# B3. What Data?

What Data Do We Collect?

Weather data is essential information that helps us understand and predict the weather. Meteorologists, who are scientists that study the weather, collect various types of weather data to give us accurate weather forecasts. Let's explore some of the weather data we collect and how it helps us.

Temperature
Temperature tells us how hot or cold it is outside. We use a thermometer to measure the temperature. When the temperature is high, it feels hot, and when it's low, it feels cold.
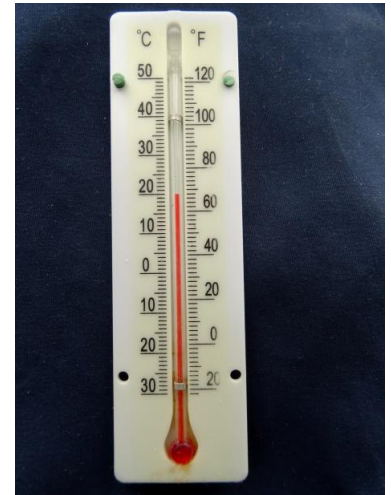
Humidity
Humidity tells us how much moisture is in the air. Have you ever felt sticky and sweaty on a hot summer day? That's because the humidity is high. When humidity is low, the air feels dry.

Wind Speed
Wind speed tells us how fast the wind is blowing. Sometimes the wind is gentle and slow, and other times it can be strong and fast, making leaves and branches move.

Wind Direction
Wind direction tells us which way the wind is coming from. It can blow from the north, south, east, or west. Wind direction is important for sailors and pilots who need to know the best route for their journey.

Precipitation
Precipitation tells us if it's raining, snowing, or hailing. We use rain gauges to measure the amount of rain that falls. When it's cold, precipitation falls as snow, and when it's icy, it falls as hail.

Cloud Cover
Cloud cover tells us how much of the sky is covered by clouds. On a sunny day, there are fewer clouds, and on a cloudy day, the sky is covered in clouds.
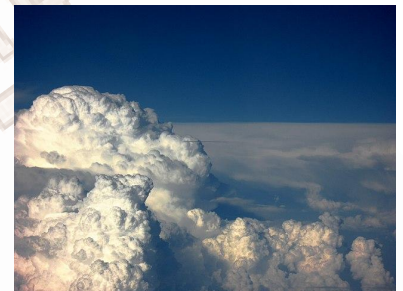
Air Pressure
Air pressure tells us the weight of the air around us. When air pressure is high, the weather is usually fair and clear. When air pressure is low, it can bring stormy and rainy weather.

Visibility

Visibility tells us how far we can see. On a foggy day, visibility is low, and things may appear blurry. On a clear day, visibility is high, and we can see far and wide.

UV Index
The UV index tells us how strong the sun's rays are. When the UV index is high, it means the sun's rays are strong, and we should wear sunscreen and protect our skin.

Weather Conditions
Weather conditions describe the overall weather for a specific location and time. For example, if it's sunny and warm, the weather condition is sunny. If it's cold and snowing, the weather condition is snowy.

Weather data is collected from weather stations all around the world. These stations have special instruments and tools to measure different types of weather data. The data is then sent to meteorologists who analyze it and create weather forecasts.

Weather forecasts are predictions about what the weather will be like in the coming hours, days, or even weeks. They help us plan our activities and be prepared for any changes in the weather. For example, if the forecast predicts rain, we can bring an umbrella when we go outside.

Meteorologists use weather data to study patterns in the weather. They can tell us about the average temperatures for different seasons, how much rain falls in a year, and how often certain weather events like thunderstorms or snowstorms occur.

Weather data is essential for many things, such as farming, transportation, and safety. Farmers use weather data to know when to plant and harvest their crops. Pilots and sailors use weather data to plan safe routes for their journeys. Schools and communities use weather data to prepare for severe weather events like hurricanes and tornadoes.

So the next time you hear about the weather forecast, remember that it's based on valuable weather data collected from all over the world. Weather data helps us stay informed and safe in any kind of weather.

1. What does temperature tell us?
    A) How fast the wind is blowing.
    B) How hot or cold it is outside.
    C) How much moisture is in the air.
    D) If it's raining or snowing.

2. How do we measure humidity?
    A) Using a thermometer.
    B) Using a rain gauge.
    C) Using a hygrometer.
    D) Using a weather vane.

3. What does wind direction tell us?
   A) How much of the sky is covered by clouds.
   B) How far we can see.
   C) Which way the wind is coming from.
   D) How strong the sun's rays are.

4. What does precipitation include?
   A) How much moisture is in the air.
   B) How fast the wind is blowing.
   C) If it's raining, snowing, or hailing.
   D) How hot or cold it is outside.

5. How is cloud cover measured?
   A) Using a rain gauge.
   B) Using a thermometer.
   C) Using a hygrometer.
   D) By observing how much of the sky is covered by clouds.

6. What does air pressure tell us?
   A) How much of the sky is covered by clouds.
   B) The weight of the air around us.
   C) How fast the wind is blowing.
   D) How hot or cold it is outside.

7. What does visibility tell us?
   A) How far we can see.
   B) How much moisture is in the air.
   C) How hot or cold it is outside.
   D) How strong the sun's rays are.

8. How do we measure the strength of the sun's rays?
   A) Using a hygrometer.
   B) Using a thermometer.
   C) Using a weather vane.
   D) By checking the UV index.

9. What do meteorologists do with weather data?
   A) They analyze it and create weather forecasts.
   B) They send it to weather stations.
   C) They collect it from all around the world.
   D) They measure different types of weather data.

10. Why is weather data important?
   A) It helps us plan our activities and be prepared for changes in the weather.
   B) It helps us study patterns in the weather and understand long-term climate changes.

C) It helps us know the average temperatures for different seasons.

D) It helps us know when to plant and harvest crops.

ANSWERS & EXPLANATIONS

1. B) How hot or cold it is outside.
   - The passage explains that temperature tells us how hot or cold it is outside.

2. C) Using a hygrometer.
   - The passage mentions that we measure humidity using a hygrometer.

3. C) Which way the wind is coming from.
   - The passage states that wind direction tells us which way the wind is coming from.

4. C) If it's raining, snowing, or hailing.
   - The passage includes precipitation data, which tells us if it's raining, snowing, or hailing.

5. D) By observing how much of the sky is covered by clouds.
   - The passage explains that cloud cover is measured by observing how much of the sky is covered by clouds.

6. B) The weight of the air around us.
   - The passage states that air pressure tells us the weight of the air around us.

7. A) How far we can see.
   - The passage explains that visibility tells us how far we can see.

8. D) By checking the UV index.
   - The passage mentions that we measure the strength of the sun's rays by checking the UV index.

9. A) They analyze it and create weather forecasts.
   - The passage states that meteorologists analyze weather data and create weather forecasts.

10. A) It helps us plan our activities and be prepared for changes in the weather.
    - The passage emphasizes that weather data is important as it helps us plan our activities and be prepared for changes in the weather.