Air Pressure and Fronts
Air Pressure

• Air has weight. Air is in constant motion and is pulled towards Earth’s center by gravity.

• Air pressure is greatest near Earth’s surface and decreases as altitude increases. Higher air pressure near the ground.
What instrument is used to measure air pressure?

• Barometer measures air pressure.
• Dry Air = High Pressure
• Moist Air = Low Pressure
Fronts

Fronts occur where two large air masses collide at the earth’s surface. Each air mass has a different temperature associated with it. In the US, air masses usually travel west to east.
• Air masses do not usually mix. A boundary called a front forms between them.
• Fronts are usually associated with some form of precipitation.
• Thunderstorms, tornadoes, and other severe weather can occur with fronts.
Four types of fronts

1. Cold Front
2. Warm Front
3. Stationary Front
4. Occluded Front

Why are there no fronts in the Tropics?
There are no cold air masses, just warm air.
Cold Front

Heavy cold air displaces lighter warm air, pushing it upward. Cumulus clouds form and usually grow into thunderstorms. Temperatures drop anywhere from 5 to 15 degrees. Winds become gusty. Rain, snow, sleet, and hail can occur with a cold front.
Warm Front
Warm fronts occur when warm air replaces cold air by sliding over it. Altocumulus clouds form and may be associated with rain, snow, or sleet. Temperatures may warm slightly. Winds are usually gentle with this kind of front.
Stationary Front

Stationary fronts occur when neither warm nor cold air advances. Neither front is moving. These type of conditions can last for days, producing nothing but clouds. Temperatures remain the same and winds are gentle to none.
Occluded Front

Occluded fronts occur when a faster-moving cold air mass overtakes a slower-moving warm air mass and forces it up. The cold air mass continues until it catches up with a warmer cold air mass. Occluded fronts have cool temperatures and large amounts of precipitation.