

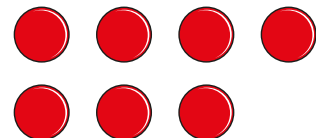
Prime numbers



- 1 Aisha makes different arrays with 7 counters.
She makes an array with 1 counter in each column.



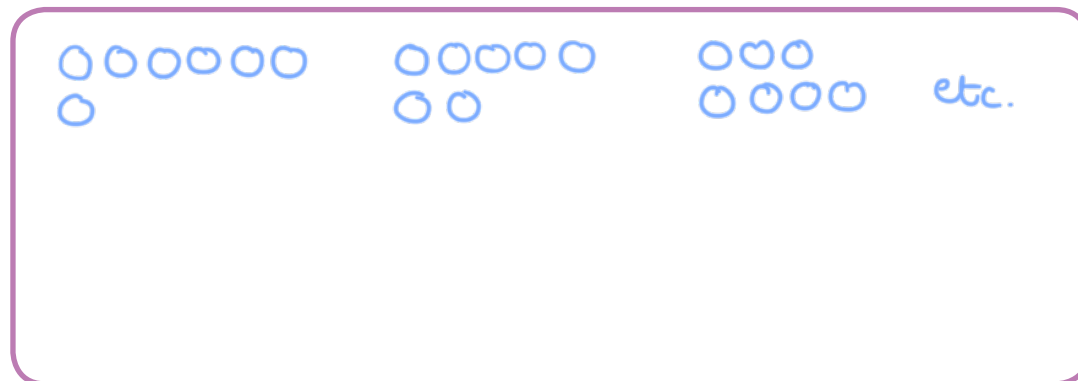
She makes an array with 2 counters in a column.



- a) Is it possible to arrange the counters in another way so that they make a rectangular array?

No

Draw counters to support your answer.



- b) What are the factors of 7?

1 and 7

- c) Explain why 7 is a prime number.

It only has two factors, 1 and itself.

- 2 Complete the table.

Number	Factors	Is the number prime?
5	1 and 5	Yes
9	1, 3, 9	No
11	1, 11	Yes
14	1, 2, 7, 14	No
15	1, 3, 5, 15	No
19	1, 19	Yes

- 3 A prime number has two factors: 1 and itself.

List the prime numbers up to 20

2, 3, 5, 7, 11, 13, 17, 19

- 4 Is 25 a prime number? No

How do you know?

$5 \times 5 = 25$

- 5 Here are sequences of consecutive prime numbers.

Complete the sequences.

a) 7, 11, 13, 17, 19

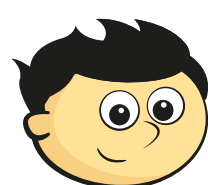
b) 37, 31, 29, 23, 19

- 6 Colour all the prime numbers.

51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80

- 7 Here are some numbers.

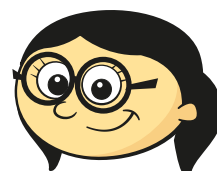
126	175	2,378	777	381	9,000
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Jack

The numbers are big. It's hard to check if they are prime.

I can tell quickly that none of these numbers are prime.



Annie

How does Annie know that none of the numbers are prime?

126, 2378 and 9000 have 2 as a factor so aren't prime. 175 has 5 as a factor. 777 has 7 as a factor. $3+8+1=12$ so 3 is a factor of 381

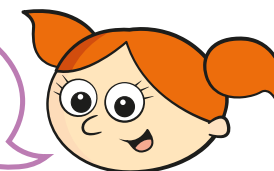
Compare answers with a partner.

- 8 Mo and Alex are talking about prime numbers.



Mo

Prime numbers are always odd.



Alex

I think prime numbers can be even.

Who is correct? Alex

How do you know?

2 is even and prime. It is the only even prime number.

- 9 Teddy writes five consecutive numbers.

Three of the numbers are prime.

What are the five consecutive numbers?

2	3	4	5	6
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- 10 Kim is thinking of a prime number.

It is in between a multiple of 11 and a factor of 48

What number is Kim thinking of?

23

