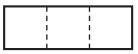
LAB 4.1
Finding the Polyominoes

Name(s) _____

Equipment: 1-Centimeter Grid Paper, interlocking cubes

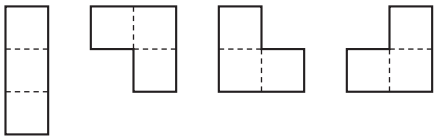
This is a *domino*. It is made of two squares, joined edge to edge.

A *tromino* is made of three squares. This one is called the straight tromino.

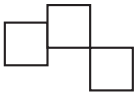


This is the *bent* tromino.

There are only two different trominoes. These are the same ones as above, but in different positions.



However, this is not a tromino, since its squares are not joined edge to edge.



Definition: Shapes that are made of squares joined edge to edge are called *polyominoes*.

You can make polyominoes using interlocking cubes. Be sure that when the figure is laid flat, all the cubes touch the table.

1. *Tetrominoes* are made of four squares. Find them all and record them on grid paper.
2. *Pentominoes* are made of five squares. Find them all and record them on grid paper.

Discussion

A. Find a way to convince an interested person that you have indeed found all of the polyominoes with area from 1 to 5, and that you have no duplicates.

B. A natural way to classify the polyominoes is by area. Find other ways to classify them.

C. Which pentominoes can be folded into a box without a top?

Polyomino Names Reference Sheet

These are the standard polyomino names.