Lesson-13: Climate and Weather

11 Periods (40 minutes each)

Learn Better (Main Coursebook), Stay Ahead (Workbook), Book of Holistic Teaching, Book of Project Ideas, CRM signs, Poster, Gratitude sheet

Animation, Animated Activities, Concept Map, Dictionary, eBook, I Explain, Infographic, Quiz, Slideshow, Test Generator

Confirming better: All seasons are fun.

Curricular Goals and Objectives (NCF)

To enable the students:

- to understand the factors influencing climate, such as distance from the equator, altitude and proximity to the sea.
- to differentiate between weather and climate and explain how they impact daily life.
- to explore the effects of different climates on human activities, plant life and animal behaviour.
- to develop an awareness of how seasonal changes affect the environment and lifestyle.
- to enhance critical thinking by analysing global climate zones and their specific characteristics.

Methodology

Period 1

SHOULD DO — 5 MIN.

Teacher: Good morning/afternoon students. Before we start today's lesson let us talk about something exciting – seasons. Can anyone tell me which season is your favourite?

Teacher: [Wait for responses.] Wonderful. Now, can you tell me what makes each season fun and special for you?

Teacher: Yes, exactly. Every season has its own unique qualities, right? Whether it is the warmth of summer, the cool breeze in winter or the rainy season's joy, all of them bring something new.

Teacher: So, let us remember that all seasons are fun, in their own ways. Now, who can give an example of what you like to do in a particular season?

Teacher: [Allow the students to share examples.] That is amazing. Thank you for sharing. Each of us enjoys the seasons differently and that is what makes them so special.

Confirming better

MUST DO — 5 MIN.

Teacher: Now, let us move to the 'Confirming better' section. It also says, 'All seasons are fun.'

Teacher: Think about it for a moment — what do you enjoy doing in summer?

Teacher: Yes, we enjoy eating ice cream, going swimming and playing outside in the evenings.

Teacher: What do we like during the rainy season?

Teacher: Yes, we love jumping in puddles, using colourful umbrellas and watching the rain fall.

Teacher: What about winter? What makes it special?

Teacher: That is right, we enjoy wearing warm clothes, drinking hot soup and snuggling in our blankets.

Teacher: Every season gives us something different to enjoy. Just like we are all different and special, each season is special in its own way too.

Teacher: So, when the weather changes, we should not get upset. Instead, we should look for the fun in every season. Let us say it together – All seasons are fun.

KWL chart

SHOULD DO — 5 MIN.

Teacher: We will begin a new chapter 'Climate and Weather'. We are going to use a KWL chart to help us organise our thoughts and learning. Please take out your notebooks and draw the KWL format.

K	W	L

Teacher: The KWL chart has three columns. The first column is labelled 'K,' in which you will write what you already know about the topic. In the second column 'W' you will

write what do you want to know and the third column is labelled 'L' where you will write what you have learnt at the end of the chapter.

Teacher: Take a few minutes to think and write. If you have any questions, feel free to ask.

Teacher: You all did an amazing work in this activity. Let us move on to Re-KAP activities. We will use Kinaesthetic, Auditory and Pictorial activities today to make our learning exciting. Let us start with the Kinaesthetic activity.

Kinaesthetic

Kinaesthetic

Form two teams amongst yourselves. One member from each team starts by writing a climate-related word about the Himalayas. Then, they pass the marker to the next team member, who writes another related word. This continues until each team has a list of words. 93

MUST DO
10 MIN.

Teacher: Let us get ready for kinaesthetic activity. We will play a game to learn about the Himalayas and their climate. We will divide into two teams. Each team will take turns writing climate-related words about the Himalayas.

Teacher: To start, I want one member from each team to come up and write the first word related to the climate of the Himalayas.

Teacher: Once you write your word, pass the marker to the next person in your team and they will write another word. Keep passing the marker until your team has a list of words.

Teacher: Remember, each word should be related to the Himalayas and its climate. You could think of things like 'snow', 'cold', 'mountain' or 'glacier'.

Teacher: The team with the most creative and relevant words by the end will be the winner. Ready? Go ahead and start.

(Allow and monitor time to complete the activity and announce the winner as well.)

Teacher: Excellent participation everyone. Let us now move on the next activity.

Auditory

Auditory*

Listen to your teacher carefully. Answer the questions. 93

MUST DO
5 MIN.

Teacher: Now, listen to me carefully. I will read an interesting description about the Thar Desert and ask you some questions about it.

Teacher: Let us begin.

"The Thar Desert, also known as the Great Indian Desert, is located in the northwestern part of India. It covers an area of about 200,000 square kilometres and spans across the states of Rajasthan, Gujarat, Punjab and Haryana. The desert is characterised by sandy terrain, extreme temperatures and sparse vegetation. The climate is arid, with very little rainfall throughout the year. Despite the harsh conditions, the Thar Desert is home to a variety of wildlife, including camels, goats and sheep."

[If required, you may read it twice for the students.]

Teacher: Now, let us move on to the questions. Can anyone tell me some of the key features of the Thar Desert that were mentioned in the description?

Teacher: Think about the environment and the wildlife.

[Wait for responses.]

Teacher: Good to hear different answers. Yes, the Thar Desert has sandy terrain, extreme temperatures and very little rainfall. It is also home to animals like camels, goats and sheep.

Teacher: Great work, everyone. Let us now move on to the next activity.

Pictorial

Pictorial PS

What types of plants and animals do you think might inhabit this region, considering the landscape shown in the image? Write in your notebook. 93

Teacher's Note: *Read aloud to the class the listening text on the last page. Ask the questions given there.
#Guide the students to recall and answer these in their notebooks.

MUST DO
10 MIN.

Teacher: Now, look at the 'Pictorial' section and focus on the landscape shown in the image.

Teacher: As you can see, this is an image of a snowy mountain region. Now, based on what you see, I want you to think about the types of plants and animals that might live in such a place.

Teacher: The region looks cold and covered in snow, so we can imagine that only certain types of plants and animals can survive here.

Teacher: Take a moment to think. What types of plants might grow in such cold, snowy areas? What kind of animals would you expect to see living in these conditions?

Teacher: [Wait for responses.] Yes, great thoughts. You might see plants like moss or fir trees and animals such as snow leopards, yaks or mountain goats, which are well adapted to cold environments.

Teacher: Now, write the answers in your notebook. Think about how these plants and animals are suited to survive in this landscape.

Teacher: Once you are done writing, feel free to share your thoughts with the class.

Teacher: Well done, everyone. Let us clap for everyone's effort and participation and end today's session.

You may show the **Animated Activities** given on digital platform.

Differentiated Activities

110 km/hr

Write different regions of India (e.g., Rajasthan, Kerala, Himachal Pradesh) with the type of climate they experience and write one unique feature of that climate, as shown below.

Region	Climate	Feature
Rajasthan	Hot and Dry	Very little rainfall

80 km/hr

Sort and write these items under the correct heading: Summer, Winter or Rainy.

umbrella, soup, woollen clothes, ice cream, raincoat, fan, bonfire, sunglasses, gloves, juice, snowman, cotton clothes, thunderstorms, caps, mango, sweater, gumboots, blanket, water bottle

Summer	Winter	Rainy
Sunglass	Gloves	Umbrella

40 km/hr

Think and draw one thing that you see or use in each season: Summer, Winter and Rainy. Write the name of the item under your drawing. For example –

- Summer – Sun or Ice Cream
- Winter – Sweater or Bonfire
- Rainy – Umbrella or Clouds with Rain

Home Task

Sit with your parents and ask about their favourite season and what they like to do in that season. Write 3 – 4 sentences in your notebook about what they said. You may also draw one picture showing your family enjoying that season together.

Period 2

SHOULD DO

5 MIN.

Teacher: Good morning/afternoon, class. Before we start today's lesson, let us do a quick warm-up. We will play a quick round of 'Desert Detective'. I will describe a place and you have to guess if it sounds like a desert or not. If it is a desert, show me a thumbs up. If it is not, show me a thumbs down ."

Teacher: Let us get started.

1. This place has lots of tall green trees and it rains almost every day.
   [Expected: Thumbs down]
2. This place is very hot during the day and cold at night. It has lots of sand.
   [Expected: Thumbs up]
3. People here grow rice and use boats during rainy season.
   [Expected: Thumbs down]
4. Camels are used for travel and water is stored carefully.
   [Expected: Thumbs up]
5. Snow falls in this place and people wear woollen clothes.
   [Expected: Thumbs down]

Teacher: Wow. You are all great Desert Detectives. From this activity, we already know a few things about how deserts are different. Now let us go deeper and talk about how people actually live in the Thar Desert. Ready?"

Interacting better

MUST DO

15 MIN.

Teacher: Look at the 'Interacting better' section. We will discuss about life in the Thar Desert. I want you all to think about how people live in the Thar Desert. What kind of challenges might they face there?

Teacher: The Thar Desert is very dry and hot and it does not get much rainfall. Can anyone think of some ways that people might adapt to live in such an environment?

Teacher: [Wait for responses.] Yes, people in the Thar Desert build houses that are made of materials like mud and clay to keep cool. They also use water very carefully because it is scarce.

Teacher: Excellent. People also depend on camels for transportation and have traditional ways of farming. They grow crops that need less water, like millets.

Teacher: Now, let us have a few more ideas. What about food and water? How do you think people get water in the Thar Desert?

Teacher: [Wait for responses.] Good. People use wells or water tanks to store water and they use it wisely.

Teacher: Wonderful thoughts, everyone. It is amazing how people have found ways to live in such a challenging environment.

Teacher: Keep thinking about how different regions around the world require people to adapt in unique ways. Let us move on to the next activity where Dtaa is watching the news and Ryan comes with a glass of water for him.

Teacher: Look at the picture. What do you see in the picture? Can anyone tell me what Dtaa and Ryan are talking about?

SHOULD DO
15 MIN.

Teacher: [Wait for responses.] Yes, Dtaa is watching the weather news on TV and Ryan brings him a glass of water. They are discussing the weather and whether technology can help us predict what will happen with the weather.

Teacher: Dtaa explains that the news shows where it is raining, sunny or stormy in different parts of the country. Ryan asks if technology can help predict the weather and Dtaa tells him that it does. They collect information from satellites and weather stations, which helps us understand weather patterns.

Teacher: Now, let us look at the text below the image. Can anyone tell me what a weather is? Teacher: Yes. The condition of air temperature, air pressure, wind, humidity and rainfall in the atmosphere at a given place and time is what we call 'weather'.

Teacher: Weather changes every day. It may be very hot on one day and rainy the next. Similarly, the weather conditions in the morning may be different from those in the evening.

Teacher: The weather conditions in the morning may also be different from those in the evening. So, weather keeps changing constantly.

Teacher: Can anyone think of some different weather conditions you have noticed during the day? For instance, have you ever felt that it was very hot in the morning and then cold in the evening?

Teacher: [Wait for responses.] That is right. Sometimes, the weather changes drastically during the day, just like how we experience it in different parts of the year.

Teacher: Now, let us talk about seasons. Periods of the year where we have similar weather are called seasons. In India, we have three main seasons: summer, winter and monsoon.

Teacher: The lifestyle of people, their eating habits, the clothes they wear and the type of houses they live in are all affected by the seasons. Can you think of how the weather affects the food we eat or the clothes we wear?

Teacher: [Wait for responses.] Exactly. In summer, we wear lighter clothes and eat cool foods like ice cream. In winter, we wear warmer clothes and enjoy hot soups.

Teacher: Also, seasons affect the crops grown by farmers. For instance, during the monsoon season, farmers plant crops that need a lot of water, while in the summer, they may grow crops that can survive in the heat.

Teacher: Well done, everyone. Now that we have learnt about weather and seasons, let us have a look at the next activity.

Discovering better

Teacher: Look at the 'Discovering better' section. We will learn about temperature. Can anyone tell me what you understand by the word 'temperature'?

MUST DO
5 MIN.

Teacher: [Wait for responses.] Great. Temperature is the measurement in degrees of how hot or cold a place is. For example, when we check the weather, we often hear about the temperature in terms of degrees Celsius or Fahrenheit.

Teacher: Temperature helps us understand how warm or cold the air is around us. It affects the clothes we wear, the food we eat and even the activities we do during the day.

Teacher: Have you ever checked the temperature in the morning before you go out? What happens when it is too hot or too cold outside?

Teacher: [Wait for responses.] Exactly. When the temperature is high, like in summer, we wear light clothes and drink plenty of water. In the winter, when the temperature drops, we wear warmer clothes to stay comfortable.

Teacher: So, temperature is an important part of our daily life. It tells us about the weather and helps us prepare for it.

Teacher: Well done, everyone. Let us clap for everyone's effort and end today's session.

You may show the **I Explain** given on digital platform.

Differentiated Activities

110 km/hr

Create a fact file comparing life in the Thar Desert with your own city/town. You should include at least 4 – 5 points such as: type of houses, transportation, water usage, clothing and crops grown.

80 km/hr

Ask the students to imagine they are going on a 2-day trip to the Thar Desert. List down 5 – 6 essential items they would carry to survive and write a sentence about how each item will help in desert life.

40 km/hr

Ask the student to create a worksheet with weather symbols (☀ 🌧 ⛈ ❄) on one side and descriptions or simple names (like hot, rainy, stormy, cold) on the other.

Home Task

Over the next two days, observe the weather conditions at home with your parents and write down in your notebook:

- Morning and evening temperature (if available)
- What kind of clothes they wear
- What food they eat (hot/cold)

One thing they did differently due to the weather (e.g., stayed indoors, used a fan)

Bring your notebook to class and share one key learning from the observation.

Period 3

SHOULD DO

5 MIN.

Teacher: Good morning/afternoon students. Before we begin learning about climate, let us warm up with a quick game to get our minds ready. I will describe a place's climate and I want you to guess where it is. Ready?

Teacher: [Hold up a picture or point to the world map.] Here is your first clue.

Teacher: Clue 1: This place is warm throughout the year, with temperatures above 30°C. It has a lot of sunshine and rainfall in certain seasons. People here wear light clothes and enjoy tropical fruits. What kind of climate is this? Can you guess the place?

Teacher: [Wait for responses.] Yes, that is right. This sounds like the tropical climate and places like India or Brazil have such a climate.

Teacher: Let us try the next clue. Clue 2: This place is very cold, with temperatures often below freezing point. People wear heavy winter clothes and the region is covered with snow for most of the year. Can anyone guess the climate and the place?

Teacher: [Wait for responses.] Yes, this sounds like a polar climate. Areas like Antarctica or the Arctic have such a cold climate.

Teacher: Excellent guesses, everyone. Let us dive into our lesson on climate and explore how different regions around the world experience different climates.

Climate

CLIMATE 94

Climate refers to the weather conditions that prevail in a large area, over a long period of time. The climate of a place remains nearly the same, every year. Different parts of the world experience different types of climate. Based on the prevailing climatic conditions, the world is divided into seven major climatic regions, as detailed in Map 13.1 on the next page. 95

MUST DO

10 MIN.

Teacher: Let us move to the next section to know more about climate.

Teacher: Can anyone tell me what the difference is between weather and climate?

Teacher: [Wait for responses.] Great. Weather refers to the conditions in a particular place on a given day, like whether it is sunny or rainy. On the other hand, climate refers to the weather conditions that prevail in a large area over a long period of time.

Teacher: So, climate is the typical weather pattern of a region that stays nearly the same every year. For example, in some regions, the climate is always hot, while in other regions, it can be cold or temperate.

Teacher: Different parts of the world experience different types of climates. For instance, some areas have tropical climates, while others have polar climates. Can anyone think of examples of places with different climates?

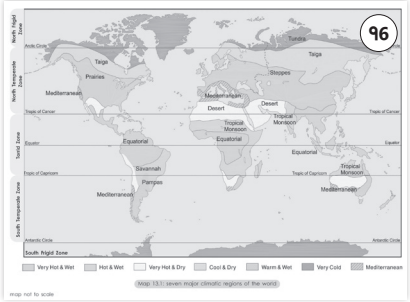
Teacher: [Wait for responses.] Yes, that is right. Places near the equator, like India, usually have a tropical climate, which means it is warm and there are distinct seasons like summer, monsoon and winter. In contrast, places near the poles have cold climates.

Teacher: Based on the prevailing climatic conditions, the world is divided into seven major climatic regions. These regions are different from each other because of factors like temperature, humidity and rainfall.

Teacher: We will look at Map 13.1 on the next page. It shows the seven major climatic regions. [Pause for the students to look at the map.] These regions help us understand the weather patterns of large areas over long periods of time.

Teacher: Let us discuss the map in detail.

Map



MUST DO

25 MIN.

Teacher: Can you all identify some of these climatic regions on the map? What do you notice about them?

Teacher: [Wait for responses.] Yes, this map shows the world divided into different climatic regions based on temperature, rainfall and other weather conditions.

Teacher: First, let us start with the areas marked in yellow. These regions are called 'Very Hot and Wet'. They are near the equator and have a tropical climate. Can anyone tell me what you might find in these regions?

Teacher: [Wait for responses.] Yes, that is right. These areas, such as parts of Brazil and Southeast Asia, are hot and rainy. They have forests and you might find animals like monkeys, tigers and elephants living there. It is also where we find the tropical rainforests.

Teacher: Now, let us look at the areas shaded in dark yellow. These are 'Very Hot and Dry' climates. These regions have very little rainfall and very high temperatures. Can you guess which areas are in this category?

Teacher: [Wait for responses.] Exactly. The desert regions, such as the Sahara in Africa and parts of Australia, fall into this category. These places are dry and hot and they are home to animals like camels and cacti.

Teacher: Moving on, let us look at the green areas on the map. These are the 'Mediterranean' climates, found in places like southern Europe, parts of California and parts of Australia. These regions have mild, wet winters and warm, dry summers.

Teacher: Now, let us talk about the cool, temperate regions. These are shown in light green and are called 'Warm & Wet' climates. Can anyone think of places with this kind of climate?

Teacher: [Wait for responses.] Yes, places like parts of the United States and New Zealand have this climate. It is not too hot and it rains throughout the year. This climate supports a variety of plants and animals.

Teacher: Let us now move to the areas in orange. These represent the 'Cool & Dry' climates, which you can find in places like northern Europe and parts of Canada. These regions have colder temperatures and are not very wet.

Teacher: Now, the areas in light blue represent 'Very Cold' climates. These regions are found near the poles, like in Antarctica or parts of Alaska. The temperature here is extremely low and it is mostly icy and snowy.

Teacher: Finally, we have the 'Equatorial' regions, marked in brown. These areas lie along the equator and have constant warm temperatures throughout the year. Can anyone think of a place with an equatorial climate?

Teacher: [Wait for responses.] Yes, the equator runs through places like the Amazon rainforest and parts of Africa. These regions stay warm year-round and are very humid.

Teacher: Now that we have seen all the regions on the map, let us take a moment to think about how climate affects life in these areas. What do you think people wear in different climates? How does the climate affect what crops can be grown in these regions?

Teacher: [Wait for responses.] Great thinking. As we move forward, keep in mind how these climatic regions influence not just the weather, but also the lifestyles of people, the types of animals and the plants that grow in each area.

Teacher: Well done, everyone. Now, let us clap for everyone's participation and end today's session.

You may show the **Animation** given on digital platform.

Differentiated Activities

110 km/hr

Choose one climatic region from the map. Create a short presentation (2-3 minutes) explaining how the climate in that region affects the lifestyle of people living there. Include details about the types of houses, clothing, food and crops grown in that region.

80 km/hr

Select two climatic regions from the map and compare them. Describe how the climate in each region is different and how people might adapt to these differences in terms of food, clothing and daily activities.

40 km/hr

Look at the map and choose any two climatic regions. Draw pictures to represent the weather and climate of those regions (for example, sun, snow, rain). Write one sentence about what people wear or do in each of those climates.

Home Task

Ask your parents about the climate in the region where they grew up. Write down what type of clothing and food were common in that place. Also, find out if the climate there has changed over time and if it has, how people have adapted to the changes. Share your findings with your family.

Period 4

SHOULD DO
10 MIN.

Teacher: Good morning/afternoon class. Before we begin today's lesson, let us warm up our thinking with a fun activity. I will describe some different places on Earth and you will try to guess why their weather is different. Are you ready?

Teacher: Clue 1: This place is very close to the equator. It is hot all year round and rains almost every day. People wear light cotton clothes and often carry umbrellas. Can you guess why it is always hot and rainy there?

Teacher: That is right. Places near the equator get more direct sunlight all year round, so they stay warm. Since, it is warm and humid, there is a lot of rain too.

Teacher: Let us try the next, Clue 2: This place is in the mountains. It is very cold in winter and even in summer, people wear jackets. Snowfall is common. Why do you

think it is cold in the mountains, even when it is summer?

Teacher: Exactly. As we go higher up, the air becomes thinner and cooler. That is why mountain areas are colder.

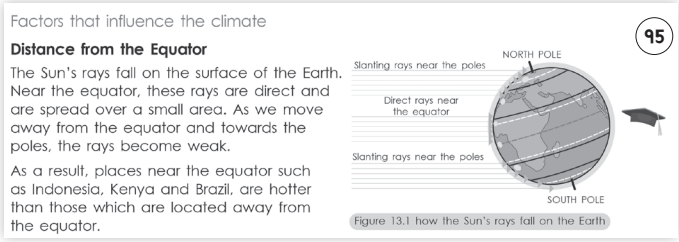
Teacher: Clue 3: This place is near the sea. It gets a lot of rain and the temperature is usually mild – not too hot, not too cold. What do you think is the reason behind this kind of weather?

Teacher: Great thinking. The sea keeps the land cool in summer and warm in winter. The sea brings moisture, which leads to more rain.

Teacher: Fantastic work, everyone. Let us explore some of the factors that influence the climate in detail.

Factors That Influence The Climate

Distance from the Equator



Teacher: Let us look at one of the factors 'Distance from the equator' that influence the climate. As you can see (in the image), the Earth is shown with lines and arrows indicating how the Sun's rays fall on the Earth's surface.

MUST DO
10 MIN.

Teacher: The Sun's rays fall in different ways depending on where you are on the Earth. Near the equator, the Sun's rays fall directly on the Earth. This means that the rays are concentrated over a small area.

Teacher: Can anyone guess what this means for the temperature in areas near the equator?

Teacher: [Wait for responses.] Yes, that is right. As the rays are direct and concentrated, places near the equator are much hotter than those farther away. For example, countries like Indonesia, Kenya and Brazil, which are close to the equator, experience warm temperatures throughout the year.

Teacher: Now, let us think about places that are far from the equator. In these areas, such as near the poles, the Sun's rays are more spread out and slant across a larger area.

Teacher: Can anyone guess how this affects the temperature in places near the poles?

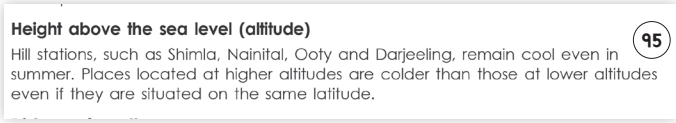
Teacher: [Wait for responses.] Exactly. The Sun's rays are weaker in these areas and that is why places near the poles, like the Arctic or Antarctica, are much colder than places near the equator.

Teacher: This is why the equator is known as the hottest part of the Earth and the poles are the coldest. The closer a place is to the equator, the hotter it tends to be.

Teacher: Let us take a closer look at the diagram on the side. As you can see, the Sun's rays are direct near the equator and slant near the poles. This helps explain why equatorial regions are hotter.

Teacher: Now that we understand how the distance from the equator affects temperature, let us move on to the next factor.

Height above the Sea Level (altitude)



Teacher: Let us look at the next factor and learn how the height above the sea level (altitude), influences the climate of a region.

MUST DO
10 MIN.

Teacher: Have you ever wondered why places on the mountains, like Shimla, Nainital, Ooty and Darjeeling stay cool even in the summer, while places in the plains get very hot?

Teacher: [Wait for responses.] That is right. This is because of altitude. The higher a place is above sea level, the cooler it becomes, even if it is located in a hot region.

Teacher: Let us think about it. Imagine two places—one at sea level and one on a mountain. The one on the mountain will have cooler temperatures, even if they are located on the same latitude. Can anyone guess why that happens?

Teacher: [Wait for responses.] Exactly. As you go higher up, the air gets thinner and it is harder for it to trap heat. So, the higher the altitude, the cooler the climate.

Teacher: That is why hill stations like Shimla, Nainital, Ooty and Darjeeling remain cool even in summer. These places are much higher than the surrounding areas and the air there is cooler, which is why they are a popular getaway from the heat.

Teacher: Also, this effect happens because, as we go up in altitude, the temperature drops by about 6.5°C for every 1,000 meters you ascend. That is why hill stations have a pleasant and cool climate.

Teacher: Let us think about this together. How do you think this difference in temperature might affect the way people live or the types of crops grown in these areas?

Teacher: [Wait for responses.] Yes, people in the mountains often wear cooler clothes, grow different crops and live in houses designed to keep them warm. In the plains, crops like rice and wheat are common but, in the mountains, fruits like apples or vegetables are often grown.

Teacher: Excellent thinking. Let us now move on to the next factor that influence the climate.

Distance from the Sea

Distance from the sea 95

Places located near the coast experience a moderate climate. This is primarily due to the effect of sea breezes. Water bodies heat up and cool down at a slower rate than land. In summer, therefore, the sea is cooler than the land and the air over the sea is cooler than that over the land. This cool air, known as sea breeze, blows from sea to land, making the land cool. In winter, the opposite action takes place and the land becomes warmer. Places, such as Delhi and Lucknow, located far away from the sea, do not experience sea breezes. As a result, they are extremely hot in summer and very cold in winter. Such a climate is called extreme climate.

MUST DO

10 MIN.

Teacher: Let us look at another important factor that influences the climate: distance from the sea. This factor is very interesting because it explains why coastal areas have moderate climates, while places far from the sea can have extreme climates.

Teacher: Have you ever been to a beach and noticed that the temperature is cooler there, even in summer? On the other hand, in cities that are far from the sea, like Delhi or Lucknow, it can be extremely hot in summer and very cold in winter. Can anyone guess why this happens?

Teacher: [Wait for responses.] That is right. This is because of the sea breeze and how water bodies like seas or oceans heat up and cool down slower than land.

Teacher: Let me explain: Water bodies take more time to heat up compared to land. So, during the summer, the sea is cooler than the land. The air over the sea is also cooler than the air over the land. This cool air from the sea blows toward the land, creating what we call a 'sea breeze'.

Teacher: Can anyone think of what effect the sea breeze has on the climate of coastal regions?

Teacher: [Wait for responses.] Exactly. The sea breeze helps cool down the land and keeps the temperature in coastal areas moderate. This is why places near the sea do not get too hot in summer or too cold in winter.

Teacher: Now, what about places that are far from the sea, like Delhi or Lucknow? These places do not get the cool sea breeze. What do you think happens there?

Teacher: [Wait for responses.] That is right. Since these places do not have the moderating effect of the sea, they experience much hotter summers and colder winters. This type of climate is called 'extreme climate' because the temperatures are very high in summer and very low in winter.

Teacher: To sum up, places near the sea enjoy a moderate climate because of the cooling effect of the sea breeze. However, places far from the sea experience more extreme temperature changes because they do not get this benefit.

Teacher: Well done, everyone. Let us clap for everyone's participation in the class and end today's session.

You may show the **Infographic** given on digital platform.

Differentiated Activities

110 km/hr

Choose one climatic region from the world map and write how the three factors (distance from the equator, height above sea level and distance from the sea) influence the climate of that region. Write it in 1-2 paragraphs explaining how these factors interact and affect the local climate.

80 km/hr

Create a Venn diagram comparing the climate of two regions: one near the equator (like Brazil) and one near the poles (like Alaska). Include factors such as temperature, rainfall and any seasonal changes. Discuss how these regions are affected differently by the factors - distance from the equator, altitude and distance from the sea.

40 km/hr

Look at the picture of the globe provided in your textbook and label at least three places you know that are close to the equator and three that are far from the equator. Draw a simple diagram showing the effects of being near or far from the equator, height and distance from the sea.

Home Task

Ask your parents to tell you about the climate in the place where they grew up. Write down their answers and find out what the weather was like during each season. Discuss with them how the climate affected their daily activities, what clothes they wore and how they adapted to different seasons. If possible, compare this with your current climate.

Period 5

SHOULD DO

10 MIN.

Teacher: Good morning/afternoon class. Before we begin today's lesson, let us have a quick warm up activity. Today, we are going on a little pretend journey – Do not worry, no ticket needed. I want you to imagine you are packing your bags for a trip.

Teacher: I am going to name a few places and I want you to tell me what kind of clothes or things you would pack if you were going there. Ready?

Teacher: Alright. First stop is Greenland. It is far in the north, covered in snow and ice for most of the year. What would you pack if you were going to Greenland?

Teacher: Exactly. We would pack woollen clothes, jackets, gloves, caps, thermals, etc. because it is very cold and snows a lot.

Teacher: Next destination is India, especially Delhi in the month of June. What do you think you would pack?

Teacher: That is right. Cotton clothes, sunscreen, cap, water bottle, etc. because it is hot and sunny.

Teacher: The next destination is France in springtime. It is neither too hot nor too cold. Just pleasant. What would you pack for France?

Teacher: Correct. Light jackets, t-shirts, an umbrella maybe, etc. because the weather there is moderate, not extreme.

Teacher: So we talked about three types of places – one very cold, one very hot and one with moderate weather. In today's class, we will learn about three heat zones as well after discussing the remaining factors that influence the climate. Let us get started.

Factors That Influence the Climate

Direction of winds

Direction of winds 95

Winds blowing from hot regions increase the temperature of a place, while those blowing from cold regions decrease the temperature. So, as a result, Delhi is hot in summer due to the dry, hot winds that blow from Rajasthan. In winter, cold winds from the Himalayas make northern India very cold. Winds blowing from the sea make the lands close to the sea cool and moist. Sometimes, winds bring clouds with them and cause rainfall. An anemometer is an instrument that measures wind speed.

Teacher: Let us look at the next factor 'Direction of winds' that affect the climate. Can anyone guess how the direction of winds might influence the weather?

MUST DO
10 MIN.

Teacher: [Wait for responses.] That is a great start. Winds play a huge role in determining the temperature and weather in different places. Let us break it down to understand it better.

Teacher: Winds blow from one place to another and they carry air from one region to another. Winds blowing from hot regions, such as deserts, can increase the temperature of a place. Can anyone think of an example where winds from a hot region might make a place hotter?

Teacher: [Wait for responses.] Yes, that is right. For example, Delhi gets very hot in summer because of the dry, hot winds that blow from Rajasthan, which is a very hot region. These winds carry the heat from the desert and make Delhi's temperature rise.

Teacher: Now, let us think about winds blowing from cold regions. These winds cool down the temperature. In winter, cold winds from the Himalayas blow down towards northern India. What effect do you think these winds have on the temperature?

Teacher: [Wait for responses.] Exactly. These cold winds from the Himalayas make northern India colder during the winter months.

Teacher: So, the direction of winds is important. Winds blowing from the sea also influence the climate. Can anyone guess what effect winds from the sea have?

Teacher: [Wait for responses.] Yes, winds blowing from the sea bring moisture and cool the land near the coast. These winds make coastal areas cooler and more moist compared to inland areas.

Teacher: Sometimes, winds carry clouds with them. When this happens, the clouds can bring rainfall. Have you ever noticed that when there is a change in the wind, it sometimes brings rain?

Teacher: [Wait for responses.] Great observations. An anemometer is an instrument that measures wind speed. It helps us understand how fast the wind is blowing and can give us an idea of how much it might affect the climate.

Teacher: So, to recap, winds can change the temperature by blowing hot air from one region to another or by bringing cool air. Winds from the sea bring moisture and help cool the land. Sometimes, winds bring clouds that can lead to rain.

Teacher: Let us now move on to the next factor.

Humidity and rainfall

Humidity and rainfall 95

Humidity refers to the moisture or water vapour present in the air. As the humid air rises and cools, the water vapour condenses into water droplets, forming clouds. These clouds eventually lead to rainfall. Places located near the

Teacher: Let us look at the next factor and learn how 'Humidity and rainfall' affect the climate of a region. Can anyone tell me what humidity means?

MUST DO
10 MIN.

Teacher: That is right. Humidity is the amount of moisture or water vapour present in the air. Can anyone tell me what happens when there is a lot of moisture in the air?

Teacher: [Wait for responses.] Yes, that is correct. When there is a lot of moisture in the air, the air is said to be humid. When this humid air rises, it cools down and the moisture turns into water droplets. These droplets form clouds.

Teacher: What happens next? Can anyone guess what the clouds do?

Teacher: [Wait for responses.] Exactly. The clouds eventually lead to rainfall. So, places that have a lot of humidity tend to receive a lot of rainfall because of this process.

Teacher: Let us think about places near the equator. Can anyone tell me what the climate is like near the equator?

Teacher: [Wait for responses.] Yes, that is right. Places near the equator, like parts of Africa and South America, are hot and humid. These regions receive a lot of rainfall throughout the year because of the high humidity levels.

Teacher: Now, let us think about deserts. What is the climate like in a desert? And how do you think humidity affects it?

Teacher: [Wait for responses.] Exactly. Deserts are dry and have very little moisture in the air. Because the air in deserts does not have moisture, they do not receive much rainfall. In fact, some deserts may not receive any rainfall for years.

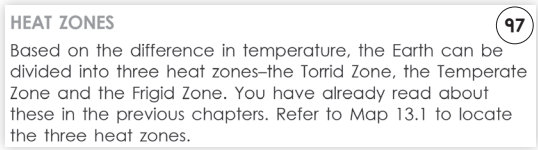
Teacher: What about very cold places, like the polar regions? What do you think the climate is like there and does humidity play a role?

Teacher: [Wait for responses.] Yes, you are right. Very cold places do not receive much rainfall. However, they experience snowfall instead of rain. The air in these places can hold very little moisture, so the moisture turns into snow instead of rain.

Teacher: To summarise, places near the equator are hot and humid, leading to a lot of rainfall. Deserts have very little humidity, so they receive very little or no rainfall. In very cold places, like the polar regions, the air holds very little moisture, so they experience snowfall instead of rain.

Teacher: Well done, everyone. Let us now move on to the next part of our lesson.

Heat Zones


HEAT ZONES 97

Based on the difference in temperature, the Earth can be divided into three heat zones–the Torrid Zone, the Temperate Zone and the Frigid Zone. You have already read about these in the previous chapters. Refer to Map 13.1 to locate the three heat zones.

MUST DO

10 MIN.

Teacher: Let us look at the 'Heat Zone' section. We are going to learn about the heat zones of the Earth. Can anyone guess how many heat zones there are?

Teacher: [Wait for responses.] Yes, that is right. There are three main heat zones: the Torrid Zone, the Temperate Zone and the Frigid Zone. These zones are based on the difference in temperature, which is influenced by the Earth's position relative to the Sun.

Teacher: Let us look at the map 13.1 on the page 96. The Torrid Zone is the area near the equator, where the Sun's rays are most direct. This zone is hot and experiences high temperatures year-round. Can anyone think of a place located in the Torrid Zone?

Teacher: [Wait for responses.] Yes, countries near the equator, like Indonesia, Kenya and Brazil are in the Torrid Zone. These places are hot and humid, receiving a lot of rainfall.

Teacher: Next, we have the Temperate Zone. This zone is located between the Torrid Zone and the Frigid Zone. The temperatures here are moderate, not too hot and not too cold. Can anyone think of a place that might be in the Temperate Zone?

Teacher: [Wait for responses.] Right. Places like parts of Europe, the United States and New Zealand are in the Temperate Zone. The climate here is much milder, with warm summers and cool winters.

Teacher: Finally, we have the Frigid Zone. This is the coldest zone on Earth, located near the poles. The Sun's rays are very weak here because the rays hit the Earth at a very low angle. Can anyone think of places that might be in the Frigid Zone?

Teacher: [Wait for responses.] Exactly. The Frigid Zone includes the Arctic and Antarctic regions, where the temperatures are extremely cold. These areas experience long, harsh winters and short, cool summers.

Teacher: To summarise, the three heat zones are:

1. The Torrid Zone near the equator, which is hot and humid.
2. The Temperate Zone with moderate temperatures.
3. The Frigid Zone near the poles, which is extremely cold.

Teacher: Now, let us look at how these zones affect the weather in different parts of the world. Do you think the people living in these regions have different lifestyles based on their climate?

Teacher: [Wait for responses.] Yes, that is correct. The lifestyle, clothing and even the food people eat can change depending on the heat zone they live in.

Teacher: Well done, everyone. Let us clap for everyone's participation and end today's session.

You may show the **Slideshow** given on digital platform.

Differentiated Activities

110 km/hr

Discuss in pairs, the effects of the three heat zones (Torrid Zone, Temperate Zone, Frigid Zone) on the types of vegetation and animal life in each zone. Write a detailed report explaining how each zone supports different ecosystems and include examples of animals and plants found in these regions.

80 km/hr

Create a table comparing the three heat zones. In the first column, list the names of the zones (Torrid, Temperate, Frigid). In the second column, write the general climate conditions (e.g., hot, mild, cold). In the third column, write one example of a place in each zone and its weather patterns.

40 km/hr

Using a world map, identify and colour the three heat zones. Label each zone with the appropriate name (Torrid, Temperate, Frigid). Draw a simple symbol or picture that represents the climate of each zone.

Home Task

Create a climate zone poster for your hometown or any place you like. On the poster, include: The climate zone (Torrid, Temperate or Frigid) that best fits the place.

- A list of activities people do in this region based on its climate (e.g., wearing winter clothes in cold climates, wearing light clothing in hot climates).

Period 6

SHOULD DO

5 MIN.

Teacher: Good morning/afternoon class. Before we begin today's lesson, let us have a quick warm up activity.

Teacher: I have a question for you. Have you ever stepped outside on a hot day and felt like the air was sticky or heavy?

Teacher: [Wait for responses.] Yes? What did it feel like?

Teacher: Right. It feels like you are sweating even when you are not doing anything. That is because the air has a lot of moisture in it. This brings us to our new word for the day – humidity.

Teacher: Great. So, what is humidity? It is the amount of water vapour in the air.

Teacher: Let us think of a real-life situation. Imagine it is July and you are visiting Kolkata. It is hot and your clothes stick to your body. You drink lots of water and still feel tired. Why?

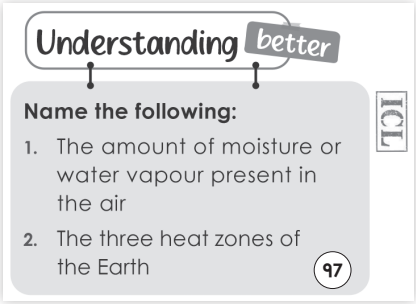
Teacher: [Wait for responses.] Yes. Because the air is humid – it has a lot of water vapour.

Teacher: Now, compare that with a hot day in the desert, like in Rajasthan. It is hot too, but the air feels dry. Your sweat dries up quickly. That is a place with low humidity.

Teacher: So now tell me – which place has high humidity? Kolkata or Rajasthan?

Teacher: Correct — Kolkata. It is near the sea, so there is more water in the air. Let us now move on to the next part of the lesson.

Understanding better



Teacher: Look at the 'Understanding better' section. With the help of these two questions, we will review some important concept. Ready?

MUST DO
5 MIN.

Teacher: The first question is: What is the amount of moisture or water vapour present in the air called?

Teacher: [Pause for a moment.] Can anyone remember what this is called?

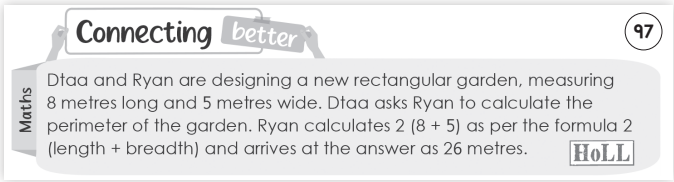
Teacher: [Wait for responses.] Yes, that is right. It is humidity. Humidity refers to the moisture in the air, which can affect the climate and how we feel the temperature.

Teacher: Now, the second question is: What are the three heat zones of the Earth?

Teacher: [Pause for responses.] Yes, we have already talked about this. The three heat zones are the Torrid Zone, the Temperate Zone and the Frigid Zone. These zones are based on temperature and the Earth's position relative to the Sun.

Teacher: Excellent participation. Let us move on to the next activity.

Connecting better



Teacher: Look at the 'Connecting better' section. We are going to look at how to calculate the perimeter of a rectangle and we will use an example to help us understand.

MUST DO
5 MIN.

Teacher: Let us take a look at the situation here. Dtaa and Ryan are designing a new rectangular garden. The length of the garden is 8 metres and the width is 5 metres. Dtaa asks Ryan to calculate the perimeter of the garden.

Teacher: Can anyone tell me the formula for calculating the perimeter of a rectangle?

Teacher: [Wait for responses.] That is right. The formula is: 2 × (length + breadth)

Teacher: So, using this formula, let us calculate the perimeter of the garden. The length is 8 metres and the breadth is 5 metres.

Teacher: Ryan follows the formula and adds the length and breadth: 8 + 5 = 13 metres.

Teacher: What does Ryan do next?

Teacher: [Wait for responses.] Yes, Ryan multiplies the sum by 2. So, 2 × 13 = 26 metres.

Teacher: Therefore, the perimeter of the garden is 26 metres.

Teacher: Can anyone think of a real-life example where you might need to calculate the perimeter of a rectangle?

Teacher: [Wait for responses.] Yes, you might need to calculate the perimeter when designing a playground, a garden or even when buying fencing for a rectangular space. It is a useful calculation to know. Let us move on to the next activity now.

Helping better

Teacher: Look at the 'Helping better' section. We are going to discuss something very important: keeping our surroundings clean, especially while we are travelling.

MUST DO
5 MIN.

Teacher: I want you to think about the places you visit, whether it is a park, a market or even while travelling in

the car or bus. What do you think is important to do while travelling?

Teacher: [Wait for responses.] Yes, that is right. It is important to keep the road clean. We should always remember not to litter, as it helps maintain a healthy and beautiful environment for everyone.

Teacher: Why do you think it is so important to not litter while travelling?

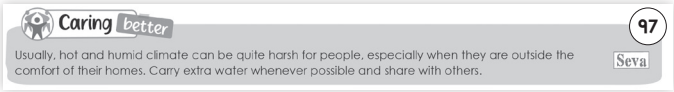
Teacher: [Wait for responses.] Yes, when we throw trash on the road, it does not only make the place look dirty, but it also harms the environment and the animals. It is our responsibility to make sure we keep the roads clean for ourselves and others.

Teacher: Now think about what you can do when you are out and about. If you have something to throw away, where should you put it?

Teacher: [Wait for responses.] Yes, always make sure to find a dustbin or carry your trash with you until you find one. This simple act can make a huge difference in keeping our surroundings clean.

Teacher: Well done, everyone. Let us move on to the next activity now.

Caring better



Teacher: Look at the 'Caring better' section. We will talk about how we can care for others, especially in challenging weather conditions.

MUST DO
5 MIN.

Teacher: As we know, hot and humid climates can be very harsh for people, especially when they are outside the comfort of their homes. Can anyone tell me how the heat affects our bodies?

Teacher: [Wait for responses.] Yes, that is right. In hot and humid weather, we can become dehydrated, tired and even dizzy. It is important to stay hydrated and take care of ourselves when we are out in such conditions.

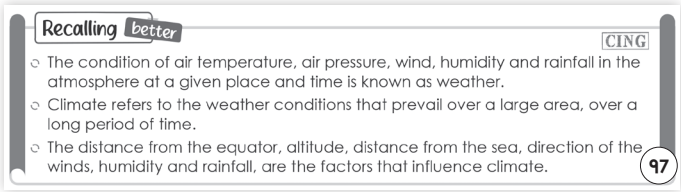
Teacher: Now, here is something important. When we are out in the heat, we need to carry extra water. Can anyone think of why it is important to always carry water with you when you are outside?

Teacher: [Wait for responses.] Exactly. Carrying extra water ensures we stay hydrated and feel better in the heat. What about others? What can we do to help people around us when they do not have enough water?

Teacher: [Wait for responses.] Yes, that is a wonderful thought. If we have extra water, we can share it with others. It is an act of kindness and it shows we care about people's well-being.

Teacher: So, remember, whenever you are out in the hot and humid climate, always carry extra water and share it with others whenever possible. It is a simple way to help those around you and show that you care. Let us now move on to the next activity.

Recalling better



Teacher: Look at the 'Recalling better' section. We are going to review some important concepts that we have learnt so far. Are you ready?

MUST DO
15 MIN.

Teacher: Let us start with the first point. It says, "The condition of air temperature, air pressure, wind, humidity and rainfall in the atmosphere at a given place and time is known as weather."

Teacher: Can anyone explain what weather means in simple terms? What does it include?

Teacher: [Wait for responses.] Yes, that is right. Weather refers to the daily conditions of the atmosphere, like how hot or cold it is, whether it is raining or how windy it is at any given time.

Teacher: Now, moving on to the next point. "Climate refers to the weather conditions that prevail over a large area, over a long period of time."

Teacher: What do we mean when we say climate? How is it different from weather?

Teacher: [Wait for responses.] Exactly. While weather is about the daily conditions, climate refers to the long-term patterns of weather in a region, like whether a place is generally hot, cold, dry or wet over many years.

Teacher: Now, let us move on to the third point. "The distance from the equator, altitude, distance from the sea, direction of the winds, humidity and rainfall, are the factors that influence climate."

Teacher: Can anyone name a few of the factors that influence the climate of a region?

Teacher: [Wait for responses.] Yes, that is correct. Some of the key factors are the distance from the equator, the height above sea level and whether the place is near the sea or far away.

Teacher: All these factors work together to affect the climate in different regions around the world. For example, areas near the equator tend to be warmer and places at higher altitudes, like mountains, tend to be cooler.

Teacher: Great work, everyone. We have recalled the key points really well. Let us clap for everyone's effort and end today's session.

You may show the **Dictionary** given on digital platform.

Differentiated Activities

110 km/hr

The students will form small groups and create a short roleplay that combines: one character experiencing high humidity and reacting to it or one summer act of kindness (e.g., sharing shade, watering a plant).

80 km/hr

In pairs, the students will draw and label a simple poster (on their notebooks) showing: one way to avoid littering during travel or one summer act of kindness (e.g., sharing shade, watering a plant).

40 km/hr

Think and write all possible ways you can do related to not littering while travelling. Then, pair up with a buddy and share your ideas verbally with the class.

Home Task

Do one act of kindness related to summer, together with a parent. For examples: put out a bowl of water for birds, carry a small bag for wrappers when travelling or give water or buttermilk to a delivery person or worker outside. Also, write 2 – 3 sentences about what you did and how it made you feel.

Period 7

SHOULD DO
5 MIN.

Teacher: Good morning/afternoon everyone. Today, we are going to start with a quick warm-up activity before diving into the exercises. This will help us recall some key concepts we have already learnt about climate, weather and the factors that influence them.

Teacher: I will ask you a few questions and I want you to think carefully and answer them. Ready?

Teacher: What type of climate do you think hill stations like Shimla and Darjeeling have? Do you think they are hot, cool or extremely hot?

Teacher: Yes, they are cool. Hill stations, because of their higher altitude, tend to have cooler temperatures even during the summer.

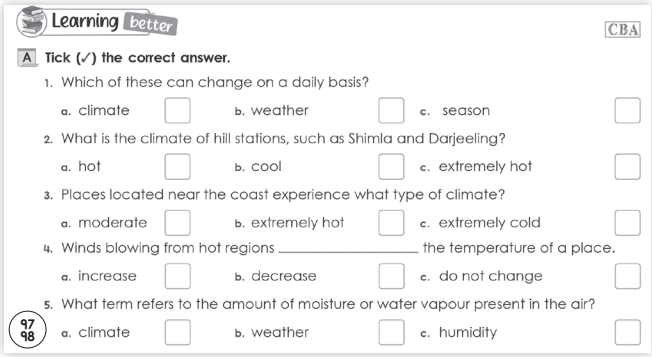
Teacher: Now, think about coastal areas. What kind of climate do places near the coast usually experience? Are they extremely hot, cold or moderate?

Teacher: Yes, coastal areas generally experience a moderate climate, meaning they neither get too hot in summer nor too cold in winter, thanks to the cooling effects of the sea.

Teacher: Well done, everyone. Let us get started with exercises now.

Learning better

Exercise A



Learning better — CBA

A Tick (✓) the correct answer.

1. Which of these can change on a daily basis?
   a. climate ☐ b. weather ☐ c. season ☐
2. What is the climate of hill stations, such as Shimla and Darjeeling?
   a. hot ☐ b. cool ☐ c. extremely hot ☐
3. Places located near the coast experience what type of climate?
   a. moderate ☐ b. extremely hot ☐ c. extremely cold ☐
4. Winds blowing from hot regions _____ the temperature of a place.
   a. increase ☐ b. decrease ☐ c. do not change ☐
5. What term refers to the amount of moisture or water vapour present in the air?
   a. climate ☐ b. weather ☐ c. humidity ☐

97 98

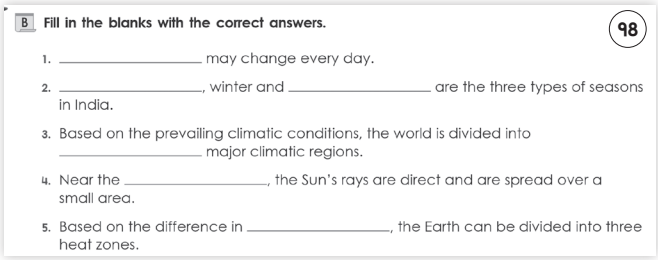
MUST DO
8 MIN.

Teacher: Look at Exercise A in 'Learning better' section. Read the questions carefully and tick the correct answer.

(Discuss each question and option with the class and complete the exercise.)

Teacher: Well done everyone. Let us now move on to the next exercise.

Exercise B



B Fill in the blanks with the correct answers. 98

1. _____ may change every day.
2. _____, winter and _____ are the three types of seasons in India.
3. Based on the prevailing climatic conditions, the world is divided into _____ major climatic regions.
4. Near the _____, the Sun's rays are direct and are spread over a small area.
5. Based on the difference in _____, the Earth can be divided into three heat zones.

MUST DO
7 MIN.

Teacher: Look at Exercise B in 'Learning better' section. Read the questions carefully and fill in the blanks with the correct answers.

(Discuss each question with the students and complete the exercise.)

Teacher: Well done everyone. Let us now move on to the next exercise.

Exercise C

C Write short answers in your notebook. 98

1. Differentiate between weather and season.
2. How does altitude influence the climate?
3. Shyam is a farmer. He checks the weather report before sowing his crops. Why do you think Shyam needs to check the weather report?

MUST DO
20 MIN.

Teacher: Look at Exercise C in 'Learning better' section. Read the questions carefully and write short answers in your notebook.

(Discuss each question with the students, help them write short answers and complete the exercise.)

Teacher: Well done everyone. Let us clap for completing the exercises and end today's session.

You may show the **Concept Map** given on digital platform.

Differentiated Activities

110 km/hr

How does the distance from the equator affect the temperature of a place? Explain with examples from different regions of the world.

80 km/hr

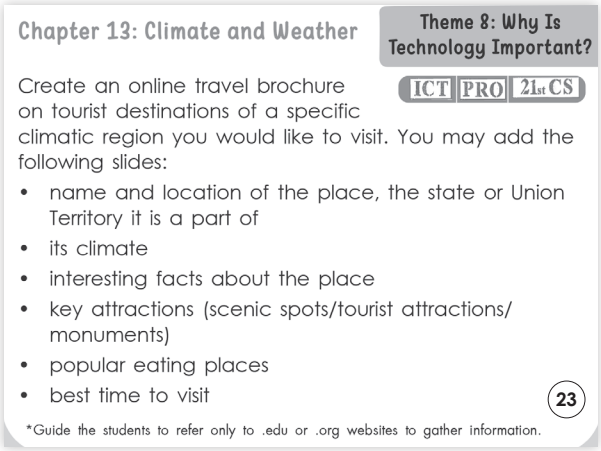
What are the main factors that influence the climate of a region? Choose one factor and explain how it affects the climate.

40 km/hr

What is the climate like in places near the sea? How is it different from places far from the sea?

Home Task

Book of Project Ideas



Chapter 13: Climate and Weather

Theme 8: Why Is Technology Important?

ICT PRO 21st CS

Create an online travel brochure on tourist destinations of a specific climatic region you would like to visit. You may add the following slides:

- name and location of the place, the state or Union Territory it is a part of
- its climate
- interesting facts about the place
- key attractions (scenic spots/tourist attractions/ monuments)
- popular eating places
- best time to visit

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*Guide the students to refer only to .edu or .org websites to gather information.

Ask students to complete this project at home with parental guidance. Choose a tourist destination from a specific climatic region that you would like to visit. Research the name, location, climate, interesting facts, key attractions, popular eating places and the best time to visit. Create an online travel brochure using a tool such as Google Slides or Canva, including the relevant information and visuals. Discuss with your parents the influence of climate on tourism and the activities available at the destination. Encourage the students to think creatively and ensure the accuracy of the information. Provide guidance as needed to help them organise and design their brochure.

(Remind them to review their work and practise presenting. Each student will get 3-5 minutes to present. Ensure they understand deadlines and provide assistance as needed.)

Period 8

SHOULD DO

10 MIN.

Teacher: Good morning/afternoon, everyone. Before we start answering the long questions, let us first recall a few key concepts to see if we are ready.

Teacher: Tell me what factors affect the climate of a region?

Teacher: Great. The main factors are – distance from the equator, altitude and distance from the sea.

Teacher: What are sea breezes and how do they affect coastal areas?

Teacher: Excellent. Sea breezes are cool winds that blow from the sea to the land. They help to cool coastal areas during hot weather, making them more comfortable compared to inland areas.

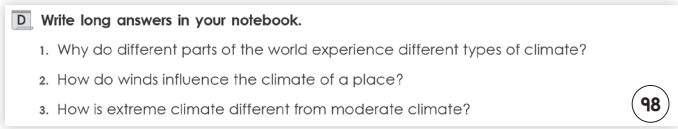
Teacher: What kind of climate do you find in deserts? How are the temperatures there?

Teacher: Good. Deserts have extreme climates with very hot summers and cold winters. The lack of moisture means there is very little rain, making them dry.

Teacher: Excellent. It seems you all are ready to answer questions in Exercise D now.

Learning better

Exercise D



D Write long answers in your notebook.

1. Why do different parts of the world experience different types of climate?
2. How do winds influence the climate of a place?
3. How is extreme climate different from moderate climate?

98

MUST DO

30 MIN.

Teacher: Look at Exercise D in 'Learning better' section. Read the questions carefully and write long answers in your notebook.

(Discuss each question with the students, help them write answers and complete the exercise.)

Teacher: Well done everyone. Let us clap for everyone's effort and end today's session.

You may show the **eBook** given on digital platform.

Differentiated Activities

110 km/hr

Choose a region of the world that has a unique climate (e.g., the Amazon rainforest, the Sahara Desert, the Arctic). Write a detailed explanation of why the region has its specific climate. Use factors such as distance from the equator, altitude and proximity to water bodies. Discuss how each factor affects the temperature, humidity and precipitation in the region.

80 km/hr

Choose two places in the world with different climates (e.g., one in the Torrid Zone and one in the Temperate Zone). Write a paragraph comparing their climates. Include factors such as temperature, humidity and the effects of winds on each region. Use your understanding of climate zones to explain how these places experience different weather patterns.

40 km/hr

Use the world map to identify and colour in regions that have hot climates, cold climates and moderate climates. Label these regions on the map and write a short description of each climate zone, explaining what makes them different in simple terms (e.g., hot climate is near the equator, cold climate is near the poles).

Home Task

With the help of parents, make a simple 3-column chart in your notebook:

Column 1: Name of the place

Column 2: Type of climate (Extreme or Moderate)

Column 3: How it felt / what you wore / what you did there

You can also add places you have visited on vacation.

Note: - Bring plastic or paper cups, straws, cardboard or paper plate for an interesting activity in the next session.

Period 9

SHOULD DO

5 MIN.

Teacher: Good morning/afternoon everyone. Before we start building our exciting anemometers today, let us warm up our brains with a fun activity called 'Feel the Wind.'

Teacher: I want everyone to close your eyes for a moment and think about a time when you felt the wind blowing. Maybe it was at a park, on a rooftop or riding a bicycle. Can you remember how it felt on your face or in your hair?

Teacher: Now, when I say 'Go,' everyone will stand up and pretend you are outside on a windy day. Ready? 3… 2… 1… Go.

[The students pretend to feel wind – acting out holding their jackets, flying kites or bracing against wind.]

Teacher: Great acting. Now, let us sit down and answer a few questions.

Teacher: How do you know the wind is blowing if you cannot see it?

Teacher: Exactly. We feel it on our skin, see leaves moving, hair flying, clothes fluttering, etc.

Teacher: Can we measure wind the same way we measure temperature with a thermometer?

Teacher: No, we need a different tool… that is where an anemometer comes in. We will make our own anemometer to measure the wind. Just like a thermometer measures heat, anemometer helps us measure how fast the wind is blowing. Let us get started.

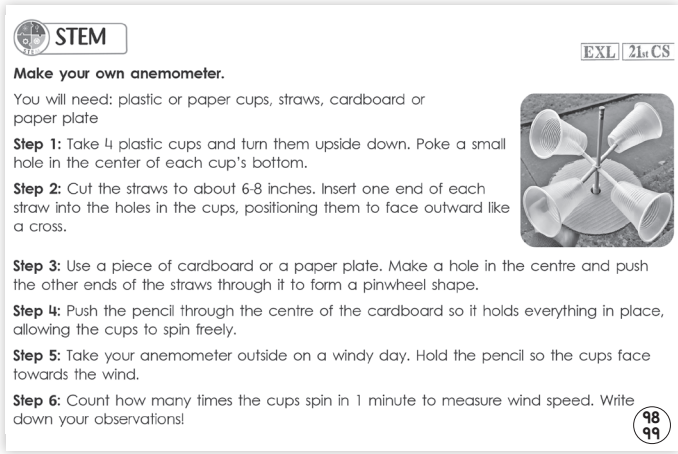
MUST DO

20 MIN.

Teacher: Look at the STEM section on page 98. We are going to do an exciting activity on making our own anemometer. Can anyone tell me what an anemometer is?

Teacher: Yes. An anemometer is a device used to measure how fast the wind is blowing. You will get to build your own and observe how it works. Are you ready to begin?

STEM



STEM

EXL | 21st CS

Make your own anemometer.

You will need: plastic or paper cups, straws, cardboard or paper plate

Step 1: Take 4 plastic cups and turn them upside down. Poke a small hole in the center of each cup's bottom.

Step 2: Cut the straws to about 6-8 inches. Insert one end of each straw into the holes in the cups, positioning them to face outward like a cross.

Step 3: Use a piece of cardboard or a paper plate. Make a hole in the centre and push the other ends of the straws through it to form a pinwheel shape.

Step 4: Push the pencil through the centre of the cardboard so it holds everything in place, allowing the cups to spin freely.

Step 5: Take your anemometer outside on a windy day. Hold the pencil so the cups face towards the wind.

Step 6: Count how many times the cups spin in 1 minute to measure wind speed. Write down your observations!

98 99

Teacher: Let us gathering all the materials first: plastic or paper cups, straws, cardboard or a paper plate and a pencil.

Teacher: The first step is to take four plastic cups and turn them upside down. Then, poke a small hole in the centre of each cup's bottom. This is where the straws will go.

[Pause to allow the students to complete the step.]

Teacher: Great work, everyone.

Teacher: For the next step, cut the straws to about 6-8 inches long. Insert one end of each straw into the holes in the cups, positioning them so the cups face outward like a cross. This will help the cups catch the wind.

[Pause to allow the students to complete the step.]

Teacher: Perfect. Now, your cups are ready and we can move on.

Teacher: Next, you will need to use a piece of cardboard or a paper plate. Make a hole in the centre of it and push the other ends of the straws through this hole to form a pinwheel shape.

[Pause to allow the students to complete the step.]

Teacher: Awesome. You are almost done.

Teacher: Now, we will use a pencil to hold everything in place. Push the pencil through the centre of the cardboard so it can hold the straws and cups firmly, but still allow the cups to spin freely.

[Pause to allow the students to complete the step.]

Teacher: Excellent work. Now, let us go outside to test it.

Teacher: Take your anemometer outside on a windy day. Hold the pencil so the cups face towards the wind. Make sure the cups are able to spin freely.

[Pause for the students to test their anemometers.]

Teacher: Now, count how many times the cups spin in one minute. This will give you the wind speed. Write down your observations.

Teacher: Great job. You have just made your own anemometer and measured the wind speed. This is a perfect example of how STEM activities help us understand the world around us. Keep experimenting with your anemometer and see if you can measure the wind speed at different times of the day.

Creating better

MUST DO
15 MIN.

Teacher: Look at the 'Creating better' section. We are going to act out different types of weather. This will help us understand how weather can make us feel and how we can show it with our bodies and voices.

Teacher: In small groups, you will each pretend to be a weather forecaster. Each group will act out a different type of weather: sunny, rainy, snowy or windy. You will need to use your body and voice to show how that type of weather feels and looks.

Teacher: For example, if you are acting out sunny weather, you might stand tall and speak happily with a big smile. Can anyone think of another way to act out sunny weather?

Teacher: [Wait for responses.] Yes. You could also pretend to feel warm by stretching your arms as if soaking up the sunshine.

Teacher: Now, for rainy weather, how do you think we should act?

Teacher: [Wait for responses.] Great. You could pretend to hold an umbrella and speak softly, as if you are protecting yourself from the rain. You could also shuffle around like you are stepping in puddles.

Teacher: How about snowy weather? What could we do to act out snow?

Teacher: [Wait for responses.] Yes, you might pretend to shiver because it is cold and move slowly as if you are walking through thick snow. Maybe you could even pretend to catch snowflakes on your tongue.

Teacher: Finally, for windy weather, what would you do?

Teacher: [Wait for responses.] That is right. You could sway side to side, like you are being blown by the wind and speak with a bit of a 'whoosh' sound.

Teacher: Are you all ready to get started? Remember, have fun and be creative. I cannot wait to see how you bring the weather to life.

Teacher: [Complete the activity.] Well done everyone. Let us clap for everyone's participation and end today's session.

Differentiated Activities

110 km/hr

Create a short weather forecast script for a day with mixed weather conditions. For example, your script could describe a sunny morning, followed by rainy weather in the afternoon and a windy evening. Use detailed descriptions and emotions in your voice and body to represent each weather condition.

80 km/hr

Work in pairs to act out different types of weather without using words. One student will act out a weather condition and the other will guess what it is (e.g., sunny, rainy, snowy or windy). After the activity, discuss how the weather made you feel and what you would wear in those conditions.

40 km/hr

In small groups, act out one type of weather from a list (sunny, rainy or windy). Focus on simple actions such as smiling and standing tall for sunny, holding an umbrella for rainy or swaying side to side for windy. Afterward, each group will share with the class what type of weather they acted out and others will guess which weather it is.

Home Task

Complete Worksheet 1 (page 46) of your Workbook.

Period 10

SHOULD DO
5 MIN.

Teacher: Good morning/afternoon, everyone. Let us have a quick warm-up before we move on to the main activity. I will ask you a few questions and I want you to think about them and share your ideas.

Teacher: First, let us talk about plants. What happens to plants when the weather is too hot or too cold? How do you think this might affect their growth?

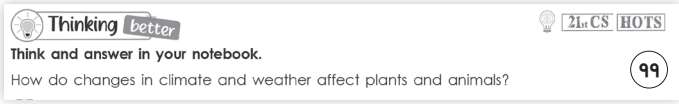
Teacher: [Wait for responses.] Yes. When it is too hot, plants can wilt because they do not get enough water and when it is too cold, they might not grow properly or may even freeze.

Teacher: Now, let us think about animals. What happens to animals when the weather changes? For example, what do you think happens to animals in the winter? Do they stay outside or do they change their behaviour?

Teacher: [Wait for responses.] Exactly. Some animals, like bears, hibernate during the winter because it is too cold for them to stay active. Other animals, like birds, may migrate to warmer places.

Teacher: Excellent thinking, everyone. Now, let us move on to the next activity and explore this idea in more detail.

Thinking better



MUST DO
5 MIN.

Teacher: Now, look at the 'Thinking better' section. We will be focusing on how changes in climate and weather affect plants and animals. This is a very important question because understanding this helps us realise how the environment impacts living things. Let us think about this for a moment.

Teacher: We know that weather is what happens day to day, like whether it is hot, rainy or windy. What about long-term changes, like climate? How might these changes affect plants and animals?

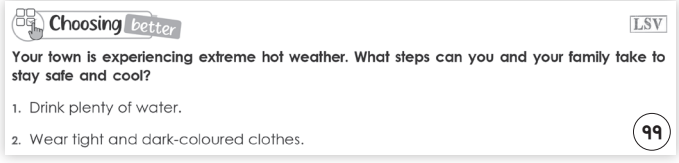
Teacher: [Wait for responses.] Yes, you are right. Changes in weather, like sudden temperature shifts, can affect plants by causing them to bloom too early or by freezing them if it gets too cold. Animals might find it harder to find food or shelter during harsh weather.

Teacher: Now, what about longer-term changes in climate? How do you think animals and plants respond to gradual changes in climate over time, like global warming?

Teacher: [Wait for responses.] Exactly. As the climate warms, some plants may not be able to grow in areas they once thrived in and animals might need to migrate to cooler places. Some animals might even face extinction if they cannot adapt quickly enough to changing conditions.

Teacher: This shows us how connected everything is. Even small changes in climate and weather can have big effects on ecosystems. Let us now move on to the next activity.

Choosing better



MUST DO
10 MIN.

Teacher: Let us look at the 'Choosing better' section. In this activity, we will discuss how we can stay safe during extreme hot weather, like the kind of heatwaves we may experience during summer.

Teacher: The question is: Your town is experiencing extreme hot weather. What steps can you and your family take to stay safe and cool? Let us think about it together.

Teacher: First, let us talk about the most important step to stay hydrated. What do you think is the best thing to do to keep your body cool during hot weather?

Teacher: [Wait for responses.] Yes. Drinking plenty of water is crucial. When it is hot outside, we sweat a lot and our bodies lose water. Drinking enough water helps to prevent dehydration and keeps us cool.

Teacher: Now, what about clothes? How can the clothes you wear help keep you cool in hot weather?

Teacher: [Wait for responses.] Good. Wearing light, loose-fitting clothes is a great idea. But did you know that wearing tight and dark-coloured clothes can actually make it harder to stay cool? Tight clothes do not let air circulate and dark colours absorb more heat.

Teacher: So, what should you do instead?

Teacher: Yes, wear loose and light-coloured clothes to help your body stay cool by allowing air to flow freely around you.

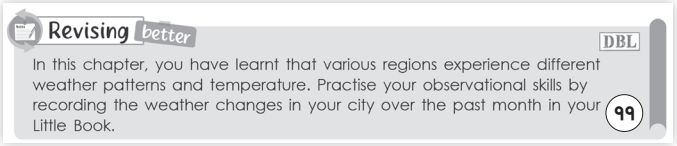
Teacher: Now that we know how water and clothing help, what are some other things we can do to stay safe in extreme heat?

Teacher: [Wait for responses.] Yes, staying indoors during the hottest parts of the day, using fans or air conditioning and wearing a hat or sunscreen if you must go outside, are great options.

Teacher: Excellent. Remember, staying safe in extreme weather is all about taking steps to protect yourself and your family. Drinking plenty of water, wearing the right clothes and staying cool indoors are some of the best ways to stay safe.

Teacher: Well done, everyone. Let us move on to the next activity.

Revising better



MUST DO
5 MIN.

Teacher: Now, look at the 'Revising better' section. We will practice our observation skills and think about how the weather changes over time.

Teacher: In this chapter, we have learnt that various regions experience different weather patterns and temperatures and these can change from day to day. Today, we are going to apply that knowledge by observing and recording the weather changes in our city over the past month.

Teacher: I want you to take out your 'Little Book', where you will record your observations. Each day, you will note the temperature, whether it was sunny, rainy or windy and anything else you notice about the weather.

Teacher: [Wait for the students to open their books.] You should have a space where you can write down these observations for each day. If you are unsure about the weather, think about how it made you feel. Was it very

hot or cold? Did you need an umbrella? Or maybe you enjoyed a sunny day in the park?

Teacher: Now, over the past month, we have had some days with different weather conditions, right? Can anyone recall a day when the weather changed suddenly?

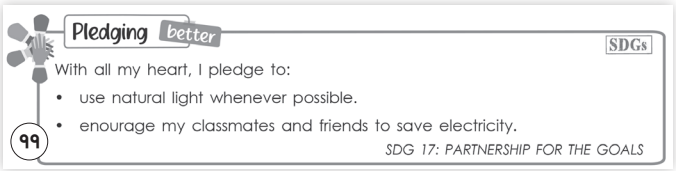
Teacher: [Wait for responses.] Exactly. Some days were sunny and warm and others were rainy or cloudy. This exercise will help you understand how quickly weather can change in your city and what factors might affect that.

Teacher: By the end of this week, your goal is to have a record of the weather for at least a few days. This will help you see patterns in the weather, just like meteorologists do.

Teacher: So, let us get started. Write down today's weather first and then over the next few days, continue adding to your Little Book. We will come back together soon to discuss your findings.

Teacher: Remember, the more you observe, the better you will understand how weather affects daily life.

Pledging better



MUST DO
5 MIN.

Teacher: Now, look at the 'Pledging better' section. In this activity, we will make pledges to take action and contribute to creating a better, more sustainable world.

Teacher: The focus of today's pledge is saving energy and using resources wisely, which is part of our responsibility to the planet. Can anyone tell me why it is important to save energy and use natural resources wisely?

Teacher: [Wait for responses.] Yes, saving energy helps reduce pollution and conserve our environment. It also helps us use our resources efficiently, ensuring there is enough for the future.

Teacher: Now, I want each of you to make a pledge to help save electricity and use natural resources better. Let us read the pledges together:

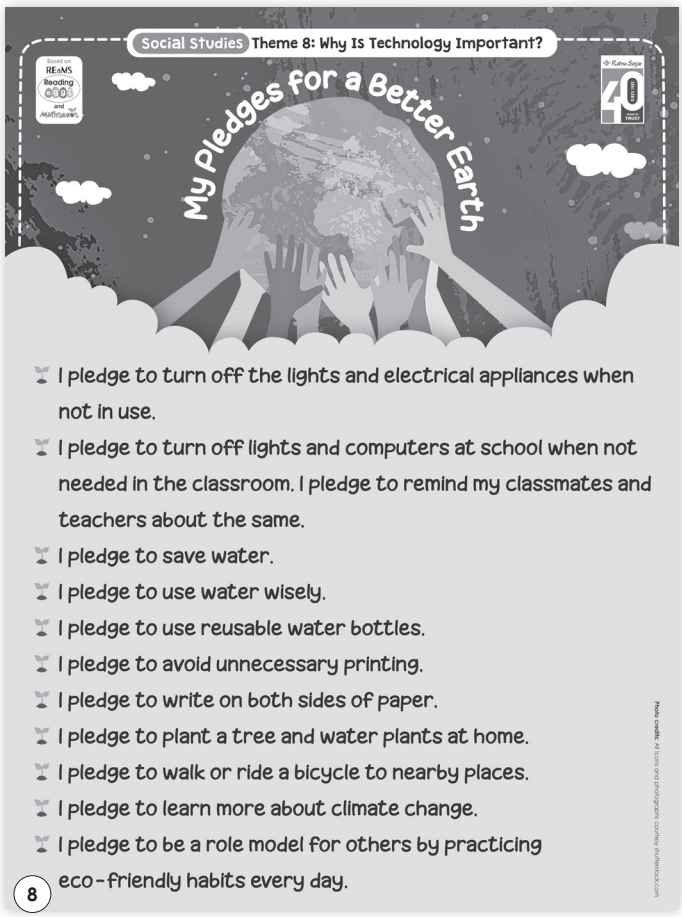
- I pledge to use natural light whenever possible.
- I pledge to encourage my classmates and friends to save electricity.

Teacher: These are simple but powerful actions we can all take to help reduce our energy consumption and protect the environment.

Teacher: I encourage each of you to talk to your friends and family about the importance of saving energy. Every little step counts and together we can make a big difference.

Teacher: Well done, everyone. Now, have a look at the 'Poster'.

Poster



MUST DO
10 MIN.

Teacher: (Display and discuss the poster prominently in the classroom and continue taking all the pledges along with the students for a better earth.)

Teacher: Great participation, everyone. You all did a fantastic work today. Give yourselves a huge round of applause. See you in the next class.

You may show the **Quiz** given on digital platform.

Differentiated Activities

110 km/hr

Choose one of the pledges from the poster (e.g., using water wisely or reducing plastic usage). Write a short essay and create a presentation explaining why this pledge is crucial for the environment. Include real-life examples of how it has helped communities or the planet.

80 km/hr

Create a poster where you list the pledges you and your family can take to help protect the environment. Include things like turning off lights,

using less water and recycling. On the poster, draw pictures or symbols representing each pledge. After completing the poster, explain to the class why each pledge is important and how it can help the Earth.

40 km/hr

Create a simple chart. On one side, list the pledges from the poster, like 'Turn off lights when not in use' or 'Use less water'. On the other side, write or draw simple things you can do at home to keep the Earth safe, like switching off lights or turning off the tap while brushing your teeth.

Home Task

Complete Worksheet 2 (page 47) of your Workbook.

Period 11

Gratitude

Teacher: Let us focus on something truly meaningful i.e. gratitude. Open your gratitude sheet.

SHOULD DO 10 MIN.

Teacher: I want you to think about one person who has made a positive difference in your life. It could be a family member, a help at home/school or even a teacher.

Teacher: Now, take your gratitude sheet and make a small box where you can write a short note to the person you are grateful for.

Teacher: Write one or two sentences thanking them for what they have done or how they have made a difference in your life.

Teacher: Once you are done writing, we will share our notes with the class and place them on our gratitude chart.

Book of Holistic Teaching

Chapter 13: Climate and Weather

Theme 8: Why Is Technology Important?

A **English** HoLL MDA

Read the following sentences. Write the British spelling of the underlined words in the space provided.

1. The sky turns grey in places near the Equator that are hot and humid and receive a lot of rainfall.

_____

2. Different colors are used to display the Heat Zones on a globe.

_____

B **Maths**

Abbas stores rainwater because he is an environmentally conscious citizen. After the rainwater is filled to the brim, that is 500 ℓ, he makes a note of the capacity in the log book. However, he is required to note the capacity in millilitre as well. Write the mℓ conversion figure in the space provided.

_____

C **Science**

Which of the following accurately predicts the weather of a particular place and at a particular time? Tick (✓) the correct answer.

1. Thermometer ☐
2. Weather satellites ☐
3. News and radio channels ☐

38 39

Teacher: Let us have a look at the Book of Holistic Teaching, Chapter 13: Climate and Weather on page 38.

COULD DO 10 MIN.

(Ensure that the mentioned activities are completed by the students. These activities are designed to enhance their holistic understanding and engagement with the topic. Provide any necessary support and/ or materials to help them successfully finish the activities.)

Book of Project Ideas

(Discuss the project assigned in the previous period, focusing on helping the students understand the

SHOULD DO 15 MIN.

objectives and addressing any challenges they faced.)

Teacher: Now, let us fill in the last column of the KWL chart.

Teacher: In this column we will write what we have learnt in this chapter.

Teacher: Think about the topics, have we learnt and write them in the 'L' column of the chart. (Wait for the students to fill in the chart.)

Teacher: Let us all give a huge round of applause to everyone for their effort. See you in the next class. Have a wonderful day ahead.

You may generate additional practice worksheets using **Test Generator** given on digital platform.

Differentiated Activities

110 km/hr

Why does the climate in regions like Rajasthan have such high temperatures in summer?

80 km/hr

What are the four seasons in India and how do they each affect daily life?

40 km/hr

Where do cold winds come from that make places like Delhi very hot in the summer?

Home Task

Complete Worksheet 3 (page 48) of your Workbook.

Learning Outcomes

The students will:

Domain	Learning Outcome
Physical Development	• demonstrate an understanding of the impact of weather and climate on human activities by engaging in physical activities that reflect different weather conditions (e.g., acting out different weather types).
Socio-Emotional and Ethical Development	• express empathy and responsibility for the environment by discussing the importance of conserving resources like water and energy, especially in extreme weather conditions.
Cognitive Development	• identify and describe the key factors that influence climate and weather, including distance from the equator, altitude and proximity to water bodies.
Language and Literacy Development	• use appropriate vocabulary to describe weather and climate patterns and communicate ideas clearly through written reports, presentations and group discussions.
Aesthetic and Cultural Development	• appreciate the diversity of climates around the world and understand how different regions influence cultural practices, clothing and daily activities.
Positive Learning Habits	• develop observation and recording skills by tracking weather patterns over a period of time and using critical thinking to understand how climate influences different parts of the world.

Starry Knights

You have been teaching efficiently. Kindly share a few tips for being so methodical.

Give yourself a STAR.