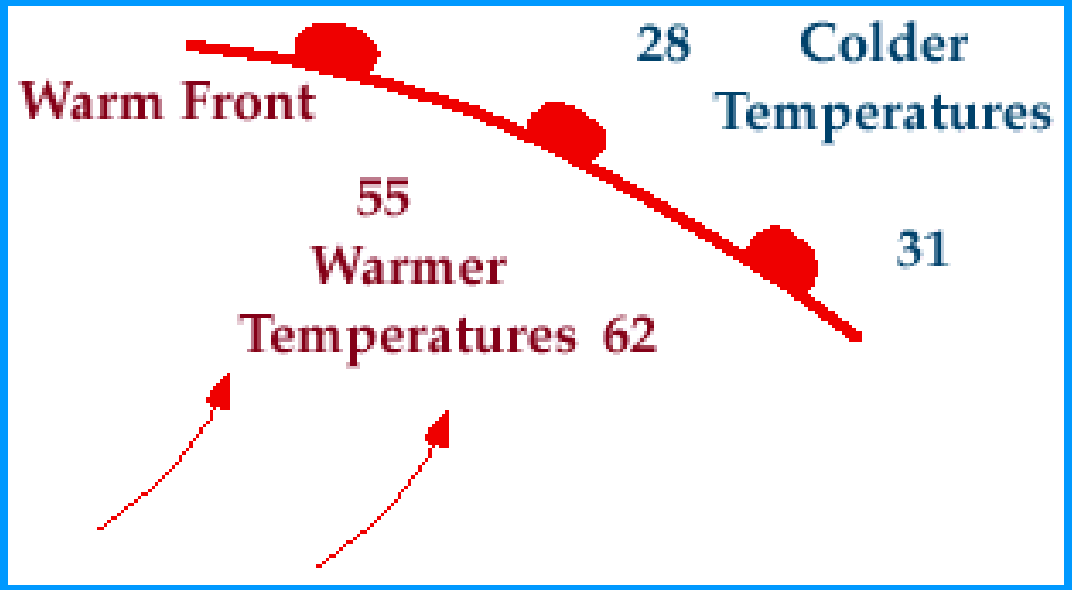
Maritime Polar- mP formed over water near the poles. Cold and wet air.

Maritime Tropical-mT formed over water near the equator. Warm and wet air.


A
cP
mP
mP
cT
mT
mT
mT

Warm Front

A warm front is defined as the transition zone where a warm air mass is replacing a cold air mass. Warm fronts generally move from southwest to northeast and the air behind a warm front is warmer and more moist than the air ahead of it. When a warm front passes through, the air becomes noticeably warmer and more humid than it was before.

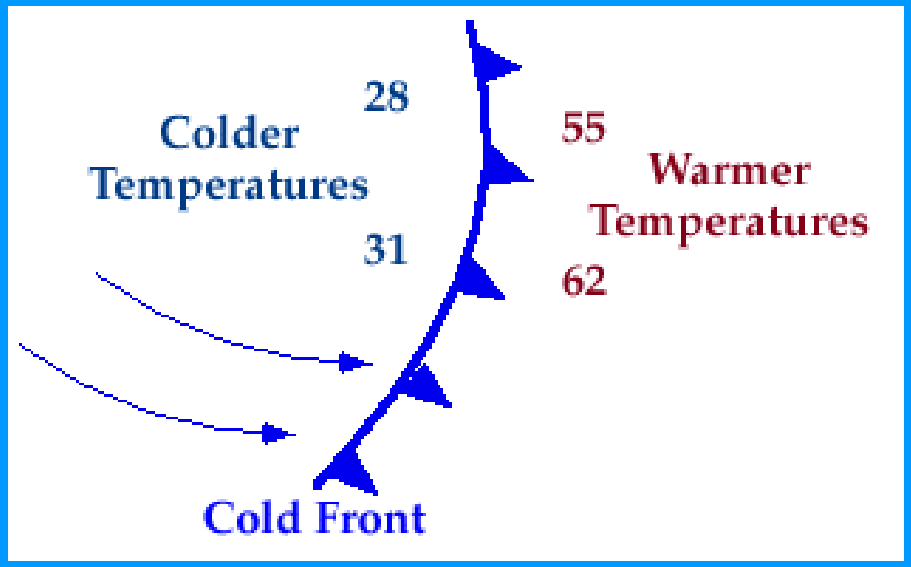


Warm Front Precipitation

Light to moderate rain, sleet, snow, or drizzle.

Cold Front

A cold front is defined as the transition zone where a cold air mass is replacing a warmer air mass. Cold fronts generally move from northwest to southeast. The air behind a cold front is noticeably colder and drier than the air ahead of it. When a cold front passes through, temperatures can drop more than 15 degrees within the first hour.



Cold Front Precipitation

Short periods of showers followed by heavy rains mixed with thunder and lightning and hail.