

LEGO Building Adventures: Perimeter Problems

Grade 5 Mathematics *Aligned with Standard 5.M.4: Find the perimeter and area of rectangles and squares.*

1. Sarah is building a rectangular LEGO baseplate border for her new creation. She uses 2-stud LEGO bricks for the entire border. The length of her baseplate is 16 studs, and the width is 12 studs. How many 2-stud LEGO bricks will she need to create the complete border around her baseplate?

(Addresses 5.M.4 by having students calculate perimeter of a rectangle and apply division to find the number of bricks needed)

2. Max is designing a square garden in his LEGO city using 1-stud LEGO pieces for the border. He wants the garden to have a perimeter of 36 studs. How many studs should each side of his square garden measure, and how many 1-stud LEGO pieces will he need for the entire border?*(Addresses 5.M.4 by having students work backwards from perimeter to find side lengths of a square and apply their understanding of equal sides)*

3. The LEGO Club at school is creating a display platform for their latest project. They're using special 4-stud LEGO bricks to make a rectangular border. The length of the platform is 24 studs, and the width is 20 studs. If they only have 20 of the 4-stud LEGO bricks, will they have enough bricks to complete the entire border? Explain your reasoning by finding the total perimeter and calculating how many 4-stud bricks they need.

Addresses 5.M.4 and incorporates problem-solving skills by requiring students to calculate perimeter, divide by brick size, and make a comparison to available resources)

Additional Math Practices Addressed:

- MP.1: Make sense of problems and persevere in solving them
- MP.4: Model with mathematics
- MP.6: Attend to precision