

Temperature

⇒ Temperature is a physical quantity expressing hot and cold. Temperature is measured with a thermometer. The most commonly used scales are the Celsius scale, denoted in $^{\circ}\text{C}$ (informally, degrees centigrade), the Fahrenheit scale ($^{\circ}\text{F}$), and the Kelvin scale. The kelvin (K) is the unit of temperature in the International System of Units (SI), in which temperature is one of the seven fundamental base quantities.

⇒ **Two different temperature scales that are commonly used are:**

1. The Fahrenheit Scale

The Fahrenheit scale is marked from 32°F to 212°F . 32°F indicates the freezing point of water and 212°F indicates the boiling point of water.

2. The Celsius Scale

Celsius scale is also called centigrade scale and is marked from 0°C to 100°C . 0°C indicates the freezing point of water and 100°C indicates the boiling point of water.

⇒ **Conversion of Temperature**

When the temperature is given in degree Celsius:

Step 1: Multiply the given temperature in degree by 9.

Step 2: Divide the product obtained by 5.

Step 3: Add 32 to the quotient obtained in step 2 to get the temperature in degree Fahrenheit.

Temperature



Let us understand with an example:

Example: Convert 55°C into degree Fahrenheit.

Solution: Here given temperature is 55°C .

To convert into degree Fahrenheit first multiply 55 by 9 and we get product as 495.

Then, divide 495 by 5 and answer we get is 99.

Now, add 32 to 99 and final answer we get is 131.

Therefore, $55^{\circ}\text{C} = 131^{\circ}\text{F}$



When the temperature is given in degree Fahrenheit:

Step 1: Subtract 32 from the given temperature in degree

Step 2: Multiply the difference obtained from step 1 by 5.

Step 3: Divide the product obtained from step 2 by 9 to get the temperature in degree Celsius.



Let us understand with an example:

Example: Convert 90°F into degree Celsius.

Solution: Here given temperature is 90°F .

To convert into degree Celsius first we need to subtract 32 from 90 and we get 58.

Then, multiply 58 by 5 we get answer as 290.

Now divide 290 by 9 and we get answer as 32.2.

Therefore, $90^{\circ}\text{F} = 32.2^{\circ}\text{C}$