Name _____ Date _____ Class _____

Air Masses and Fronts

This section describes huge bodies of air, called air masses, and explains how they move. The section also explains how the meeting of different air masses affects weather.

Use Target Reading Skills

As you read about the four types of fronts, complete the compare-and-contrast table below.

Types of Fronts

Front	How It Forms	Type of Weather
Cold front	A cold air mass overtakes a warm air mass.	**a.**
Warm front	**b.**	**c.**
Occluded front	**d.**	**e.**
Stationary front	**f.**	**g.**

Introduction

1. What is an air mass?

_____

_____

_____

Types of Air Masses

2. Scientists classify air masses according to _____ and _____.
3. Is the following sentence true or false? Polar air masses have low air pressure. _____

4. Complete the compare/contrast table that shows the types of air masses and their characteristics.

Types of Air Masses and Their Characteristics

Type or Air Mass	Characteristics
a.	Warm and humid
b.	Cool and humid
c.	Warm and dry
d.	Cool and dry

e. How are maritime tropical and marine polar air masses alike, and how are they different?

_____

_____

f. How are continental tropical and continental polar air masses alike, and how are they different?

_____

_____

How Air Masses Move

5. In the continental United States, major wind belts generally push air masses from _____ to _____.

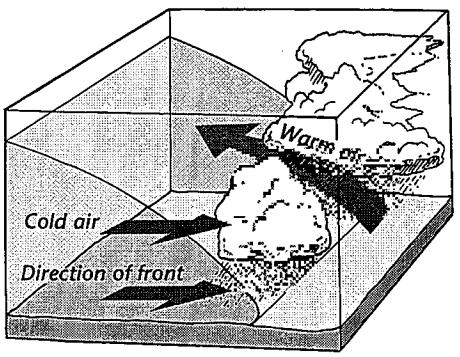
6. How do jet streams affect air masses?

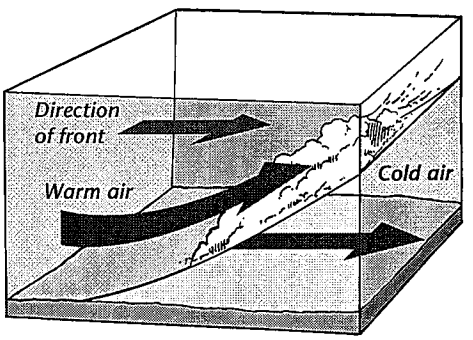
_____

_____

Types of Fronts

7. Label the drawings to indicate a cold front and a warm front.





a. _____ **b.** _____

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Weather Patterns ▪ *Guided Reading and Study*

Match the type of front with how it forms.

Type of Front	How It Forms
_____ **8.** cold front	**a.** A moving warm air mass overtakes a slowly moving cold air mass.
_____ **9.** warm front	**b.** A warm air mass is caught between two cooler air masses.
_____ **10.** stationary front	**c.** A rapidly moving cold air mass runs into a slowly moving warm air mass.
_____ **11.** occluded front	**d.** A cold air mass and a warm air mass meet and remain stalled over an area.

12. Circle the letter of each sentence that is true about fronts.

a. Cold fronts can bring violent thunderstorms.
b. Warm fronts are associated with clouds and rain.
c. Stationary fronts may bring many days of clouds and precipitation.
d. Occluded fronts always bring fair weather.

Cyclones and Anticyclones

13. A swirling center of low air pressure is called a(n) _____.

14. Is the following sentence true or false? Winds spiral inward toward the center of a cyclone. _____

15. What type of weather is associated with cyclones?

_____

_____

_____

16. Is the following sentence true or false? Winds in an anticyclone spin clockwise in the Northern Hemisphere. _____

17. What type of weather is generally associated with anticyclones?

_____

_____

_____

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Occluded Fronts

Recall that an occluded front occurs when a warm air mass is caught between two cooler air masses and is cut off from the ground. The figures below show two types of occluded fronts. The arrows indicate the direction in which the air masses are moving. The type of occluded front that occurs, A or B, depends on the relative temperatures of the two cold air masses.

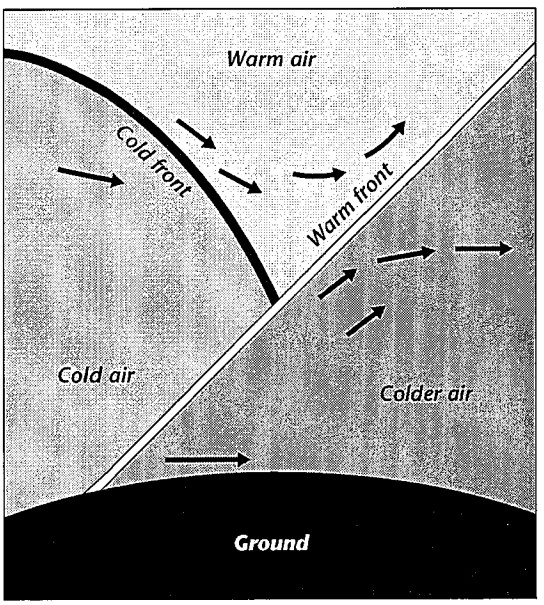

Figure A

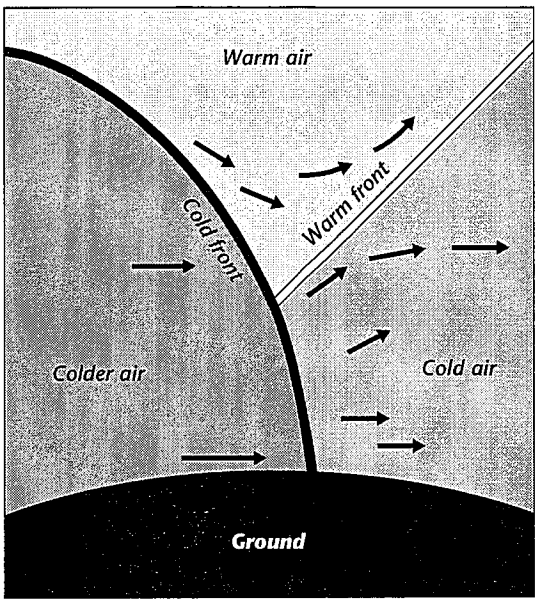

Figure B

Use the figures to answer the following questions. Write your answers on a separate sheet of paper.

1. What are the differences between the occluded fronts shown in Figures A and B?
2. In Figure A, which air mass is densest? Which is least dense?
3. Why doesn't the warm front in Figure B touch the ground?
4. Predict what would happen if both cold air masses had the same temperature.
5. Where would you expect clouds and precipitation to form in each type of occluded front?