

CLASS – VII
LESSON PLAN
Ch 4 Heat

Unit	Physics (Chapter 4 Heat)
Class Transaction	Total: 11 periods (approx. 40 min each)
Pre-requisite for the course	This lesson requires 1. Basic knowledge of hot or cold objects. 2. Basic knowledge of energy.
Assessment of qualifying knowledge	1. Written test 2. Lab activity 3. Group Discussion 4. HW notebook
Objective	Given the content (chapter) the learners will be able to explain the different modes of heat transfer. Students will be able to differentiate between conduction, convection and radiation. They would be able to understand thermometers with 90% accuracy.
	DoL- D1, D2, D3, D4
Learning Outcomes	<u>KNOWLEDGE-</u> Students will know and understand • Students will be able to define temperature and thermometer. • Students will be able to classify different types of thermometers. • Students will be able to compare and contrast modes of transfer of heat • Students will be able to draw arrow diagrams for movement of heat energy in land breeze and sea breeze. • Students will be able to examine why woolen clothes are worn in winters • Students will be able to construct a model of insulated beverage bottles to understand transfer of thermal energy. <u>SKILLS AND COMPETENCIES-</u> Students would be able to • Critically analyze the difference between a) Lab thermometer and b) Clinical thermometer • Appreciate importance of thermometers Collaboratively. • Collaborate in groups and experiment the heat transfer in solids. • Design Creative methods to construct model of insulated beverage bottles to understand transfer of heat energy. • Built Character amongst themselves by discussing importance of thermal energy. • Answer knowledge, understanding, application and diagrammatic skill based questions based on the topic.

	<u>ATTITUDES AND BELIEFS</u> – Students will be able to Develop citizenship by visualizing and observing day to day phenomena and present it in the form of skit to Sensitize others.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Active Learning- <i>Frayer Model</i> on thermometer. (Critical Thinking) Group Learning- The class will be divided into eight groups. <i>Jigsaw</i> Expert Group: The group will be given worksheet on three modes of transfer of heat Learning Group: Students will teach each other the different modes of transfer of heat. (Communication, Collaboration) Differentiation- The students in groups of 8 will be demonstrating the transfer of heat in solids and liquids. (Character, Communication) Questioning- Multiple level question- Teacher will prepare a list of question about conduction, convection and radiation and will ask these questions after discussion. (Critical Thinking, Communication) Brain Storming-The class would start with a discussion on what the students have already learnt in the previous classes and hence what is it that they would learn now. They would also be told the significance of the topic that they would be studying. Introduction of the topic- PPT and Digital Content would be shared. Facilitation of content The facilitator will enable the learners to understand the fundamental concept of Heat. He/ She will compare and contrast different modes of transfer of heat. Approaches The facilitator should apply some or all the approaches while administering the teaching learning process. • Didactic Approach • Summarizing Approach • Feedback Approach Techniques to be used: • Quiz • MCQ • PPT • Computer aided simulation/3D pictures • Skit/Role playing

	• Group discussion • HOTS questions • Peer Assessment • Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table,compare- contrast matrix), silent/ loud reading, collaborative learning, • Lab Activities <i>Guided practice to be followed by Independent Practice- NCERT questions to be discussed in the classroom.</i>
Resources	Text Book: NCERT text book Reference Books CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the questions in their H.W note books as mentioned in the monthly planner by which we can assess their critical thinking and creativity HW notebooks to be marked as per the given plan: <i>Assessment Parameters:</i> The total marks for the activity is 5 Rubrics On time submission.....1 mark Presentation/ Neatness.....1 mark Content(critical thinking and creativity).....3 marks It is also advised that the students come to the class with proper background knowledge of the topic under discussion. They can refer to the resources stated above.
Assessments	4 UNIT TESTS25 Mark each=100 Marks HALF YEARLY EXAMINATION80+20 (internal)=100 Marks ANNUAL EXAMINATION 80+20(internal)=100 Marks By administering pen paper test, we assess creativity and critical thinking. INTERNAL ASSESSMENT20 Marks in each Term • Subject Enrichment Activity 10 Marks With the help of subject enrichment activities we assess communication, collaboration, character building and citizenship (Demonstration and implementation of on force and pressure in our daily life). The students in a group of 5 will be demonstrating the activity.

	Note Book Submission 10 Marks
Addressing Classroom Diversity	It's a different classroom today: As the kids are from different socio-economic background, So are their needs, demands and aspirations. Today all kinds of students including the gifted, the average and the differently able are mainstreamed into one class. So the teaching learning process must be devised in such that can cater to the needs and aspirations of students of abilities . The following techniques can be used for different groups: <i>For the gifted:</i> - Preparing a debate - Making PPT - Designing an exhibit - Writing a report - Preparing a talk - Encouragement for referring other resources <i>For the average/slow learners:</i> - Making a Chart/diagram/poster/ flashcards - Buddy system help to be provided - Provide grade-up classes <i>For differently able:</i> - Ignore grammatical inaccuracy - Call parents at regular intervals - Provide grade-up classes
Marks	The weight age would be given by CBSE.
	Q1. Explain why a thermometer should be washed before and after use with an antiseptic solution. Q2. Define conductor and insulator with an example in each case. Q3. Differentiate between land breeze and sea breeze. Q4. Mercury is chosen as the thermometric liquid. Q5. Why is freezer placed at the top of refrigerator? Q6. Huge bridges are provided with expansion joints.

Unit	Day 1 (Hot or Cold)
Class Transaction	40 min
Pre-requisite for the course	This lesson requires Basic knowledge of hot or cold objects. Basic knowledge of energy.
Assessment of qualifying knowledge	Written test Group Discussion Lab activity HW Notebook
Objective	Given the content (chapter) the learners will be able to explain the different modes of heat transfer. Students will be able to understand concept of hot and cold. They would be able to categorize hot and cold objects.
DOL	D1, D2,D3
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will know and understand</i> Students will be able to - Recall hot and cold (Identify objects which are hot and cold) - Define temperature - Cite examples of hot and cold through video Students' responses will be listed on the blackboard by using the KWL chart KWL- <i>What you Know, What you will Learn, What you have learned.</i> <i>Students will be able to</i> Identify hot or cold objects through an activity (20 Minutes) - Students will be divided into two groups and will be given three beakers of warm, cold and lukewarm water. <u>SKILLS AND COMPETENCIES</u>- <i>Students would be able to</i> Critically analyse hot or cold objects. - Appreciate the importance degree of hotness or coldness in Collaboration - Built character amongst themselves by discussing communicating in <i>understanding the degree of hotness or coldness (temperature)</i> Answer knowledge, understanding, application and diagrammatic skill based questions based on the topic. Attitudes and beliefs- <i>Students will be able to</i> - Develop citizenship in doing activity for hot or cold by understanding their role and duties.
Transaction Methodology (The teacher can	Transaction would proceed in the following manner- Active learning- <i>Identifying with sense of touch whether the object is hot or cold by taking three containers of warm cold and leukwarm water(Critical thinking)</i>

use the mentioned techniques, wherever applicable, and can use any other too.)	Questioning- <i>Multiple level question</i>- Teacher will prepare a list of questions based on the activity and will ask these questions during discussions. (Critical thinking, Communication) Brain Storming-The class would start with a discussion on what the students have already learnt in the previous classes and hence what is it that they would learn now. They would also be told the significance of the topic that they would be studying. Introduction of the topic- PPT and Digital Content would be shared <i>Guided practice followed by Independent Practice</i>- NCERT questions to be discussed in the classroom. Techniques to be used: • Quiz • MCQ • PPT • Computer aided simulation/3D pictures • Skit/Role playing • Group discussion • HOTS questions • Peer Assessment • Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), silent/ loud reading, collaborative learning, • Lab Activities <i>Guided practice to be followed by Independent Practice</i>- NCERT questions to be discussed in the classroom.
Resources	Text Book: NCERT text book Reference Books CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the questions in their H.W notebooks as mentioned in the monthly planner by which we can assess their critical thinking and creativity HW notebooks to be marked as per the given plan: <i>Assessment Parameters:</i> The total marks for the activity is 5 marks On time submission.....1 mark Presentation/ Neatness(creativity).....1 mark Content(critical thinking and

	creativity)3 marks It is also advised that the students come to the class with proper background knowledge of the topic under discussion. They can refer to the resources stated above.
Closure	Involving students in summarizing by asking them to prepare questions based on the topic.

Topic	DAY 2 (Thermometer)
Class Transaction	40 min each
Pre-requisite for the course	This lesson requires Basic knowledge of hot or cold objects. Basic knowledge of energy.
Assessment of qualifying knowledge	Written test Group Discussion Lab activity HW Notebook
Objective	Given the content (chapter) the learners will be able to explain the different modes of heat transfer. Students will be able explain thermometer. They would be able to understand thermometers with 90% accuracy.
	DOL - D1, D2, D3
Learning Outcomes	<u>Knowledge-</u> <i>Students will know and understand</i> Students will be able to • Explain thermometer. • Describe construction of thermometer. • Measure heat using thermometer • Classify different types of thermometer. <u>Skills & Competencies-</u> Students would be able to • Critically analyse construction of thermometer. • In Collaboration they will measure the heat of an object using thermometer. • Built character amongst themselves by discussing /communicating in <i>understanding thermometer</i>. Answer knowledge, understanding, application and diagrammatic skill based questions based on the topic.
Transaction Methodology (The teacher can use the mentioned	Transaction would proceed in the following manner- Active learning- 5 <i>Why's for gathering information which help in deeper understanding of topic. (Critical thinking)</i> Questioning- Multiple level question- Teacher will prepare a list of

techniques, wherever applicable, and can use any other too.)	question about different types of thermometer.. (Critical thinking, Communication) Brain Storming-The class would start with a discussion on what the students have already learnt in the previous classes and hence what is it that they would learn now. They would also be told the significance of the topic that they would be studying. Introduction of the topic- PPT and Digital Content would be shared Techniques to be used: • Quiz • MCQ • PPT • Computer aided simulation/3D pictures • Skit/Role playing • Group discussion • HOTS questions • Peer Assessment • Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), silent/ loud reading, collaborative learning, • Lab Activities <i>Guided practice to be followed by Independent Practice</i>- NCERT questions to be discussed in the classroom.
Resources	Text Book: NCERT text book Reference Books CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the questions in their H.W note books as mentioned in the monthly planner by which we can assess their critical thinking and creativity HW notebooks to be marked as per the given plan: <i>Assessment Parameters:</i> The total marks for the activity is 5 Rubrics On time submission..... 1 mark Presentation/ Neatness..... 1 mark Content (critical thinking and creativity)..... 3 marks

	It is also advised that the students come to the class with proper background knowledge of the topic under discussion. They can refer to the resources stated above.
Closure	Involving students in summarizing by asking them to prepare questions based on the topic

Unit	Day 3 (Clinical Thermometer)
Class Transaction	40 min
Pre-requisite for the course	This lesson requires Basic knowledge of hot or cold objects. Basic knowledge of energy.
Assessment of qualifying knowledge	Written test Group Discussion Lab activity HW Notebook
Objective	Given the content (chapter) the learners will be able to explain the different modes of heat transfer. Students will be able to understand clinical thermometer. They would be able to understand thermometers with 90% accuracy.
	DOL - D1, D2, D3, D4
Learning Outcomes	<u>Knowledge-</u> <i>Students will know and understand</i> Students will be able to • Define Clinical thermometer. • Read clinical thermometer using least count. • Use clinical thermometer for measuring body temperature. • Analyse construction of clinical thermometer. <u>Skills & Competencies-</u> Students would be able to • Critically analyse construction of clinical thermometer. • In Collaboration they will be able to measure body temperature using clinical thermometer. • Built character amongst themselves by discussing /communicating in <i>understanding use of clinical thermometer..</i> Answer knowledge, understanding, application and diagrammatic skill based questions based on the topic.
Transaction Methodology (The teacher can use the mentioned techniques, wherever	Transaction would proceed in the following manner- Active learning- Activity 4.2 Take a clinical thermometer and note the temperature difference indicated between the two bigger marks. Also note down the number of divisions shown by smaller marks between these marks. Calculate least count. record your observation (Critical thinking) Questioning- Multiple level question- Teacher will prepare a list of

applicable, and can use any other too.)	question about clinical thermometer and its uses. (Critical thinking, Communication) Brain Storming-The class would start with a discussion on what the students have already learnt in the previous classes and hence what is it that they would learn now. They would also be told the significance of the topic that they would be studying. Introduction of the topic- PPT and Digital Content would be shared Techniques to be used: • Quiz • MCQ • PPT • Computer aided simulation/3D pictures • Skit/Role playing • Group discussion • HOTS questions • Peer Assessment • Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), silent/ loud reading, collaborative learning, • Lab Activities <i>Guided practice to be followed by Independent Practice</i>- NCERT questions to be discussed in the classroom
Resources	Text Book: NCERT text book Reference Books CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the questions in their H.W note books as mentioned in the monthly planner by which we can assess their critical thinking and creativity HW notebooks to be marked as per the given plan: <i>Assessment Parameters:</i> The total marks for the activity is 5 Rubrics On time submission.....1 mark Presentation/ Neatness.....1 mark Content (critical thinking and creativity).....3 marks It is also advised that the students come to the class with proper

	background knowledge of the topic under discussion. They can refer to the resources stated above.
Closure	Involving students in summarizing by asking them to prepare questions based on the topic.

Unit	Day 4 (Laboratory Thermometer)
Class Transaction	approx. 40 min each
Pre-requisite for the course	This lesson requires Basic knowledge of hot or cold objects. Basic knowledge of energy.
Assessment of qualifying knowledge	Written test Group Discussion Lab activity HW Notebook
Objective	Given the content (chapter) the learners will be able to explain the different modes of heat transfer. Students will be able to understand laboratory thermometer. They would be able to understand thermometers with 90%
	DOL -D1, D2,D3,D4
Learning Outcomes	<u>Knowledge-</u> <i>Students will know and understand</i> Students will be able to • Define Laboratory thermometer. • Read laboratory thermometer using least count. • Use laboratory thermometer for measuring temperature of liquids. • Analyse construction of laboratory thermometer. <u>Skills & Competencies-</u> Students would be able to • Critically analyse construction of laboratory thermometer. • In Collaboration they will be able to measure temperature of liquids using laboratory thermometer. • Built character amongst themselves by discussing /communicating in <i>understanding use of laboratory thermometer..</i> Answer knowledge, understanding, application and diagrammatic skill based questions based on the topic.
Transaction Methodology (The teacher can use the mentioned techniques, wherever	Transaction would proceed in the following manner- Active learning- Activity 4.5 – Take a beaker of hot water. Put a laboratory thermometer in it and note the temperature. Take out the laboratory thermometer and now observe the fall of mercury. Record and analyze the observations. (Critical thinking) Questioning- <i>Multiple level question-</i> Teacher will prepare a list of

applicable, and can use any other too.)	question on the topic and will ask these questions during discussions. (Critical thinking, Communication) <i>Brain Storming</i>-The class would start with a discussion on what the students have already learnt in the previous classes and hence what is it that they would learn now. They would also be told the significance of the topic that they would be studying. <i>Introduction of the topic</i>- PPT and Digital Content would be shared Techniques to be used: • Quiz • MCQ • PPT • Computer aided simulation/3D pictures • Skit/Role playing • Group discussion • HOTS questions • Peer Assessment • Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), silent/ loud reading, collaborative learning, • Lab Activities <i>Guided practice followed by Independent Practice</i>- NCERT questions to be discussed in the classroom
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the questions in their H.W notebooks as mentioned in the monthly planner. HW notebooks to be marked as per the given plan: <i>Assessment Parameters:</i> The total marks for the activity is 5 marks On time submission.....1 mark Presentation/ Neatness.....1 mark Content.....3 marks It is also advised that the students come to the class with proper background knowledge of the topic under discussion. They can refer to the resources stated above.

Closure	Involving students in summarizing by asking them to prepare questions based on the topic.
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Unit	Day 5 (Transfer of Heat, Conduction)
Class Transaction	(approx. 40 min each)
Pre-requisite for the course	This lesson requires Basic knowledge of hot or cold objects. Basic knowledge of energy
Assessment of qualifying knowledge	Written test Group Discussion Lab activity HW Notebook
Objective	Given the content (chapter) the learners will be able to explain the different modes of heat transfer. Students will be able to identify conduction as heat transfer within and between solids with 90% accuracy.
	DOL - D1, D2,D3
Learning Outcomes	<u>Knowledge-</u> <i>Students will know and understand</i> Students will be able to • List three modes of transfer of heat. • Demonstrate conduction in solids • Conclude that molecule transfer their heat in solids. <u>Skills & Competencies-</u> Students would be able to • Critically analyse conduction in solids. • In Collaboration they will be able to conclude that molecule transfer heir heat in solids. • Built character amongst themselves by discussing /communicating in <i>understanding conduction</i>. Answer knowledge, understanding, application and diagrammatic skill based questions based on the topic.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any	Transaction would proceed in the following manner- Active learning- Activity 4.6 – Take an aluminum rod and fix small pieces of wax an attach iron nails. Now place a candle below it at the one end and record your observations. (Critical thinking)? Brain Storming-The class would start with a discussion on what the students have already learnt in the previous classes and hence what is it that they would learn now. They would also be told the significance of the topic that they would be studying.

other too.)	Introduction of the topic- PPT and Digital Content would be shared Techniques to be used: • Quiz • MCQ • PPT • Computer aided simulation/3D pictures • Skit/Role playing • Group discussion • HOTS questions • Peer Assessment • Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), silent/ loud reading, collaborative learning, • Lab Activities Guided practice to be followed by Independent Practice- NCERT questions to be discussed in the classroom.
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the questions in their H.W note books as mentioned in the monthly planner by which we can assess their critical thinking and creativity HW notebooks to be marked as per the given plan: <i>Assessment Parameters:</i> The total marks for the activity is 5 Rubrics On time submission.....1 mark Presentation/ Neatness.....1 mark Content (critical thinking and creativity).....3 marks It is also advised that the students come to the class with proper background knowledge of the topic under discussion. They can refer to the resources stated above.
Closure	Involving students in summarizing by asking them to prepare questions based on the topic.

Unit	Day7 (Conductors and Insulators)
Class Transaction	(approx. 40 min each)
Pre-requisite for the course	This lesson requires Basic knowledge of hot or cold objects. Basic knowledge of energy.
Assessment of qualifying knowledge	Written test Group Discussion Lab activity HW Notebook
Objective	Given the content (chapter) the learners will be able to explain the different modes of heat transfer. Students will be able to differentiate between conductors and insulators. They would be able to identify conductors and insulators with 100% accuracy.
	DOL - D1,D2,D3
Learning Outcomes	<u>Knowledge-</u> <i>Students will know and understand</i> Students will be able to • Compare and Contrast conductors and insulators. • List various conductors and insulators • Identify conductors and insulators with the help of an experiment. <u>Skills & Competencies-</u> Students would be able to • Critically analyse conductors and insulators • In Collaboration they will be able identify conductors and insulators. <i>Built character amongst themselves by discussing /communicating in understanding conductors and insulators of heat . Answer knowledge, understanding, application and diagrammatic skill based questions based on the topic</i>
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Active learning- <i>CAF(consider all factors)</i> on conductors and insulators of heat. (Critical thinking) Differentiation- The students in a group of 10 will be identifying conductors and insulators of heat. (Character, Citizenship) Questioning- Multiple <i>level question-</i> Teacher will prepare a list of question about the conductors and insulators of heat and will ask these questions during discussions. (Critical thinking, Communication) Brain Storming-The class would start with a discussion on what the students have already learnt in the previous classes and hence what is it that

	they would learn now. They would also be told the significance of the topic that they would be studying. Introduction of the topic- PPT and Digital Content would be shared Techniques to be used: • Quiz • MCQ • PPT • Computer aided simulation/3D pictures • Skit/Role playing • Group discussion • HOTS questions • Peer Assessment • Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), silent/ loud reading, collaborative learning, • Lab Activities <i>Guided practice to be followed by Independent Practice-</i> NCERT questions to be discussed in the classroom.
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Self-Study, Home Work, Assignments	Independent Practice: Students would do the questions in their H.W note books as mentioned in the monthly planner by which we can assess their critical thinking and creativity HW notebooks to be marked as per the given plan: <i>Assessment Parameters:</i> The total marks for the activity is 5 Rubrics On time submission.....1 mark Presentation/ Neatness.....1 mark Content (critical thinking and creativity).....3 marks It is also advised that the students come to the class with proper background knowledge of the topic under discussion. They can refer to the resources stated above.
Closure	Involving students in summarizing by asking them to prepare questions based on the topic.

Unit	Day 7 (Convection)
Class Transaction	(approx. 40 min each)
Pre-requisite for the course	This lesson requires Basic knowledge of hot or cold objects. Basic knowledge of energy
Assessment of qualifying knowledge	Written test Group Discussion Lab activity HW Notebook
Objective	Given the content (chapter) the learners will be able to explain the different modes of heat transfer. Students will be able to interpret convection in liquids. They would be able to understand the movement of molecules in liquids with 90% accuracy.
	DOI - D1, D2,D3,D4
Learning Outcomes	<u>Knowledge-</u> <i>Students will know and understand</i> Students will be able to • Demonstrate conduction in solids • Conclude that molecule move themselves and transfer heat in liquids. <u>Skills & Competencies-</u> Students would be able to • Critically analyse convection in liquids. • In Collaboration they will be able to conclude that heat transfer takes place by movement of molecules in liquids. • Built character amongst themselves by discussing /communicating in <i>understanding Convection</i>. Answer knowledge, understanding, application and diagrammatic skill based questions based on the topic.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Active learning- 5 <i>Why's for gathering information which help in deeper understanding of topic. (Critical thinking)</i> Questioning- Multiple <i>level question-</i> Teacher will prepare a list of question about convection in liquids will ask these questions during discussions. (Critical thinking, Communication) Brain Storming-The class would start with a discussion on what the students have already learnt in the previous classes and hence what is it that they would learn now. They would also be told the significance of the topic that they would be studying.

	Introduction of the topic- PPT and Digital Content would be shared Techniques to be used: • Quiz • MCQ • PPT • Computer aided simulation/3D pictures • Skit/Role playing • Group discussion • HOTS questions • Peer Assessment • Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), silent/ loud reading, collaborative learning, • Lab Activities <i>Guided practice to be followed by Independent Practice-</i> NCERT questions to be discussed in the classroom.
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the questions in their H.W note books as mentioned in the monthly planner by which we can assess their critical thinking and creativity HW notebooks to be marked as per the given plan: <i>Assessment Parameters:</i> The total marks for the activity is 5 Rubrics On time submission..... 1 mark Presentation/ Neatness..... 1 mark Content (critical thinking and creativity)..... 3 marks It is also advised that the students come to the class with proper background knowledge of the topic under discussion. They can refer to the resources stated above.
Closure	Involving students in summarizing by asking them to prepare questions based on the topic.

Unit	Day 8 (Land Breeze and Sea Breeze)
Class	(approx. 40 min each)

Transaction	
Pre-requisite for the course	This lesson requires Basic knowledge of hot or cold objects. Basic knowledge of energy
Assessment of qualifying knowledge	Written test Group Discussion Lab activity HW Notebook
Objective	Given the content (chapter) the learners will be able to explain the different modes of heat transfer. Students will be able to differentiate between land breeze and sea breeze. Students will be able to draw arrow for directions of land breeze and sea breeze with 90% accuracy.
	DOL - D1, D2,D3,D4
Learning Outcomes	<u>Knowledge-</u> <i>Students will know and understand</i> Students will be able to • Compare and contrast land breeze and sea breeze. • Identify the direction of heat transfer by drawing arrows. <u>Skills & Competencies-</u> Students would be able to • Critically analyse characteristics about warm air and cold air. • In Collaboration they will be able to compare and contrast land breeze and sea breeze. • <i>Built character amongst themselves by discussing /communicating in understanding land breeze and sea breeze. Answer knowledge, understanding, application and diagrammatic skill based questions based on the topic.</i>
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Active learning- 5 <i>Why's for gathering information which help in deeper understanding of topic</i> (Critical thinking) Questioning- Multiple <i>level question-</i> Teacher will prepare a list of question aboutland breeze and sea breeze and will ask these questions during discussions. (Critical thinking, Communication) Brain Storming-The class would start with a discussion on what the students have already learnt in the previous classes and hence what is it that they would learn now. They would also be told the significance of the topic that they would be studying. Introduction of the topic- PPT and Digital Content would be shared Techniques to be used: • Quiz

	• MCQ • PPT • Computer aided simulation/3D pictures • Skit/Role playing • Group discussion • HOTS questions • Peer Assessment • Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), silent/ loud reading, collaborative learning, • Lab Activities <i>Guided practice to be followed by Independent Practice- NCERT questions to be discussed in the classroom.</i>
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the questions in their H.W note books as mentioned in the monthly planner by which we can assess their critical thinking and creativity HW notebooks to be marked as per the given plan: <i>Assessment Parameters:</i> The total marks for the activity is 5 Rubrics On time submission.....1 mark Presentation/ Neatness.....1 mark Content (critical thinking and creativity).....3 marks It is also advised that the students come to the class with proper background knowledge of the topic under discussion. They can refer to the resources stated above.
Closure	Involving students in summarizing by asking them to prepare questions based on the topic.

Unit	Day 9 (Radiation)
Class Transaction	(approx. 40 min each)
Pre-requisite for the course	This lesson requires Basic knowledge of hot or cold objects. Basic knowledge of energy

Assessment of qualifying knowledge	Written test Group Discussion Lab activity HW Notebook
Objective	Given the content (chapter) the learners will be able to explain the different modes of heat transfer. Students will be able understand radiation. Students will be able to compare and contrast conduction, convection and radiation with 90% accuracy.
	DOL -D1,2,3
Learning Outcomes	<u>Knowledge-</u> <i>Students will know and understand</i> Students will be able to • Define radiation. • Interpret how heat from sun reaches earth. <u>Skills & Competencies-</u> Students would be able to • Critically analyse transfer of heat without any medium. • In Collaboration they will be able to compare and contrast convection, radiation and conduction. • <i>Built character amongst themselves by discussing /communicating in understanding radiation. Answer knowledge, understanding, application and diagrammatic skill based questions based on the topic.</i>
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- <i>Active learning- 5 Why's for gathering information which help in deeper understanding of topic. (Critical thinking)</i> Questioning- Multiple <i>level question</i>- Teacher will prepare a list of question about radiation and will ask these questions during discussions. (Critical thinking, Communication) Brain Storming-The class would start with a discussion on what the students have already learnt in the previous classes and hence what is it that they would learn now. They would also be told the significance of the topic that they would be studying. Introduction of the topic- PPT and Digital Content would be shared Techniques to be used: • Quiz • MCQ • PPT • Computer aided simulation/3D pictures • Skit/Role playing

	• Group discussion • HOTS questions • Peer Assessment • Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), silent/ loud reading, collaborative learning, • Lab Activities <i>Guided practice to be followed by Independent Practice- NCERT questions to be discussed in the classroom.</i>
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the questions in their H.W note books as mentioned in the monthly planner by which we can assess their critical thinking and creativity HW notebooks to be marked as per the given plan: <i>Assessment Parameters:</i> The total marks for the activity is 5 Rubrics On time submission.....1 mark Presentation/ Neatness.....1 mark Content (critical thinking and creativity).....3 marks It is also advised that the students come to the class with proper background knowledge of the topic under discussion. They can refer to the resources stated above.
Closure	Involving students in summarizing by asking them to prepare questions based on the topic.

Unit	Day 10 (Kinds of clothes we wear in summer and winter)
Class Transaction	(approx. 40 min each)
Pre-requisite for the course	This lesson requires Basic knowledge of hot or cold objects. Basic knowledge of energy
Assessment of qualifying	Written test Group Discussion

knowledge	Lab activity HW Notebook
Objective	Given the content (chapter) the learners will be able to explain the different modes of heat transfer. Students will be able understand that dark colored objects absorb more heat than light colored objects.
	DOL -D1,2,3
Learning Outcomes	<u>Knowledge-</u> <i>Students will know and understand</i> Students will be able to • Understand heat is absorbed by dark colored clothes. • Interpret types of clothes worn in summers and winters. <u>Skills & Competencies-</u> Students would be able to • Critically analyse dark color clothes absorb heat and light colored clothes reflect heat.. • In Collaboration they will be able to design insulated beverage bottles. • <i>Built character amongst themselves by discussing /communicating in the model where they have to determine what material and material thickness work best at insulating hot water. Answer knowledge, understanding, application and diagrammatic skill based questions based on the topic.</i>
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Active learning- Activity 4.10 – Take two identical tin cans. Paint one with black and other with white. Allow it to stand for a while in sun. Measure the temperature of both. Note your observation (Critical thinking) Questioning- Multiple <i>level question</i>- Teacher will prepare a list of question about types of clothes worn in summers and winters.(Critical thinking, Communication) Brain Storming-The class would start with a discussion on what the students have already learnt in the previous classes and hence what is it that they would learn now. They would also be told the significance of the topic that they would be studying. Introduction of the topic- PPT and Digital Content would be shared Techniques to be used: • Quiz • MCQ • PPT • Computer aided simulation/3D pictures

	• Skit/Role playing • Group discussion • HOTS questions • Peer Assessment • Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), silent/ loud reading, collaborative learning, • Lab Activities <i>Guided practice to be followed by Independent Practice-</i> NCERT questions to be discussed in the classroom.
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the questions in their H.W note books as mentioned in the monthly planner by which we can assess their critical thinking and creativity HW notebooks to be marked as per the given plan: <i>Assessment Parameters:</i> The total marks for the activity is 5 Rubrics On time submission.....1 mark Presentation/ Neatness.....1 mark Content (critical thinking and creativity).....3 marks It is also advised that the students come to the class with proper background knowledge of the topic under discussion. They can refer to the resources stated above.
Closure	Involving students in summarizing by asking them to prepare questions based on the topic.

Unit	Day 11 (Woolen clothes keep us warm in winter)
Class Transaction	(approx. 40 min each)
Pre-requisite for the course	This lesson requires Basic knowledge of hot or cold objects. Basic knowledge of energy
Assessment of qualifying	Written test Group Discussion

knowledge	Lab activity HW Notebook
Objective	Given the content (chapter) the learners will be able to explain the different modes of heat transfer. Students will be able understand wool keeps us warm in winters.
	DOL -D1,2,3
Learning Outcomes	<u>Knowledge-</u> <i>Students will know and understand</i> Students will be able to • Explain wool keeps traps heat energy • Interpret wool is poor conductor of heat <u>Skills & Competencies-</u> Students would be able to • Critically analyse wool is poor conductor f heat.. • In Collaboration they will be able to interpret wool keeps us warm in winter.. • Built <i>character</i> amongst themselves by discussing /communicating in understanding heat transfer by poor conductor of heat. Answer knowledge, understanding, application and diagrammatic skill based questions based on the topic.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- <i>Active learning- 5 Why's for gathering information which help in deeper understanding of topic. (Critical thinking)</i> Questioning- Multiple level question- Teacher will prepare a list of question about poor conductor of heat and will ask these questions during discussions. (Critical thinking, Communication) Brain Storming-The class would start with a discussion on what the students have already learnt in the previous classes and hence what is it that they would learn now. They would also be told the significance of the topic that they would be studying. Introduction of the topic- PPT and Digital Content would be shared Techniques to be used: • Quiz • MCQ • PPT • Computer aided simulation/3D pictures • Skit/Role playing • Group discussion • HOTS questions • Peer Assessment

	• Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), silent/ loud reading, collaborative learning, • Lab Activities <i>Guided practice to be followed by Independent Practice-</i> NCERT questions to be discussed in the classroom.
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the questions in their H.W note books as mentioned in the monthly planner by which we can assess their critical thinking and creativity HW notebooks to be marked as per the given plan: <i>Assessment Parameters:</i> The total marks for the activity is 5 Rubrics On time submission.....1 mark Presentation/ Neatness.....1 mark Content (critical thinking and creativity).....3 marks It is also advised that the students come to the class with proper background knowledge of the topic under discussion. They can refer to the resources stated above.
Closure	Involving students in summarizing by asking them to prepare questions based on the topic.