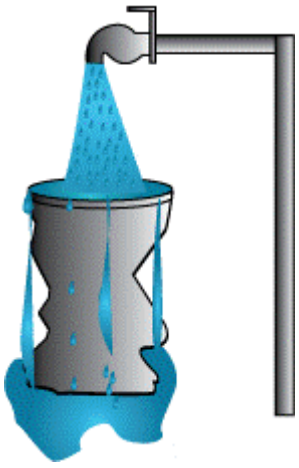
Winds, Storms and Cyclones

- **Air can exert pressure**



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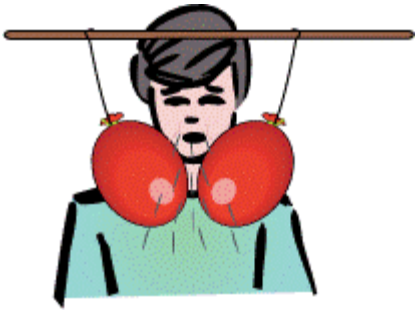
  - A tin can filled with hot water gets distorted when placed under running water because steam condenses back into water. This reduces the pressure in the can. As a result, the can gets compressed.
  - In an anemometer, moving air exerts pressure on the bowls. Hence, this indicates the direction of wind.

- **High speed winds are always accompanied by reduced air pressure**.
  - A paper ball acquires zigzag motion and does not go into a bottle when air is blown on it to force it into the bottle.



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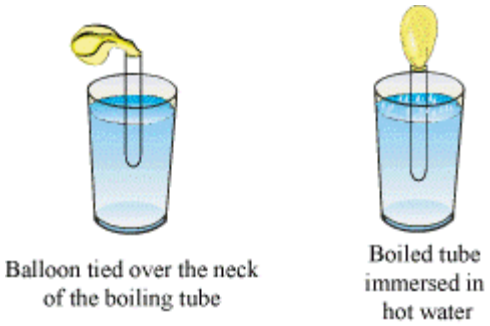
  - The balloons move towards each other when air is blown between them.
  - The strip of paper lifts when air is blown over it.
  - Air moves from high air pressure region to low air pressure region. The greater the difference in air pressure, the faster the air moves.

- **Air expands on heating**



Balloon tied over the neck of the boiling tube

Boiled tube immersed in hot water

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  - Hot water and balloon
  - A deflated balloon inflates slightly when tied over the neck of a tube and immersed into boiling water.

- **Hot air moves upwards:**

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  - Air inside the left bag expands on heating. Hence, this bag rises up because warm air is lighter than cold air.
  - Air moves from high air pressure region to low air pressure region. The greater the difference in air pressure, the faster the air moves.

- **Uneven heating on the earth** generates wind. The monsoon winds carry water with it that falls down as rain.
- Air moves from high air pressure region to low air pressure region. The greater the difference in air pressure, the faster the air moves.

- **Thunderstorms** develop in hot and humid tropical areas. These are very frequent in India.

- High speed wind and difference in air pressure cause **cyclones**. Factors such as wind speed and direction, temperature, and humidity contribute to the development of cyclones. **Eye of a cyclone is a low pressure region**.

- Closed areas are the safest places during thunderstorms and cyclones.