Long as you like

Children create chains of numbers by finding factors and multiples. Their aim is to create the longest chain possible.

Skills practised:

- Finding factors of 2-digit numbers
- Finding multiples of two-digit numbers
- Using trial and improvement to improve their results

Conjecture: We can find a chain of more than 50 numbers by finding factors and multiples.

What to do:

Children work individually or in pairs.

You will need lots of copies of a 1-100 grid (see resource attached to child sheet) and also coloured pencils: red, blue, purple and yellow.

1. Use a 1-100 grid.

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

2. Choose a start number. Colour it red.
3. Now choose either a multiple or a factor. Colour it blue.
4. Now choose either a multiple or a factor of that number. Colour it yellow.
5. Now choose either a factor or a multiple of that number. Colour it purple.
6. Now choose either a factor or a multiple of that number. Colour it red.
7. Keep going like this until you get blocked and can't go on.

Your aim is to colour more than 50 squares!

What makes a good starting number? Is it good to colour odd numbers? Or even ones?

What makes a good strategy for your first move? For a second move?

CHALLENGE: The record is 67 (held by Oliver at Bradworthy Primary Academy, Devon).

Can you beat it?

Aims:
- – To use trial and improvement effectively
- – To explore patterns in multiples and factors

Minimum number of calculations expected

50+

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   Your aim is to colour more than 50 squares!

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   Or even ones?
   What makes a good strategy for your first move? For a second move?

Challenge

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