ScienceCube

Measuring Temperature in Various Places

1. **Measuring Temperature with a Temperature Sensor**
2. **Measuring Temperature in Various Places and Comparing Temperatures According to Location**

Fundamental Concept

1. Concept of Temperature

The degree of coldness or warmth of a substance.

The commonly used temperature in daily life is Celsius, unit: ℃ (Celsius degrees).

2. What is Air Temperature?

Air temperature is the temperature of the air surrounding us. When the air temperature rises, it becomes warm or hot; when it falls, it becomes cool or cold.

The earth's surface is heated by solar heat, which in turn raises the air temperature.

3. Suitable Temperatures for Daily Life and Measuring the Temperature of Substances

Activity	Temperature	Activity	Temperature
Comfortable indoor temp	18℃	Summer cooling temp	25~28℃
Winter heating temp	15~20℃	Bath water temp	35~40℃
Refrigerator temp	0~4℃	Study room temp	15~17℃

4. Measuring Air Temperature with a Temperature Sensor

The air that enters the Smart Sensor Box is immediately detected by the temperature sensor, which displays the air temperature.

Air temperature sensor detection area

Experiment

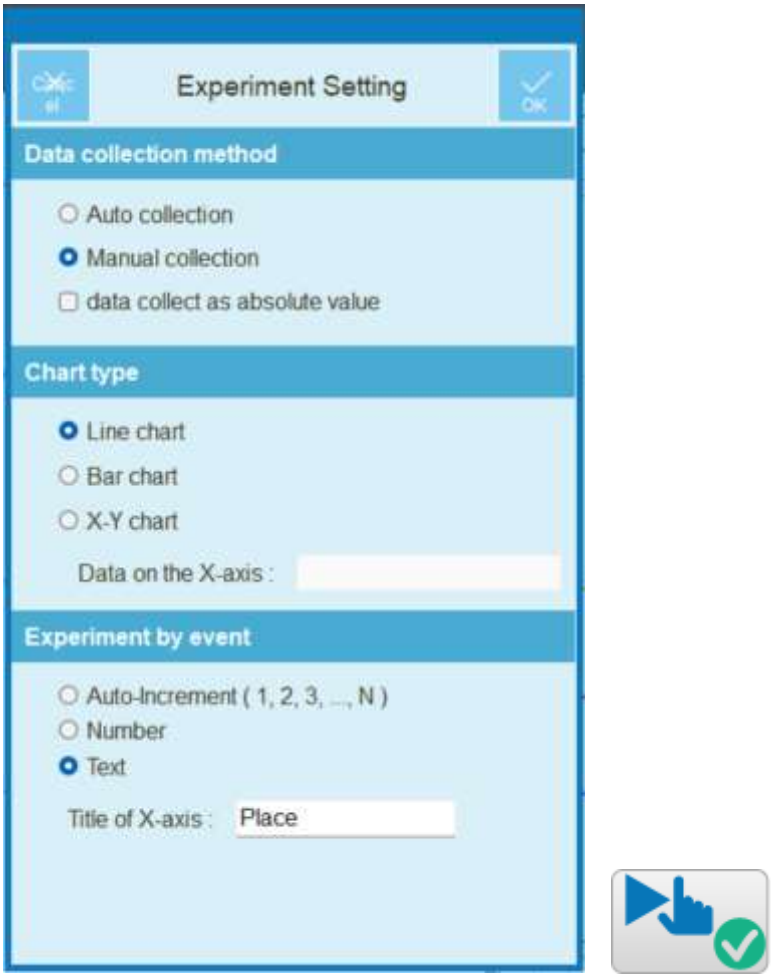
Materials Needed

Smart Sensor Box, Science# program

Interface Setup

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

4. Press the button  to set up the experimental environment as shown below or press the button  for automatic setup. .



Data Collection

1. 

Press the button to set the chart to a bar graph..
2. Press the button  and then press the button  to measure the current classroom temperature. Enter the place name on the X-axis. (Wait for the data to stabilize before collecting.)
3. Move to your desired locations and measure and record the air temperature of each place.
4. Press the button  to end the experiment.

< Example Locations>

Indoors and outdoors, sunny spots and shady spots, near the ground surface and higher up.

Data Analysis

Recording Data

1. Display and compare the air temperatures according to locations using a bar graph.

2. Display and compare the air temperatures according to locations in a table format

   Select a table chart  and press the butto  n to insert data on the Y-axis.

Data Application

1. List the places in order of highest to lowest temperature.

Category	Place with Highest Temperature	Place with Lowest Temperature
Location Name		

2. Represent the temperature difference between inside and outside a building using inequality signs and explain the reason.

Inside a building ☐ Outside a building

3. Compare the temperatures of sunny spots and shady spots using inequality signs and explain the reason.

Sunny spot ☐ Shady spot

4. Compare the temperatures of places near the ground surface and higher up using inequality signs and explain the reason.

Near the ground ☐ Higher up


Report
(For Teachers)
Report
(For Students)