

Project Polyhedron

Part I: Your mission, should you choose to accept it, is to construct a semi-regular polyhedron. “Semi-regular” means it must be made up of several different types of regular polygons joined together in a patterned, symmetric fashion. In order to prepare for this mission, you will want to view examples at the following web sites:

www.ScienceU.com/geometry/facts/solids/handson.html

<http://www.korthalsaltes.com/instructions.htm>

After you have gleaned some ideas from these sites (and others if you choose to look around some more), you will want to gather materials for the construction of your polyhedron including:

- Colored paper, foam board, card stock, poster board
- Tape or glue
- Templates for each regular polygon needed to create your chosen polyhedron
- You may want to print the polyhedron from the web so that you have some sort of model of it to work with as you construct it.

You will “contract” for a grade based on the number of faces your polyhedron has.

Contract: Less than 10 faces	C	[15 points]
11-14 faces	B	[20 points]
15 or more faces	A	[25 points]

To fulfill your contract, your polyhedron must be **carefully constructed, colorful, and at least 1 foot wide at its widest point**. Failure to adhere to these qualifications will result in a deduction of points.

Part II: To complete your mission, you must also complete **TWO** of the following three tasks...

- Determine a “use” for your polyhedron and write a professional business letter to a company explaining what it is, why people will be interested in purchasing it, the options a consumer will have available, and therefore, why the company should agree to produce your product (be sure to name it too).
- Write an instruction manual that clearly shows someone how to construct your polyhedron from scratch. Be sure to include illustrations, dimensions (if necessary), material, and detailed explanations (steps).
- Write a paper showing the calculations for the total surface area of your polyhedron. Make sure your answer is exact. NO decimal approximations.

Each of the completed tasks is worth 15 points. To receive full credit your papers must be clear, concise, and cleanly written. While spelling and grammar are not explicitly being graded, distractions due to poor spelling or incorrect grammar will result in a deduction of points.

The entire project is due by the end of school on Thursday, May 23rd.

NO LATE PROJECTS WILL BE ACCEPTED.