NCERT Solutions Class 7 Social Science
(Exploring Society India and Beyond)
Chapter 2 Understanding the Weather

The Big Questions? (Page 27)

Question 1. How can we measure and monitor the weather around us?
Answer: We can measure and monitor the weather using special instruments and tools. **Here are some examples:**

1. Thermometer: Measures temperature (how hot or cold it is).
2. Rain Gauge: Measures the amount of rainfall ‘ (in millimeters or centimeters).
3. Barometer: Measures atmospheric pressure, which helps predict weather changes.
4. Anemometer: Measures wind speed (how fast the wind is blowing).
5. Wind Vane: Shows the direction of the wind (north, south, east, or west).
6. Hygrometer: Measures humidity (the amount of water vapor in the air).

Question 2. How do weather predictions help us prepare for events like heavy rain, storms, drought and heat waves?
Answer: Weather predictions give us advance information about upcoming weather events, which helps us prepare and stay safe. For example:

1. Heavy Rain: Predictions warn us to carry umbrellas, avoid flooded areas, and protect our homes from water damage.
2. Storms: We can secure loose objects, stay indoors, and prepare emergency kits with food, water, and medicines.
3. Drought: Farmers can plan irrigation and water storage to save crops, and people can conserve water.
4. Heat Waves: We can stay hydrated, avoid going out during peak heat, and use fans or coolers to stay comfortable.

Let’s Explore:

Question 1. What are some of the words in your local language that you use to describe the weather? Hot, cold, warm, chilly, crisp, pleasant and so on, are commonly used terms in English. (Page 28)
Answer: In my local language, we have some unique and expressive words to describe the weather. Here are a few:

1. Hot: We say “garmi” (Hindi), which refers to the heat, especially in summer.
2. Cold: “Thand” is commonly used for cold or chilly weather.

3. Pleasant: When the weather is nice and enjoyable, we often say “suhavna mausam”, meaning pleasant or delightful weather.
4. Chilly: For a slightly cold breeze or morning, people use “ thandi hawa” or “halki thand”.
5. Rainy: “Barsaaf’ or “baarish” is used for rainy weather.
6. Humid: “Urnas” is used when it’s sticky or sweaty due to humidity.
7. Cool breeze: A refreshing wind is often called thandi hawa lag rahi hai.

Question 2. What do you think could be some other reasons to measure the weather more precisely? (Page 29)
Answer: Yes, measuring the weather more precisely has many important reasons. Here are some of them:

1. Planning Daily Activities: Knowing the weather helps people plan their day, like deciding whether to carry an umbrella, wear warm clothes, or stay indoors during extreme heat or rain.
2. Agriculture: Farmers rely on accurate weather forecasts to decide when to plant crops, irrigate fields, or harvest. This helps them grow better crops and avoid losses.
3. Disaster Preparedness: Precise weather measurements help predict natural disasters like cyclones, floods, or droughts. This allows governments and people to prepare and take safety measures in advance.
4. Aviation and Transportation: Pilots and drivers need accurate weather information to ensure safe travel. For example, knowing about storms or fog helps avoid accidents.
5. Environmental Monitoring: Accurate weather measurements help scientists study climate change, track pollution levels, and protect the environment.

Question 3. Talk to the elders in your neighbourhood and ask them how they predict the weather. What signs do they observe? Document any sayings in your regional language that refer to weather prediction. (Page 30)
Answer: Do it yourself.

Question 4. (a) Here’s a chart of the temperatures of a city in Madhya Pradesh. What is the maximum temperature recorded in the week shown here? What is the minimum temperature? Calculate the range. (Page 32)

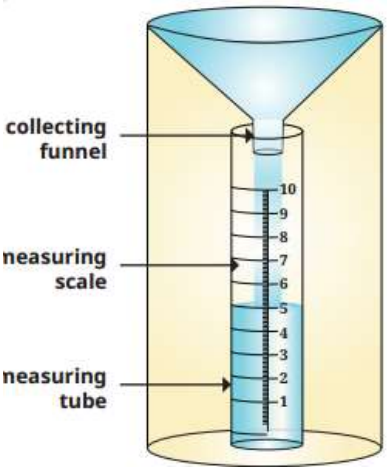
Date	Maximum Temperature (in °C)	Minimum Temperature (in °C)
28.02.2025	29	16

01.03.2025	30	15
02.03.2025	31	17
03.03.2025	32	18
04.03.2025	30	17
05.03.2025	28	14
06.03.2025	29	15

Answer: Maximum temperature recorded in the week: From the chart, the highest maximum temperature is 32°C (on 3.3.2025).
Minimum temperature recorded in the week: The lowest minimum temperature is 14°C (on 5.3.2025).
Temperature range: Range = Maximum temperature – Minimum temperature = 32°C – 14°C = 18°C

(b) Remember the conservation between Krishnan and Amir? If Krishnan said it was 20 degree Celsius in Chennai and that he was feeling a little cold, both he and Amir would have a measure they could understand. What do you think Amir's reaction to Krishnan's statement might be? (Page 33)
Answer: If Krishnan said it was 20°C in Chennai and that he was feeling a little cold, Amir might be surprised and say something like:
"Really? 20 degrees is quite comfortable here! In Madhya Pradesh, we only start feeling cold when it's much lower than that."
This highlights how climate and personal experience influence how we perceive temperature. Chennai has a hot and humid climate most of the year, so 20°C can feel cool to someone used to higher temperatures. Meanwhile, someone from central or northern India, like Amir, might find it quite normal or even warm.

Question 5. Make a rain gauge as shown in the below diagram. Place the rain gauge in an open area, away from objects that might obstruct rain. Ensure that the rain gauge is on a flat surface and will not tilt or topple with the wind. Using the measuring scale, record the amount of rainwater collected at the same time every day, for a month. (If there is snow, allow it to melt before taking the measurement.) Calculate the average rainfall for every week in that month and comment on the variation from week to week. (Page 34)

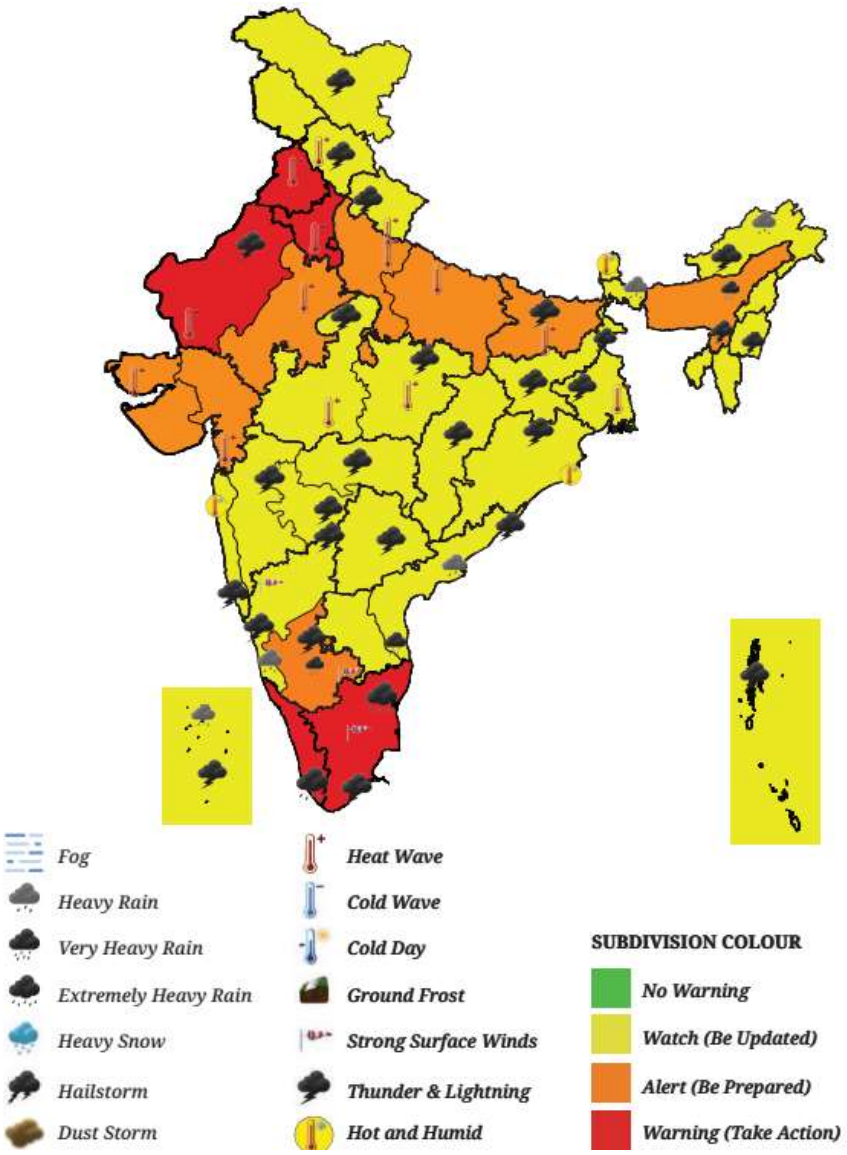


Answer: Do it yourself.

Question 6. Where do you think the humidity is likely to be more, Kochi or Jaipur? You might guess that Kochi has higher humidity than Jaipur because it is located near the sea. But how will we know for sure? If we had to compare the humidity level between Kochi and Mangaluru, how would we do it? Discuss with your classmates. (Page 37)
Answer: Do it yourself

Question 7. Discuss in pairs, different situations in which weather predictions are useful. Make a list and after you have completed your list, share it and discuss it with the pair sitting next to you. How many different categories of situations have you been able to identify? (Page 41)
Answer: Do it yourself.

Question 8. Look carefully at the below map. (Page 40-41)



(i) What do you observe happening on that day (19 May 2024)? What are the various weather conditions that the IMD is alerting people to?
Answer: On 19 May 2024, the IMD issued alerts for:

1. Severe heatwave conditions in parts of Northwest India, including Punjab, Haryana, Delhi, and Rajasthan.
2. Extremely heavy rainfall in Tamil Nadu and Kerala.
3. Heavy rainfall in regions like Sikkim, Arunachal Pradesh, and Assam & Meghalaya.
4. Thunderstorms with lightning and gusty winds in parts of Central and Eastern India, including Madhya Pradesh, Chhattisgarh, Odisha, and Bihar.
5. Hot and humid weather over Konkan & Goa.

(ii) Which state has warning sign?
Answer: States under red alert or significant warnings on 19 May 2024 included:

1. Punjab, Haryana, Delhi, and Rajasthan for severe heatwave conditions.
2. Tamil Nadu and Kerala for extremely heavy rainfall.

3. Assam and Meghalaya for very heavy rainfall.

(iii) Which parts of India are likely to be free from any severe weather?
Answer: Regions likely to experience normal weather conditions without severe alerts included:

1. Parts of Western India such as Maharashtra (excluding Vidarbha).
2. Central India areas not under heatwave or rainfall warnings.
3. Portions of Eastern India not affected by thunderstorms or heavy rainfall.

(iv) Which states are likely to face heat wave conditions?
Answer: States forecasted to experience heatwave or severe heatwave conditions included:

1. Punjab, Haryana, Delhi, and Rajasthan.
2. Uttar Pradesh (both western and eastern parts).
3. Gujarat.
4. Madhya Pradesh.
5. Bihar, Jharkhand, and Odisha.

(v) What are causes for warning in Tripura and Lakshadweep?
Answer:

1. Tripura: The warning was due to a cyclonic circulation over northeast Assam, leading to widespread rainfall accompanied by thunderstorms, lightning, and gusty winds.
2. Lakshadweep: The alert was issued because of isolated heavy rainfall expected during 19 to 22 May 2024.

Think About it (Page 29)

Question 1. Let us imagine Krishnan from Chennai is speaking with Amir in Kashmiri. Krishnan tells Amir that it has become chilly in Chennai after it rained the previous night. Amir asks him how cold it is. How will Krishnan explain to Amir how cold it is? After all, what is cold for Krishnan may not be cold for Amir?
Answer: Krishnan, who lives in Chennai, tells Amir from Kashmir that it has become chilly after it rained the previous night. When Amir asks how cold it is, Krishnan explains that the temperature has dropped to around 22°C, which feels quite cold for people in Chennai. He says that they are used to hot and humid weather most of the year, so even a small drop in temperature feels chilly. He might even mention that he had to wear a light sweater in the morning. Amir, coming from Kashmir where winter temperatures can go below 0°C, finds this surprising. For him, 22°C is quite pleasant and not cold at all. This shows that what feels cold or warm can be different depending on the climate people are used to.

Question 2. Why do you think it would be important to measure the atmospheric pressure? Who are the people most likely to use such measurements? (Page 35)
Answer: It is important to measure the atmospheric pressure:

1. Weather prediction: Changes in atmospheric ‘ pressure indicate upcoming weather changes. For example, a drop in pressure often means storms or rain, while high pressure usually means clear skies.
2. Disaster warnings: Sudden changes in pressure can signal severe weather events like cyclones, hurricanes, or thunderstorms, helping authorities issue warnings.
3. Aviation safety: Pilots need accurate pressure readings to ensure safe take-offs, landings, and flights. Pressure changes affect air density and aircraft performance.
4. Health monitoring: Changes in atmospheric pressure can affect people with health conditions like arthritis or migraines. Monitoring pressure helps them prepare for discomfort.
5. Scientific research: Scientists study atmospheric pressure to understand climate change, weather systems, and environmental patterns.
6. Maritime Activities: Sailors and fishermen use pressure measurements to predict storms and plan safe voyages.

Such instruments are used by:

1. Meteorologists: They use pressure data to forecast weather and study climate patterns.
2. Pilots and Airlines: They rely on pressure readings for safe flight operations.
3. Farmers: Farmers use pressure data to plan farming activities and protect crops from bad weather.
4. Sailors and Fishermen: They use pressure measurements to predict storms and ensure safe travel at sea.
5. Mountaineers and Hikers: They monitor pressure to understand altitude changes and avoid risks like altitude sickness.
6. Scientists and Researchers: They study pressure to analyze climate change and environmental systems.

Question 3. People who journey to places at a high altitude are advised to make pause on the way to allow the body to acclimatise. Our army personnel serve in high- altitude places like Khardungla in Ladakh, which is over 5600 metres above sea level. It is hard to image how they live and work in places where the oxygen level is so low – the atmospheric pressure there is generally about 650 millibars! (Page 35)
Answer: The army personnel live in:

1. Extreme conditions: Army personnel stationed at places like Khardung La face freezing temperatures, strong winds, and very low oxygen levels. It’s challenging to live and work in such harsh environments.
2. Training and preparation: Soldiers undergo special training to adapt to high altitudes. They are physically and mentally prepared for the challenges.
3. Special equipment: They use oxygen cylinders, warm clothing, and other gear to survive and perform their duties.

4. Mental strength: Living in such conditions requires immense courage and resilience. Soldiers often spend months away from their families, protecting the nation in extreme weather.

For most people, living at such high altitudes is unimaginable because we are used to normal oxygen levels and comfortable temperatures. The idea of surviving in freezing cold, with little oxygen, and performing physically demanding tasks is a testament to the bravery and dedication of army personnel.

Question 4. Have you seen seeds like these flying in the wind (see the below image)? What would happen to the seeds if there was no wind? (Page 36)

Answer: If there was no wind, the seeds would not be able to spread far from the parent plant. Most wind- dispersed seeds would fall right below the plant that produced them. This would cause the plants to grow very close to each other, leading to competition for sunlight, water, and nutrients. Some seeds might not grow at all because there would not be enough space or resources. Without wind, seeds would not reach new places to grow, and this would reduce the number of new plants in different areas. Over time, some types of plants might even disappear because they cannot spread their seeds properly.

Question 5. If the humidity in Delhi is at 52% while in Kochi it is 84% in which of the two places are wet clothes likely to dry faster? And where are you likely to sweat more, assuming the temperature in the same in both places? (Page 38)
Answer: If the humidity in Delhi is 52% and in Kochi it is 84%, here's what would happen:

1. Drying of wet clothes: Wet clothes are likely to dry faster in Delhi. This is because lower humidity (52%) means the air can absorb more moisture, so the water from the clothes evaporates more quickly.
2. Sweating: You are likely to sweat more in Kochi. At higher humidity (84%), the sweat on your body does not evaporate easily, so you feel hotter and more sweaty, even if the temperature is the same.

Question Answer (Exercise)

Question 1. Match the instrument with the weather element it measures.

Instrument used	Element of the Weather
1. Hygrometer	(a) Precipitation
2. Anemometer	(b) Atmospheric pressure
3. Barometer	(c) Wind direction and speed
4. Thermometer	(d) Humidity
5. Rain gauge	(e) Temperature

Answers:

Instrument used	Element of the Weather
1. Hygrometer	(d) Humidity
2. Anemometer	(e) Temperature

3. Barometer	(b) Atmospheric pressure
4. Thermometer	(c) Wind direction and speed
5. Rain gauge	(a) Precipitation

Question 2. Jyotsna is deciding what clothes to pack for her school trip to Mumbai in June. She looks at the weather forecast, which predicts 29°C and 84% humidity. What would be your advice to her?
Answer: Since Jyotsna is going to Mumbai in June, and the forecast shows 29°C with 84% humidity, here's some advice for her:

1. Pack light and breathable clothes: Cotton clothes are best as they absorb sweat and keep you cool.
2. Carry a cap or hat and sunglasses: To protect from the sun when outdoors.
3. Bring an umbrella or a raincoat: June is the start of the monsoon season in Mumbai, so sudden rains are common.
4. Wear comfortable footwear: Preferably water-resistant shoes or sandals in case it rains.
5. Stay hydrated: It can feel hotter due to high humidity, so drinking plenty of water is important.

Question 3. Imagine that a small group of students is setting up a rain gauge. Here are some options for the site.
(i) The school vegetable garden.
(ii) The terrace of the school building.
(iii) Open ground with elevated platform.
(iv) Compound wall of school.
(v) Verandah of the school laboratory.
Discuss in your group and finalise the site. Write down the reasons for your decisions.
Answer: Do it yourself.

Question 4. Below is a chart taken from IMD, Jammu and Kashmir. Looking at the data available, write a short script to report the weather conditions in different parts of Jammu and Kashmir on the data shown. (Hint: Cover the temperature range, maximum and minimum temperatures, humiditys, precipitation, etc.)

Daily weather parameters jammu & kashmir (evening) date: 01-02-2024

Station	max temperature of date			min temperature of date			from 0830 to 1730 hrs (mm/cm)		24 hrs R/F ending 0830 of date (mm/cm)		relative humidity	
	ACT (°C)	NOR (°C)	DEP (°C)	ACT (°C)	NOR (°C)	DEP (°C)	R/F (mm)	S/N (cm)	R/F	S/N	0830 (%)	1730 (%)
SRINAGAR	6.5	8.9	-2.4	0.2	-0.7	0.9	TR	0.0	13.4	2.4	89	89
QAZIGUND	3.2	8.5	-5.3	-0.4	-2.1	1.7	11.8	10.0	36.2	22.0	97	90
PAHALGAM	1.1	5.6	-4.5	-4.1	-6.1	2.0	6.0	8.0	19.4	23.0	96	96
KUPWARA	5.1	8.5	-3.4	-0.7	-2.3	1.6	0.5	0.0	21.9	10.0	97	94
KUKERNAG	2.6	6.6	-4.0	-1.4	-2.4	1.0	12.0	8.0	35.2	30.0	96	97
GULMARG	-2.6	1.4	-4.0	-7.6	-7.6	0.0	8.2	6.35	35.2	35.0	76	100
MUZAFARABAD	8.5	–	–	5.6	–	–	–	–	25.8	–	93	–

Answer: Do it yourself