Weather Predictions

Predicting the weather is a complex process. Forecasts can lack accuracy due to the chaotic character of the atmosphere and our inability to comprehend the processes. However, over the years, weather forecasts have become more detailed with improved accuracy. A technological advantage is the development of apps that offer information regarding the weather immediately, thus giving opportune warnings in times of a crisis.

Before the forecast with icons of the sun or the rain is posted on a website or texted via the mobile phone, a rather complicated procedure takes place. In order to understand the weather patterns and present an accurate forecast, massive data is collected and processed. There are several variations to be considered, and it is also important to correctly measure them.

Data from observations of atmospheric pressure, temperature, wind speed, wind direction, humidity, and precipitation are collected regularly through trained observers, automatic weather stations, or anchored floats or buoys.

With the advancement in technology, radars and weather satellites are also now widely used. Before making a forecast, meteorologists must 'get in touch with the weather.' This means that at the start of the shift, forecasters glance at the weather patterns of the previous day. Then the current weather is given a closer look. Says Bernie Rayno, AccuWeather meteorologist, 'If you don't know what happened yesterday, and why, then the chances of you being able to forecast the future are less.'

Just like removing layers from the outside towards the core, the weather forecasters begin with the larger movements in the atmosphere and then gradually move inwards to the smaller details. A surface map is frequently used by meteorologists as it gives them an idea as to why a particular weather phenomenon is happening. They can see the location of the key factors in the phenomenon such as cloud cover, precipitation, low pressure, and high pressure as they study the map. A storm system and its movement can be tracked by identifying the low-pressure areas,

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while high-pressure areas show good weather.

In the next step of weather investigation, observations gathered from surveillance are recorded into the computer models. These models imitate the atmosphere using various weather parameters such as temperature, humidity, and pressure. Supercomputers are needed to solve complex equations which decide how the condition of fluid changes with time. The input is processed by the models using data assimilation, and the generated output is then used to give the basis of a weather forecast.

While it's true that more often than we would like, we are caught in a downpour without an umbrella because the forecast predicted a sunny day; when it comes to tornadoes , the predictions are eerily exact, saving thousands of lives and property.

- trained observers
- **1** _____
- radars
- weather stations and satellites
- Next, weather conditions of the **2** _____ day are referred
- To make a forecast, current weather parameters are observed
- first, bigger atmospheric **3** _____ are identified, then small details are noted
- a **4** _____ is often used to:

  - understand the cause of a weather phenomenon and get the **5**_____ of the responsible parameters such as cloud cover, precipitation
  - track the progression of a **6** _____ by identifying low-pressure areas

- the collected information is fed into the **7** _____ which simulate the atmosphere
- the data is processed and the output forms the weather forecast

Questions 1-7

Complete the notes below.
*Write **NO MORE THAN TWO WORDS** from the passage for each answer.*

Steps of Daily Weather Forecast

- Data collection by:

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