Coodanup CC

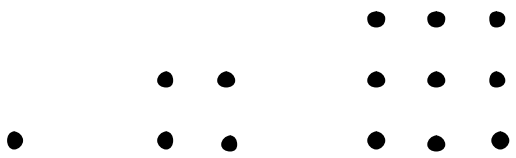
Workcard

Number

N64w1

Strand: Number **Substrand: Understand Operations**

We can use dots to make patterns.



Continue the pattern by drawing two more shapes.
The number of dots for each follow the pattern shown below:

1 , 4 , 9, _ , _ , _

Complete the next 3 numbers in the sequence.
Complete the table.

Shape No.	1	2	3	4	5		n
No. Dots	1	4	9				

This pattern does not have a constant first difference pattern. It goes up by 3, then 5, then 7 etc. If we subtract these numbers again, then the number is 2. If two difference patterns are needed to get a constant number, then the rule is of the form $n \times n = n^2$. That is, $1 \times 1 = 1$ and $2 \times 2 = 4$ etc.
Find a rule for the following.

Exercises :

1 Complete the table.

Shape No.	1	2	3	4	5		n
No. Dots	0	1	4	9			

2 Complete the table.

Shape No.	1	2	3	4	5		n
No. Dots	2	8	18	32			

3 Complete the table.

Shape No.	1	2	3	4	5		n
No. Dots	2	5	10	17			

4 Complete the table.

Shape No.	1	2	3	4	5		n
No. Dots	3	12	27	48			

5 Complete the table.

Shape No.	1	2	3	4	5		n
No. Dots	4	7	12	19			

6 Complete the table.

Shape No.	1	2	3	4	5		n
No. Dots	9	16	25	36			

7 Complete the table.

Shape No.	1	2	3	4	5		n
No. Dots	4	16	36	64			

8 Complete the table.

Shape No.	1	2	3	4	5		n
No. Dots	-2	1	6	13			

9 Complete the table.

Shape No.	1	2	3	4	5		n
No. Dots	6	9	14	21			

10 Complete the table.

Shape No.	1	2	3	4	5		n
No. Dots	1	7	17	31			

These are mixed patterns, see if you can write a rule.

1 Complete the table.

Shape No.	1	2	3	4	5		n
No. Dots	8	14	20				

2 Complete the table.

Shape No.	1	2	3	4	5		n
No. Dots	6	14	26				

3 Complete the table.

Shape No.	1	2	3	4	5		n
No. Dots	98	86	74				

4 Complete the table.

Shape No.	1	2	3	4	5		n
No. Dots	4	22	40				

5 Complete the table.

Shape No.	1	2	3	4	5		n
No. Dots	12	24	48				

6 Complete the table.

Shape No.	1	2	3	4	5		n
No. Dots	5	20	45				

Draw 5 of your own patterns using dots. Along with each pattern write down a table and find the rule.