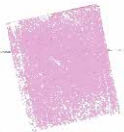
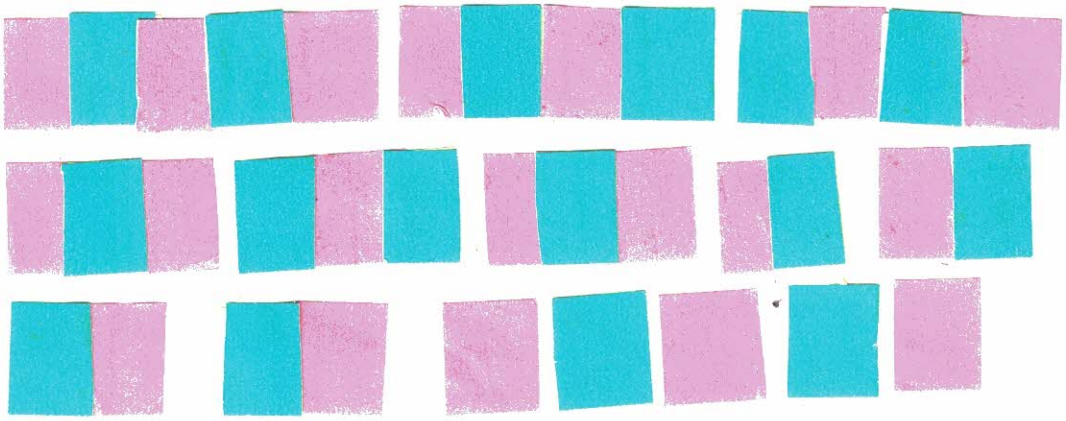
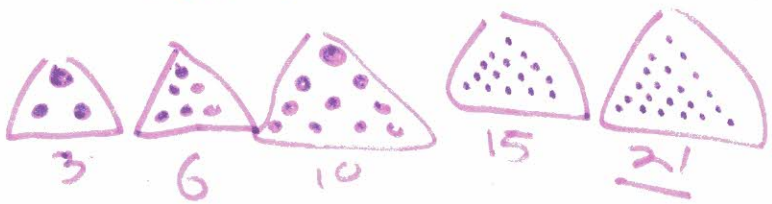
Ong Ci Hui Minh Ngoc P4 KongHwa School (Singapore)

Sticks Number	Arrangement of rectangles	No. of rectangles
1		1
2		3
3		6
4		10
5		15
6	I predict that the next number is 21.	

These numbers are all TRIANGULAR NUMBERS!



2 $1+2=3$

3 $1+2+3=6$

4 $1+2+3+4=10$

5 $1+2+3+4+5=15$

6 $1+2+3+4+5+6=21$

n $1+2+3+4\ldots+(n-3)+(n-2)+(n-1)+n$

1	2	3	4
n	$(n-1)$	$(n-2)$	$(n-3)$
$(n+1)$	$(n+1)$	$(n+1)$	$(n+1)$

These are $n \div 2$ items

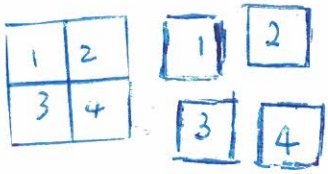
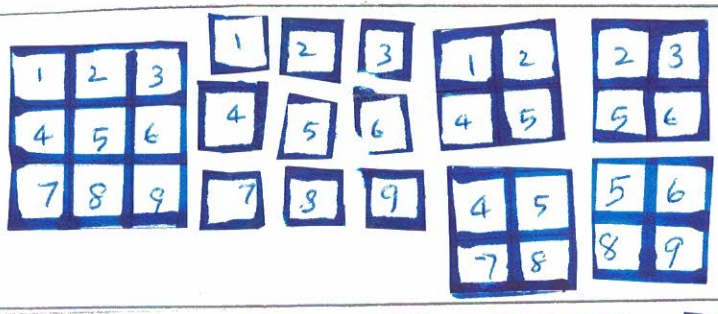
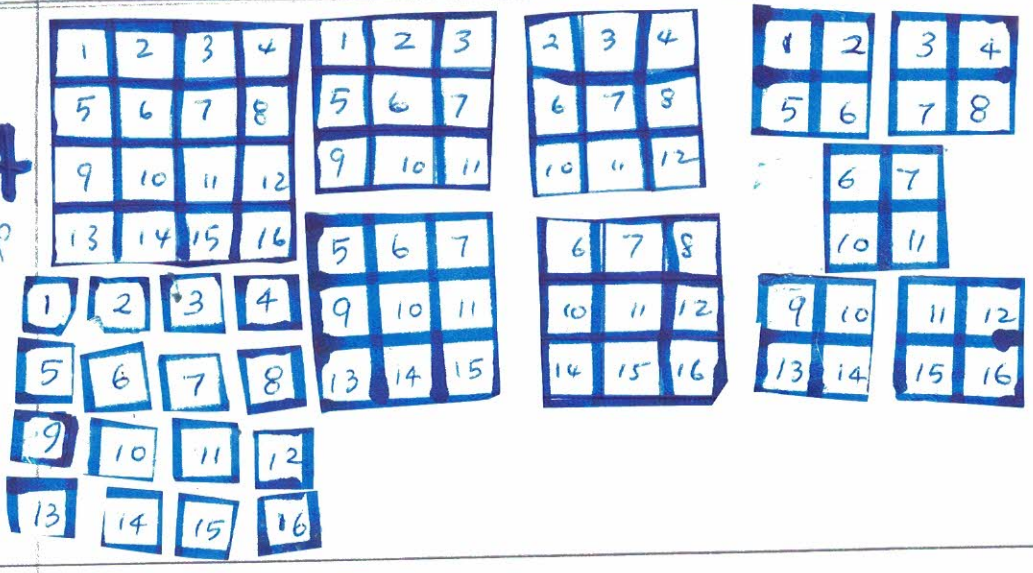
The sum of the series is (triangle number) equal to $(n+1) \times (n \div 2)$

$$=(n+1) \times \frac{n}{2}$$

$n=100$ triangular no is $(100+1) \times (\frac{100}{2})$

$n=1000$ triangular no is $(1000+1) \times (\frac{1000}{2}) = 1001 \times 500 = 500500$

Continue: explore further: squares

square types	Descriptions	No. of squares
1 square		1
2×2 square		1+4
3×3 Square		1+4+9
4×4 Square		1+4+9+16
5×5 square	I predict 5×5 square has $1+4+9+16+5^2$ squares	
n×n square	There are $1+2^2+3^2+4^2+5^2 \ldots +n^2$ squares	

Ong Ci Hui Min, Jaoc ??

Kong Hwa School, Singapore