



Representing prime numbers

CAPS: Grade 6, Term 3

Numbers, Operations and Relationships

Represent prime numbers to at least 100.

Note

There are certain numbers called prime numbers.

A prime number can be divided evenly only by **1 or itself**.

E.g. 5 can only be divided by **1** or **5**, therefore it's a **prime number**.

E.g. 11 can only be divided by **1** or **11**, therefore it's a **prime number**.

E.g. 6 however, can be divided by **1, 6, 2** and **3**, therefore it is **not a prime number**.

Activity 1

- ① State if the following numbers are prime or not. Give a reason for your answer or show, using number sentences, why they are or they are not prime numbers.

- (a) 7 _____
- (b) 3 _____
- (c) 2 _____
- (d) 13 _____
- (e) 14 _____
- (f) 21 _____
- (g) 26 _____
- (h) 27 _____
- (i) 30 _____
- (j) 31 _____



② List all the prime numbers between 1 and 50.

③ Write down ways you used to tell if a number was prime or not without having to do calculations.

③ State if the following numbers are prime or not. Check your work with a partner and discuss reasons for your answers.

③ a 51 _____.

③ b 57 _____.

③ c 81 _____.

③ d 83 _____.

③ e 99 _____.

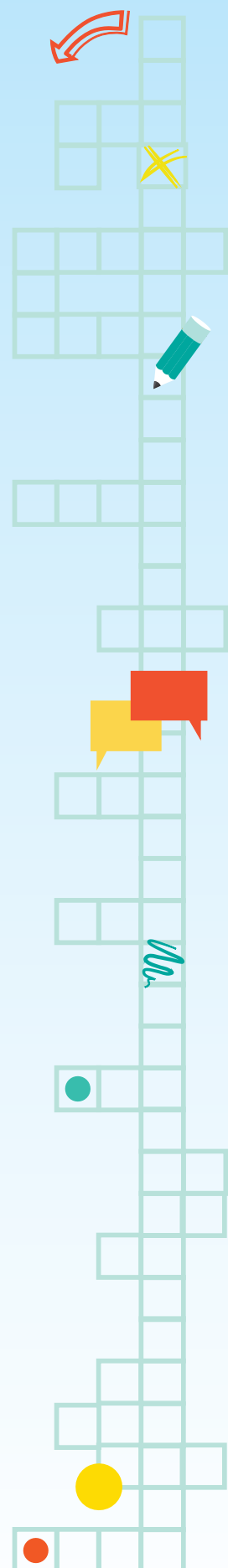
③ f 77 _____.

③ g 76 _____.

③ h 63 _____.

③ i 61 _____.

③ j 98 _____.





Activity 2

- ① Many years ago a Greek Mathematician, Eratosthenes, made a way to identify prime numbers called the Eratosthenes sieve.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
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
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

- Ⓐ Cross out 1, circle 2, and then cross out all the even numbers.
- Ⓑ Circle 3 and then cross out all the numbers that can be divided by 3.
- Ⓒ Circle 5 and then cross out all the numbers that can be divided by 5.
- Ⓓ Circle 7 and then cross out all the numbers that can be divided by 7.
- Ⓔ Circle 11 and then cross out all the numbers that can be divided by 11.
- Ⓕ Circle all the numbers that have not been crossed out.

These are the prime numbers.



② Use the circled numbers in the Eratosthenes sieve to check your answers in Activity 1.

a Which even numbers are prime?

_____.

b Which odd numbers did you think were prime but in fact are not?

_____.

Activity 3

① Look at the numbers below which are bigger than 100. Just by looking at them, write down whether they are prime or not, and how you got your answers.

a 202 _____.

b 224 _____.

c 304 _____.

d 305 _____.

e 425 _____.

f 501 _____.

g 600 _____.

h 326 _____.

i 333 _____.

j 700 _____.

Teacher Tip

If your learners are familiar with the term **factor**, introduce prime numbers as a number with only two factors. However this is not a focus of this lesson. Rather allow learners to explore numbers and notice divisibility rules (e.g. numbers ending in an even number and 0 are divisible by 2 and therefore are not prime). Numbers which are not prime numbers are composite numbers. Introduce this term if you feel it is appropriate.

