ScienceCube

# Temperature Changes Over a Day

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1. **You can measure temperature using a temperature sensor.**
2. **Measure and explain the temperature changes throughout the day.**

## Fundamental Concept

### 1. Concept of Temperature

The degree of coldness or warmth of a substance.

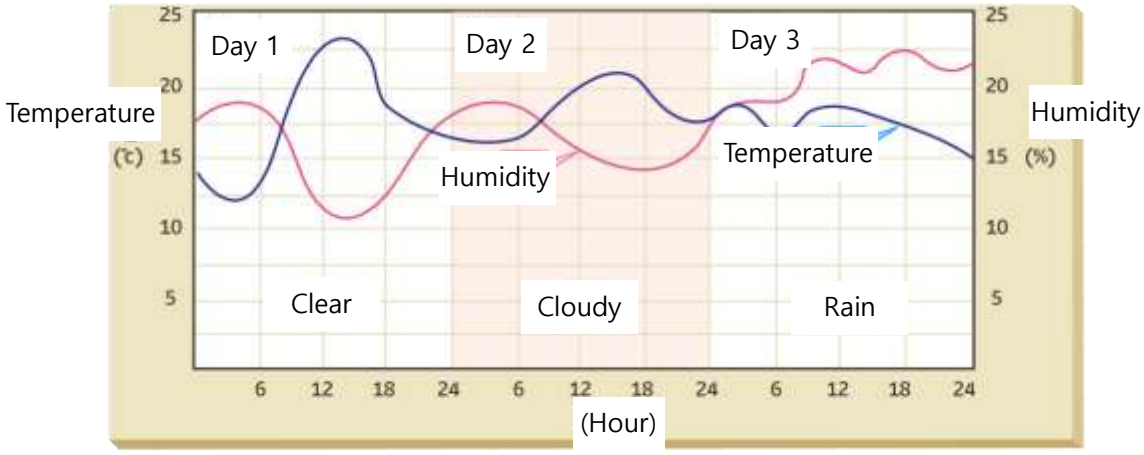
The commonly used temperature in daily life is Celsius, with the unit ℃ (Celsius degree).

### 2. What is Air Temperature?

Air temperature refers to the temperature of the air surrounding us. When the air temperature rises, it becomes warmer or hotter, and when it falls, it becomes cooler or colder.

The ground surface is heated by solar heat, and the heated surface raises the air temperature.

### 3. Changes in Air Temperature Over Time



## 4. Measuring Temperature Using a Temperature Sensor Materials

The air entering the smart sensor box is immediately detected by the temperature sensor, which displays the air temperature.

Air temperature sensor detection area

# Experiment

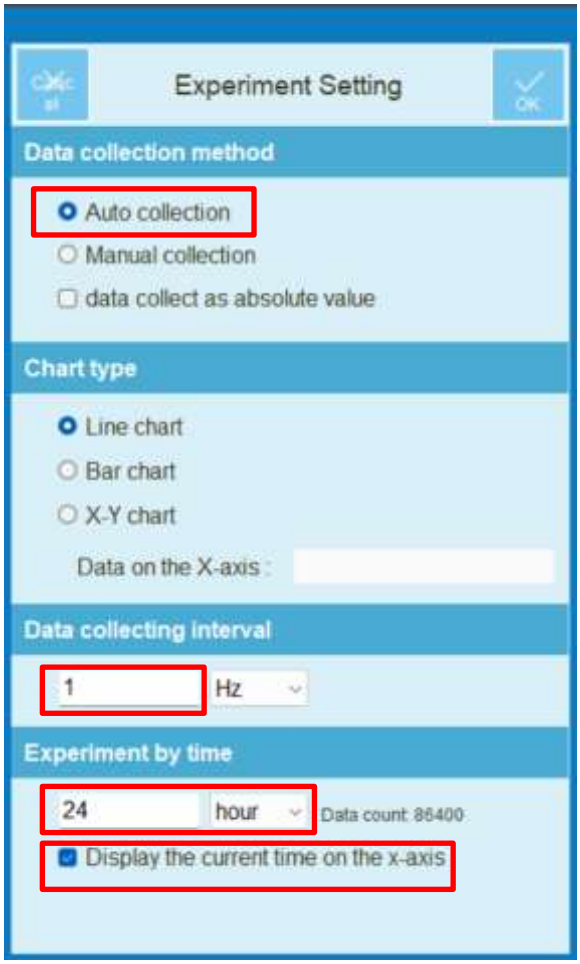
## Materials Needed

Smart Sensor Box, Science# Program (Device)

## Interface Setup

1. Launch Science#.
2. Turn on the Smart Sensor Box and connect it to the Science# program.
3. Activate the air temperature sensor in the Science# program. 

4. Press Setup and configure the experiment environment as follows:




### Data Collection

1. Move the Smart Sensor Box and device outdoors to measure the outdoor air temperature. (Ensure there are no objects around the Smart Sensor Box that could affect the air temperature measurement.)
2. Check the power supply to ensure data can be collected for 24 hours.
3.  Press Start and measure the temperature changes over 24 hours..

# Data Analysis

### Recording Data

1. Display the temperature changes over a day in a graph.

2. Identify and record the times when the temperature was highest and lowest..

| Category | Highest Temperature | Lowest Temperature |
|---|---|---|
| Time | | |

## Applying Data

1. Summarize and describe how the temperature changed over the day based on the experiment results.

2. Explain the reasons for the temperature changes as observed in the experiment results.