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 +1 000 and 12 345 are all positive numbers.

Whole numbers less than 0 are called negative integers.

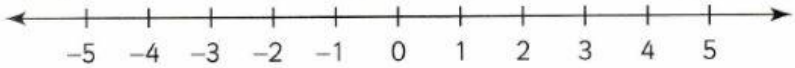
Negative integers are always written with a negative sign to show that they are negative.

−17 −45 −1 000 and −12 345 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.



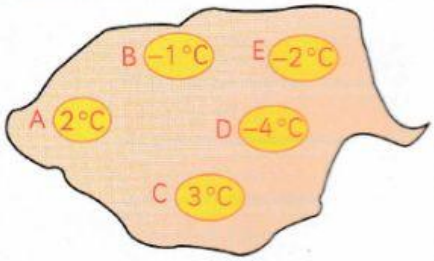
You already know that positive numbers increase (get bigger) as you move to the right along the line and that they decrease (get smaller) as you move to the left along the line.

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

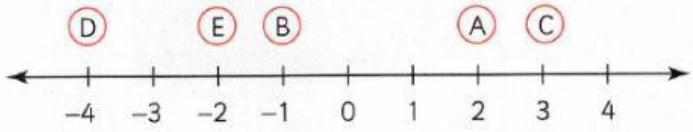
−1 means 1 less than 0, −2 means 2 less than 0 and so on.

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.

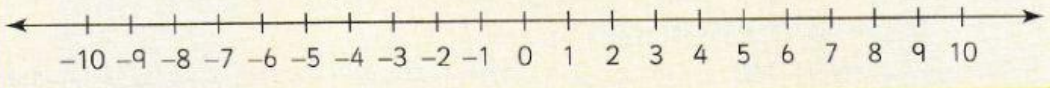
Write the temperatures in order from left to right.

−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

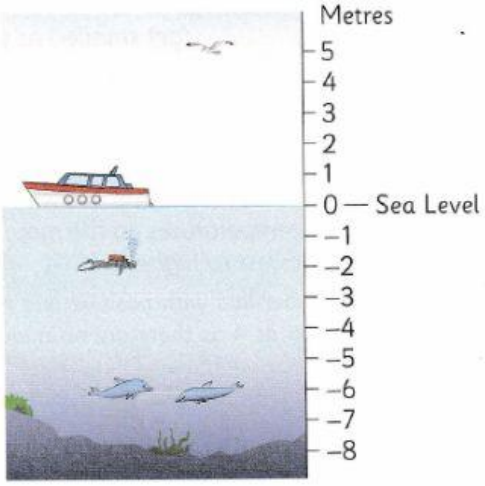
7 The heights above and below sea level are shown on this diagram.

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

1 How many spaces from 0 is 4 on a number line? And how many from 0 to −4?

2 Is 0 a negative or a positive number?

3 Why is −15 smaller than −5?