

# Clouds and What They Mean

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## Understanding Temperature Scales

### Temperature Worksheet 1

**Did you know?** Two common scales for measuring temperature are Celsius and Fahrenheit, which are both based on the freezing and boiling points of water. On the Celsius scale, which is part of the metric system and is used in most parts of the world, the freezing point of water is set at 0 degrees and the boiling point at 100 degrees; on the Fahrenheit scale, which is used in the United States, the freezing point of water is set at 32 degrees and the boiling point at 212 degrees. By using a mathematical formula, you can convert Fahrenheit temperatures to Celsius temperatures—and vice versa.

✓ **Formula 1:** If you know the temperature in degrees Celsius (C) and you want to find out what it is in degrees Fahrenheit: Multiply  $C \times 9$ . Then, divide your answer by 5. Finally, add 32.

✓ **Formula 2:** If you know the temperature in degrees Fahrenheit (F) and you want to find out what it is in degrees Celsius: Subtract 32 from F ( $F - 32$ ). Then, multiply your answer by 5. Finally, divide that answer by 9.

Let's plug the freezing point of water in degrees Fahrenheit and Celsius into the formulas to see if they work.

We know that water freezes at 0 degrees Celsius. Therefore, in this example  $C = 0$ . Using Formula 1, we can find out the freezing point of water in degrees Fahrenheit.

**Formula 1:**  $C = 0$   
 $0 \times 9 = 0$   
 $0 \div 5 = 0$   
 $0 + 32 = 32$   
 $F = 32$

As we already know, water freezes at 32 degrees Fahrenheit.

Let's check our answer by using Formula 2.

**Formula 2:**  $F = 32$   
 $32 - 32 = 0$   
 $0 \times 5 = 0$   
 $0 \div 9 = 0$   
 $C = 0$

As we know, water freezes at 0 degrees Celsius.

### Give it a try!

Use the back of this page and try a few conversions yourself.

\*F = degrees Fahrenheit

\*C = degrees Celsius

1.  $68^\circ F = ? C$

2.  $104^\circ F = ? C$

3.  $30^\circ C = ? F$

4.  $10^\circ C = ? F$

### Find out for yourself.

Look up the words Fahrenheit and Celsius in an encyclopedia and find out how these temperature scales were named.

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## Reading a Thermometer

### Temperature Worksheet 2

Answer the following questions, using the thermometer below. On the thermometer, the bigger numbers on the outside circle indicate degrees Fahrenheit; the smaller numbers inside indicate degrees Celsius.

1. When the temperature is 32 degrees Fahrenheit, what is the temperature in degrees Celsius? What do you know about this temperature?
2. What is the temperature on the thermometer below in degrees Fahrenheit? degrees Celsius?
3. Your Canadian pen pal writes you a letter in June and tells you that the temperature—where she lives—has already reached 35 degrees Celsius. What is the equivalent temperature in degrees Fahrenheit? Would you expect that kind of temperature in June? Why or why not?
4. What is the temperature outside today in degrees Celsius? in degrees Fahrenheit?
5. It's 5 degrees Celsius outside. What is the approximate temperature in degrees Fahrenheit? Should you dress for warm or cold weather?
6. One winter morning, you look out the window and see a dark nimbostratus cloud blanketing the sky. Then, you turn on the radio and the weather forecaster tells you to expect rain, sleet, and snow all day and a high temperature of 40 degrees Celsius. Which piece of information in this forecast seems wrong? Why?

