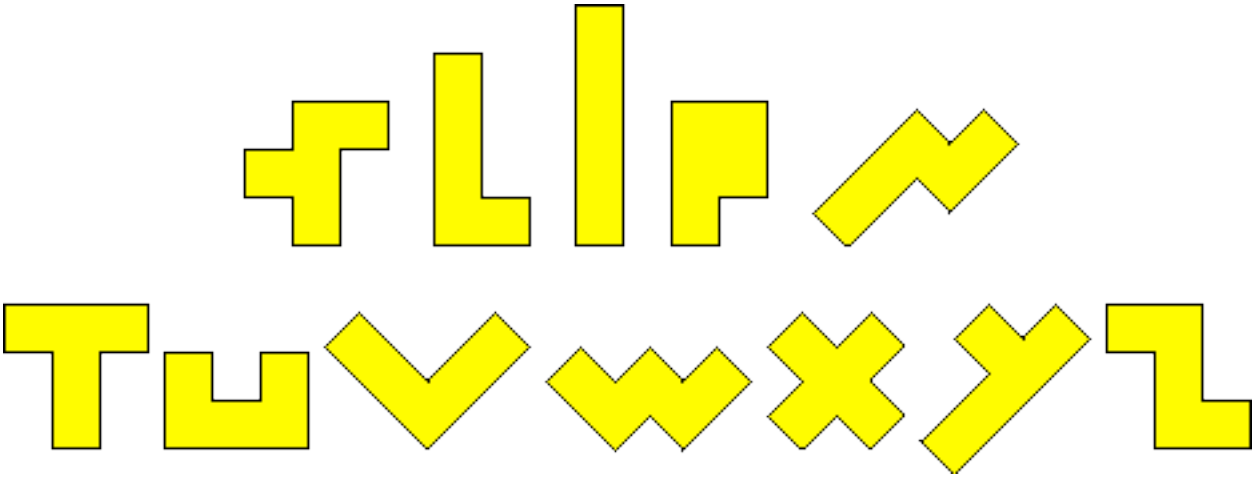
Scaling Pentominoes

The Pentominoes

Pentominoes are shapes made by joining five squares edge-to-edge. They are named after letters of the alphabet: FLIP'N TUVWXYZ.



The Puzzles

Step 1: Choose a pentomino and draw a scaled copy of it, with a scaling factor of 2 or 3.

Step 2: Tile the scaled copy with pentominoes.

More challenging puzzles:
◊ Use all different pentominoes in the tiling
◊ Only use copies of a single pentomino (homogeneous tiling)
◊ Only use copies of the original pentomino (self-tiling)

Results can be colored and displayed on the bulletin board.

The Math

Many students find it difficult to scale the shapes correctly. It is an opportunity to discuss similar figures and the need for *all* the sides to be proportional.

The activity can be followed by a discussion of the ratio of areas: what is the original area? What is the area of the scaled figure? What is the ratio of areas? How is it related to the scaling factor?

Extension

Experiment with scaling and tiling other shapes.

Find triangles that can be scaled and tiled with 2 copies of the original. With 3. With 4. With 5.