

Chapter 5: Multiplying and Dividing Fractions

CH 5.2 - Dividing fractions by whole numbers

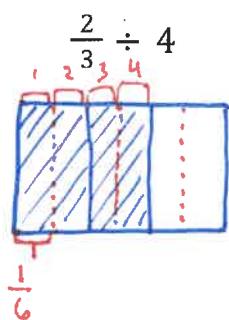
Division - Two ways to think about it

1. Breaking a value into some number of equal groups
2. Determining how many equal groups fit into some value

Method 1: Multiply by reciprocal

Example

Key Points

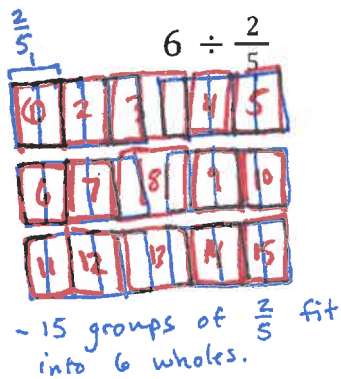


$$\frac{2}{3} \div \left(\frac{4}{1}\right)$$

$$\frac{2}{3} \times \frac{1}{4} = \frac{2}{12}$$

$$= \frac{1}{6}$$

- Turn whole number into a fraction over 1
- "Flip" the fraction you are dividing by (the second one)
- Numerator x numerator and denominator x denominator
- Reduce to lowest terms if needed



$$\frac{6}{1} \div \left(\frac{2}{5}\right)$$

$$\frac{6}{1} \times \frac{5}{2} = \frac{30}{2}$$

$$= 15$$

Try it out:

$$\frac{1}{2} \div 5$$

$$\frac{1}{10}$$

$$\frac{1}{5}$$

$$\frac{3}{5} \div 3$$

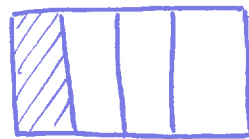
$$\frac{2}{3}$$

$$2\frac{2}{3} \div 4$$

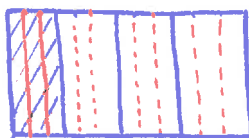
Method 2: Using a model**Example****Key Points**

$$\frac{1}{4} \div 3$$

" $\frac{1}{4}$ divided into 3 equal groups"



$$\frac{1}{4}$$



cut into 3 equal groups



each group contains $\frac{1}{12}$.

$$\frac{1}{12}$$

CHECK

$$\frac{1}{4} \div \left(\frac{3}{1}\right)$$

$$\frac{1}{4} \times \frac{1}{3}$$

$$= \frac{1}{12}$$

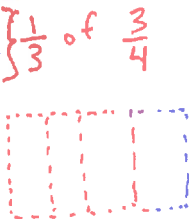
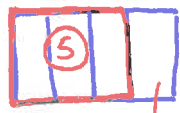
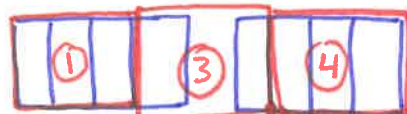
- Model your fraction

- The whole number is how many groups you need to divide each piece into

- Determine which each piece is now worth

$$4 \div \frac{3}{4}$$

"How many groups of $\frac{3}{4}$ can fit in 4 wholes?"



$\frac{1}{3}$ of $\frac{3}{4}$

$5\frac{1}{3}$ groups of $\frac{3}{4}$ can fit into 4 wholes.

$$4 \div \left(\frac{3}{4}\right)$$

$$4 \times \frac{4}{3}$$

$$\frac{16}{3} \rightarrow 5\frac{1}{3}$$

CHECK.

Try it out:

$$\frac{1}{4} \div \frac{3}{4} \div 3$$

$$\frac{5}{12} \div \frac{5}{6} \div 2$$

$$\frac{11}{15} \div 2\frac{1}{5} \div 3$$