

AIM | What causes wind?

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You have learned that the sun heats our entire planet. You know that heat moves through gases by convection.

When heat moves by convection, the heat is not even. Some places are heated more than others.

Warm air and cool air do not weigh the same. You know that warm air is lighter than cool air. And you know that light air rises.

When warm air rises, other cooler air rushes in to take its place. The air that rushes in moves parallel to the ground. It is this moving air that we call "wind."

Wind is caused by the uneven heating of the earth's surface.

- Uneven heating of the *entire planet* causes *planetary* winds.

- Uneven heating of *smaller areas* causes *local* winds.

The exercise on the facing page shows how a wind is made.

Air that moves up and down is very important in making winds.

Air that moves up or down is called a *current*.

STUDYING HOW A WIND IS MADE

Study Figure A carefully. Then choose the correct term to complete each statement. Write your choice in the space.

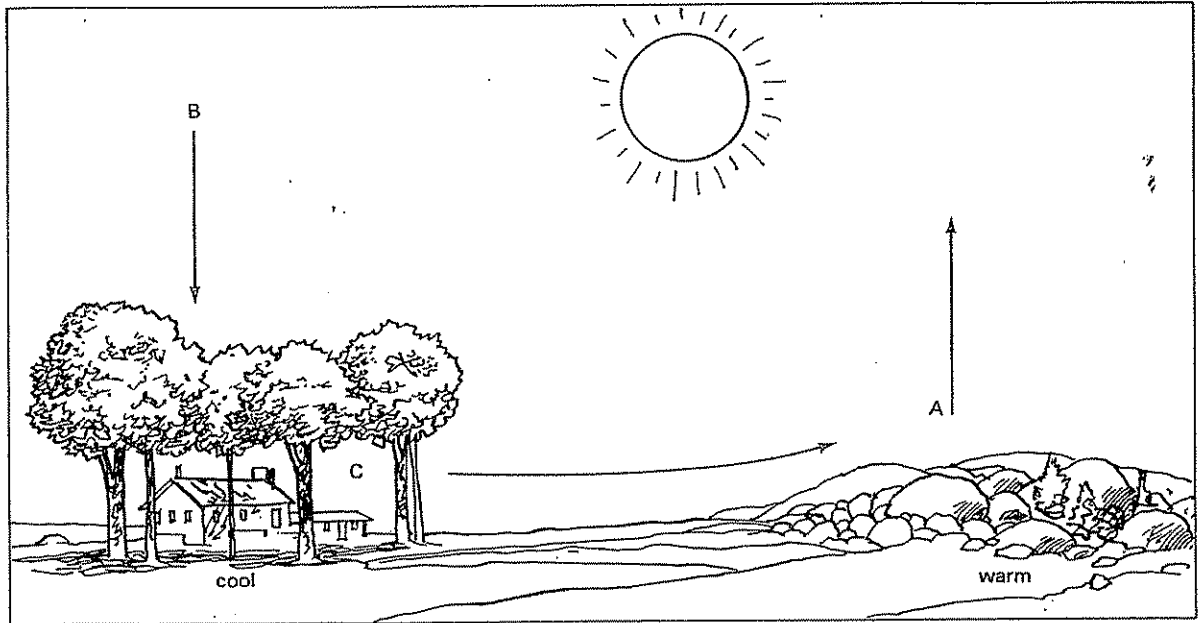


Figure A

- The air at A is _____.
warm, cool
- Warm air is _____ than cool air.
lighter, heavier
- Light air _____.
rises, falls
- The air rising from A is called a _____.
wind, current
- The air at B is _____.
warm, cool
- Cool air is _____ than warm air.
lighter, heavier
- Cool air _____.
rises, falls
- The air moving from B to C is called a _____.
wind, current
- The air moving from C to A is called a _____.
wind, current
- Wind moves from a _____ place to a _____ place.
warm, cool warm, cool

A SPECIAL CHALLENGE!

Now that you know how wind is made, try to answer these questions. Refer to Aim 5 if you have to.

11. Air pressure is greater at _____. Label this spot "High Pressure" on Figure A.
A, C
12. Air pressure is less at _____. Label this spot "Low Pressure" on Figure A.
A, C

Underline the correct statement.

13. Wind moves from
- a) a place of low pressure to a place of high pressure.
 - b) a place of high pressure to a place of low pressure.
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COMPLETING SENTENCES Complete the sentences with the choices below.

heavier
wind
lighter
drops

local
uneven heating
current

cooler air
planetary
rises

1. Winds are caused by the _____ of the earth.
2. Uneven heating of the entire planet causes _____ winds.
3. Uneven heating of small areas cause _____ winds.
4. Air becomes _____ when it is heated.
5. Warm air _____.
6. Air becomes _____ when it is cooled.
7. Cool air _____.
8. When warm air rises, other _____ moves in to take its place.
9. Air moving parallel to the ground is called a _____.
10. Air moving up or down is called a _____.

MATCHING Match the two lists. Write the correct letter on the line next to each number.

- | | | |
|----------|-------------|---------------------------------|
| 1. _____ | wind | a) moves up or down |
| 2. _____ | current | b) falls |
| 3. _____ | heated air | c) move over small areas |
| 4. _____ | cooled air | d) moves parallel to the ground |
| 5. _____ | local winds | e) rises |

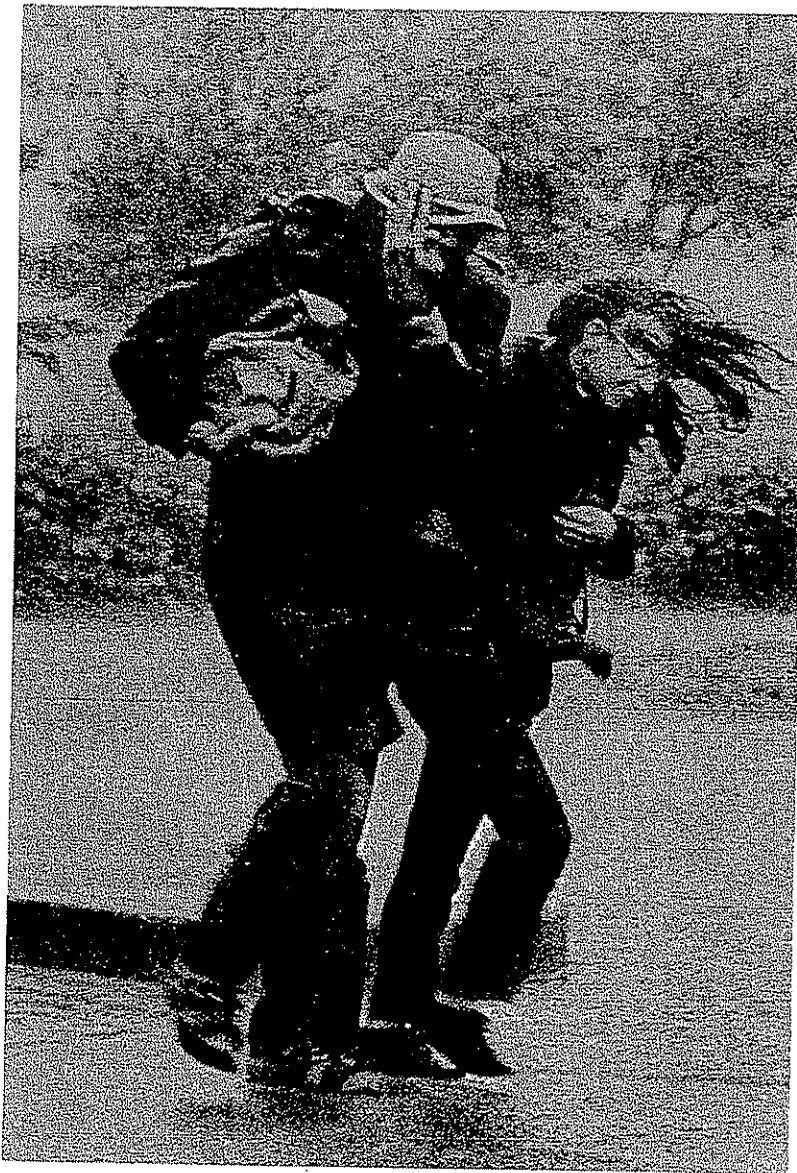
TRUE OR FALSE Write T on the line next to the number if the sentence is true. Write F if the sentence is false.

- _____ Warm air weighs less than cool air.
- _____ Warm air presses more than cool air.
- _____ Cool air is heavier than warm air.
- _____ Cool air presses more than warm air.
- _____ Warm air rises.
- _____ Cool air rises.
- _____ Wind moves from a cool place to a warm place.
- _____ Rising or falling air is called a wind.
- _____ A wind moves parallel to the ground.
- _____ All winds move at the same speed.

WORD SCRAMBLE Unscramble each of the following to form a word or term that you have read in this Aim.

1. RALENTAPY _____
2. DIWN _____
3. RERNUCT _____
4. COLLA _____
5. NEEVUN _____

**REACHING
OUT** Wind moves from high pressure to low pressure.
What makes some winds stronger than others?



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