

Penta-Mosaik™

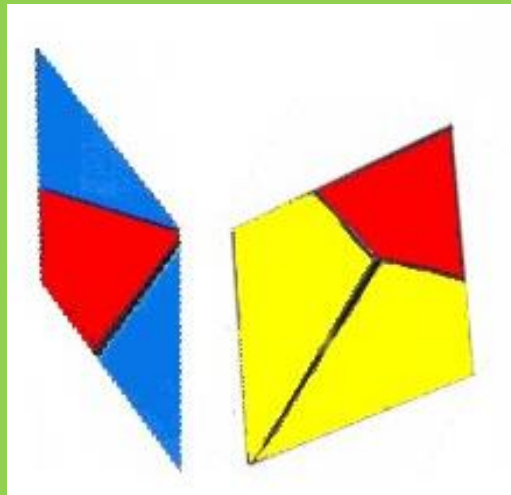
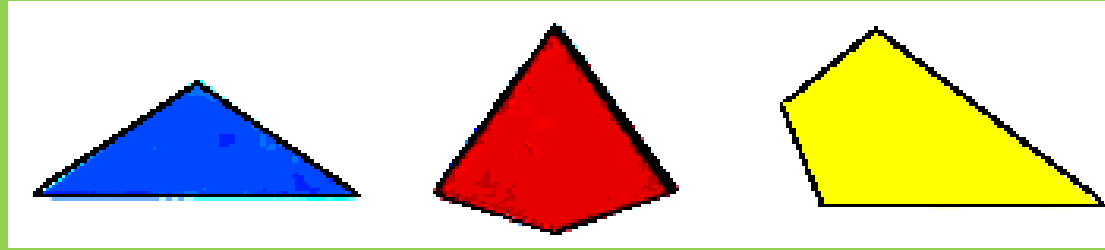
Golden Ratio Magic

Proposed by Tick Wang
Expanded by Kate Jones
Made by Kadon Enterprises, Inc.



Kate Jones
Bridges Poetry Reading
Richmond, VA – 2024

Introduction



Three shapes of tiles, just ten of each, can fill
That handsome decagon for visual thrill.
A golden triangle, kites long and short,
Will serve you for a dazzling puzzling sport.



The decagon

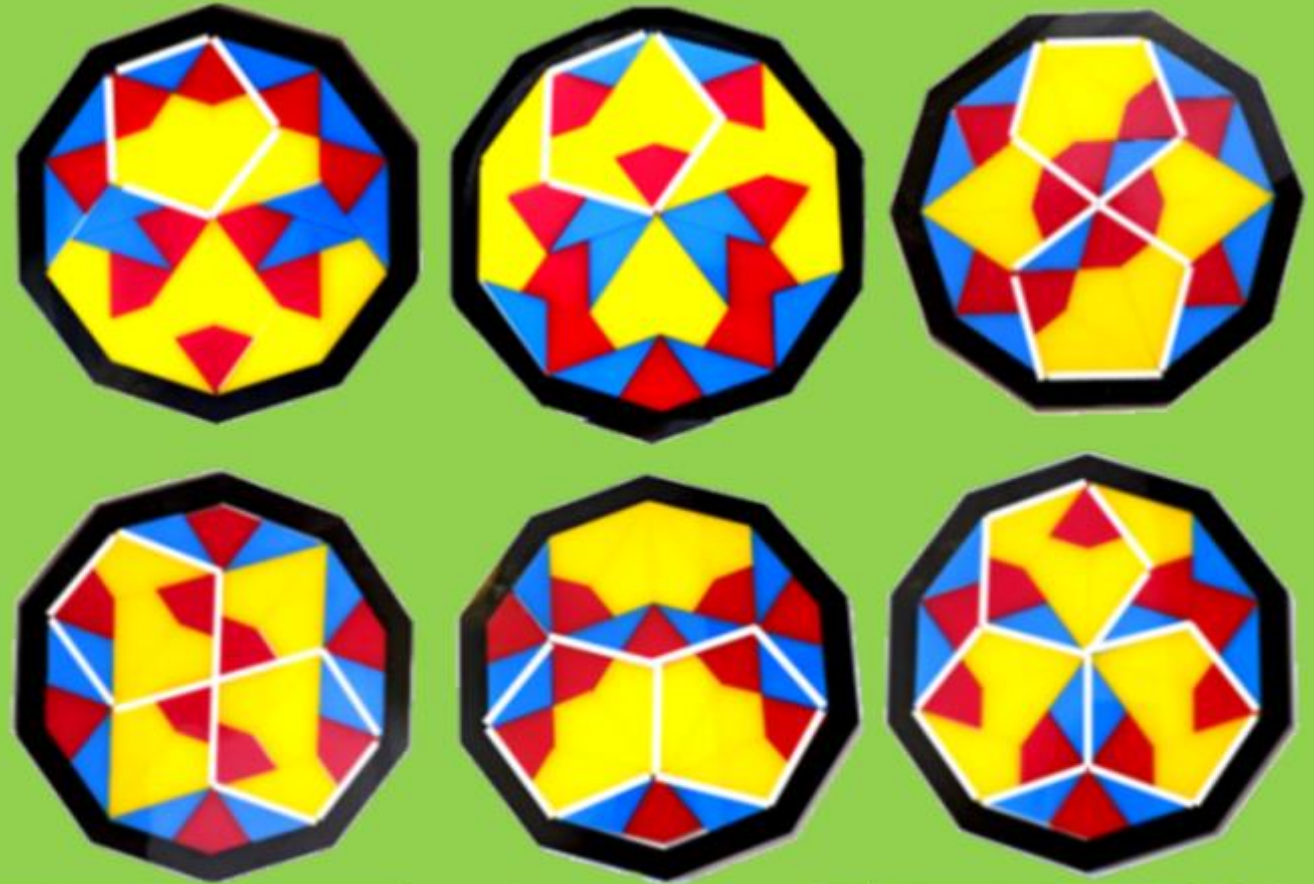


Behold how ten rhombs spread their close domains
That not the smallest empty space remains.

Examine how the thin rhombs ring the tray
The fat rhombs stack like eggs, a neat array.



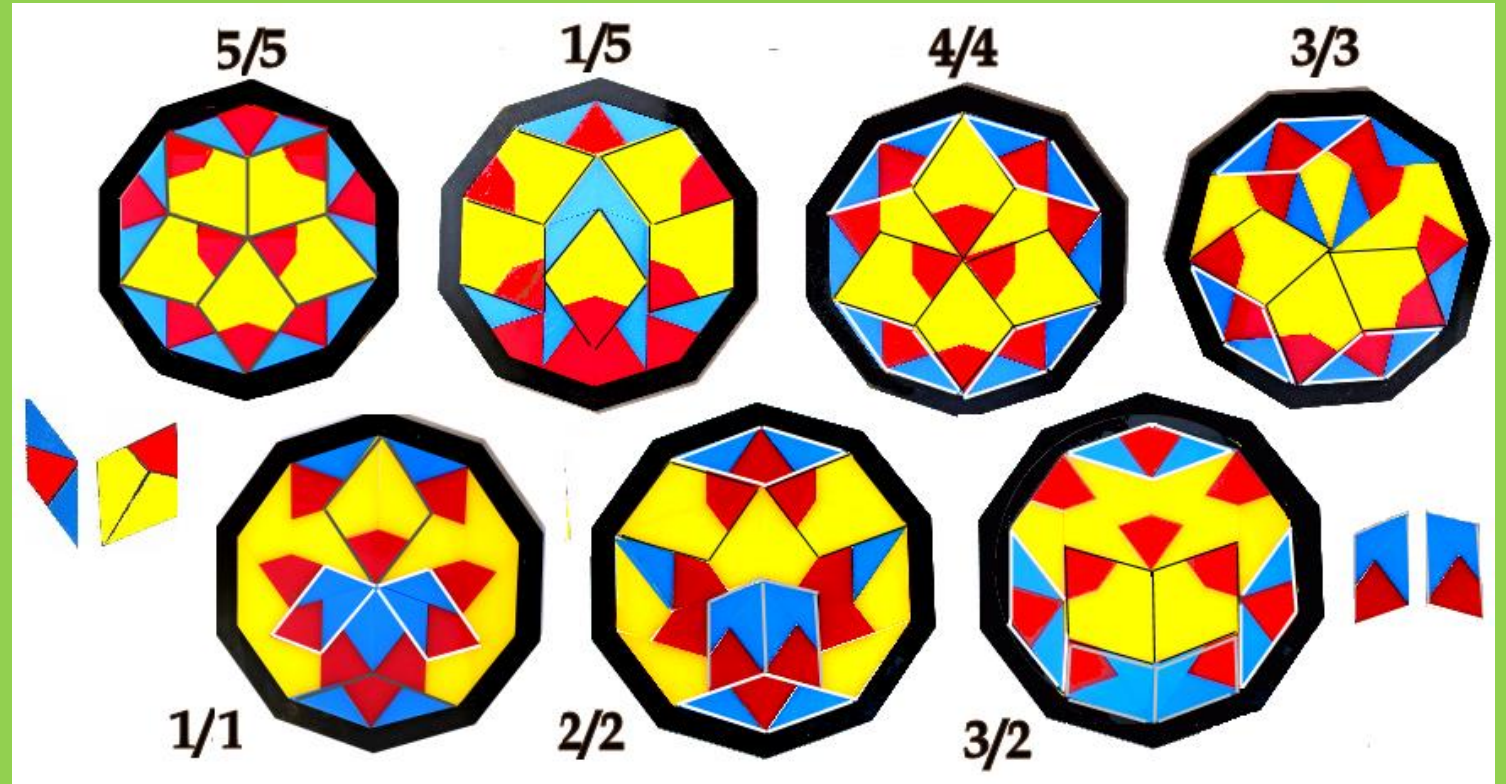
Special feature: Embedded pentagons



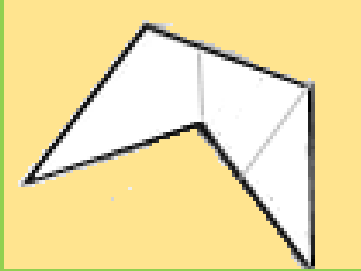
See now how smaller parts form larger groups,
Then link as handsome pentagons and loops.
One, two, or three such pentagons appear
When pantaloons to diamonds deftly steer.

Special feature: Embedded rhombs

A pair of diamonds, wide and slender,
In full a decagon can render.
Both equal and unequal pairs
Lend to the field their fitting shares..



Special feature: Embedded “pantaloons”



What baggy pants are these,
of three tiles sewn?
Inverted pentagons,
here neatly shown,.



Special feature: Two-fold symmetry

A marvelous mix makes symmetries both ways: Their vertical and horizontal phase.



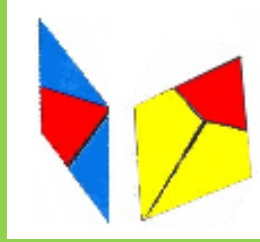
Special feature: Rotational symmetry



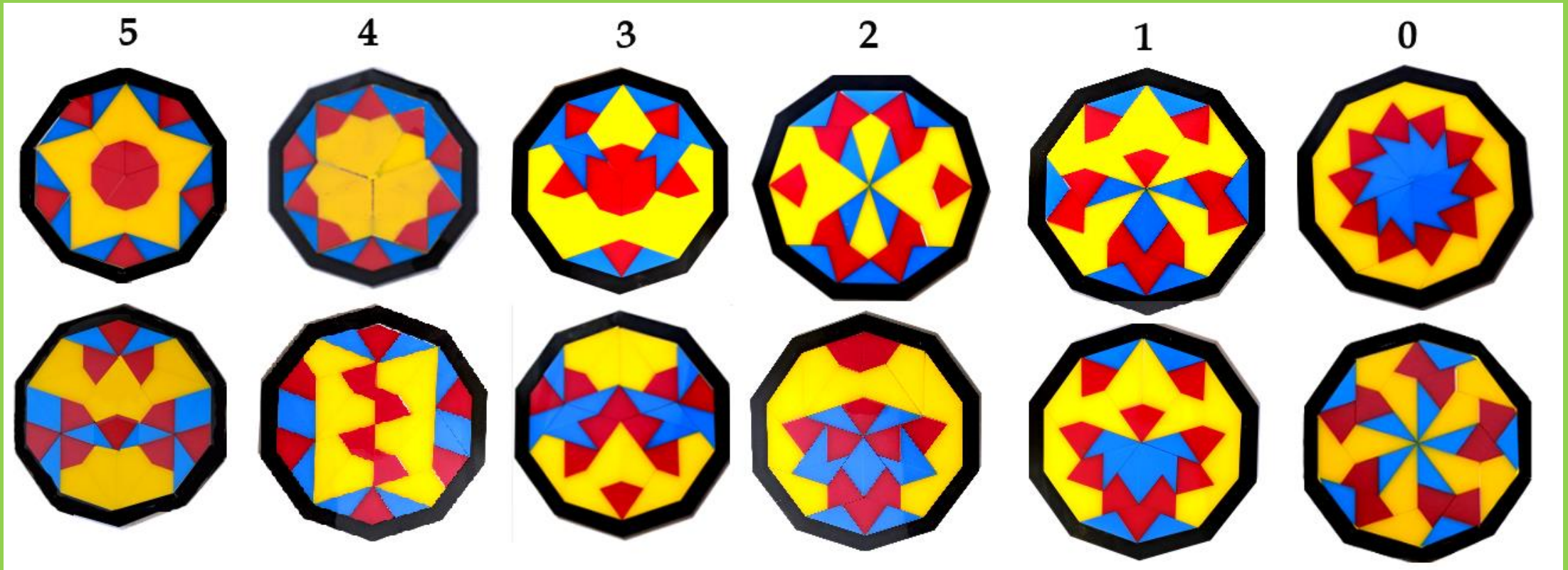
One form of symmetry we seldom see
Is by rotation, like the letter Z.



**Special feature: Embedded rhombs—
non-periodic symmetry**

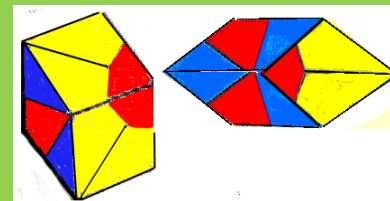
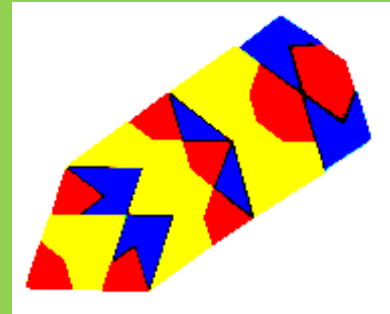
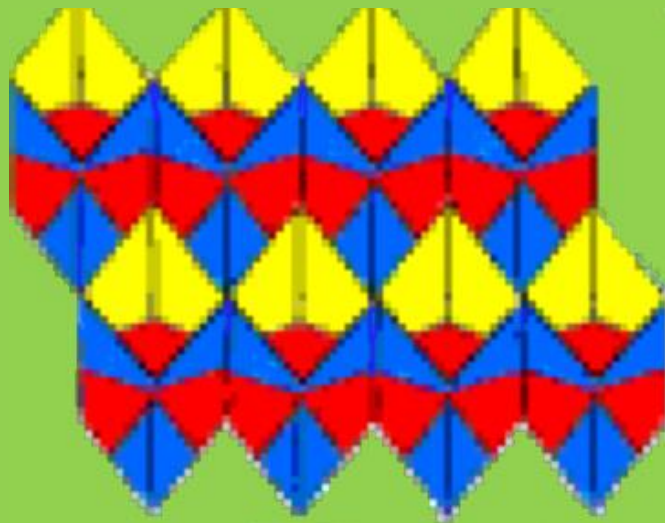
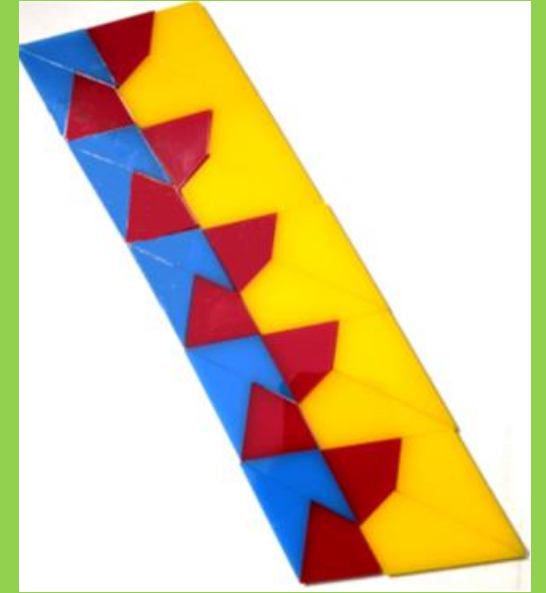
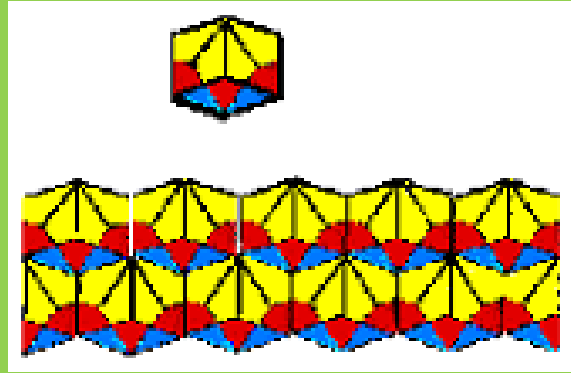


Each size has equal count, from none to five;
In non-periodic splendor they will thrive.
Non-periodic? If you tile the plane,
Their shapes will not repeat an equal chain.

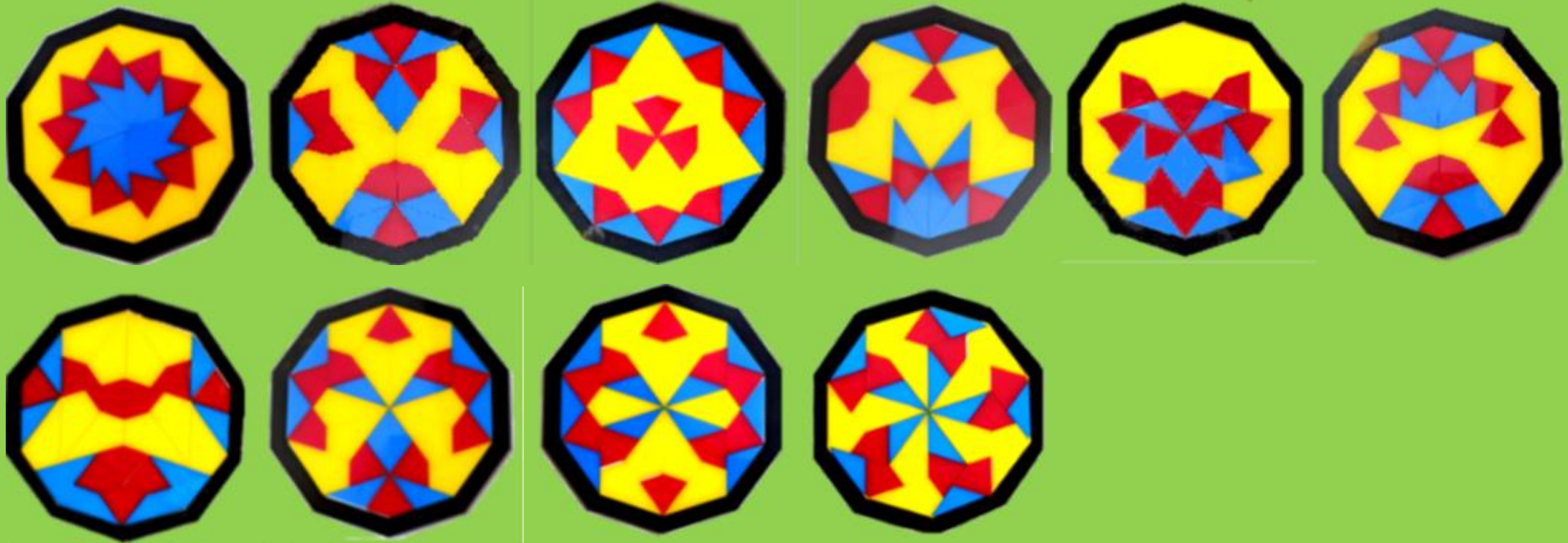


Special feature: Periodic symmetry

Wallpaper patterns are a puzzling breed,
17 groups to endless variants lead.
This one has "glide reflection" as its name
Since parts can flip or slide along a frame.



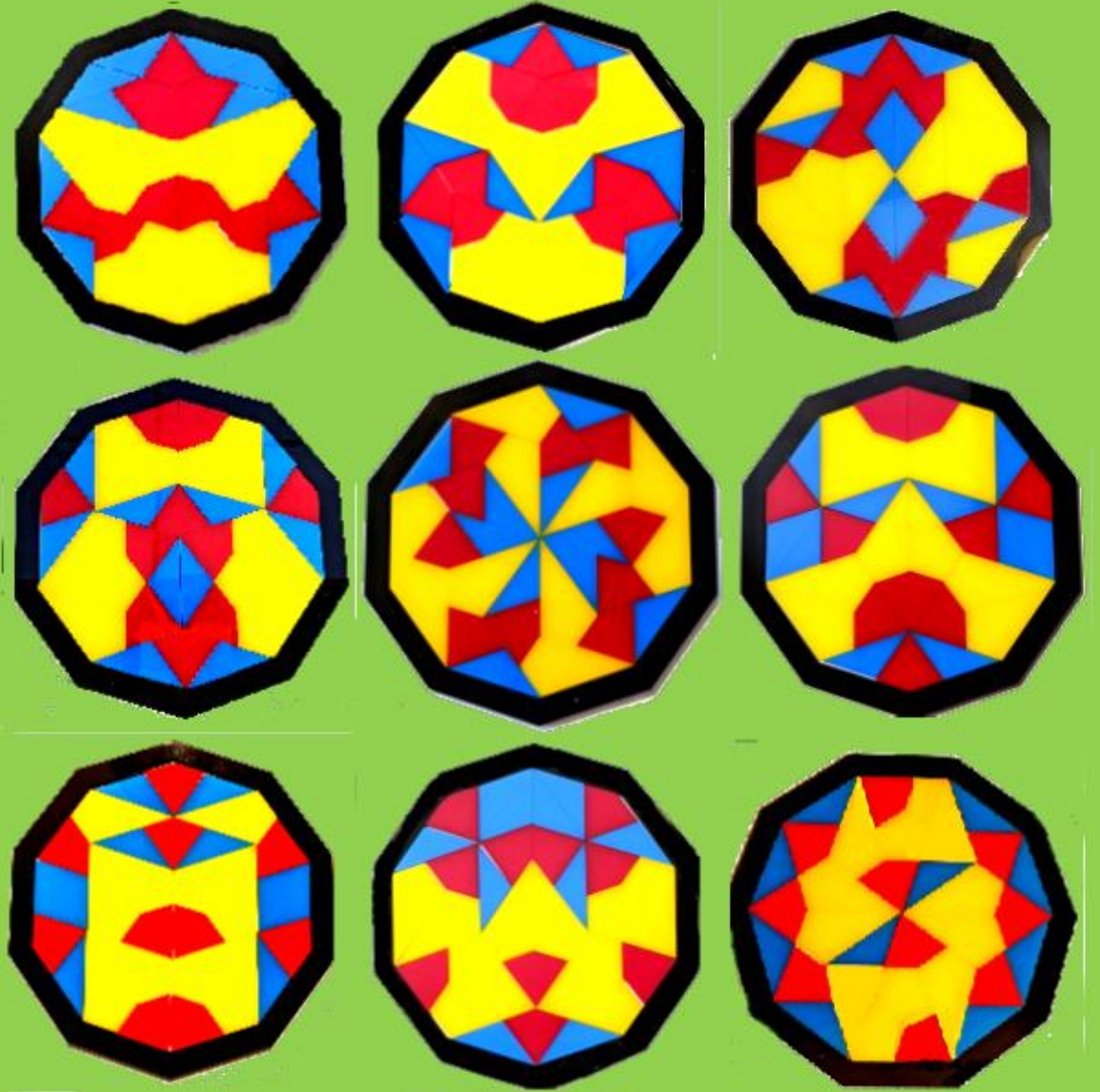
Color patches—few or many (yellow)



Each type of tile its own strange habits shows.
The long kite, yellow, only up to 5 chunks knows.

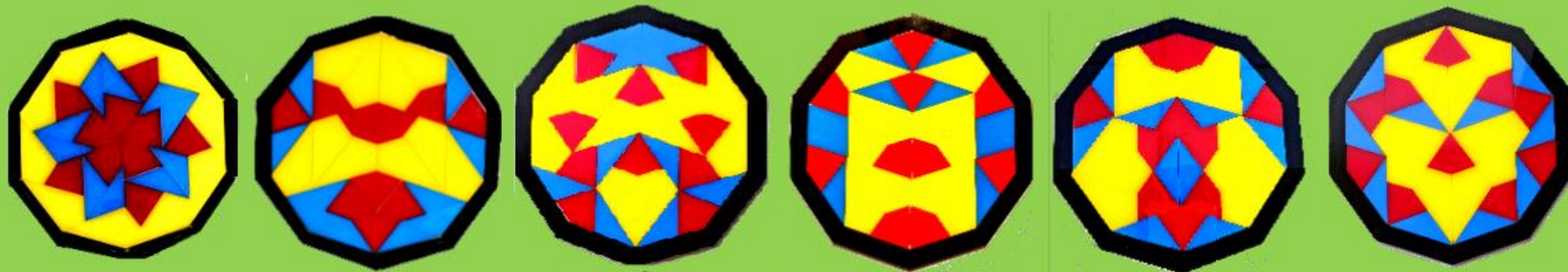
Color patches—few or many (red)

The red kites stubbornly resist one patch,
Though two to ten, as shown here, we can catch.



Color patches—few or many (blue)

The triangles, the smallest and true blue,
With easy flare from 1 to 10 spots grew.



Color patches—on the border

The yellow long kites grab the largest ground,
As one field they can center or surround,

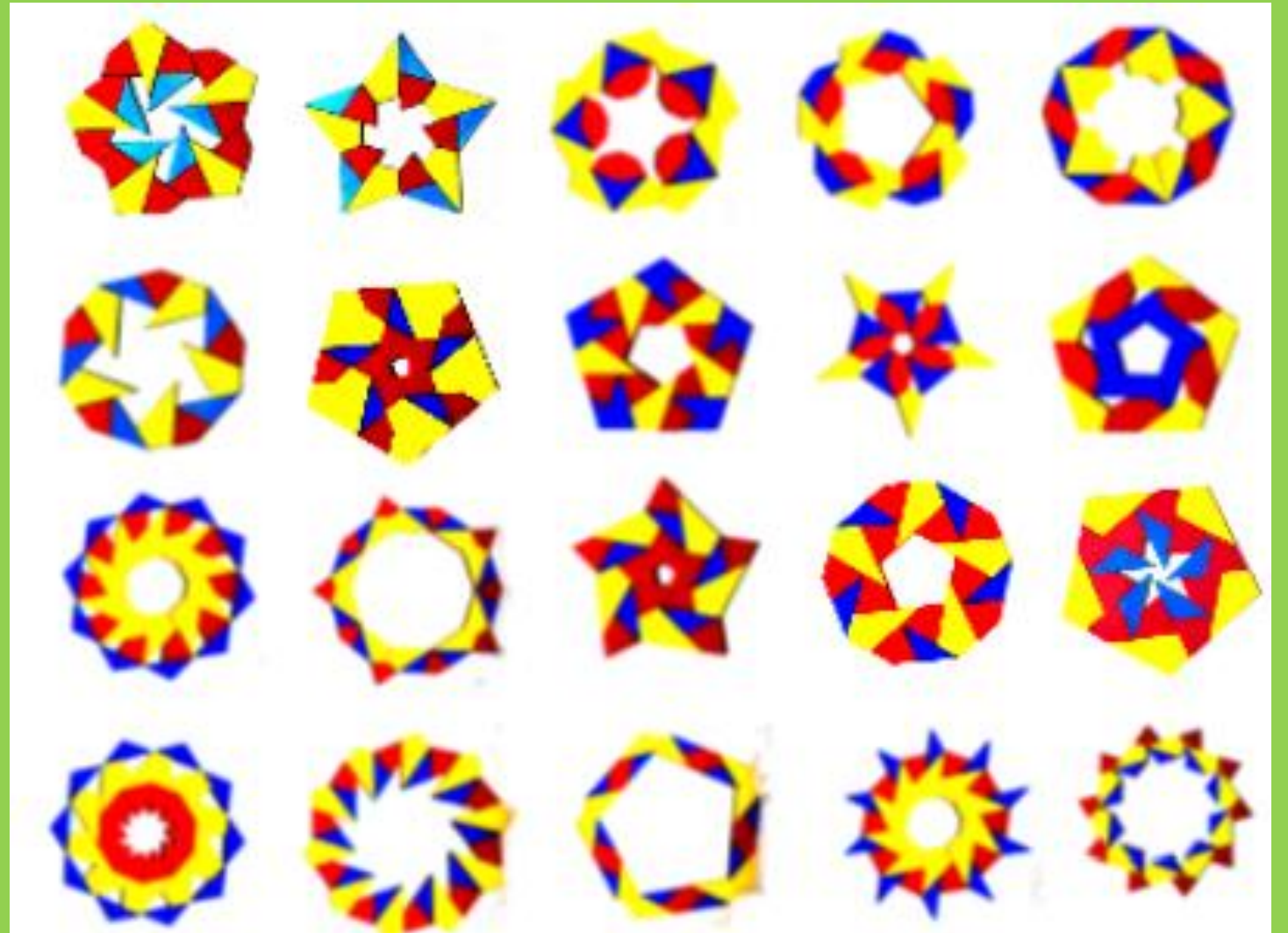
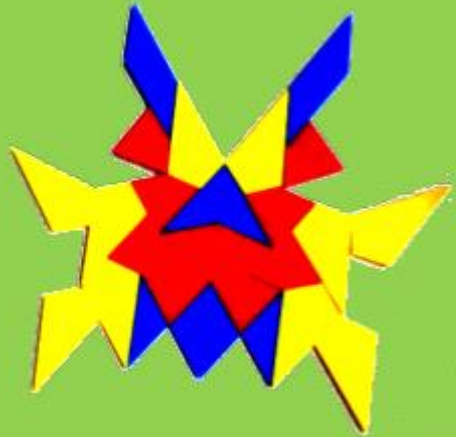
The red kites spurn one region, two's the least.
Ten particles become a visual feast.

The blue triangles win the one-and-all,
Surround the border or enclose a ball.



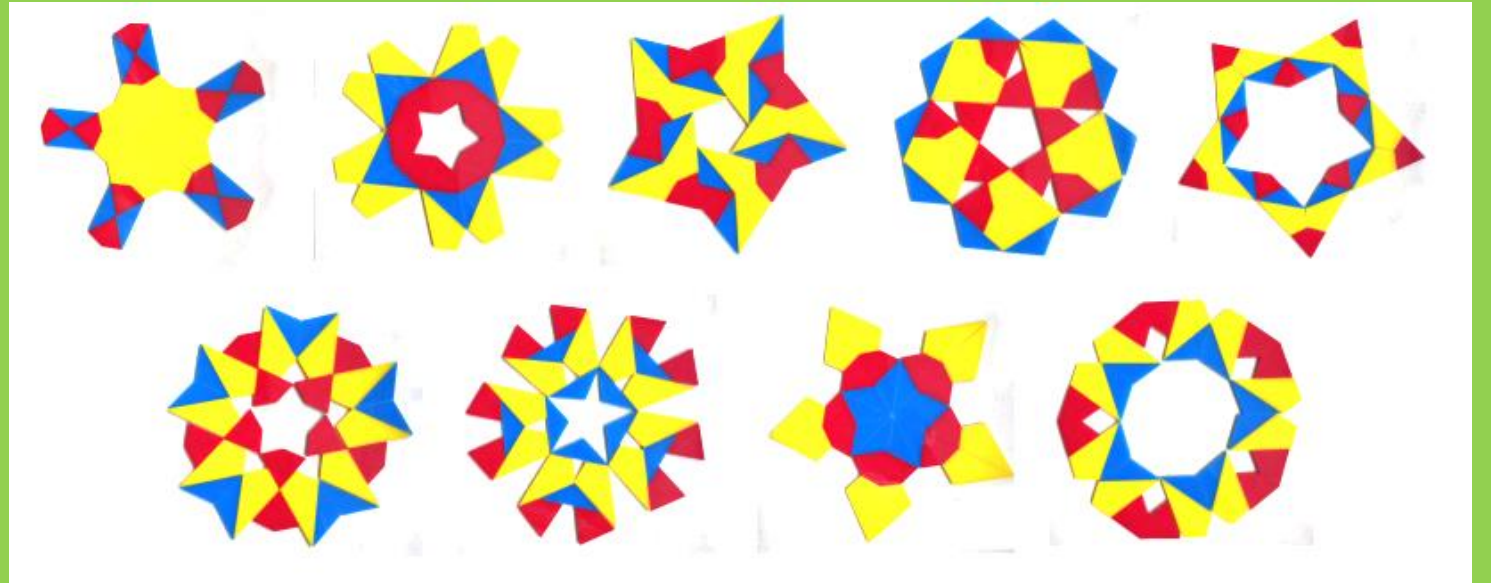
Free-form designs for endless variety

These gems enclose
some shapely spaces
The classic math of
free mosaic faces.



More fanciful designs

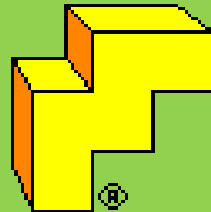
Here are some more designs
that may inspire
Your own imagination's
fervent fire.



Conclusion

Something there is in human minds that cherishes the new,
That sees the beauty of emerging order, that it's good and true.

That's how we build a consciousness, no end in sight,
And how we build the future in growing wisdom's light.



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