

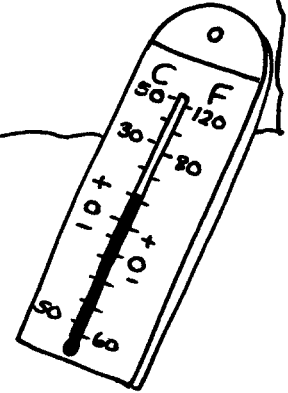
A matter of degrees

Use formulae from mathematics and other subjects

C

Temperature can be measured in degrees Celsius ($^{\circ}\text{C}$) or in degrees Fahrenheit ($^{\circ}\text{F}$). This formula shows the relationship between the two sets of units, where C stands for degrees Celsius and F for degrees Fahrenheit.

$$F = \frac{9C}{5} + 32$$



1. (a) Complete this table. Give your answers to the nearest degree.

$^{\circ}\text{C}$	-50	-35	-30	-10	0	10	20	30
$^{\circ}\text{F}$								

(b) Give a temperature from the table where the number of degrees Fahrenheit is **more than** the number of degrees Celsius. Write this temperature using both units.

_____ and _____

(c) Give a temperature from the table where the number of degrees Fahrenheit is **less than** the number of degrees Celsius. Write this temperature using both units.

_____ and _____

2. (a)



At one temperature there are the same number of degrees Fahrenheit as degrees Celsius ($C = F$).

Substitute F for C in the formula. Rearrange it to find the value of F .

$$F = \frac{9C}{5} + 32$$

$F =$ _____

(b)



At one temperature the number of degrees Fahrenheit is 20 more than when recorded as degrees Celsius.

Use the formula to find this temperature in degrees Fahrenheit. _____

(c)



At one temperature the number of degrees Fahrenheit is 40 less than when recorded as degrees Celsius.

Use the formula to find this temperature in degrees Fahrenheit. _____

NOW TRY THIS!

• Prove that these two formulae are equivalent by simplifying the second formula.

$$F = \frac{9C}{5} + 32$$

$$F = \frac{9}{5}(C + 40) - 40$$

• Rearrange the first formula to make C the subject.



To simplify the second formula in the 'Now try this!' challenge, expand the brackets first.

Developing Numeracy
Algebra
Year 9

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