

## Stop me if you can!

*Children create diagonal lines on a 1-100 grid by adding and subtracting 10 and 1, whilst trying to stop their partner doing the same.*

## Skills practised:

- Adding 10 and 1
- Subtracting 10 and 1

**Conjecture:** *It is possible to choose numbers to stop my partner making a long diagonal line!*

### What to do:

*Children play in pairs.*

*Each pair need a 1-100 grid (see resource with child sheet) and two different coloured crayons.*

1. Children take it in turns to play.
2. One player chooses a number on the grid and colours it.
3. This player adds 10, then adds 1 and colours the answer on the grid.  
They write the addition, e.g.  $23 + 10 + 1 = 34$ .
4. Next, they go back to their original number.
5. They subtract 10, subtract 1 and colour the answer.  
They write the subtraction, e.g.  $23 - 10 - 1 = 12$ .

1	2	3	4	5
11	12	13	14	15
21	22	23	24	25
31	32	33	34	35
41	42	43	44	45

6. Now the other player chooses a different number, and does the same, using a different coloured crayon. BUT no square can be coloured twice!
7. You have six goes each.

Each player's AIM is to create a long diagonal line in their colour. How long a line can they make?  
Can they stop their partner making a long line by choosing a number which gets in their way?

**HINT:** *If you only ever choose numbers to stop your partner, you will never make a long line of your own!*

**CHALLENGE:** *What number should you choose to start with in order make the longest diagonal line possible?*

### Aim:

- To plan ahead and think strategically

### Minimum number of calculations expected

12

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Play with a partner.

You will need a 1-100 grid between you.

1. You need a coloured crayon each in a different colour from your partner!
2. Take turns to play
3. Choose a number on the grid. Colour it. Add 10 then add 1 and colour the answer.
4. Go back to your original number. Subtract 10 and subtract 1 and colour the answer.
5. Now let your partner have a turn

YOUR AIM is to create a long diagonal line in your colour. How long a line can you make? Can you stop your partner making a long line by choosing a number which gets in their way?

**HINT:** If you only ever choose numbers to stop your partner, you will never make a long line of your own!

**Think about:**

What number should you choose to start with in order make the longest diagonal line possible?

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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