

Topics: 3-dimensional Shapes, Spatial Skills, Mathematical Reasoning

Materials List

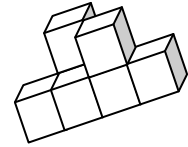
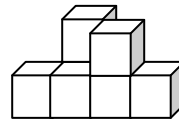
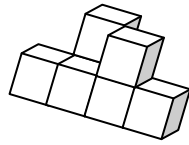
- ✓ Wooden Cubes

This activity can be used to teach:

- 2-Dimensional representations of 3-Dimensional objects (Common Core Math Standards: Grade 6, Geometry, 4)

Building Blocks

3-d building from 2-d pictures

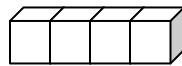


Wooden cubes can be used for a variety of building activities that develop spatial skills and mathematical reasoning. In this activity, students make a 3-dimensional shape using a given number of cubes.

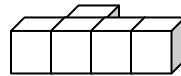
To Do and Notice

- Using the chart on page 2, try and create 3-dimensional block formations that fit the images from each view.

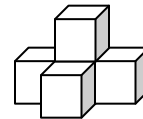
3-d representations answers:



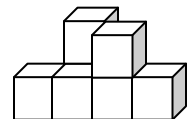
#1



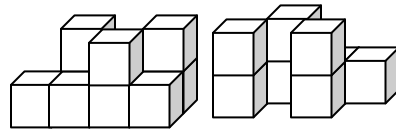
#2



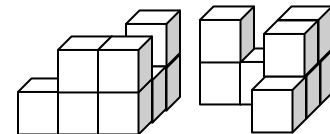
#3



#4



#5 – two views



#6 – two views

The Math Behind the Activity

The brain develops pathways via repetition, just as doing a few push-ups every day develops biceps. This activity helps develop the inferior parietal lobes, regions of the brain responsible for visual spatial thinking, for three-dimensional representation of ideas, and for mathematical reasoning. By using specific areas of the brain on a regular basis, students can develop the greater potential for skills that use that part of the brain.

(Factoid: Albert Einstein's inferior parietal lobes were found to be 15% larger than those of persons of average intelligence.)

- Note: Going from a 2-D picture to a 3-D shape is a developmental leap. If young students just seem to “not get it,” it probably means that they are simply not ready. In this case, stick to the actual cubes for the model as presented in the RAFT Idea Sheet *Follow the Leader*³.

Taking it Further

For an easier version of this activity, see the RAFT Idea Sheet *Follow the Leader*³

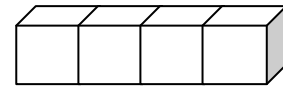
To make this activity even more challenging, add another variable by using colored cubes.

Web Resources (Visit www.raft.net/raft-idea?isid=13 for more resources!)

Building Blocks

3-d building from 2-d pictures

Directions: Use blocks to create formations that would look like the pictures below if viewed from the given perspectives.



#1

Example (#1): a formation 4 blocks long, 1 block high, and 1 block deep

	Front View	Side View	Top View
#1 4 cubes			
#2 5 cubes			
#3 5 cubes			
#4 7 cubes			
#5 9 cubes			
#6 8 cubes			