

Unit 1 Positive and Negative Integers

Let's Think ...

Look at the Celsius scale on the thermometer again.

- How is the scale like a number line?
- What happens to the numbers on the line as you go upwards?
- What happens to the numbers on the line as you go downwards?
- Why?

Whole numbers greater than 0 are called **positive integers**.

They are sometimes written with a positive sign (+), but if a number has no sign, it is always positive.

17, +45, +1000 and 12345 are all positive numbers.

Whole numbers less than 0 are called **negative integers**.

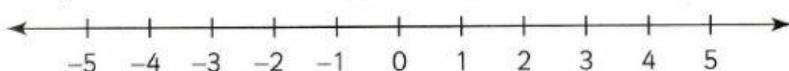
Negative integers are always written with a negative sign to show that they are negative.

-17, -45, -1000 and -12345 are all negative numbers.

Zero (0) is neither negative nor positive.

The set of negative and positive integers (with 0) can be shown on a number line.

Each positive number has an opposite negative number.



You already know that positive numbers **increase** (get bigger) as you move to the right along the line and that they **decrease** (get smaller) as you move to the left along the line.

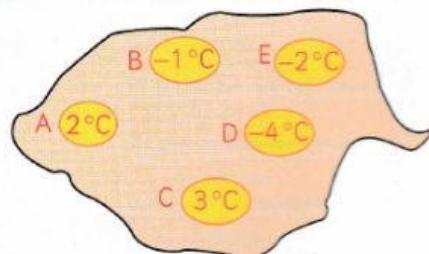
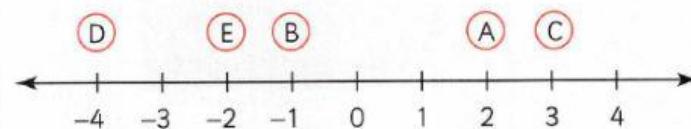
As you move left of 0, the numbers get smaller and smaller.

-1 means 1 less than 0, -2 means 2 less than 0 and so on.

You can use a number line to help you sort integers in order of size.

Look at the temperatures on the map. Write them in order from lowest to highest.

Draw a number line with positive and negative numbers. (You can stop at 4 as there are no numbers higher or lower than that).



Mark and circle the temperatures on your number line.

The temperatures get higher from left to right, so the left-hand one is the lowest.

Write the temperatures in order from left to right.

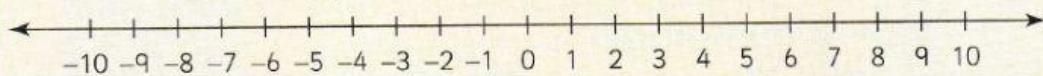
-4°C, -2°C, -1°C, 2°C, 3°C



1 Write down the opposite of each integer.

a 5 b -3 c 100 d 0 e -66

Use this number line to help you in activities 2 to 6.



2 Which is smaller in each pair?

a 5 or -5 b -10 or 2 c -7 or -1

3 Write each set of numbers in descending order.

a -8, 0, 2, -4, 5, -3, 8 b -3, 5, 4, 9, -9, -5, 1, 0

4 Follow the instructions, write the number you end on.

a Start at -2 and move 5 jumps to the right.
 b Start at -2 and move 5 jumps to the left.
 c Start at 4, move 8 jumps left.

5 Write down all the integers between:

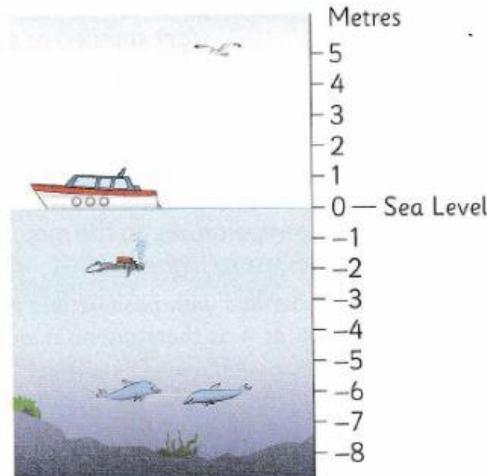
a -3 and 7 b -5 and 1 c -6 and -2 d -9 and -2

6 Find a number that is:

a even, greater than -6 and smaller than -3
 b odd, less than -4 and greater than -8
 c 8 more than -3

7 The heights above and below sea level are shown on this diagram.

a At what height is the seagull?
 b What is at -2 m?
 c At what depth are the dolphins swimming?
 d How far above the dolphins is the seagull?



Looking Back

- How many spaces from 0 is 4 on a number line? And how many from 0 to -4?
- Is 0 a negative or a positive number?
- Why is -15 smaller than -5?