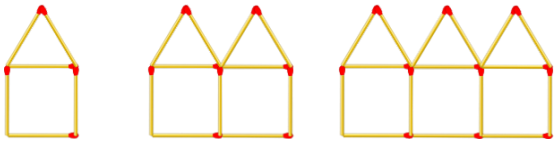
Steps to Success

Lockdown	
Date	**03.02.21**
Subject/s	**Maths**
Learning Objective	To create patterns and write the rule

		SA	TA
Success Criteria	I can create an increasing pattern with objects		
	I can discuss what I am adding each time		
	I can write the rule using the pattern number and what it is increasing by		
Support	Independent Adult Support ( ) Group Work		

Pre-task

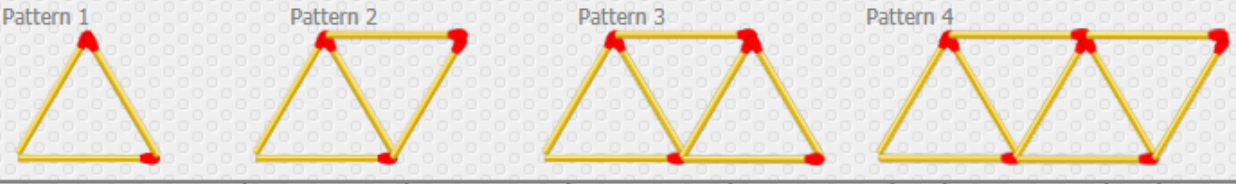


Describe what is happening in the pattern.

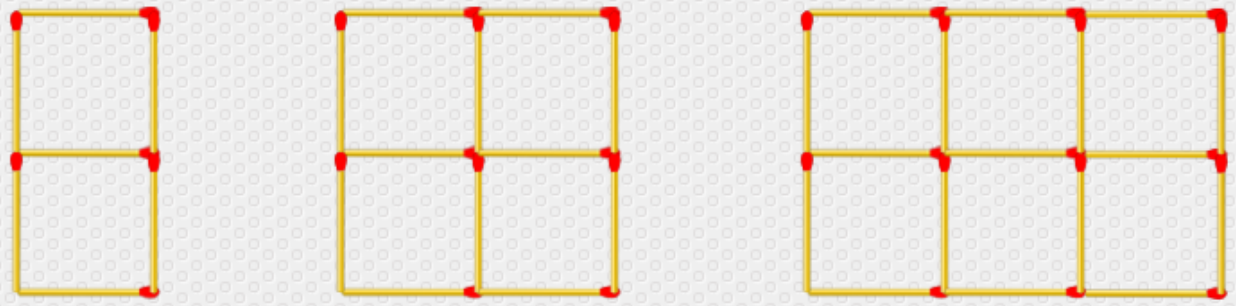
How many match sticks is the next pattern going to have?

What is the rule?

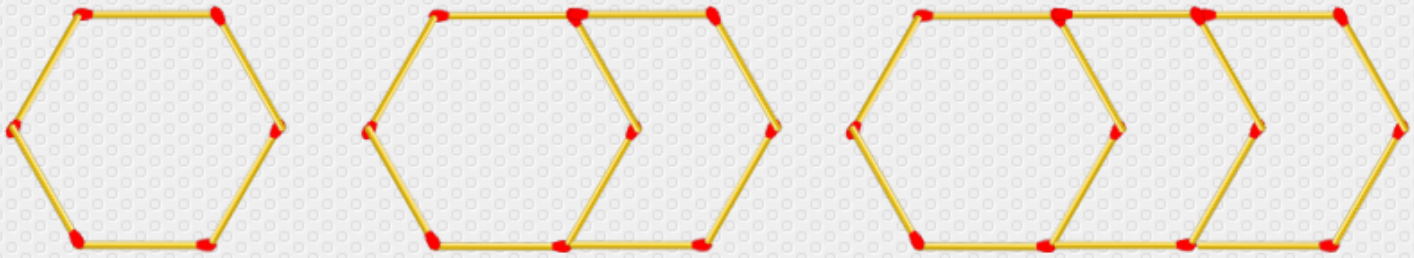
Fluency



Pattern Number:	1	2	3	4	...	n	...	82
Number of Matchsticks:					...		...	

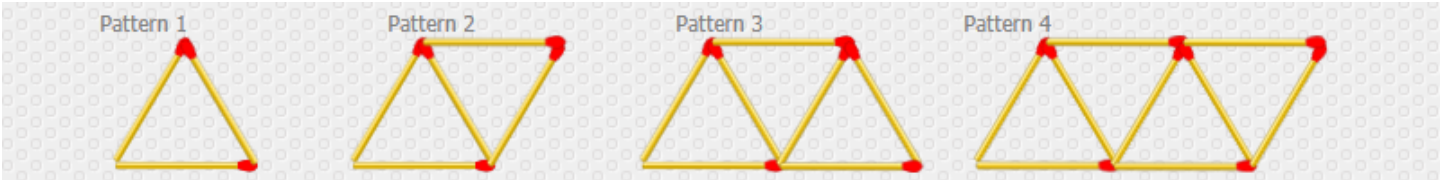


Pattern Number:	1	2	3	4	...	n	...	108
Number of Matchsticks:					...		...	

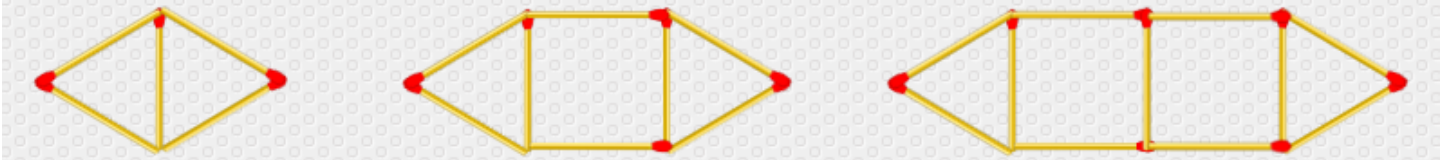


Pattern Number:	1	2	3	4	...	n	...	145
Number of Matchsticks:					...		...	

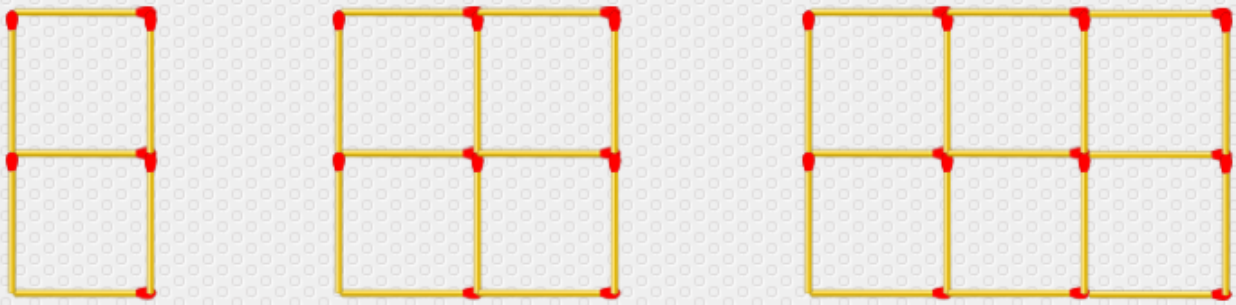
Answers



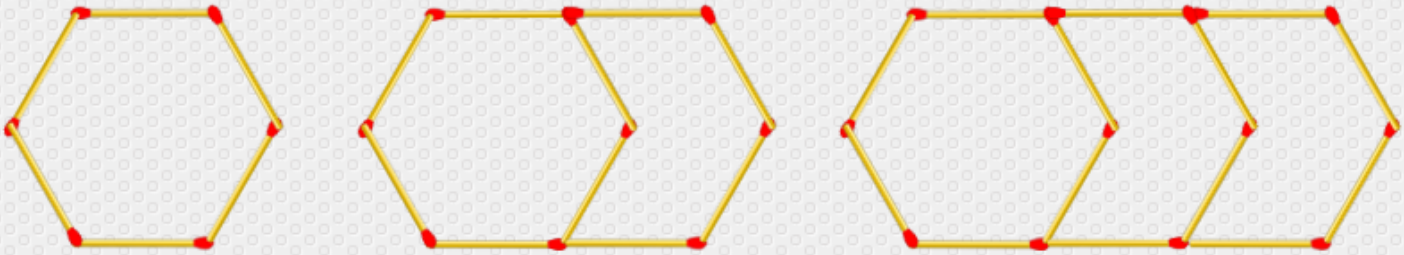
Pattern Number:	1	2	3	4	...	n	...	82
Number of Matchsticks:	3 ✓	5 ✓	7 ✓	9 ✓	...	2n+1 ✓	...	165 ✓



Pattern Number:	1	2	3	4	...	n	...	139
Number of Matchsticks:	5 ✓	8 ✓	11 ✓	14 ✓	...	3n+2 ✓	...	419 ✓



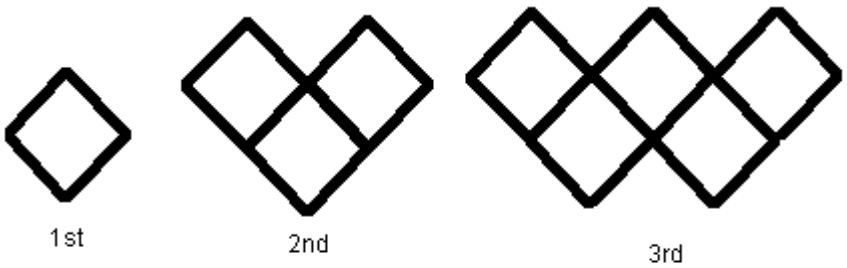
Pattern Number:	1	2	3	4	...	n	...	108
Number of Matchsticks:	7 ✓	12 ✓	17 ✓	22 ✓	...	5n+2 ✓	...	542 ✓



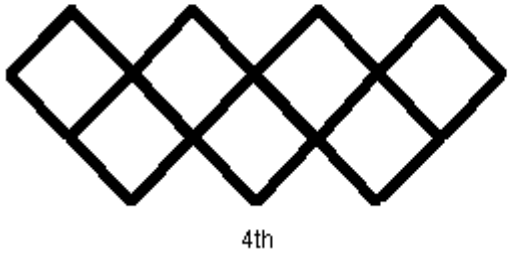
Pattern Number:	1	2	3	4	...	n	...	145
Number of Matchsticks:	6 ✓	10 ✓	14 ✓	18 ✓	...	4n+2 ✓	...	582 ✓

Problem Solving and Reasoning

Prove it!



Explain it!

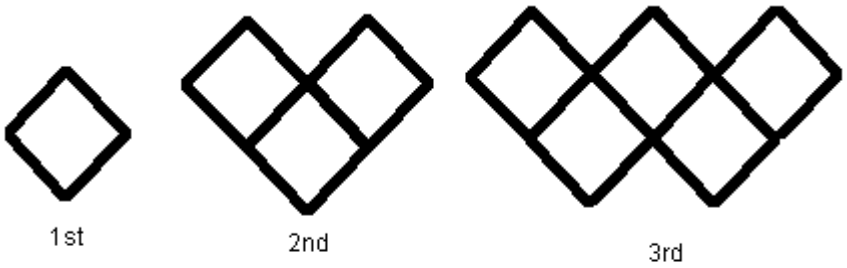


Jack says the rule for this pattern is n+6. Correct or incorrect? Why?

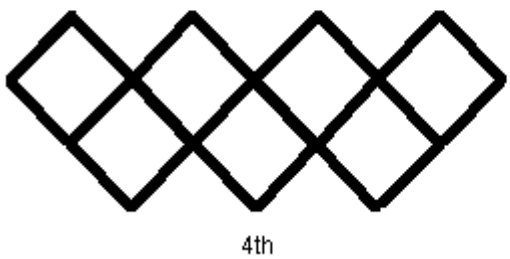
Prove it!

Problem Solving and Reasoning

Prove it!



Explain it!



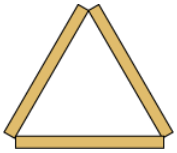
Jack says the rule for this pattern is n+6. Correct or incorrect? Why?

Prove it!

Further Challenge

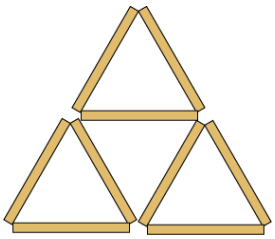
I was exploring a puzzle in which headless match sticks had to be moved to make a different number of triangles.

I made one small triangle



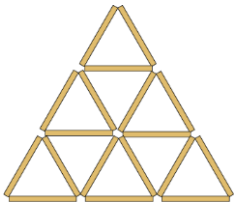
3 matches

I made it into 4 small triangles by adding 6 matches.



9 matches

I added another row and counted the number of small triangles and counted the matches.



I made a table of my results and continued adding rows. I found many patterns.

Have a go and see what patterns you can find.

Find a good way to record your results. See if you can predict the numbers for rows of triangles you have not drawn.