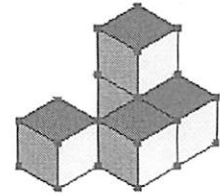


Name _____ Date _____

How Many Ways?



- Count out 24 cubes.
- Build all the rectangular prisms that can be made with the 24 cubes. For each rectangular prism, record the dimensions and volume in the table below.
- What do you notice about the rectangular prisms you created?
- How can you find the volume without building and counting the cubes?

Shape #	Area of the BASE of the Solid $A = bh$		Number of Layers of the Base (Height of Solid)	Volume
	base	height		
1	$4 \times 6 = 24$	1	1	24
2	$3 \times 8 = 24$	1	1	24
3	$2 \times 12 = 24$	1	1	24
4	$1 \times 24 = 24$	1	1	24
5	$1 \times 12 = 12$	2	2	24
6	$1 \times 6 = 6$	4	4	24
7	$1 \times 3 = 3$	8	8	24
8	$1 \times 2 = 2$	12	12	24
9	$2 \times 4 = 8$	3	3	24
10	$2 \times 2 = 4$	6	6	24

$$\begin{array}{r} 24 \\ 1 \overline{) 24} \\ \underline{1} \\ 1 \\ 2 \overline{) 12} \\ \underline{1} \\ 1 \\ 3 \overline{) 8} \\ \underline{3} \\ 5 \\ 4 \overline{) 6} \\ \underline{4} \\ 2 \end{array}$$

$$\begin{array}{cccc} 1 & 24 & 24 & 24 \end{array}$$