

Negative Numbers

You'll have seen negative numbers before, but now it's time to use them in lots of real life contexts. If a problem seems difficult, draw a number line to keep track of how far past zero you've gone.

Example

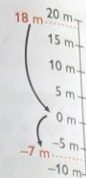
Alan is digging up his buried treasure. He is 18 m above sea level. The treasure is 7 m below sea level. How many metres will Alan have to dig in total?



Alan has to dig 18 m to reach sea level.

Then he has to dig 7 m further.

$$18 + 7 = 25 \text{ m.}$$



Set A

An anchor is -10 m under a boat. The flag on the mast is 8 m above the boat.

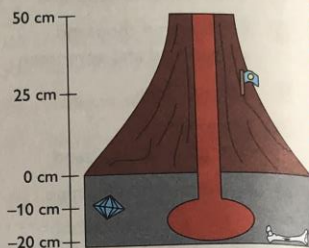
- 1 What distance separates the anchor from the flag?

The anchor is lowered by 5 m and the flag is raised by 2 m.

- 2 What distance separates them now?

The diagram on the right shows a model volcano. What is the distance between:

- 3 the flag and the diamond?
- 4 the top of the volcano and the bone?
- 5 the diamond and the top of the volcano?
- 6 the diamond and the bone?



Set B

A scientist slowly raises the temperature of an experiment. It starts at -18 °C, and warms up by 3 °C every 30 minutes.

What temperature will it be:

- 1 after two hours?
- 2 after three and a half hours?
- 3 after five hours?
- 4 after six and a half hours?

Look at the table on the right.

What is the difference in temperature between:

- 5 New York and Moscow?
- 6 London and Toronto?
- 7 Athens and the North Pole?
- 8 Sydney and Antarctica?
- 9 the North Pole and Antarctica?

Location	Temperature
North Pole	-34 °C
Moscow	-5 °C
London	11 °C
Toronto	-2 °C
New York	17 °C
Athens	23 °C
Sydney	29 °C
Antarctica	-48 °C

Set C

A submarine is at -450 m. The ocean floor is at -800 m.

- 1 How far does the submarine have to dive to get to the ocean floor?

A plane flies overhead at 4200 m.

- 2 How far apart are the plane and the ocean floor?

Look at the table on the right.

What is the difference between the starting and cooked temperature:

- 3 of the chips?
- 4 of the garlic bread?
- 5 Which food had the greatest change in temperature?

Food	Starting Temp	Cooked Temp
Chips	-16 °C	180 °C
Fish fingers	-19 °C	210 °C
Pork chops	1 °C	170 °C
Garlic bread	-12 °C	160 °C
Sausages	2 °C	180 °C
Pizza	3 °C	200 °C

I know and can use negative numbers in context.



Number

What is the value of the digit 7 in 4 876?

- 1 7 in 4 876
- 2 3 in 3 958
- 3 2 in 5 942
- 4 6 in 9 034

What is the value of the digit 8 in 8 936 571?

- 9 8 936 571
- 10 1 247 930
- 11 6 930 300
- 12 8 178 930

Look at the number 6.

6

What number is 10 times as big as 6?

- 17 tens and 7 units
- 18 millions
- 19 ones and 6 units
- 20 the largest number
- 21 the smallest number

Write in words the number 5 000 000.

- 22 5 million
- 23 8 tens and 6 million
- 24 2 hundred and 2 one
- 25 4 ten and 9 million

Write in words the number 8 000.

- 26 8 000
- 27 7 800
- 28 3 340
- 29 2 600

Top world...