

Maths - Year 5

Pattern and Algebra 3: Properties of number

Key Vocabulary

Common multiple	A number that is a multiple of two or more other numbers, e.g. 24 is a common multiple of 2, 3 and 6.
Lowest common multiple	The lowest number that is a multiple of two or more other numbers, e.g. the lowest common multiple of 3, 4 and 6 is 12.
Common factor	A whole number that divides into two or more other numbers exactly.
Factor pairs	Two numbers that multiply together to make another number, e.g. 2 and 3 are a factor pair of 6, $2 \times 3 = 6$.
Prime number	A whole number with exactly two different factors, which are 1 and itself, e.g. the only factors of 3 are 1 and 3.
Prime factor	The smallest parts a composite number can be divided into, e.g. the prime factors of 12 are 2, 2 and 3, because $2 \times 2 \times 3 = 12$.
Composite number	Any positive whole number that is not a prime number.

Mathematical Skills

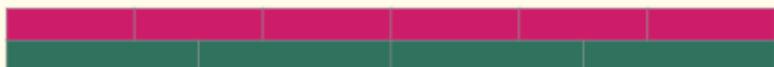
- Explain that a number is a multiple of another if it divides by that number without a remainder.
- Use knowledge of multiples and times table facts flexibly and fluently.
- Work systematically and logically to narrow possibilities involving combinations of multiples.
- Use knowledge of multiples and number facts to find the lowest common multiple of two or more numbers.
- Use knowledge of multiples and times table facts flexibly to develop efficient strategies for finding common multiples and record these in different ways.
- Work systematically to find common factors and identify the highest common factor.
- Work systematically to find all the factors of a given number.
- Work systematically to find prime numbers to 100.
- Explain that numbers that have only 1 and themselves as factors are called prime numbers.
- Explain that numbers that have factors other than 1 and themselves are called composite numbers.

Mathematical Methods

- Solving problems with combinations of multiples e.g. Adam has bought a pack of stickers each week since his birthday, sticking them in a 10-page book. He hasn't finished collecting, but has either 4 or 7 stickers on each page. How many stickers could he have?

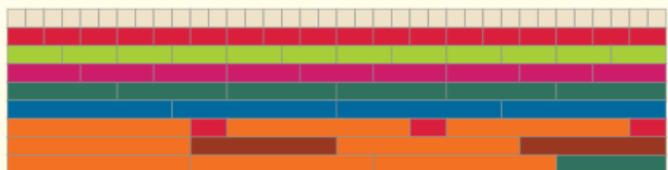
Stickers on pages with 7 stickers	Stickers on pages with 4 stickers	Total
$9 \times 7 = 63$	$1 \times 4 = 4$	67
$8 \times 7 = 56$	$2 \times 4 = 8$	64
$7 \times 7 = 49$	$3 \times 4 = 12$	61
$6 \times 7 = 42$	$4 \times 4 = 16$	58
$5 \times 7 = 35$	$5 \times 4 = 20$	55
$4 \times 7 = 28$	$6 \times 4 = 24$	52
$3 \times 7 = 21$	$7 \times 4 = 28$	49
$2 \times 7 = 14$	$8 \times 4 = 32$	46
$1 \times 7 = 7$	$9 \times 4 = 36$	43

- Finding the lowest common multiple of two or more numbers e.g. Sanjay has made enough cakes to fill boxes of either 4 or 6. What is the smallest number he might have?



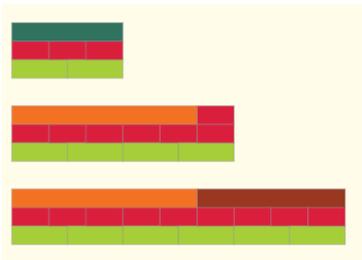
Multiples of both 4 and 6 = 12, 24, 36.
Lowest common multiple = 12.

- Finding all the factors of a given number e.g. 36



36	
1	36
2	18
3	12
4	9
6	6

- Prime and composite numbers.



2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
x	x	✓	x	✓	x	✓		✓		✓		✓		✓		✓		✓

x	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

- Finding all prime numbers to 100.

Can you..?

- Guess the multiple—it is a multiple of 2, 3, 4, 5 and 6. What could it be?
- What are the first 4 multiples of 63?
- Choose two numbers between 20 and 100 and find their highest common factor.