Air Masses on the Move

Collect clues to explain changing weather



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Your Weather Day

Which weather change messes with your plans the most?

- **A** Sudden temperature drop
- **B** Heavy rain starting
- **C** Strong wind picking up
- **D** Thick clouds rolling in

Vote with your hands, then explain why.

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What Is an Air Mass?

- Huge air body, thousands of miles wide
- Same temperature and humidity throughout
- Gains traits from its source region
- Carries its weather when winds move it



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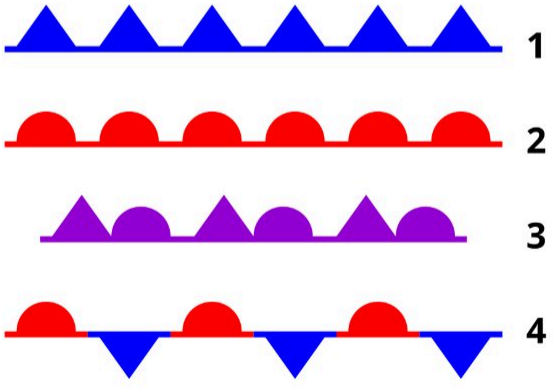
When Different Air Meets

Tall storm clouds build where warm, moist air crashes into cold, dry air. What changes would you feel in temperature, wind and rain?

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What could this be?

Red curves and blue spikes march across a weather map. What are these lines?



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Watch: Fronts in Action



▶ 0:00 – 3:15

- Spot where two air masses meet
- Watch what blue triangles track
- Listen for temperature and rain clues

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How Air Masses Move

- Sun heats equator more than poles
- Warm air rises, cool air sinks and flows
- Air moves from high to low pressure
- Jet streams above steer storms along

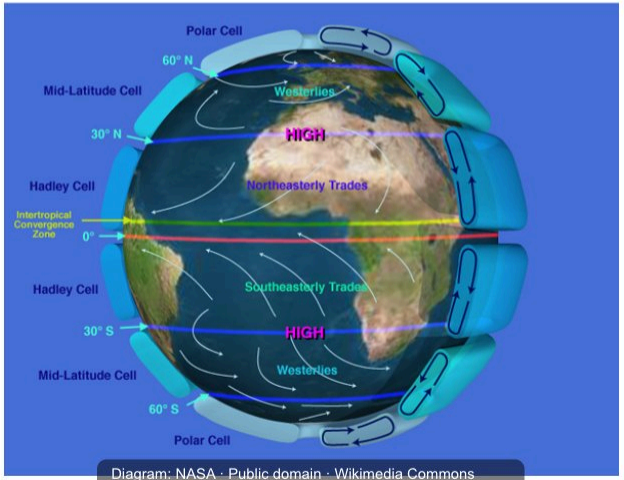


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Watch: Warm, Cold, Wet, Dry



▶ 0:00 – 5:00

- Catch warm, humid air from oceans
- Catch cold, dry air from land
- Notice clouds where they collide

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Your task

Crack two days of weather data and prove an air mass changed.

1. Day 1: 78°F, humid, south wind 15 mph, low pressure, rain
2. Day 2: 56°F, dry, north wind 20 mph, high pressure, clear
3. Claim which masses swapped and what front passed

10 min

In pairs

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Cold Front vs Warm Front

Cold Front

- Cold air pushes under warm air
- Blue triangles show direction
- Fast, about 25 to 30 mph
- Sudden drop, gusty storms

Warm Front

- Warm air slides over cold air
- Red semicircles show direction
- Slower, steady push forward
- Layered clouds, steady rain

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Think, pair, share

If temperature fell 20°F and wind shifted north overnight, what air mass move explains it?



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True or false?

An air mass has nearly the same temperature and humidity throughout.

Maritime air forms over land and is dry.

Cold fronts move fast and can bring sudden storms.

Warm fronts are shown in blue with triangles.

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