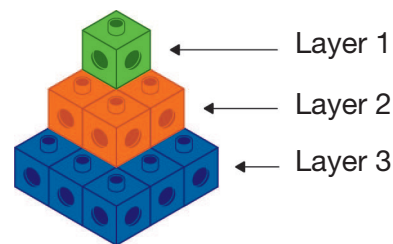


Connecting Cubes



A Tower of Squares

Overview: In this activity, children use Connecting Cubes to build larger and larger square prisms and stack them to form a tower. They predict the numbers of Connecting Cubes needed to produce larger prisms and towers.

Materials: — Connecting Cubes, paper, pencil

- Build a tower made of layers of Connecting Cubes according to these directions:
 - The first layer is 1 Connecting Cube. (see image)
 - The second layer is 2 Connecting Cubes long, 2 Connecting Cubes wide, and 1 Connecting Cube high ($2 \times 2 \times 1$). How many Connecting Cubes are in this layer? When you add this layer to your tower, how many Connecting Cubes are in the whole tower?
 - The next layer is $3 \times 3 \times 1$. Record the number of Connecting Cubes in the layer and the whole tower.
 - Add another layer to the tower. What are the dimensions of this layer? Record the number of Connecting Cubes in the layer and the whole tower.
- Is it starting to look like a tower of stairs? Look at the numbers children have recorded. Children will use that information to predict how many Connecting Cubes they will need to build a tower 6 layers high.
- Get that many Connecting Cubes ready and start building. Did they predict the right number of Connecting Cubes?

Wrap it Up

Overview: In this activity, children will work with 3-dimensional solids to discover that solids with the same volume can have different surface areas.

Materials: — Connecting Cubes, paper, pencil

- Imagine that 1 Connecting Cube represents a box that holds 1 piece of candy.
- Build a box that will hold 8 pieces of candy. How many Connecting Cubes will that be?
- We need to wrap the box in pretty paper. Count the Connecting Cube faces on the outside of your box. That is how many units of paper you will need to wrap the box.
- Rearrange the 8 Connecting Cubes into a different-shaped box. It is okay to stack the candy in the box. How many units of paper will it take to wrap the new box?
- Build all the rectangular boxes possible for 8 candies. Record how many units of paper it will take to wrap each box.
- Look for patterns in your chart. Now make a box for 12 candies.