

# INTRODUCTION

A set of Power Blocks consists of 254 blocks cut in the shape of triangles, squares, rectangles, and parallelograms. They are produced in eight different colors. Sets of different colors may be mixed or left intact. Eight sets are a useful quantity for a class of thirty-two students. One reason for leaving the sets intact is to facilitate whole class instruction. Frequently within a class, each group of students needs the larger blocks to solve a problem. There are fewer of the larger shapes than the smaller shapes. Having each set a different color enables the teacher and students to locate missing blocks quickly.

Power Blocks are cut to metric units. The basic unit of length is the length of the side of the smallest square, which is 25 millimeters. Each of the different pieces is inscribed with a code to identify it. Ten different triangles are coded T1 through T10. Squares are coded S1 through S5. Rectangles are coded R1 through R5. Parallelograms are coded P1 through P4. The breakdown of the pieces in a set is as follows:

<b>Triangles</b> .....	<b>Qty</b>	<b>Squares</b> .....	<b>Qty</b>
T1 .....	32	S1 .....	100
T2 .....	16	S2 .....	4
T3 .....	8	S3 .....	2
T4 .....	8	S4 .....	4
T5 .....	4	S5 .....	4
T6 .....	8	<b>Total Squares</b> .....	<b>114</b>
T7 .....	4		
T8 .....	2	<b>Rectangles</b> .....	<b>Qty</b>
T9 .....	2	R1 .....	8
T10 .....	2	R2 .....	4
<b>Total Triangles</b> .....	<b>86</b>	R3 .....	2
		R4 .....	2
<b>Parallelograms</b> .....	<b>Qty</b>	R5 .....	2
P1 .....	16	<b>Total Rectangles</b> .....	<b>18</b>
P2 .....	8		
P3 .....	8		
P4 .....	4		
<b>Total Parallelograms</b> .....	<b>36</b>		

Each set of Power Blocks has within it all the pieces required to make four separate Tangram Puzzles. Each set also includes one hundred square tiles.

The shapes have been designed around the pattern for the powers of two (1, 2, 4, 8, 16, 32...). The powers of two pattern also occurs when exploring base two numbers. Elements of the

powers of two pattern also occur frequently in the writing and development of computer programs and the design of microprocessors. Power Blocks and the traditional Pattern Blocks are not redundant. Pattern Blocks are cut to the square number pattern (1, 4, 9, 16, 25, 36,...). The two materials are meant to complement and not replace one another.

In the lessons that follow, I have assumed teachers are working with small groups of students or are working from an overhead projector. Overhead Power Blocks are not presently commercially available. However, it is possible to make a set. If you are interested in doing this, purchase the following items from an artist's supply store:

- Utility knife (extra blades)
- Cutting mat
- Fine tipped permanent marking pen

Use the yellow pages in your local phone book to locate a plastics store that sells clear vinyl. Vinyl is soft and flexible and can be cut without using a power saw. Purchase enough one-eighth inch thick clear vinyl to make the blocks you want to make.

- Place the vinyl on the cutting mat
- Place a Power Block on the vinyl
- Cut around the Power Block
- Write the block's code on the vinyl

Repeat the process for each block you need.

