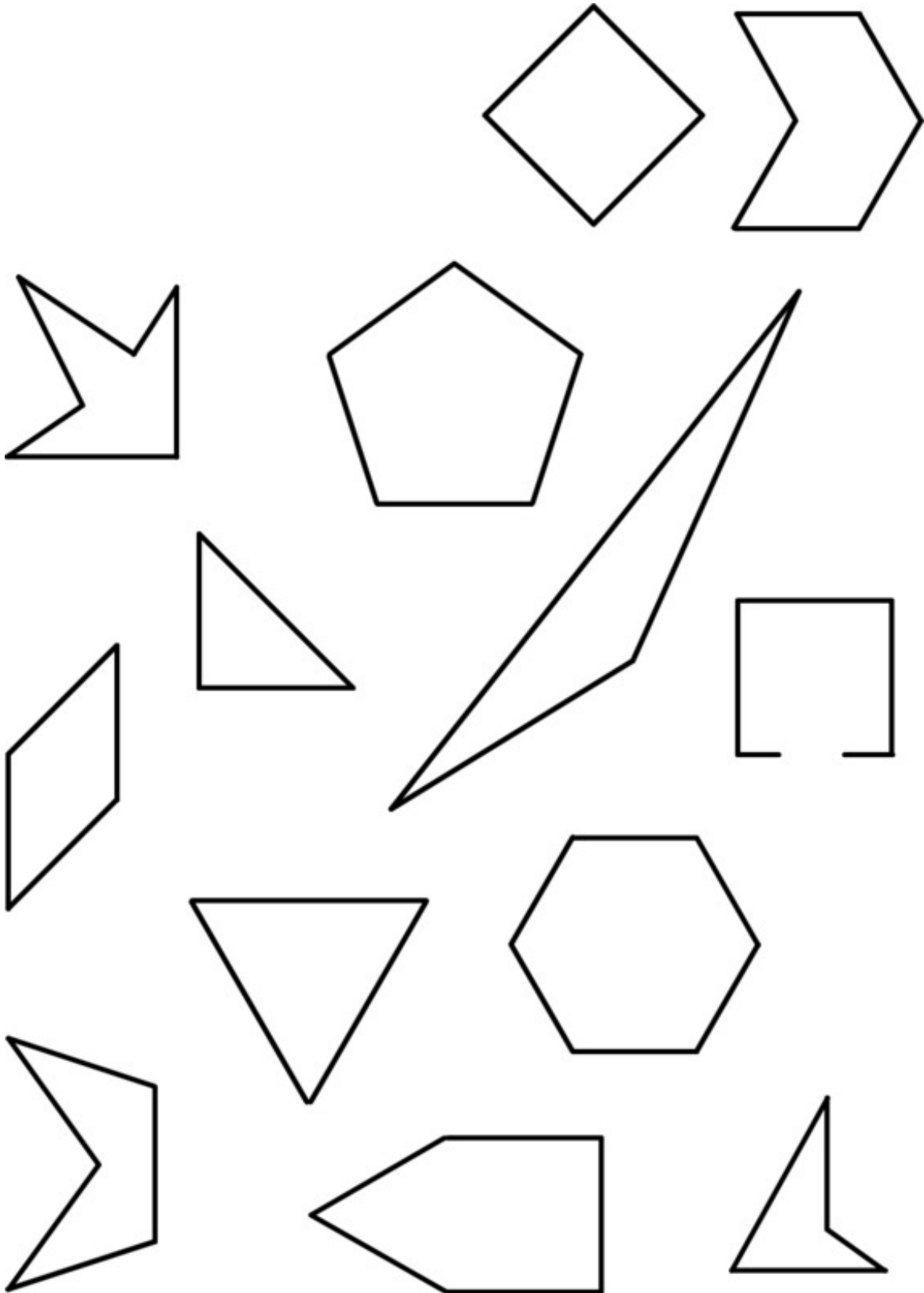


2.G Polygons

Alignments to Content Standards: 2.G.A.1

Task

- Color the inside of all the triangles blue.
- Color the inside of all the quadrilaterals red.
- Color the inside of all the pentagons orange.
- Color the inside of all the hexagons green.
- Circle all the shapes that have sides that are equal.



IM Commentary

The purpose of this task is to give students practice identifying different types of polygons, namely triangles, quadrilaterals, pentagons, and hexagons. A complete definition of a polygon is usually either very technical and dense or very wordy. Here are some ideas for talking about polygons to help students understand what they are.

- A polygon is made up of line segments that meet end-to-end. These line segments are called "sides." Every side meets exactly two other sides, and three sides never meet at the same point.
- Sometimes students talk about the sides meeting at "corners." The technical name for the corners is "vertices." A polygon always has as many vertices as sides.
- A polygon always divides the plane into exactly two regions - one "inside" the polygon and one "outside."

This task asks students to color the region "inside" the polygon. There is one figure in this task that does not divide the plane into two regions because it is not closed, so it is not a polygon.

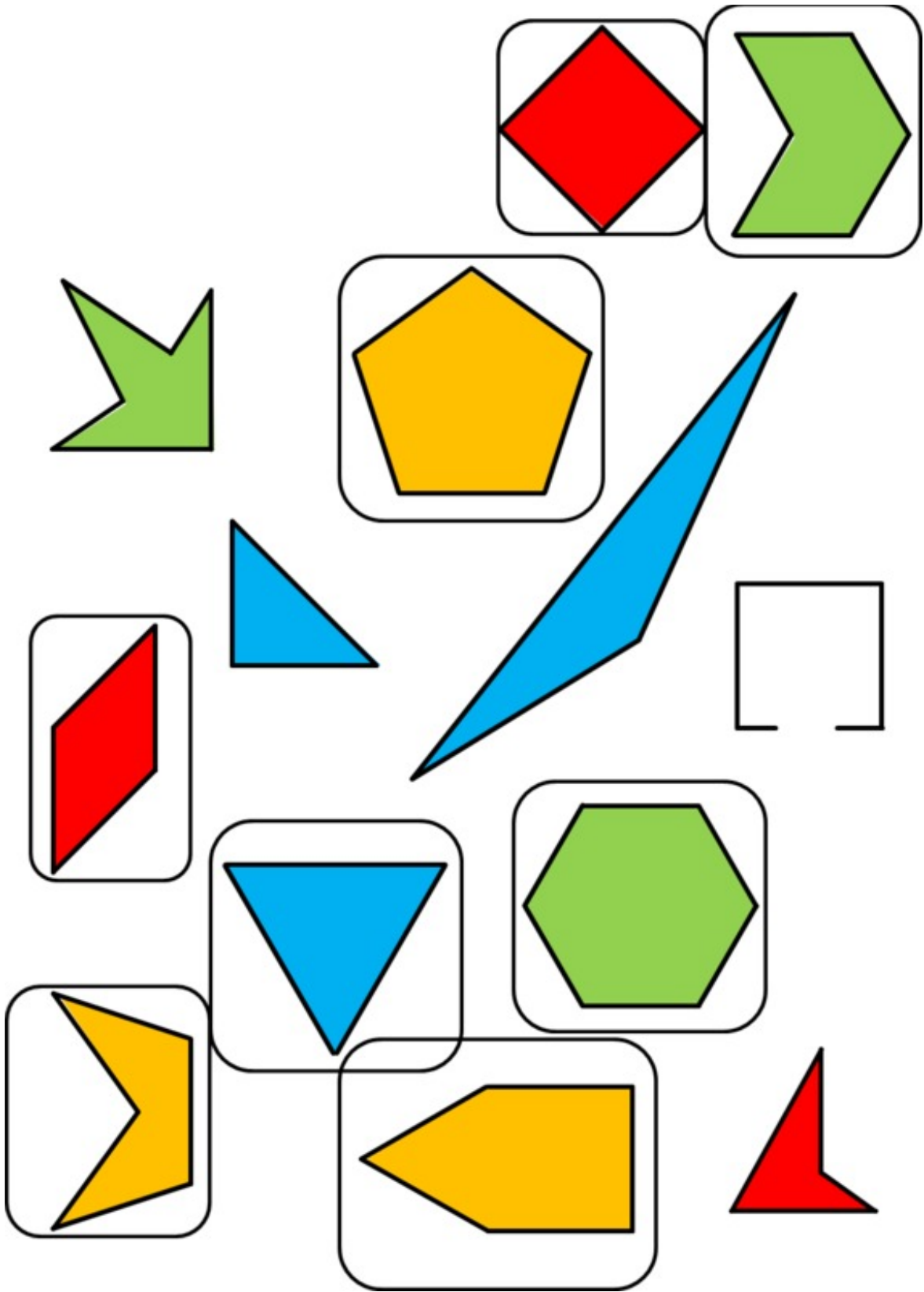
Triangles are polygons with 3 sides. Quadrilaterals are polygons with 4 sides. Pentagons are polygons with 5 sides. Hexagons are polygons with 6 sides. It is a good idea for the class to start by developing a definition for triangles first, then quadrilaterals, and only then trying to generalize. There is a great opportunity for students to engage in MP 6, Attend to precision, when talking about polygons and what they are.

Students often get confused when, for example, a triangle isn't oriented with one side horizontal and at the bottom. They may also have trouble identifying polygon types when they are not convex (that is, when the sides "push in") or when they are not regular (that is, when they don't have equal side lengths). The collection of shapes in this task gives students an opportunity to confront all of these possible misconceptions. As a result, it would be a good idea for the teacher to ask students to explain how they identified the various shapes to the class when everyone has had a chance to think it through for themselves.

Students can mark off the side-lengths of the polygons on the edge of a piece of paper if they are not sure whether the side-lengths are equal or not.

Edit this solution

Solution





2.G Polygons
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