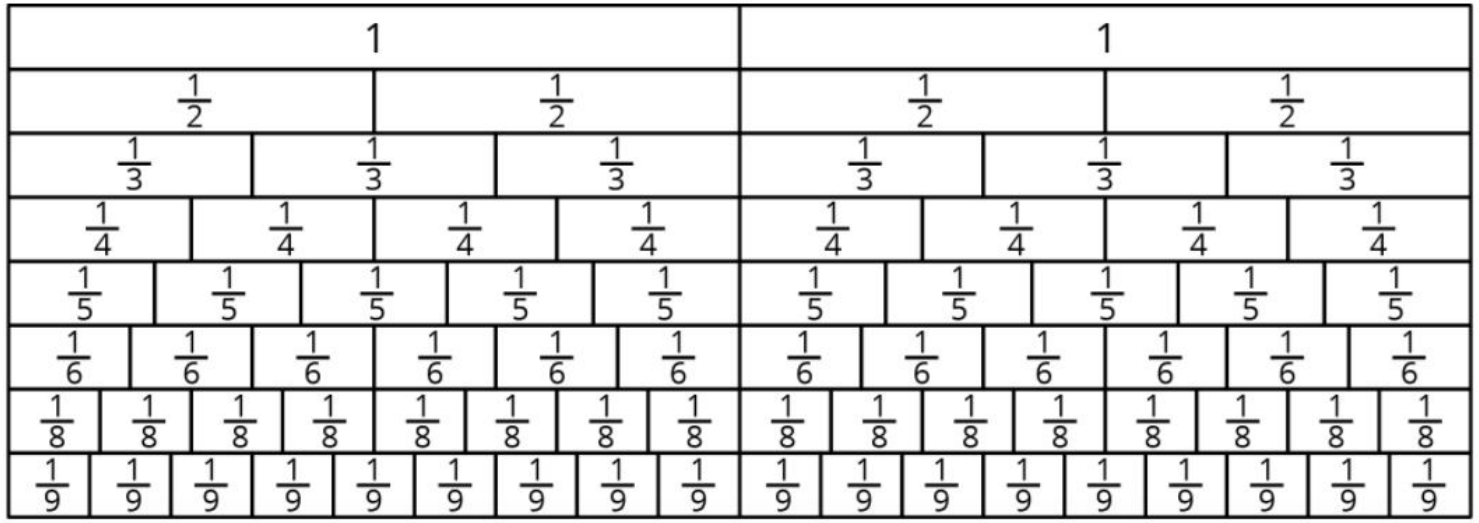
4-5: Learning Goals

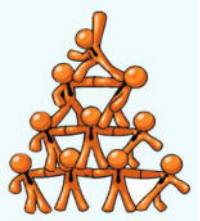
- Let’s use blocks and diagrams to understand more about division with fractions.

4-5-1: Reasoning with Fraction Strips

Write a fraction or whole number as an answer for each question. If you get stuck, use the fraction strips. Be prepared to share your strategy.

1. How many $\frac{1}{2}$s are in 2?
2. How many $\frac{1}{5}$s are in 3?
3. How many $\frac{1}{8}$s are in $1\frac{1}{4}$?
4. $1 \div \frac{2}{6} = ?$
5. $2 \div \frac{2}{9} = ?$
6. $4 \div \frac{2}{10} = ?$





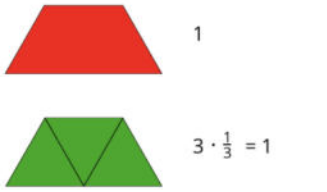
4-5-2: More Reasoning with Pattern Blocks

1. a. $\frac{1}{3}$ because three triangles make a trapezoid.

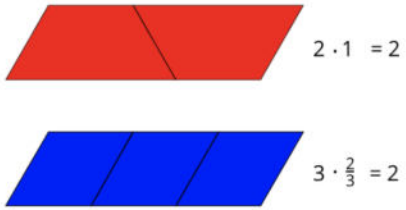
   b. $\frac{2}{3}$ because two triangles make a rhombus and each triangle represents $\frac{1}{3}$.

   c. 2 because two trapezoids have the same area as the hexagon.

2. a.

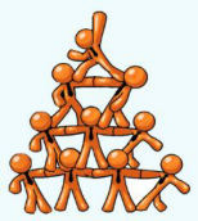


   b.



3. $1\frac{1}{2}$ is the right answer. Sample reasoning: Since the question is "how many rhombuses," the leftover space should be compared to a rhombus. A triangle is half of a rhombus, so we can fit $1\frac{1}{2}$ rhombuses in a trapezoid.

4. $? \cdot \frac{2}{3} = 1$ and $1 \div \frac{2}{3} = ?$



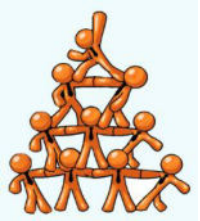
4-5-3: Drawing Diagrams to Show Equal-sized Groups

For each situation, draw a diagram for the relationship of the quantities to help you answer the question. Then write a multiplication equation or a division equation for the relationship. Be prepared to share your reasoning.

1. The distance around a park is $\frac{3}{2}$ miles. Noah rode his bicycle around the park for a total of 3 miles. How many times around the park did he ride?

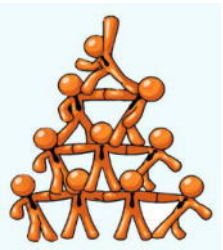
2. You need $\frac{3}{4}$ yard of ribbon for one gift box. You have 3 yards of ribbon. How many gift boxes do you have ribbon for?

3. The water hose fills a bucket at $\frac{1}{3}$ gallon per minute. How many minutes does it take to fill a 2-gallon bucket?



4-5: Lesson Synthesis

- We can think of the question “how many ¾ are in 2?” in terms of equal-size groups. What do the ¾ and 2 represent? What are we looking for?
- What multiplication equation can we write for this situation?
- What division equation can we write?
- We can draw a diagram and count how many groups of ¾ there are in 2. How many whole groups of ¾ are there?
- How do we deal with a remainder that is less than one whole group?



4-5: Learning Targets

- I can find how many groups there are when the number of groups and the amount in each group are not whole numbers.

4-5-4: Bags of Tangerines

A grocery store sells tangerines in $\frac{2}{5}$ kg bags. A customer bought 4 kg of tangerines for a school party. How many bags did he buy?

1. Select **all** equations that represent the situation.

A. $4 \cdot \frac{2}{5} = ?$

B. $? \cdot \frac{2}{5} = 4$

C. $\frac{2}{5} \div 4 = ?$

D. $4 \div \frac{2}{5} = ?$

E. $? \div \frac{2}{5} = 4$

2. Draw a diagram to represent the situation. Answer the question.