

BUILDING VIEWS

Picture Puzzles

Creator ... Doug. Williams
Publisher ... Mathematics Centre
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This Picture Puzzle is based on
... Task 104, Building Views
Teaching Notes
... mathematicscentre.com/picturepuzzles/teachingnotes.htm

Picture Puzzles

To Do

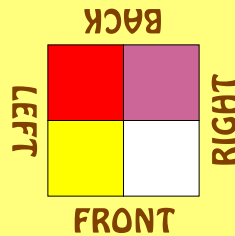
1. Given looking down views make towers of cubes.
2. Given side views make towers of cubes.
3. Draw isometric views of towers of cubes.

You Need

- Cuisenaire Rods or wooden cubes or linking cubes
- Square graph paper (1cm)
- Isometric dot paper (1cm)

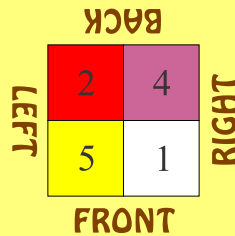
Picture Puzzles

You are looking down on four towers of cubes.



Picture Puzzles

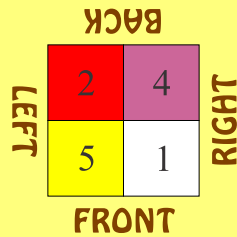
You are looking down on four towers of cubes.



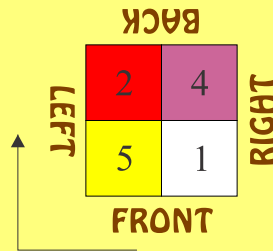
The numbers count the cubes in each tower.

Picture Puzzles

Build the towers.

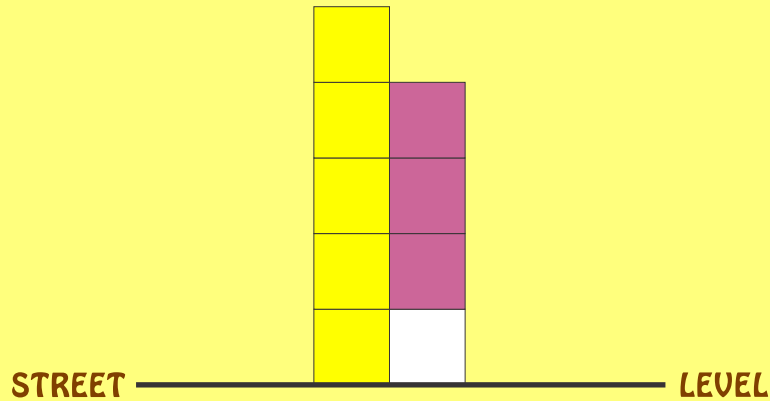
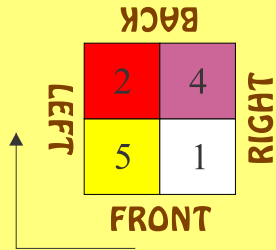


Build the towers.

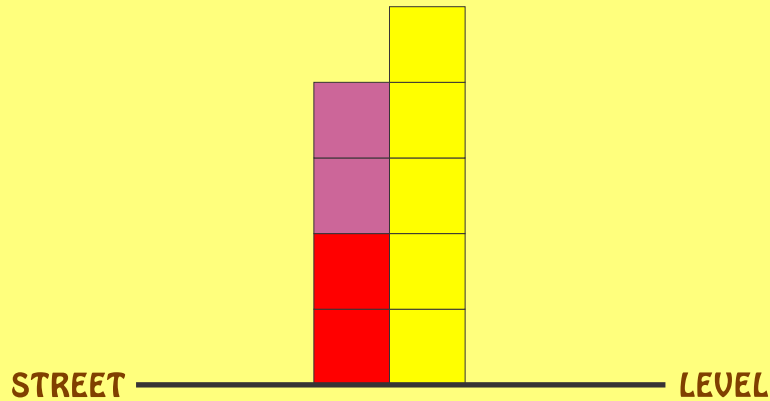
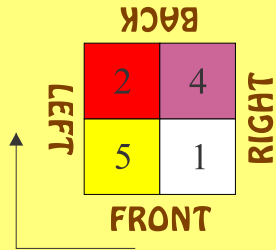


Walk around the tower block at street level...

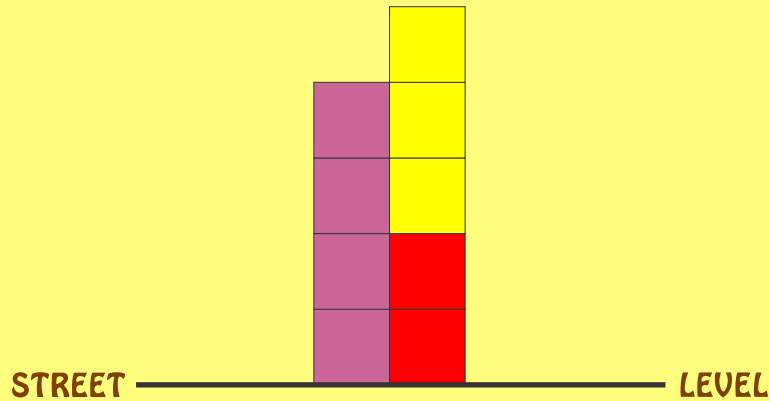
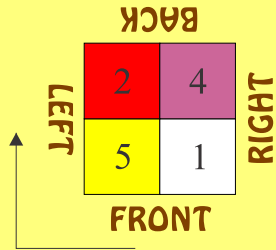
Front View



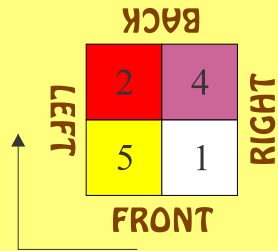
Left View



Back View



Picture Puzzles



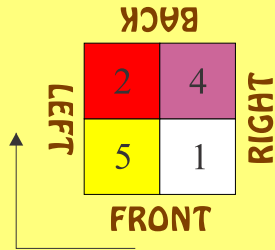
Right View

???

STREET ————— LEVEL

Picture Puzzles

Right View



???

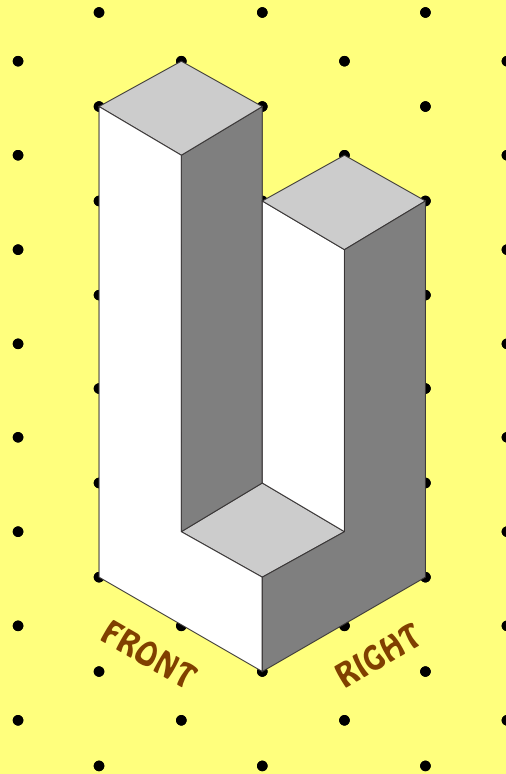
Draw it on graph paper.

STREET ————— LEVEL

Picture Puzzles

Isometric View: Corner of Front & Right Streets

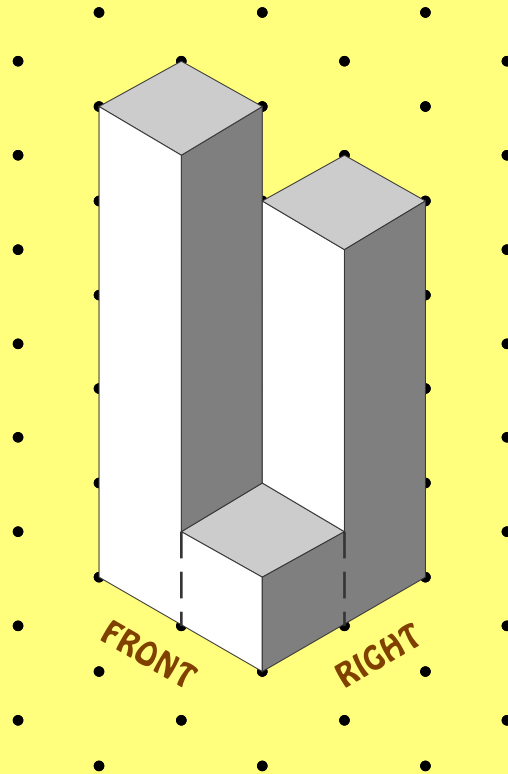
BACK	
2	4
5	1
FRONT	
LEFT	RIGHT



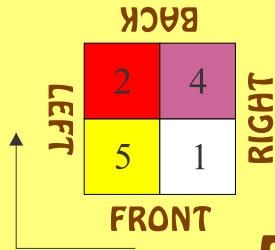
Picture Puzzles

What do you learn from the dotted lines?

	BACK		
LEFT	2	4	RIGHT
	5	1	
	FRONT		

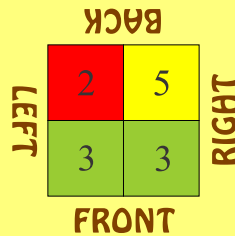


Picture Puzzles



**Draw the isometric view
from the corner of
Back & Left Streets.**

Make this block of towers.



Draw 4 side views and 1 isometric view.

Make this block of towers.

	BACK			
	5	1	5	
LEFT	4	2	3	RIGHT
	1	3	4	
	FRONT			

Draw 4 side views.

Picture Puzzles

Make this block of towers.

	BACK			
	1	1	2	
LEFT	4	5	2	RIGHT
	0	3	3	
	FRONT			

Draw 4 side views.

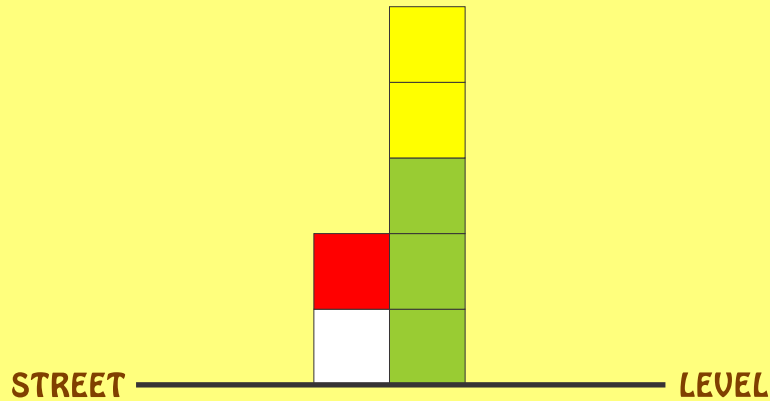
**Picture
Puzzles**

more

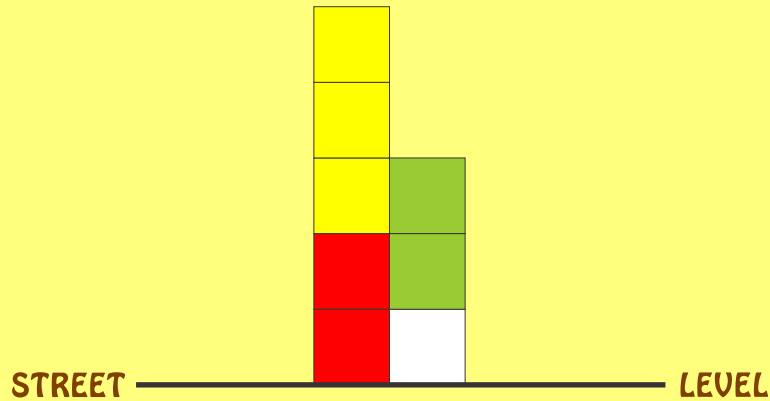
**Picture
Puzzles**

**The next four slides show front, left,
back and right views. Make the towers.
Draw the looking down view.**

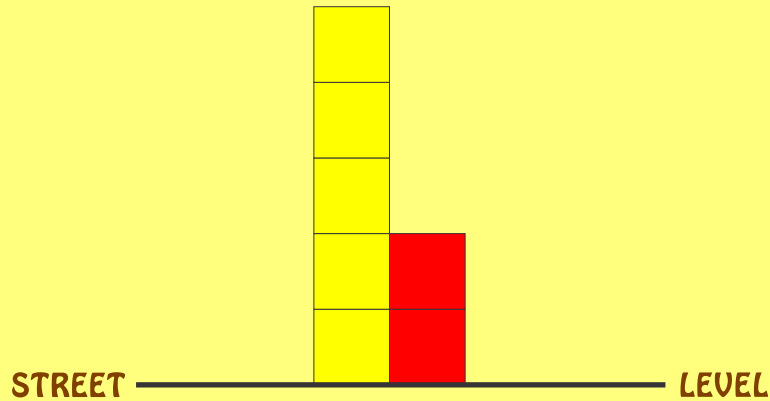
Front View



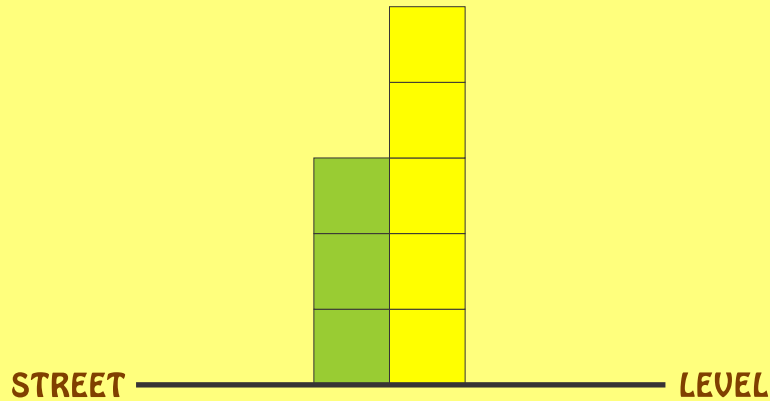
Left View



Back View

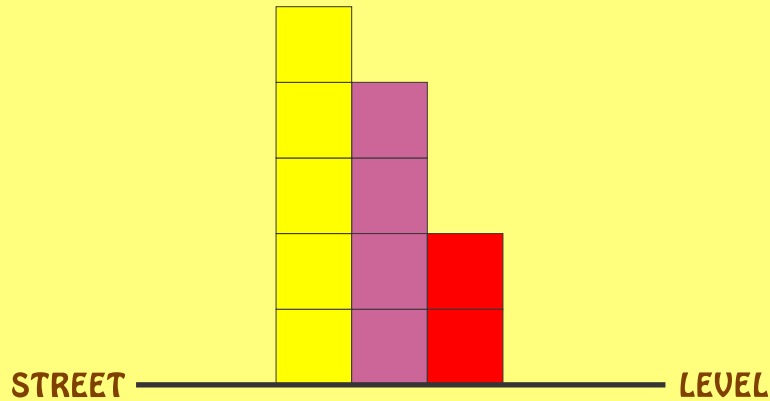


Right View

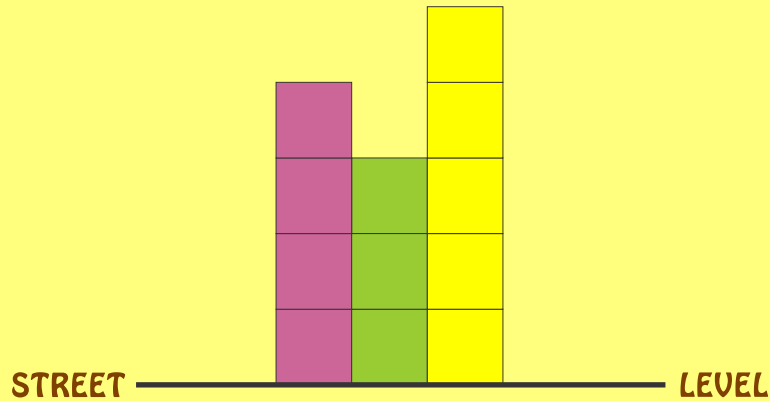


**The next four slides show front, left,
back and right views. Make the towers.
Draw the looking down view.**

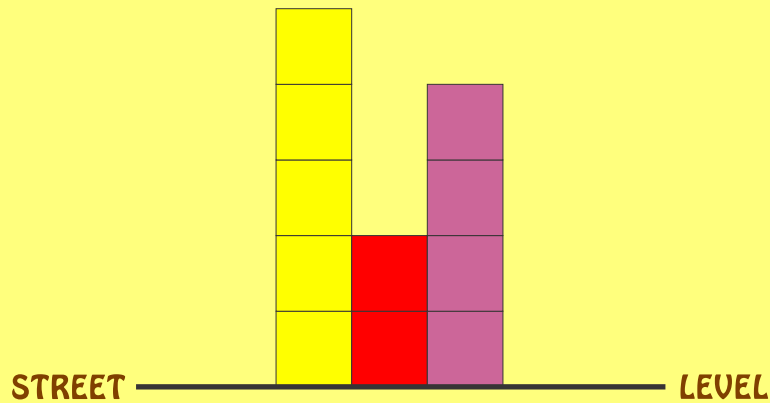
Front View



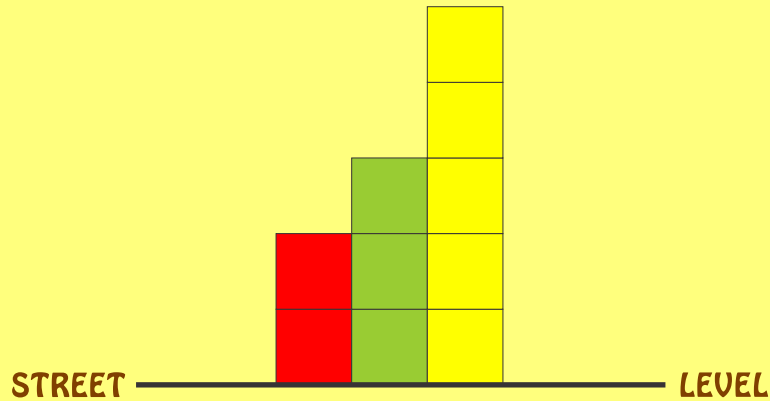
Left View



Back View



Right View



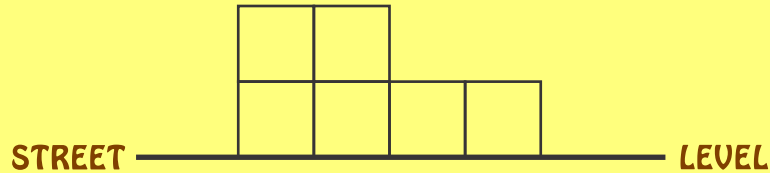
How many solutions are there?

How do you know when you have found them all?

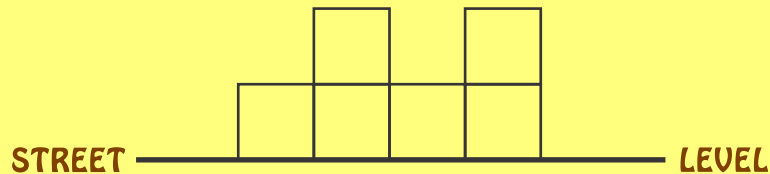
even more

**On graph paper, rule up a 4x4 grid
the correct size for your cubes.**

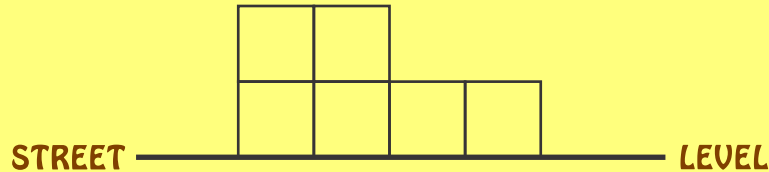
Front View



Left View

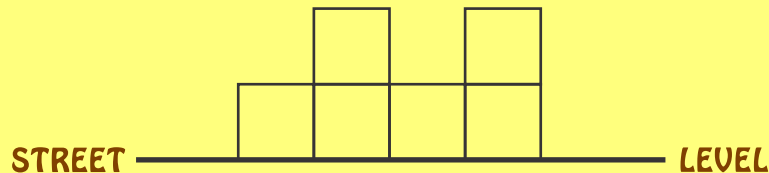


Front View

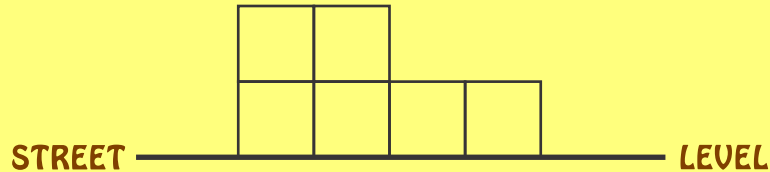


What is the minimum number of cubes for these views?

Left View

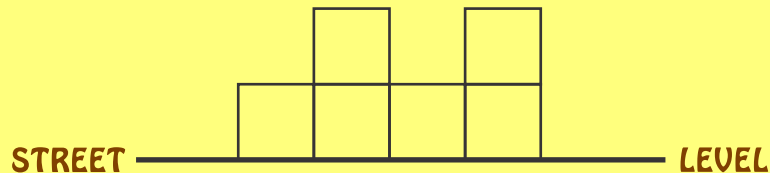


Front View



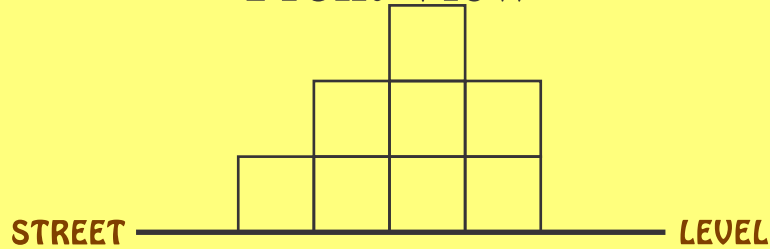
Are you sure?

Left View

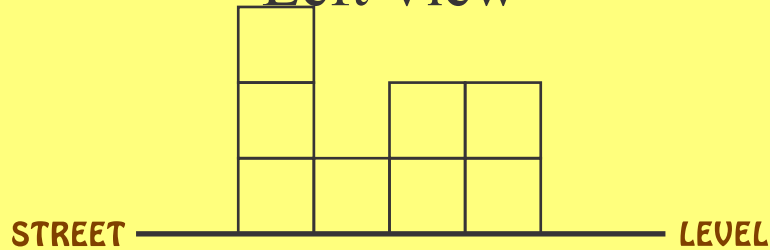


**When you are sure, draw the top view and
show the number of cubes in each place.**

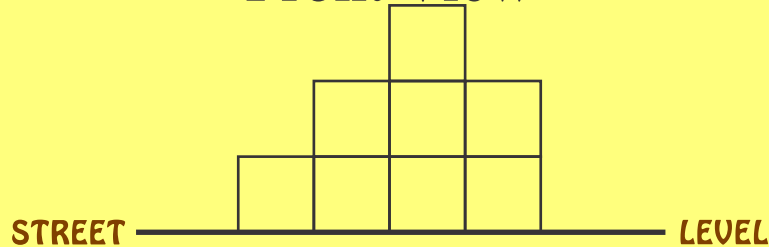
Front View



Left View

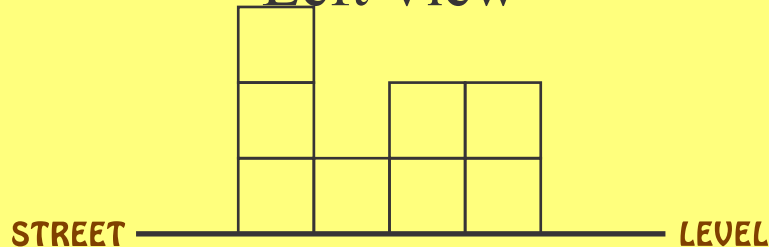


Front View

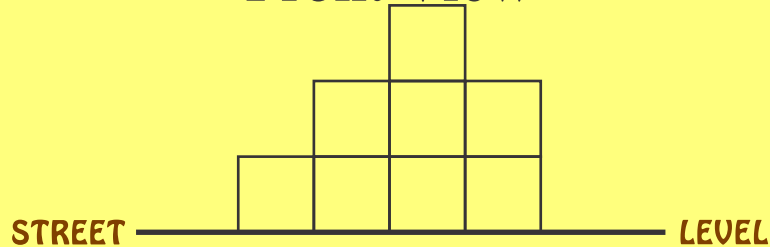


What is the minimum number of cubes for these views?

Left View

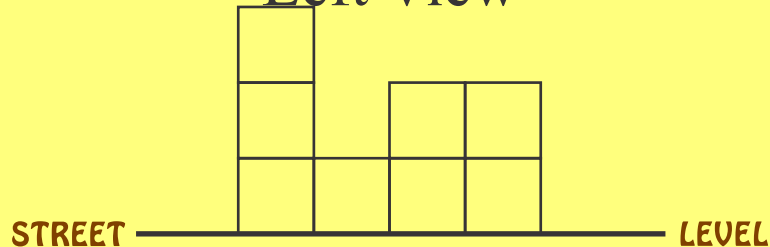


Front View



Are you sure?

Left View



**When you are sure, draw the top view and
show the number of cubes in each place.**

THE END...

...OR IS IT?