1.The document name

Science _7th _heat_ MANAVPREET KAUR (TGT Sc)NIDHI BAJAJ (TGT Sc)

Edited by -Ashok phutela& Naresh kumar-_GMS koyal khera GMS Ramkot(Fazilka)

SECTION A. (Basic description of the lesson)

Name of the School	**GOVT. ADARSH SR. SEC SCHOOL CANAL COLONY BATHINDA**
Name of the Teacher	**MANAVPREET KAUR (TGT Sc) NIDHI BAJAJ (TGT Sc)**
Edited By	**Ashok Phutela (Govt. Middle School Koyal Khera ,Fazilka) And Naresh Kumar (Govt. Middle School, Ramkot , Fazilka)**
Class	**VII**
Subject	**SCIENCE (PHYSICS)**
Name of the Chapter	**HEAT**
No. of the Periods required to teach the Chapter	**12**

SECTION B. EXPECTED OUTCOME/ OBJECTIVES

B1. CONCEPTS:

1. Hot and cold objects, Sources of heat
2. Temperature
3. Measurement of Temperature, To Know the methods of using clinical thermometer
4. Types of thermometer, To know the various temperature scales
5. Transfer of Heat
   a. Conduction
   b. Convection
   c. Radiation
6. Conductors and insulators of heat
7. Air Currents (Land Breeze and Sea Breeze)
8. Clothes suitable for summer and winter season

B2. USEFULNESS IN DAILY LIFE

Students will be able to

- Read clinical and laboratory thermometer.
- Measure body temperature through clinical thermometer.
- Differentiate between clinical and laboratory thermometer and know where to use clinical or laboratory thermometer.
- Know where to use conductors and insulators.
- Understand the phenomenon of air current formation during day and night.
- Know which kind of clothes should be worn during summer and winter season.
- To enable the students to utilize the heat energy in daily life for various purposes like engines, press, heater, solar cooker etc.
- To enable the students to understand natural phenomenon occur in daily life because of heat like blowing of winds, changes of seasons and growing of various crops in various seasons.

Without learning this concept they will not understand

- How to measure body temperature correctly which is needed in daily life?
- It is not correct to measure temperature of hot objects like tea, milk etc. with clinical thermometer as the range of this thermometer is not sufficient.
- The toxicity of mercury which is used in thermometer and its lethal effects.
- Why light coloured clothes in summer and dark coloured clothes in winters are preferred.
- Why plastic or wooden handles are used in cooking pans.
- She/he will not be able to be eco friendly and fail to safeguard the environment

Career Options:

Laboratory assistant , Cookware industry, Textile industry, Medical field etc.

Energy engineers, Meteorology , Climatology

B3. LIFE SKILLS

The following life skills can be inculcated through the teaching of this chapter in the class:

- **Creative Skill**- When child thinks heat energy uses in various daily life aspects
- **Communication skill**- Listening , understanding, raising questions by the student
- **Critical Thinking**- Counter questions on suspected areas
- **Research aptitude** – Problem solving skill will be developed when students are given to find a solution
- **Team Work**- Students collect data measuring temperature and perform other activities in group will learn to work as a team .

B4. VOCABULARY

S. N.	WORD IN ENGLISH	MEANING IN PUNJABI	PRONUNCIATION IN ENGLISH	TRANSLITERATION IN PUNJABI
1.	Conduction			
2.	Convection			
3.	Radiation			
4.	Sea Breeze			
5.	Conductor			
6.	Insulator			
7.	Digital			
8.	Celsius			
9.	Fahrenheit			
10.	Coastal			
11.	Antiseptic			

SECTION C. PREREQUISITES OR PREVIOUS KNOWLEDGE (PK)

Previous knowledge of the students will be checked by performing an activity GA1 in first period.

SECTION D.

D. Period wise Break up for each Chapter

PERIOD	WHAT TO BE COVERED
1	Introduction to hot and cold objects (Previous Knowledge Testing), talking to students regarding hot and cold objects of daily life, Activity to explain basic knowledge of hot and cold objects., Activity regarding sources of heat. Introduction and definition of heat. Home Work is given to make a list of sources of heat which they use in homes.
2	Discussion on home work given, Introduction and definition of temperature ,Which devices are used to measure temperature of the objects? Study and read clinical thermometer.
3	Discussion of home work, Introduction to laboratory thermometer, How to read a laboratory thermometer? Home Work is given to record the temperature of day time after the school hours.
4	Discussion of home work, comparison (Similarities and dissimilarities) of Clinical and Laboratory Thermometer, Recapitulation/ Revision ,Home work will be given
5	Introduction to the transfer of heat, concept of conduction. Activity on conduction, Home work will be given
6	classification of materials- conductors and insulators. Home work will be given
7	Concept of Convection and Radiation- Other modes of heat transfer
8	Air currents- Sea breeze, Land breeze
9	Kinds of clothes suitable for summer and winter season, Quiz competition on topics covered
10	Students will be given a project. The whole class will be divided into groups. The instructions will be given to the students. They will have to visit to library, computer lab etc.
11	Different groups will give their presentations on the topic given to them ensuring the participation of every child of each group.
12	Suggestions will be given to improve their presentation. Students' problems will be listened and solved. Whole chapter will be revised.

SECTION E. MICRO PLANNING OF THE PERIODS OR MINUTE TO MINUTE BREAKUP OF PERIODS

Sub section E.1 Minute to minute breakup of period 1

CONCEPT	TIME	INDICATIVE/GUIDING SCRIPT
Introduction to hot and cold objects (Previous Knowledge Testing), talking to students regarding hot and cold objects of daily life	**15 min**	Perform an activity 'Hot and Cold Objects' where students will check which object is cold or hot. For details refer to annexure GA1. By doing this activity hot and cold objects are discussed with students with the help of listed objects.
Sources of heat	**15 min**	Perform an activity 'on sources of heat. For details refer to annexure GA2.
Definition of heat and in introduction of topic	**5 min**	Teacher will define heat and basic knowledge of topic will be given.
Home Assignment	**5 min**	As a home work Students are asked to make a list of sources of heat which they used in their homes.

Annexure Name	GA1
Name of the Activity	Hot and Cold Objects
Objectives	To make students understand about hot and cold objects of daily life helping in relating it with the chapter.
Type of Activity	Individual Activity
Material Required for the Activity	Hot and cold objects like hot water , tea, ice ,handle of a gate, etc.
Any Specific Preparations Required in the Class room for performing Activity	Hot water
Details of Activity and Instructions	Students will be asked to touch the objects like hot water, tea cup, ice etc. and they will be asked to tell which object is hotter and which is colder. Students will be able to distinguish easily which object is cold and which one is hot
Pictures describing the activity(if any)	
Any precautions to be kept in Mind	Hot water must be handled carefully
Explanation of the Outcomes of the Activity	Students will understand hot and cold object and this will help them to connect with the lesson.

Annexure Name	GA2
Name of the Activity	Natural and man made sources of heat
Objectives	To make students understand about natural and man made sources of heat
Type of Activity	Group
Material Required for the Activity	Candle ,bulb, coal, kerosene oil ,matchbox, sun light will act as a teaching aid
Any Specific Preparations Required in the Class room for performing Activity	N.A.
Details of Activity and Instructions	Teacher will show the source of heat to the students and tell the students that there are two type of sources of heat that is natural and man made. He will show the source to the students and ask the students to make a list of natural and man made sources of heat Candle- Man made Coal- Natural Bulb –man made Sun light – natural
Pictures describing the activity(if any)	
Any precautions to be kept in Mind	N. A.
Explanation of the Outcomes of the Activity	Students will understand natural and man made sources of heat and this will help them to connect with the lesson.

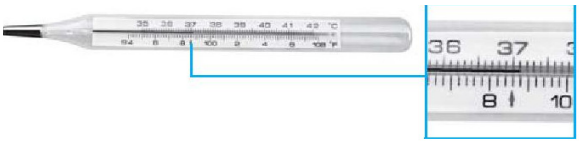
Sub section E.2 Minute to minute breakup of period 2

CONCEPT	TIME	INDICATIVE/GUIDING SCRIPT
Discussion of home work	**5 min**	Students will be asked to present the list of sources they prepared at homes and will try to find out which is the most common source of heat.
Temperature	**5 min**	Teacher will give basic knowledge and introduction of topic temperature.
Scales of temperature	**10 min**	Teacher will tell about various scales of temeperature like celcius and Fahrenheit .
Activity to measure body temperature	**15 min**	Teacher will demonstrate an activity to measure body temperature .
Home assignmenmt	**5 min**	Students will be asked to convert one scale to another and make a list. 10^0C=-------^0F 20^0C=-------^0F 98.6^0F=-------^0C

Hint:

one scale can be converted into another $^0C=5(^0F-32)/9$ or $F=(9/5)(C)+32$

<table>
<tr><td>Annexure Name</td><td>GA3</td></tr>
<tr><td>Name of the Activity</td><td>To Study and read clinical thermometer</td></tr>
<tr><td>Objectives</td><td>To make students able to read clinical thermometer to measure body temperature.</td></tr>
<tr><td>Type of Activity</td><td>Group activity</td></tr>
<tr><td>Material Required for the Activity</td><td>Clinical thermometers, Water etc.</td></tr>
<tr><td>Any Specific Preparations Required in the Class room for performing Activity</td><td>N.A.</td></tr>
<tr><td>Details of Activity and Instructions</td><td>Hold the thermometer in your hand and examine it carefully. If you do not have a thermometer, request a friend to share it with you.
By showing a clinical thermometer teacher will explain its structure- A clinical thermometer consists of a long, narrow, uniform glass tube. It has a bulb at one end. This bulb contains mercury. Outside the bulb, a small shining thread of mercury can be seen.
If you do not see the mercury thread, rotate the thermometer a bit till you see it. You will also find a scale on the thermometer. The scale we use is the Celsius scale, indicated by °C. A clinical thermometer reads temperature from 35°C to 42°C.
Thereafter students will be divided into groups and they are asked to note the temperature of body of their group mates and make record of it.
<table>
<tr><td>Sr. No.</td><td>STUDENT'S NAME</td><td>TEMPERATURE (^{0}C)</td></tr>
<tr><td>1.</td><td></td><td></td></tr>
<tr><td>2.</td><td></td><td></td></tr>
<tr><td>3.</td><td></td><td></td></tr>
<tr><td>4.</td><td></td><td></td></tr>
<tr><td>5.</td><td></td><td></td></tr>
</table>
</td></tr>
</table>

Pictures describing the activity(if any)	 
Any precautions to be kept in Mind	• Thermometer should be washed before and after use, preferably with an antiseptic solution. • Ensure that before use the mercury level is below 35°C. • Read the thermometer keeping the level of mercury along the line of sight. (See Fig. 4.3). • Handle the thermometer with care. If it hits against some hard object, it can break. • Don't hold the thermometer by the bulb while reading it. • Do not use a clinical thermometer for measuring the temperature of any object other than the human body. • Avoid keeping the thermometer in the sun or near a flame. It may break.
Explanation of the Outcomes of the Activity	Students will be able to read clinical thermometer to measure body temperature correctly.

Sub section E.3 Minute to minute breakup of period 3

CONCEPT	**TIME**	**INDICATIVE/GUIDING SCRIPT**
Discussion on home work	**5 min**	Discussion of home work will be done that how one scale of temperature can be converted into another.
Introduction of laboratory temperature	**5min**	Teacher will introduce about the laboratory thermometer.
How to measure temperature using laboratory thermometer	**10min**	Teacher will explain about how to use laboratory temperature
Activity to measure laboratory thermometer	**15 min**	Teacher will demonstrate an activity based on how to measure temperature using laboratory thermometer
Home Assignment	**5 min**	Students will be given home work to note down the temperature of the daytime after school time

<table>
<tr><td>Annexure Name</td><td>GA4</td></tr>
<tr><td>Name of the Activity</td><td>To read laboratory thermometer</td></tr>
<tr><td>Objectives</td><td>To make students able to read laboratory thermometer to measure the temperature of other objects.</td></tr>
<tr><td>Type of Activity</td><td>Group activity</td></tr>
<tr><td>Material Required for the Activity</td><td>Laboratory thermometers, tap water, beaker etc.</td></tr>
<tr><td>Any Specific Preparations Required in the Class room for performing Activity</td><td>N.A.</td></tr>
<tr><td>Details of Activity and Instructions</td><td>Take some tap water in a beaker or a mug. Dip the thermometer in water so that the bulb is immersed in water but does not touch the bottom or the sides of the container. Hold the thermometer vertically. Observe the movement of mercury in the thermometer. Wait till the mercury thread becomes steady. Note the reading. This is the temperature of water at that time.
Compare the temperature of water recorded by each group of students in the class.

<table>
<tr><td>Sr. No.</td><td>GROUP NAME</td><td>TEMPERATURE (^{0}C)</td></tr>
<tr><td>1.</td><td></td><td></td></tr>
<tr><td>2.</td><td></td><td></td></tr>
<tr><td>3.</td><td></td><td></td></tr>
<tr><td>4.</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Pictures describing the activity(if any)</td><td></td></tr>
</table>

	
Any precautions to be kept in Mind	• Handle the thermometer with care. If it hits against some hard object, it can break. • Don't hold the thermometer by the bulb while reading it. • Avoid keeping the thermometer in the sun or near a flame. It may break. • It should be kept upright not tilted. • The bulb should be surrounded from all sides by the substance of which the temperature is to be measured. The bulb should not touch the surface of the container
Explanation of the Outcomes of the Activity	Students will be able to read laboratory thermometer correctly to measure temperature of objects other than human body.

Sub section E.4 Minute to minute breakup of period 4

CONCEPT	TIME	INDICATIVE/GUIDING SCRIPT
Discussion of home assignment	**5 min**	Discussion on home assignment will be done on temperature noted on previous day.
Comparison (Similarities and dissimilarities) Clinical and Laboratory Thermometer	**15min**	On the basis of activities performed in the class and home task given to the students the major similarities and differences between the two thermometers will be discussed. (Hint 1).
Recapitulation/ Revision	**13 min**	All the topics done so far will be revised by recapitulation. Some questions related to these topics will be asked from students like • Define temperature. • Name the different scales of temperature. • What are the types of thermometers? • What is the range of clinical and laboratory thermometer?
Interesting Facts	**5 min**	•Mostly metals are solids but mercury is an exception which is liquid at room temperature. • Mercury is a toxic substance and is very difficult to dispose off if a thermometer breaks. •These days, **digital thermometers** are available which do not use mercury. So they are comparatively safe and easily readable.
Home Assignment	**2min**	Students will be asked to find at which temperature both scales are equal.

HINT 1.

Similarities between Clinical and Laboratory Thermometers

1. Both are made up of glass.

2. In both of these the rise or fall of mercury indicates the temperature.

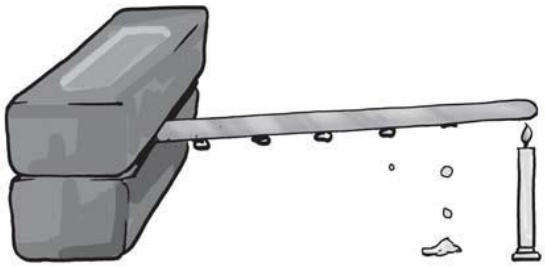
Dissimilarities between Clinical and Laboratory Thermometers

Clinical Thermometer	Laboratory Thermometer
1. It is used to measure the temperature of human body.	It is used to measure the temperature of objects other than human body.
2. Its ranges from 35^0 C to 42^0 C.	It ranges from -10^0 C to 110^0 C
3. It is short in length.	3. It is longer than clinical thermometer.

Sub section E.5 Minute to minute breakup of period 5

CONCEPT	TIME	INDICATIVE/GUIDING SCRIPT
Discussion on home work	**5 min**	**Teacher will discuss about home work given**
Introduction to the transference of heat The concept of conduction	5min	The teacher will introduce the topic of heat transference by telling that heat flows from a hot body to cold body by giving an example • When a frying pan is heated with the help of a flame and after sometime when it is removed from the fire then heat is transferred from the pan to the cooler surroundings.
The concept of conduction	25min	The concept of conduction will be explained with the help of activity GA5.
Home assignment	5 min	Students will be asked to make a list of devices based on conduction of heat.

Annexure Name	GA5

Name of the Activity	To study the phenomenon of conduction
Objectives	To make students able to understand how heat transfers in solids.
Type of Activity	Group Activity
Material Required for the Activity	Metal rod, stand, wax, candle flame etc.
Any Specific Preparations Required in the Class room for performing Activity	N.A.
Details of Activity and Instructions	Take a rod or flat strip of a metal, say of aluminium or iron. Fix a few small wax pieces on the rod. These pieces should be at nearly equal distances. Clamp the rod to a stand. If you do not find a stand, you can put one end of the rod in between bricks. Now, heat the other end of the rod and observe. The process by which heat is transferred from the hotter end to the colder end of an object is known as **conduction**.
Pictures describing the activity(if any)	
Any precautions to be kept in Mind	N. A.
Explanation of the Outcomes of the Activity	Students will be able to understand how heat transfers in solids.

Sub section E.6 Minute to minute breakup of period 6

CONCEPT	TIME	INDICATIVE/GUIDING SCRIPT
Discussion of home assignment	**5 min**	**Teacher will discuss about home work given**
classification of materials- conductors and insulators	20min	Teacher will explain the conductors and insulators on the basis of the activity GA6.
Definitions of Conductors and Insulators	10min	On the basis of activity GA6 conductors and insulators will be defined and written on b.b.
Home Assignment	5min	Find out any five conductors and insulators which you come across in daily life and prepare a list.

Annexure Name	GA6
Name of the Activity	Classification of materials- conductors and insulators
Objectives	To differentiate conductors and insulators
Type of Activity	Individual activity
Material Required for the Activity	Scale, pencil, steel spoon etc.
Any Specific Preparations Required in the Class room for performing Activity	N.A.
Details of Activity and Instructions	Heat water in a small pan or a beaker. Collect some articles such as a steel spoon, plastic scale, pencil and divider. Dip one end of each of these articles in hot water. Wait for a few minutes. Touch the other end. Enter your observation in Table.

Article	**Material with which the article is made of**	**Does the other end get hot Yes/No**
Steel spoon	Metal	Yes

Pictures describing the activity(if any)	N. A.
Any precautions to be kept in Mind	N. A.
Explanation of the Outcomes of the Activity	Students will be able to differentiate conductors and insulators

Sub section E.7 Minute to minute breakup of period 7

CONCEPT	**TIME**	**INDICATIVE/GUIDING SCRIPT**
Discussion of home work	**5 min**	**Teacher will discuss about the home work given**
Concept of Convection	15min	Teacher will explain the concept of convection on the basis of the activity GA7.
Concept of radiation	15 min	Teacher will explain about concept of radiation on the basis of activity GA8
Home assignment	5min	Teacher will ask the students to prepare a list of phenomenon which are based on convection and on radiation.

Annexure Name	GA7
Name of the Activity	To study the Concept of convection
Objectives	To understand the Concept of convection
Type of Activity	Group activity
Material Required for the Activity	Round bottom flask, tripod stand, candle flame, water, $KMnO_4$ crystal, straw etc.
Any Specific Preparations Required in the Class room for performing Activity	N.A.
Details of Activity and Instructions	Take a round bottom flask (if flask is not available, a beaker can be used). Fill it two-thirds with water. Place it on a tripod, or make some arrangement to place the flask in such a way that you can heat it by placing a candle below it. Wait till the water in the flask is still. Place a crystal of potassium permanganate at the bottom of the flask gently using a straw. Now, heat the water by placing the candle just below the crystal.

	Write your observation in your notebook and also draw a picture of what you observe .
Pictures describing the activity(if any)	
Any precautions to be kept in Mind	N. A.
Explanation of the Outcomes of the Activity	Students will be able to understand the concept of convection

Annexure Name	GA8
Name Of Activity	To demonstrate radiation
Specify the topic and its convergence (inter discipline)	
Type of Activity	Group
Material Required for Activity	Candle, tooth pick and wax
Any Specific preparation required in the class room for performing the activity	
Detail of activity and detailed instruction to carry it out	Teacher will take a tooth pick and put wax on its edge and then teacher will bring it near to a burning

	candle. He will not insert the tooth pick inside the flame but will put it near the flame. Student will observe thar wax melts even the tooth pick is away from the flame. This will demonstrate radiation.
Pictures describing the activity	
Any precaution to be kept in mind	
Explanation of outcomes of the activity	The Successful activity and result will enable the students to know about radiation
Objective assessment of learning	Knowledge of radiation

Sub section E.8 Minute to minute breakup of period 8

CONCEPT	**TIME**	**INDICATIVE/GUIDING SCRIPT**
Home Assignment	**5 min**	**Teacher will discuss about home work given**
Air currents- Sea breeze, Land breeze	15min	The people living in the coastal areas experience an interesting phenomenon. During the day, the land gets heated faster than the water. The air over the land becomes hotter and rises up. The cooler air from the sea rushes in towards the land to take its place. The warm air from the land moves towards the sea to complete the cycle. The air from the sea is called the **sea breeze**. To receive the cooler sea breeze, the windows of the houses in coastal areas are made to face the sea. At night it is exactly the reverse. The water cools down more slowly than the land. So, the cool air from the land moves towards the sea. This is called the **land breeze**.
Explanation of Air currents with the help of a video.	20min	A video will be shown through link https://www.youtube.com/watch?v=gM0d3fGew-0 https://www.youtube.com/watch?v=qNGpMXZFYt8 (GA9)
Home assignment	5min	To prepare for a quiz based on topic discussed

Annexure Name	GA9
Name of the Activity	Explanation of Air currents with the help of a video
Objectives	To understand sea breeze and land breeze.
Type of Activity	Individual activity
Material Required for the Activity	LED projector

Any Specific Preparations Required in the Class room for performing Activity	Internet connection
Details of Activity and Instructions	A video will be shown through link https://www.youtube.com/watch?v=gM0d3fGew-0 . https://www.youtube.com/watch?v=qNGpMXZFYt8
Pictures describing the activity(if any)	N. A.
Any precautions to be kept in Mind	N. A.
Explanation of the Outcomes of the Activity	To understand sea breeze and land breeze.

Sub section E.9 Minute to minute breakup of period 9

CONCEPT	**TIME**	**INDICATIVE/GUIDING SCRIPT**
Kinds of clothes suitable for summer and winter season,	15min	Dark surfaces absorb more heat and, therefore, we feel comfortable with dark coloured clothes in the winter. Light coloured clothes reflect most of the heat that falls on them and, therefore, we feel more comfortable wearing them in the summer. In the winter, we use woollen clothes. Wool is a poor conductor of heat. Moreover, there is air trapped in between the wool fibres. This air prevents the flow of heat from our body to the cold surroundings. So, we feel warm.
Quiz competiton	25min	Quiz competition will done in class on the topic. The quiz can question can be downloaded from site www.phymat.webnode.com

Sub section E.10

CONCEPT	TIME	INDICATIVE/GUIDING SCRIPT
Project Report	**10 min**	Students will be given a project under the heading 'Modes of Transfer of Heat i.e. Conduction, convection and radiation with suitable examples.' In this project students will be asked to collect information regarding the topic using various sources like library ,ICT etc.
Data collection through different sources	**30 min**	The whole class will be divided into groups. They will visit to library, computer lab etc. Teacher will assist them wherever required.

Sub section E.11

CONCEPT	TIME	INDICATIVE/GUIDING SCRIPT
Presentations on Project Report	**40 min**	Different groups will give their presentations on the topic given to them ensuring the participation of every child of each group.

Sub section E.12

CONCEPT	TIME	INDICATIVE/GUIDING SCRIPT
Discussion period	**40 min**	Suggestions will be given to improve their presentation. Students' problems will be listened and solved. Whole chapter will be revised.

Section F. THE CONTENT

- Pg. 35 to 48, chapter 4, NCERT class 7th Science text book.
- www.pseb.ac.in
- https://www.youtube.com/watch?v=gM0d3fGew-0
- www.phymat.webnode.com
- https://www.youtube.com/watch?v=qNGpMXZFYt8

SECTION G. Listing of possible activities

Name of the Concept/ Skill/ Outcome	**Name of the possible activities**	**Reference of the annexure where the details of the activity have been given in the already specified format or reference to the web address**
Introduction to hot and cold objects (Previous Knowledge Testing)	Hot and Cold Objects	GA1
Natural and man made sources of heat	To Study natural and man made sources of heat	GA2
Reading a clinical thermometer	To Study and read clinical thermometer	GA3
Reading a laboratory thermometer	To read laboratory thermometer	GA4
Introduction to the transference of heat- The concept of conduction	To study the phenomenon of conduction	GA5
Conductors and insulators	Classification of materials- conductors and insulators	GA6
Concept of Convection	To study the Concept of convection	GA7
Concept of Radiation	To study the concept of radiation	GA8
Air currents- Sea breeze, Land breeze	Explanation of Air currents with the help of a video	GA9(https://www.youtube.com/watch?v=gM0d3fGew-0) https://www.youtube.com/watch?v=qNGpMXZFYt8
Quiz	Quiz based on topic of heat	www.phymat.webnode.com
Creative skill	To measure the temperature using thermometer	GA3,GA4

Communication skill	Sources of heat	GA2
Team work	Measuring temperature	GA3,GA4
Research aptitude	Conductor and insulator	GA6

Sub Section H1- Assesment tool to asses students on objective mention in sub section B1

Q1.Which type of clothes we wear in summer?

Q2. What is the normal temperature of human body/

Q3.What is boiling point of water?

Q4. What is freezing point of water?

Q5. Which colour absorb maximum heat?

Q6. Which device is used to measure temperature of human body?

Q7. Which liquid is used in thermometer?

Q10. The range of clinical thermometer is ----------.

Q11. Wood paper and glass are ---------- conductor of heat?

Q12. We receive heat from sun by which mode of transfer of heat)

(a) Conduction (b) Convection (c) radiataion (d) all of these

Q13 True false

(a) Heat can not travel in vacuum
(b) Water is a bad conductor of heat
(c) Black bodies are good conductor of heat
(d) Heat always transfers from a cold body to a hot body

White clothes are not preffered in summer

Sub Section H2- Assesment tool to asses students on objective mention in sub section B2

1. Define heat.
2. Name two good conductor of heat.
3. Why ice kept in saw dust in summer?
4. Define temperature.
5. What is the range of clinical thermometer?
6. Why digital thermometer are used these days?
7. Why is mercury used in thermometer?
8. Match word

Column A	Column B
(a) Good conductor of heat	(i) vacum
(b) Convection	(ii) Aluminium
(c) Radiation	(iii) Liquids
(d) Insulator	(iv) Temperature scale
(e)Celsius	(v) Ebonite
(f) Thermometer	(vi) Heat Absoebers
(g) thermoflask	(vii) Device used to measure temperature
(h) Black bodies and cold thing	(viii) A device keeps hot thing hot Cold

Q9. The most appropriate liquid for thermometer is

(a) Water (b) mercury (c) Alcohol (d) Coloured water

Q10. The Substance which do not conduct heat easily are called

(a) Good conductors (b) Insulators (c)superconductors (d) none of these

Q11. **Cross word on Sources of Heat**

	F

				C		
		S				E
C		N		L		

Q12.Temperature is measured in

a) Joule b) meter c)celcius d) none of these

Q13. A spoon is dipped in cup of hot milk . The heat is transferred in other end of the spoon is by

a)radiation b)convection c)conduction d) none of these

Q14. Which of the following is a natural source of heat

a)candle b) electric bulb c) sun d) all of these

Q15. Temperature of boiling water is measured by

a) clinical thermometer b) laboratory thermometer c) Both d)none of these

Sub Section H3- Assesment tool to asses students on objective mention in sub section B3

Q1.Which is the biggest source of heat.

Q2. Name two natural sources of heat.

Q3.Why Cooking utensils are made of metals?

Q4. Why are ventilators located near the ceiling?

Q5. What do you mean by land breeze?

Q6. What do you mean by Sea breeze?

Q7. Name the invisible form of energy which causes the sensation of hotness or coldness?

Q8.Why handle of cooking utensils are made up of ebonite?

Q9. Why which mode the transfer of heat takes place in liquids and gasses?

Q10.When hot body is connected with cold body the heat flow from --------body to --------body

Q11.Name two crops which are sown in summer?

Q12. Name two crops which are sown in winter.

Q13. Why the base of cooking utensils are blackened?

Q14.Why we feel hot when we stand outside in the sun?

Q15. How do we decide which object is hotter than other?

Sub Section H4- Assesment tool to asses students on objective mention in sub section B4.

Q1. Write the meaning of following words in Punjabi

i)Temperature

ii)conduction

iii) convection

iv) radiation

v)Conductor

vi) insulator

vii)trade winds

viii)mercury

Q2. Rewrite the statement correctly

i) The mormal body temprrature of the human body is 98.8 F
ii) Due to conduction the heat of a body can be felt from a distance
iii) A celcius scale has a range from 32 C to 212 C
iv) A lab tjermometer is used to measure body temperature
v) A bright shining surface is a bad radiator

Section I Model assessment tool for the teachers.

Q1. How will you convert celcius scale to Fahrenheit scale

Q2. At which temperature celcius scale is equal to Fahrenheit scale.

Q3. What is Reaumur scale of temperature?

Q4. What is freezing point of mercury?

Q5. What is the boiling point of mercury?

Q6. What is effect of temperature on density of substance?

Q7. Which out of heat and temperature is cause and which one is effect?

Q8. Can water be used as a thermometer fluid ? Why or why not?

Q9. Two metallic balls of different size are at same temperature , what will be the direction of flow of heat when they are placed in contact and why?

Q10. An AC is to be installed in your room where will you get it installed near the ceiling or near the floor and why?

Q11. When we switched on a fan we feel cold , does it mean that air is cooled if not then why we we feel cool?

Q12. Why is kink is provided in clinical thermometer?

Q13. How land and sea breeze occur?

Q14. How thrmoflask is designed to minimize the loss of heat?

Q15. Why alcohol is not used in clinical thermometer?

Q16.What is the least count of clinical thermometer?

Q17. What is the least count of lab thermometer?

Q18. Why 0K is called absolute zero.

Q19. Do all the substance conduct heat easily?

Q20. List the special feature of clinical thermometer?

Q21.Why temperature decrease when we move up?

Q22. If we keep refrigerators door open the will it be helpful to cool the room?

Q23.Mercury is the nearest planet to sun even then venus is hottest why?

Q24. How water remain cold on earthen pot?

Q25. Why water is a bad conductor of heat?

Q26. Why copper is better conductor than iron why?

Q27. Why windows of AC trains are provided wih double glass?

Q28. Why New quilt is warmer than old one.

Q29.Why evaporation causes cooling?

Q30. Why pressure cooker is used to cook food quickly?

Q31.If you are given a ball in the class room suggest an activity to explain conduction convection and radiation?

Q32.In convection water travels from the ---------- region to the--------- region

Q33. Why black colour absorb maximum heat?

Q34. Who construct the clinical thermometer?

Q35. What is the correct method to measure the temperature using clinical thermometer?

Q36. Match word

A	B
1.Calorie	Metal
2.Heat	Temperature
3.Good Conductor	Units of heat
4. Insulator	Modes of heat transfer
5. celsius	Energy
6.Convection	Rubber

Q37. Give one point difference conduction of heat and convection.

Q38. Explain the terms temperature and heat

Q39. In place of hot climate its advised that outer wall of houses be painted white explain.

Q40. Why mercury is used in thermometer.