

Front and Center

Density, Temperature, and Fronts

Name _____

Date _____ Period _____

Purpose

To investigate how fronts affect the weather.

Part I: Weather Maps

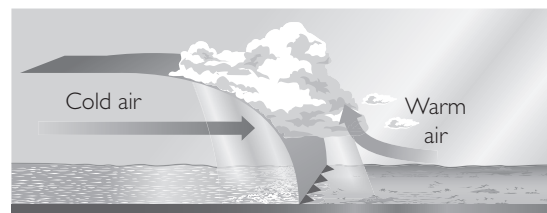
Reexamine the weather maps from Lesson 1 to answer the questions.

1. Examine the Fronts Map, Cloud Cover Map, and Precipitation Map together. What relationships do you see among fronts, clouds, and precipitation?
2. Where would you expect to see warm and cold air masses on the Fronts Map? Draw them on this map.



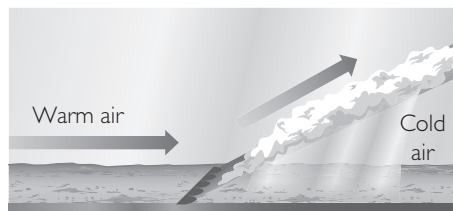
Part 2: Warm and Cold Fronts

1. Why is a cold air mass denser than a warm air mass?
2. Explain why clouds might form when a warm air mass collides with a cold air mass.
3. Examine the illustration showing what happens at a cold front.



Cold front: Cold air overtakes warm air.

- a. Explain why warm air is pushed up by the cold front.
 - b. Where do clouds form when there is a cold front?
 - c. Where does precipitation fall when there is a cold front?
4. Examine the illustration showing what happens at a warm front.



Warm front: Warm air overtakes cold air.

- a. What happens to the warm air when it overtakes the cold air?
 - b. Where do clouds form when there is a warm front?
 - c. Where does precipitation fall when there is a warm front?
5. **Making Sense** What does air density have to do with weather fronts?
6. **If You Finish Early** Nearly eighty percent of the air in our atmosphere is nitrogen gas, N_2 , while water vapor makes up only 1% of the air. Why doesn't it rain liquid nitrogen instead of rainwater?