Try this

The Sieve of Eratosthenes

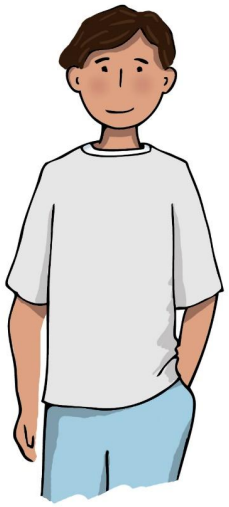
1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60

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

Step 1: Cross out 1.

Step 2: Circle the smallest remaining number and cross out all the larger remaining multiples of that number.

Step 3: Repeat step 2



What numbers will be circled?

Connect

	A	B	C		D
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

Why is the no prime number greater than 3 in columns A, B, C and D?

Connect

A student highlighted multiples of 6

1	2	3	4	5	6×1
7	8	9	10	11	6×2
13	14	15	16	17	6×3
19	20	21	22	23	6×4
25	26	27	28	29	6×5
31	32	33	34	35	6×6
37	38	39	40	41	6×7
43	44	45	46	47	6×8
49	50	51	52	53	6×9
55	56	57	58	59	6×10

I can write multiples of 6 as the product of 6 and an integer

Can we generalise the students statement so that we can represent any multiple of 6?

Independent task

1) Write an expression to represent all the multiples of the following numbers:

a) 4

b) 5

c) 7

2) Write an expression to represent all the common multiples of 3 and 4 (use the grid to help you)

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

Explore

Which of the numbers in the table can you find by substituting positive integers into the following expressions?

$6 \times \square$

$6 \times \square - 1$

$6 \times \square + 1$

Generalising

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
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How would you write each expression using algebraic notation?