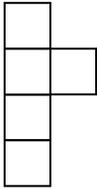
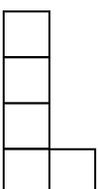
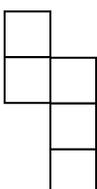
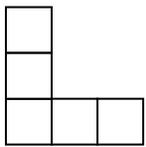
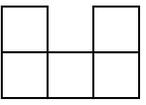
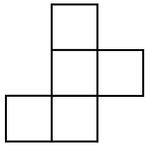
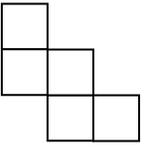
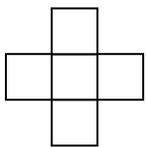
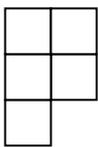
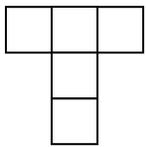
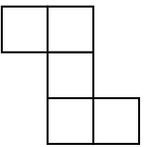


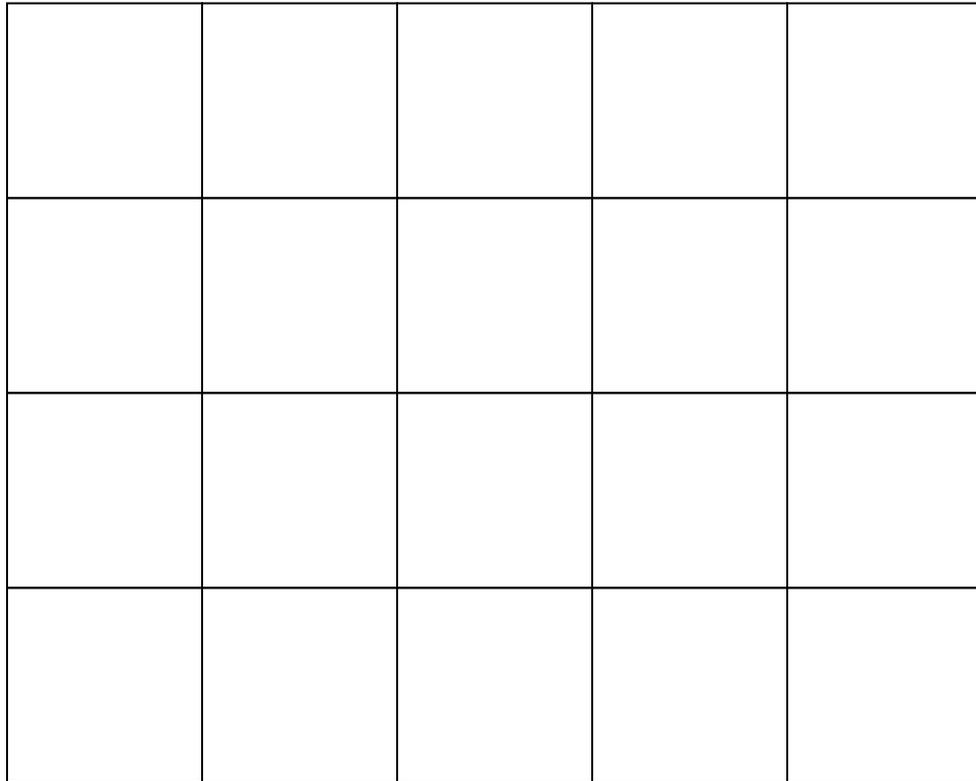
Which Pentominoes Make a Topless Box?

Put an X on the square that would be the bottom of the topless box.

Pentomino Piece	Makes a Box	Does NOT make a box	Pentomino Piece	Makes a box	Does NOT make a box
					
					
					
					
					
					

Date _____

Someone in a factory bought lots of cardboard that was five squares by four squares. They figured that each sheet of cardboard could be cut into four pieces so each piece would fold into a topless box. How should the sheet be cut? You may use the pieces and the grid below to try different methods. Use a colored pen or pencil to show where you would cut the sheet. Put an X in each square that would be the bottom of a topless box.



More Pentomino and Other Net Explorations

Pentomino Rectangles

Make as many rectangles as you can with pentomino pieces. You may use any number of pieces. Trace around the pieces to show how you used them to create each rectangle. Can you make a rectangle that uses all 12 pieces?

MATH Pentomino Boxes

Use the pentominoes that could be folded into a topless box. Try to write the letters M-A-T-H on four of the squares so that the word "MATH" will appear on the sides of the box.

Cubes from Pentomino Topless Boxes

For each of the pentomino topless boxes, explore places to put a sixth square so that the box would have a top (and therefore become a cube). Sketch your results.

Other Cubes

Are there nets for a cube that don't start with a pentomino net? Using a hexomino (cube) net, try to place the dot patterns so that the net folds into a regular die.

Other solids

Choose a 3-D solid shape (e.g., a rectangular prism or a square pyramid). Create a net for the solid. How many other nets can you find? Use the shapes of the solid's faces and create some arrangement of the faces that would not fold into the solid. Have a friend decide which nets would fold into the solid and which would not.

