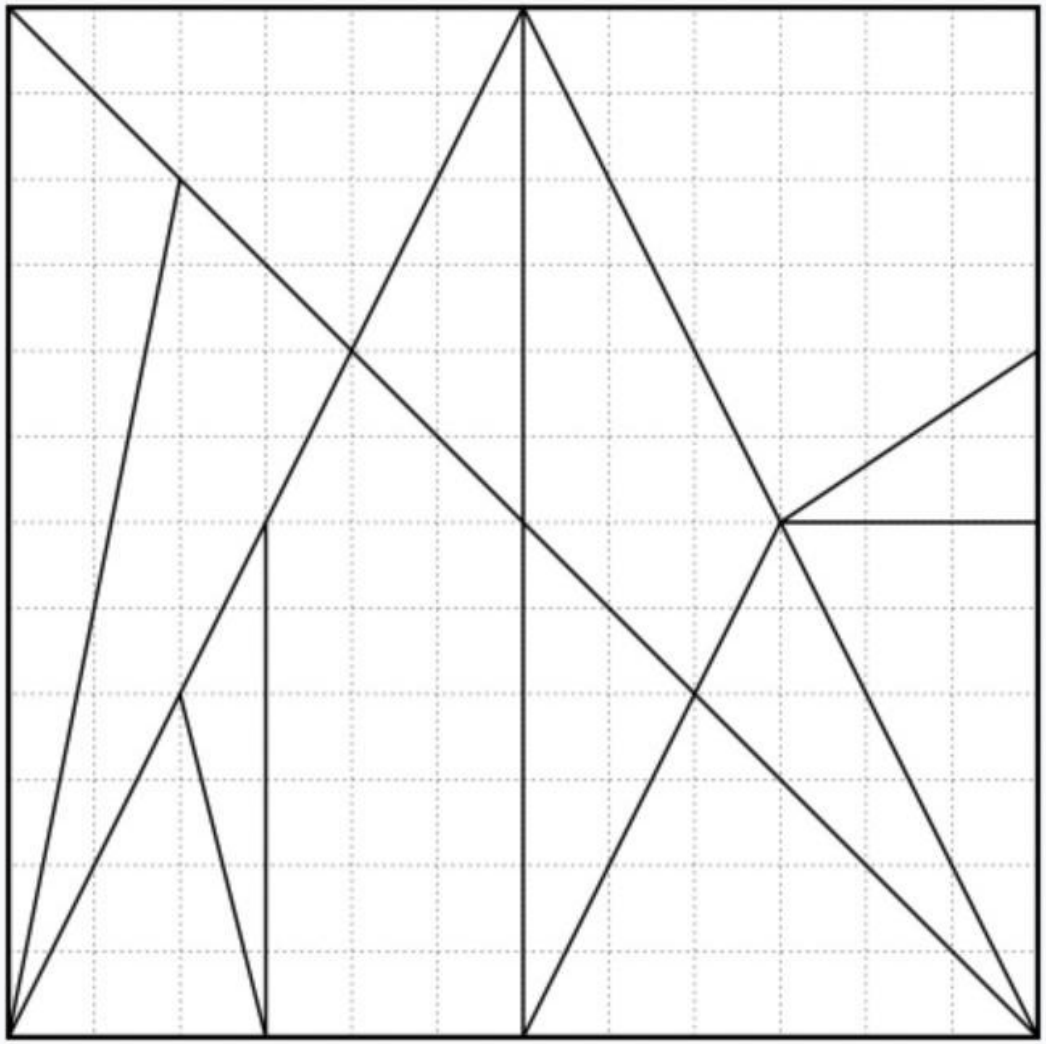
Ostomachion

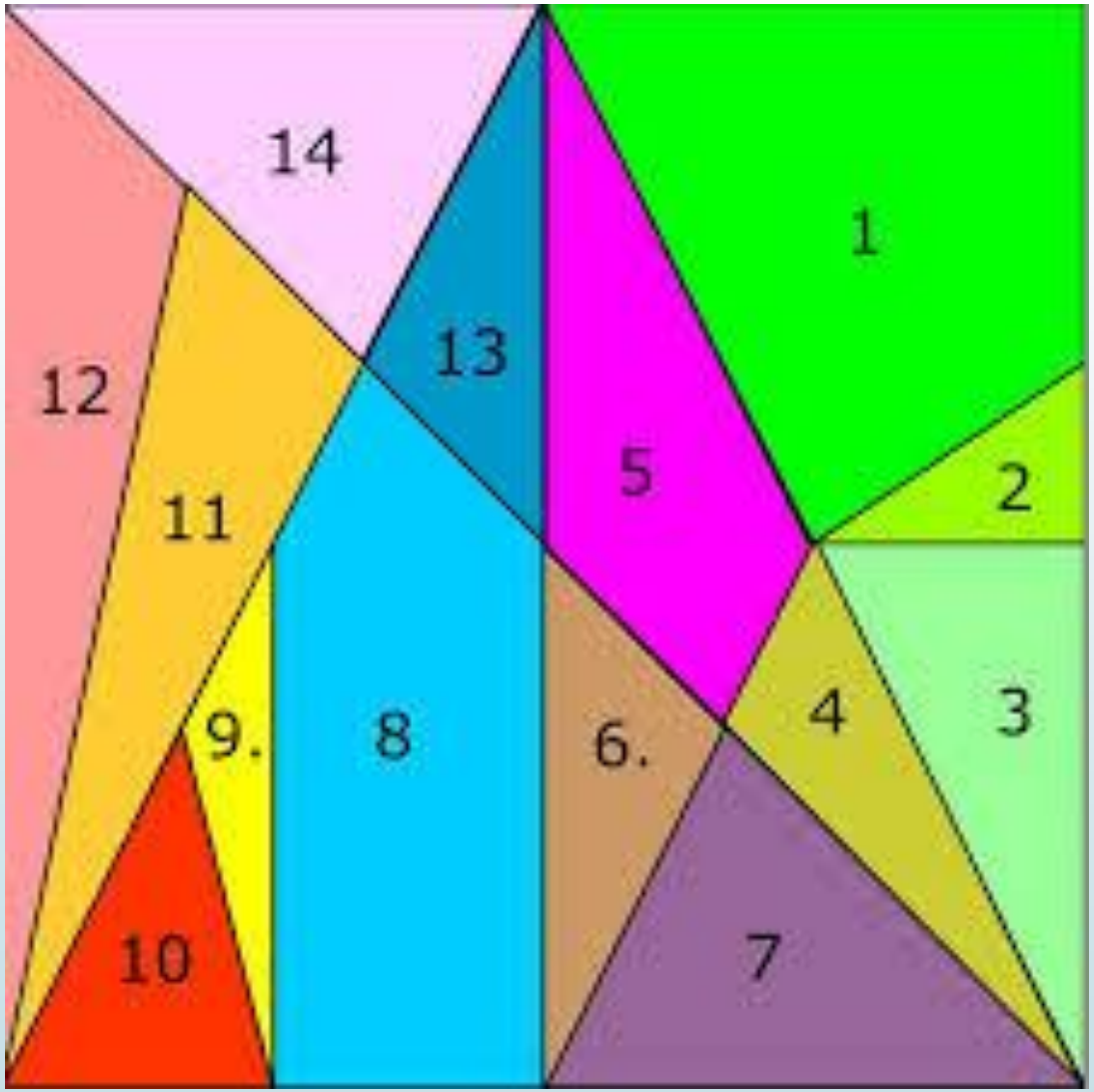
It is a mental game, the ancestor of puzzles and tangrams. At the same time, it is a mathematical problem of Archimedes.

- We draw a square ABCD (12cm*12cm)
- Let E be the middle of side BC, we draw the segment EZ perpendicular to AD.
- We draw the diagonals AC, BZ, and CZ , we call L the intersection point of AC and BZ and F the intersection point of AC and ZE.
- Let H be the midpoint of BE, draw the perpendicular to BE at point H, which intersects BZ at T.

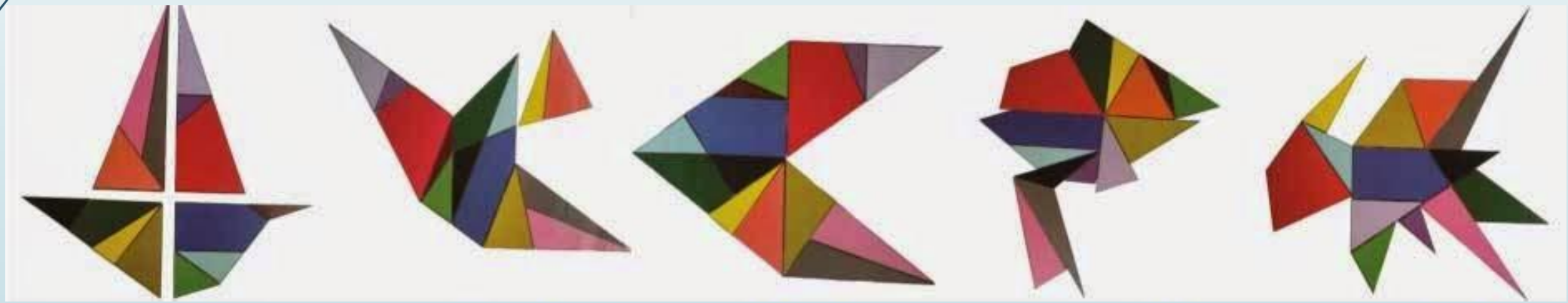
- Then we put the rule at point H and aiming at A we form the straight segment HK , where K point of BZ.
- Let M be the middle of the straight segment AL, we draw the straight segment BM.
- Let N be the midpoint of CD and S the midpoint of ZC, we draw the SN and the ES that intersects AC at point Y.
- Then we put the rule at point S and aiming at B we form the straight segment SX , where X point of DC.

Thus we divided the square into 14 geometric surfaces.

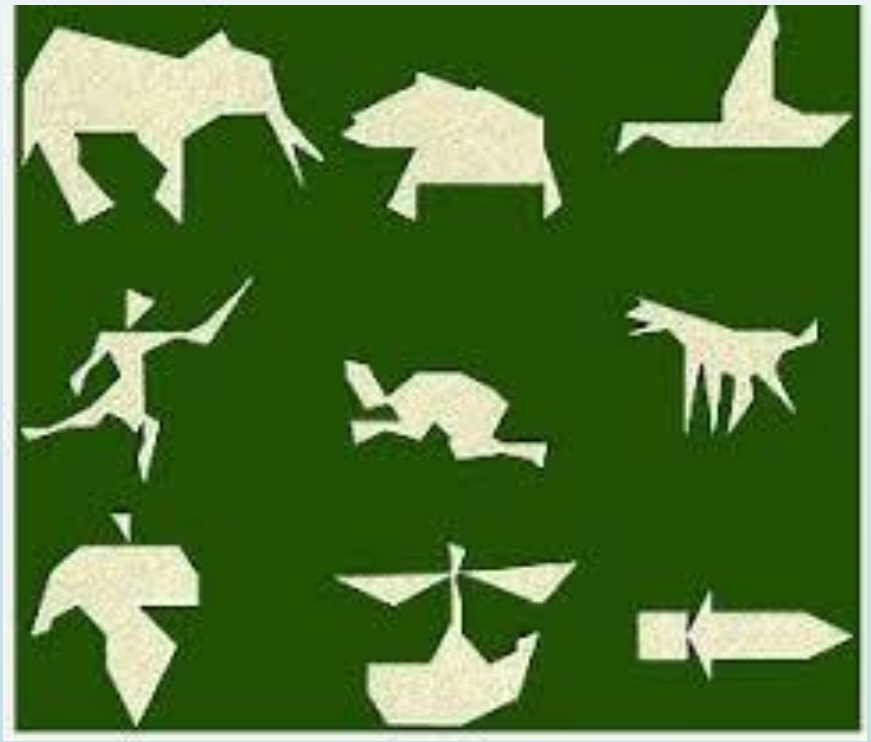


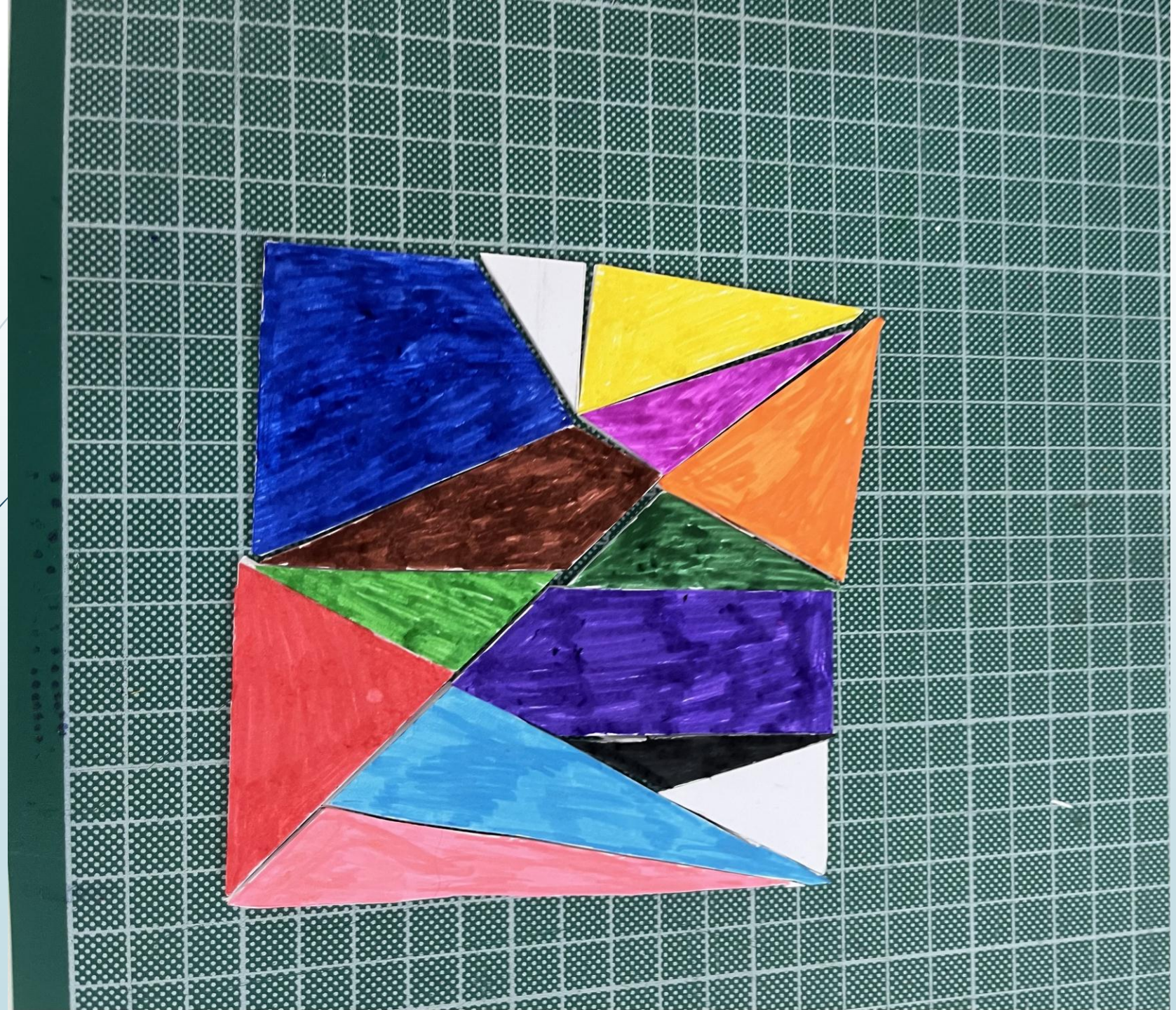

14
1
13
12
5
2
11
9.
8
6.
4
3
10
7

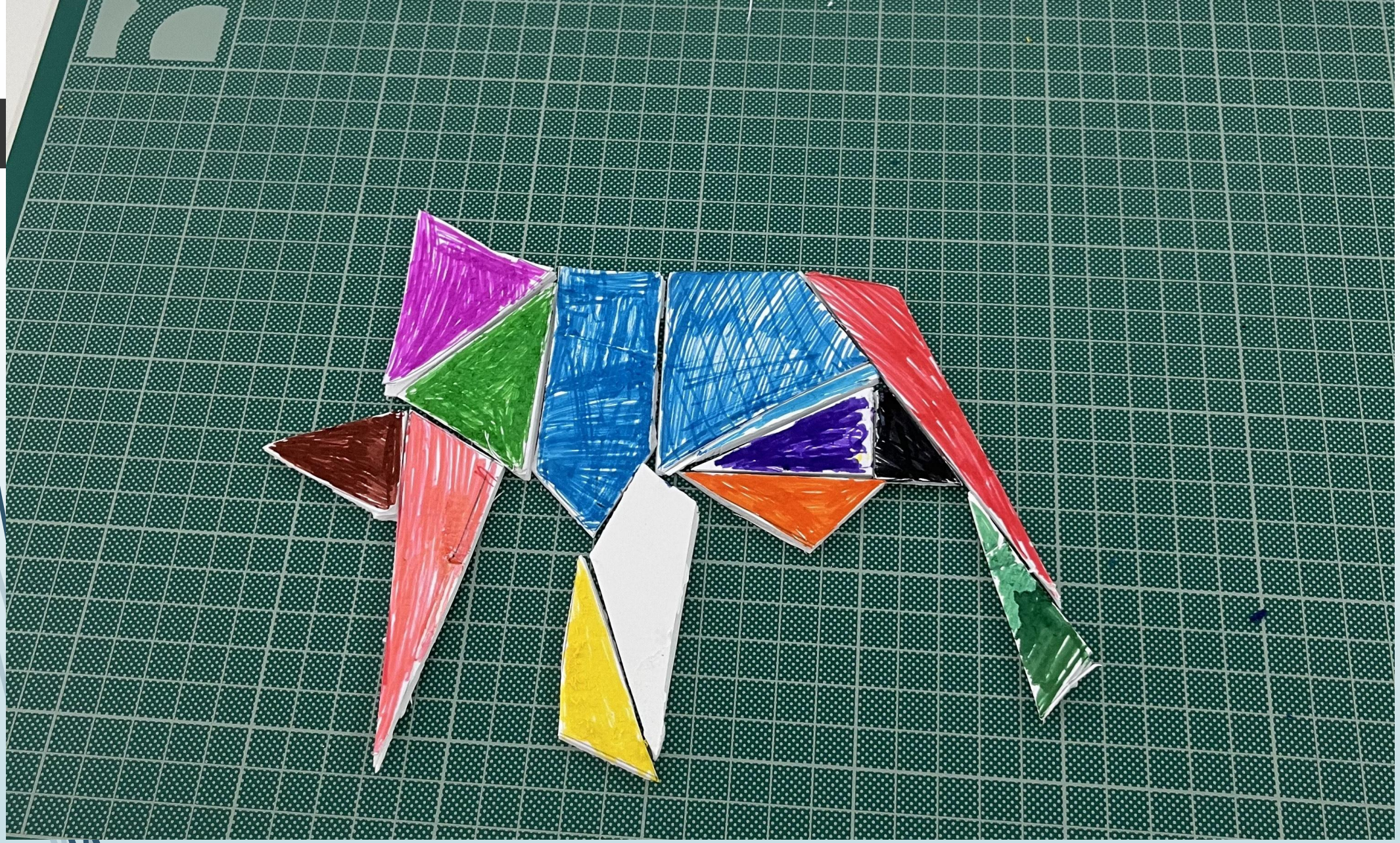
- Paint each geometric surface with a different color.
- Glue the paper to the construction paper.
- Cut carefully with the cutter.
- Create object with the pieces.

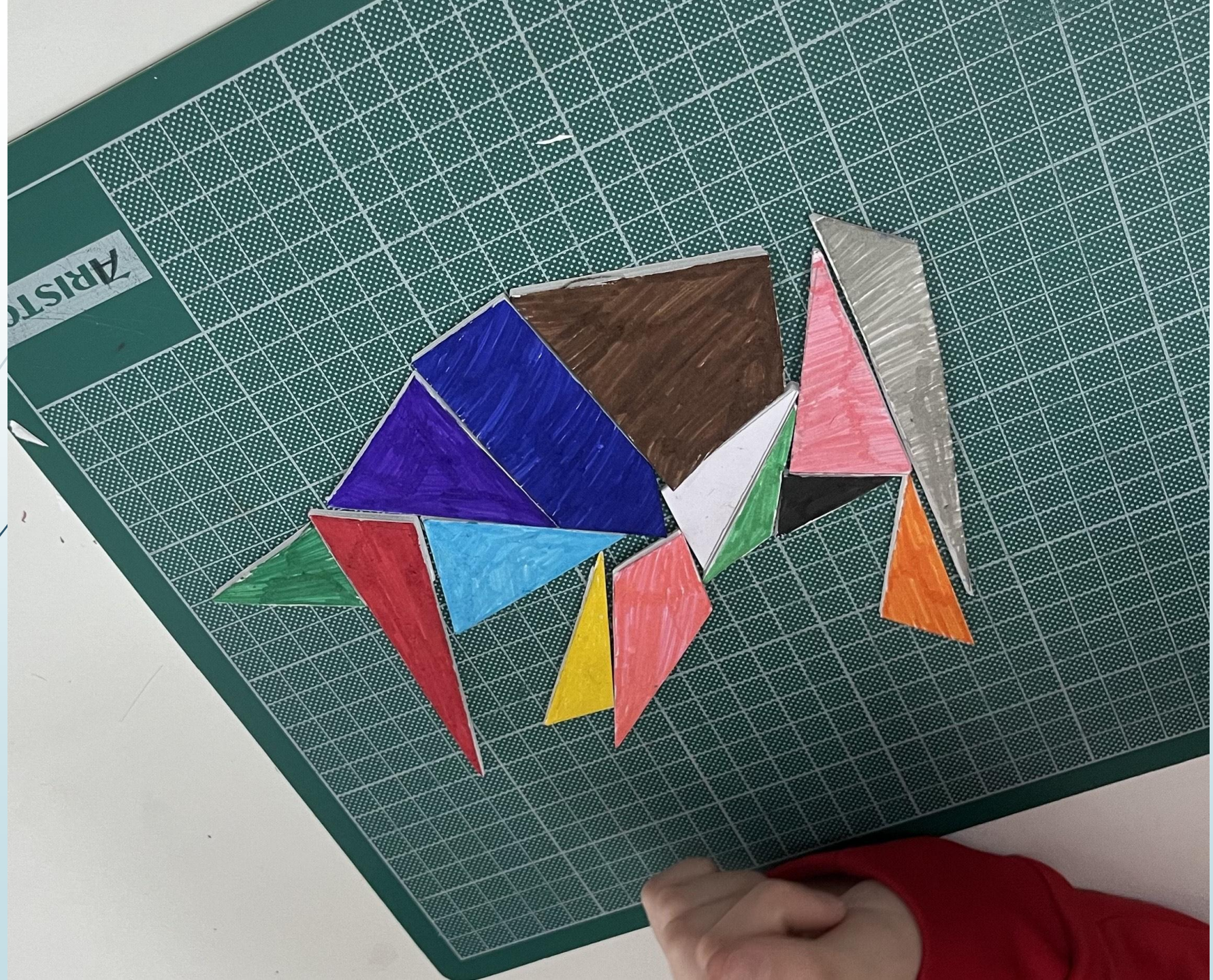


Archimedes attempted to determine how many possible ways the pieces could be arranged to form a square. The answer was given in 2003 by mathematician Bill Culter using computers, where **536** different combinations were found, and if symmetries are included, then the number rises to **17152.**





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