



# FINDING FACTORS

## Students will learn/discover:

- What factors are
- How to find all the factors of numbers
- How to make models of factor families
- Vocabulary:
  - **Factors:** Factors are numbers you can multiply together to get another number. Example: 2 and 3 are factors of 6; 2 and 4 are factors of 8.

## Why is this important?

Students need to be able to identify all the factors of numbers before they can work on equivalent fractions, simplifying fractions, and addition or subtraction of unlike denominators. For example: adding and subtracting fractions with unlike denominators requires a common denominator. Finding a common denominator requires knowing factors.

## Brick Math journal:

After students build their models, have them draw the models on base plate paper and keep them in their Brick Math journals (see page 7 for more about the Brick Math journal). Recording the models on paper after building with the LEGO® bricks helps to reinforce the concepts.

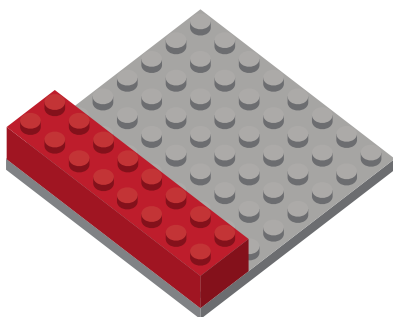
## SUGGESTED BRICKS

Size	Number
1x1	20
1x2	6-8
1x4	4-6
1x16	2
2x2	4-6
2x4	9-12
2x8	2

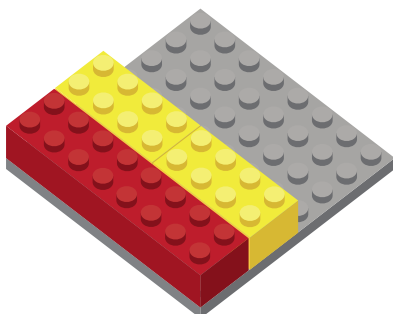
Note: Using a base plate will help keep the bricks in a uniform line. One base plate is suggested for these activities.



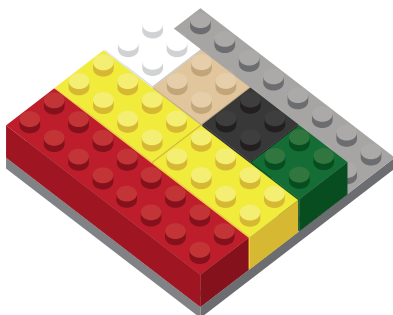
## Part 1: Show Them How Model how to find all the factors of 16



1. Place a 2x8 brick or a 1x16 brick on a base plate.



2. Place two bricks that are the same and, when placed next to the 16-stud brick, are equivalent in size and show two halves of the 16-stud brick. Use two 2x4 bricks or two 1x8 bricks.

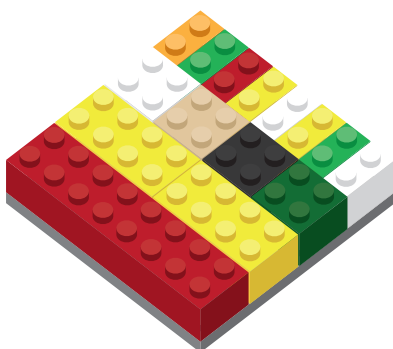


3. Ask students: Can you find three bricks of equal size equivalent to the size of the 16-stud brick?

Let students look and think, and discover that the answer is no.

4. Ask students: Can you find four bricks of equal size equivalent to the size of the 16-stud brick?

Let students look and think, and discover that the answer is four 2x2 bricks or four 1x4 bricks.



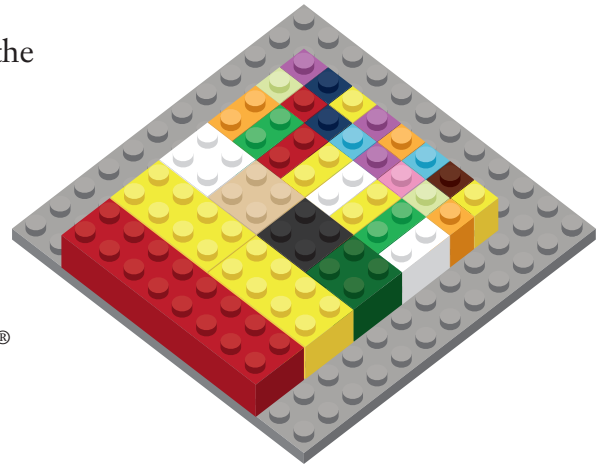
5. Ask students: Can you find the next number of equal-sized bricks that are equivalent to the size of the 16-stud brick?

Let students discover that five, six, and seven bricks don't work. Let them discover that the answer is eight 1x2 bricks.



6. Ask students: Can you find the next number of equal-sized bricks that are equivalent to the size of the 16-stud brick?

Let students discover that the answer is sixteen 1x1 bricks.



7. Name all the factors of 16 by looking at the LEGO® bricks on the base plate.

(Answer: 16, 8, 4, 2, and 1.)