

# LESSON

27

## What happens when air masses meet?

Warm and cold air masses do not mix. When warm and cold air masses meet, they collide. The masses "battle" each other. The meeting causes many weather changes.

The boundary between two air masses is called a **front**. One kind of front is called a **warm front**.

**A WARM FRONT FORMS WHEN A MOVING WARM AIR MASS PUSHES AGAINST A COLD AIR MASS.**

The warm air of the front pushes upward. It flows over the top of the cooler air mass.

Many clouds form along a warm front. They may reach out for 1,600 kilometers (1,000 miles) or more.

At first there are only thin cirrus clouds high in the sky. Then stratus clouds move in. Slowly, the clouds become lower and lower. The sky becomes darker and darker. Finally, it rains.

Precipitation along a warm front is even and steady. It keeps falling until the front passes. It may last a few days. Then the weather becomes clearer and warmer. A warm air mass has moved in.

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## WHAT A WARM FRONT LOOKS LIKE

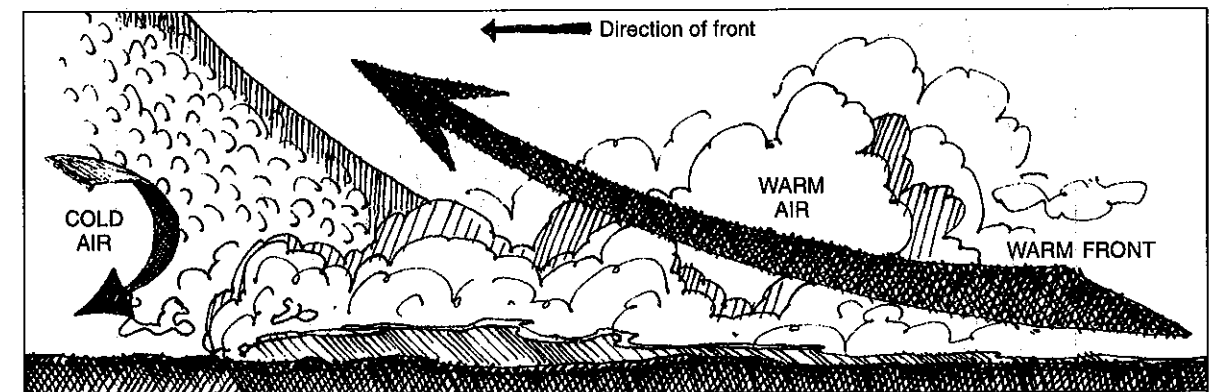


Figure A

Figure A shows a warm front. Find the two air masses. The warm air pushes upward and flows over the cold air. Many clouds form where the two air masses meet.

See for yourself how a warm front brings weather changes slowly.

### What To Do

1. Get a thin piece of paper. Tracing paper would be best.
2. Put your paper over Figure B and trace it.
3. Now put the traced drawing over Figure C, lining up the x's.
4. Slowly, move the tracing to the right until the y's match up. Now, imagine yourself to be at spot y. What would you see? What would you feel?

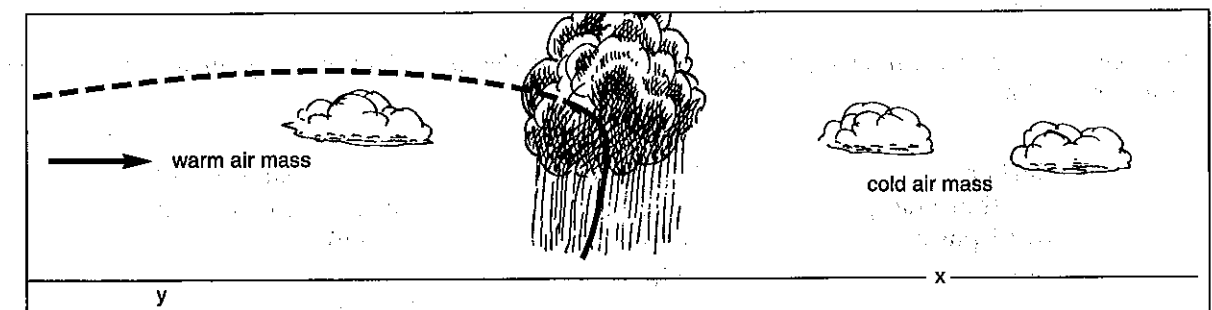


Figure B

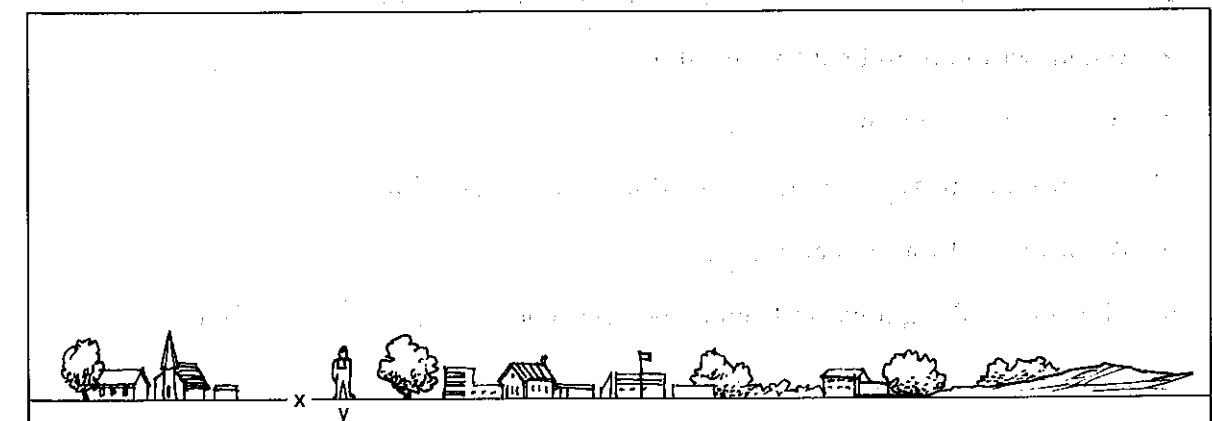


Figure C

## A WARM FRONT ON A WEATHER MAP

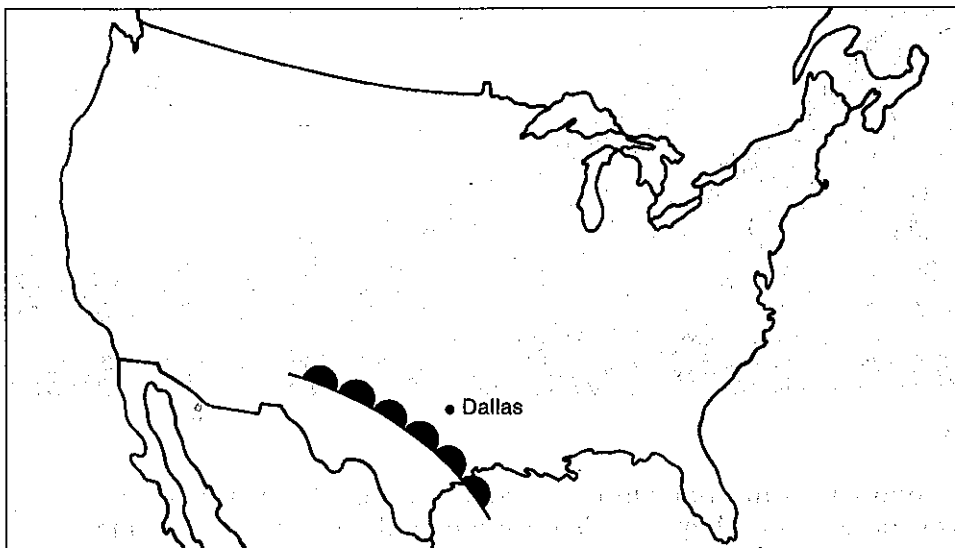



Figure D

The symbol for a warm front is . Figure D shows what it looks like on a weather map. The warm front on this map is moving towards Dallas. Its speed is about 24 kilometers (15 miles) per hour. Dallas is 240 kilometers away.

In how many hours will the warm front reach Dallas? \_\_\_\_\_

### FILL IN THE BLANK

Complete each statement using a term or terms from the list below. Write your answers in the spaces provided.

darker  
weather changes  
front passes  
rain

boundary  
lower  
warm front  
maps

"battle each other"  
clearer and warmer  
clouds

1. A front is the \_\_\_\_\_ between two air masses.
2. When warm air and cold air meet, they \_\_\_\_\_.
3. A front brings about \_\_\_\_\_.
4. A warm air mass that pushes a cold air mass is called a \_\_\_\_\_.
5. A warm front forms many \_\_\_\_\_.
6. The clouds along a warm front slowly become \_\_\_\_\_ and \_\_\_\_\_.

## A WARM FRONT ON A WEATHER MAP

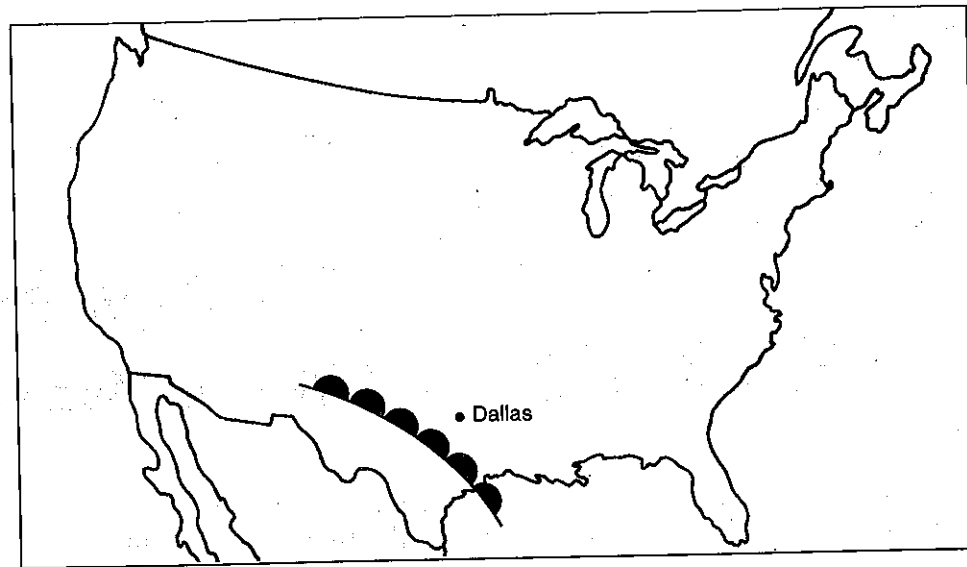


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3. A front brings about \_\_\_\_\_.
4. A warm air mass that pushes a cold air mass is called a \_\_\_\_\_.
5. A warm front forms many \_\_\_\_\_.
6. The clouds along a warm front slowly become \_\_\_\_\_ and \_\_\_\_\_.

7. A warm front brings steady \_\_\_\_\_.
8. Precipitation along a warm front continues until the \_\_\_\_\_.
9. After a warm front passes, the weather becomes \_\_\_\_\_.
10. The symbol for a warm front () is shown on weather \_\_\_\_\_.

## FIND THE PARTS

Figure E shows a warm front. Find the parts listed below. Write the correct letter in the spaces provided. Then fill in the blanks.

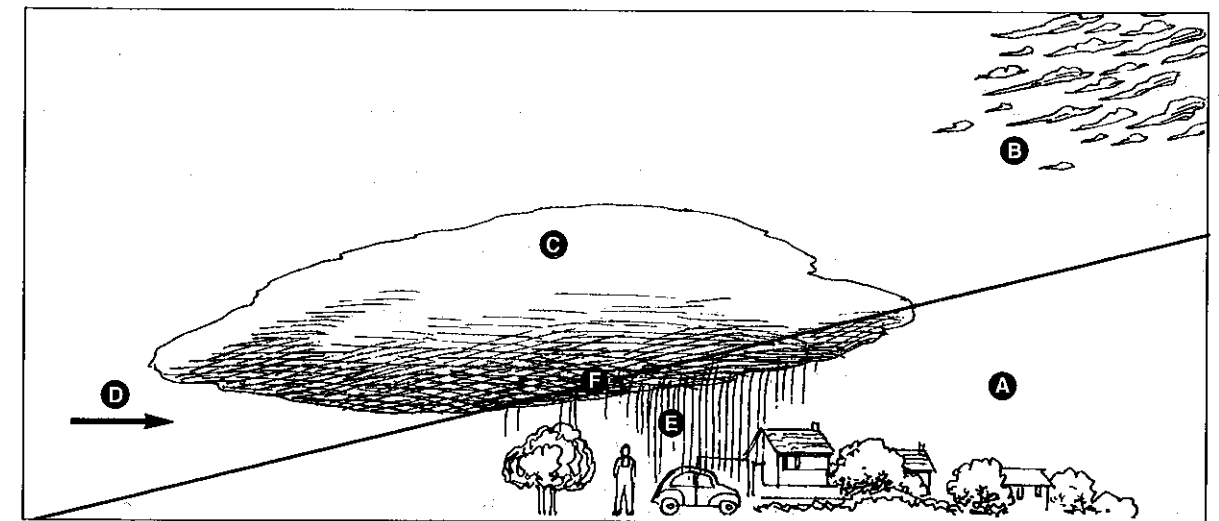



Figure E

1. warm air mass \_\_\_\_\_
2. cold air mass \_\_\_\_\_
3. warm front \_\_\_\_\_
4. cirrus clouds \_\_\_\_\_
5. stratus clouds \_\_\_\_\_
6. area of precipitation \_\_\_\_\_
7. A warm front is moving from \_\_\_\_\_  
left to right, right to left
8. A warm front changes weather \_\_\_\_\_  
slowly, quickly
9. Usually, precipitation from a warm front lasts \_\_\_\_\_  
only a few hours, several days
10. After the warm front passes, the weather becomes \_\_\_\_\_  
colder, warmer

## MATCHING

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Match each term in Column A with its description in Column B. Write the correct letter in the space provided.

Column A	Column B
_____ 1. warm front	a) boundary between two air masses
_____ 2. cold air and warm air	b) kinds of precipitation
_____ 3. 	c) pushes against a cold air mass
_____ 4. rain and snow	d) do not mix easily
_____ 5. front	e) warm front symbol

## TRUE OR FALSE

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In the space provided, write "true" if the sentence is true. Write "false" if the sentence is false.

- \_\_\_\_\_ 1. Warm and cold air masses mix easily.
- \_\_\_\_\_ 2. The border between air masses is called a front.
- \_\_\_\_\_ 3. In a warm front, warm air pushes against cold air.
- \_\_\_\_\_ 4. A warm front brings many clouds.
- \_\_\_\_\_ 5. A warm front causes fast weather changes.
- \_\_\_\_\_ 6. The first clouds you see along a warm front are stratus clouds.
- \_\_\_\_\_ 7. The last clouds you see along a warm front are stratus clouds.
- \_\_\_\_\_ 8. Cirrus clouds are rain clouds.
- \_\_\_\_\_ 9. Cirrus clouds warn of coming rain or snow.
- \_\_\_\_\_ 10. Precipitation along a warm front lasts only a few hours.

## REACHING OUT

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A passing warm front changes air pressure. Does a passing warm front increase or decrease air pressure? (Hint: In Lesson 14, you learned how temperature changes the weight of air.)

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