

The Worlds tallest Lego Tower, Seoul, South Korea



The world's tallest Lego tower with more than 500,000 bricks stands in front of Seoul's Olympic Stadium.

In South Korea, a bunch of adults tapped into toddlers' boundless energy by putting them to work building the tallest Lego tower on Earth. It took 4,000 kids, five days, and 500,000 bricks to build a tower that stands at a height of 31.9 meters, beating France's previous record of 31.6 meters. This humongous construction project made by itty-bitty kiddies was finished last weekend to celebrate Lego's 80th birthday on May 13.

Act 1: How much do you *estimate* that it costs for only the materials, to build this tower?

500,000 blocks is in the description of the tower.

It kind of looks like Lego sets to purchase contain around 500 pieces, on average, and cost about \$30.

So students might estimate $1000 \text{ sets} \times \$30 = \$30,000$.

But it will be interesting to hear their reasoning. Students probably have a better idea about the cost of Legos than adults.

What other questions do you have?

Not necessary but interesting is how big is an average Lego block?

A standard "stud" brick is; 1 cm tall x 1.6 cm wide x 3.2 cm long

A standard "flat" is 0.333 cm tall

Are flats cheaper than studs? or vice versa?

Could you figure out how many layers are in this construction and then figure out the number of pieces, on average, of each layer?

How did they get toddlers to build the correct shapes for each of their layers?

Act 2: What other information do you need?

Is there a cheaper way to buy Lego blocks?

What is that rate?

As you come to an estimate make sure that you show your thinking and process so that it is clear to other.

Act 3: Possible Solutions.

500,000 blocks is in the description of the tower.

Legos come in two heights – 1cm tall (Block) and .33 cm tall (Flat). We don't know how many flats and how many blocks are in each of the following kits. Worrisome.

Ad 1 – Lego Ultimate Building Set = 405 pieces for \$28.99

Ad 2 – Lego Bricks & More Deluxe Brick Box = 704 pieces for \$44.97

Ad 3 – Lego Bricks & More Builders of Tomorrow Set = 650 pieces at \$26.95

Assuming that we only care about how many pieces are in a kit and not how tall they are, we need to price 500,000 pieces.

- a. With the information in the first ad, the Lego Ultimate Building Set,

$$\begin{array}{r} \frac{405 \text{ pieces}}{\$28.99} = \frac{500,000 \text{ pieces}}{? \text{ dollars}} \\ \$28.99 \cdot 500,000 = \$? \cdot 405 \\ \frac{\$28.99 \cdot 500,000}{405} = \$? \\ \$35,790.10 = \$? \end{array}$$

Or for younger students you could calculate how much one piece must cost and then multiply that price times 50,000.

- b. In the second ad for Lego Bricks & More Deluxe Brick Box,

$$\begin{array}{r} \frac{704 \text{ pieces}}{\$44.97} = \frac{500,000 \text{ pieces}}{? \text{ dollars}} \\ \$44.97 \cdot 500,000 = \$? \cdot 704 \\ \frac{\$44.97 \cdot 500,000}{704} = \$? \\ \$31,938.90 = \$? \end{array}$$

- c. From ad #3 we know that Lego Bricks & More Builders of Tomorrow Set has 650 pieces and costs \$26.95.

$$\begin{array}{r} \frac{650 \text{ pieces}}{\$26.95} = \frac{500,000 \text{ pieces}}{? \text{ dollars}} \\ \$26.95 \cdot 500,000 = \$? \cdot 650 \\ \frac{\$26.95 \cdot 500,000}{650} = \$? \\ \$20,730.80 = \$? \end{array}$$