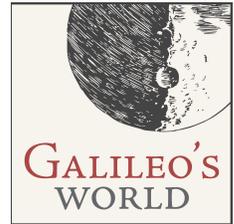


Introduction to the 5 Regular Pythagorean Solids

EXHIBIT: *Galileo's World*
 GALLERY: New Physics; Music of the Spheres
 OBJECT: Johann Kepler, *Mysterium cosmographicum* (1596)



We can define a solid as **regular** when every face, edge and corner angle is identical, whether a square on every side of a cube, or a triangle on every side of a tetrahedron. The Pythagoreans proved that there are **only five** regular solids: The octahedron has 8 sides; the dodecahedron has 12 sides; and the icosahedron has 20 sides. There are no others.

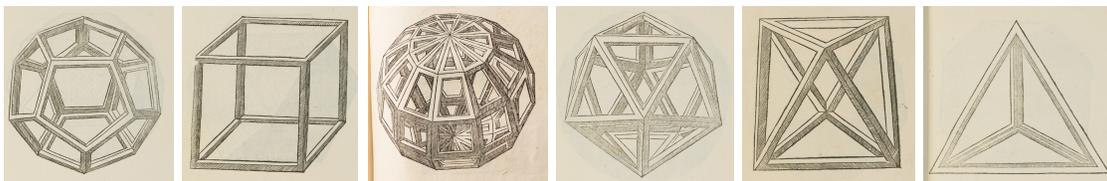
Solid	face	# sides
Tetrahedron	equilateral triangle	4
Cube	square	6
Octahedron	equilateral triangle	8
Dodecahedron	pentagon	12
Icosahedron	equilateral triangle	20

Which is which?

Given a set of three-dimensional regular solids, identify them using the information in the table.

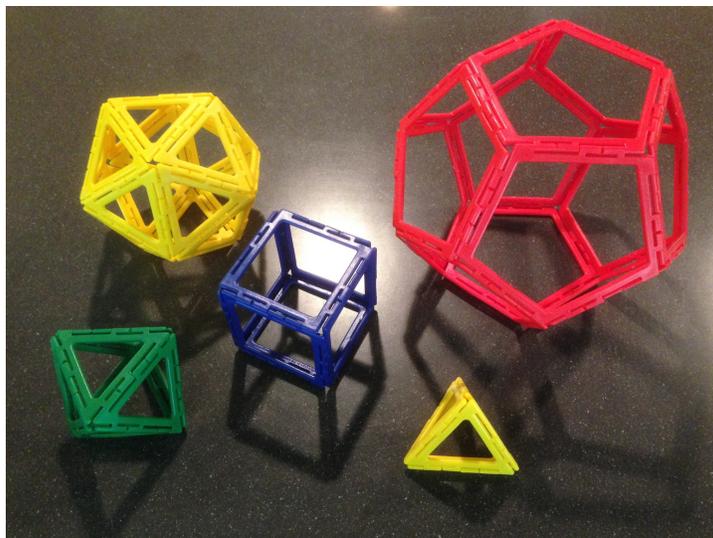


Which figure below is NOT a regular solid? Why not?

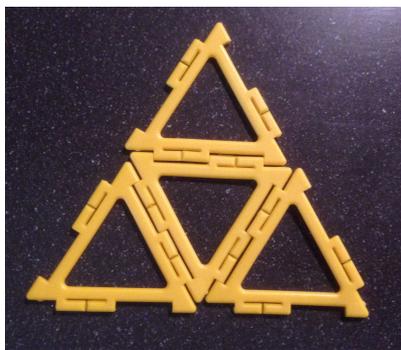


BONUS: Colored-Plastic models

Given the interlocking colored plastic triangles, squares and pentagons, assemble each of the five regular solids.



A “net” is a flat, two-dimensional pattern that could be used as a template to cut out models of the solids, printed on card stock.



Use the plastic pieces to create your own “net.”

For each solid, is there more than one way to make a net?

Provided by the **OU Academy of the Lynx:**
Collaborating in exhibit-based learning, oulynx.org
(Ask about the *Galileo's World* iPad Exhibit Guide)

