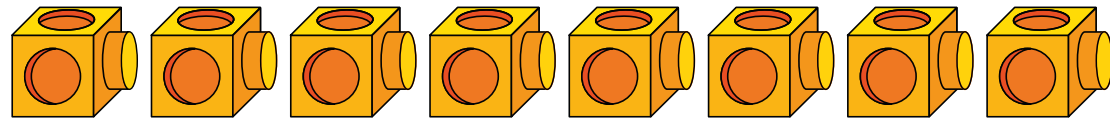


# Cube numbers



- 1 a) Fit 8 multilink cubes together to make a larger cube.



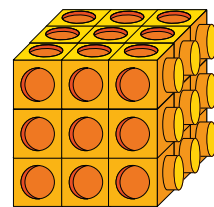
- b) Is it possible to fit 9 multilink cubes together to make a larger cube?

No

Explain your answer.

There will be one cube sticking out.

- 2 Filip makes a cube using some smaller cubes.



- a) How many cubes make up this cube?

27

- b) How did you work out the number of cubes?

$3 \times 3 \times 3 = 27$

- c) This number is an example of a cube number.

Why do you think it is a cube number?



- 3 a) Complete the table of cubed numbers.

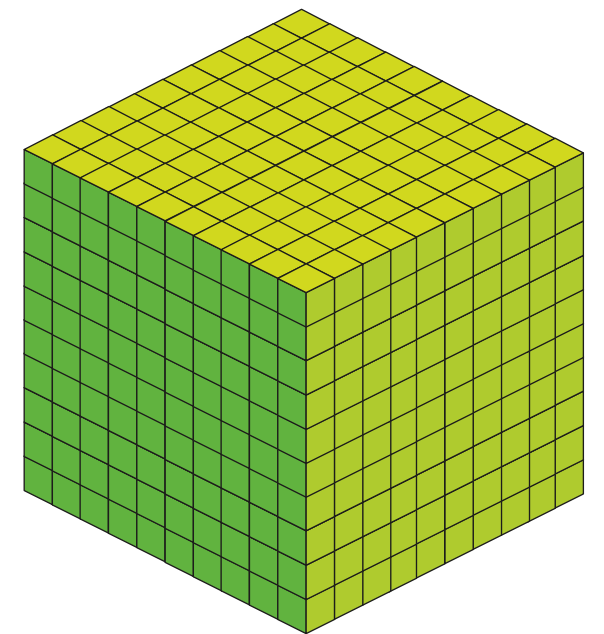
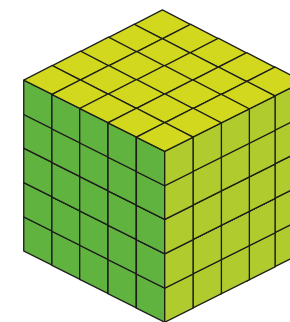
$2^3$	$2 \times 2 \times 2$	8
$3^3$	$3 \times 3 \times 3$	27
$4^3$	$4 \times 4 \times 4$	64

- b) What would the next cube number in the table be?

$$5^3 = 5 \times 5 \times 5 = 125$$

- 4 Complete the statements.

Use the cubes to help you.



a)  $5^3 = 125$

5 cubed = 125

$5 \times 5 \times 5 = 125$

b)  $10^3 = 1,000$

10 cubed = 1,000

$10 \times 10 \times 10 = 1,000$

- 5 a) Which calculation is the same as  $6^3$ ?

Tick your answer.

$6 \times 3$

☐

$6 + 6 + 6$

☐

$6 \times 6 \times 6$

☒

- b) Kim has worked out  $6^3$  using this method.

$$\begin{aligned} 6^3 &= (6 \times 6) \times 6 \\ &= 36 \times 6 \\ &= 216 \end{aligned}$$

	30	6
6	$30 \times 6 = 180$	$6 \times 6 = 36$
	$180 + 36 = 216$	

Is Kim's method correct? Yes

How do you know?

She has correctly calculated  $6 \times 6$  then multiplied her answer by 6

- c) Match the cube numbers to the calculations.

One has been done for you.

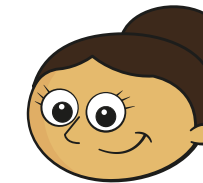
$4^3$	$4 \times 2$
$5^3$	$9 \times 3$
$2^3$	$16 \times 4$
$3^3$	$25 \times 5$

- 6 Calculate  $7^3$

343

- 7

$1^3$  is 1, and  
 $3^3$  is 9



What mistake has Dora made?

Why might she have made this mistake?

She has calculated  $3 \times 3$  because the power is 3 rather than  $3 \times 3 \times 3$

- 8

Scott's age is a cube number.

His sister is 2 years younger than him.

Her age is a square number.

In 3 years, Scott's age will be a multiple of 10

How old is Scott?

Scott is 27 years old.