

Local Winds

Weather & Climate #6: I can explain how the differences in surface temperature, due to the different heating and cooling rates of water and soil, affect the temperature and movement of the air above.

Have you ever flown a kite?



Wind

- * **Wind** is the horizontal movement of air from an area of high pressure to an area of lower pressure.
- * An **anemometer** is a tool used to measure wind speed.



Main Ideas

1. Warm air rises.
2. Air moves toward the place where warm air is rising.
3. Air moves from high-pressure areas to low-pressure areas.
4. Land heats up (and cools down) faster than water.

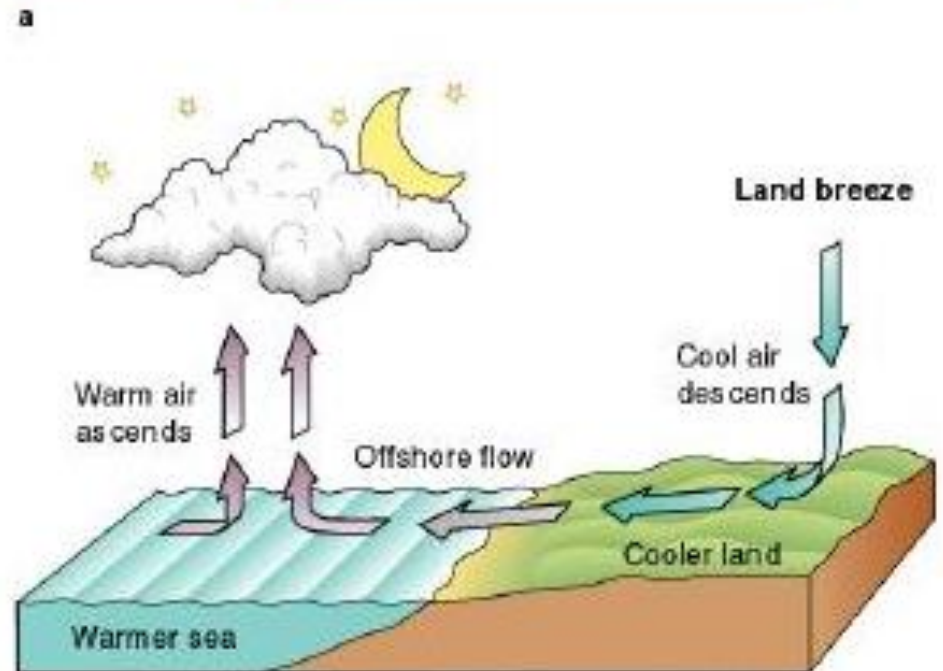
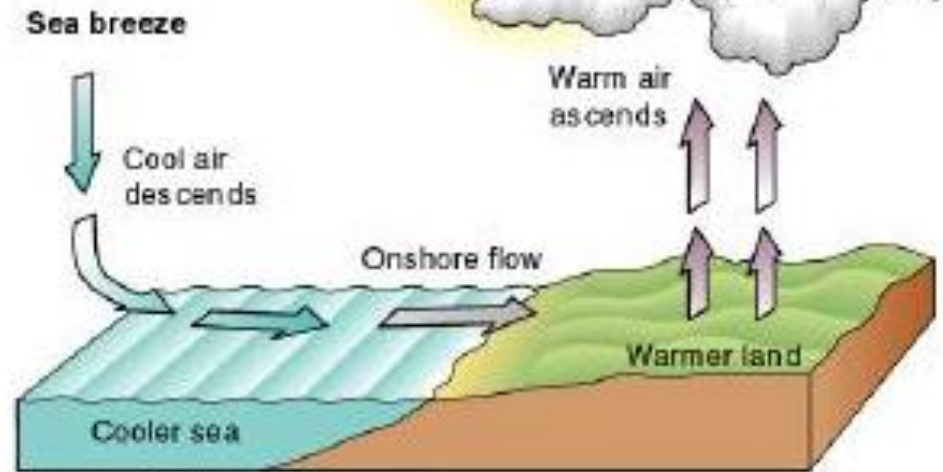
Local Winds

- * **Local winds** are winds that blow over short distances.
- * There are two types of local winds: **Sea breeze** and **land breeze**.

❖ The warm air rises and the cool air sinks.

❖ During the day the land is warm and the sea is cool. The breeze comes in from the sea.

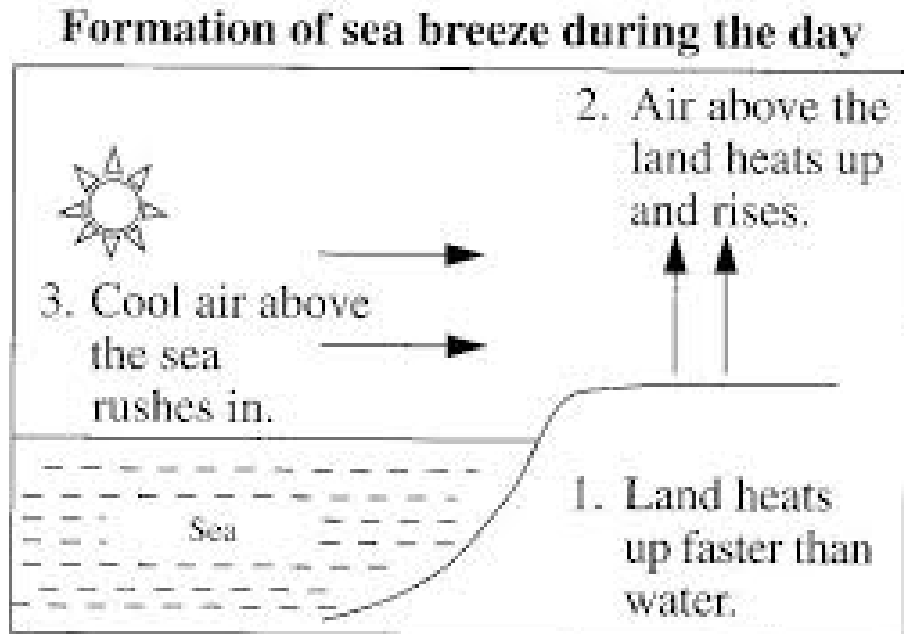
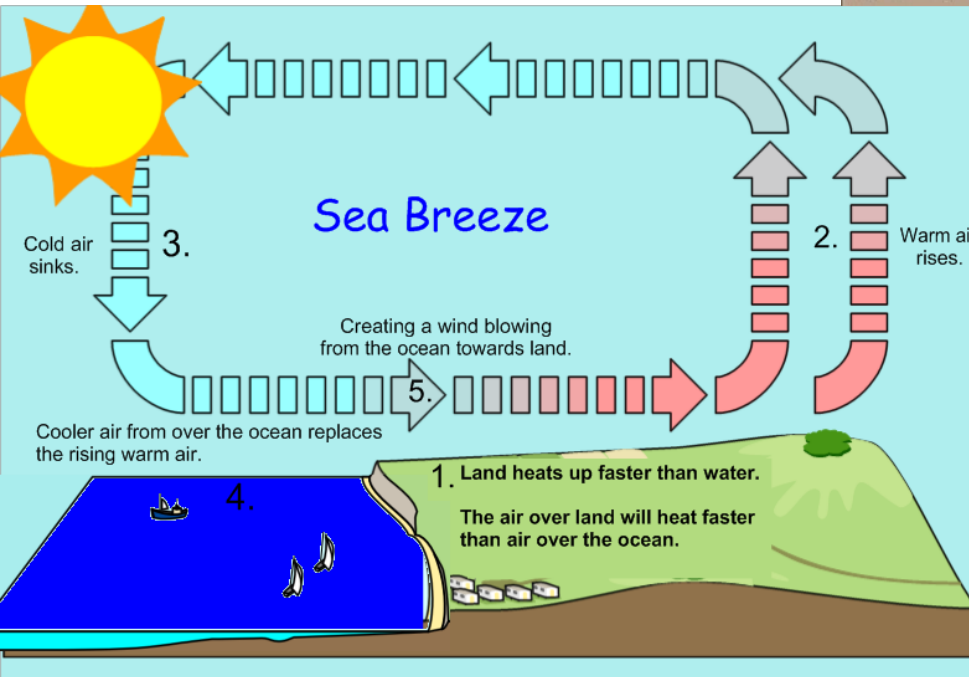
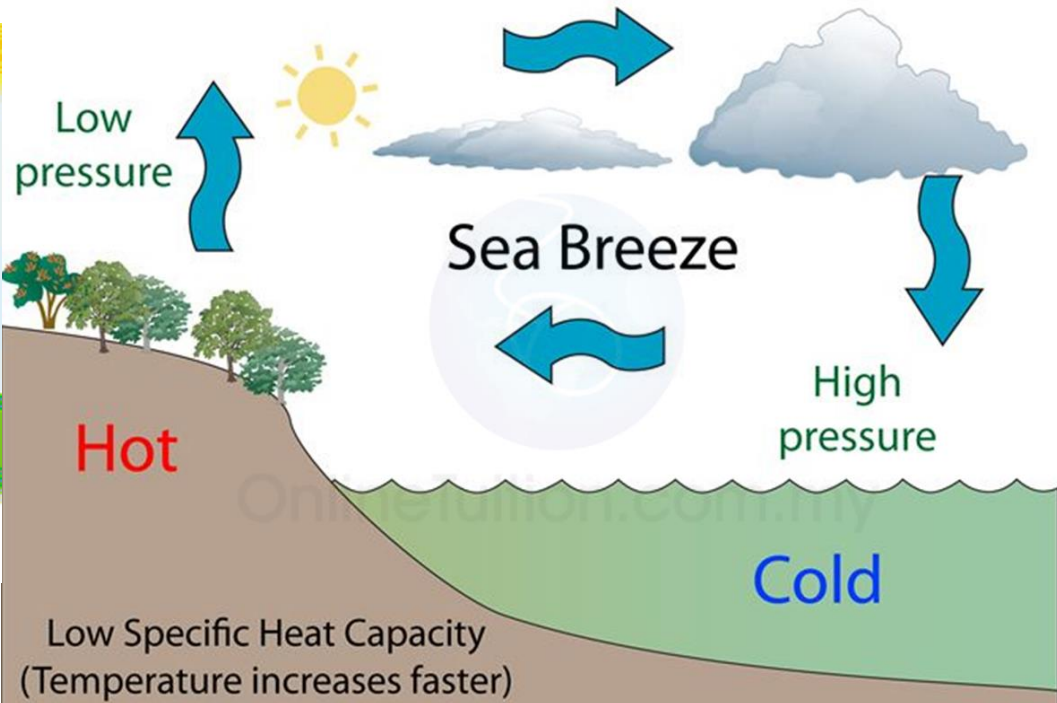
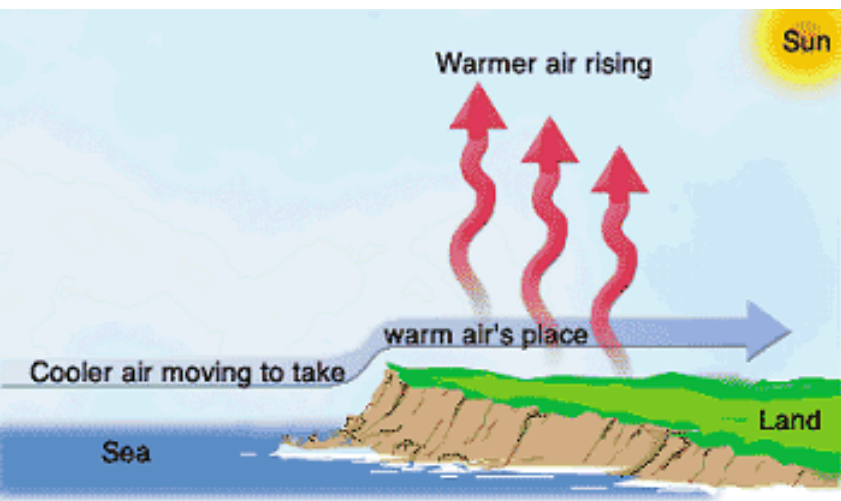
❖ At night the land is cool and the sea is warm. The breeze moves out towards the sea from the land.



Sea Breeze

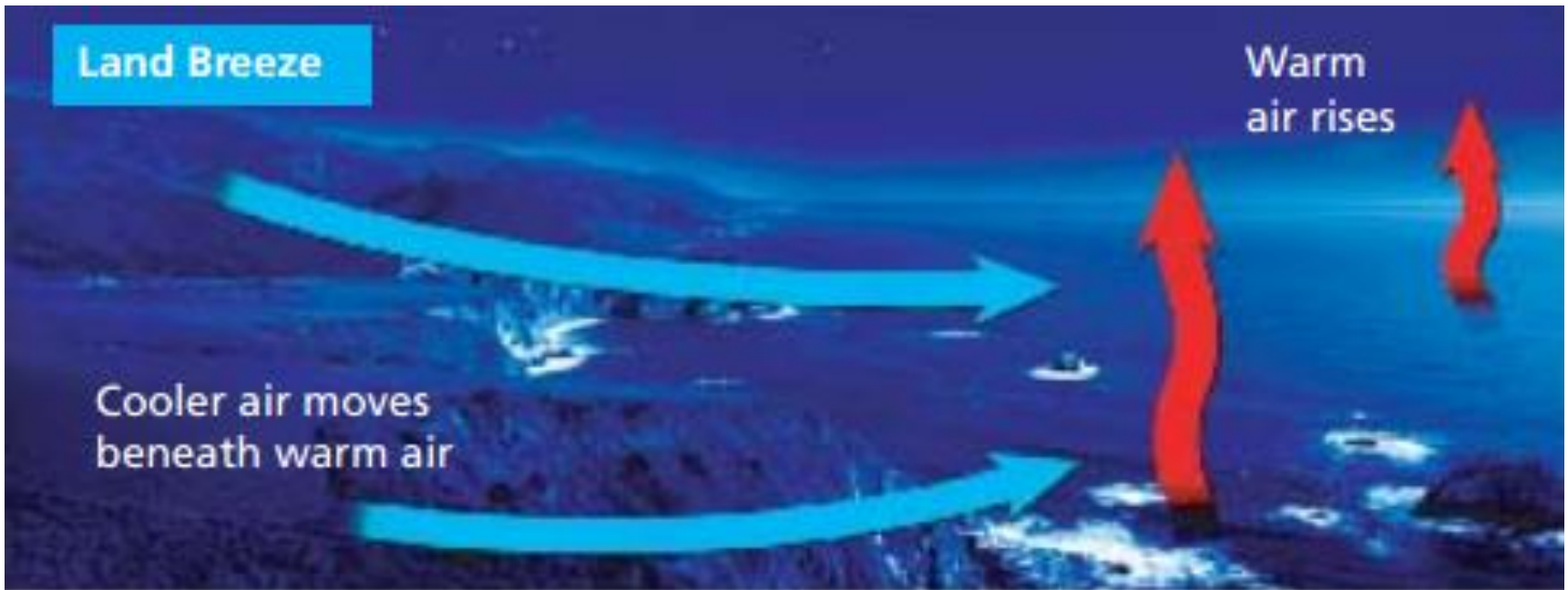
- * A **sea breeze** or a lake breeze is a local wind that blows from an ocean or lake.

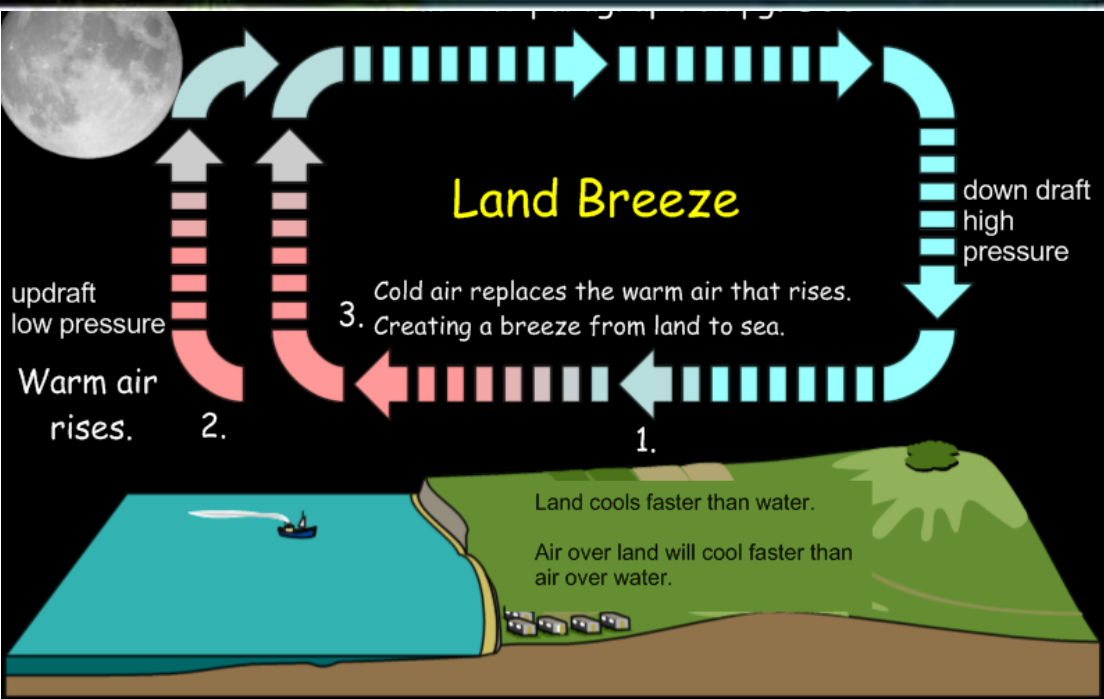
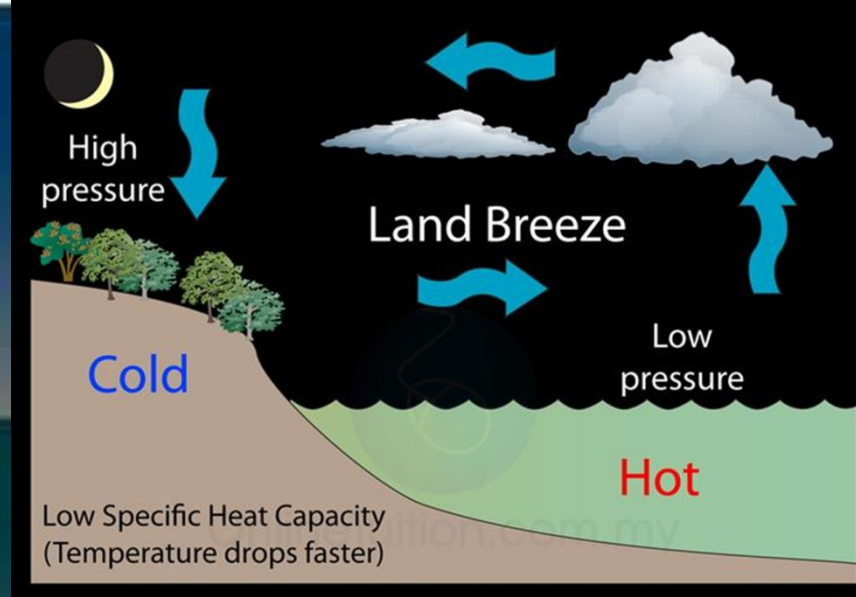
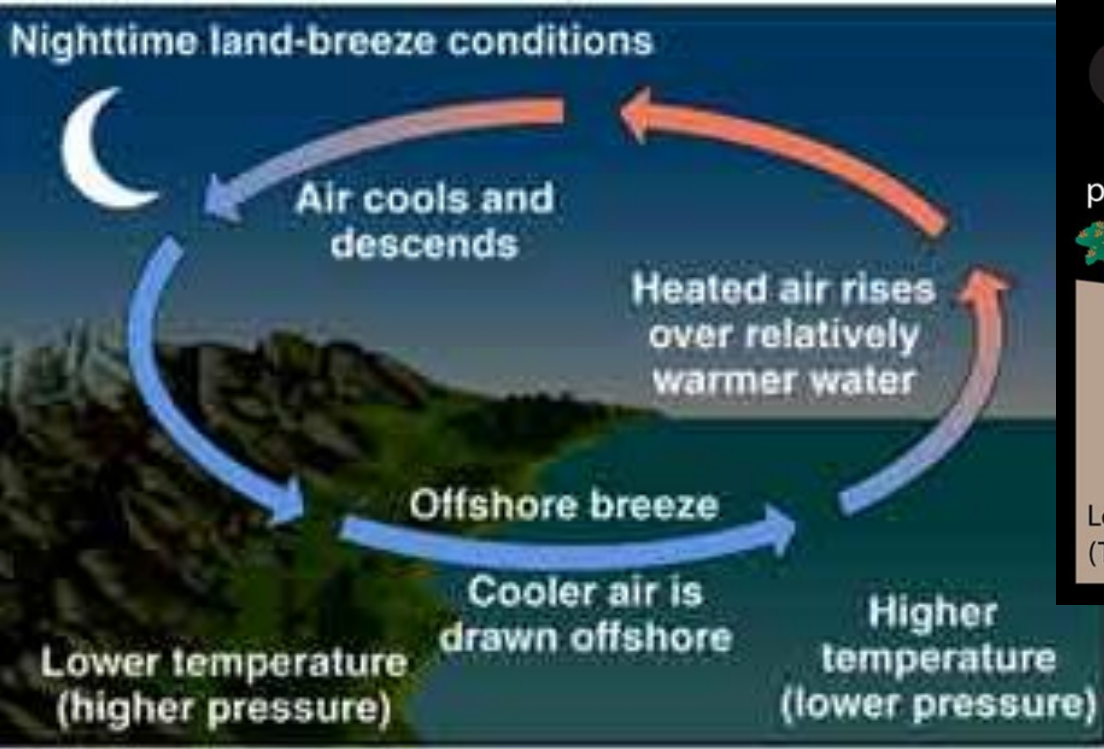




Land Breeze


- * A **land breeze** is the flow of air from land to a body of water.



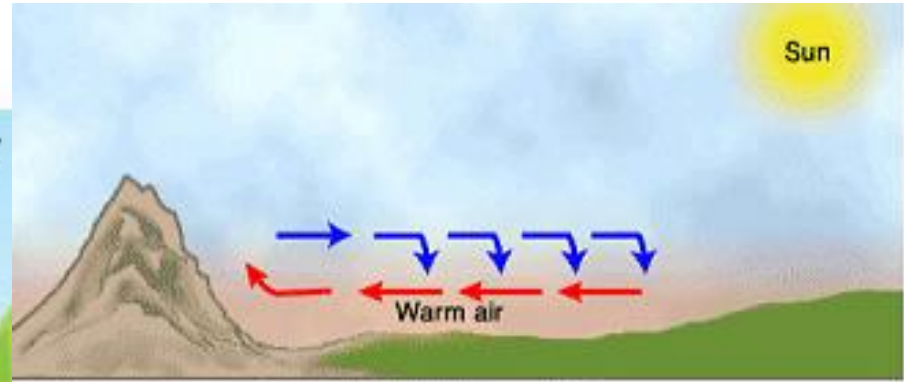
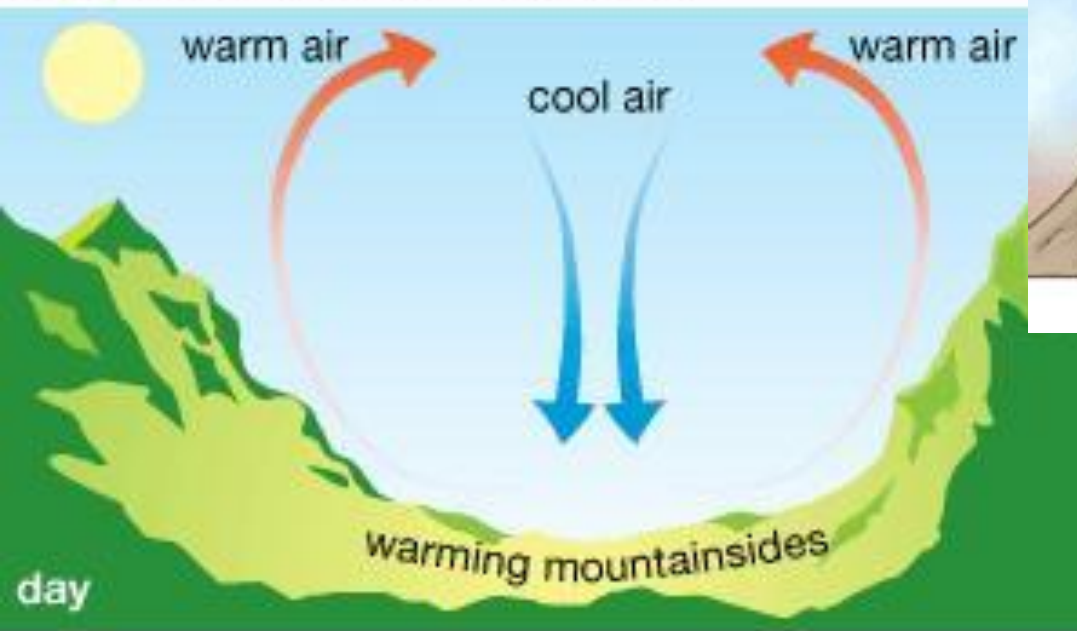


References

- * <http://www.eschooltoday.com/winds/land-breeze-and-sea-breeze.html>
- * http://www.classzone.com/books/earth_science/terc/content/visualizations/es1903/es1903page01.cfm
- * http://oceanservice.noaa.gov/education/pd/oceans_weather_climate/media/sea_and_land_breeze.swf
- * http://youtu.be/pF1_PloOPdw

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- * What happens to the density of air when it is heated?
It decreases
 - * How does this affect air pressure? It also decreases
 - * What happens to the density of the air when it is cooled? It increases.

Valley and mountain breezes



Valley Wind

