Thursday

Word problems/investigation

Maths Group A

Mr Riddoch will explain this to you!

IXL

Section G 14

Section I I 8– I I0

Calendar capers

1. Here is a month on a calendar. We can draw a 4 by 4 rectangle anywhere, as long as it is around 16 numbers. Look at the red rectangle below for an example.

Mon	Tues	Wed	Thur	Fri	Sat	Sun
	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			

2. We add the number in the top left corner to the number in the bottom right corner 7 + 31. We write the total, **38.**

3. Next we double it, i.e. 38 + 38. Write the answer, **76.**

4. Circle *any* number in the same rectangle, e.g. 16. Cross out all the numbers in the same row and column as your circled number.

Mon	Tues	Wed	Thur	Fri	Sat	Sun
	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			

5. Repeat this, circling another number, 22 - *not* one that is already crossed out – then cross out all the numbers in the same row and the same column as this circled number.

Mon	Tues	Wed	Thur	Fri	Sat	Sun
	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			

6. Repeat this process one more time.

Mon	Tues	Wed	Thur	Fri	Sat	Sun
	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			

7. Circle the last remaining number, 10.

8. Add the 4 circled numbers. 28 + 22 + 16 + 10. You could add two at a time to make it easier, e.g. 28 + 22 = 50. 16 + 10 = 26. 50 + 26 = **76.**

What do you notice about the answers in step 3 and 8? I wonder if this always happens? Let's investigate other months and choose other numbers to find out...

Calendar for Year 2020 (United Kingdom)

January

M	T	W	T	F	S	S
		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		

February

M	T	W	T	F	S	S
					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	

March

M	T	W	T	F	S	S
						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					

April

M	T	W	T	F	S	S
		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			

May

M	T	W	T	F	S	S
				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

June

M	T	W	T	F	S	S
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					

July

M	T	W	T	F	S	S
		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		

August

M	T	W	T	F	S	S
					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						

September

M	T	W	T	F	S	S
	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				

October

M	T	W	T	F	S	S
			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	

November

M	T	W	T	F	S	S
						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						

December

M	T	W	T	F	S	S
	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			

You will need:

Copies of a calendar (see resources for the Investigation)

- Draw a square around 4 numbers on a calendar, e.g.

JUNE

S	M	T	W	T	F	S
	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				

- Add the numbers in opposite corners, top left and bottom right, 8 and 16: 16 + 8 = 24

- Now add the numbers from the other two opposite corners, 9 and 15: 15 + 9 = 24.

- What do you notice?

- Try other squares to find out whether the same thing happens.

- Does this happen with other months?

S-t-r-e-t-c-h:

- Explore what happens with bigger squares, e.g. 3 by 3 and 4 by 4...

JUNE

S	M	T	W	T	F	S
	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				

JUNE

S	M	T	W	T	F	S
	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				