

Lego and Math: Use Lego Blocks to Explore Multiplication, Division and Factors

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Level: Elementary Grades

Concepts: Problem Solving, Number Sense, Computational Fluency

Essential Questions:

1. How can I use Lego blocks to represent groupings?
2. How can I connect Lego and groups with the concept of multiplication?

Problem:

Represent groups using Lego blocks from numbers being rolled on two dice.

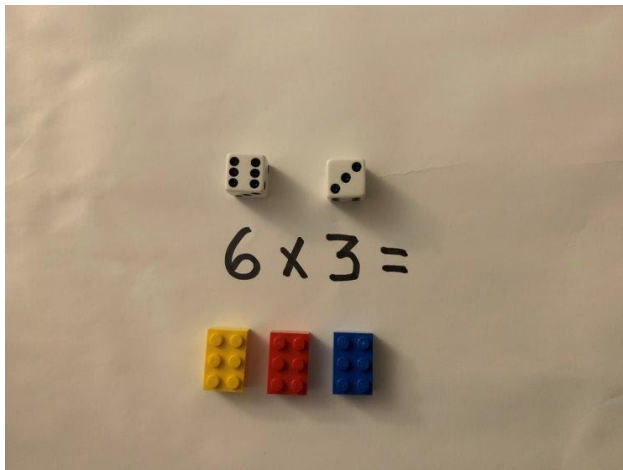
Materials:

- Two six-sided dice
- Lego blocks – random sizes
- Lego plate – any size

Procedure:

1. Roll dice.
2. Look for Lego blocks that represent the groupings.
3. Put Lego blocks on Lego plate.
4. Find another way to show the groupings using different Lego blocks.

Example:



Step 1 – Roll Dice.

Step 2 – Find 3 groups of 6 Using Lego blocks.

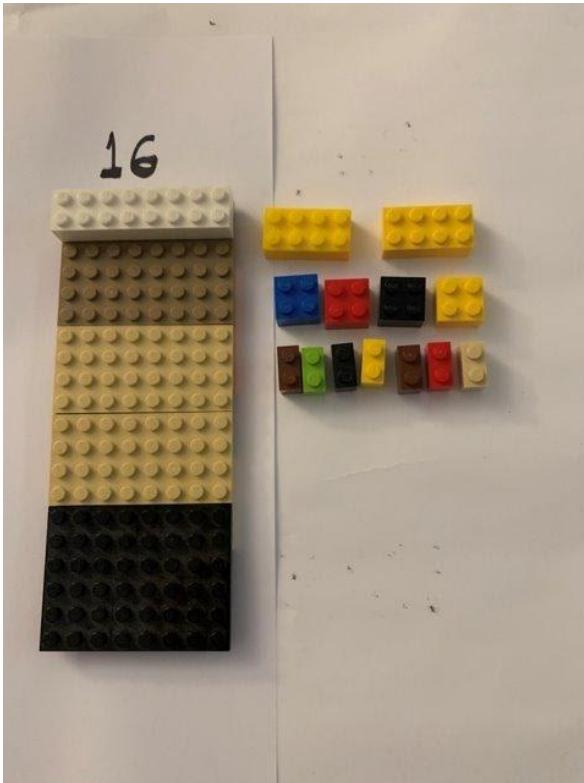
Step 3 – Represent using Lego blocks.

Extension: Find other blocks to represent this situation. How does 6 groups of 3 relate to 3 groups of 6?

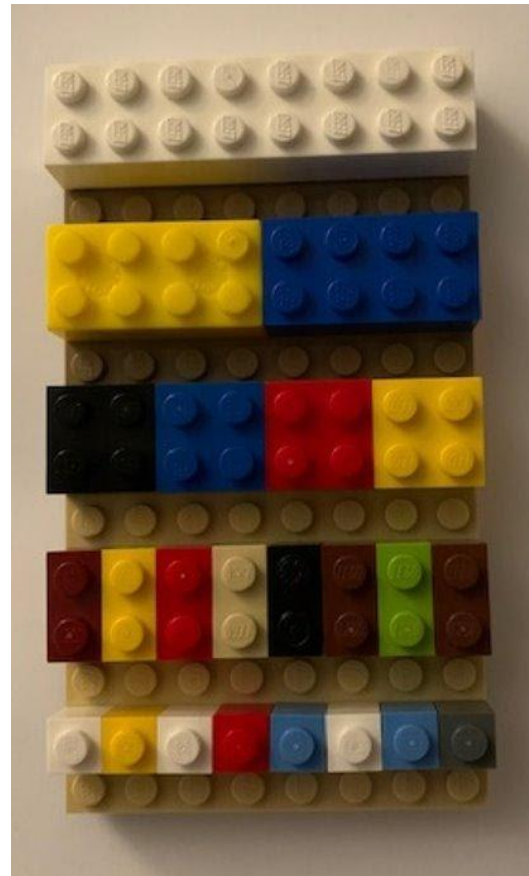
Other questions/extensions to consider:

1. Using three dice instead of two and repeat steps 1 to 4 in the procedure.
2. How can you split up a Lego block into groups of different blocks of the same size?

For example, how could you split a Lego block of 16 studs into groups of different groups of the same size?



Pose a picture that students need to find the mistake if any: Is there anything wrong with this picture?



Answer: Yes – there are only 8 one stud blocks at the bottom and there needs to be 16

3. Create a game adapted from the resource:

<https://www.youcubed.org/tasks/how-close-to-100/>

- a. Use two dice to roll the factors.
- b. Represent the factors using Lego blocks and place strategically on Lego plate.
- c. Players take turns rolling dice and first player to cover entire Lego plate wins!