VIDYA BHAWAN BALIKA VIDYAPEETH

STUDY MATERIAL SCIENCE
CLASS-VI

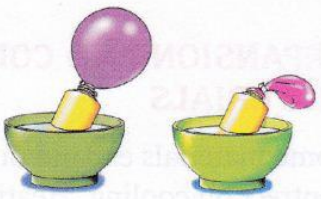
Date 29/08/2020 Teacher : Poonam Kumari

6. Changes Around us

Expansion And Contraction Of Materials:

Cooling does the opposite of heating. Cooling causes a material to contract. Solids contract the least while gases contract the most. Table 6.2 lists some examples of contraction.

Table 6.2 Contraction in solids, liquids, and gases

Contraction in solids	Contraction in liquids	Contraction in gases
If we hold a very hot glass tumbler under cold water, it cracks. This is because the outer surface of the glass comes in direct contact with cold water and contracts more as compared to the inner surface. 	We observed that water expanded on heating. Can you say what will happen if the water is allowed to cool down and then poured back into the glass? Would it still overflow? No. This is because of contraction. 	If an inflated balloon is tied at the mouth of a bottle and the bottle is placed in ice-cold water, what will happen? The balloon will shrink in size, as the air inside the balloon contracts on cooling. 

Applications of Expansion and Contraction:

Expansion by heating can be used in several everyday activities.
The jammed metal lid of a jam jar can be opened by heating. The jar is inverted and just the lid is dipped in hot water. After some time, the lid can be opened easily as the lid gets slightly expanded.

The fact that materials expand on heating is used in thermometers. In many thermometers, mercury is used. When the bulb of the thermometer comes in contact with a hot object, the mercury expands and its level rises in the glass tube, indicating the temperature.