## Negative numbers

As outcomes, Year 5 pupils should, for example:
Use, read and write, spelling correctly: integer, positive, negative, minus, above/below zero..

Recognise negative numbers on a calculator. Use the constant function to generate sequences of negative numbers.

Count back through zero, for example: seven, three, negative one, negative five...

Respond to questions such as:

- Put these numbers in order, least first:

$$
-2,-8,-1,-6,-4 .
$$

- What number is the arrow pointing to?

- Here is a row of six cards. Three cards are blank. Write a whole number on each blank card so that the six numbers are in order.

- If $-7<\square<-4$, what integer could $\square$ be?

Use negative numbers in the context of temperature. For example:

- What temperature does this thermometer show?

- The temperature rises by 15 degrees. Mark the new temperature reading on the thermometer.
- The temperature falls from $11^{\circ} \mathrm{C}$ to $-2^{\circ} \mathrm{C}$.

How many degrees does the temperature fall?

- The temperature is $6^{\circ} \mathrm{C}$. It falls by 8 degrees. What is the temperature now?
- The temperature is $-3^{\circ} \mathrm{C}$.

How much must it rise to reach $5^{\circ} \mathrm{C}$ ?

- What is the difference in temperature between $-4^{\circ} \mathrm{C}$ and $14^{\circ} \mathrm{C}$ ?

Use negative numbers in other contexts such as:

- A diver is below the surface of the water at -30 m . He goes up 12 metres, then down 4 metres. Where is he now?


## As outcomes, Year 6 pupils should, for example:

Use, read and write, spelling correctly: integer, positive, negative, minus, above/below zero...

Respond to questions such as:

- Put these integers in order, least first:

$$
-37,4,29,-4,-28
$$

- In this equation, $\square$ and $\triangle$ represent whole numbers.

$$
\square+\triangle=17
$$

Make a table of their possible values.
Is there a pattern?

- Plot these points on a co-ordinate grid:

$$
(5,4) \quad(5,8) \quad(-3,4) \quad(-3,8)
$$

What shape do they make?
What is the length of its perimeter?
See also plotting co-ordinates (page 109).

Use negative numbers in the context of temperature.
For example:

- The temperature is $-5^{\circ} \mathrm{C}$. It falls by 6 degrees. What is the temperature now?
- The temperature is $-11^{\circ} \mathrm{C}$. It rises by 2 degrees. What is the temperature now?
- The temperature at the North Pole is $-20^{\circ} \mathrm{C}$. How much must it rise to reach $-5^{\circ} \mathrm{C}$ ?
- Draw a line graph to show these temperatures at 9:00 am each day for a week:
$-2{ }^{\circ} \mathrm{C},+3^{\circ} \mathrm{C},-1{ }^{\circ} \mathrm{C} \ldots$

Use negative numbers in other contexts such as:

- Lena set herself a target of 1 metre for her high jump. She recorded each attempt in centimetres above and below her target.
$\square$
What was her highest (best) jump?
What was her lowest jump?
What was her average jump?

