

# Unit 4

## 4.1 Temperature Conversion

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### Objective

Understand how to convert between Celsius and Fahrenheit

### Start

#### Intro

Fahrenheit was made by a man of the name of Daniel Gabriel Fahrenheit, who lived from 1686 to 1736. He defined 0 to be the point that salt water freezes, and 100 to be the temperature of the human body. This wasn't a great way to have a universal system of temperature, because the two points, 0 and 100, are not easily related to each other.

The Celsius system was named after the Swedish astronomer Anders Celsius, who lived from 1701 to 1744. Until 1948 it was called centigrade, which means 100 steps (centum - gradus). The Celsius system was significantly better thought out, and used pure water as a base, with 0 being the freezing point of water, and 100 being the boiling point. This is a good system, considering that we live on a planet that is about 70% covered with water, and a body that is about 65% water. Water is necessary for life on this planet, and is necessary for most biological and chemistry experiments.

Now the two systems share one common point, -40 degrees. However, above and below this point the two systems mean different things. Fahrenheit degrees are smaller than Celsius degrees, which means that 1 degree Fahrenheit does not equal 1 degree Celsius.

Activity 4.1 - graphing and scientific study

I'm going to show you some higher level scientific methods

To start with we have a table found on pg. 139. We are going to use that information, and a nifty tool called geogebra to find the conversion.

After plotting two points (with  $x$  = celsius,  $y$  = fahrenheit), we find the  $y$  intercept to be 32, and the slope to be 1.8. This means that we have this equation

$$Y = M \times X + B$$

$$F = 1.8 \times C + 32$$

We can use this formula for doing all future conversions.

### **Example 1**

pg. 141

### **Example 2**

pg. 142 (we will need to rearrange our formula for this)

### **Assignment**

pg. 144: 1-5