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Unit 4, Lesson 4

# How Many Groups? (Part 1)

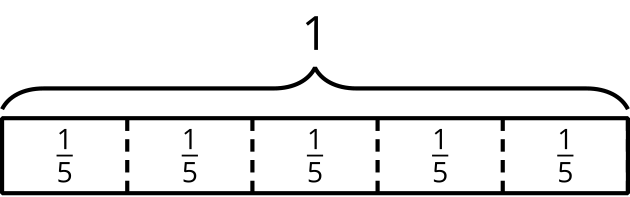
Let’s play with blocks and diagrams to think about division with fractions.

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## 4.1Equal-size Groups

Write a multiplication equation and a division equation for each sentence or diagram.

1. Eight $5 bills are worth $40.

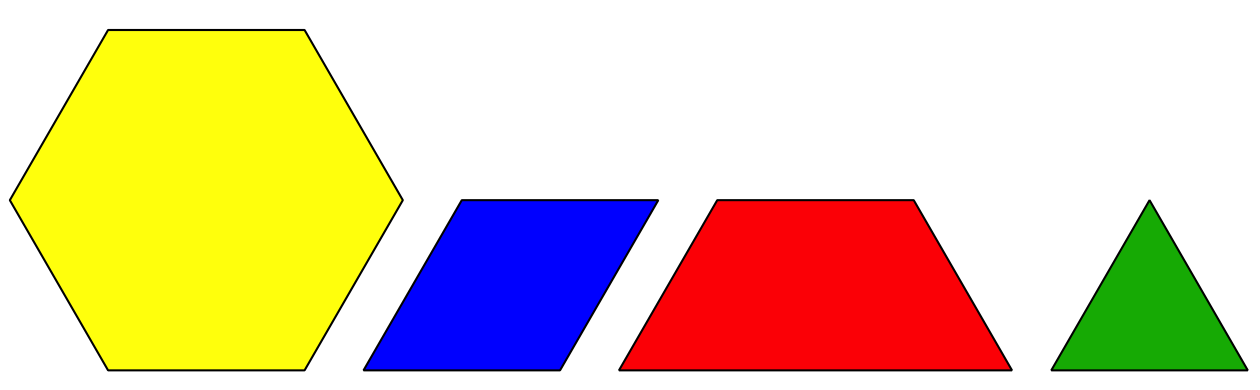
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1. There are 9 thirds in 3 ones.

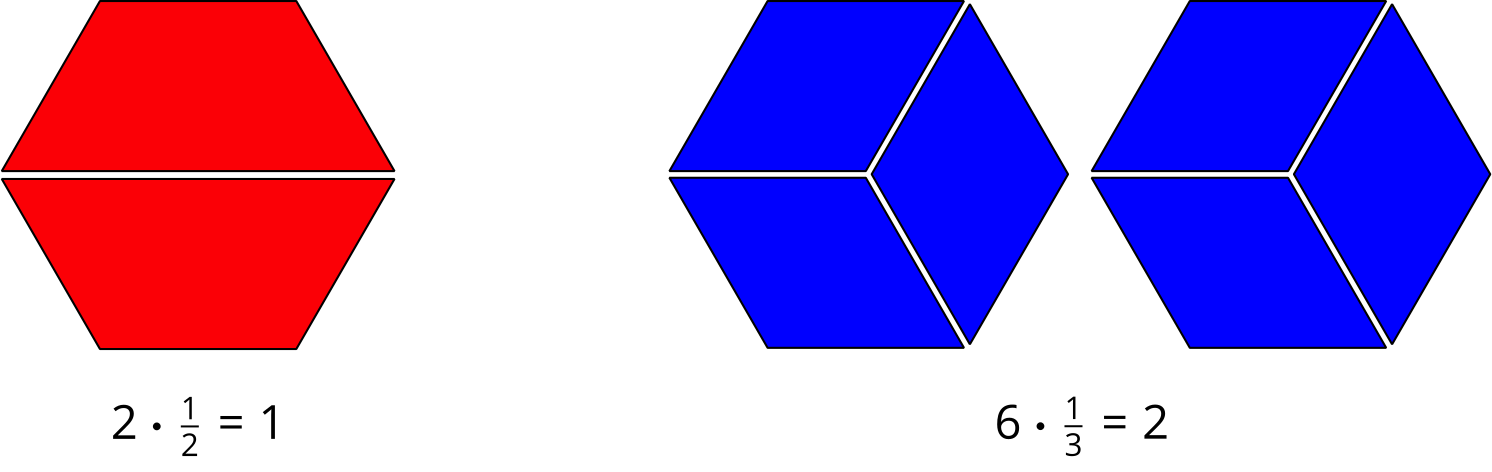
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## 4.2Reasoning with Pattern Blocks

Your teacher will give you pattern blocks as shown here. Use them to answer the questions.



1. If a hexagon represents 1 whole, what fraction does each of the following shapes represent? Be prepared to show or explain your reasoning.
   * 1 triangle
   * 1 rhombus
   * 1 trapezoid
   * 4 triangles
   * 3 rhombuses
   * 2 hexagons
   * 1 hexagon and 1 trapezoid
2. Here are Elena’s diagrams for and . Do you think these diagrams represent the equations? Explain or show your reasoning.

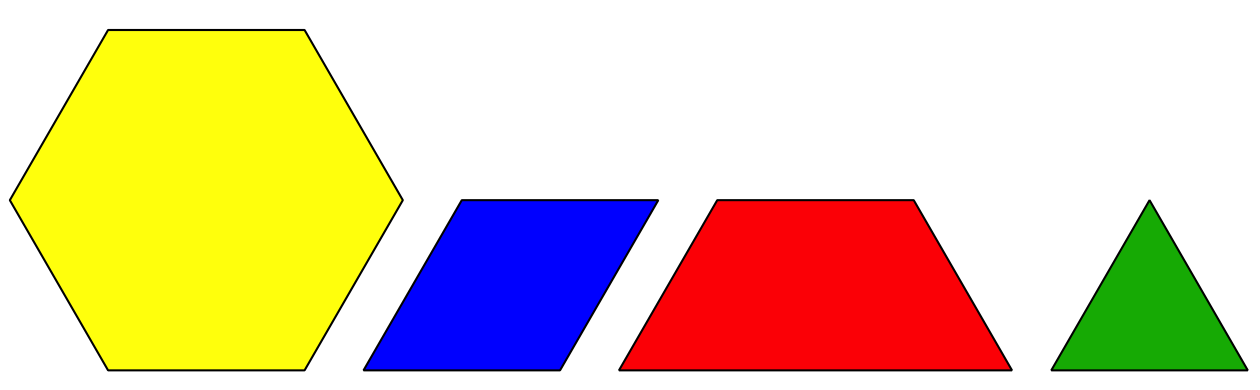
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1. Use pattern blocks to represent each multiplication. Sketch or trace the blocks to record your representation. Remember that a hexagon represents 1 whole.
2. Answer each question. If you get stuck, consider using pattern blocks.
   1. How many s are in 4?
   2. How many s are in ?
   3. How many s are in 2?

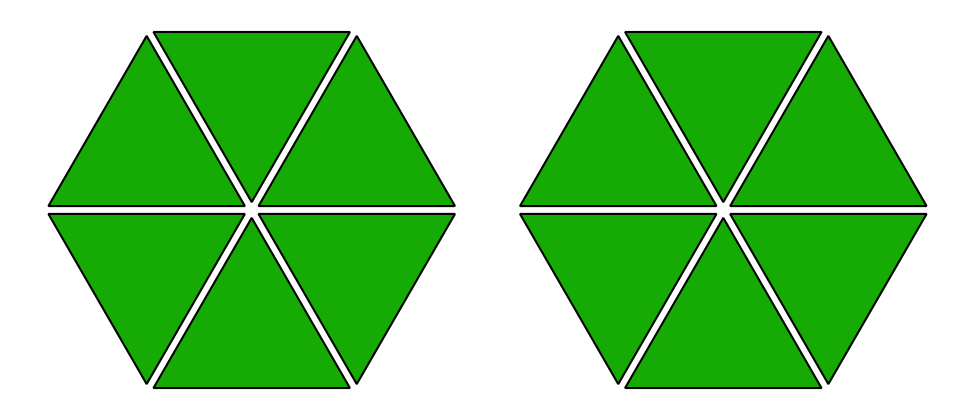
## Lesson 4 Summary

Some problems that involve equal-size groups also involve fractions. Here is an example: “How many s are in 2?” We can express this question with multiplication and division equations.

Pattern-block diagrams can help us make sense of such problems. Here is a set of pattern blocks.



If the hexagon represents 1 whole, then a triangle must represent , because 6 triangles make 1 hexagon. We can use the triangle to represent the in the problem.



Twelve triangles make 2 hexagons, which means there are 12 groups of in 2.

If we write the 12 in the place of the “?” in the original equations, we have: