

AIM | What are shore breezes?

11

Did you ever visit the seashore? Did you notice that it is usually breezy there?

Shore breezes are special, gentle local winds. There are two kinds of shore breezes—the *sea breeze* and the *land breeze*.

A *sea breeze* moves in from the sea. It heads towards the land. A sea breeze blows during the daytime.

A *land breeze* moves out from the land. It heads towards the sea. A land breeze blows during the evening hours.

Shore breezes are caused by the uneven heating and cooling of the land and water.

SEA BREEZE During the daytime, the sun heats both the land and the water. But the land heats up faster than the water. Because of this, the air above the land becomes warmer than the air above the water.

The warmer and lighter air above the land rises. Cooler and heavier air that is over the water moves in to take its place.

This air that moves in from the sea and heads towards the land is a *sea breeze*.

LAND BREEZE In the evening, the sun goes down. The land and water cool off. But the land cools off faster than the water. The water is now warmer than the land.

The warmer and lighter air above the water rises. Cooler and heavier air that is over the land moves in to take its place.

This air that moves out from the land and heads towards the sea is a *land breeze*.

UNDERSTANDING LAND BREEZES AND SEA BREEZES

Look at Figures A and B. Then choose the correct term to complete each statement. Write your choice in the space.

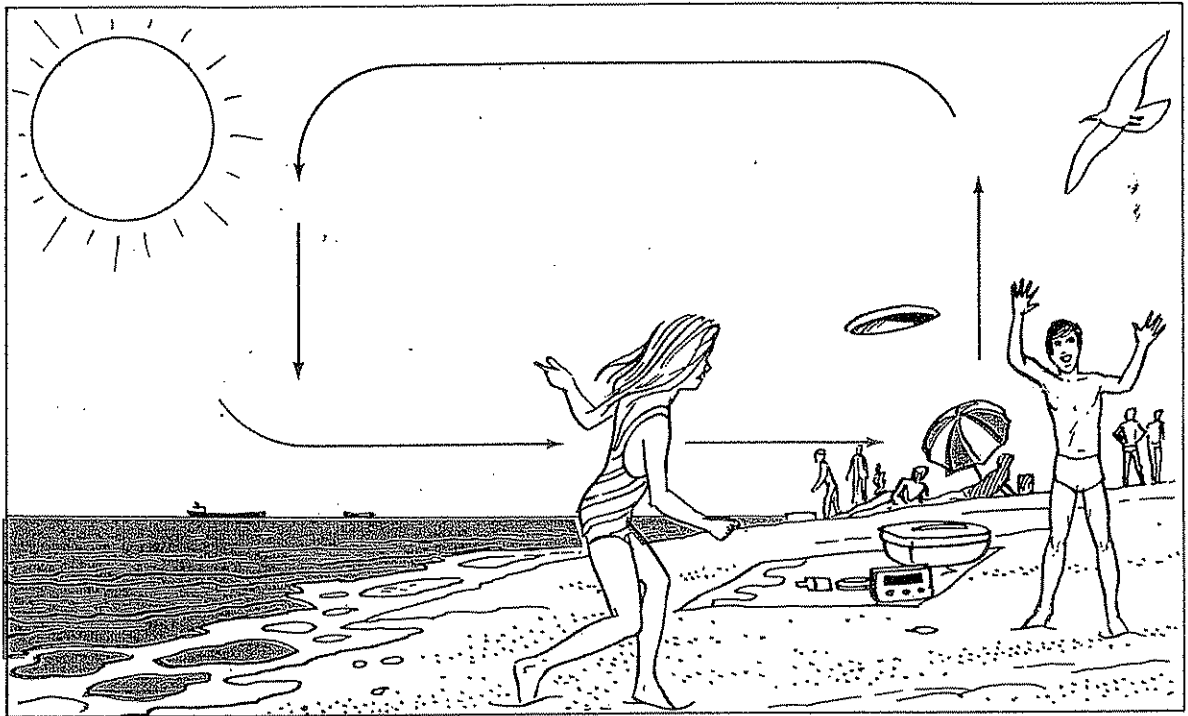


Figure A

1. In Figure A the _____ is warmer; the _____ is cooler.
land, water land, water
2. The air is warmer over the _____.
land, water
3. The air is cooler over the _____.
land, water
4. The air is lighter over the _____.
land, water
5. The air is heavier over the _____.
land, water
6. a) The air over the _____ rises.
land, water
- b) Air that is over the _____ moves in to take its place.
land, water
7. This is an example of a _____ breeze.
land, sea
8. A sea breeze blows during the _____.
daytime, evening

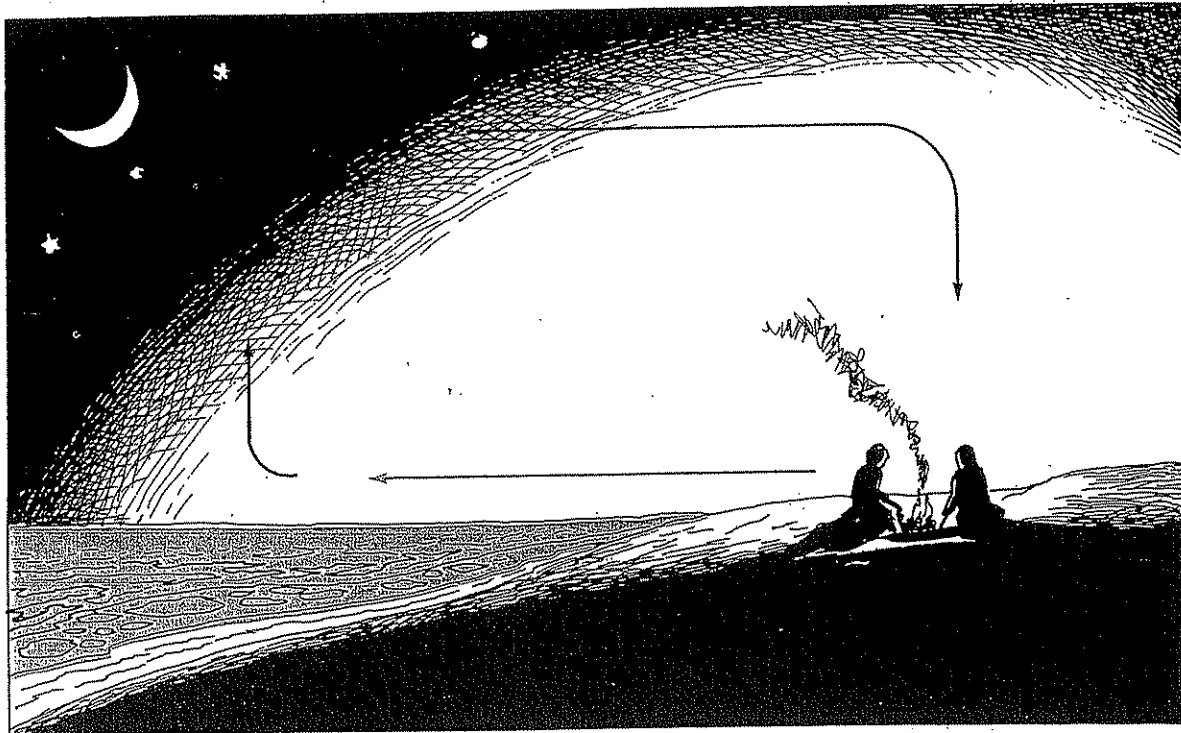


Figure B

1. In Figure B, the _____ is warmer; the _____ is cooler.
 land, water land, water
2. The air is warmer over the _____.
 land, water
3. The air is cooler over the _____.
 land, water
4. The air is lighter over the _____.
 land, water
5. The air is heavier over the _____.
 land, water
6. a) The air over the _____ rises.
 land, water
- b) Air that is over the _____ moves in to take its place.
 land, water
7. This is an example of _____ breeze.
 land, sea
8. A land breeze blows during the _____.
 daytime, evening
9. A breeze is a _____ wind.
 strong, mild

COMPLETING SENTENCES

Complete the sentences with the choices below. Four of these may be used twice.

land
slower
sea breeze

breeze
sea
daytime

land breeze
faster
evening

1. Any gentle wind is called a _____.
2. The two kinds of shore breezes are the _____ and the _____.
3. A sea breeze blows during the _____.
4. A sea breeze blows from the _____ and moves towards the _____.
5. A land breeze blows during the _____.
6. A land breeze blows from the _____ and moves towards the _____.
7. Land heats up _____ than water.
8. Land cools off _____ than water.
9. Water heats up _____ than land.
10. Water cools off _____ than land.

MATCHING

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

- | | | |
|----------|-------------|---|
| 1. _____ | land breeze | a) heats up fast and cools fast |
| 2. _____ | sea breeze | b) heats up slowly and cools slowly |
| 3. _____ | water | c) starts from the land and moves toward the sea |
| 4. _____ | land | d) rises |
| 5. _____ | warm air | e) starts from the sea and moves towards the land |

FILL IN THE ANSWERS Look at Figures C and D. Then do the exercise that goes with each.

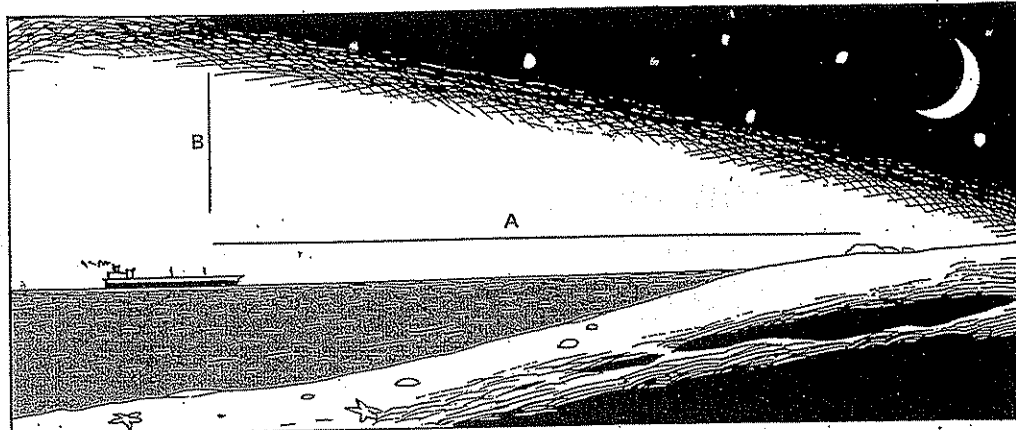


Figure C

Lines A and B stand for moving air.

1. Draw arrows on each line to show how it is moving.
2. The current is line _____
A, B
3. a) The shore breeze is line _____
A, B
- b) What kind of shore breeze is it? _____

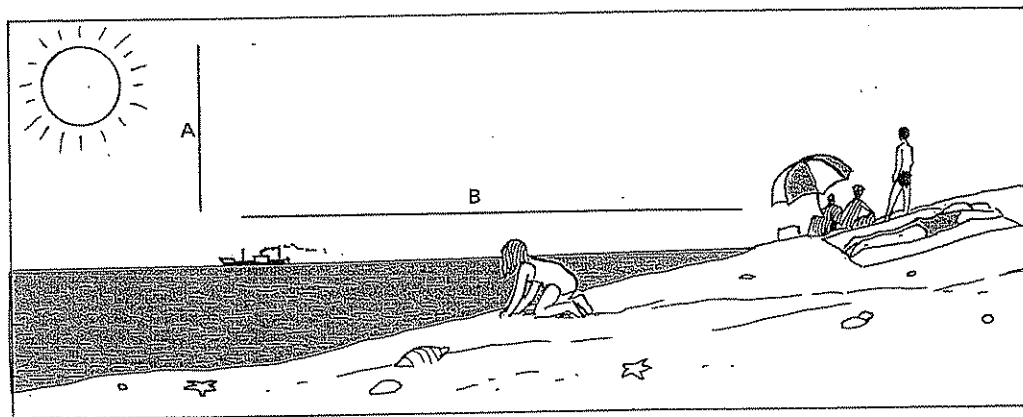


Figure D

Lines A and B stand for moving air.

4. Draw arrows on each line to show how it is moving.
5. The current is line _____
A, B
6. a) The shore breeze is line _____
A, B
- b) What kind of shore breeze is it? _____

ABOUT MONSOONS

A monsoon is like a very strong shore breeze. It covers a very large area. It is caused by the uneven heating and cooling of land and water areas. But a monsoon does not change from day to night. A monsoon changes from season to season.

The greatest monsoons happen in India and southeast Asia.

The maps below show the monsoon winds of India.

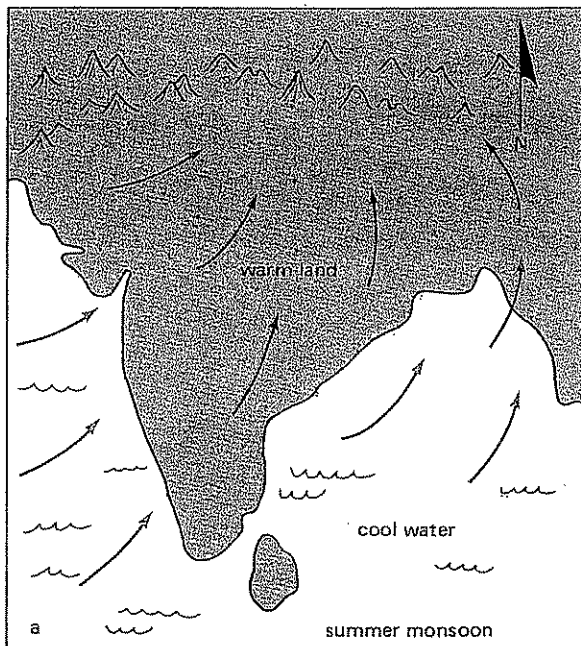


Figure E

During the summer, monsoon winds blow from the sea to the land.

This wind has a lot of moisture from the water. It causes heavy rain.

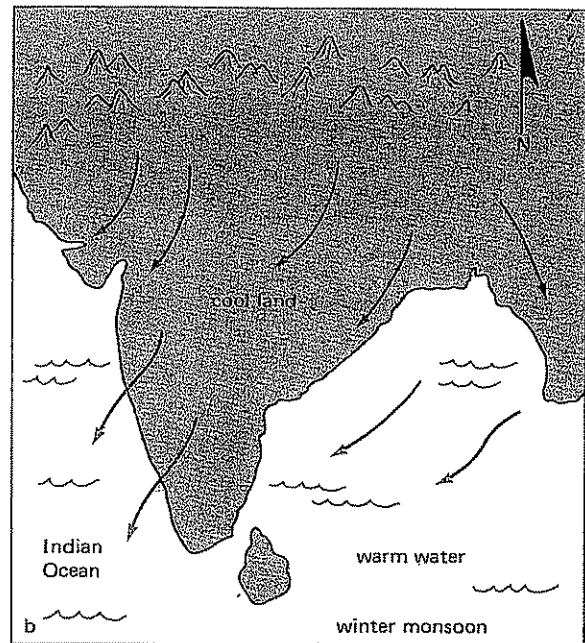


Figure F

During the winter, monsoon winds blow from the land to the water.

This wind is dry.

1. In the summer, monsoon winds blow _____ the land.
towards, away from
2. In the winter, monsoons blow _____ the land.
towards, away from
3. In the summer, monsoon winds are _____.
wet, dry
4. In the winter, monsoon winds are _____.
wet, dry
5. The monsoon winds change with _____.
each day, the seasons