



Brick Math Lesson of the Month

June 2020

from Division Using LEGO® Bricks

SUGGESTED BRICKS

Size	Number
1x1	24
1x2	16
1x3	8
1x4	8
1x6	12
1x12	6
2x2	8
2x3	8
2x4	8
2x6	6

Note: Using a base plate will help keep the bricks in a uniform line. One large base plate is suggested for these activities.

Teacher Lesson Guide

EQUAL SHARES OR PARTITIVE DIVISION

Students will learn/discover:

- The definition of partitive division
- What it means to have equal shares
- What it means to divide parts of a whole

Why is this important?

Partitive division is a basic concept and involves taking the whole and dividing it into equal parts. Understanding what it means to divide into equal parts provides a basis for division as well as other math concepts such as fractions. Very early on, children begin to learn this idea when they are sharing.

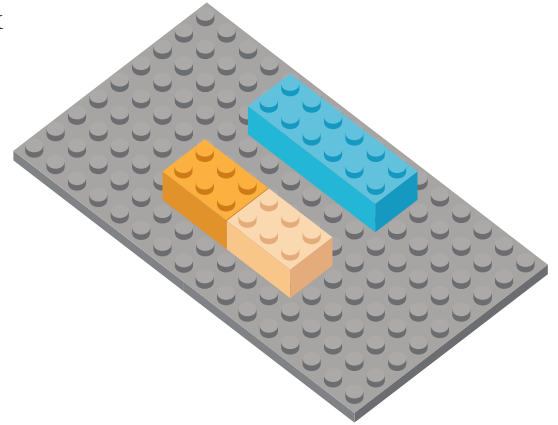
This activity uses a different modeling strategy than has been used in earlier chapters. Students respond to different strategies depending on their individual learning styles, and it is helpful to expose them to a number of different strategies.



Part 1: Show Them How

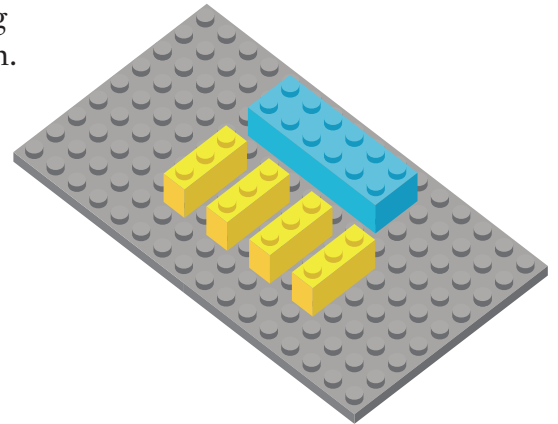
1. Place a 2x6 brick on a base plate. Explain that this brick represents 12 pieces of candy—each stud is one piece. Tell students that will share this candy equally with a friend. Ask them to find two bricks that show how many pieces each person gets.

Students should choose two 2x3 bricks so that each friend gets 6 pieces of candy. Have students draw their solution model.



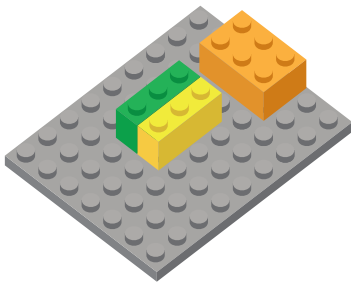
2. Model how to share the same 12 pieces of candy among four friends. Ask students how that changes the solution.

Students should show four 1x3 bricks as the solution. Have them draw this model and explain their solution.

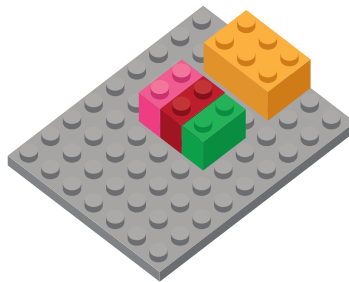


3. Place a 2x3 brick on a base plate. Have students discuss some ways this amount could be equally shared among two friends, three friends, and six friends.

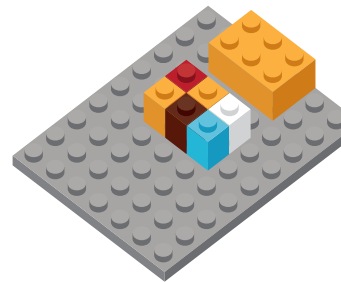
Introduce the term *partitive division*, explaining that it means dividing a whole into equal shares. Ask students to model the division, draw the model, and write a word problem to show the equal sharing of the total amount.



Six candies shared equally between 2 friends.



Six candies shared equally among 3 friends.



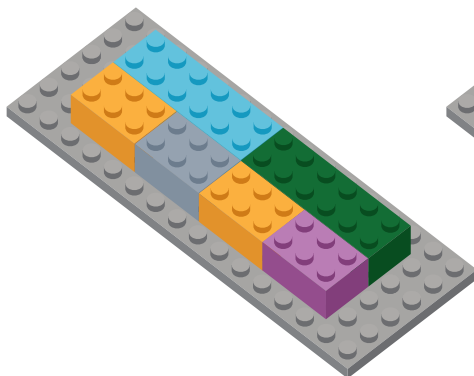
Six candies shared equally among 6 friends.

Note: Make sure students use the term “shared equally” in their word problems.

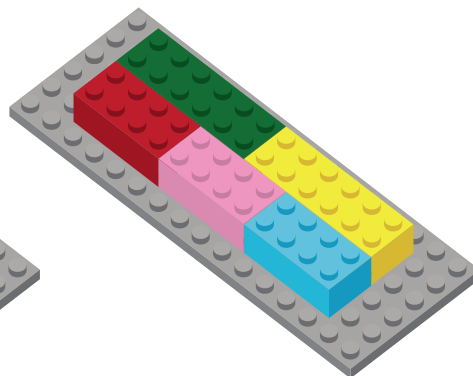


4. Place two 2x6 bricks on a base plate. Point out that this whole is equal to 24. Ask students to show as many ways as possible to equally share this amount, then draw their solutions and write a word problem for each solution.

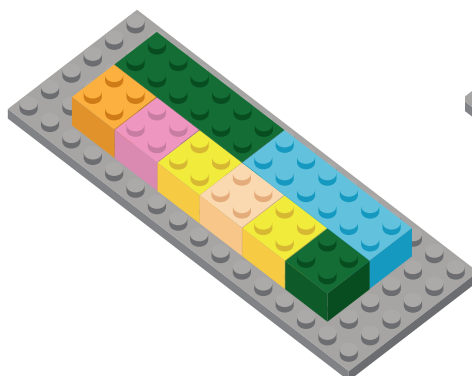
There are seven possible solutions. Four are illustrated:



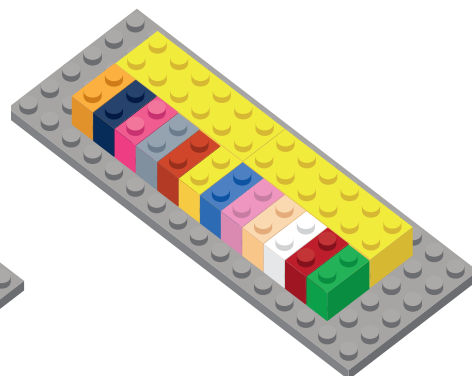
24 shared equally into 4 sets of 6. Each one of the 4 friends gets 6 pieces.



24 shared equally into 3 sets of 8. Each one of the 3 friends gets 8 pieces.



24 shared equally among 6 friends. Each friend gets 4 pieces.



24 shared equally among 12 friends. Each friend gets 2 pieces.

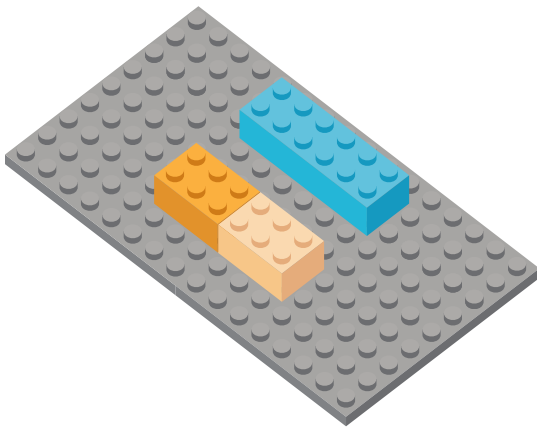
Correct models also include: eight 1x3 bricks, twenty-four 1x1 bricks, and two 2x6 bricks.



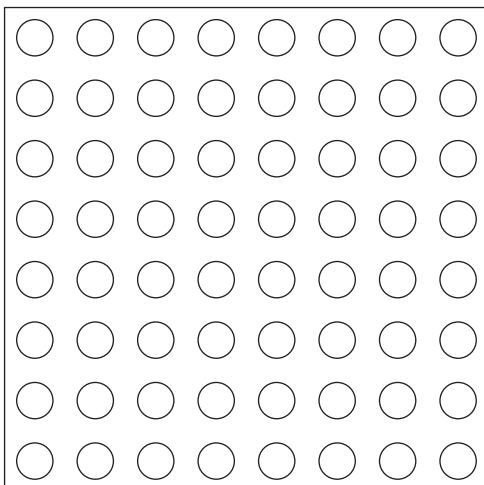
Student Workbook Pages

EQUAL SHARES OR PARTITIVE DIVISION

Partitive Division: Sharing equally among sets



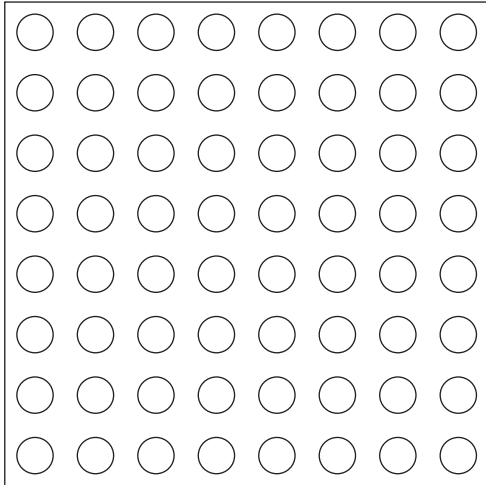
1. With bricks, build this model. It represents 12 pieces of candy (each stud is one piece). Find two same-sized bricks that have the same total number of studs as the one in your model. Place these two on the model next to the 12-stud brick. Each of these bricks represents one friend who will get an equal share of the 12 pieces of candy.



How many pieces will each friend get? _____
 Draw your model. Using your model, explain your thinking.

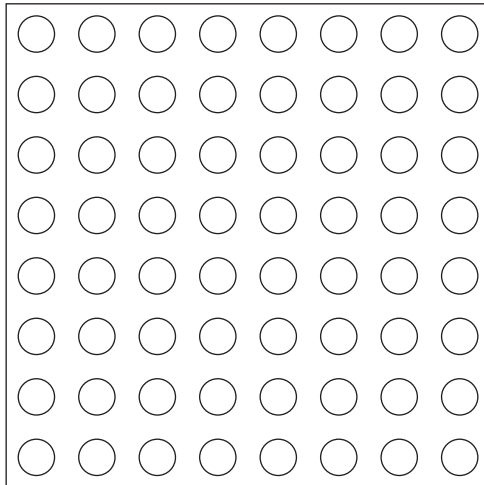
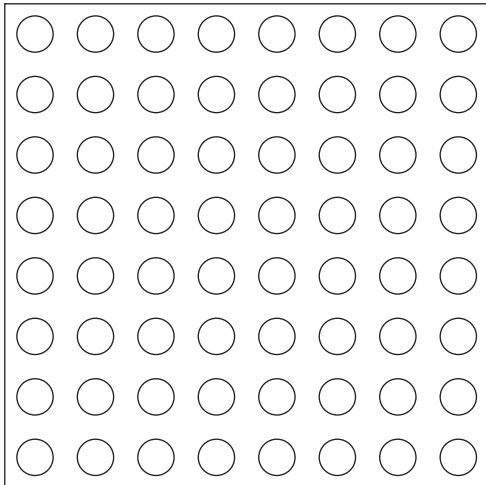


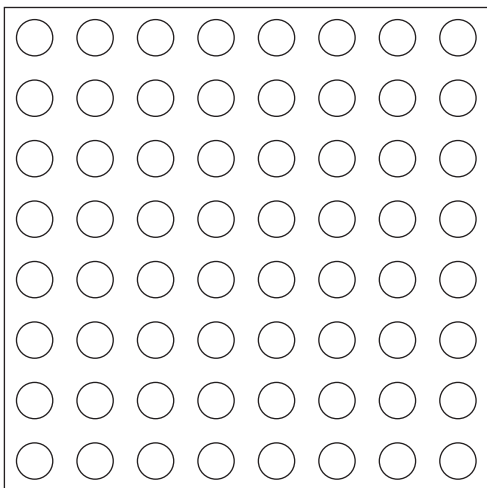
2. Now you have 4 friends to share the 12 pieces with equally. With bricks, build a model to show how to equally share the 12 pieces of candy with your 4 friends. Draw your model and explain your thinking.



3. Place a 2x3 brick on a base plate and show how to divide this amount equally among 2 friends, 3 friends, and 6 friends.

Draw each model and explain your thinking.



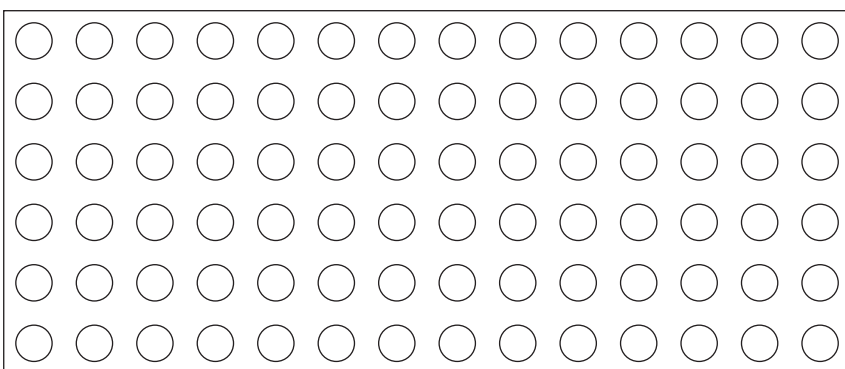


Another term for this process of equal sharing is called _____ division.

4. Build a model with two 2x6 bricks to show a whole of 24.

Show four ways to use partitive division to equally share 24. (Note: There are more than four ways.)

Draw your models and explain your thinking.





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