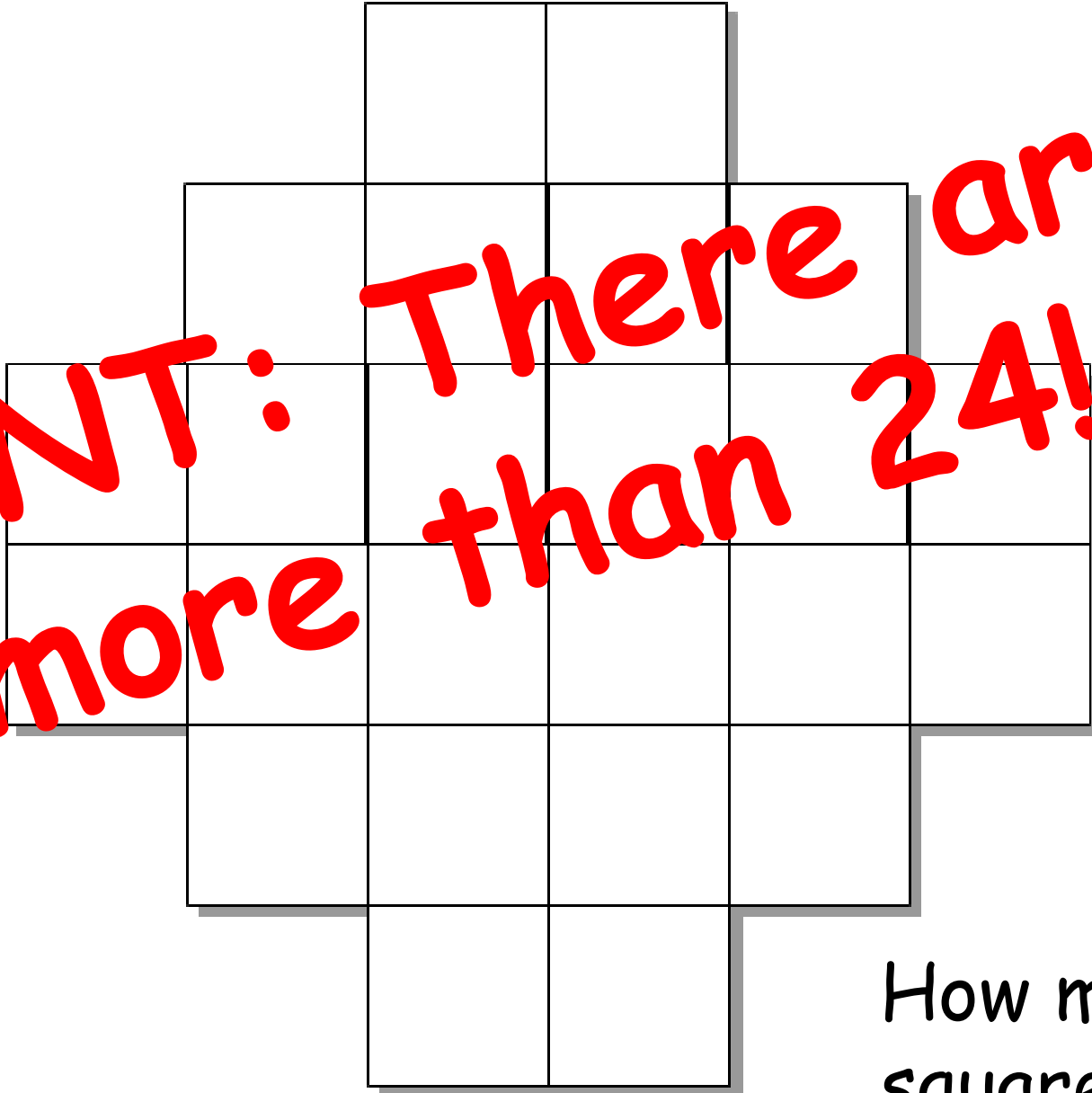How many squares?

HINT: There are more than 24!

How many squares?

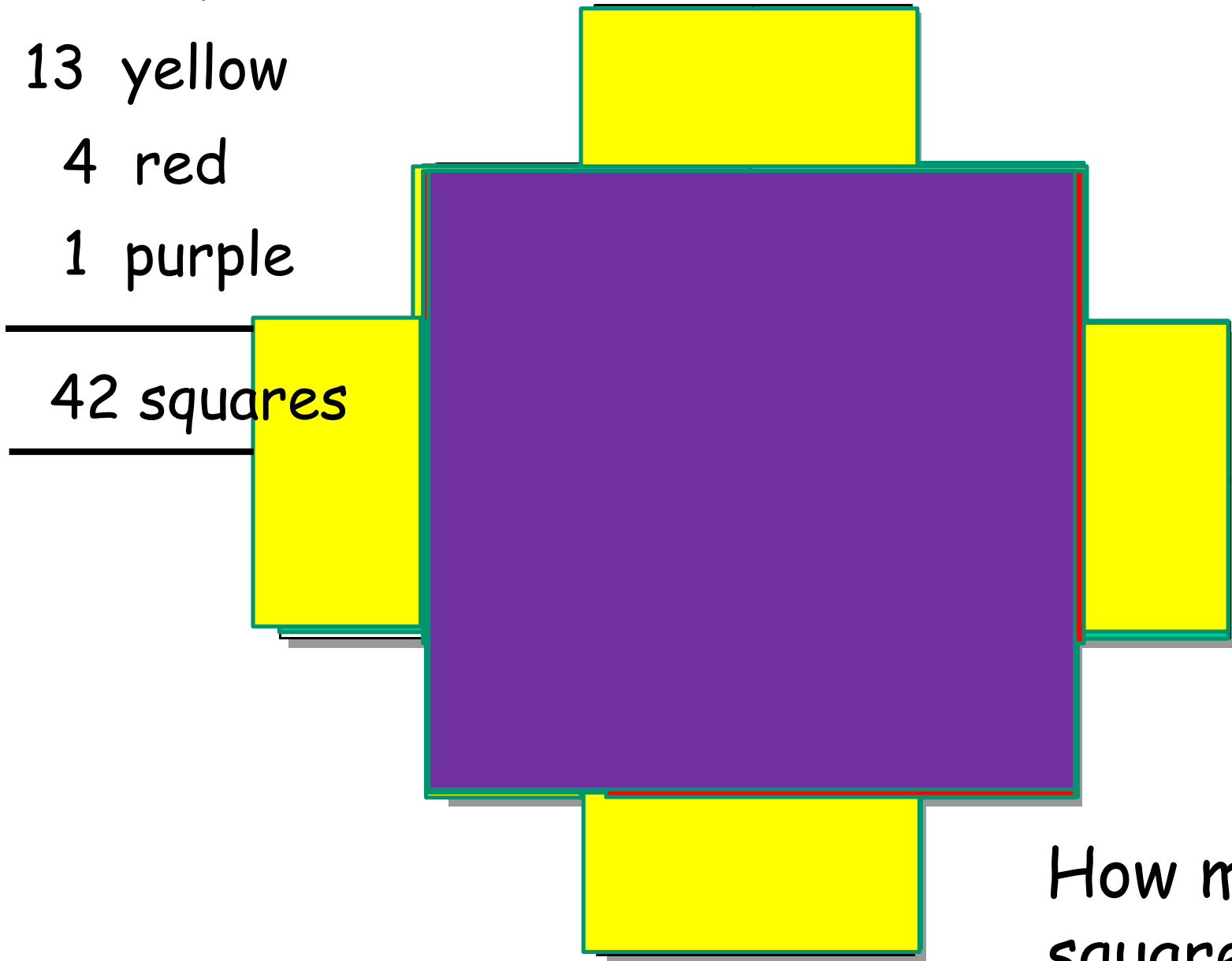24 blue

13 yellow

4 red

1 purple

_____

42 squares

How many
squares?

Square Numbers

WALT

Investigate Square Numbers

Key Words:

- multiples
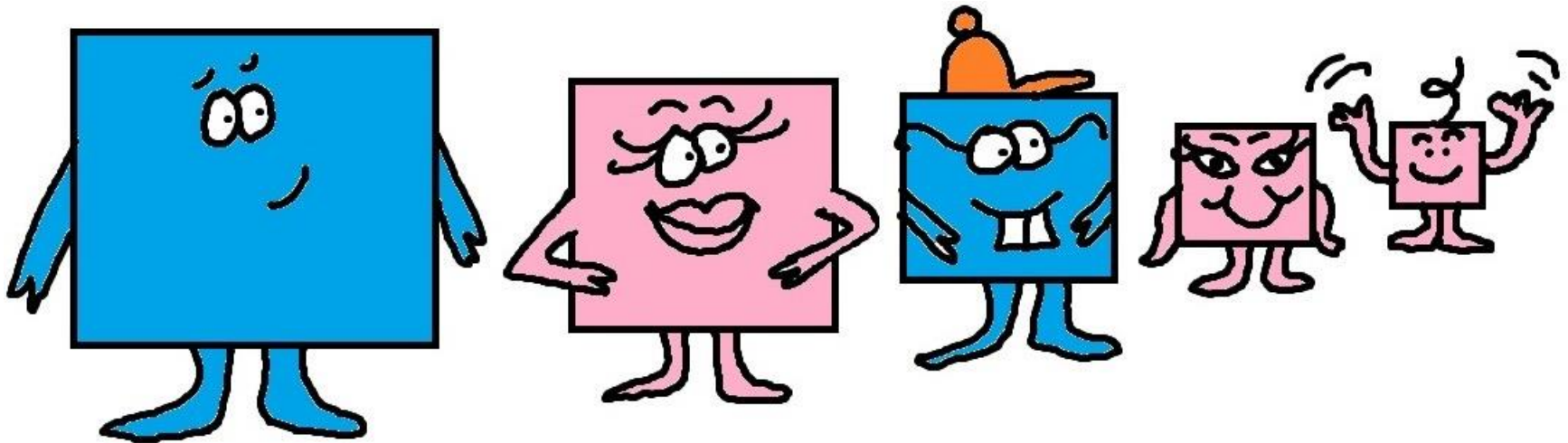- prime number
- cubes
- square roots
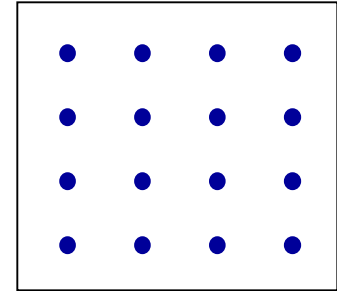- factor
- integer
- squares

Key Words:

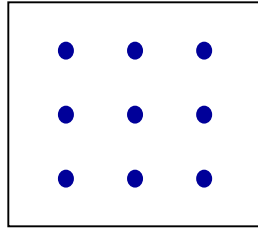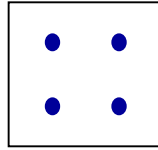Tell me any three of the key words!

What are square numbers?

1 4 9 16 25

These are called square numbers

WHAT IS A SQUARE NUMBER?

A square number is the number you get when you multiply an integer by itself.

For example: 3 X 3 = 9, so 9 is a square number.

1	2	3
4	5	6
7	8	9

They're called square numbers because they can be made into square shapes.

How do we work out square numbers?

1^2 1×1 1

2^2 2×2 4

3^2 3×3 9

4^2 4×4 16

5^2 5×5 25

6^2 6×6 36

How do we work out square numbers?

7^2 7×7 49

8^2 8×8 64

9^2 9×9 81

10^2 10×10 100

11^2 11×11 121

12^2 12×12 144

Identify the square numbers, is there a pattern?

	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

What is the pattern?

	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

What are the green numbers?
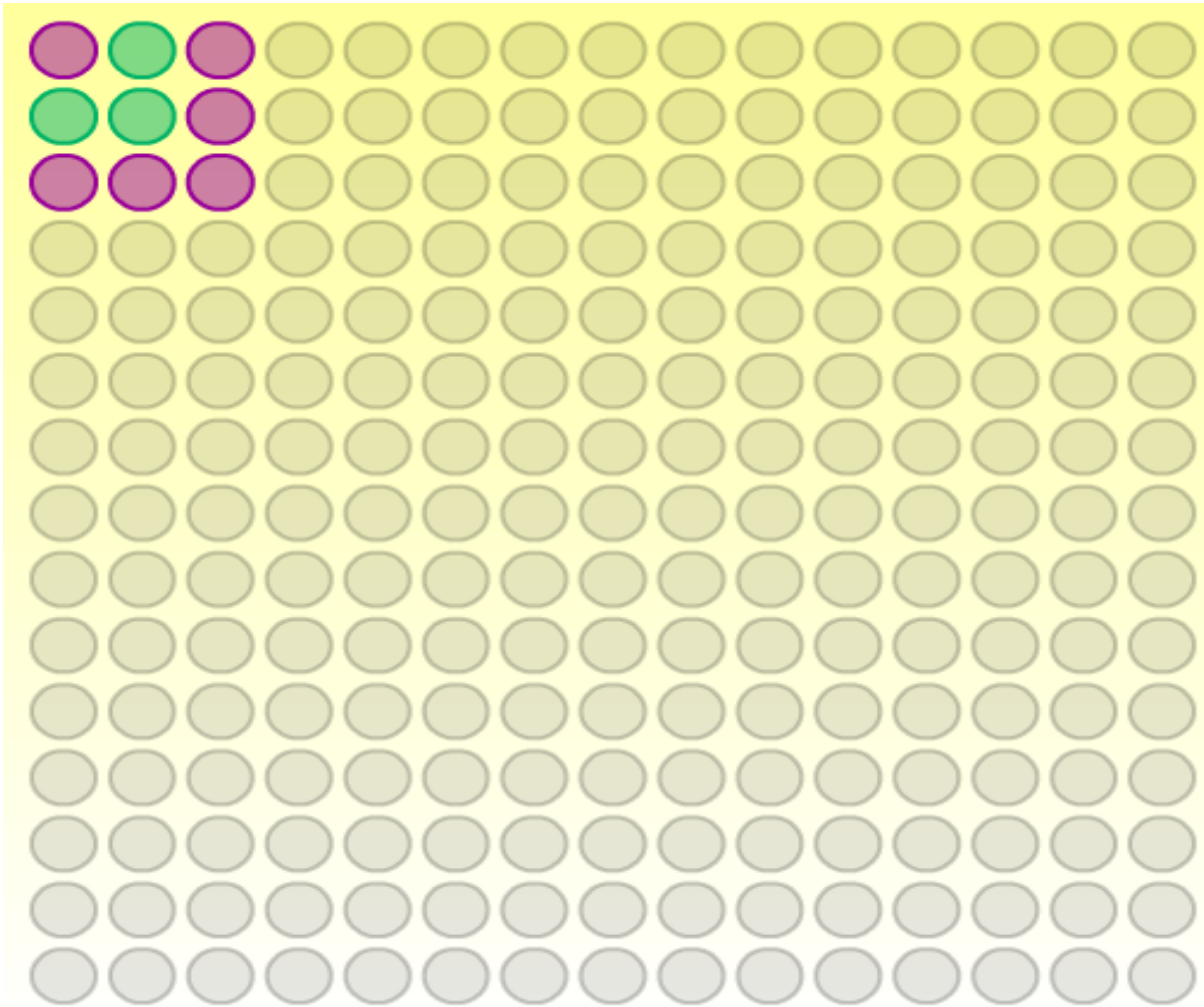
Is there a connection to the square numbers?
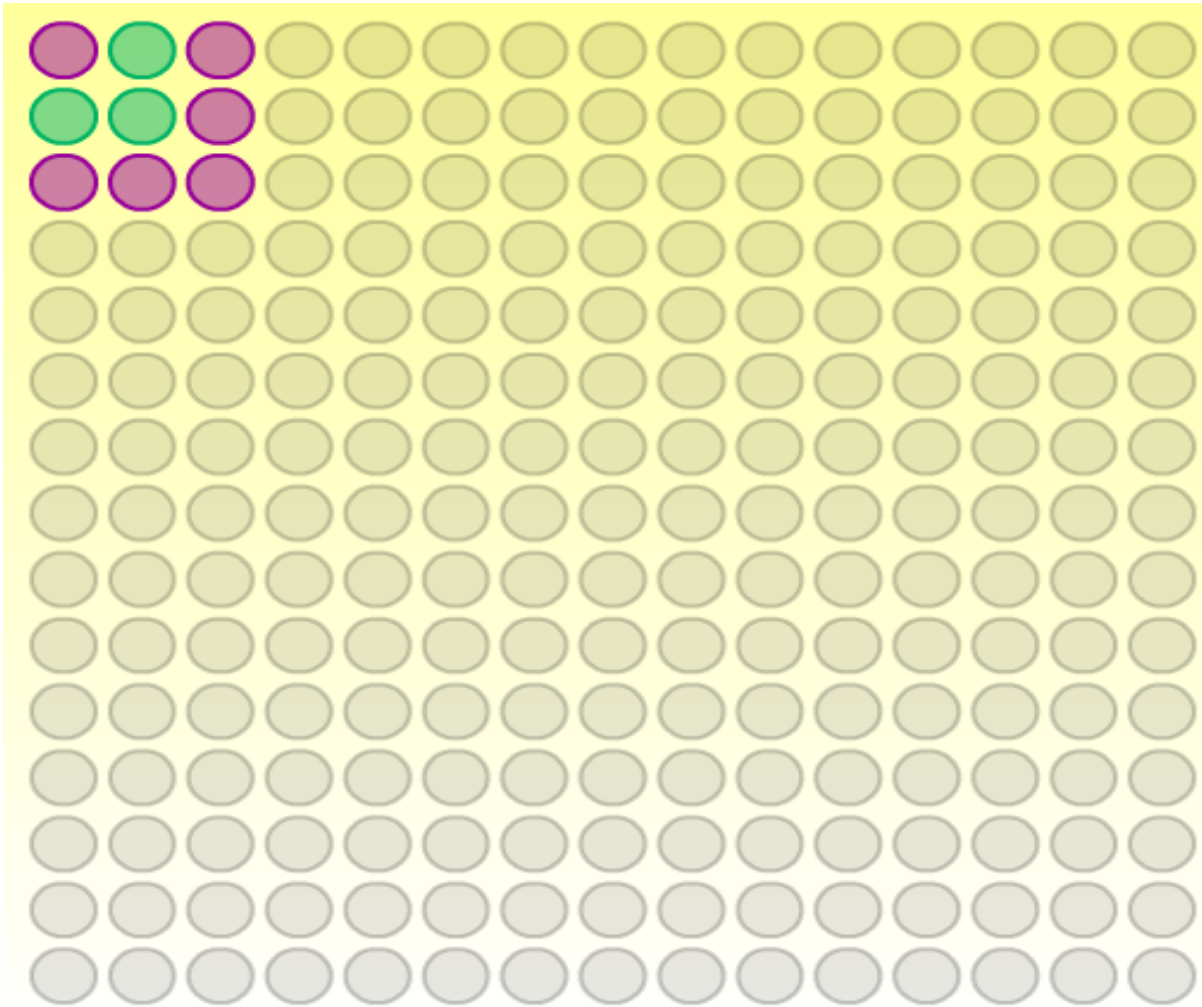
Create square numbers by following the pattern.
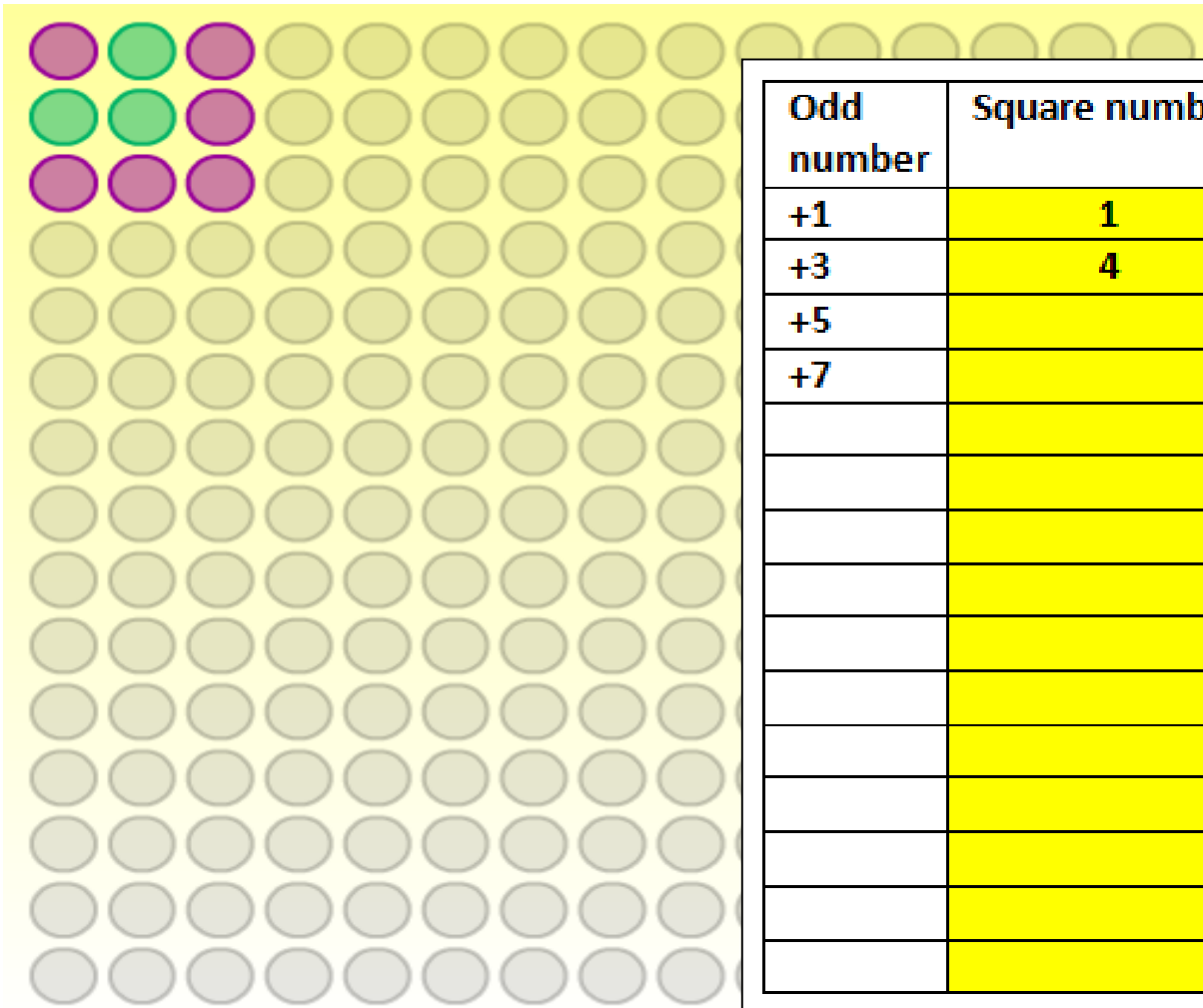
Use 2 different colours to make the square bigger
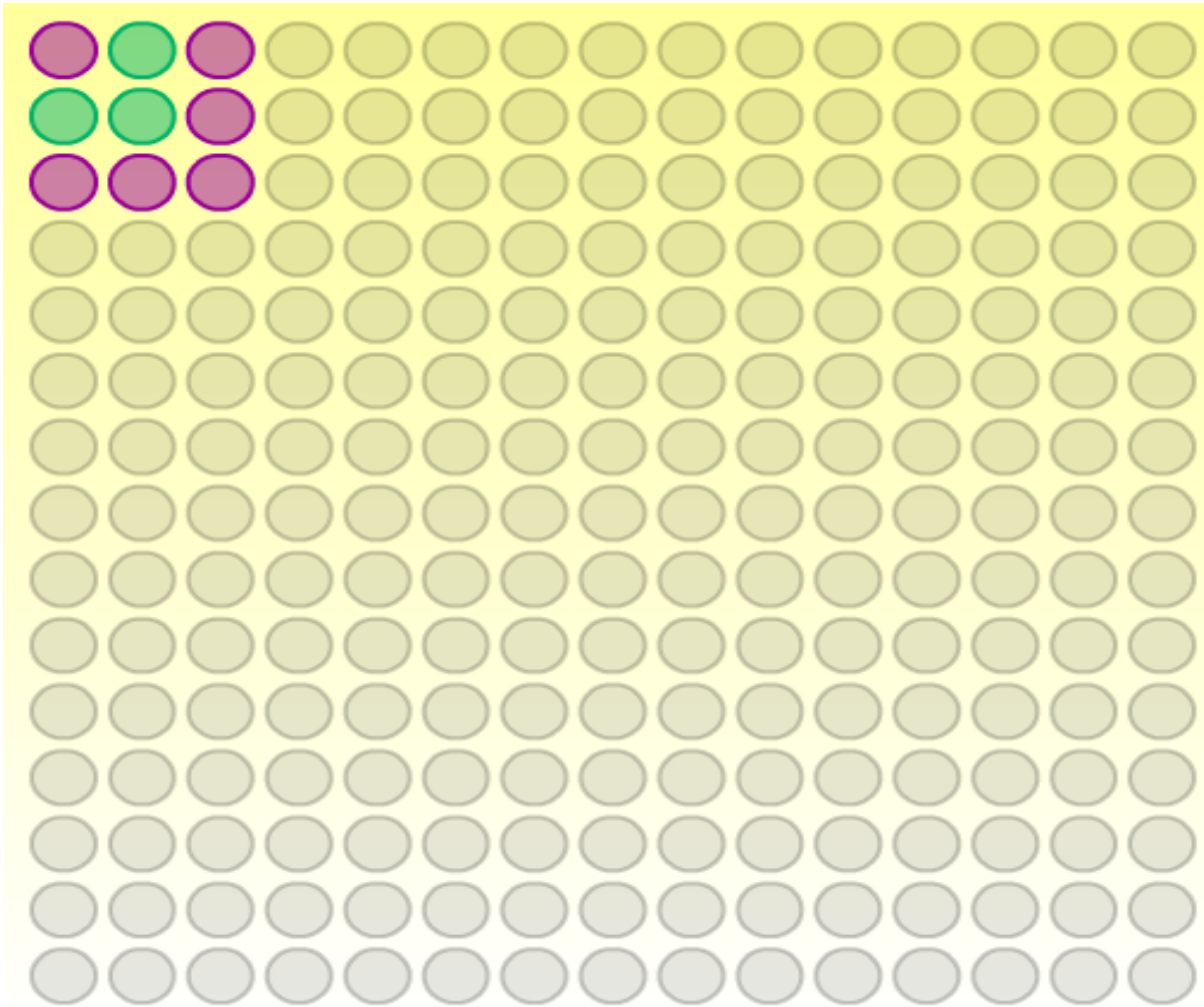
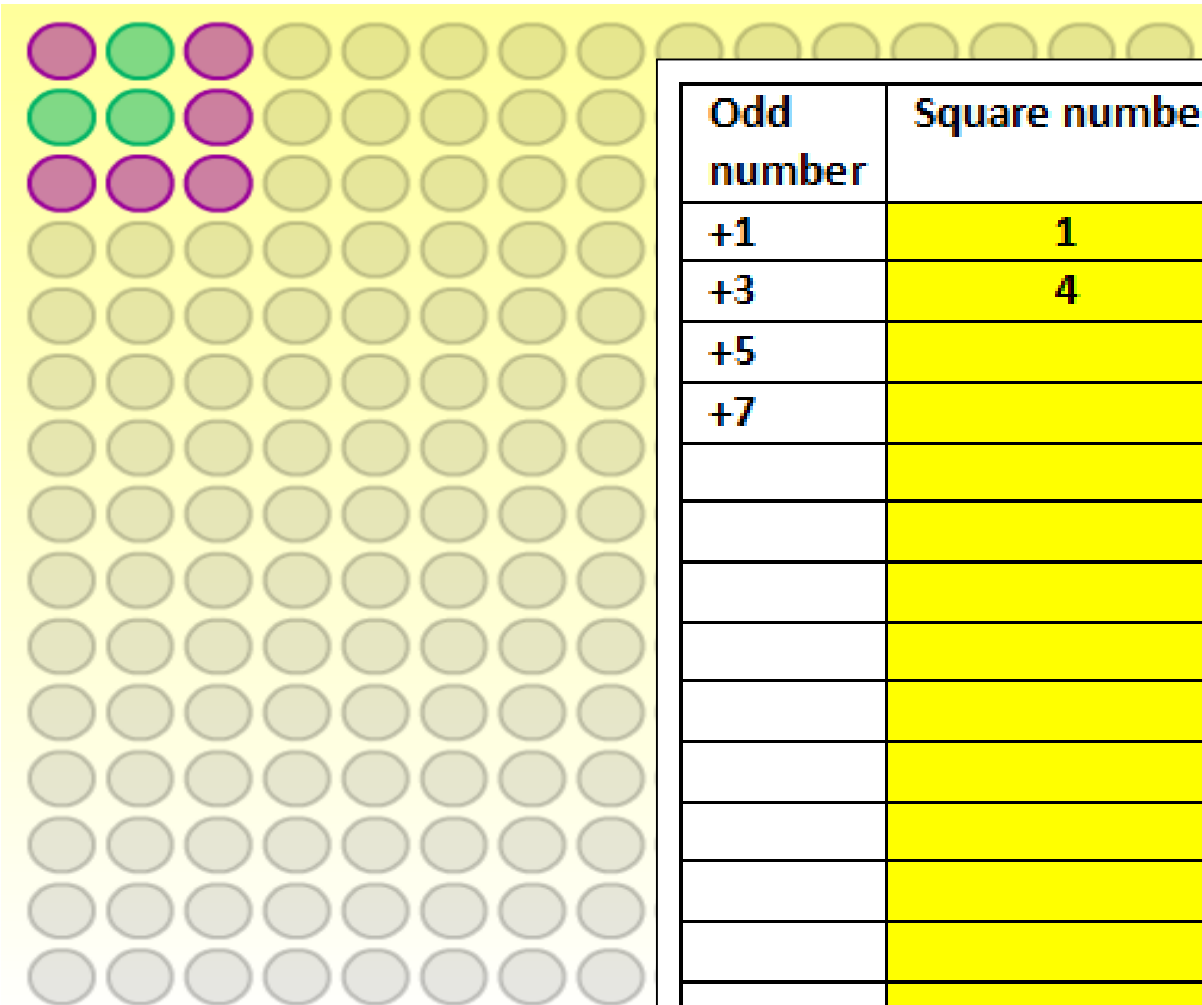The amount of dots in each square is a square number:

1 , 4 , 9 …

But how many new dots are you adding on each time?

add 3 ,   add 5 , add 7 …

Odd number	Square number	Pattern
+1	1	1X1=1
+3	4	2x2=4
+5		
+7		

It looks as though you're adding 'odd numbers' to make the next square number!

Odd number	Square number	Pattern
+1	1	1X1=1
+3	4	2x2=4
+5		
+7		

Complete the table

Challenge: can you find 2 square numbers that add together to make another square number?

-
-
-

Challenge: can you find 3 square numbers that add together to make another square number?

-
-
-

2 square numbers that add to make a square number

3

nu

-

-

- ...00 = 441