

# AIM | What causes wind?

## 8

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.

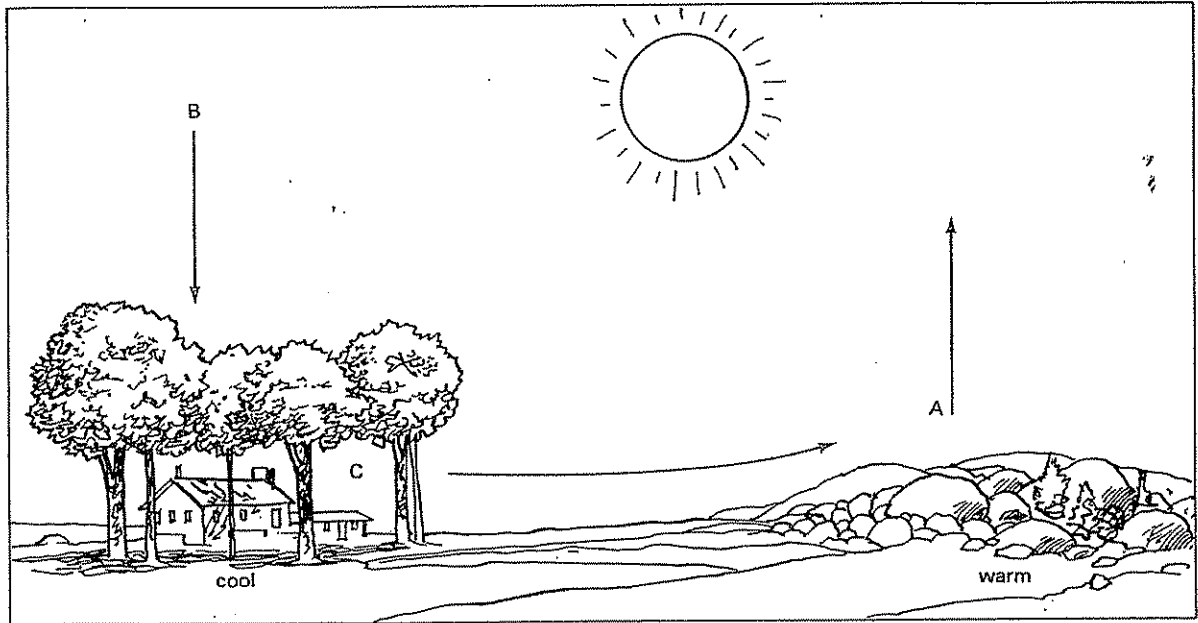


Figure A

1. The air at A is \_\_\_\_\_.  
warm, cool
2. Warm air is \_\_\_\_\_ than cool air.  
lighter, heavier
3. Light air \_\_\_\_\_.  
rises, falls
4. The air rising from A is called a \_\_\_\_\_.  
wind, current
5. The air at B is \_\_\_\_\_.  
warm, cool
6. Cool air is \_\_\_\_\_ than warm air.  
lighter, heavier
7. Cool air \_\_\_\_\_.  
rises, falls
8. The air moving from B to C is called a \_\_\_\_\_.  
wind, current
9. The air moving from C to A is called a \_\_\_\_\_.  
wind, current
10. 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.

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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.

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- |          |             |                                 |
|----------|-------------|---------------------------------|
| 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.

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- \_\_\_\_\_ 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.

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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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