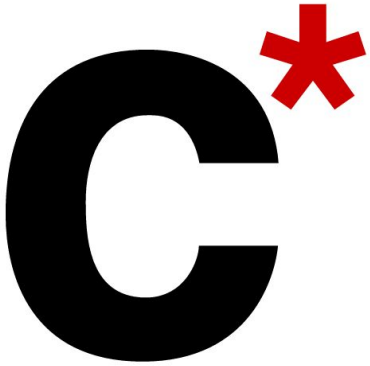
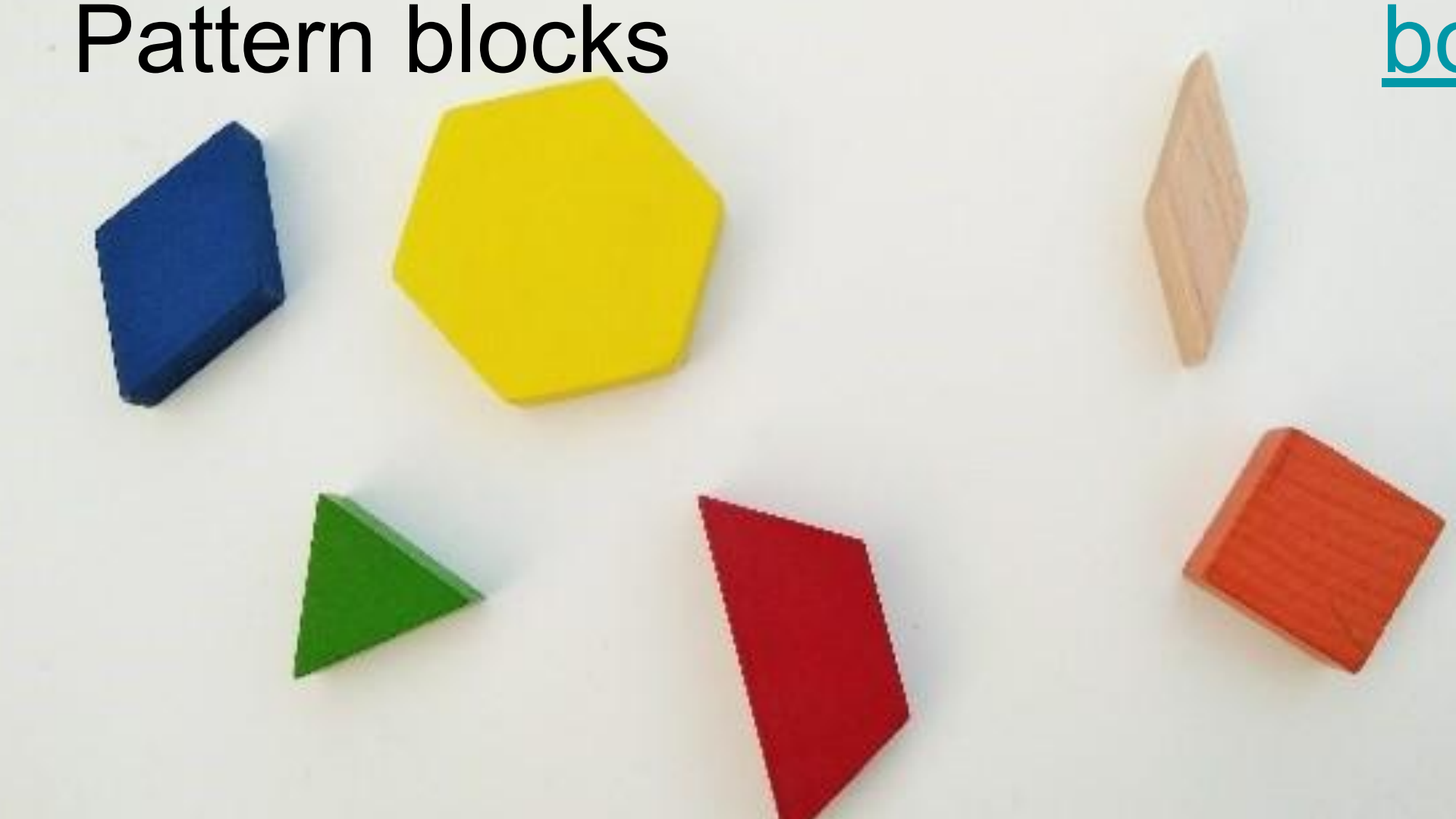


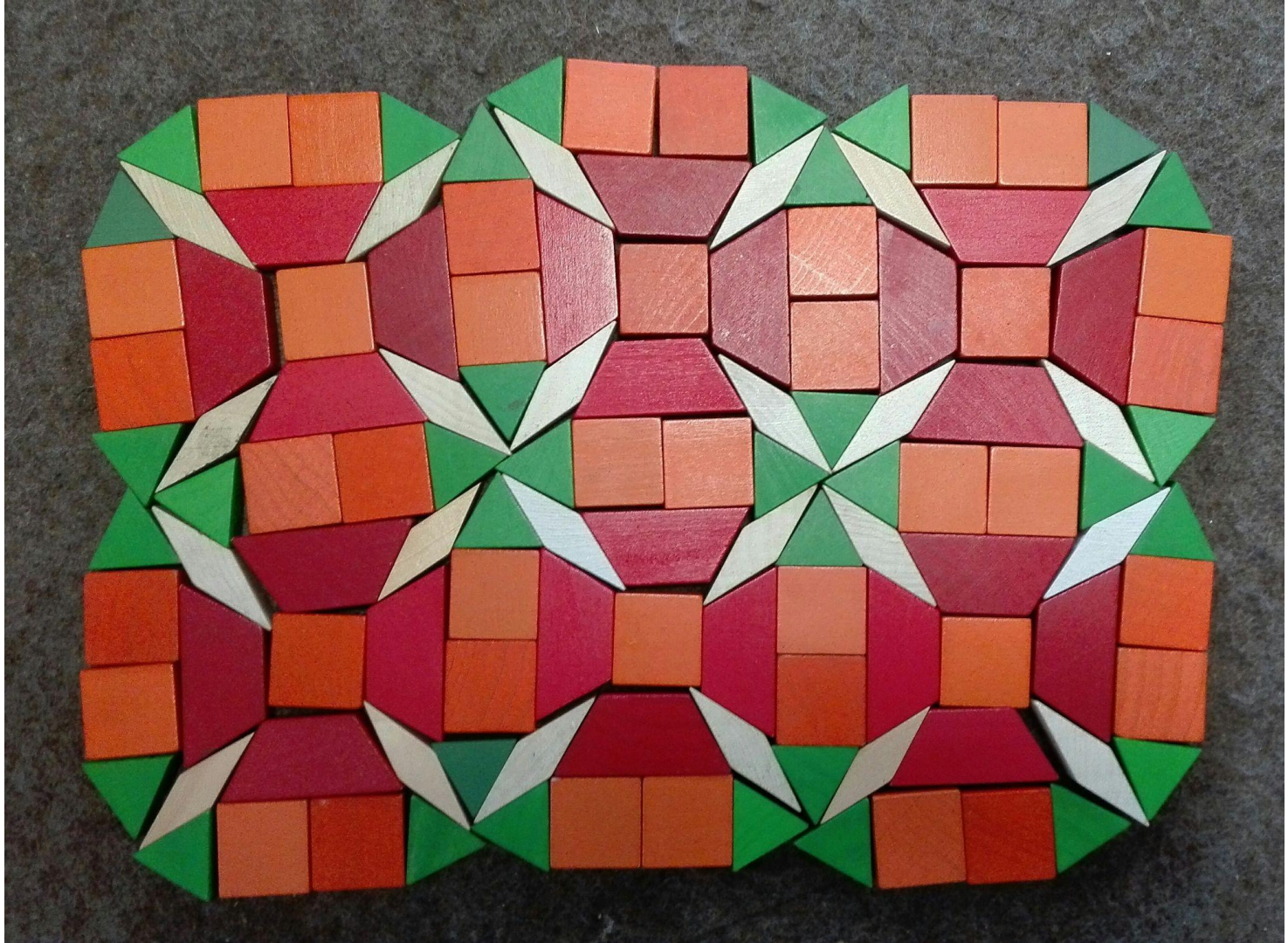
Maths Materials for the Maths Classroom
Wednesday 10th March 2021 6pm
Simon Gregg

Teacher and STEAM coach at the International School of Toulouse, France

Twitter: @Simon_Gregg
Blog: followinglearning.blogspot.com

Pattern blocks

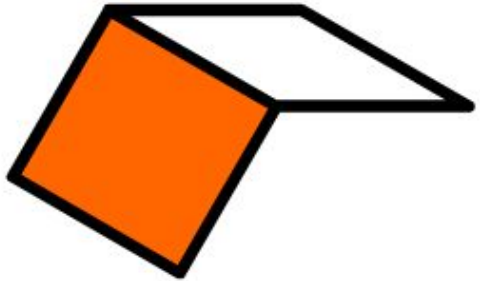


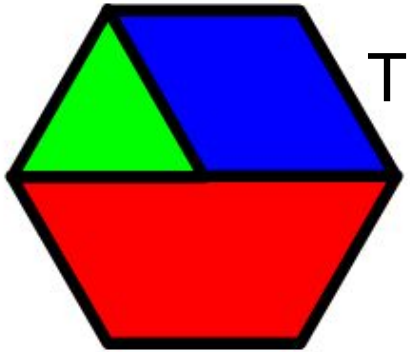


Make a hexagon with 2 pattern blocks

Virtual pattern blocks

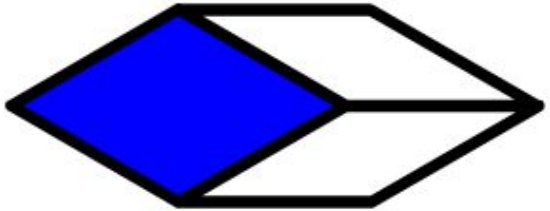
Top left

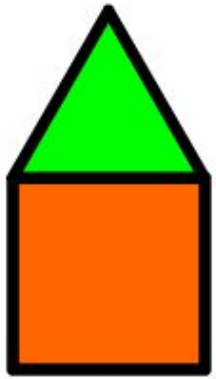




TR

BL

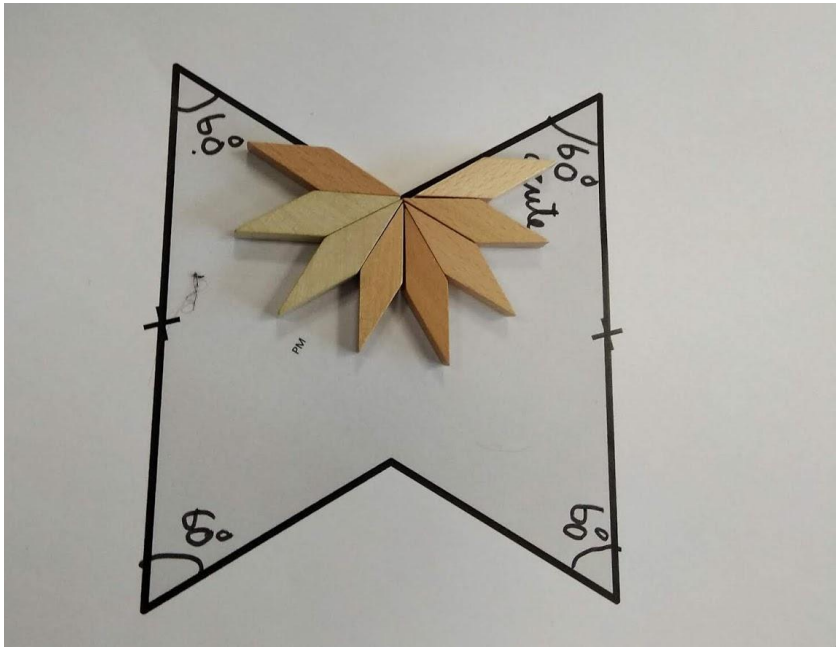


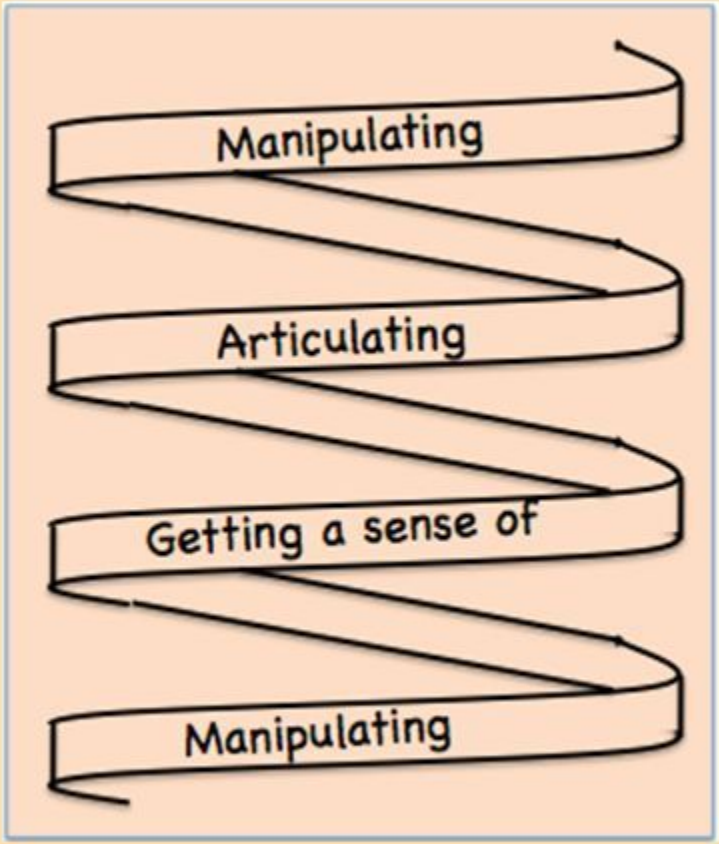


Bottom right

Pattern blocks - make a hexagon with 2 blocks

http://followinglearning.blogspot.com/2018/11/hexagons.html



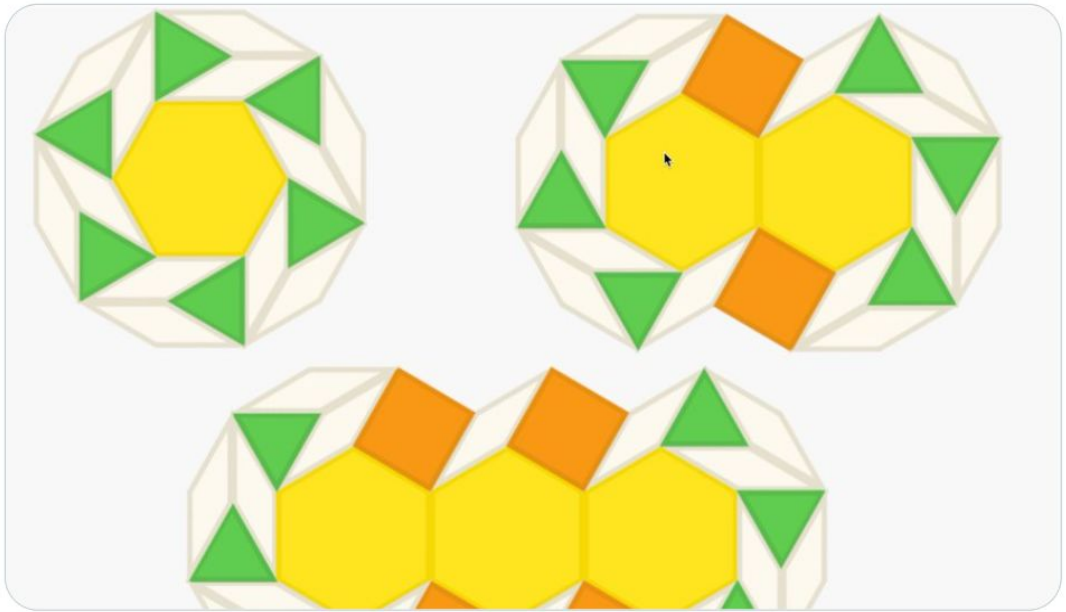


- ⇒ Manipulating familiar confidence inspiring objects (specialising, particularising)
- ⇒ In order to get a sense of underlying structural relationships (modelling, axiomatising, justifying, proving …)
- ⇒ Bringing this experience to articulation, which over time, becomes more succinct and useable (manipulable)

Jim Noble, my secondary colleague, tweeted:

Jim Noble @teachmaths · May 14, 2020

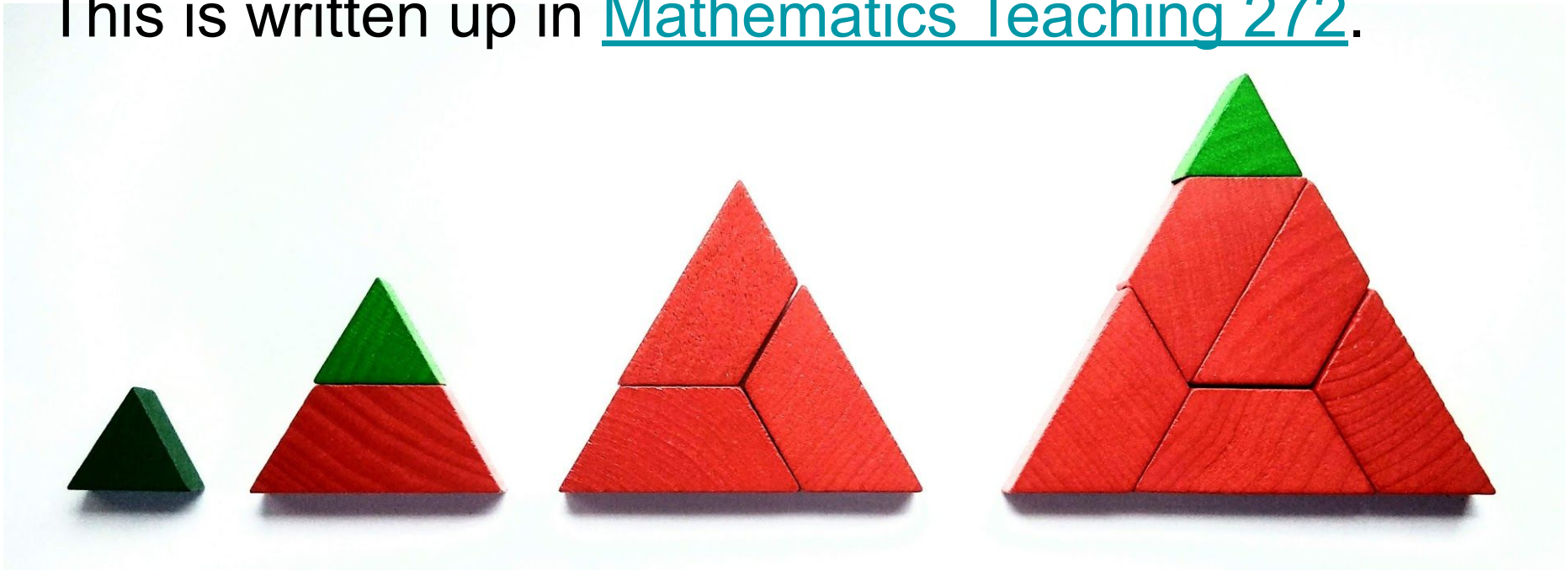
Sooo much to think about when making sequences with #patternblocks @Simon_Gregg has been telling me for ages, but I just needed to take the time to play and let students play...



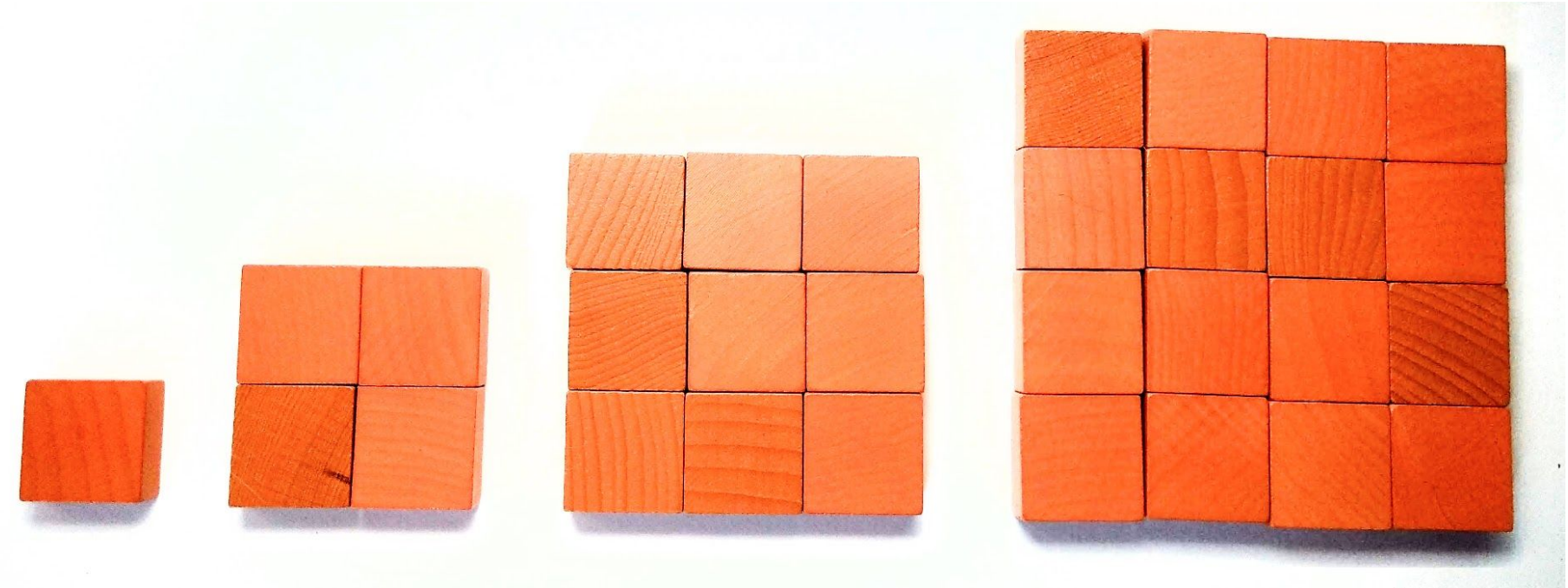
4 8 30

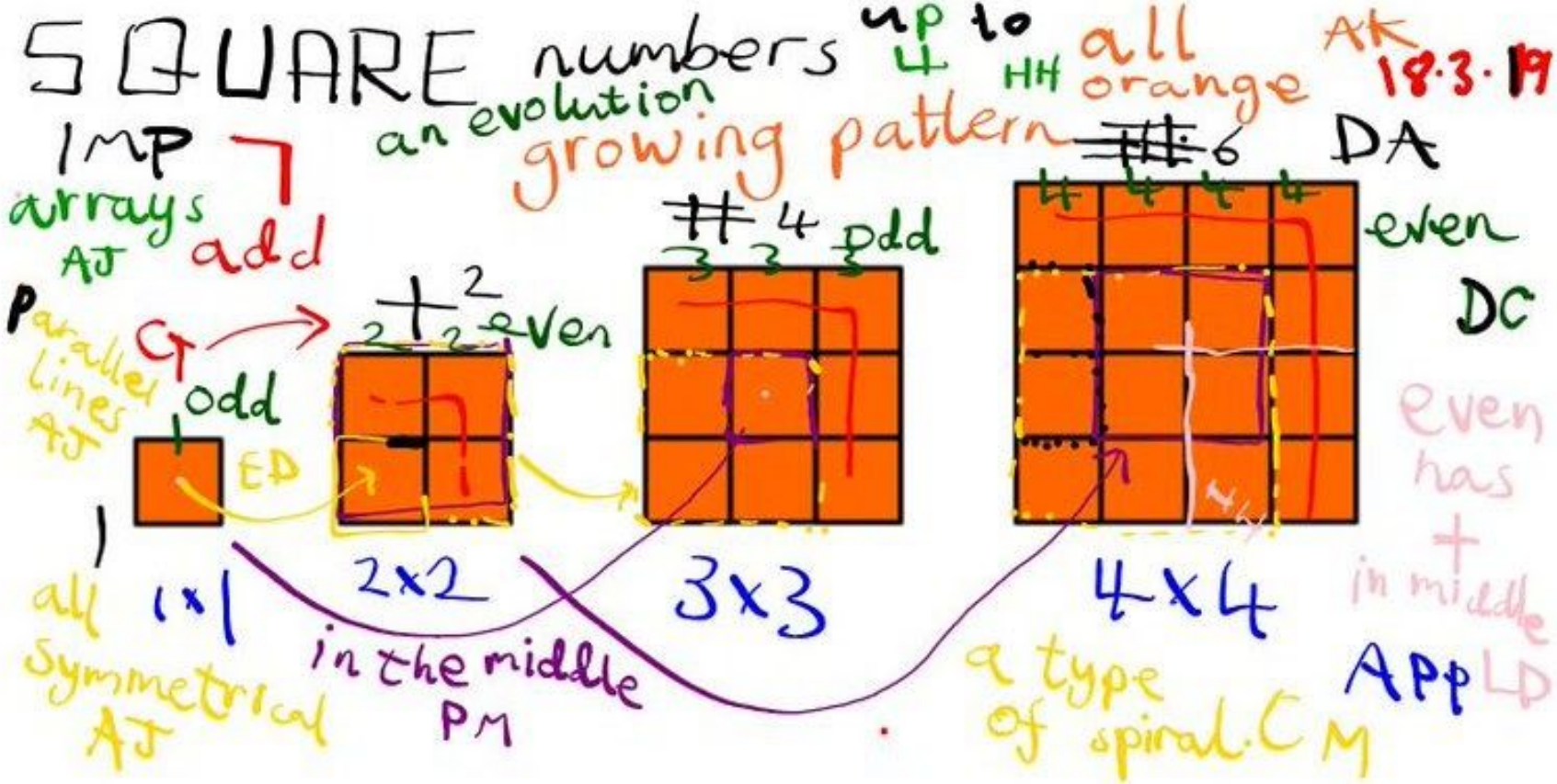
A pattern with pattern blocks

This is written up in Mathematics Teaching 272.

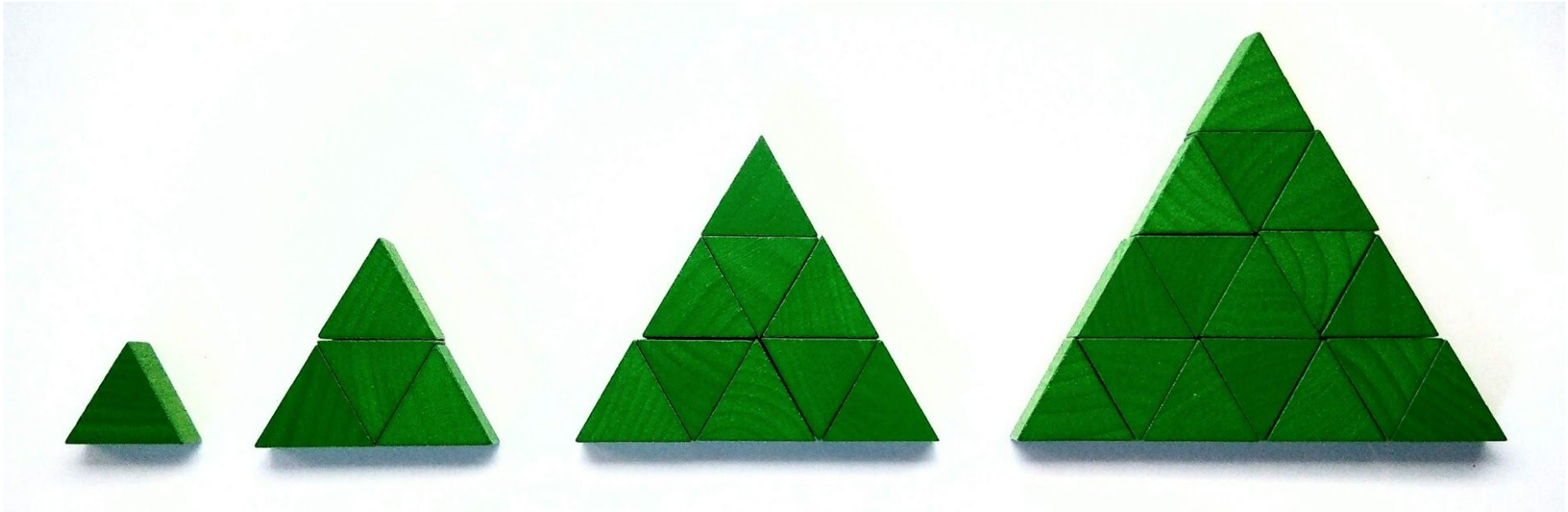


Square numbers

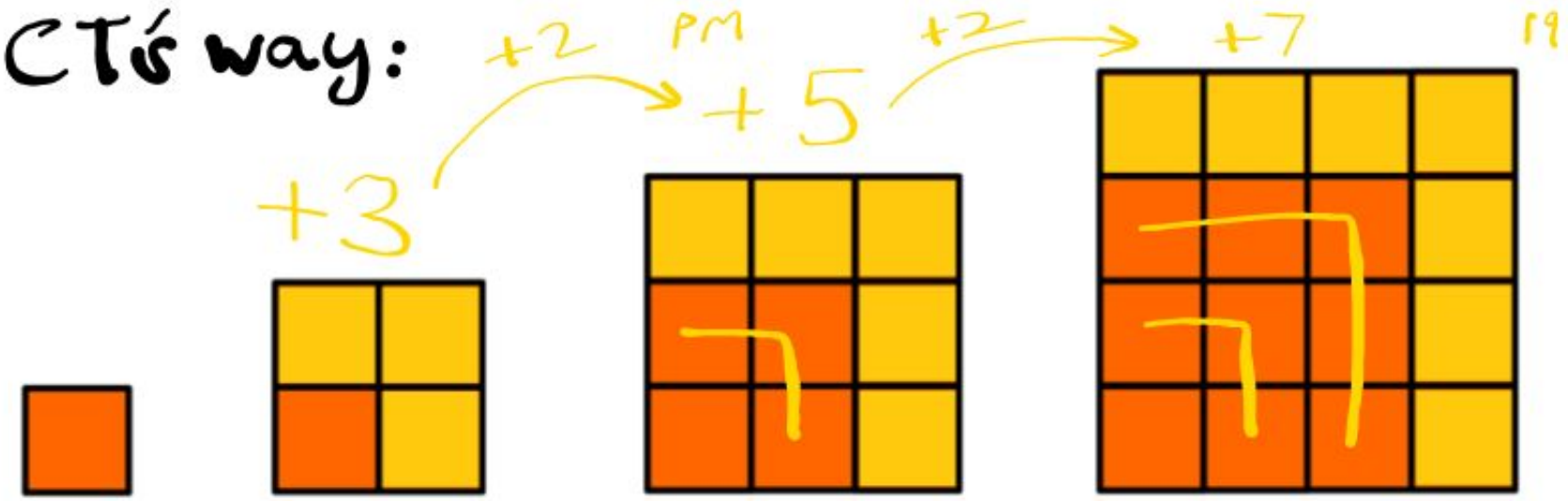


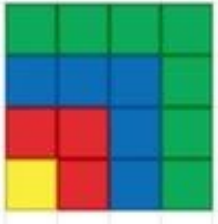

SQUARE numbers
an evolution
growing pattern
up to 4
HH all orange
AK 18·3·19
IMP
arrays AJ
add
DA
even
DC
odd
ED
even has + in middle
1x1
2x2
3x3
4x4
all symmetrical AJ
in the middle PM
a type of spiral CM
App LD

More square numbers!



CTś way:





$4 \times 4 = 16$

LD

$1 + 3 + 5 + 7 = 16$

AC

1) 4

3) 12

5) 28

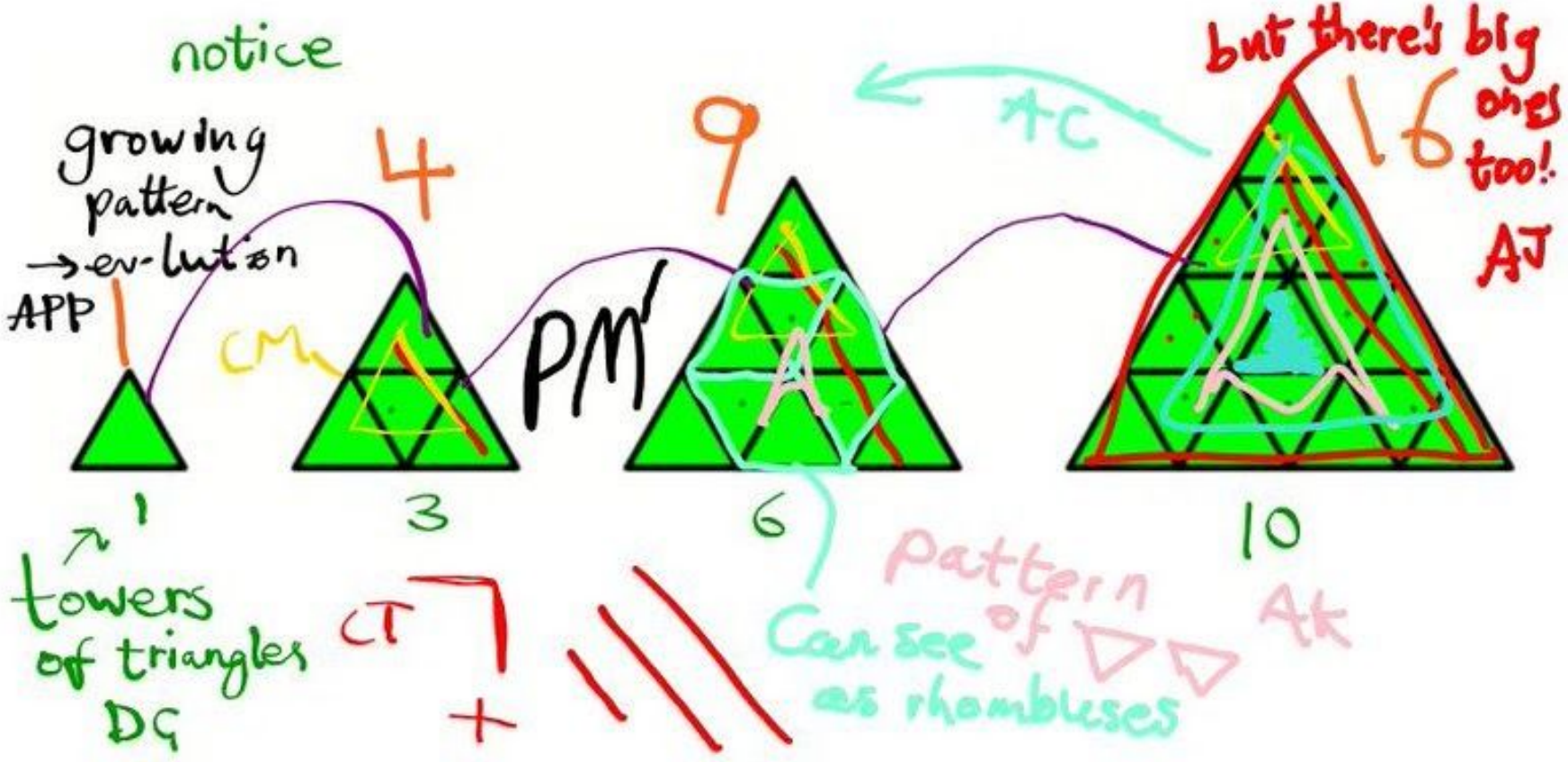
7)

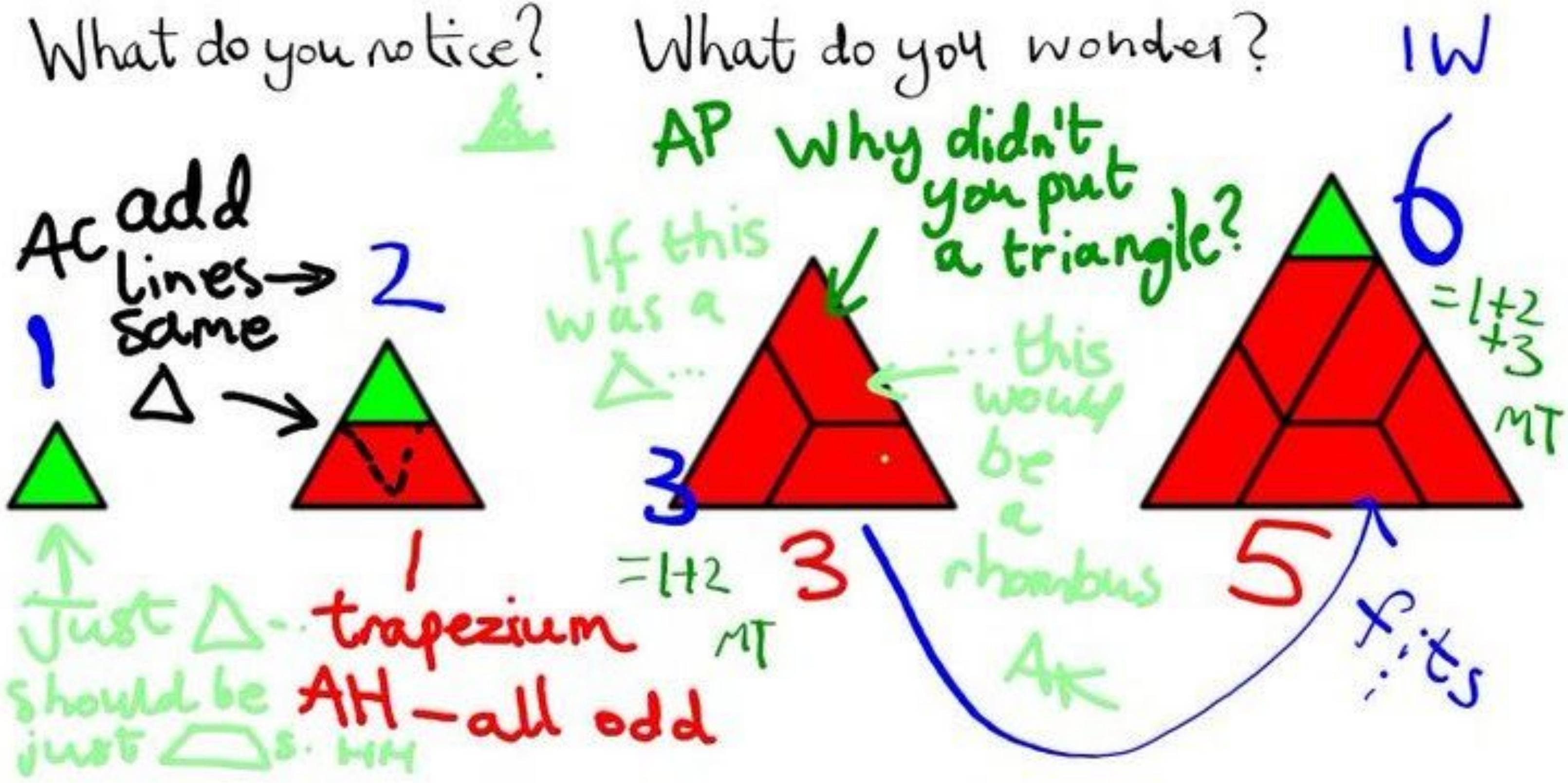
HH

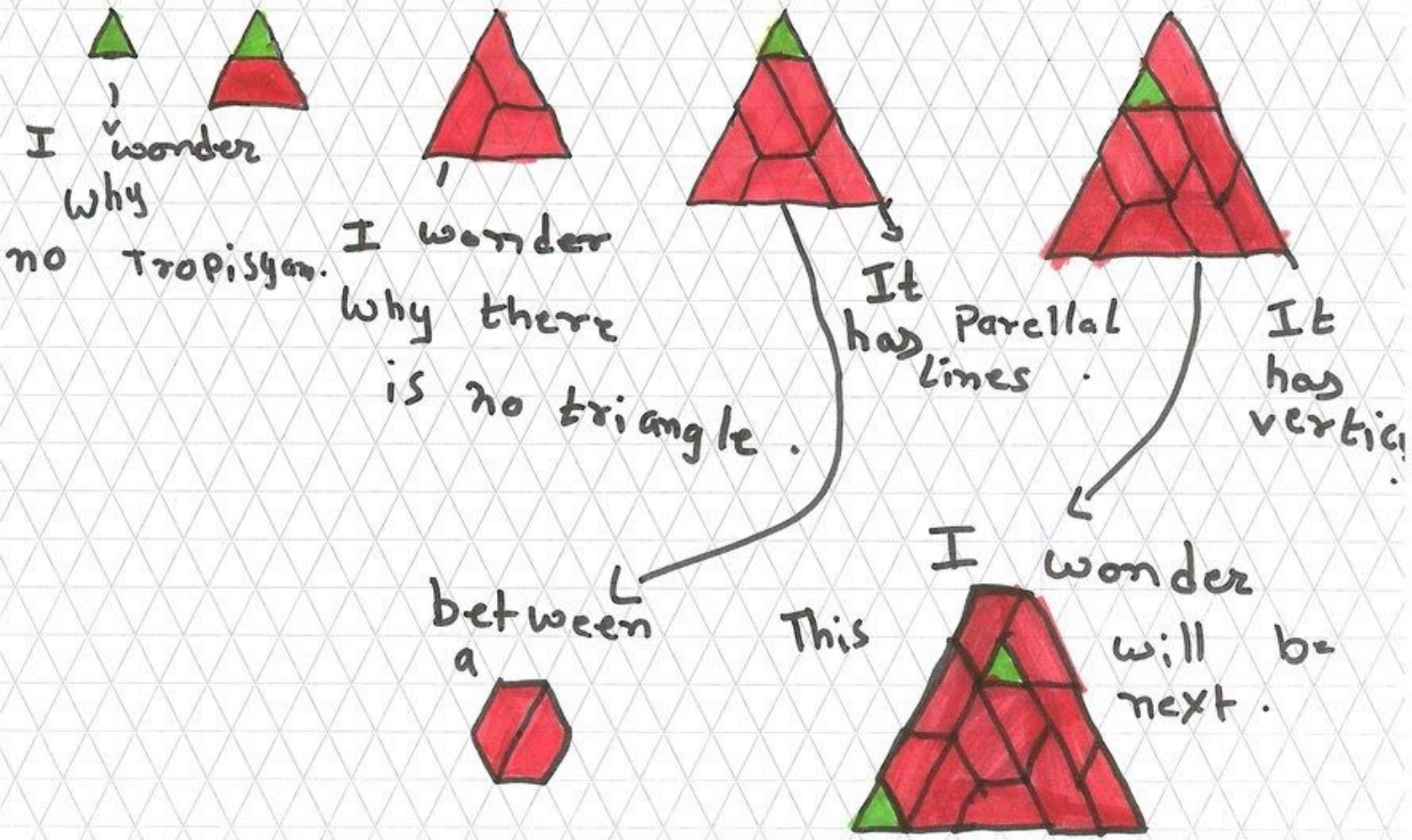
Counts

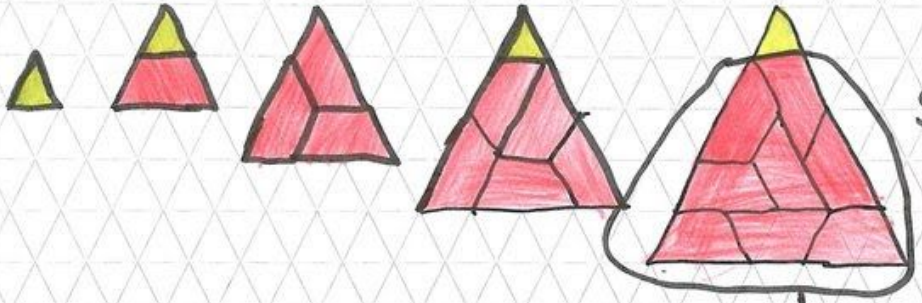
Clear All

Basic


notice
growing pattern
→ evolution
APP
4
9
AC
but there's big ones too!
16
AJ
CM
PM
1
3
6
10
towers of triangles
DG
CT
Can see as rhombuses
pattern of
Ak


What do you notice? What do you wonder?
IW
AP
Why didn't you put a triangle?
AC add lines→ same △
1
2
3
6
1 trapezium
3
5
=1+2
MT
=1+2 +3
MT
If this was a △...
... this would be a rhombus
Just △... should be just ⏢s. HM
AH – all odd
AK
fits


I wonder
Why
no Tropisyan.
I wonder
why there
is no triangle.
It has Parellal lines.
It has
between
a
This
I wonder
will be
next.
Aanya. J



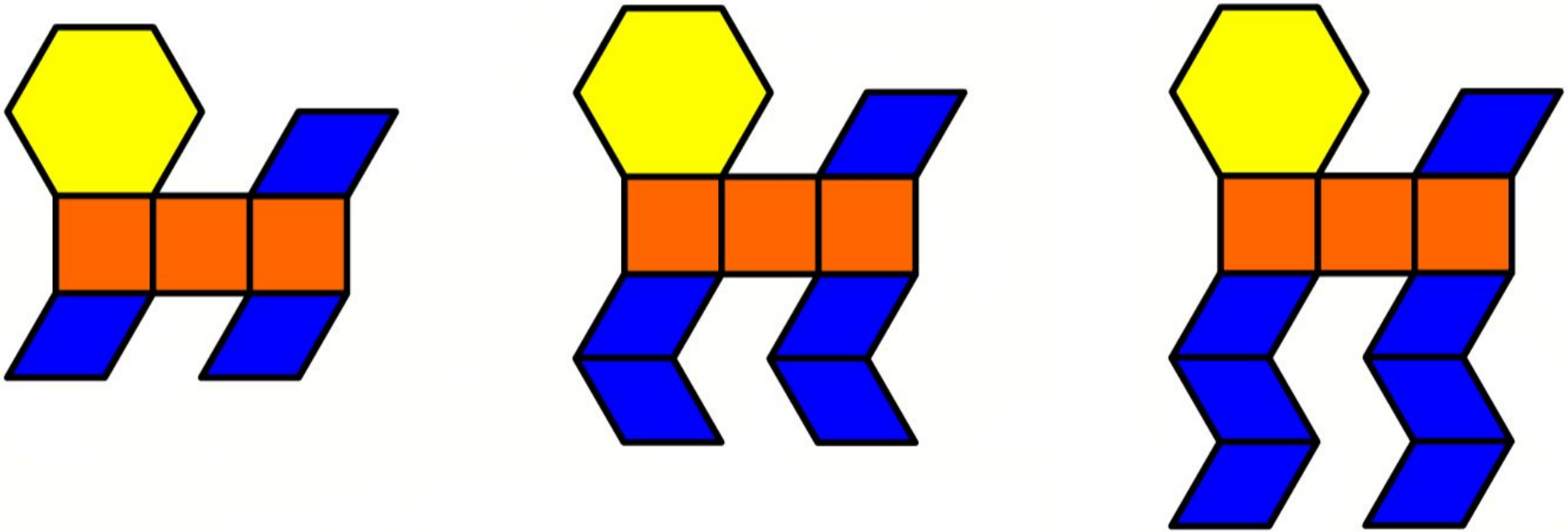
I notice that it is a growing Pattern.

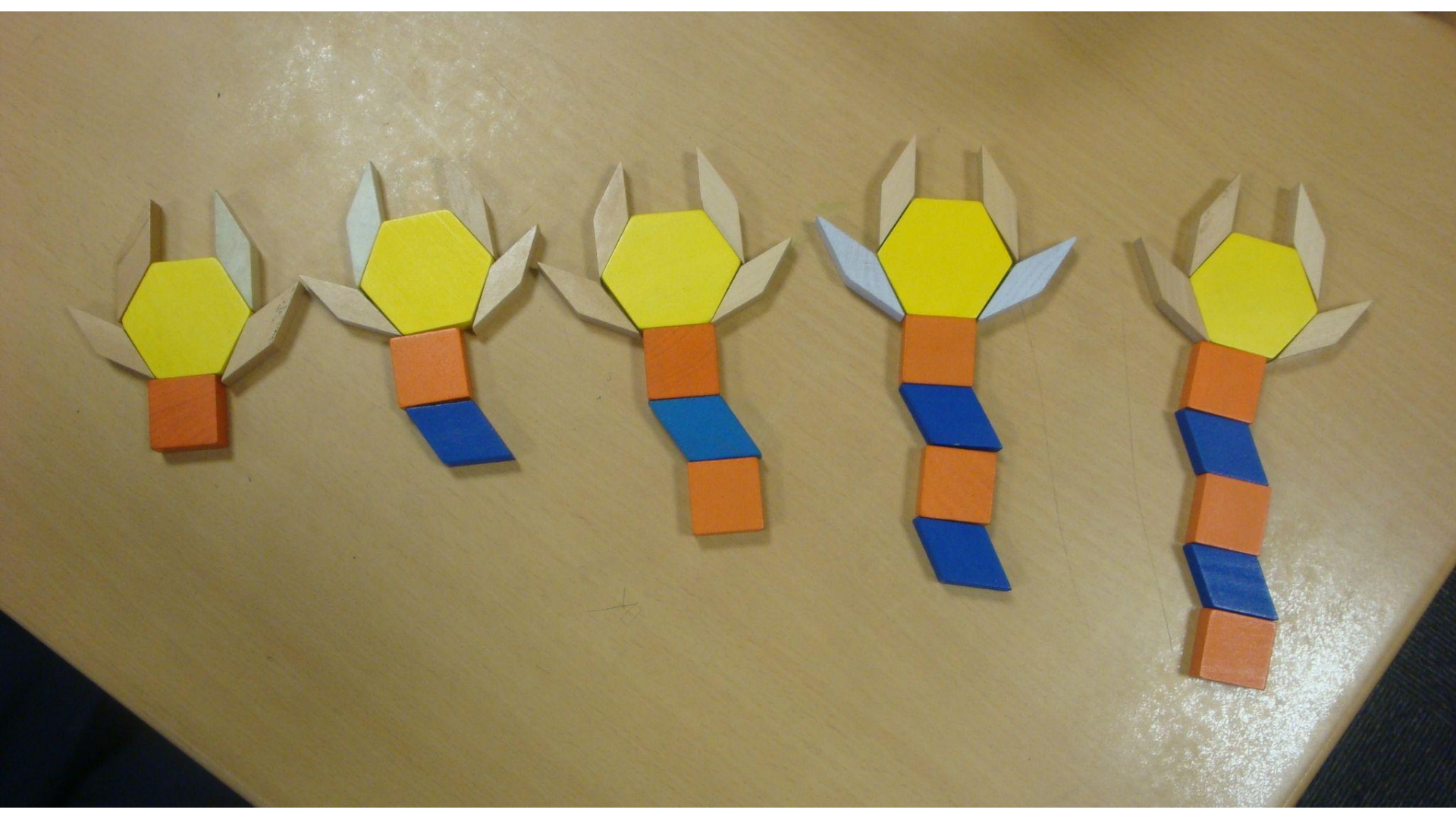
I also wonder what the next, next, next and next one is.

I think that there will be a pattern and it is on top of the red trapezium a trai- [redacted] there is angle two traiangles on the trapeziums then there is one without a traiangle on top and then there are two traiangles on top again.

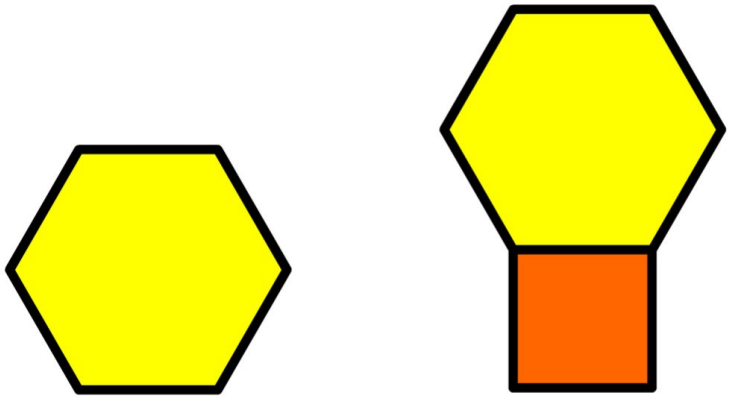
Lisa

More growing pattern work with 8 and 9 olds





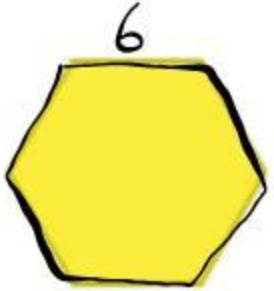
What do you notice? What do you wonder?



It's a growing pattern.
AK

It's an evolution
AP

Euler's rule would work
AK



Step Number 1

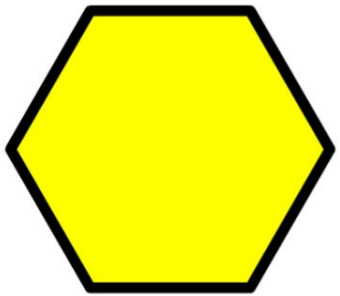
like a tree LD

yes PM 6.8.10

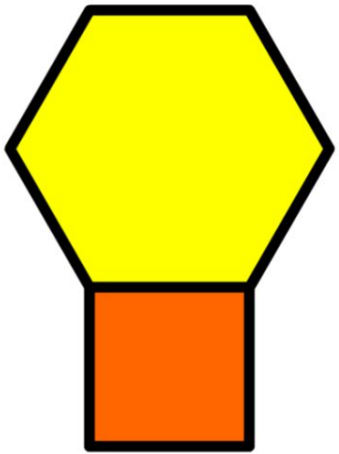
next one? HH

Step Number 2 MK

6

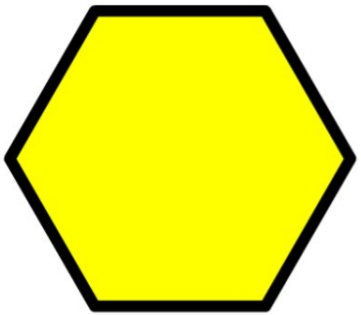


8

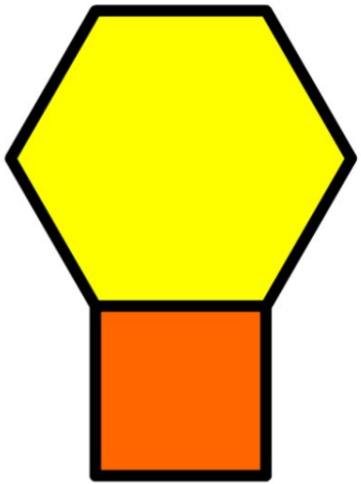


What comes next?

6



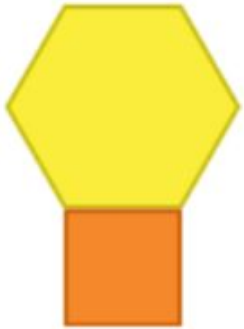
8



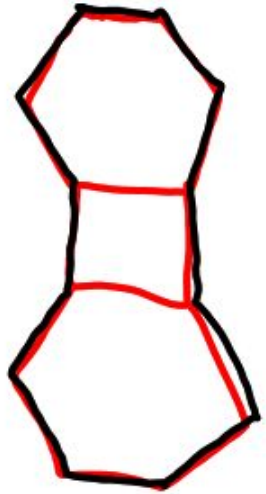
12

6

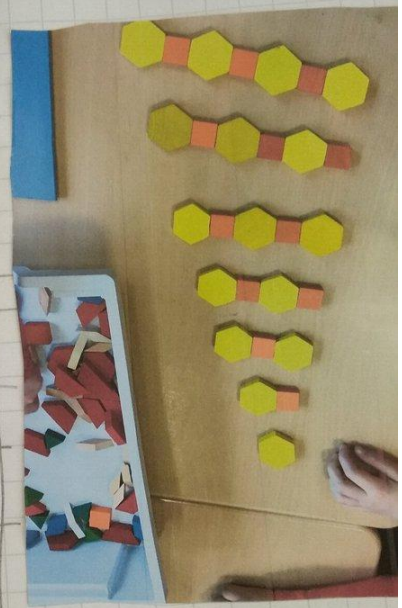
8



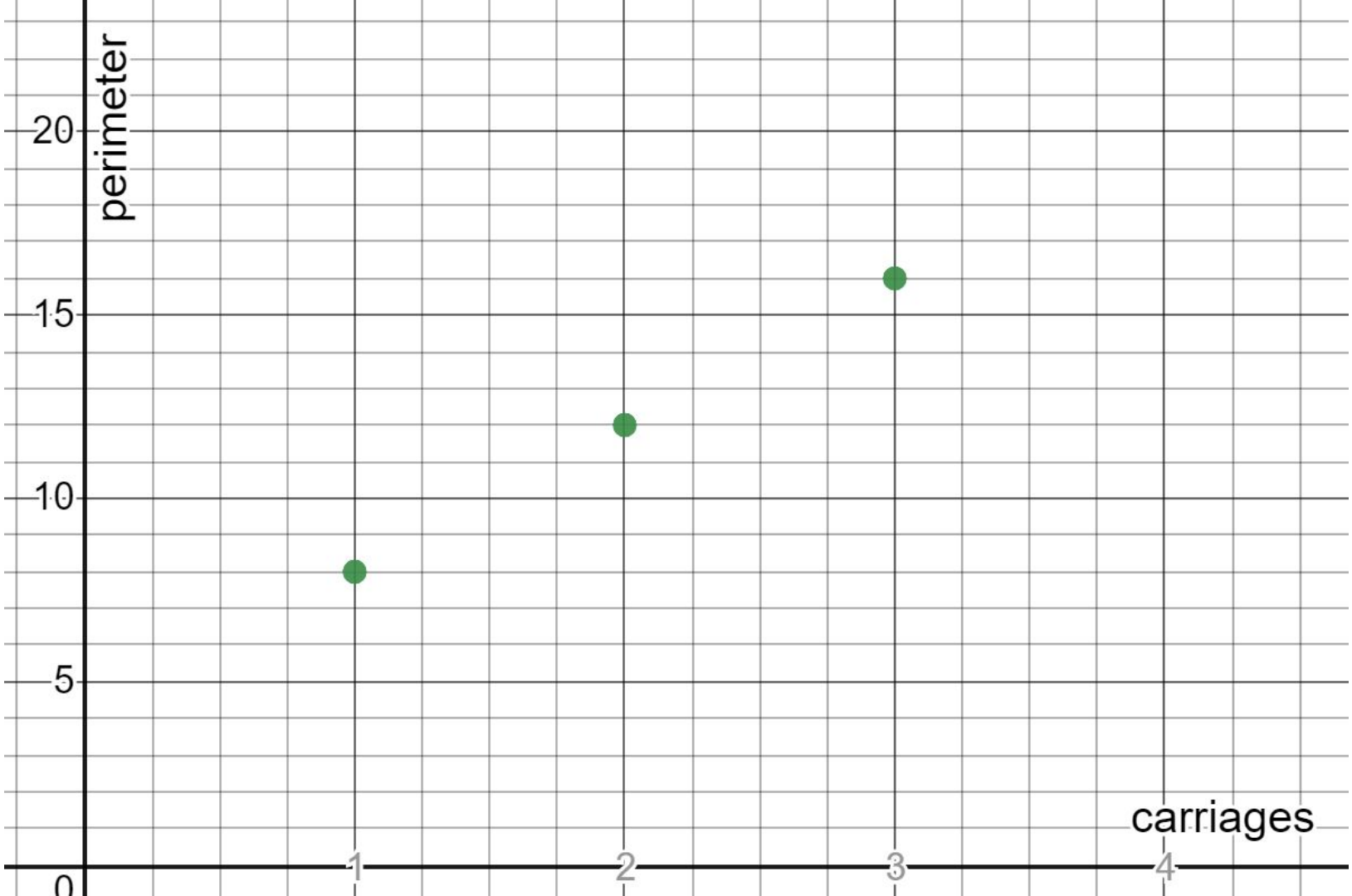
12



Step number	Perimeter
1	6
2	8
3	12
4	14
5	18
6	20
7	24
8	26
9	30
10	32
11	36
12	38
13	32
14	36
15	40
16	42
17	46
18	50
19	52
20	56
21	60
22	62
23	66
24	70
25	72
26	76
27	80



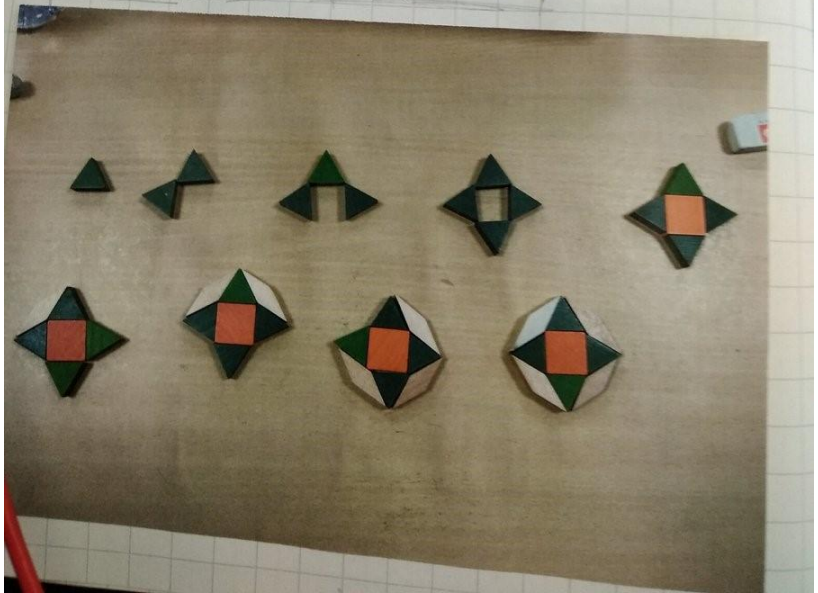
ots represent
tight line.


perimeter
20
15
10
5
0
carriages
1
2
3
4

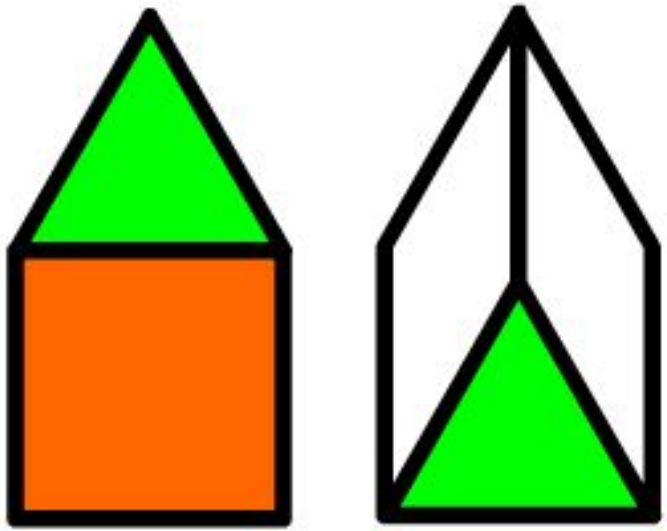
2nd Growing Pattern

step number	Perimeter
1	3
2	6
3	9
4	8
5	~~8~~
6	8
7	8
8	8
9	8

12



Equality



Areas as numbers

If the green triangle is 1, what other numbers can you see?