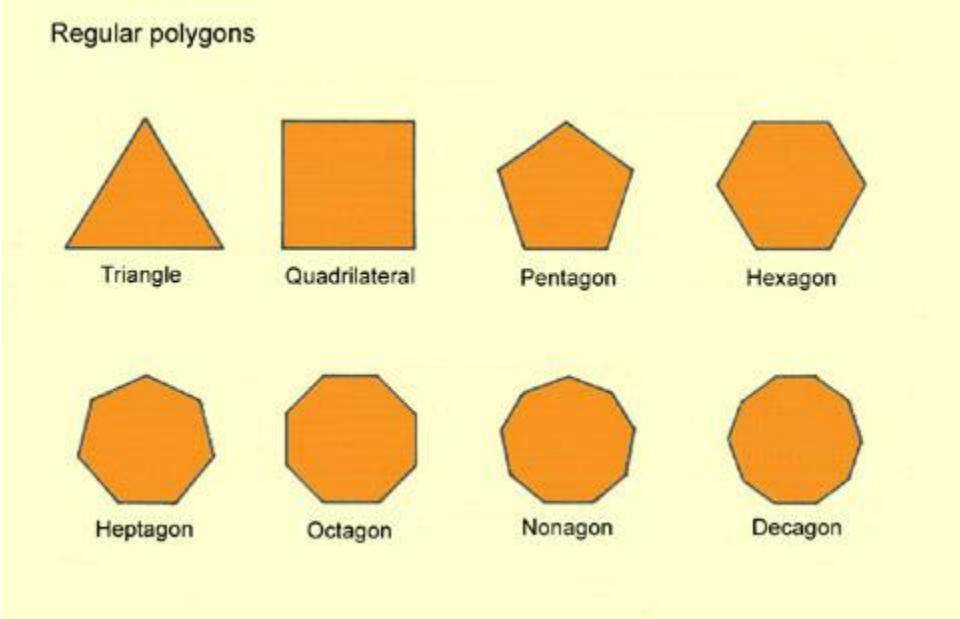
Project – Coloring Platonic Solids:

Problem Set 1: Coloring Two Dimensional Figures

Name:

Regular Polygons



NOTES: To make our lives easier, we'll consider up to decagon in this lesson.

1. Make a table with the number of vertices, edges, and faces of each regular polygon. (**)

Triangle:

2. If we have two colors of gumdrops and toothpicks, how many different triangles can you make? Make one triangle model with toothpicks and gumdrops, and then draw all possible diagrams.
3. If you rotate and reflect the figure, how many triangles appear to be the same in Problem 1? (**)
4. How many triangles are really different?

Square:

5. How many different squares can we make under the following conditions? Draw diagrams for each case.
    a. We want to make a square with two different colors of gumdrops.
    b. We cannot move the object.
6. If you rotate and reflect the figure, how many squares appear to be the same in Problem 1? (**)
7. How many squares are really different?
8. How about hexagon? Octagon? Pentagon? Heptagon? Nonagon? Decagon? (*)