

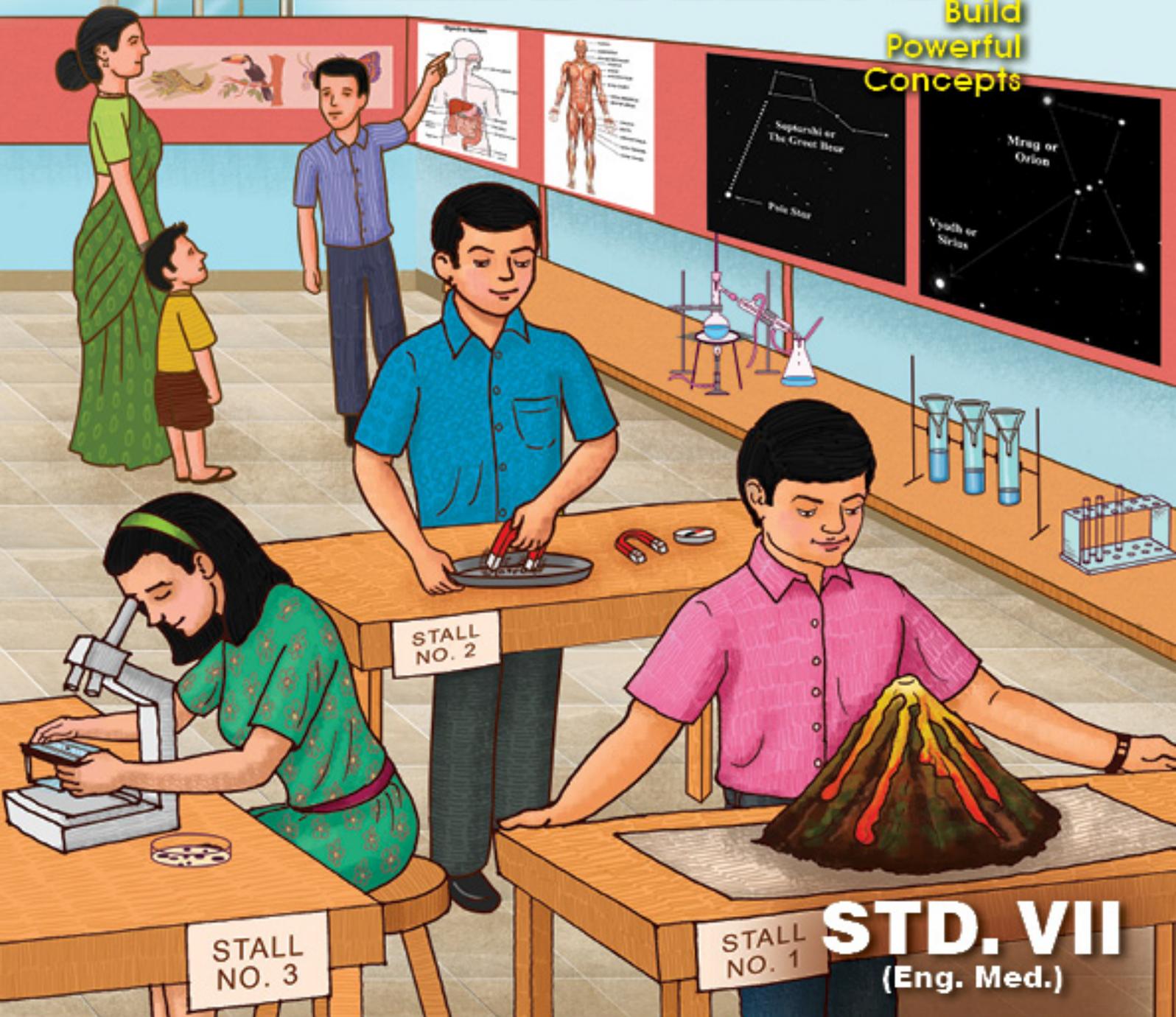
SAMPLE CONTENT



Perfect Notes

GENERAL SCIENCE

Build
Powerful
Concepts



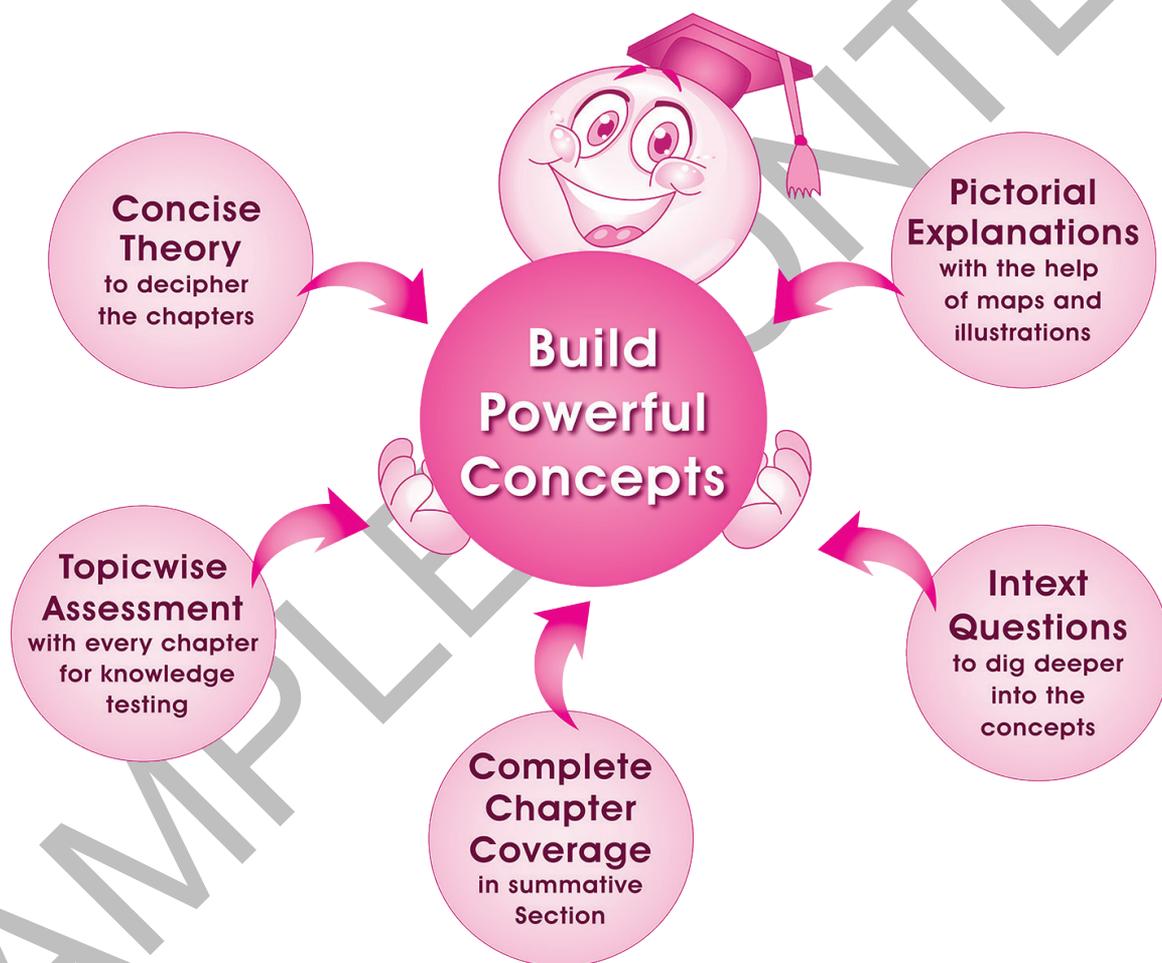
STD. VII
(Eng. Med.)

Target Publications Pvt. Ltd.

Written as per the latest syllabus prescribed by the Maharashtra State Bureau of Textbook
Production and Curriculum Research, Pune.

STD. VII

General Science



Printed at: **Repro India Ltd.**, Mumbai

© Target Publications Pvt. Ltd.

No part of this book may be reproduced or transmitted in any form or by any means, C.D. ROM/Audio Video Cassettes or electronic, mechanical including photocopying; recording or by any information storage and retrieval system without permission in writing from the Publisher.

PREFACE

General Science: Std. VII has been prepared as per the new 'Continuous Comprehensive Evaluation' (CCE) evaluation system which is more child-centric and focuses on active learning and making the process of education more enjoyable and interesting.

We have infused the book with a liberal sprinkling of real life examples, pictorial explanations and additional questions. Questions titled under 'Use your brain power', 'Can you tell' and a series of 'In-text Questions', pave the way for a robust concept building.

Every chapter begins with Point wise Theory and Pictorial Illustrations. It follows through by covering all the textual content in the format of **Summative** and **Formative assessment**. Summative assessment includes Question-Answers, Give Reasons and other type of Questions. Formative assessment is divided into Apply your knowledge, Oral work, Activities and Project which helps students to understand concepts quickly. The chapter also includes **Activity Based Questions** that explain certain concepts to students in a point wise manner through the medium of an activity. The chapter eventually ends with a **Chapter wise Assessment** that stands a testimony to the fact that the child has understood the chapter thoroughly. To provide general and understandable explanations of the difficult terms, '**Glossary**' is included at the end of the book. **Additional information** and **Fun Facts** are added to trigger the students' thought process.

With absolute trust in our work, we hope, our holistic efforts towards making this book an ideal knowledge hub for students pays off.

The journey to create a complete book is strewn with triumphs, failures and near misses. If you think we've nearly missed something or want to applaud us for our triumphs, we'd love to hear from you.

Please write to us at: mail@targetpublications.org

A book affects eternity; one can never tell where its influence stops.

Best of luck to all the aspirants!

From,
Publisher

Edition: Second

Disclaimer

This reference book is transformative work based on textual contents published by Bureau of Textbook. We the publishers are making this reference book which constitutes as fair use of textual contents which are transformed by adding and elaborating, with a view to simplify the same to enable the students to understand, memorize and reproduce the same in examinations.

This work is purely inspired upon the course work as prescribed by the Maharashtra State Bureau of Textbook Production and Curriculum Research, Pune. Every care has been taken in the publication of this reference book by the Authors while creating the contents. The Authors and the Publishers shall not be responsible for any loss or damages caused to any person on account of errors or omissions which might have crept in or disagreement of any third party on the point of view expressed in the reference book.

© reserved with the Publisher for all the contents created by our Authors.

No copyright is claimed in the textual contents which are presented as part of fair dealing with a view to provide best supplementary study material for the benefit of students.

Contents

No.	Topic Name	Page No.
1.	The Living World : Adaptations and Classification	1
2.	Plants : Structure and Function	17
3.	Properties of Natural Resources	33
4.	Nutrition in Living Organisms	46
5.	Food Safety	63
6.	Measurement of Physical Quantities	76
7.	Motion, Force and Work	86
8.	Static Electricity	99
9.	Heat	111
10.	Disaster Management	122

No.	Topic Name	Page No.
11.	Cell Structure and Micro-organisms	134
12.	The Muscular System and Digestive System in Human Beings	149
13.	Changes - Physical and Chemical	162
14.	Elements, Compounds and Mixtures	173
15.	Materials we Use	190
16.	Natural Resources	200
17.	Effects of Light	218
18.	Sound : Production of Sound	228
19.	Properties of a Magnetic Field	239
20.	In the World of Stars	250
	Glossary	260

*Note: Textual Questions are represented by * mark.*

9. Heat



Let's Study

Transfer of heat

1. The flow of heat from one place to another is called transfer of heat.
2. Heat flows from hot object to cold object. Hence, cold object gets warm in the vicinity of hot object and hot object becomes cooler.

Modes of heat transfer

1. **Conduction:**
 - i. Transfer of heat from the hot part of an object to the cold part is called **conduction** of heat.
 - ii. Conduction through an object is the property of that object. Hence, it depends on nature of the substance.
 - iii. Conduction of heat requires a medium. It takes place only in solid substances.
2. **Convection:**
 - i. The process of heat transfer by convection currents is called **convection** of heat.
 - ii. Convection needs a medium to transfer heat.
 - iii. It occurs in liquids as well as gases.
3. **Radiation:**
 - i. The transfer of heat that takes place in the absence of a medium is called **radiation**.
 - ii. Almost all bodies in nature transfer heat in the form of radiations.
 - iii. When heat radiations fall on a substance, heat is partly absorbed and partly reflected by the substance. The capacity of a substance to absorb heat depends on the colour and intrinsic properties of the substance.

Good and bad conductors of heat

1. Substances which easily transfer heat are called good conductors of heat. **Examples:** copper, gold, aluminium etc.
2. Substances which do not transfer heat are called bad conductors of heat. **Examples:** wood, plastic, paper, glass etc.

Expansion and contraction of a substance due to heat

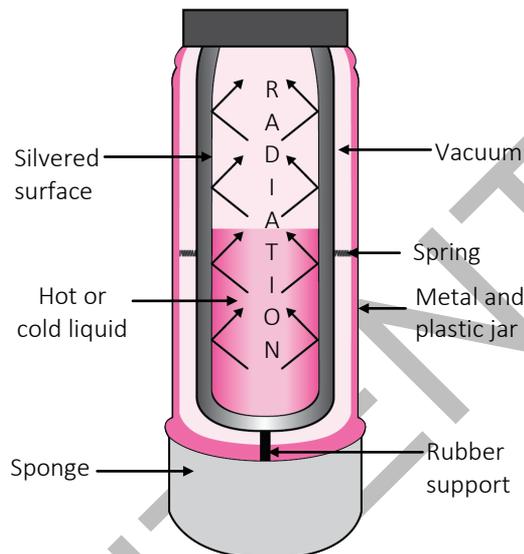
1. All solids, liquids and gases expand on heating and contract on cooling.

Thermos Flask (Dewar flask)

1. The first thermos flask was made in 1892 by Scottish scientist Sir James Dewar. Hence, it is also known as the Dewar flask.
2. Thermos flask is a flask used to maintain the temperature of the hot or cold substances kept inside it.



3. This flask is designed to avoid the heat transfer from the inside of the flask to the surroundings.
4. It is a double-walled flask which has two glass tubes, one placed inside the other. The inner walls of the glass-tubes of the flask are silver coated and shiny. Hence, the heat radiations are reflected and trapped inside the flask, thus, avoiding heat transfer by radiation.
5. Also, vacuum is created between inner and outer glass tubes to avoid heat transfer by conduction and convection.
6. The tubes are covered with a protective jar of metal or plastic. The flask is protected by the pieces of sponge or rubber fixed between the outer jar and the flask.
7. In this manner, the temperature inside the flask is maintained. However, a little heat is lost from around the lid and by conduction through the glass.



Thermos flask

Summative Assessment



Fill in the blanks

***1. Fill in the blanks with the proper word from the brackets.**

(radiation, white, conduction, blue, convection, bad conductor, good conductor, black, reflection)

- i. Cooking utensils are made from metals due to their property of
- ii. of heat does not require a medium.
- iii. The earth receives heat from the sun by
- iv. Maximum heat is absorbed by a coloured object.
- v. Conduction of heat takes place through a substance.
- vi. The shining surface in a thermos flask decreases the outgoing heat by

Answers:

- | | | |
|---------------|-------------------|----------------|
| i. conduction | ii. Radiation | iii. radiation |
| iv. black | v. good conductor | vi. reflection |



Odd one out

1. Ironing clothes, heating a rod, holding hot cup of tea, taking warmth from bonfire.
2. Copper, cotton, wood, plastic.

Answers:

1. Taking warmth from bonfire.
Reason: Heat is transferred by means of radiation in taking warmth from bonfire while in rest of the processes heat transfer takes place due to conduction.
2. Copper.
Reason: Copper is a good conductor of heat while others are bad conductors.



Fun Fact

The height of Eiffel tower in France changes depending on the season. The tower on an average is 324 metres tall but during summer on a hot day it is observed to expand nearly 17 centimetres. As it cools down, it regains its original size.

**How are we different?****1. Conduction and convection of heat.**

Ans:

	Conduction of heat	Convection of heat
i.	Transfer of heat from the hot part of an object to the cold part is called conduction of heat.	The process of heat transfer by means of convection currents is called convection of heat.
ii.	Conduction can occur only in solids.	Convection can occur in liquids and gases.
iii.	Heat is transferred through solid in all directions.	Heat is transferred only in upward direction i.e., when a liquid or gas is heated at the upper part, the heat is not transferred to the lower part of the liquid or gas.
	Examples: Heating of handle of a pan, heating of other end of spoon kept in hot milk, etc.	Examples: Heating of water, formation of land breeze and sea breeze, etc.

2. Conduction and radiation of heat.

Ans:

	Conduction of heat	Radiation of heat
i.	Transfer of heat from the hot part of an object to the cold part is called conduction of heat.	The transfer of heat that takes place without a medium is called radiation.
ii.	Conduction of heat requires medium.	Radiation of heat does not require any medium.
iii.	Conduction occurs only in solids.	Radiation occurs in gases and vacuum.
	Examples: Heating of handle of a pan, heating of other end of spoon kept in hot milk, etc.	Examples: Solar heat reaching earth, heat from bonfire, etc.

**Answer in one sentence****1. Intext Question. (Textbook page no. 58)****How does the solar heat reach the earth?**

Ans: Solar heat reaches the earth by radiation.

***2. What are the modes of heat transfer?**

Ans: The modes of heat transfer are conduction, convection and radiation.

3. For what purpose vacuum is created between two tubes of thermos flask?

Ans: Vacuum is created between two tubes of thermos flask to prevent heat transfer by conduction and convection.

**Answer the following*****1. How does a fever get lowered by putting a cold compress on the forehead of a patient?**

- Ans:
- Heat is transferred from a hot body to a cold body.
 - During fever, body temperature gets very high i.e., the body is hot compared to the surroundings.
 - When a cold compress is put on the forehead of the patient, the heat is transferred from body of the patient to the cold compress.
 - Hence, the body temperature gets lowered and compress becomes warm. This lowers the fever of the patient.



2. **Can you tell** (Textbook page no. 58) 

Why do we hold a steel glass in a handkerchief while drinking hot milk from it? What are other examples of this kind? Make a note of them.

- Ans:** i. We hold a steel glass of hot milk in a handkerchief. The handkerchief being a bad conductor of heat, does not transfer the heat to our hands from the steel glass.
- ii. Some other examples are:
- Cooking utensils have plastic coated handles.
 - We wear hand gloves while taking out hot pot from an oven.

3. **Intext Question.** (Textbook page no. 58)

Why does the heat in the water, heated to boiling, slowly decrease once it is taken off the flame? Where does this heat go?

- Ans:** i. When the boiling water is taken off the flame, it transfers the heat to the surroundings through conduction, convection and radiation.
- ii. Conduction occurs through the vessel. Convection takes place within the water. Radiation occurs through the air around the vessel and water surface.
- iii. This heat lost from the water goes into the surroundings.
- iv. Hence, the air around the water gets warmer while water in the vessel becomes cooler.

4. **What are convection currents?**

- Ans:** i. When a liquid is heated in a container, the liquid at the bottom of the container becomes warm. The density of the liquid at the bottom decreases and it rises up by replacing the cold liquid at the top.
- ii. In this way, heat is transferred by means of currents known as convection currents.

*5. **Explain which mode of heat transfer causes sea breezes and land breezes.**

- Ans:** i. During day time, air above the land gets heated by the sun to a higher temperature than the air above the sea.
- ii. The hot air above the land has less density than the cool air above the sea. So air above the land moves upwards and is replaced by comparatively cooler air moving from the sea forming convection currents. In this way, sea breeze is set up.
- iii. Similarly, during night time air above the land is cooler than air above the sea. The air above the sea being hotter moves upwards and is replaced by comparatively cooler air moving from the land forming convection currents. In this way, land breeze is set up.
- iv. Thus, sea and land breezes are formed due to convection of heat.

*6. **What will absorb heat?**

Steel spoon, wooden board, glass vessel, iron griddle (*tava*), glass, wooden spoon, plastic plate, soil, water, wax.

Ans: Amongst the given substances, steel spoon, iron griddle (*tava*), water and wax are the good conductors of heat. Hence, these substances would absorb heat.

The remaining substances like wooden board, glass vessel, glass, wooden spoon, plastic plate and soil are bad conductors. Hence, they would absorb so small amount of heat that it can be neglected.

Give reasons

1. **Can you tell** (Textbook page no. 58) 

Why does the *halwai* wrap up cloth around the end of his slotted spoon while stirring the boiling milk in his large *kadhai*?

- Ans:** i. When the slotted spoon comes in contact with the boiling milk, heat is transferred to the spoon. The *halwai* may get a burn if he touches the hot spoon.
- ii. To avoid this, he wraps up a cloth around the end of the spoon.
- iii. The cloth being a bad conductor of heat, does not transfer the heat to the hands of *halwai*. Hence, the *halwai* wraps up cloth around the end of his slotted spoon while stirring the boiling milk.

***2. Why are heaters fitted near the floor and air conditioners, near the ceiling of a room?**

- Ans:**
- Heaters are used to keep the room warm. The warm air coming out of a heater is lighter and rises up. Cooler air with larger density flows downward and replaces the warm air. This cool air is further replaced by the warm air coming from the heater. This process continues and convection currents are formed which help in warming the room faster. Thus, fitting the heater near the floor set up the convection currents, which is not possible if the heater is near the ceiling of the room.
 - Air conditioners are used to keep the room cool. The cool air coming out of an air conditioner is heavier and sinks. Warm air being lighter flows upwards and replaces the cool air. This warm air is further replaced by the cool air coming from the air conditioner. This process continues and convection currents are formed which help in cooling the room faster. Thus, fitting the air conditioner near the ceiling set up the convection currents, which is not possible if the air conditioner is near the floor of the room.

***3. Dew drops form on the grass, in winter.**

- Ans:**
- In winter, the temperature of the surrounding is low. So, the surface of the grass radiates heat to the surrounding.
 - As, the heat transfer takes place between grass and the surrounding, the capacity of air to hold the vapour decreases.
 - Due to this, some of the vapour is transformed into water droplets and we see dew drops on the grass.

***4. Why are the houses in Rajasthan painted white?**

- Ans:**
- Absorption of heat radiations depends on the colour of the object.
 - As white colour absorbs less heat, most of the heat is reflected by the white colour.
 - In Rajasthan, the temperature of the surroundings is very high.
 - Hence, to keep the temperature inside the house low, the houses in Rajasthan are painted white.

***5. Why is the outer coat of the penguins of Antarctica black?**

- Ans:**
- In Antarctica, most of the times temperature is less than 0°C .
 - As black colour absorbs more heat than it reflects, the outer black coat of penguins absorbs most of the heat radiations falling on it.
 - Hence, to survive in such a cold weather, the outer coat of penguins of Antarctica is black.

6. Use your brain power! (Textbook page no. 58) **Why do we wear woollen clothes in winter?**

- Ans:**
- Wool is a bad conductor of heat.
 - The woollen clothes prevent the flow of heat from our body to the surroundings.
 - Hence, we wear woollen clothes to keep our body warm during winter.

7. Use your brain power! (Textbook page no. 61) **Why do we use white clothes in summer and dark or black clothes in winter?**

- Ans:**
- Absorption and reflection of heat radiations depends on the colour of the object.
 - White and light colours reflect most of the heat falling on them and dark or black colours absorb most of the heat.
 - Hence, to help in maintaining our normal body temperature we use white clothes in summer and dark clothes in winter.

***8. In winter, why does an iron pillar feel colder than a wooden pole?**

- Ans:**
- Iron being a good conductor of heat, transfers heat to the surroundings during winter and becomes cold.
 - Wood being a bad conductor of heat, no heat transfer takes place between wood and surroundings. Hence, wooden pole does not become cold in winter.



***9. An ordinary glass bottle cracks when boiling water is poured into it, but a borosil glass bottle does not.**

- Ans:**
- When boiling water is poured into a glass bottle, the glass surface that comes into the contact with hot water heats up and expands.
 - Glass being bad conductor of heat does not conduct heat which keeps the remaining glass surface of bottle cooler.
 - This unequal heating and expansion cause cracking of glass bottle.
 - On the other hand, borosil glass is made up of constituents different than that of ordinary glass.
 - This makes borosil glass almost non-conductor of heat causing very little expansion upon heating.
 - Due to this intrinsic properties borosil bottle does not crack when boiling water is poured into it.

***10. The telephone wires which sag in summer become straight in winter.**

- Ans:**
- All substances expand on heating and contract on cooling.
 - In summer, when temperature rises, the telephone wires expand causing them to sag. In winter, the temperature decreases. This temperature change brings back the particles of the wire close to each other.

Hence, the telephone wires which sag in summer become straight in winter.

11. Use your brain power! (Textbook page no. 62) 

Why is there a gap at the joints of rails and of cement concrete bridges?

- Ans:**
- Solids and metals expand on heating.
 - Rails or bridges contain some metals which may expand during summer due to temperature rise.
 - If there is no gap provided at the joints of these metals, the expansion may destroy the bridge structure or may cause serious accidents.
 - Hence, to provide room for expansion of solids, there is a gap at the joints of rails and cement concrete bridges.

12. Use your brain power! (Textbook page no. 62) 

Why is mercury or alcohol used in thermometer?

- Ans:**
- Mercury and alcohol need very little heat to expand. As a result, they can measure slight changes in temperature easily.
 - Also, mercury is a good conductor of heat.
- Hence, mercury or alcohol is used in a thermometer.

13. Why does a hot substance not remain hot after two or three hours in a thermos flask?

- Ans:** Although thermos flask prevents the transfer of heat between the flask and the surroundings, a small amount of heat is lost from around the lid and conduction through the glass.
Therefore, a hot substance does not remain hot after two or three hours in a thermos flask.

Formative Assessment



Apply Your Knowledge

1. Observe and Discuss. (Textbook page no. 58) 

What are the causes of what you see happening in the picture 9.1 shown on textbook page no. 58?

- Ans:**
- Continuous supply of heat increases the temperature which causes spilling of milk and whistling of cooker.
 - Higher temperature of the body than surroundings is causing the fever.
 - Cooling of the moisture in the air due to ice cubes is causing the formation of water droplets on the outside of the glass.
 - Large temperature difference between the body and the surroundings is causing the sensation of cold in persons shown in the picture.
 - Higher body temperature than the surrounding air is causing the buffalo to stay in water.



2. **Try this.** (Textbook page no. 58)



Rub your palms against each other and put them on your cheeks. What do you feel?

Ans: During the above activity, we get a warm sensation on our cheeks.

3. **Try this.** (Textbook page no. 59)



i. **Apparatus:** Bars of stainless steel, aluminium and copper, a candle, a burner, pins, etc.

Procedure: Take stainless steel (or iron), copper and aluminium bars, each about 30 cm long and having the same shape. Apply wax spots with the help of candle at a distance of 2 cm from each other on all the three bars. Stick a pin in each of these spots so that it is upright. Now insert the ends of all three bars into a flame at the same time. Observe for a while.

What do you see? From which bar do the pins start falling first? Why?

Ans: After a while, the pins start falling from the copper bar first. This is because heat is transferred easily through copper as compared to aluminium and stainless steel (or iron).

ii. **Apparatus:** A beaker, potassium permanganate crystals, a burner, water, etc.

Procedure: Take some water in a beaker. Heat the beaker slowly on a gas burner. Drop a few crystals of potassium permanganate into the water. Now watch the water in the beaker carefully. What do you see?

Ans: We can see streams of water going upwards and coming back to the bottom. Use of potassium permanganate gives magenta coloured streams which can be identified easily.

4. **Intext Question.** (Textbook page no. 60)

Light a candle and stand it upright. Hold your hands on its two sides at some distance from the candle. Bring them closer.

i. **What do you feel?**

Ans: When we bring our hands closer to the flame of a candle, we feel more heat on our hands.

ii. **Have you warmed yourself near a bonfire or in the morning sun in winter?**

(Students are expected to answer this question based on their own experiences.)

5. **Let's try this.** (Textbook page no. 61)



Apparatus: Two aluminium tins of the same size, two small glasses, water, thermometers, black paint, etc.

Procedure: Paint the outer surface of one tin with black paint, and let it dry. Then in both tins, place one glass, each filled with water at the same temperature. Cover the tins with lids. Keep them in the sun for two hours. Now measure the temperature of the water in the glasses in the two tins. What is the reason for the difference in the temperature?

Ans: The water in the black painted tin will show higher temperature than the water in the tin which is not painted. This is because, the absorption of heat radiation depends on the colour of the object and black colour absorbs most of the heat radiation. The tin whose surface is not painted, reflects some amount of heat radiations. Therefore, water inside the painted tin is heated more.

6. **Intext Question.** (Textbook page no. 61)

Place a steel spoon, a copper strip or rod, a divider from your compass box, a pencil and a plastic ruler in a glass beaker. Pour hot water (heated upto 60 °C–70 °C) into the beaker. Wait for a while. Then touch the outer end of the objects. Record your observations in the table below.

Object	How hot is the outer end? (very hot, hot, warm, as cool as the atmosphere)



What inference will you draw from this?

Ans:

Object	How hot is the outer end? (very hot, hot, warm, as cool as the atmosphere)
Steel spoon	hot
Copper strip or rod	very hot
Divider from compass box	hot (if metal), as cool as the atmosphere (if plastic)
Pencil	as cool as the atmosphere
Plastic ruler	as cool as the atmosphere

This tells us that some substances like copper or steel are good conductors of heat while substances like plastic and wood are bad conductors of heat.

7. Let's try this. (Textbook page no. 61)



Apparatus: a metal ring, a metal ball, a burner, etc.

Activity 1: Take a metal ring and metal ball of such size that the ball just passes through the ring. Heat the ball and check whether it passes through the ring. Now let the ball cool down, and check whether it passes through the ring.

Ans: When the metal ball is heated, it cannot pass through the metal ring as it expands on heating. However, after cooling down, the ball can again pass through the ring.

8. Intext Question. (Textbook page no. 62)

Apparatus: 500 mL conical flask, two-holed rubber stopper, glass tube, measuring ruler, thermometer, stand, wire gauze, burner, graph paper, etc.

Procedure: Fill a conical flask completely with water. Insert a glass tube and a thermometer in the two holes of a stopper and fit it to the conical flask. Heat the water and with the help of a ruler, record the water level in the glass tube after every 2 °C rise in temperature. Take about 10 readings. Observe what happens when heating is stopped. Draw a graph to show the change in water level as the temperature rises.

Ans: i. When heating is stopped, the water level in the glass tube, starts falling down.
ii. The graph of change in water level with the temperature rise shows that, water level increases with rise in temperature.

[Note: Students should note down the readings as per their experimental observations and then make a graph based on it.]

9. Intext Question. (Textbook page no. 62)

Apparatus: Glass bottle, balloon, hot water, etc.

Procedure: Fix a balloon on the mouth of a glass bottle. Hold this bottle in hot water. What happens?

Ans: When the glass bottle is held in hot water, after some time the balloon attached on the mouth of the bottle starts expanding. This is because the air inside the bottle expands and enters the balloon due to heat received from hot water. As a result, the balloon starts blowing up.

10. Find out. (Textbook page no. 63)



What is meant by thermoware?

Ans: The word thermo means heat and ware means object. Hence, thermoware is an object which does not allow heat to escape from it, keeping the inside substance warm. Thermoware refers to any object like clothing, containers etc.

Examples: sweater, thermos bottles, hot-pots etc.



Oral work

1. What is conduction of heat?

Ans: The transfer of heat from the hot part of an object to the cold part is called conduction of heat.

**2. What will happen when only upper part of liquid is heated?**

Ans: When only upper part of liquid is heated, the density of liquid in upper part will decrease, hence it will not sink. Therefore, no convection currents will be formed and no heat will be transferred to the bottom of the liquid.

3. Intext Question. (Textbook page no. 60)**How does the heat of the sun reach us?**

Ans: The heat of the sun reaches us through radiations.

4. How can we see objects at night using infrared camera?

Ans: Infrared camera captures the radiations from the objects enabling us to see objects at night.

**Activities**

1. In what ways heat transfer is taking place in the situation shown in the following picture? Also list the ways in which heat transfer or flow of heat is being blocked.



Ans: In the situation shown in the given picture:

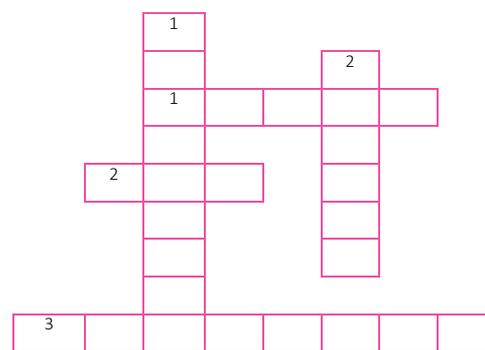
- Heat is transferred by conduction through vessel.
- The food/liquid in the vessel is getting cooked due to heat transfer by convection through the food.
- The men are sitting around the fire to get warm. They are getting warm by radiation from the fire.
- The air around the vessel is getting warm because of heat transfer by radiation.
- All the people/men shown in the picture are wearing thick clothes. These clothes are blocking the heat flow from their bodies to the surrounding.
- The person who is sleeping has covered himself with a blanket. The blanket acts as an insulator and prevents the loss of body heat to the surroundings.

2. Solve the following crossword puzzle.**Across:**

- Thermos flask was invented by scientist in 1892.
- Rubber is conductor of heat.
- Solids on cooling.

Down:

- of heat takes place from almost all objects in nature.
- Transfer of heat in is possible only by radiation.



Ans: Across: 1. DEWAR 2. BAD 3. CONTRACT
Down: 1. RADIATION 2. VACUUM



Project

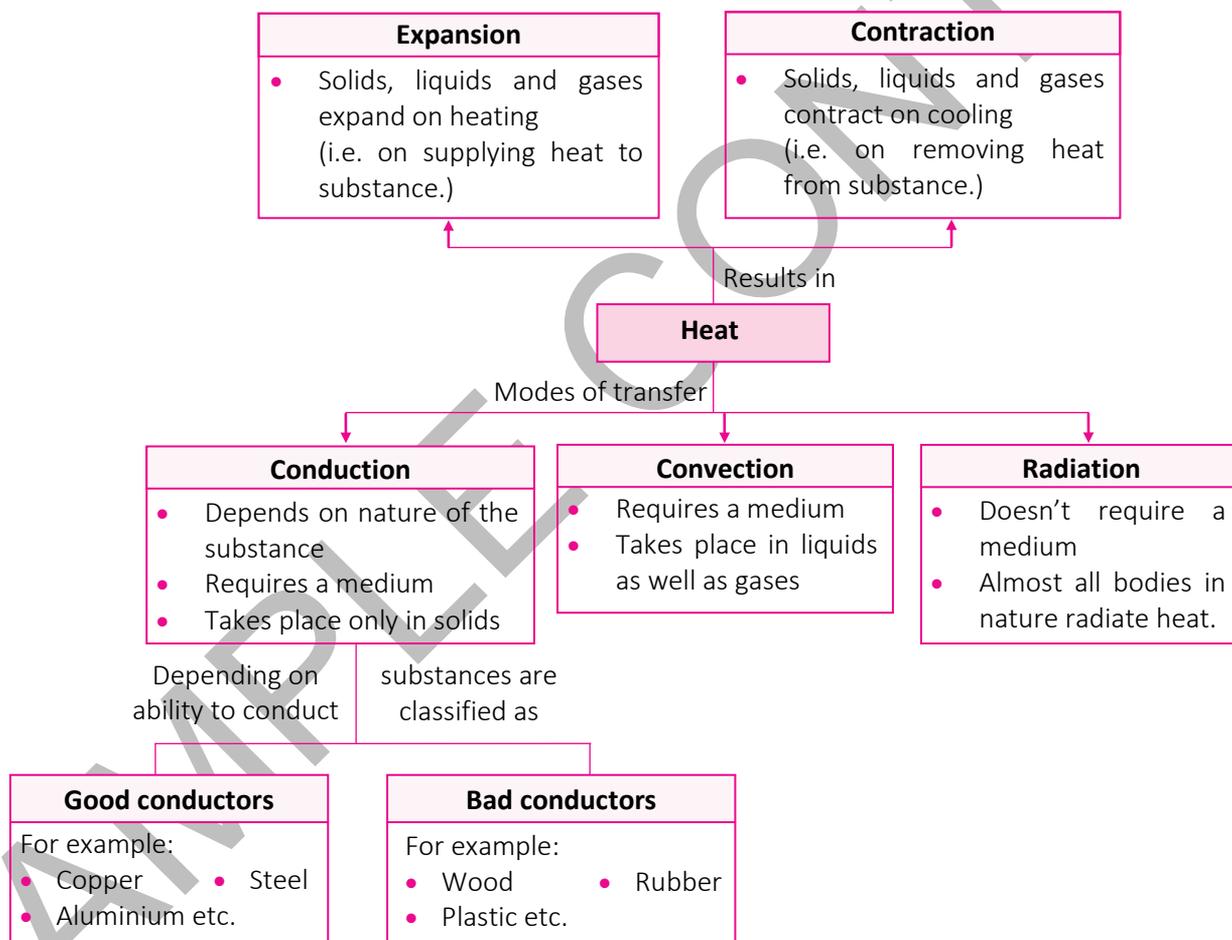
***1. Make a note of the various examples of heat transfer seen in day-to-day life.**

Ans: Few of the examples of heat transfer seen in day-to-day life are as follows:

- i. Air in the whole room is cooled when a fan rotates.
- ii. We get burning sensation when we touch a pot of boiling water.
- iii. When a hot iron is placed on clothes, the clothes become warm.
- iv. When we take steam, our body temperature rises slightly.
- v. Bread gets toasted when placed on hot iron griddle.

(Students are expected to observe their surrounding and write more such examples on their own.)

Memory Map





Chapter Assessment

1. Fill in the blanks.

- i. (Transfer/Convention) of heat means the flow of heat from one place to another.
- ii. The ability of a substance to absorb heat radiation depends on its (colour/shape).

2. Answer in one word.

- i. In which of the substances does conduction occur?
- ii. Which material is used as a coating on inner walls of a thermos flask?

3. Answer in your own words.

- i. Explain what happens when a liquid is heated.
- ii. Explain how temperature of the substance kept in the thermos flask is maintained.
- iii. Why refrigerator have freezers placed at the top?

Answers:

1.
 - i. Transfer
 - ii. colour
2.
 - i. Solids
 - ii. Silver
3.
 - i. When liquid is heated, the distance between its particles increases. This leads to increase in the volume of the liquid. Therefore, the liquid is said to expand when heated.
 - ii.
 - a. Thermos flask is designed to avoid the heat transfer from the inside of the flask to the surroundings.
 - b. It has two glass tubes one placed inside the other. The inner walls of the glass-tubes of the flask are silver coated and shiny. Hence, the heat radiations are reflected and trapped inside the flask. Thus, heat transfer by radiation is avoided.
 - c. Also, vacuum is created between inner and outer glass tubes to avoid heat transfer by conduction and convection.
 - d. In this manner, the temperature inside the flask is maintained.
 - iii.
 - a. Freezer is the compartment of the refrigerator which is at the lowest temperature.
 - b. The cold air which comes from the freezer is denser than the air at the bottom of the refrigerator. So the cold air sinks down and the warm air rises up.
 - c. This sets up convection currents inside the refrigerator which facilitates uniform cooling throughout the refrigerator.Hence, freezers are placed at the top in refrigerators.



Std. VII

AVAILABLE SUBJECTS:

- English Balbharati
- हिंदी सुलभभारती
- मराठी सुलभभारती
- Mathematics
- General Science
- History & Civics
- Geography



BUY NOW

SALIENT FEATURES:

- Based on the latest syllabus of Maharashtra State Board
- Extensive coverage of textual questions as well as additional question for practice
- Coverage of textual activity based questions to widen the knowledge spectrum of students
- Provision of Chapter wise Assessment in Mathematics, Social Studies and General Science for self-assessment
- A detailed glossary, Summary and Paraphrase is provided for all Chapters and Poems in languages

Target Publications Pvt. Ltd.

88799 39712 / 13 / 14 / 15

mail@targetpublications.org

www.targetpublications.org