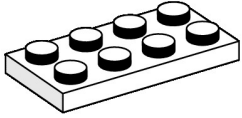# Exploring Multiplication and Division with LEGOS

Lego Terminology Tip: A round peg on top of a Lego is called a "stud." We can name Lego bricks by their stud dimensions.

Warm up:
This piece has _____ studs. It is a ____ by ____ brick. This brick is also called a "flat" because it is very short. It is often used a building base for other bricks.

_____

☞ Take a bag of mixed Lego bricks.
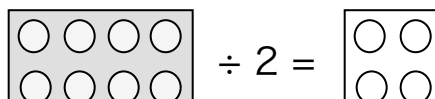
✏ How are Lego bricks similar to an **array**? _____

_____

_____

Find a brick with 6 studs. Draw the brick.	Find a brick with 12 studs. Draw the brick.
What are the dimensions of the brick? _____	What are the dimensions of the brick? _____
How many studs are on your largest brick? Draw the brick. _____	Find a square brick. How many studs? _____ Draw the brick?
What are the dimensions of the brick? _____	What are the dimensions of the brick? _____

☑ _Vocabulary:_
Dividend = The number in division that is being divided
Divisor = The number in division that divides another number. It tells you the number of parts.
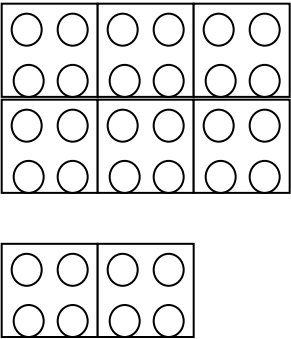Quotient = The result of dividing one number by another number.

$$\boxed{\begin{matrix} \circ\,\circ\,\circ\,\circ \\ \circ\,\circ\,\circ\,\circ \end{matrix}} \div 2 = \boxed{\begin{matrix} \circ\,\circ \\ \circ\,\circ \end{matrix}}$$
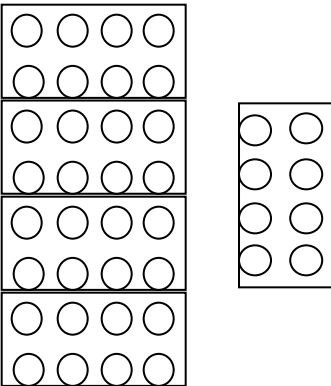
Dividend ÷ Divisor = Quotient

How can you show "divide by two" with your Lego pieces? One example is drawn for you.
Draw and label two other examples of "divide by two" with your Legos.

4 ÷ 2 = 2		

How can you show "divide by three" with your Lego pieces? One example is drawn for you.
Draw and label two other examples of "divide by three" with your Legos. (Tip: You can combine Legos to make your dividend.)

24 ÷ 3 = 8		

How can you show "divide by four" with your Lego pieces? One example is drawn for you.
Draw and label two other examples of "divide by four" with your Legos. (Tip: You can combine Legos to make your dividend.)

32 ÷ 4 = 8		

☞ Draw the Lego pieces in your bag that divide evenly by 2. (One has been done for you.)

✎ Do you have any pieces that do not divide evenly by two? Why or why not?
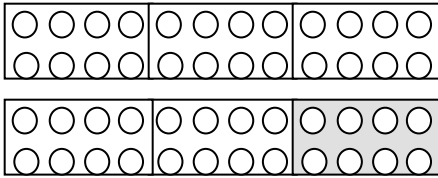
_____

_____

_____

_____

☞ Draw the Lego pieces in your bag that divide evenly by 3. Color the pieces that also divide evenly by 2 with a red crayon.

☞ Draw the Lego pieces in your bag that divide evenly by 4. Color the pieces that also divide evenly by 3 with a blue crayon.

✎ Are there any pieces that do not also divide evenly by 2? _____

☞ Using your 4 by 2 Lego bricks, draw to show …

Example: ⬚⬚⬚ (lego grid drawing) 48 ÷ 6 = _____	 40 ÷ 5 = _____
      52 ÷ 7 = _____	 24 ÷ 3 = _____

☞ Take a 6 by 8 Lego brick "flat." How can you cover the flat completely with one type of brick? Cover the flat completely, and then draw and label what your covered flat looks like.

Now cover your 6 by 8 flat completely with a different type of brick. Draw and label.

Are there any other ways you can cover your 6 by 8 flat completely with just one type of brick? Draw and label any remaining ways.

☑ *Vocabulary:*

All of the bricks that cover the 6 by 8 flat are *"counting number **factors**"* of 48. This means that each number can be multiplied by another counting number to make 48.

☞ Take an 8 by 2 Lego brick. Draw and label all of the ways you can cover up the 16-stud brick. Make sure to label the brick type and the number of bricks needed.

Example: I can cover the 16-stud brick with 16 1-stud pieces.
        Factors: 1, 16
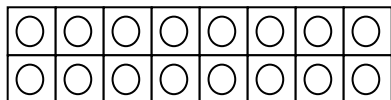
✏ Are there any other possible factors for 16? How do you know?

_____

_____

_____