Convection

Convection: When liquids and gases are heated the heat is carried from one part to another by the actual movement of the hot particles this moment of particles due to the temperature difference between different parts of the same substance is called convection. Example: boiling of water.

The molecules of the fluid or gas near the source of heat become hot and rise up and this is replaced by the colder molecules in the fluid or air. They also get heated up and rise till the entire fluid or air is heated.

This is the principle behind the interesting feature in the coastal areas called the **sea** and **land breeze**.

Sea Breeze

This process takes place for the duration of the day. Both the sea and the land surface are heated up by the sun. The sea heats up slower than the land because it has a much higher heat capacity.

Thus, the temperature over the land surface increases, in turn, heating up the surrounding air. Expansion occurs in the less dense warm air and an area over the land having low pressure is developed.



Convection

At the same time on the top of the sea, a high-pressure area develops. Due to the difference in pressure, the air flows from the high pressure over the sea to the low pressure over the land. This flow of air from the sea to the land is termed as the sea breeze.

The sea breeze is more prevalent on warm sunny days during the spring and summer. An amazing cooling effect and a noticeable temperature drop are experienced as a consequence of it.

Land Breeze

This process takes place for the duration of the night and the above-mentioned process gets reversed. Both the land and the sea start cooling down when the sunsets. As the heat capacity of the land is different from the sea it cools down quicker.

Thus, a low-pressure situation develops over the sea as the temperature above it is higher when compared to the land. Due to this, the air flows from the land to the sea which is termed the land breeze.

Land breezes can occur at any time of year but are more prevalent during the fall and winter seasons when water temperatures are still fairly warm and nights are cool.

