Math Circle Artifacts at the Bard Math Circle

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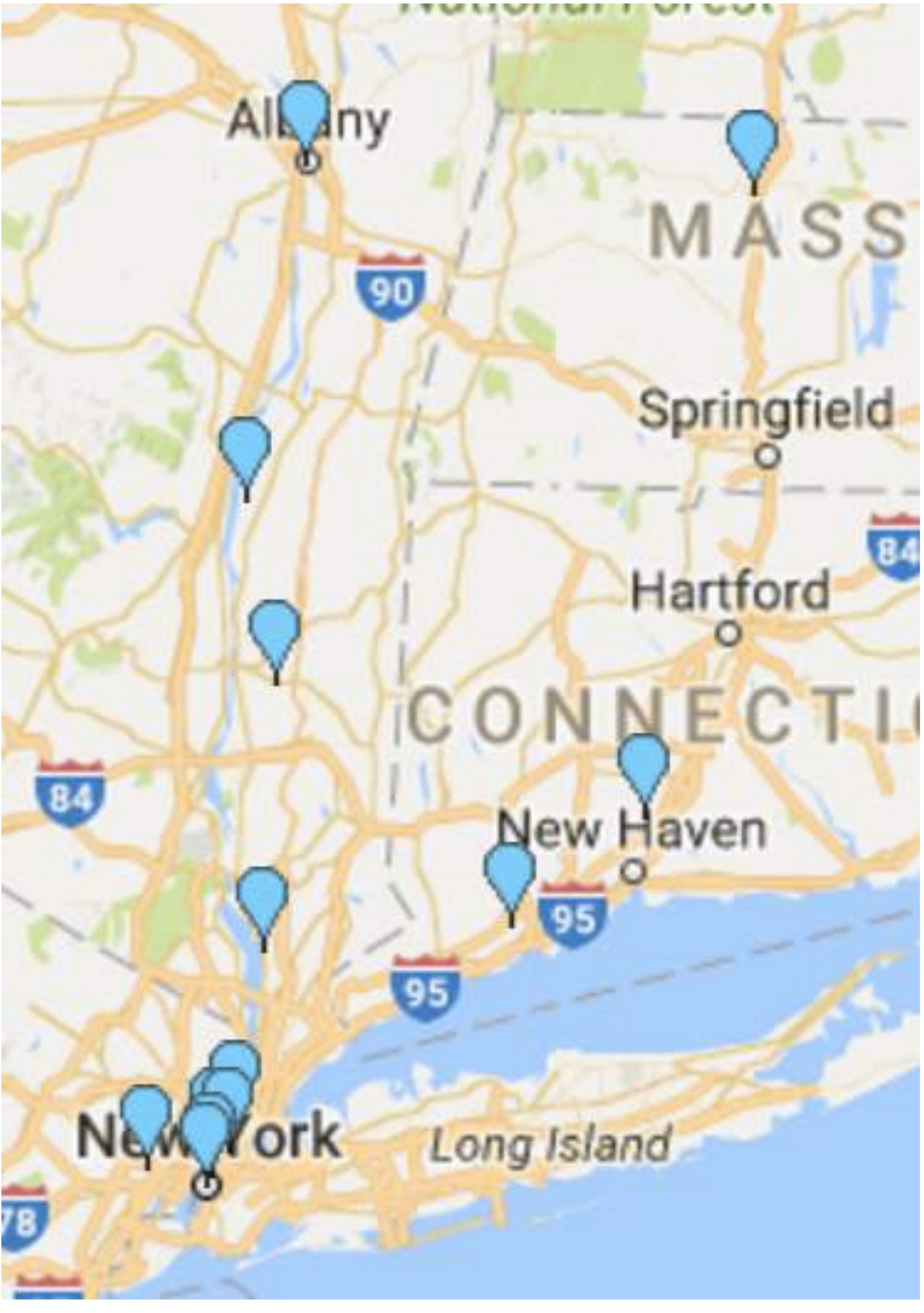


Bard Math Circle

est. 2007

Serves the Mid-Hudson Valley Region

- Library Programs
- Contests
- C.A.M.P.
- Rubik's Cube Club

Library Programs

Kingston Library
Tivoli Free Library

Curriculum

Puzzles and Games
Problem Solving
Math Artifact

Artifact. noun. an object made by a human being, typically an item of cultural or historical interest.

Math Artifacts

- Physical objects with significant mathematical content
- Opportunity to take math home and share
- Learn math artistically and in a tactile manner
- Disseminate mathematical ideas to others

Sonobe Units

Yoshimoto Cube

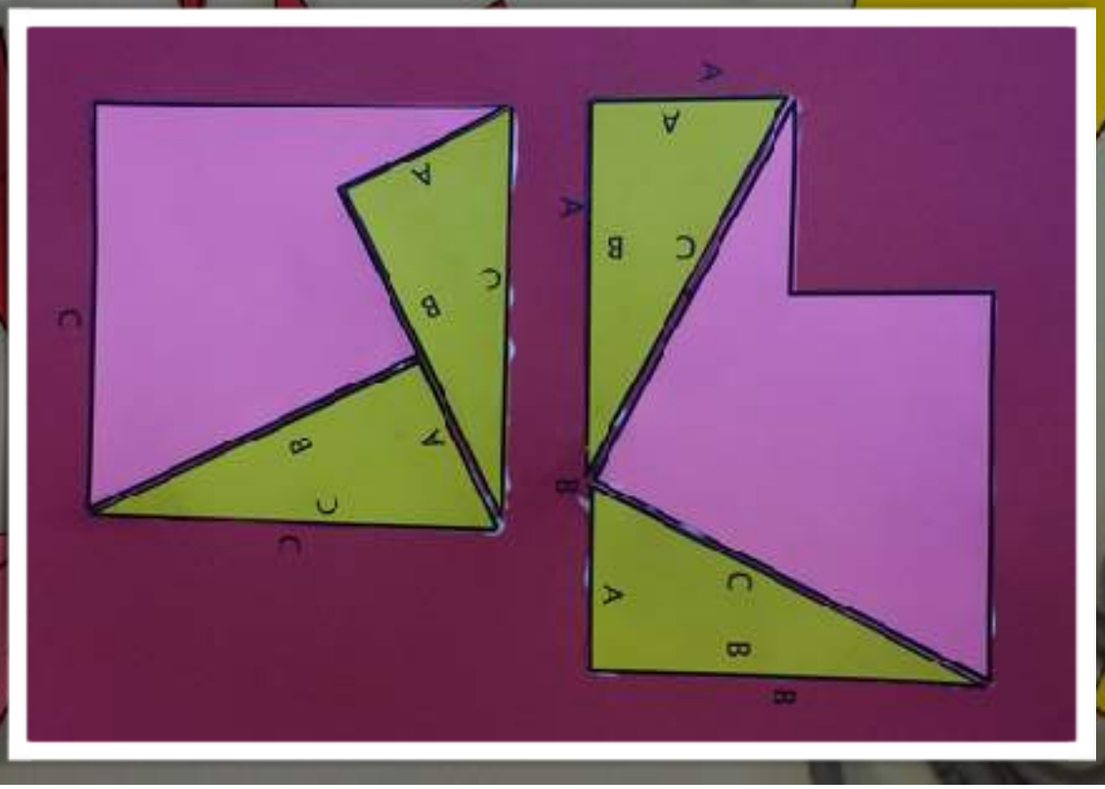
Snapology Variant

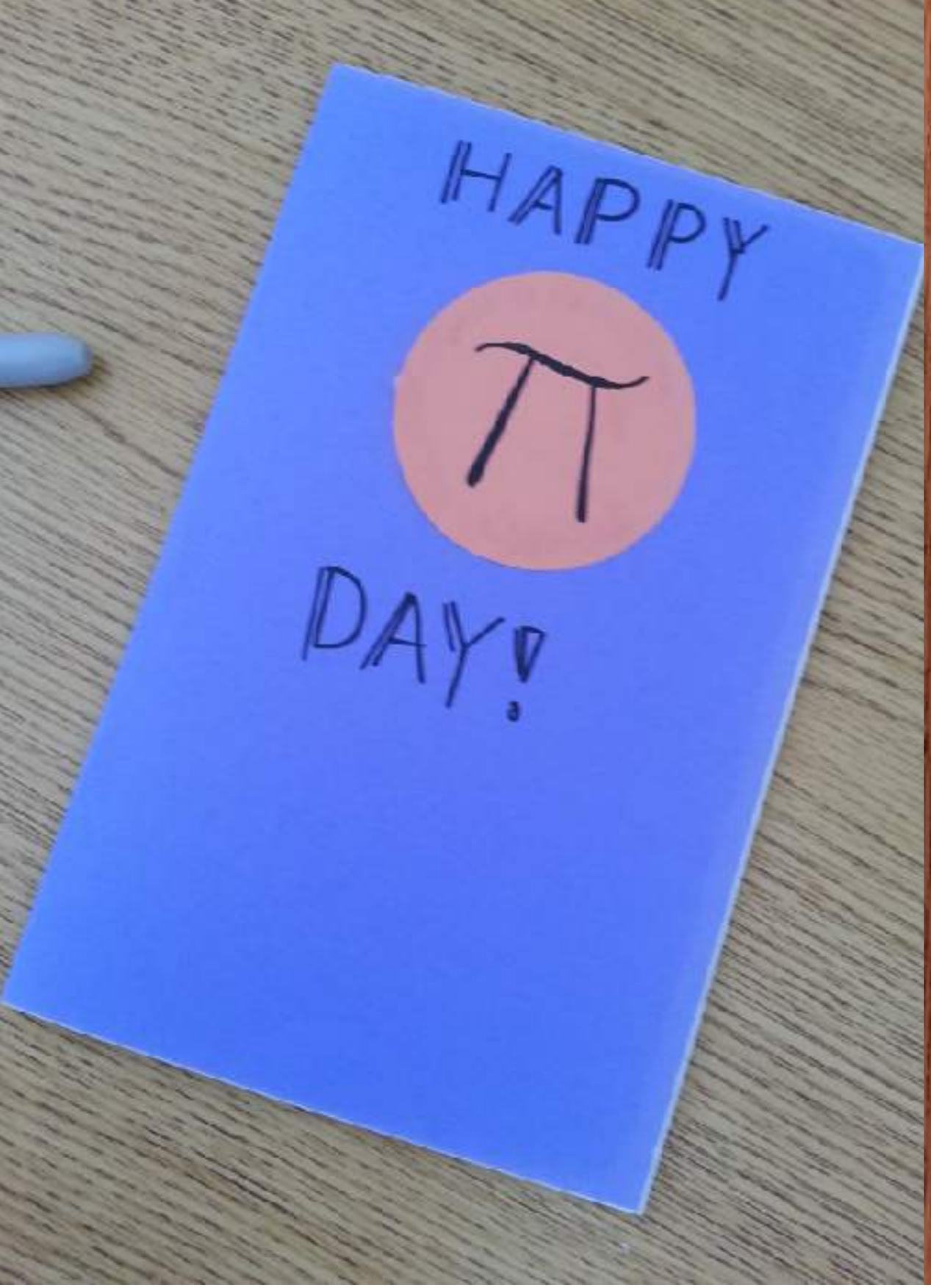

Snub Polyhedra

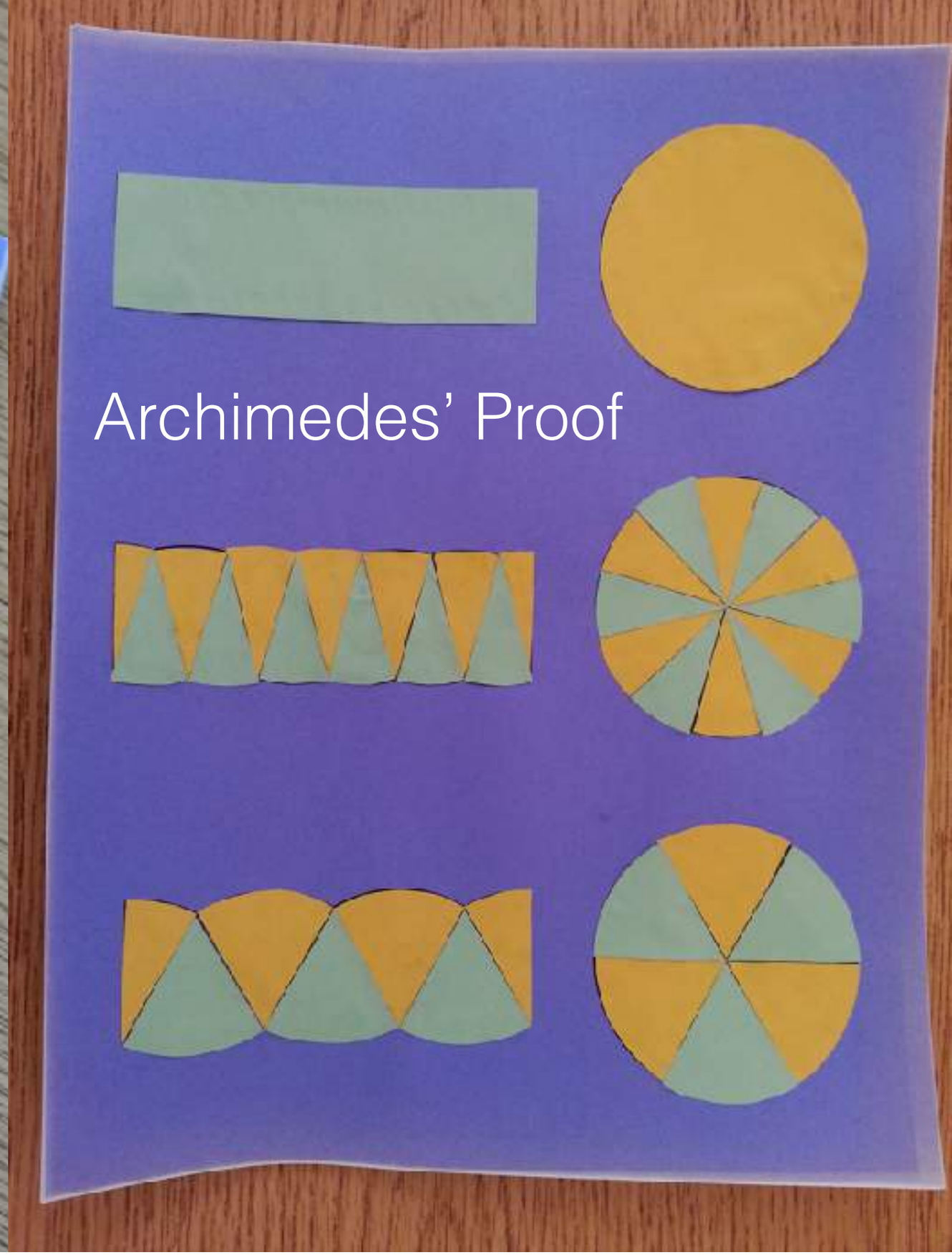
Paper Plate-ology

Picasso Tiles
Magnatiles
Magnaforms
Polydrons
ZOMEtool

Pythagoras!

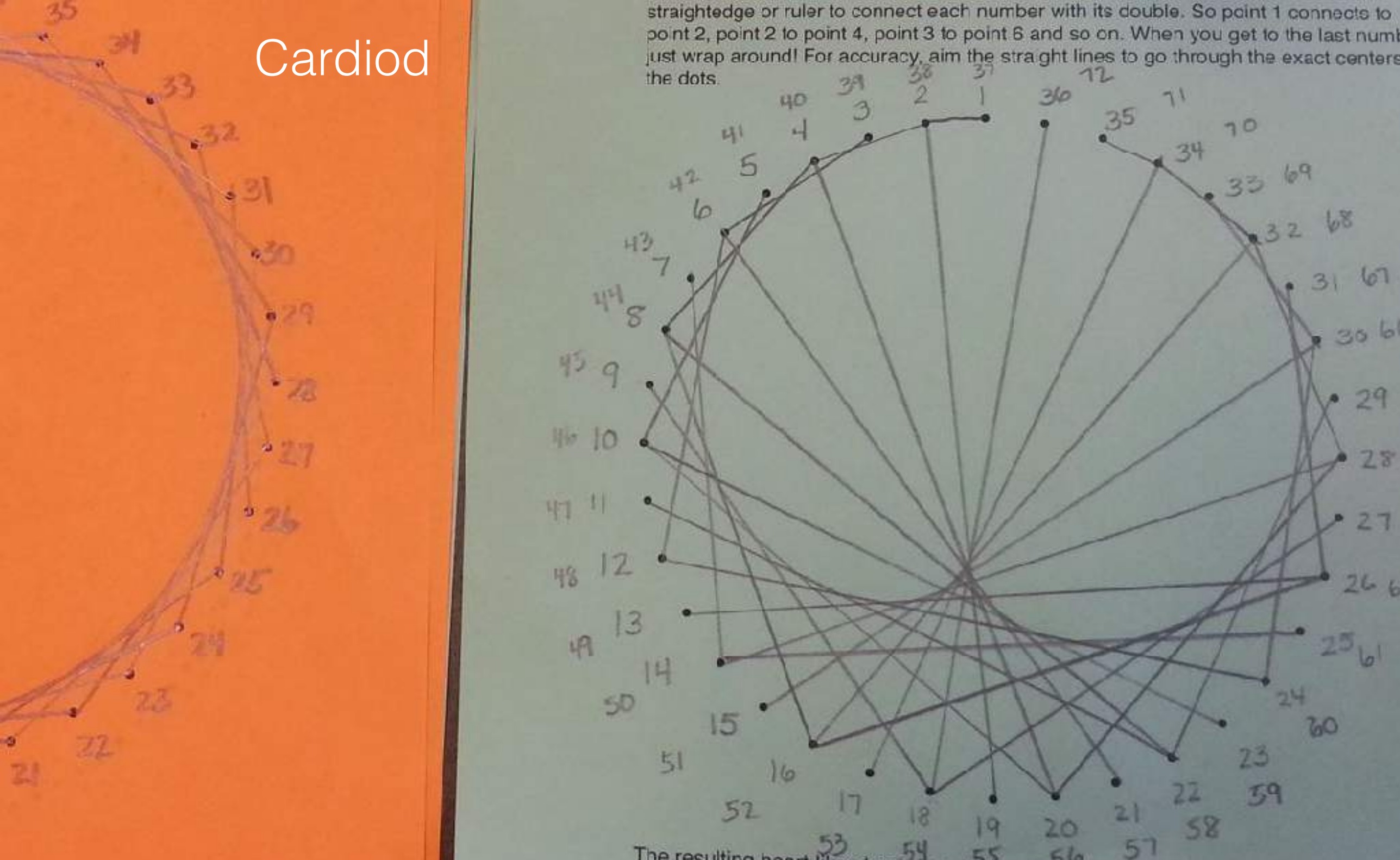



HAPPY
π
DAY!


Archimedes' Proof

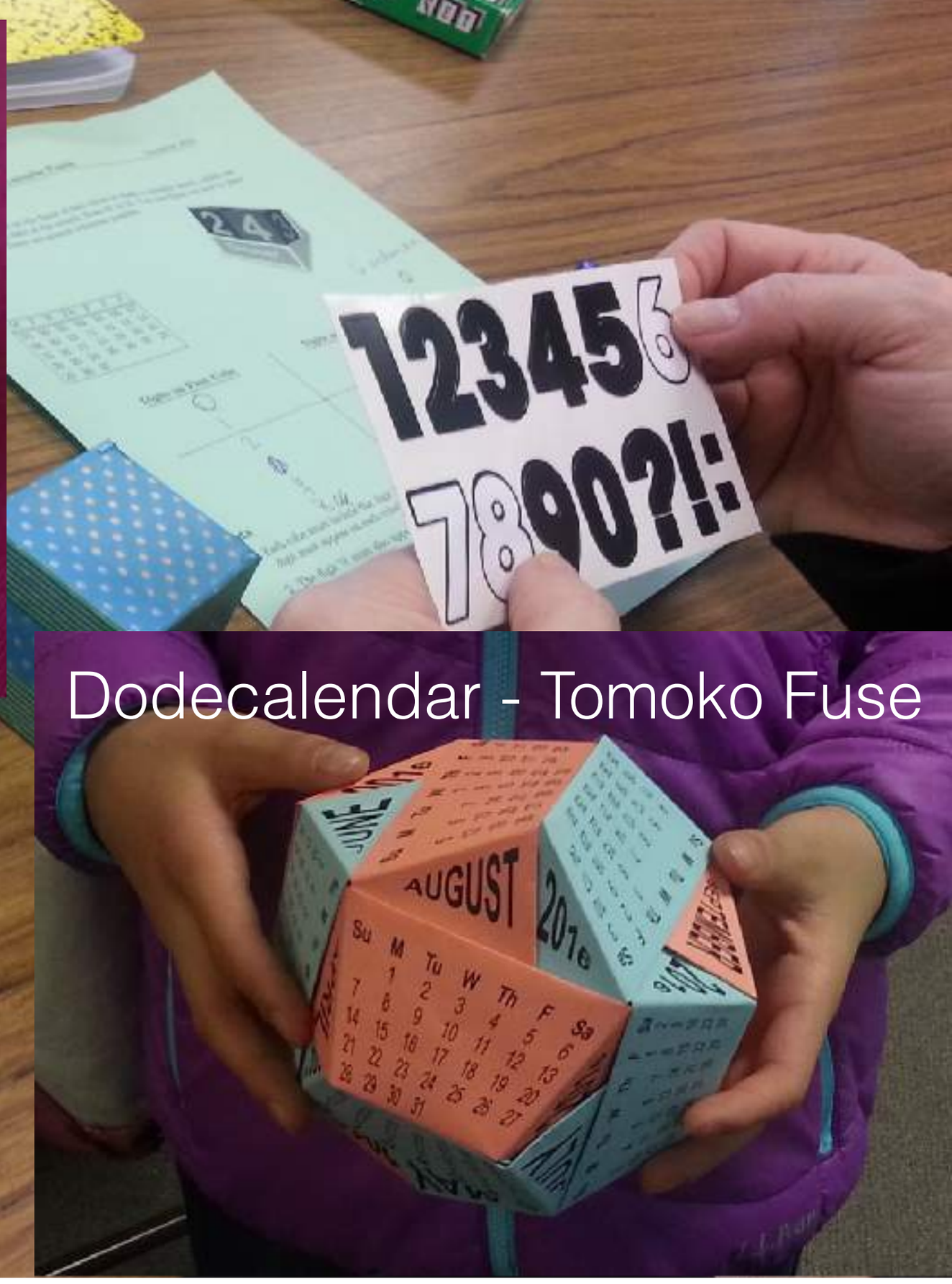
Cardiod

straightedge or ruler to connect each number with its double. So point 1 connects to point 2, point 2 to point 4, point 3 to point 6 and so on. When you get to the last numb just wrap around! For accuracy, aim the straight lines to go through the exact centers the dots.

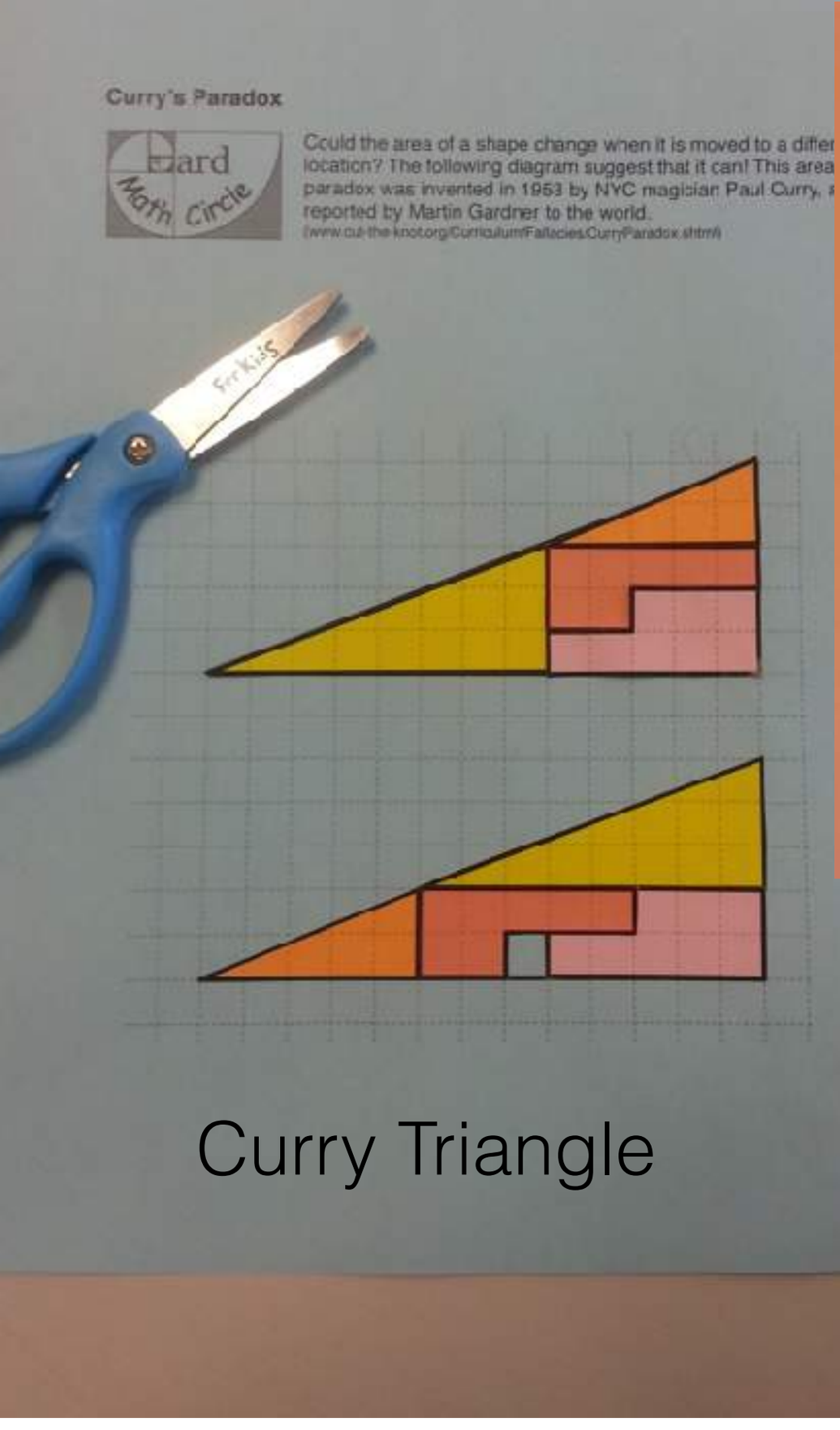


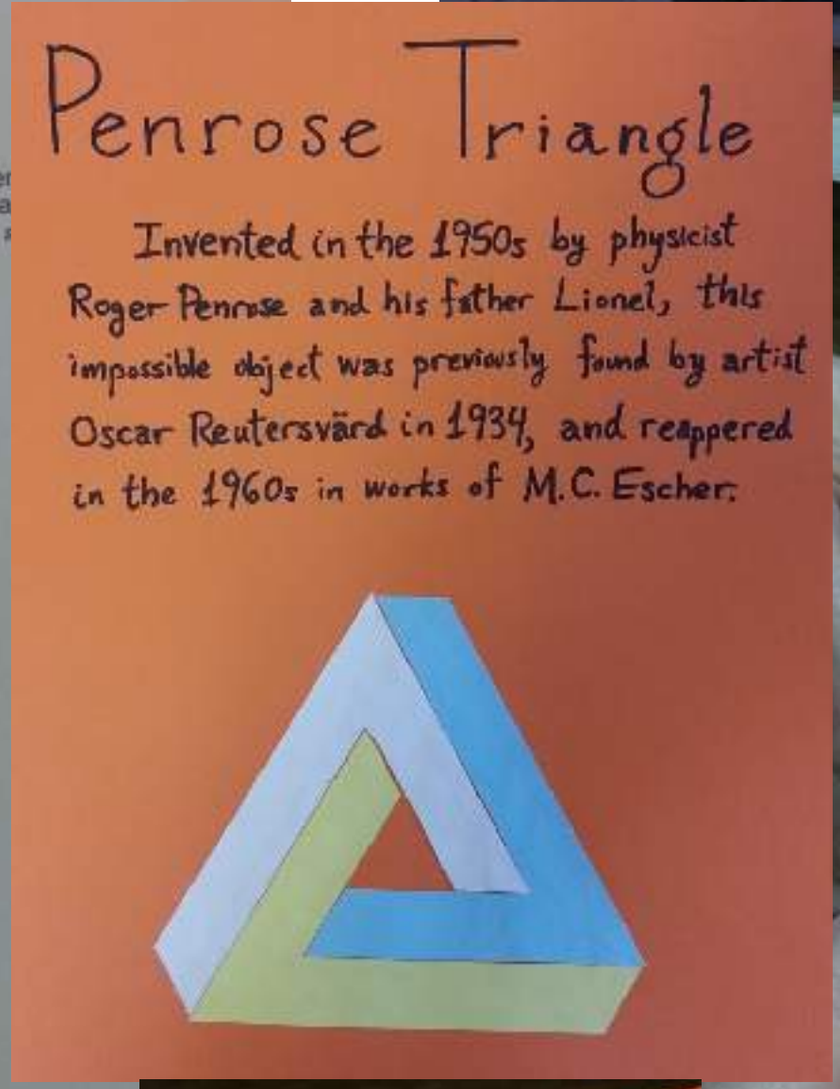
The resulting heart-like shape is called a *cardiod*. Cardiods were studied in the la 1600s and early 1700s for their mechanical properties. They are a special type of *limaçon* and *epicycloid*, and can be seen in the reflection inside a coffee cup.

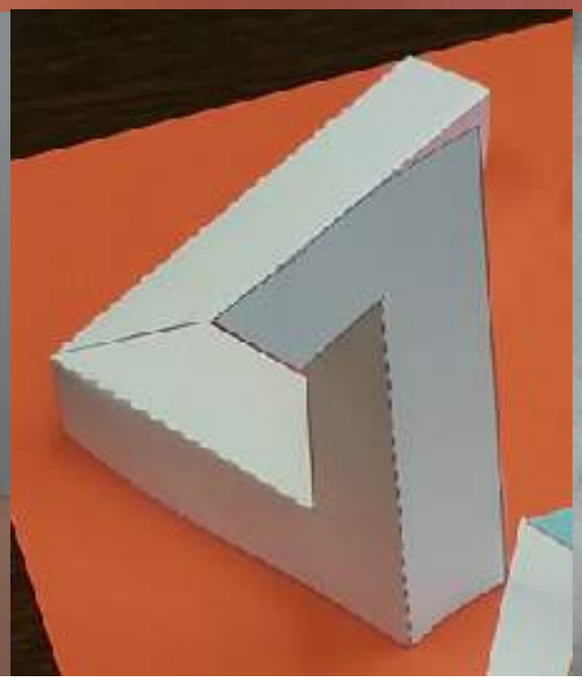
Singleton Calendar

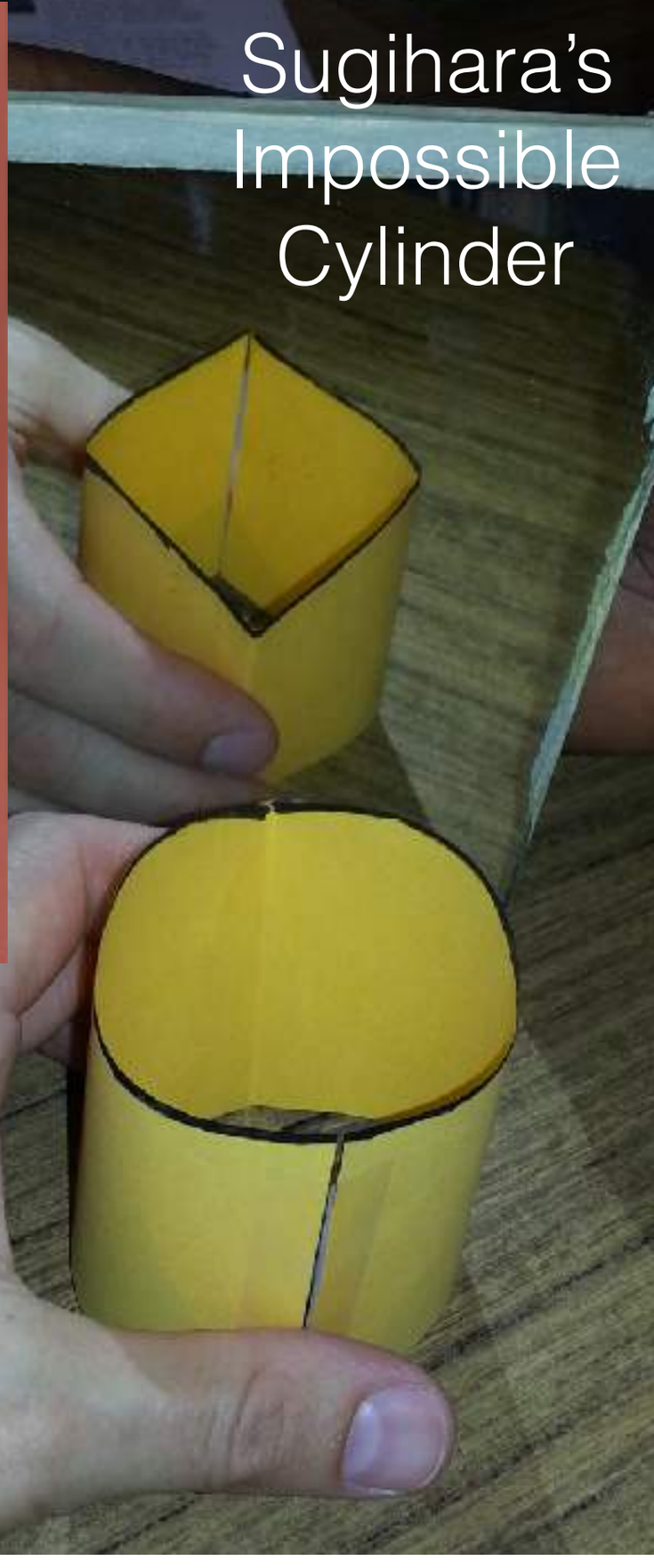


Dodecalendar - Tomoko Fuse

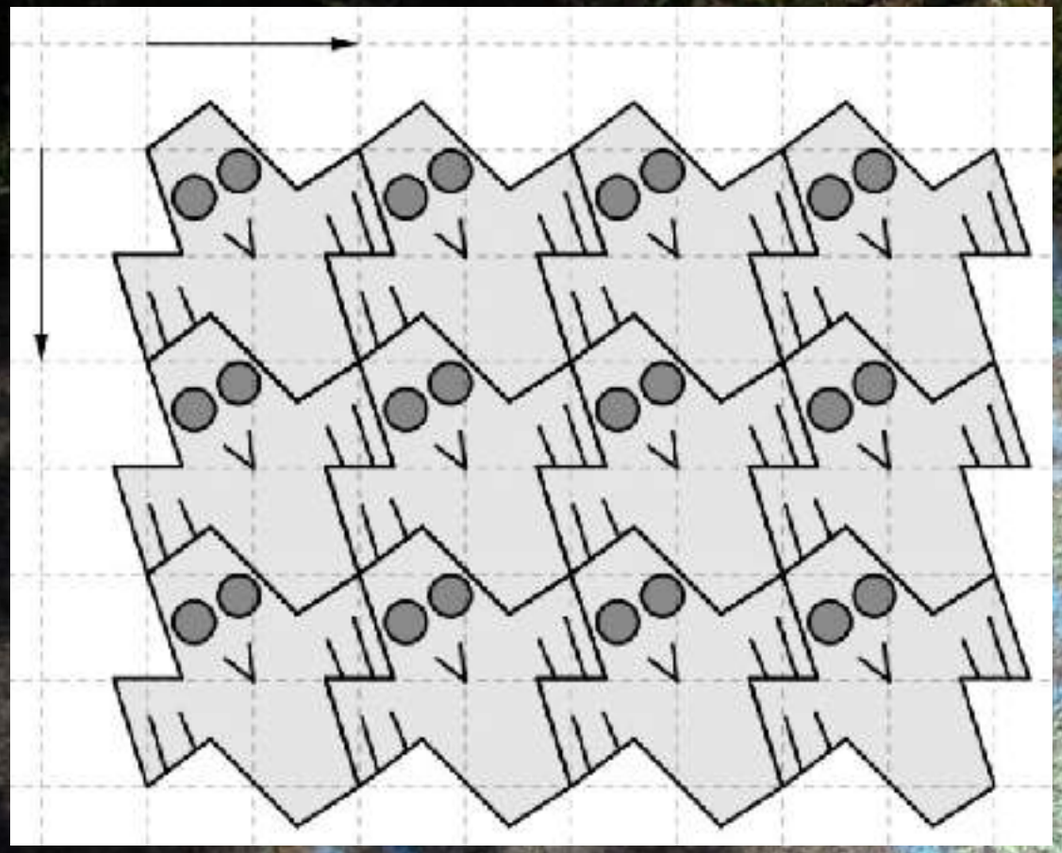

Curry's Paradox
Could the area of a shape change when it is moved to a differ
location? The following diagram suggest that it can! This area
paradox was invented in 1953 by NYC magician Paul Curry,
reported by Martin Gardner to the world.
(www.cut-the-knot.org/Curriculum/Fallacies/CurryParadox.shtml)
Curry Triangle


Penrose Triangle
Invented in the 1950s by physicist Roger Penrose and his father Lionel, this impossible object was previously found by artist Oscar Reutersvärd in 1934, and reappered in the 1960s in works of M.C. Escher.




Sugihara's Impossible Cylinder

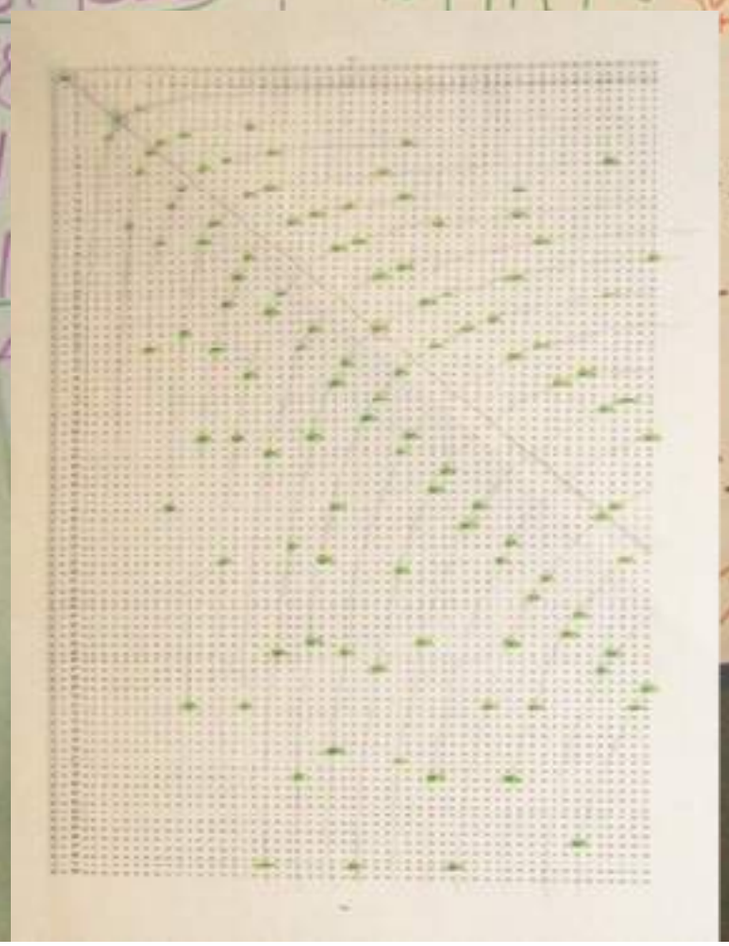
Impossible Braids



Chalk Tesselations

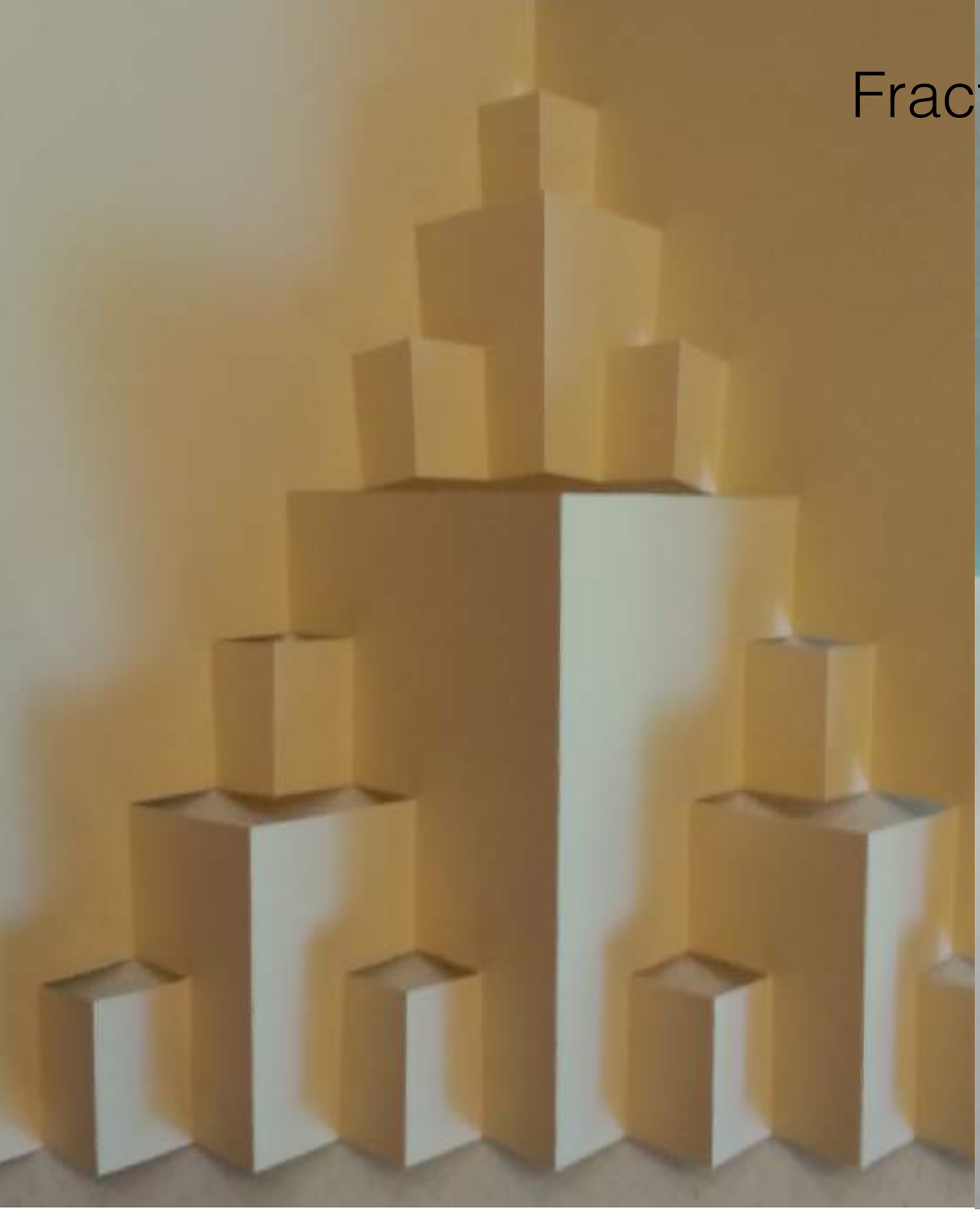
Almost Pythagorean Triples

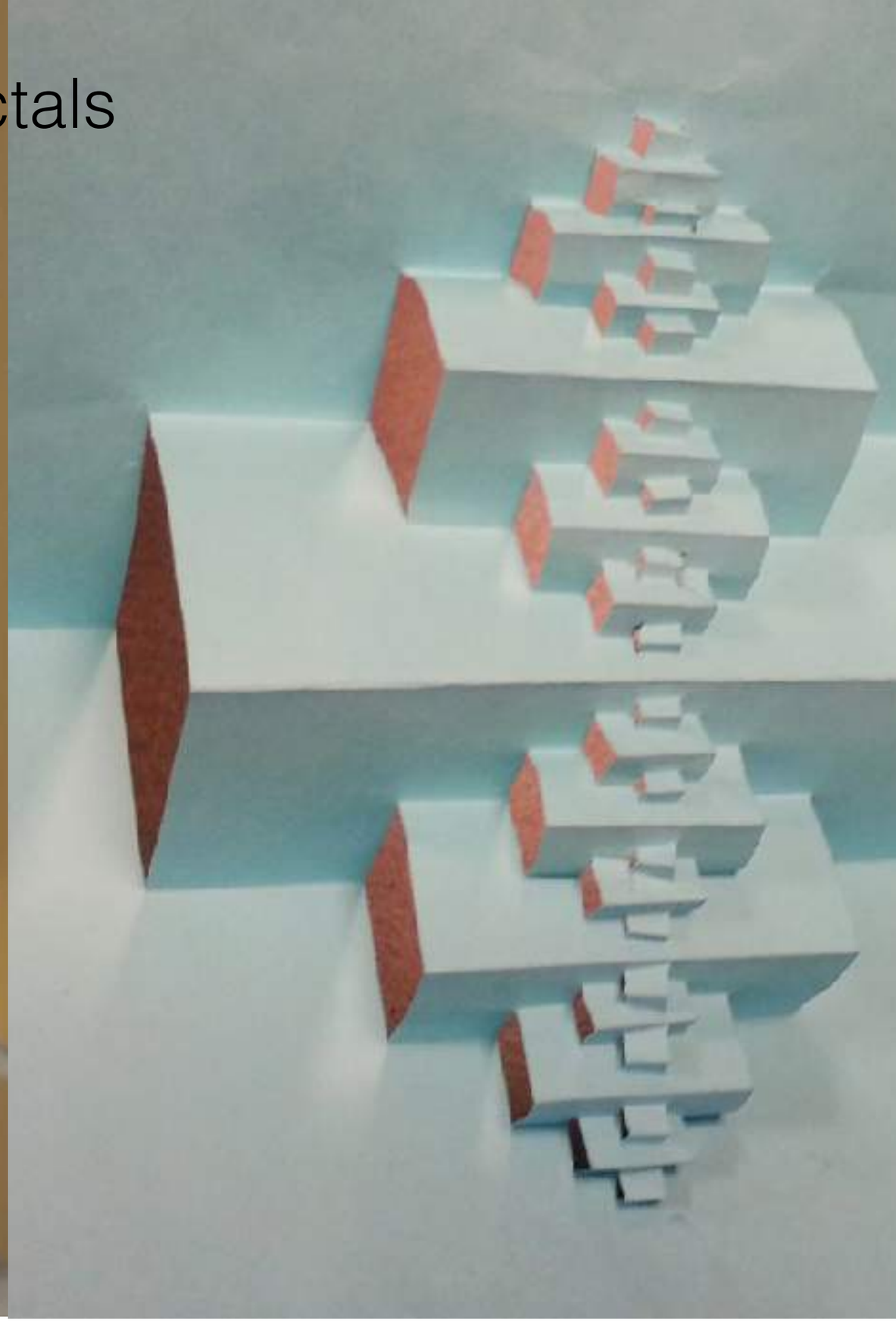
$$x^2 + y^2 = z^2 + 1$$



Marbling

Fractals





And More!

- Soma Cube
- Flexagons
- Möbius Strips
- Paper Puzzles
- Tensegrity
- 2D Dissections
- 3D Dissections
- and so on!

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