

Warm air overrides cool air because it's less dense; air cools and forms clouds

Warm air moves in

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Warm front: a place where a warm air mass replaces a cold air mass

How does the temperature change in front of and behind a warm front?

How do weather conditions change in front of and behind a warm front?

Forecast for Noon Wed 21

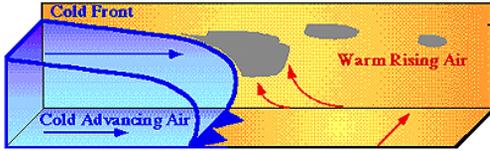
Black circles; temps in C (°F in brackets). Arrows: wind speed in mph. Pressure in millibars (inches in brackets)

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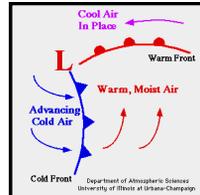
The white numbers represent air temperature (degrees C). Which line best represents a COLD FRONT?

1. A
 2. B



This is how a low pressure system forms:

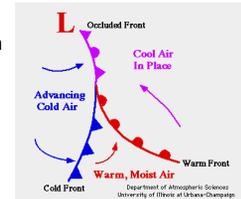
- 1) An advancing cold front (dense air) displaces warm air
- 2) Warm air rises, causing a region of low pressure to form



Low pressure system usually has a warm and cold front

As the low pressure intensifies, the cold front overtakes the warm front (or vice versa).

Where they meet is an **occluded front**.



Weather changes with the passage of fronts....

Some fronts are accompanied by a rapid or violent change in the weather called **storms**.

- Thunderstorms
- Tornadoes
- Hurricanes



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Thunderstorms develop in warm, moist air that is quickly uplifted

This air is uplifted by:

- 1) Differential heating
- 2) Mountains
- 3) Passage of cold front



Tornadoes

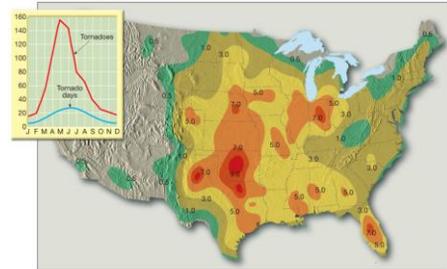
- Violent, local windstorms associated with severe thunderstorms

- Rotating column of air extending downward from a cumulonimbus cloud

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“Tornado Alley”:

Spring, early summer, **warm, moist air** from Gulf of Mexico collides with **dry cold air** from Rocky Mountains



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The greatest storms on Earth are hurricanes. (This is hurricane Ivan)

Hurricanes are **tropical cyclones** with winds greater than 120 km/h (75 mph)



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Hurricanes occur in tropical oceans all over the world and go by these names:

Pacific Ocean: **Typhoons**

Indian Ocean: **Cyclones**

Atlantic Ocean: **Hurricanes**

Around Australia: **Willy Willy**



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