

Square Numbers

FOR TEACHERS

Content: Square number patterns.

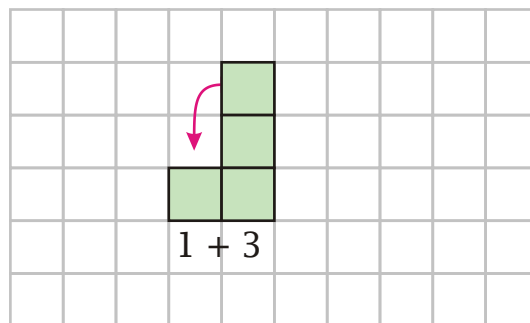
Materials required: Square cut-outs (36).

Learning outcome: Children learn that the sum of odd numbers, starting from 1 is a square of the number of odd numbers added.

ACTIVITY

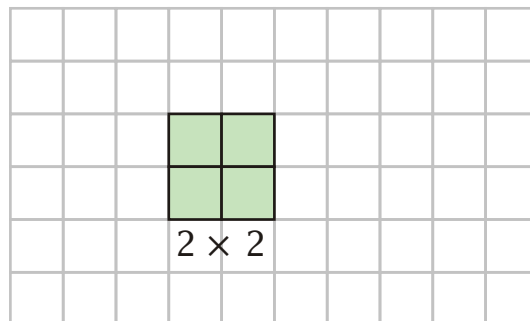
A. To build a square.

- Build two columns with the square cut-outs with the first two odd numbers starting from 1 as shown in Fig 1.

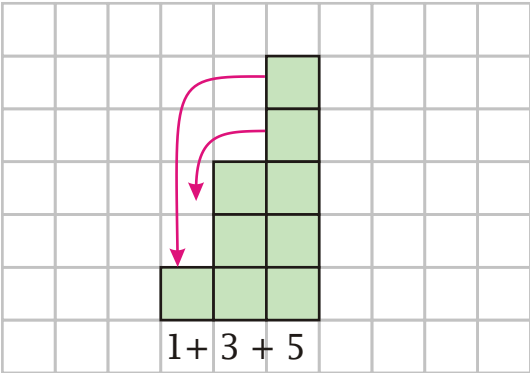


- Now rearrange the cut-outs to make a square.

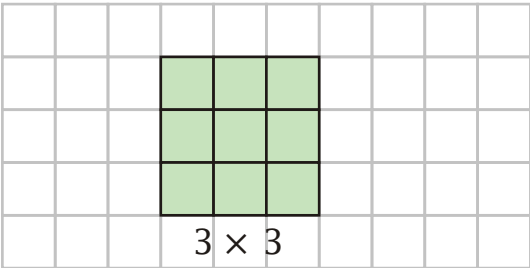
Does your arrangement look like this?



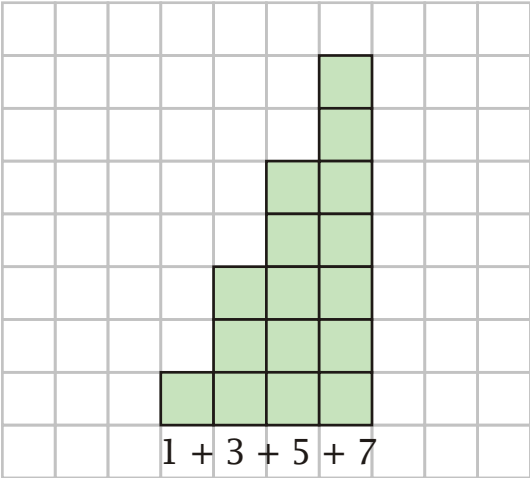
- Build 3 columns of square cut-outs with the first three odd numbers starting from 1.



- Now rearrange the cut-outs to make a square. Does your arrangement look like this?



- Find $1 + 3 + 5 + 7$



- Find $1 + 3 + 5 + 7 + 9$ by using the cut-outs.

C. Can you now find the following sums without using the cut-outs?

1. $1 + 3 + 5 + 7 + 9 + 11 + 13$.

2. $1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 + 21$.

3. The first 100 odd numbers.

For teachers: Let children discover the rule themselves.