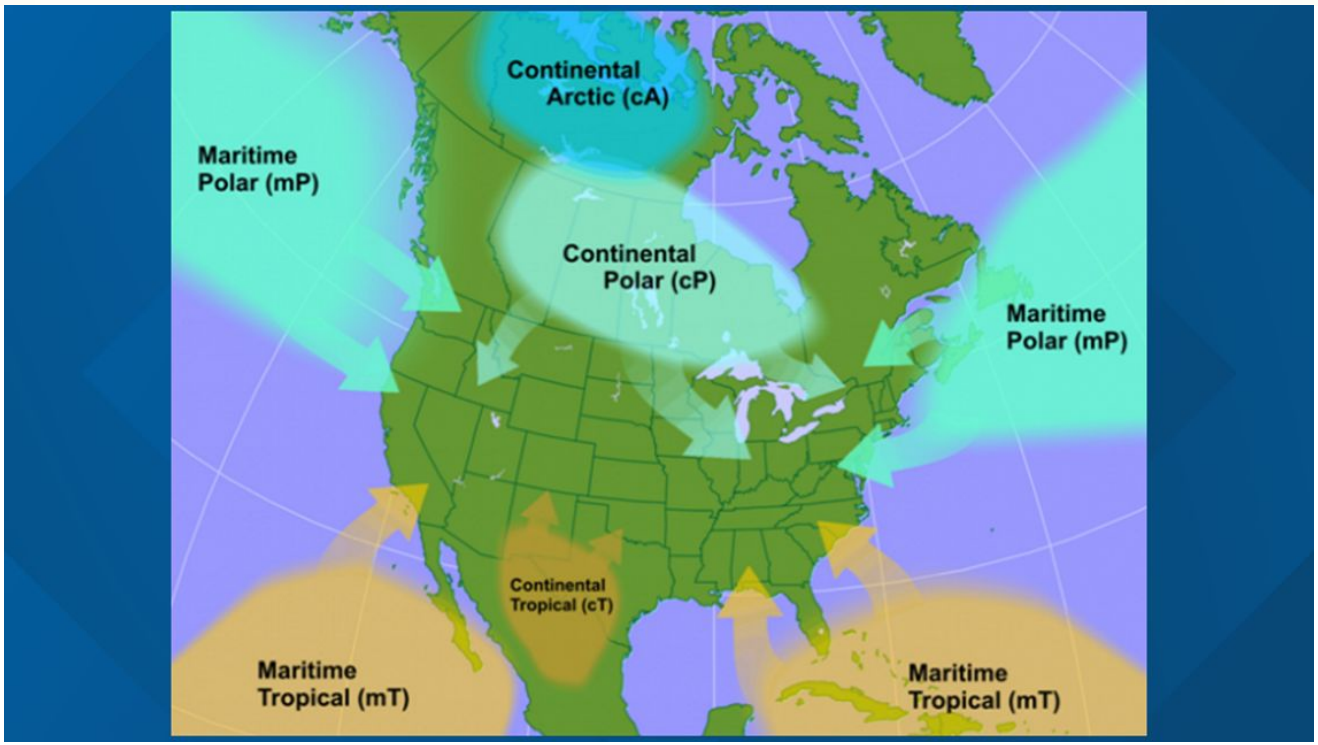
AIR MASSES AND FRONTS

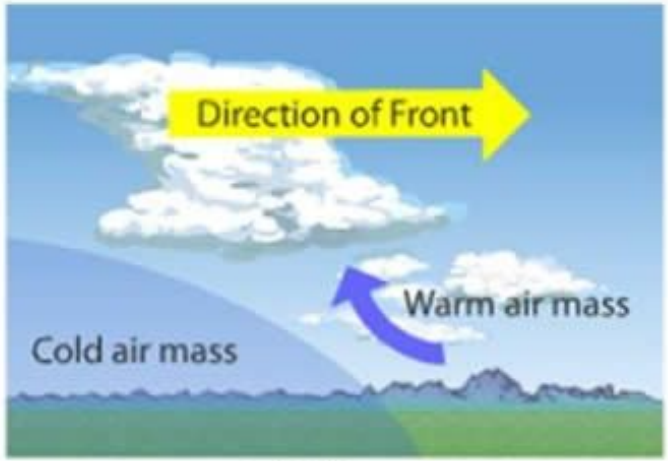
Section 3

A. **Air mass**—large body of air that develops over a particular region; it acquires the characteristics of the area over which it occurs

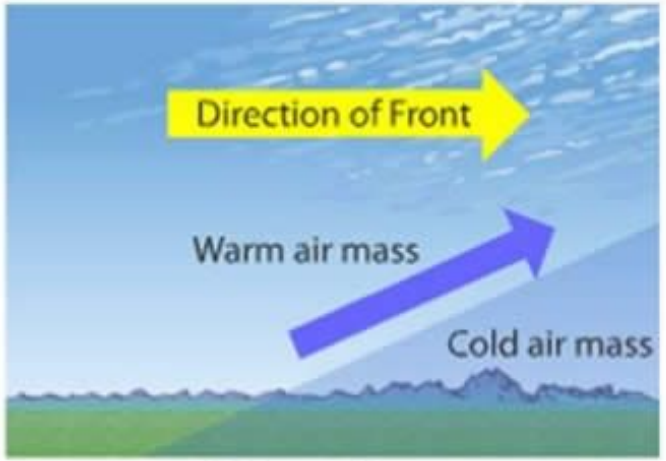


B. Front—boundary between different air masses

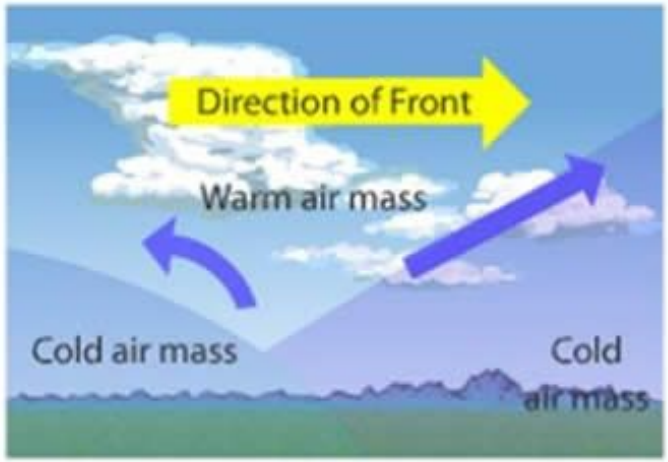
1. Cold front—cold air mass pushes under a warm air mass and can cause a narrow band of violent storms; temperatures drop
2. Warm front—warm air mass slides up over a cold air mass; widespread precipitation develops
3. Stationary front—warm air mass and cold air mass meet but neither advances; cloudiness and precipitation result
4. Occluded front—fast-moving cold front overtakes a slower-moving warm front or vice versa; cloudy weather with precipitation



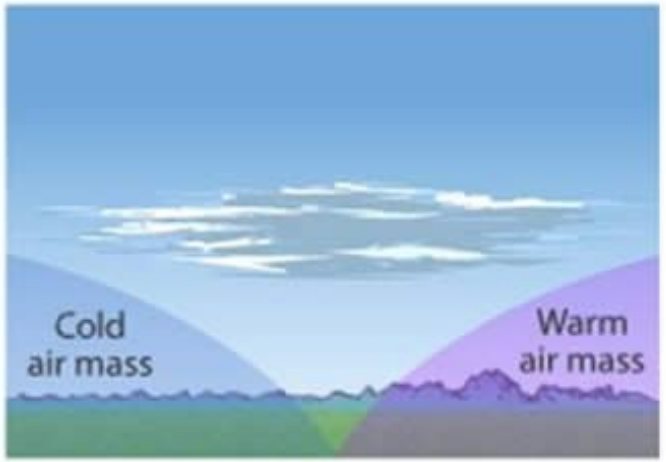
Cold front



Warm front



Occluded front



Stationary front

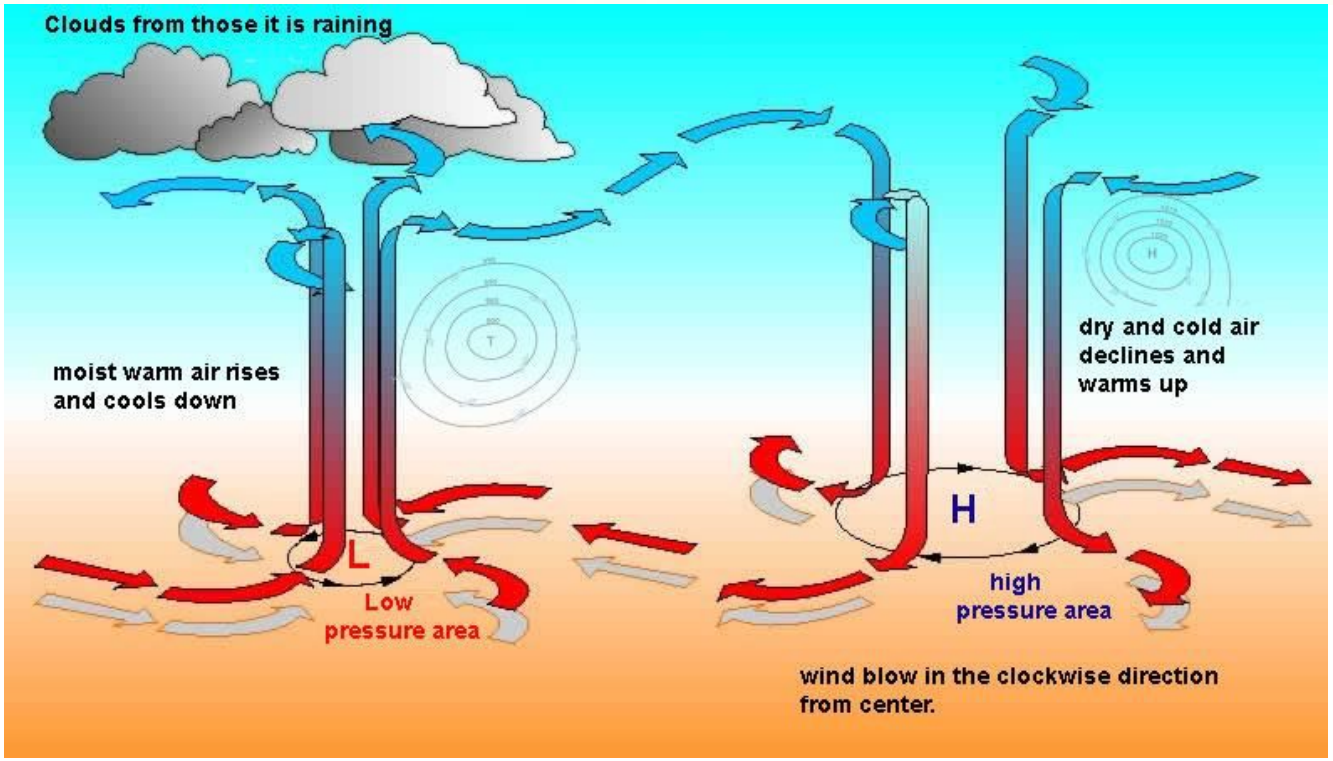
Figure 10-4. Fronts

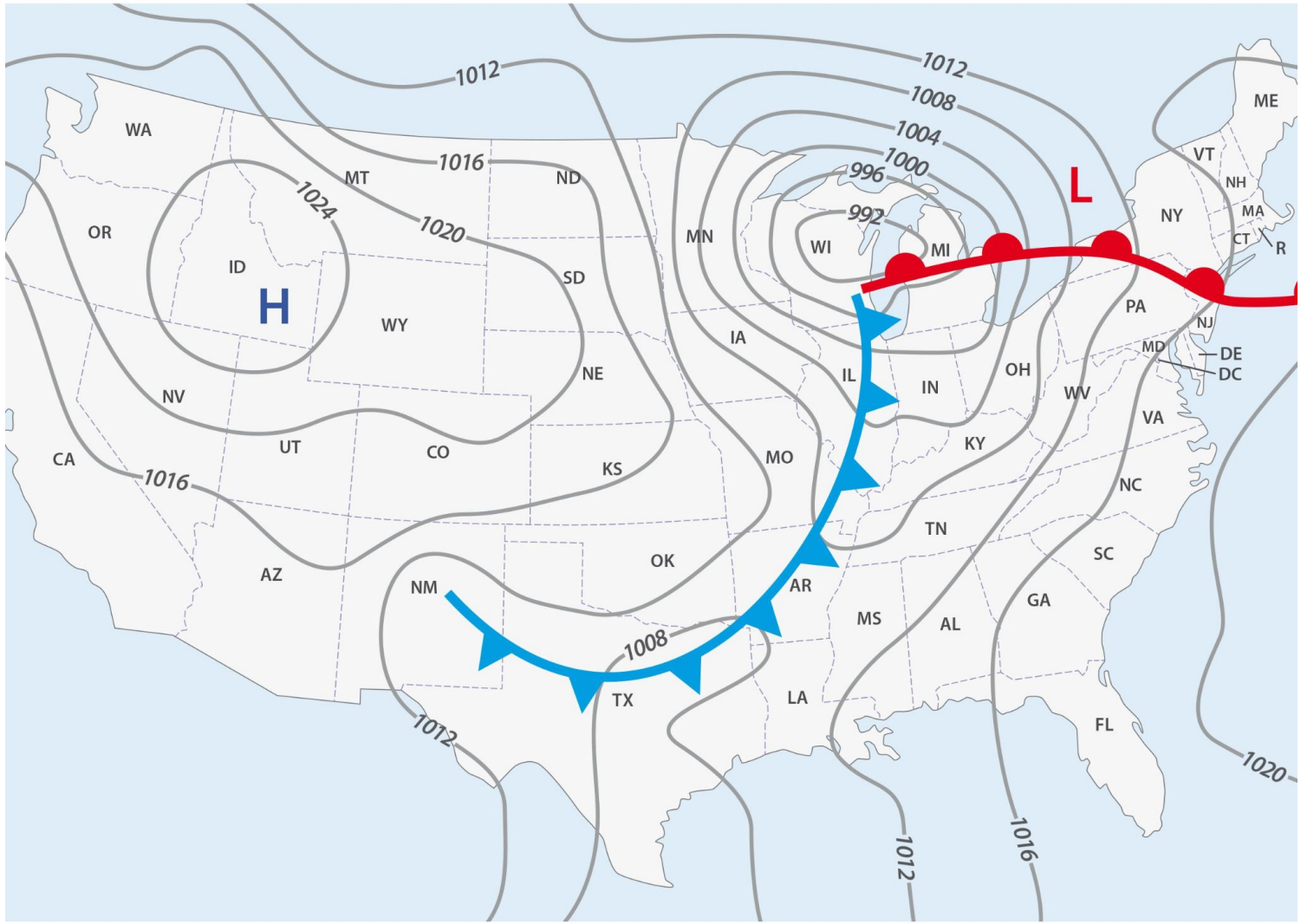
FRONT	CHART SYMBOL	DEFINITION
Cold Front		A front that moves in such a way that colder air replaces warmer air.
Warm Front		A front that moves in such a way that warmer air replaces colder air.
Stationary Front		A front which is stationary or nearly so.
Occluded Front		A composite of two fronts as a cold front overtakes a warm front or stationary front.

Note: Frontal symbols point in the direction of frontal movement.

C. Centers of pressure

1. High pressure—air sinks and spreads away from the high-pressure center; moisture cannot rise and condense; usually dry with few clouds
2. Low pressure—air rises and cools forming clouds and precipitation

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D. Severe weather—causes strong winds and heavy precipitation; can threaten property or life

1. Thunderstorms—develop from cumulonimbus clouds that form along cold fronts; can have strong wind, dangerous hail, lightning and thunder
2. **Tornado**—violent, whirling wind that moves in a narrow path over land
3. **Hurricane**—large storm that begins as an area of low pressure over tropical oceans; heat energy from moist air is converted to wind that can reach speeds of 250 km/h
4. The National Weather Service monitors weather and issues watches when severe weather is a potential threat and warnings when severe weather is an actual threat.