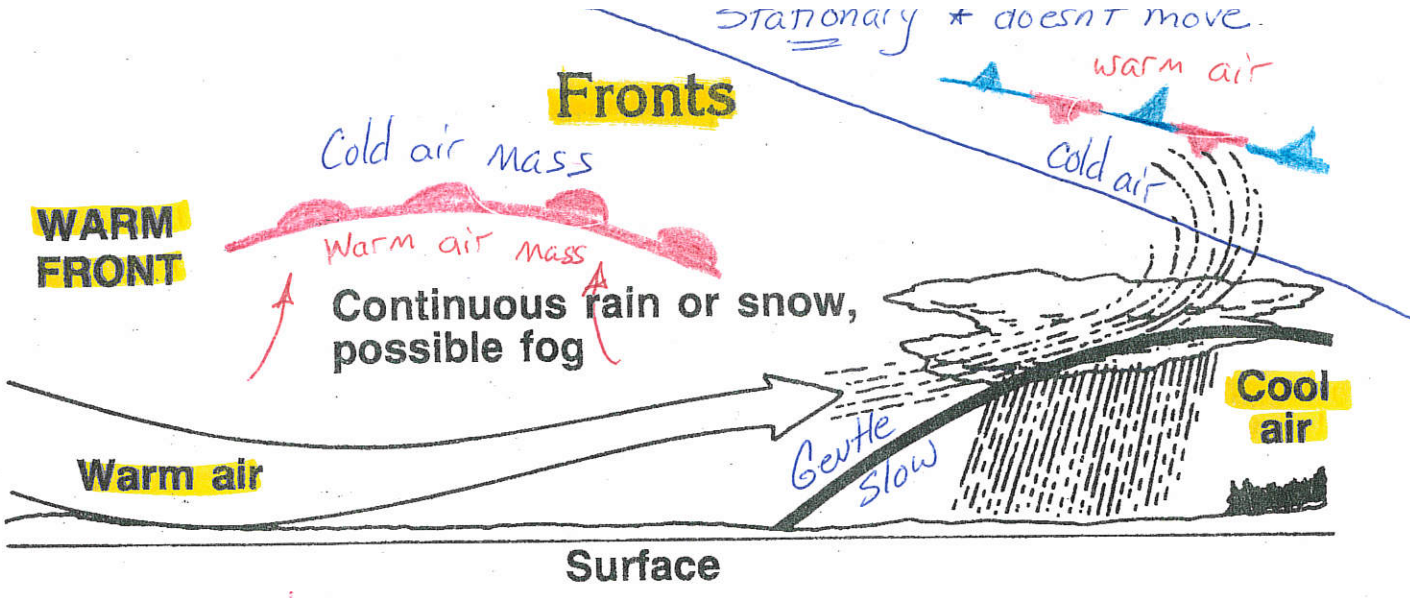
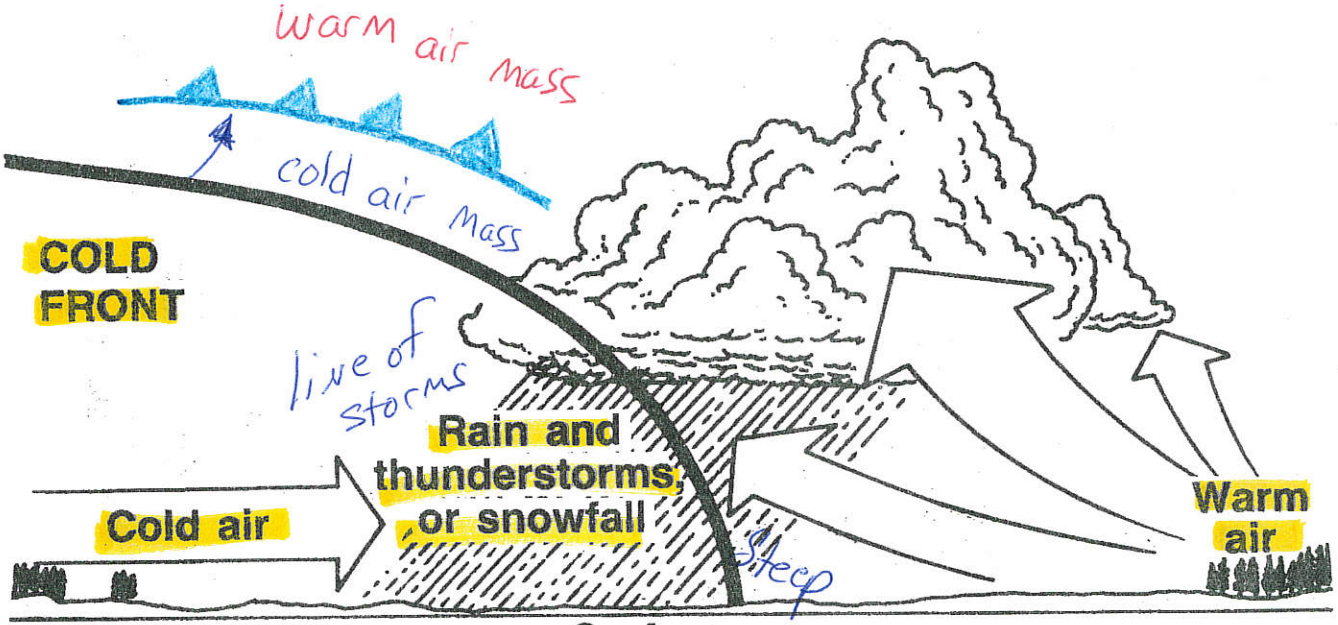
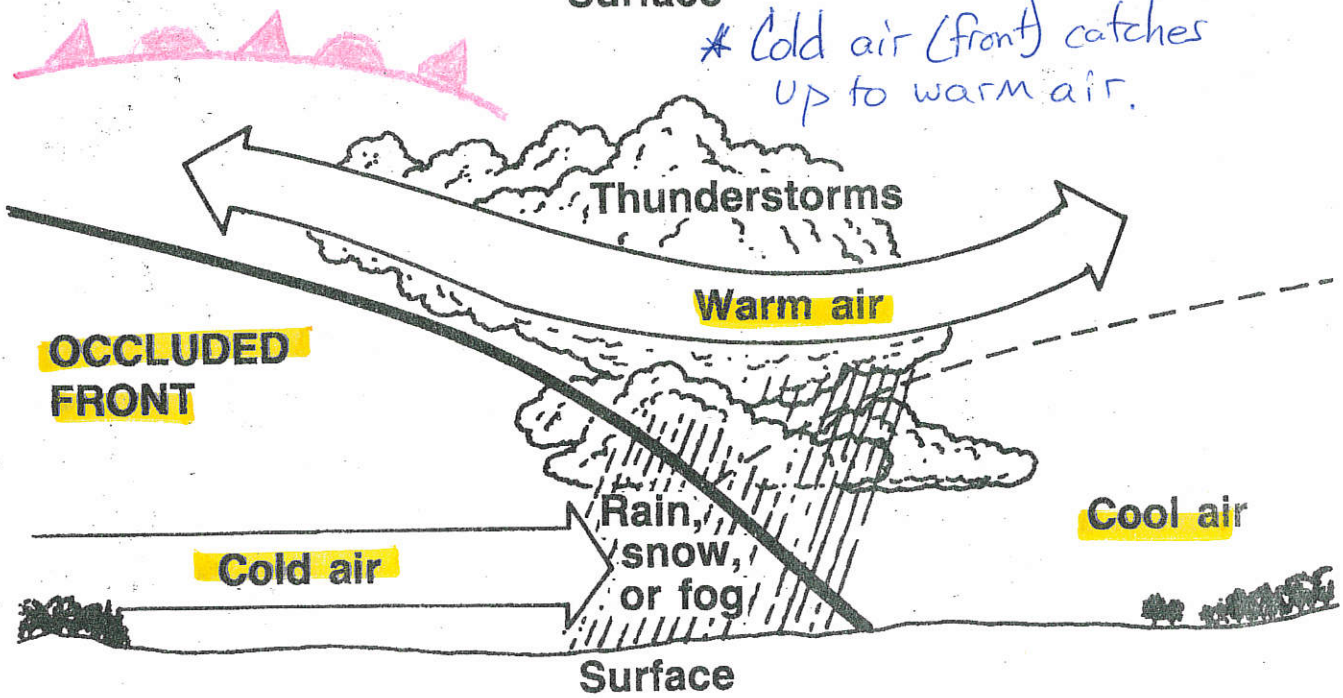
Stationary * doesn't move.

Fronts







12:3 Fronts

Large bodies of air with the same temp. & humidity.

Air masses do not mix. Like oil and water, they tend to remain separate. The region where two different air masses come together is called a front. A front is the boundary between two air masses. Clouds and precipitation are often associated with fronts.

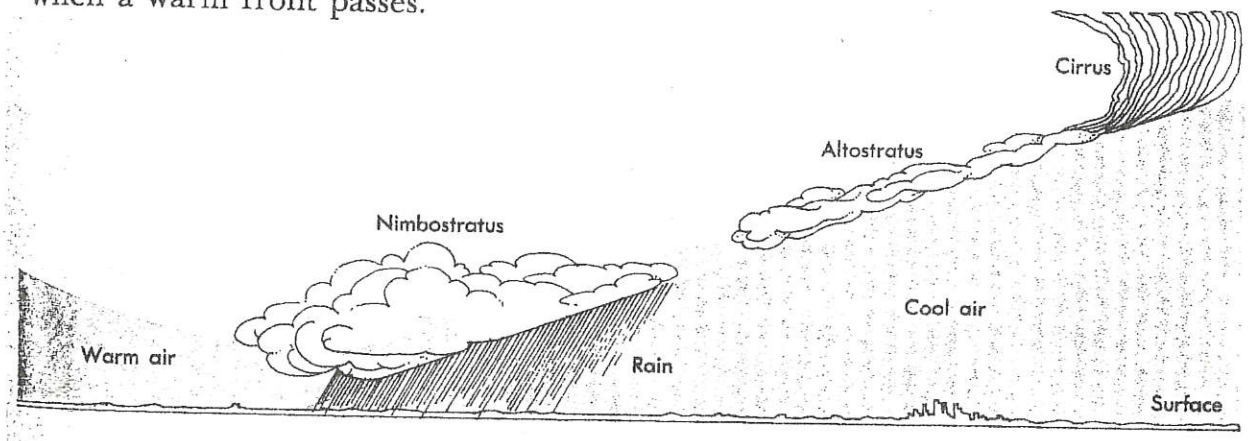
Fronts move as the air masses move. One air mass usually moves into or invades a region occupied by another as the other air mass moves away. In this way, the front travels across the earth's surface.

Fronts tend to move from west to east across the U.S.

When a warm air mass moves against a cold air mass, a **warm front** occurs. Warm air slides forward and above the cold air in a warm front. As the air rises, it cools. Cirrus clouds form about 1000 km ahead of the front. The clouds become lower and thicker as the front continues to move. A large area of snow or rain may fall from nimbostratus clouds and last for several hours. Temperatures often rise when a warm front passes.

Mapping fronts and following their movements is a prime aspect of weather forecasting.

FIGURE 12–3. Clouds and precipitation associated with a warm front.



A **cold front** occurs when a cold air mass moves against a warm air mass. Cold fronts move almost twice as fast as warm fronts. As the cold air drives forward, the warm air is forced upward rapidly. Clouds that form along cold fronts are usually cumulus or cumulonimbus. Snowshowers or rainstorms may be severe, but they end quickly. When a cold front passes, temperatures drop and winds shift.

How is a cold front different from a warm front?

A squall line is an area of intense instability ahead of a fast moving cold front.

A cold front moves faster than a warm front. Therefore, a cold front may approach and overtake a warm front. When the two fronts meet, an **occluded front** forms. Weather in an occluded front has some of the characteristics of both warm and cold fronts. Periods of light rain or snow may be followed by heavy thunderstorms and snowshowers.

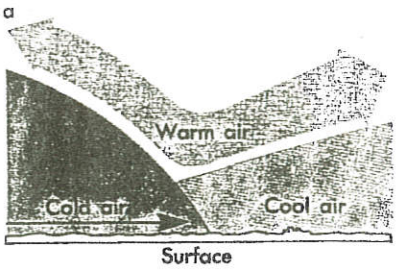


FIGURE 12–4. An occluded front has characteristics of both warm and cold fronts (a).

How is an occluded front produced?