

PART I GET STARTED**Today's Mathematics**

We will divide mixed numbers, interpret complete groups and remainders, and check quotients.

Essential Question

How can a model and improper fractions help us divide mixed numbers?

DO NOW

1. Write $2\frac{1}{2}$ as an improper fraction.

2. Write the reciprocal of $\frac{3}{4}$.

3. $\frac{3}{4} \div \frac{1}{8}$

4. Check $\frac{2}{3} \div 4$ using multiplication.

SEE IT

You have 6 cups of water. Each container holds $1\frac{1}{2}$ cups. How many containers can you fill? Draw a model and write a division expression.

QUICK WRITE | 2 MINUTES

Why must a mixed number be converted before finding its reciprocal?

PART II INVESTIGATE

BUILD A MODEL AND LOOK FOR A PATTERN

Draw models on graph paper. Convert the mixed numbers, calculate, and check with multiplication.

Expression	Improper fractions	Quotient	Multiplication check
$4\frac{1}{2} \div \frac{3}{4}$			
$3\frac{1}{3} \div \frac{5}{6}$			
$6 \div 1\frac{1}{2}$			
$5\frac{5}{6} \div 2\frac{1}{3}$			

COMPARE AND EXPLAIN

Explain how the model, improper-fraction calculation, and multiplication check represent the same groups.

PART III MAKE SENSE AND PRACTICE**WHAT WE CAN CONCLUDE**

Convert each mixed number to an improper fraction. Multiply by the reciprocal of the divisor, then simplify. Interpret the quotient in context: a fraction of a group is different from the leftover amount.

WORKED MODEL

$$4\frac{1}{2} \div \frac{3}{4} = \frac{9}{2} \times \frac{4}{3} = 6. \text{ Check: } 6 \times \frac{3}{4} = 4\frac{1}{2}.$$

MUST DO

1. $3\frac{1}{3} \div \frac{5}{6}$

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

3. $4\frac{1}{2} \div 1\frac{1}{4}$

4. $5\frac{5}{6} \div 2\frac{1}{3}$

5. A $7\frac{1}{2}$ -foot ribbon is cut into $1\frac{1}{4}$ -foot pieces. How many pieces are made?

READY FOR MORE

A $4\frac{1}{2}$ -foot ribbon is cut into $1\frac{1}{4}$ -foot pieces. Find the number of complete pieces and the leftover length. Explain the fractional part of the quotient.

PART IV PUZZLE PRACTICE

Name _____

Date _____

DECODE THE MATHEMATICS REMINDER

Solve. Match each result to the answer bank. Write its letter in the numbered code boxes.

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

2. $4\frac{1}{2} \div \frac{3}{4}$

3. $3\frac{1}{3} \div \frac{5}{6}$

4. $5 \div 1\frac{1}{5}$

5. $4\frac{1}{2} \div 1\frac{1}{4}$

6. $5\frac{5}{6} \div 2\frac{1}{3}$

7. $3\frac{3}{4} \div \frac{3}{8}$

8. $8\frac{1}{4} \div 1\frac{1}{2}$

ANSWER BANKT: 10 I: $2\frac{1}{2}$ N: $3\frac{3}{5}$ E: 4 U: $4\frac{1}{6}$ U: 5 S: $5\frac{1}{2}$ S: 6**CODE BOXES**

1	2	3	4	5	6	7	8