

LESSON | What causes wind?

16

In Lesson 4, you learned about ocean currents. Now you will learn about **air currents** [KUR-unts]. Air currents are up-and-down movements of air. They are important in making winds.

You have learned that the sun heats our entire planet. However, the sun does not heat all parts of the earth the same amount. Some areas of the earth are heated more than others. The uneven heating and cooling of the earth's surface causes air currents.

Warm air and cool air do not weigh the same. 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 global winds.
- Uneven heating of smaller areas causes local winds.

You will learn more about how winds are made on the next page.

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STUDYING HOW WIND IS MADE

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

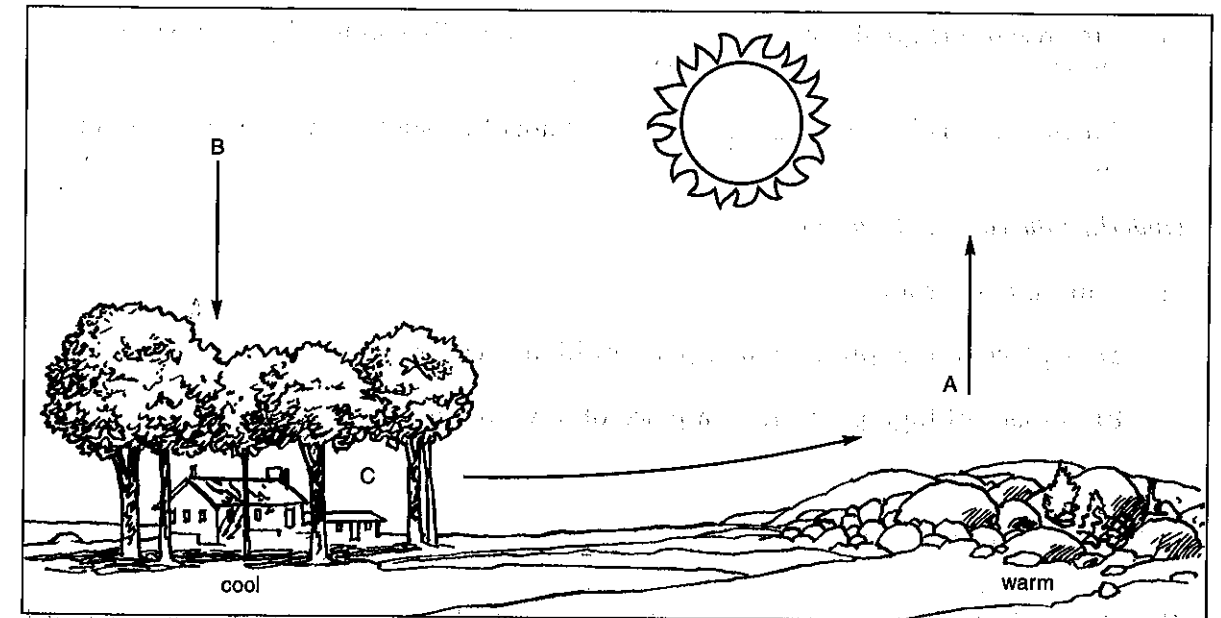


Figure A

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 is called a _____.
wind, current
9. The air moving from C to A is called a _____.
wind, current
10. Winds moves from a _____ place to a _____ place.
warm, cool warm, cool

A SPECIAL CHALLENGE!

Now that you know how winds form, try to answer these questions. Refer to Lesson 14 if you have to.

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

Underline the correct statement.

- Wind moves from
 - a place of low pressure to a place of high pressure.
 - a place of high pressure to a place of low pressure.

FILL IN THE BLANK

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

- | | | |
|-------------------------------------|--|-------------------------------|
| heavier
wind
lighter
sinks | local
uneven heating and cooling
current | cooler air
global
rises |
|-------------------------------------|--|-------------------------------|

- Winds are caused by the _____ of the earth.
- Uneven heating of the entire planet causes _____ winds.
- Uneven heating of small areas causes _____ winds.
- Air becomes _____ when it is heated.
- Warm air _____ .
- Air becomes _____ when it is cooled.
- Cool air _____ .
- When warm air rises, other _____ moves in to take its place.
- Air moving parallel to the ground is called a _____ .
- Air moving up or down is called a _____ .

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heavier wind lighter sinks	local uneven heating and cooling current	cooler air global rises
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MATCHING

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. 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

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

- Warm air weighs less than cool air.
- Warm air has greater pressure than cool air.
- Cool air is heavier than warm air.
- Cool air has greater pressure 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

Below are several scrambled words you have used in this Lesson. Unscramble the words and write your answers in the spaces provided.

- GLBAOL _____
- DIWN _____
- RERNUCT _____
- COLLA _____
- NEEVUN _____



KEY
Jan
sea

MULTIPLE CHOICE

In the space provided, write the letter of the word that best completes each statement.

- _____ 1. Wind is caused by
 - a) ocean currents.
 - b) even cooling.
 - c) land breezes.
 - d) uneven heating.

- _____ 2. The earth is heated by
 - a) currents.
 - b) wind.
 - c) the sun.
 - d) the moon.

- _____ 3. As air is cooled
 - a) it rises.
 - b) it becomes lighter.
 - c) it sinks.
 - d) its pressure decreases.

- _____ 4. Up-and-down movements of air are called
 - a) currents.
 - b) breezes.
 - c) winds.
 - d) convections.

- _____ 5. Warm air
 - a) falls.
 - b) rises.
 - c) sinks.
 - d) remains in place.

REACHING OUT



Figure B

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