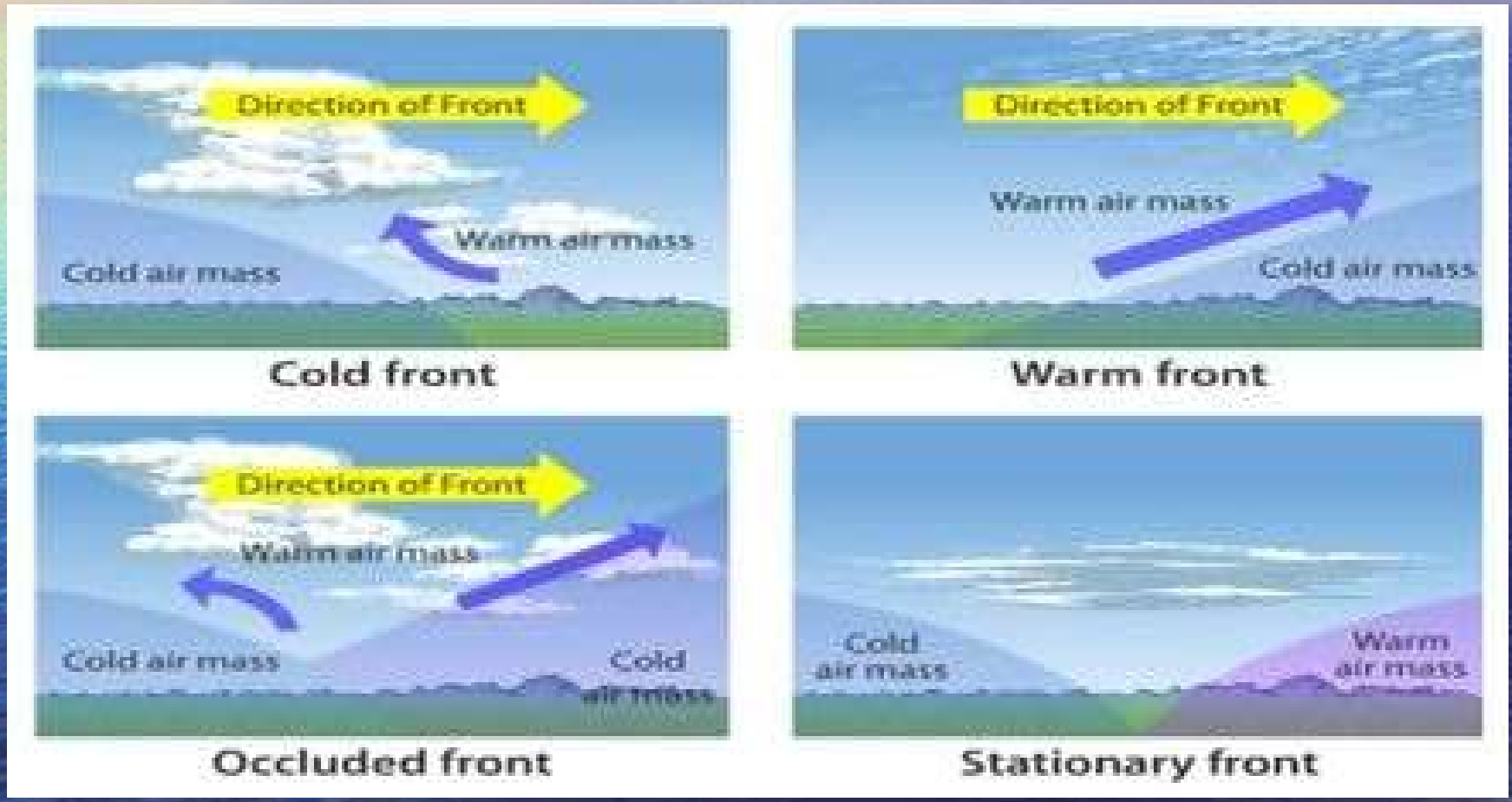
Warm up

Grab a sheet regarding Progress Reports from the turn in tray table.

Quickly record your hurricane data then answer the following questions in your notebook.

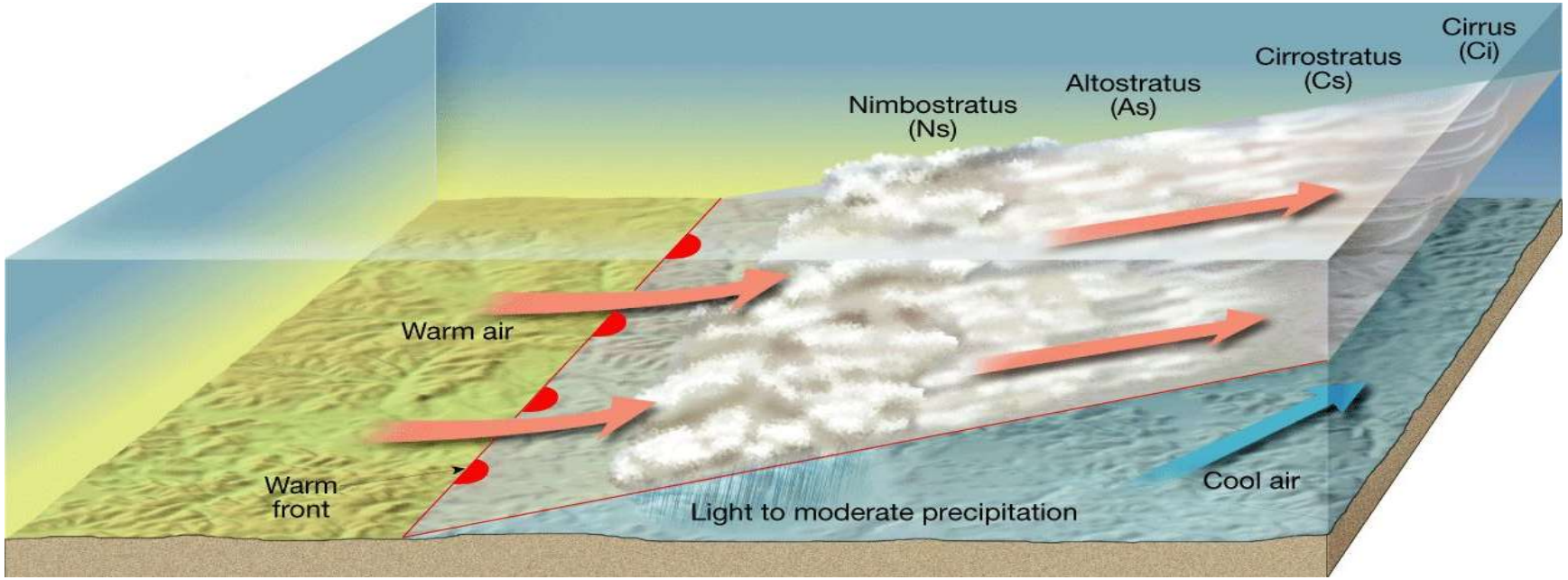
1. Name and describe the four different types of air masses.
2. What does it mean when there is high air pressure? What about low air pressure?

Day 2 Fronts


Direction of Front
Warm air mass
Cold air mass
Cold front
Direction of Front
Warm air mass
Cold air mass
Warm front
Direction of Front
Warm air mass
Cold air mass
Cold air mass
Occluded front
Cold air mass
Warm air mass
Stationary front

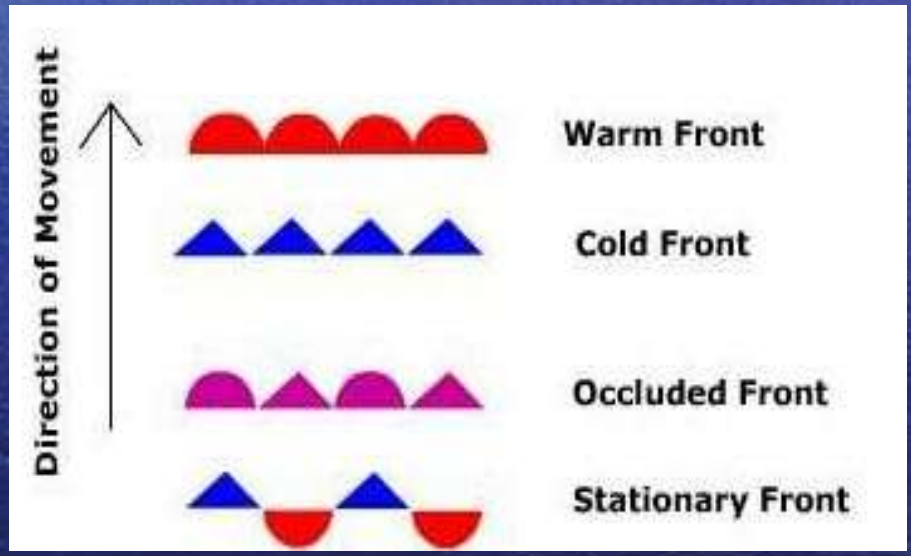
Fronts

- Where air masses meet but do not mix due to different temperatures and densities, becomes a front



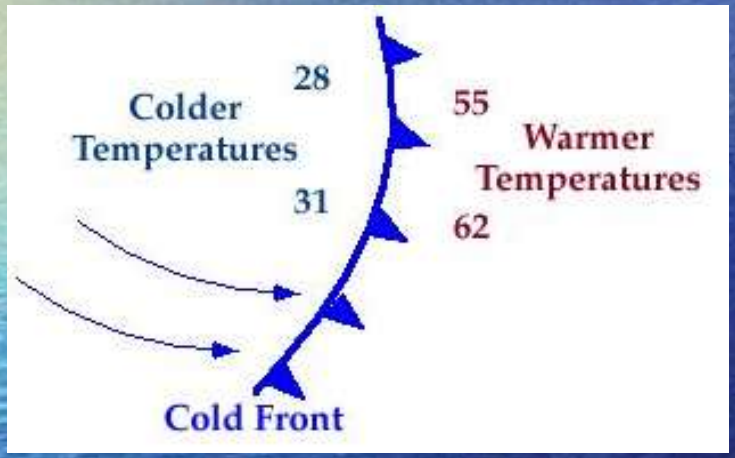
Fronts

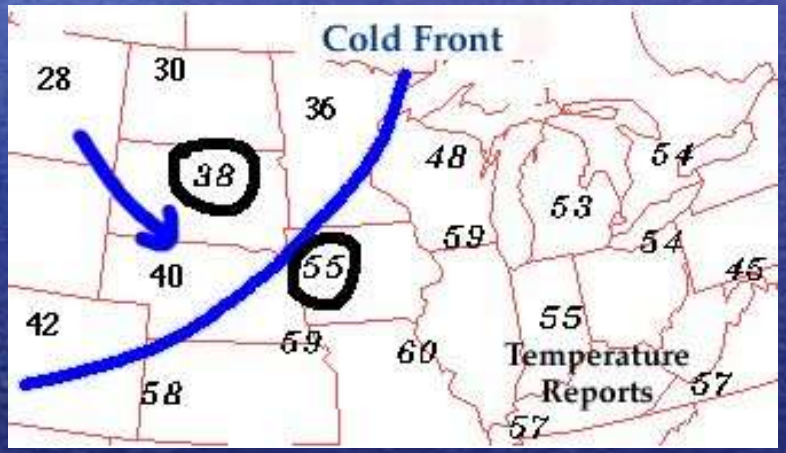
- 4 kinds of fronts:
  - **Cold front**
  - **Warm front**
  - **Occluded front**
  - **Stationary front**



Fronts: Five Types of Fronts

1. **Cold Front: The zone where cold air is replacing warmer air**

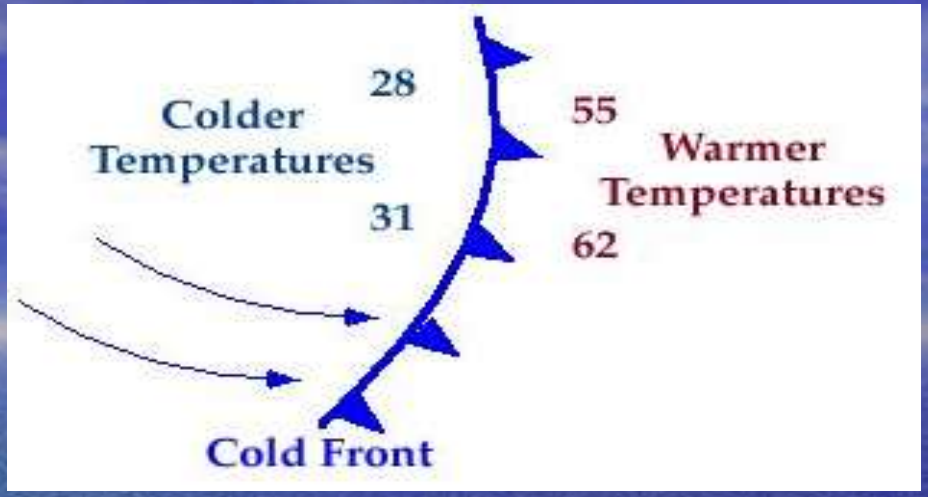


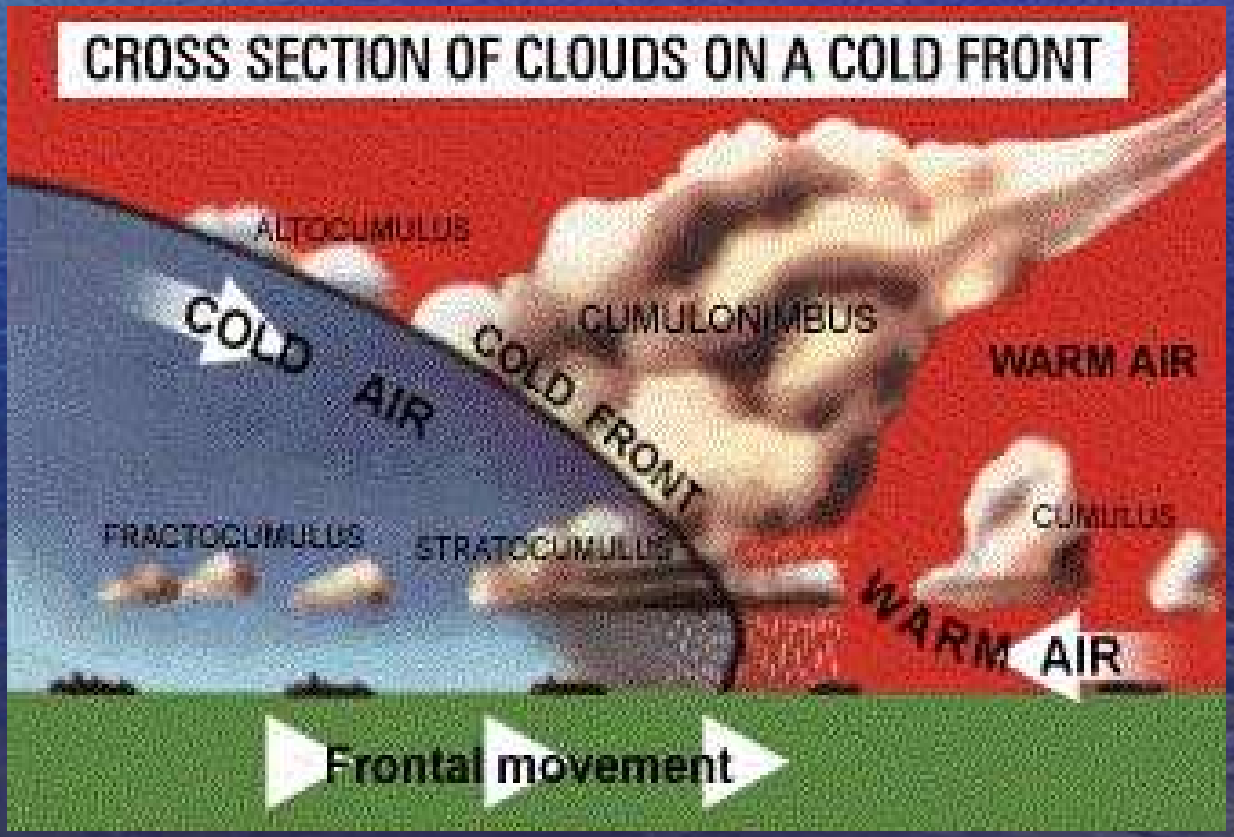


- **Air gets drier after a cold front moves through**

Cold Front

- A cold air mass is replacing a warmer air mass.
- Shown on a weather map by a blue line with triangles pointing the direction the cool air is moving.





Cold Front

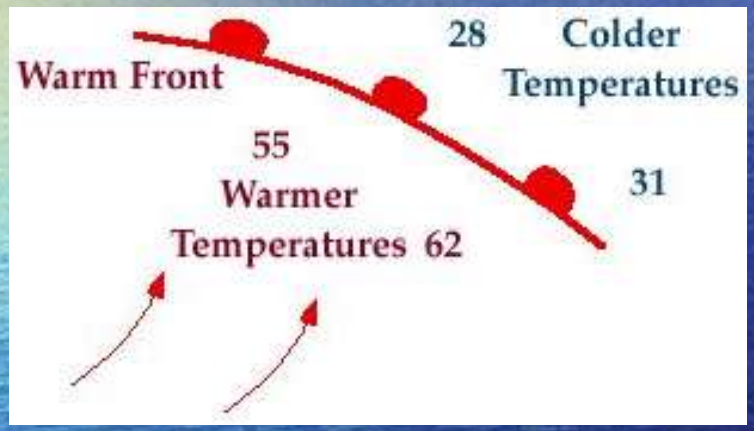
- Rapidly moving cold air mass runs into a slowly moving warm air mass.
- The denser cold air slides under the lighter warm air pushing it upward.
- The rising air cools and condenses, forming clouds.
- Heavy rain or snow may fall.
- If the warm air mass contains only a little water vapor, there may be only cloudy skies.

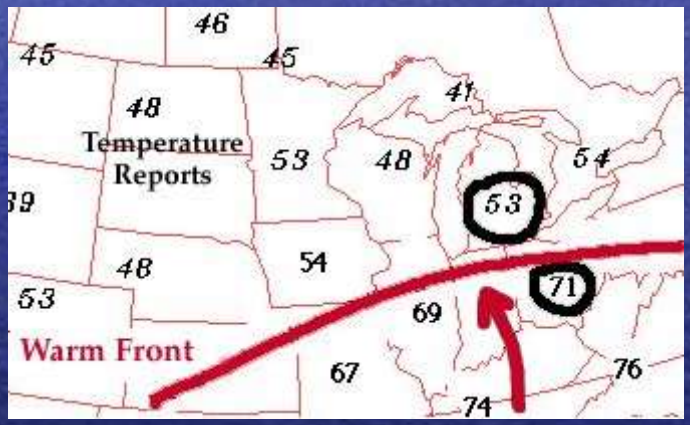
Cold Front

- Cold fronts move quickly and can cause abrupt weather changes including violent thunderstorms
- After a cold front passes through, cool, dry air moves in.
- Clear skies and cooler temperatures often follow.
- Visual

Fronts: Five Types of Fronts

2. **Warm Front: The zone where warm air is replacing colder air**

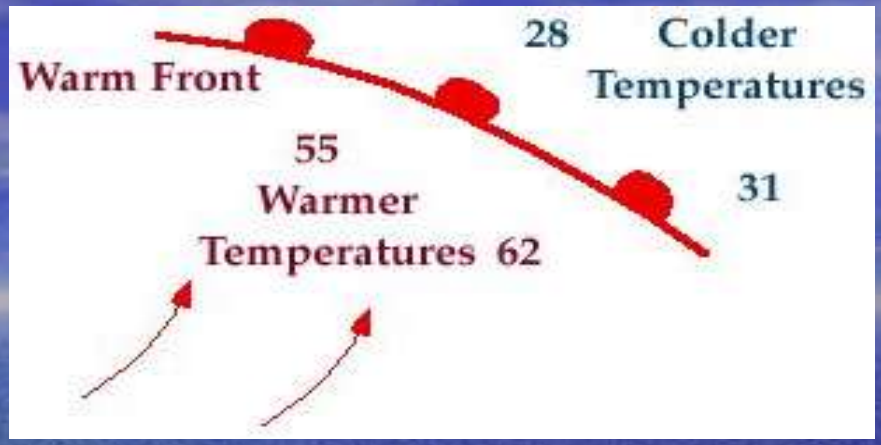


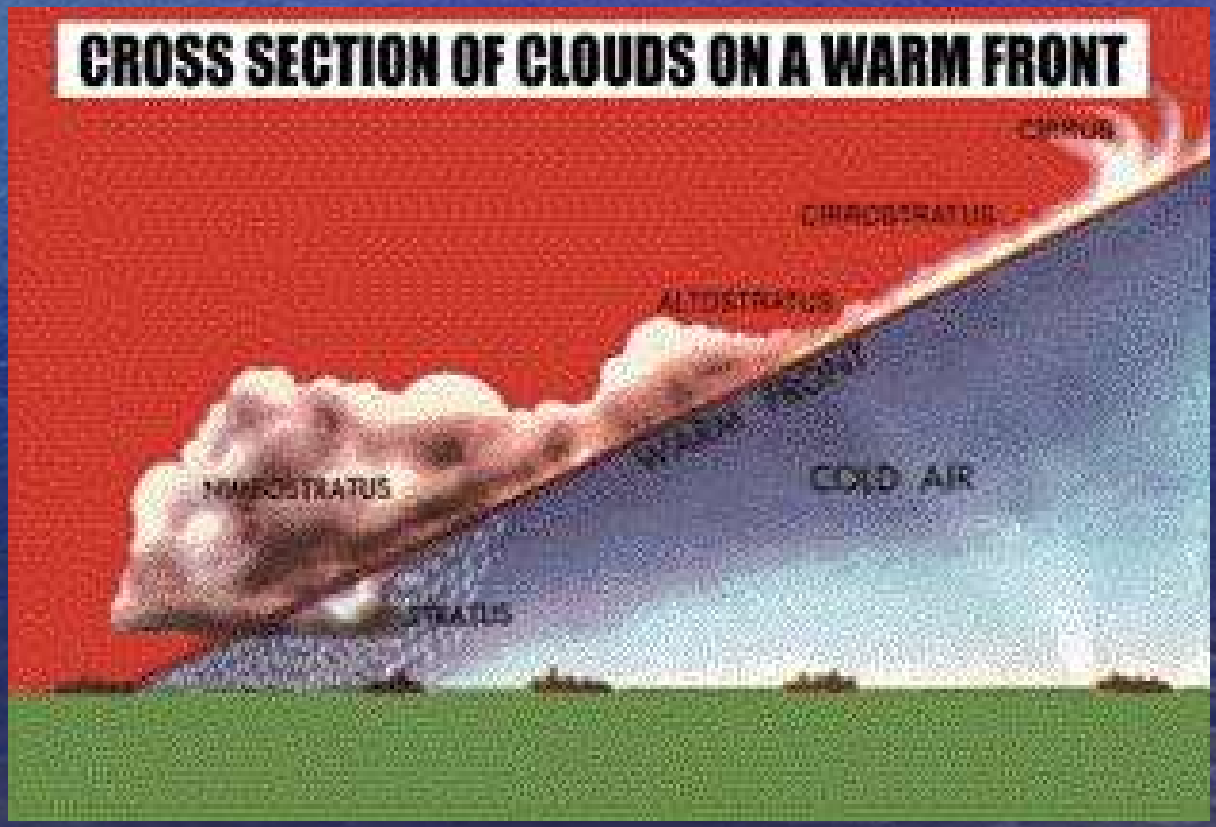


- **Air gets more humid after a warm front moves through**

Warm Front

- Warm air mass collides with a slowly moving cooler air mass.
- Shown on a weather map by a red line with half circles pointing the direction the warm air is moving.





Warm Front

- Moving warm air mass collides with a slowly moving cold air mass.
- The warm air moves over the denser cold air.
- If the warm air is humid, showers and light rain fall along the front where the warm and cold air meet.
- If the warm air is dry scattered clouds form.

Warm Front

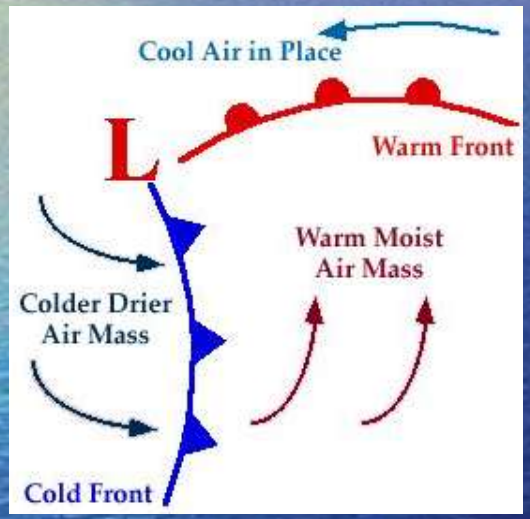
- Because warm fronts move more slowly than cold fronts, the weather may be rainy or foggy for several days.
- After the warm front passes, the weather is likely to be warm and humid.
- In winter, warm fronts bring snow.
- Visual

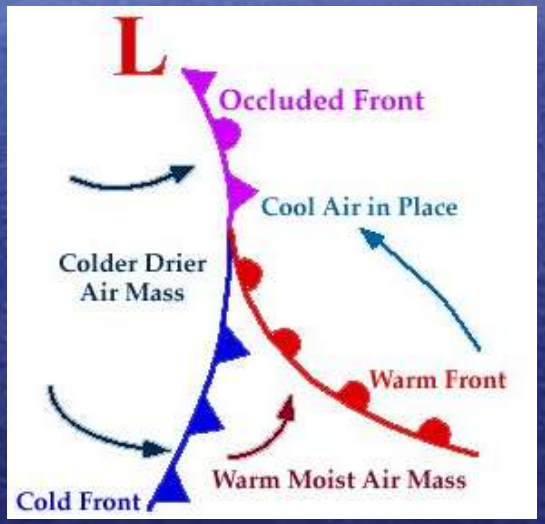
Comparing Warm and Cold Fronts

- Cold fronts move faster than warm fronts.
- The weather activity in a cold front is often violent and happens directly at the front.
- Cold fronts have sudden gusty winds high in the air creating turbulence.
- The weather activity in a warm front generally happens before the front passes.
- In a warm front the cloud formation is very low often creating situations of poor visibility.

Fronts: Five Types of Fronts

4. **Occluded Front: Formed when a cold front overtakes a warm front**

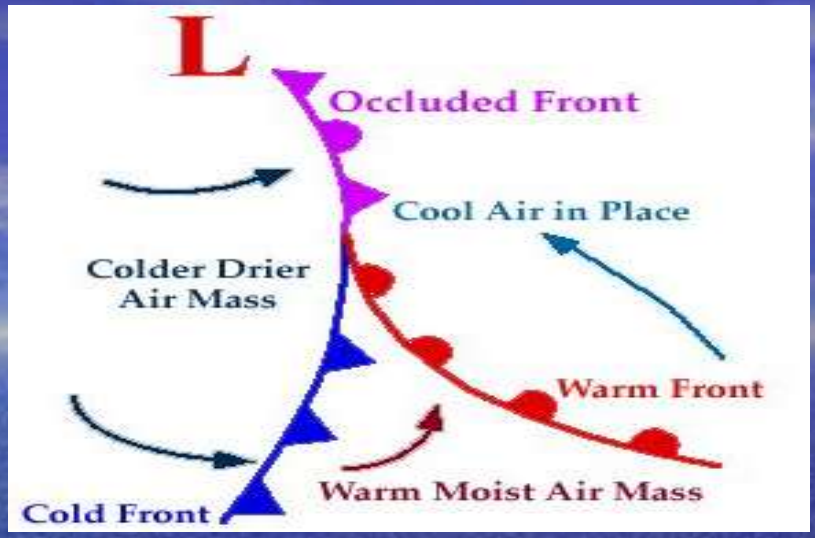


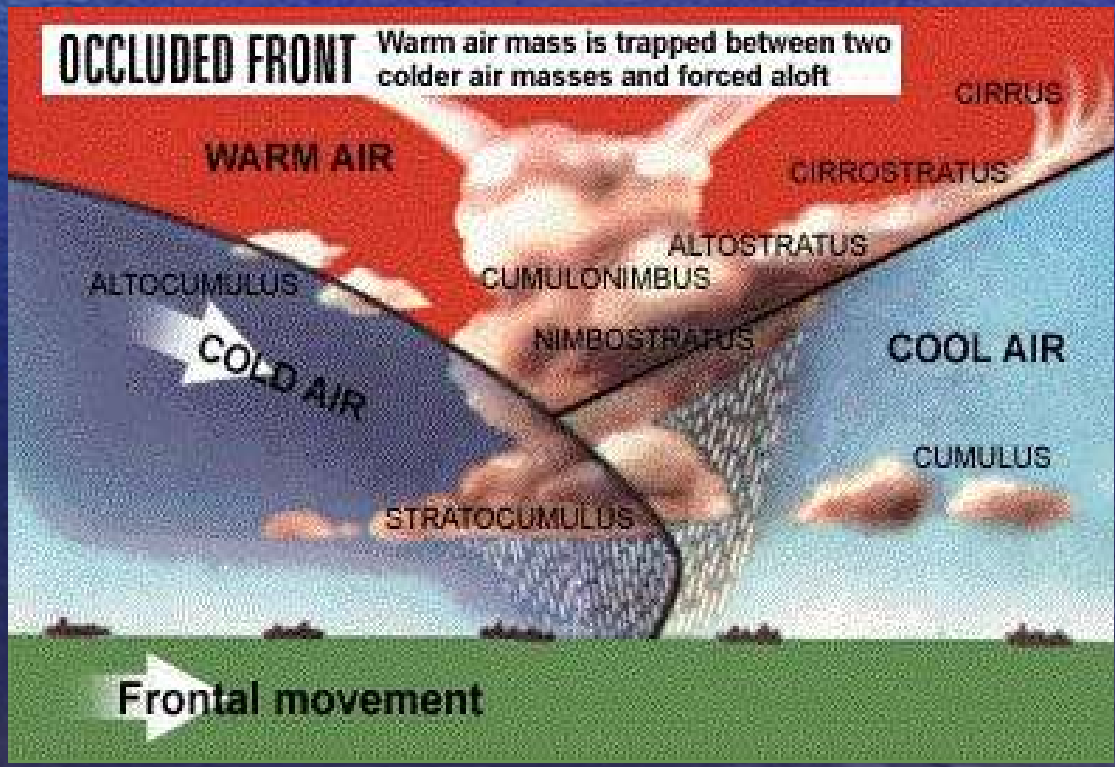


- **This occurrence usually results in storms over an area**
- **In U.S., the colder air usually lies to the west**

Occluded Fronts

- When a warm front is trapped by 2 cold fronts.
- Shown on a weather map by a purple line with alternating triangles and semicircles pointing the direction the front is moving.





Occluded Fronts

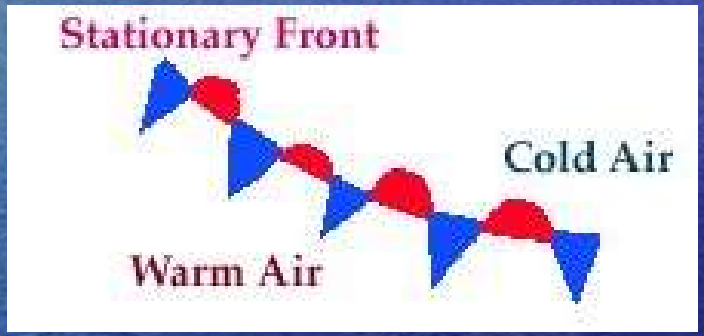
- A warm air mass is caught between two cooler air masses.
- The denser cool air masses move underneath the less dense warm air and push it upward.
- The temperature near the ground becomes cooler.
- Visual

Occluded Fronts

- The warm air mass is cut off, or occluded, from the ground.
- As the warm air cools and its water vapor condenses, the weather may turn cloudy and rainy or snowy.
- Visual

Fronts: Five Types of Fronts

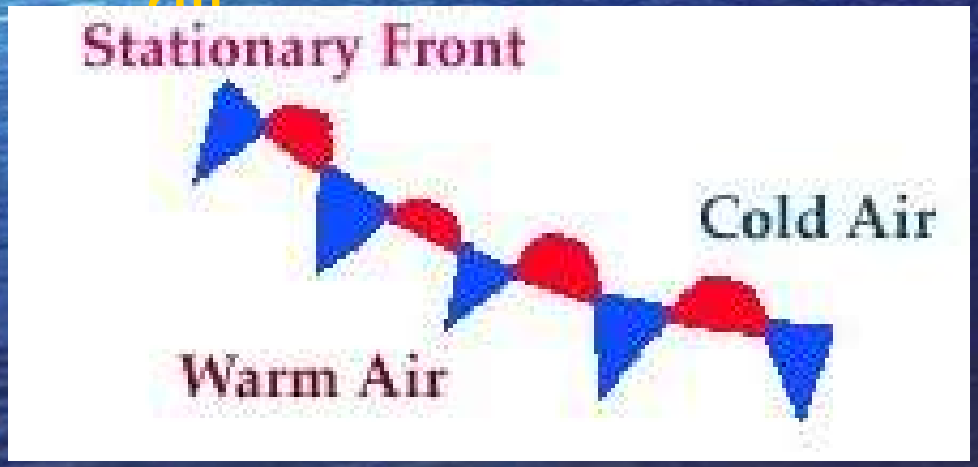
3. Stationary Front: When either a cold or warm front stops moving

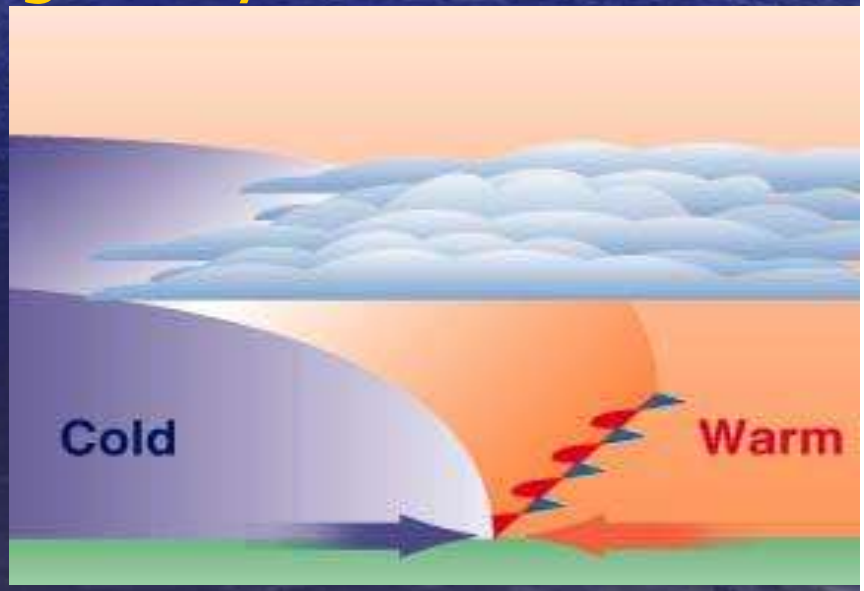


- **When the front starts moving again it returns to either being a cold or warm front**

Stationary Fronts

- A front that stops moving or is moving very slowly.
- Shown on a weather map with alternating red semicircles pointing away from the warm air and blue triangles pointing away from the cold air.





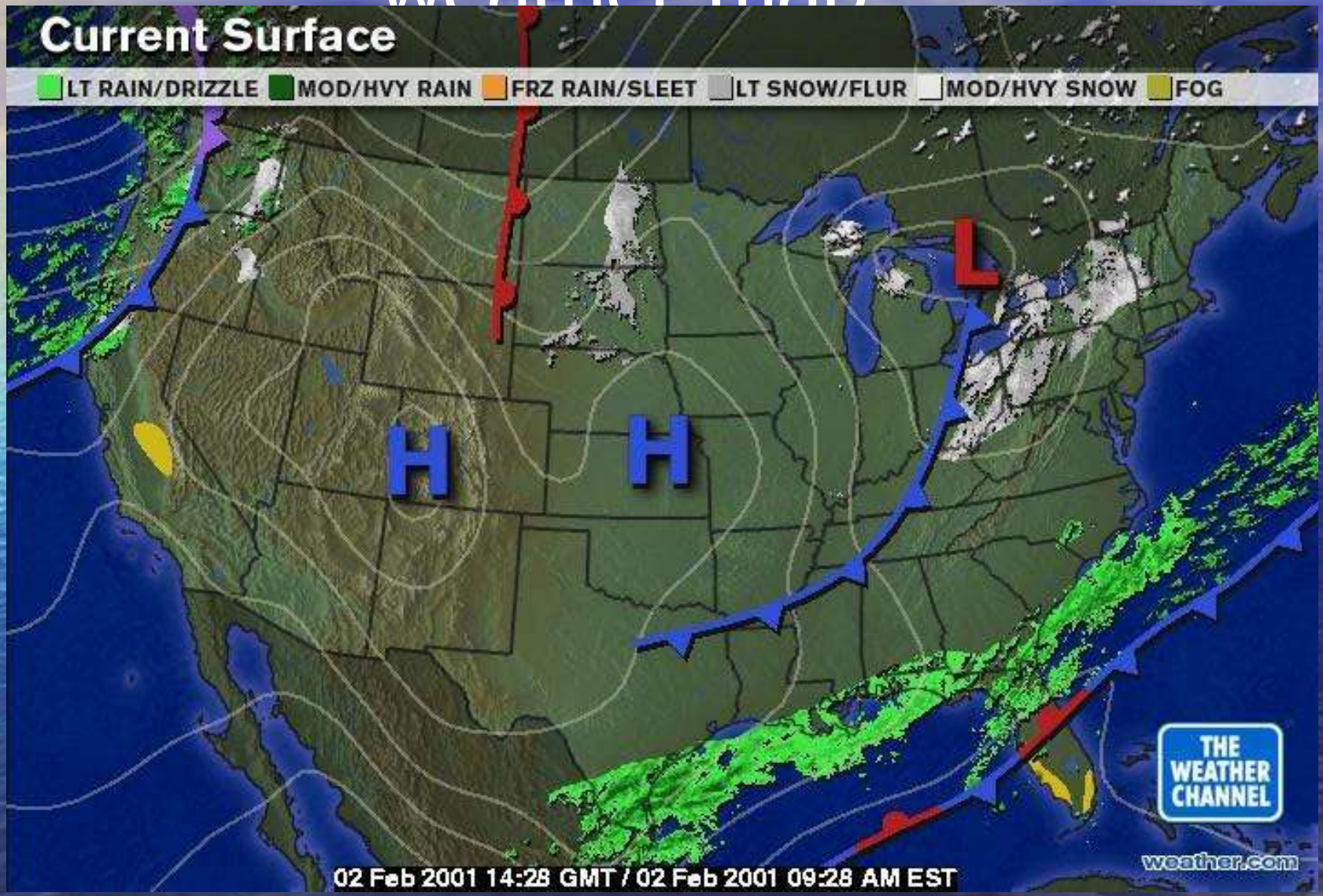
Stationary Fronts

- Sometime cold and warm air masses meet, but neither has enough force to move the other.
- They meet in a "standoff"

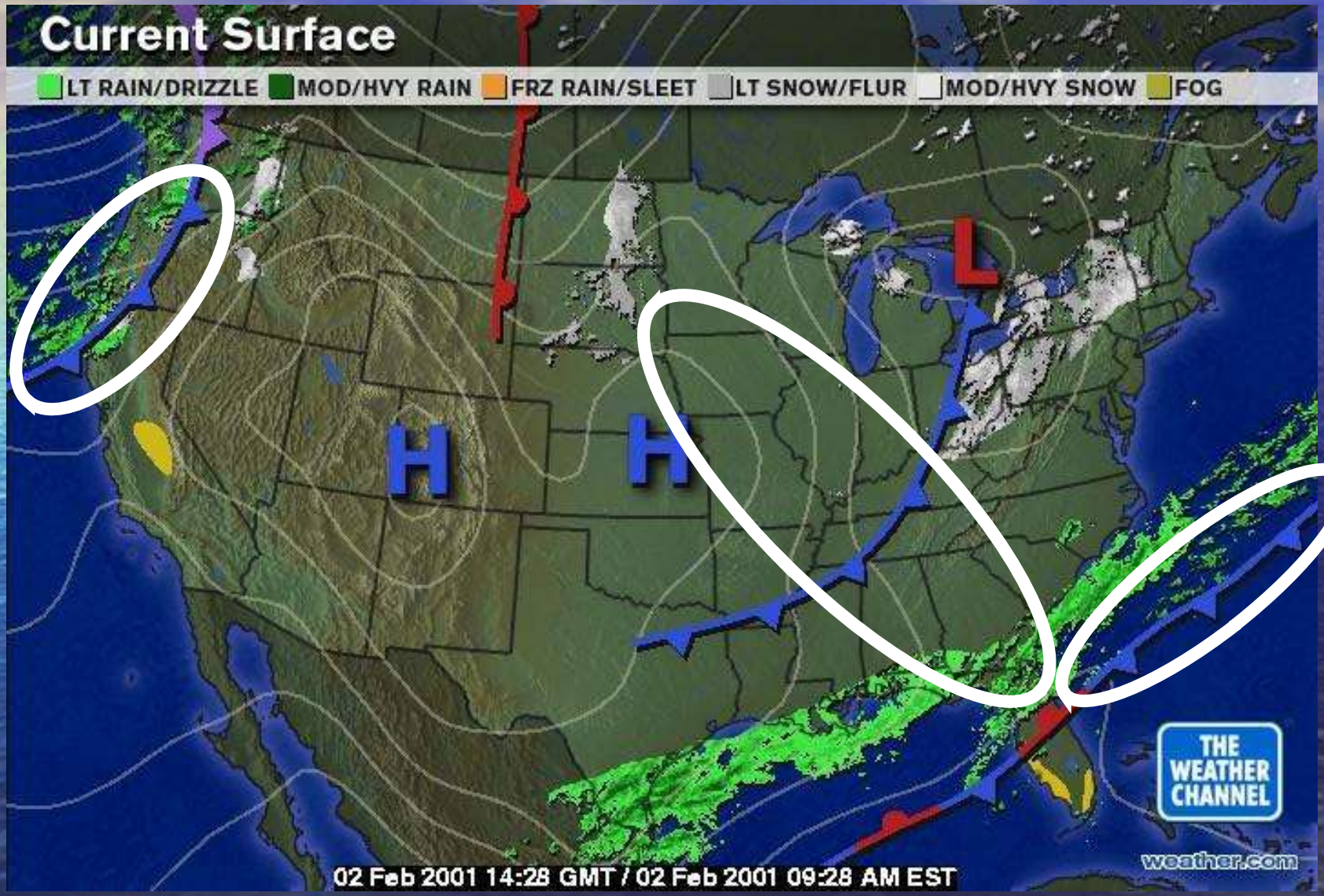
Stationary Fronts

- Where the warm and cool air meet, water vapor in the air condenses into rain, snow, fog, or clouds.
- It may stall over an area and bring many days of clouds and precipitation.
- Visual

Locate the 4 types of fronts on this weather map



Cold Fronts


Current Surface
LT RAIN/DRIZZLE
MOD/HVY RAIN
FRZ RAIN/SLEET
LT SNOW/FLUR
MOD/HVY SNOW
FOG
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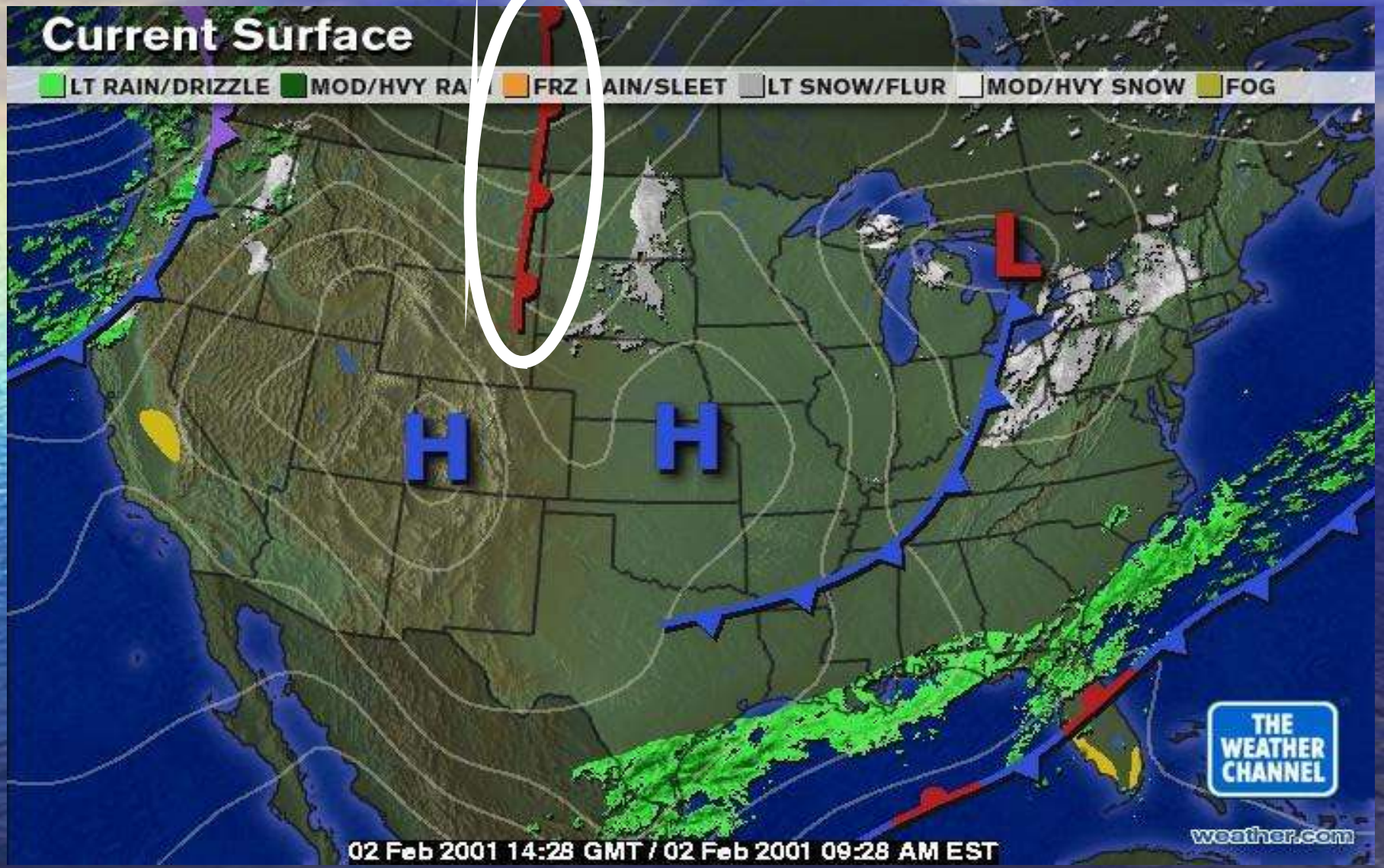
THE WEATHER CHANNEL
weather.com
02 Feb 2001 14:28 GMT / 02 Feb 2001 09:28 AM EST

Warm Front


Current Surface
LT RAIN/DRIZZLE
MOD/HVY RA
FRZ
AIN/SLEET
LT SNOW/FLUR
MOD/HVY SNOW
FOG
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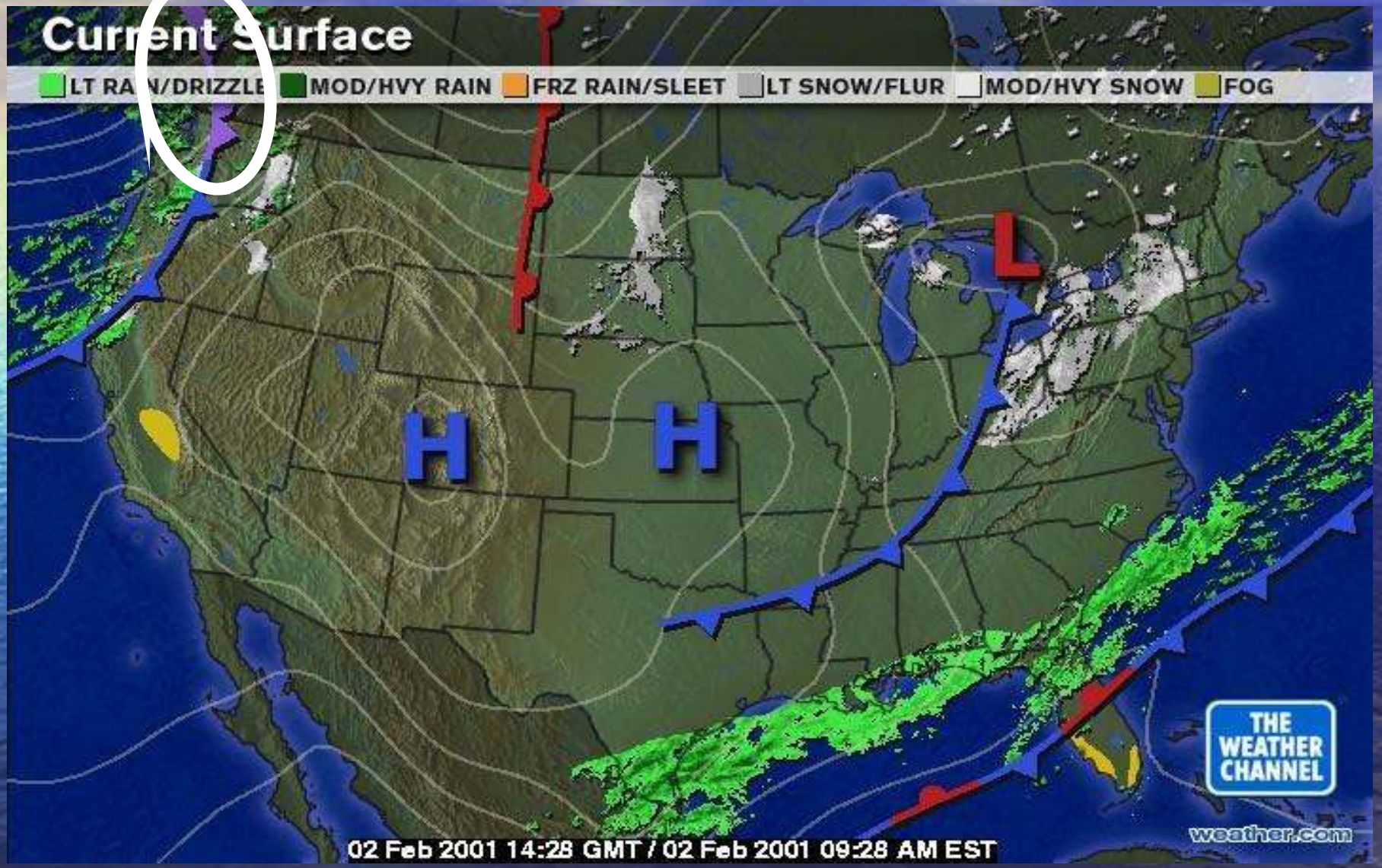
THE WEATHER CHANNEL
weather.com
02 Feb 2001 14:28 GMT / 02 Feb 2001 09:28 AM EST

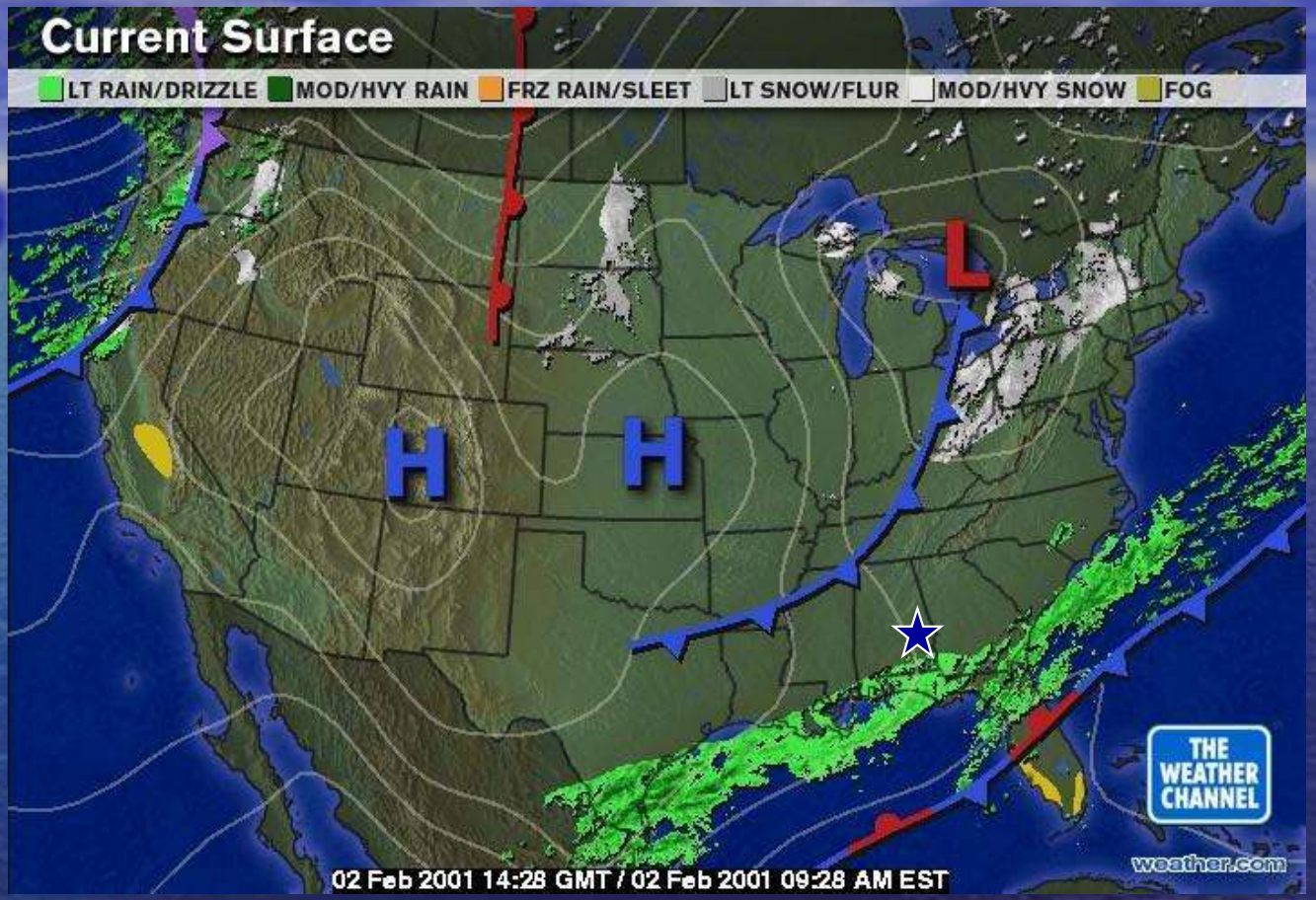
Stationary Front

Occluded Front



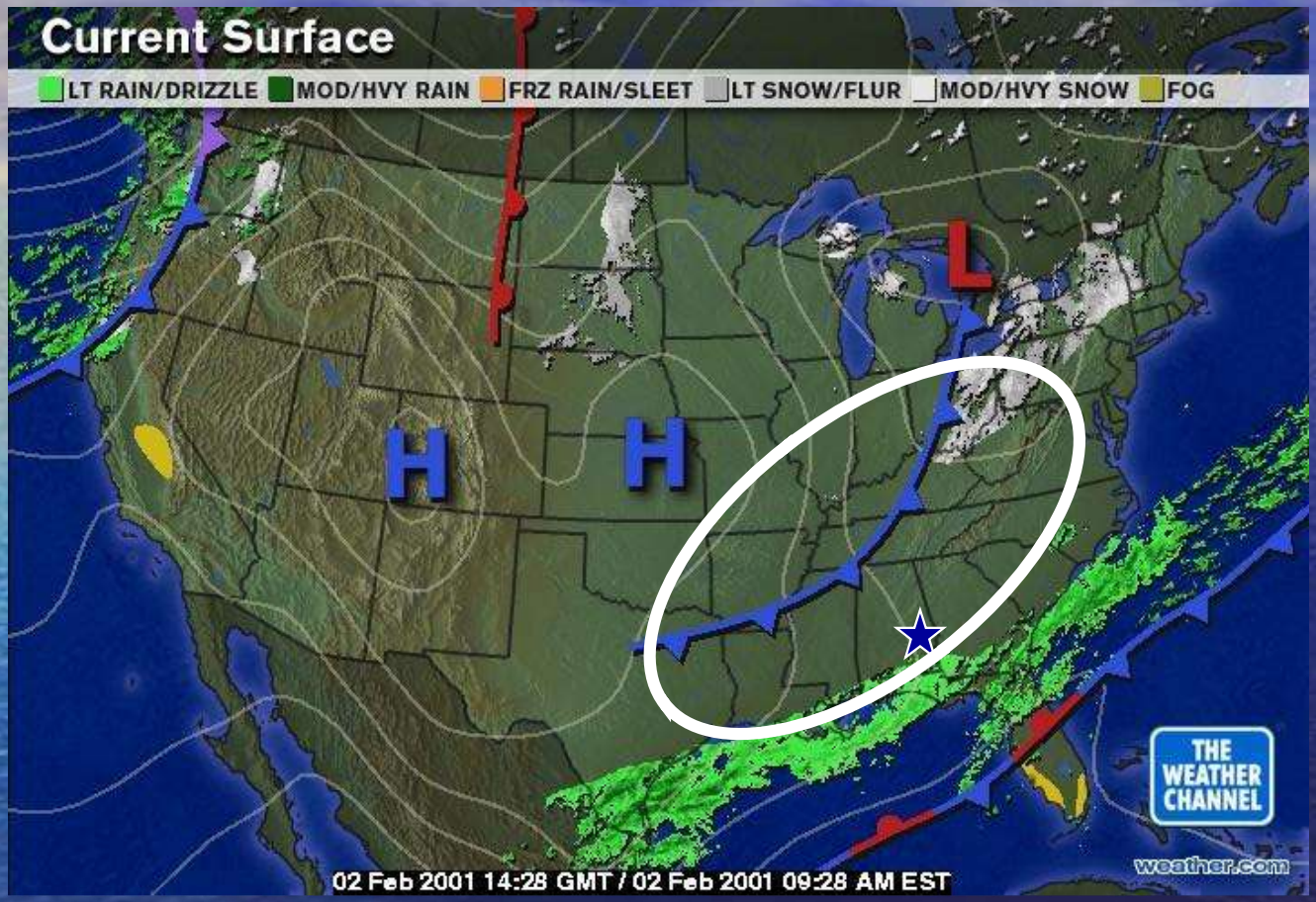
Be a Weather Forecaster

You are planning to travel to Alabama in 2 days. The high temperature there for today is 68° F.



Use the map to help you predict whether the temperature in Alabama will increase, decrease, or stay the same. Explain why you think so.

Be a Weather Forecaster



There is a cold front approaching. The temperatures will probably be cooler behind the front.

Be a Weather Forecaster

- Of course, meteorologists (weather forecasters) use much more data than fronts and air masses to help them forecast the weather more accurately. But any forecast is just a prediction of what *might* happen. Even with the best data, weather forecasts can be wrong.
- Quizlet