

Geometry Project – Polyhedra Exhibition (9pts)

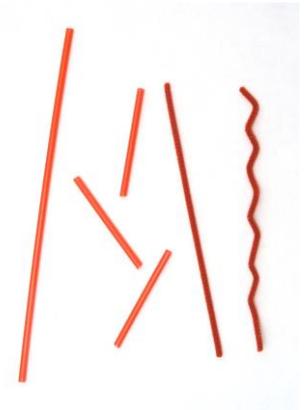
Polyhedra Exhibition (Project for up to 6 students)

Objective of this project is to create an exhibition of various polyhedra models. You may choose any material and technique suitable to build models but models must be true showpieces that nobody would hesitate to display in a classroom or school's hallway. Below are a few suggestions on what to use to build models; you may use one or combination of techniques to make your exhibition visually appealing, yet mathematically accurate and sound. (The first two techniques are particularly effective.)

1. For solid-face paper models, use precisely drawn polyhedra nets. Use thicker paper to make durable models, use colors to make your exhibition varied.

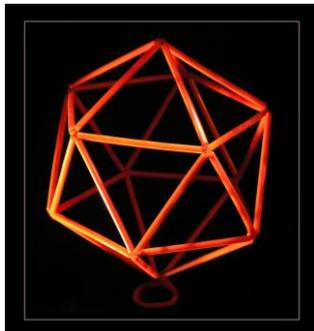
2. For wireframe models use drinking straws and thin “pipe cleaners”, which you can get in supermarkets (in craft section) also as chenille or chenille sticks. Straws will be the edges of your polyhedra and cleaners will be used to connect these edges. You may want to make cleaners a bit wavy before sliding them into straws for a snug fit (see the picture of supplies on the left and model of icosahedron below).

3. Other techniques to create wireframe models include using (1) small marshmallows and wooden skewers or longer toothpicks, or (2) craft metal wire. You may give free rein to your own artistic vision as long as your exhibits are visually appealing and geometrically accurate.



The exhibits must include:

- All Platonic solids
- Example(s) of prism(s), pyramid(s), antiprism(s) and Archimedean Solid(s) (at least one of each).



Each exhibit must have a description – like in a museum or at artistic exhibition. The description should bear the name, a few fundamental facts and possibly an interesting feature(s) to catch visitor's eye. Regularity, Euler's formula and other relationships are worth mentioning. It's an exhibition so think of a general visitor and keep description short, just a few lines (yet sound and accurate).