






Answer Key – Exploring Geometric Solids

Explore the six polyhedron listed below. For each shape, determine the number of faces, edges, and vertices (corners). Record your results below.

POLYHEDRON	NAME OF EACH FACE	NUMBER OF SIDES ON EACH FACE	NUMBER OF FACES	NUMBER OF VERTICES	NUMBER OF EDGES
 Tetrahedron	[triangle]	[3]	[4]	[4]	[6]
 Cube	[square]	[4]	[6]	[8]	[12]
 Octahedron	[triangle]	[3]	[8]	[6]	[12]
 Dodecahedron	[pentagon]	[5]	[12]	[20]	[30]
 Icosahedron	[triangle]	[3]	[20]	[12]	[30]

- Look at the first shape in the table above. Find the sum of the number of faces and the number of vertices. How does this sum compare with the number of edges?

The number of edges is 2 fewer than the sum of the faces and vertices.

- Do you think this may be a rule for the other shapes?

Yes, it seems to work for all shapes in the table.

- Add the number of faces and the number of corners for the other shapes in the table. Compare the sum of faces and corners to the number of edges. What did you find out? Is there a rule for all of the shapes?

Faces + Vertices = Edges + 2