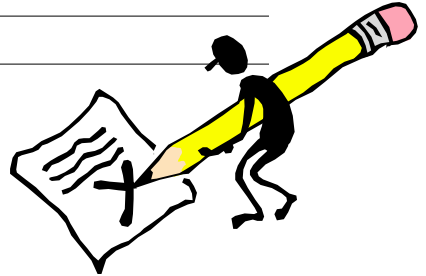


Math Journal



Learning Target

I can find whole number quotients and remainders.

WRESTLING WITH REMAINDERS

Making sense of the long division algorithm through connections with place value discs helps with effectiveness and efficiency. By understanding what remainders in any place mean will help you know what to do with them as you solve increasingly complex problems.

Divide a two-digit number by a one-digit divisor with a remainder in the tens place.

$$75 \div 3 = m$$

Place Value
Discs

T	O
•••••	•••••

3 groups

Standard
Algorithm

$$3 \overline{) 57}$$

$$86 \div 5 = m$$

Place Value
Discs

T	O
•••••	•••••

5 groups

Standard
Algorithm

$$5 \overline{) 86}$$

Reflect:

What is the trickiest part of the division algorithm? Why?



Represent the problem using place value discs and connect it to the standard algorithm.

$$74 \div 8 = m$$

Place Value
Discs

Standard
Algorithm

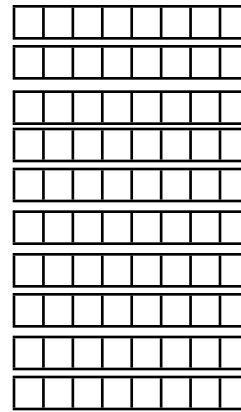
Fraction

T	O
●●●●	●●

$$8 \overline{) 74}$$

$$\frac{74}{8} =$$

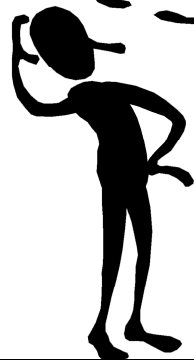
Fraction Bar Model



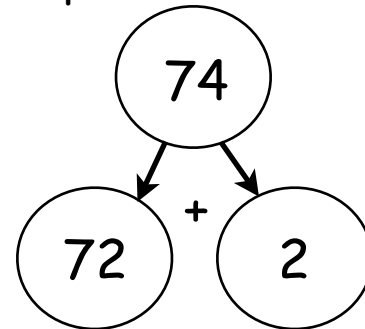
8 groups

$$\div 8$$

Think:
What is a multiple of 8
that is closest to 74
without going over?



Decompose with Mental Math



Mots Mathématiques

Mental Math: a way to calculate and estimate quickly, using math facts that are committed to memory, such as multiplication, division, or doubles

How can mental math help with this problem?

$$\times 9$$

- $1 \times 9 = 9$
- $2 \times 9 = 18$
- $3 \times 9 = 27$
- $4 \times 9 = 36$
- $5 \times 9 = 45$
- $6 \times 9 = 54$
- $7 \times 9 = 63$
- $8 \times 9 = 72$
- $9 \times 9 = 81$

$$9 \overline{) 87}$$

Represent the problem using fraction bars and connect it to the long division standard algorithm. Check your answer using multiplication.

Standard Algorithm Fraction

$$64 \div 7 = m$$

$$\begin{array}{r} 7 \overline{) 64} \end{array}$$

$$\frac{64}{7} =$$

Check

Standard Algorithm Fraction

$$46 \div 2 = m$$

$$\begin{array}{r} 2 \overline{) 46} \end{array}$$

$$\frac{46}{2} =$$

Check

Standard Algorithm Fraction

$$96 \div 3 = m$$

$$\begin{array}{r} 3 \overline{) 96} \end{array}$$

$$\frac{96}{3} =$$

Check

Standard Algorithm Fraction

$$85 \div 5 = m$$

$$\begin{array}{r} 5 \overline{) 85} \end{array}$$

$$\frac{85}{5} =$$

Check

Standard Algorithm Fraction

$$52 \div 4 = m$$

$$\begin{array}{r} 4 \overline{) 52} \end{array}$$

$$\frac{52}{4} =$$

Check

Standard Algorithm Fraction

$$95 \div 4 = m$$

$$\begin{array}{r} 4 \overline{) 95} \end{array}$$

$$\frac{95}{4} =$$

Check

Represent the problem using fraction bars and connect it to the long division standard algorithm. Check your answer using multiplication.

$$\begin{array}{l} 89 \div 6 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{89}{6} = \end{array}$$
$$6 \overline{) 89}$$

Check

$$\begin{array}{l} 96 \div 6 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{96}{6} = \end{array}$$
$$6 \overline{) 96}$$

Check

$$\begin{array}{l} 60 \div 3 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{60}{3} = \end{array}$$
$$3 \overline{) 60}$$

Check

$$\begin{array}{l} 60 \div 4 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{60}{4} = \end{array}$$
$$4 \overline{) 60}$$

Check

$$\begin{array}{l} 95 \div 8 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{95}{8} = \end{array}$$
$$8 \overline{) 95}$$

Check

$$\begin{array}{l} 95 \div 7 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{95}{7} = \end{array}$$
$$7 \overline{) 95}$$

Check

Represent the problem using fraction bars and connect it to the long division standard algorithm. Check your answer using multiplication.

$$\begin{array}{l} 84 \div 2 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{84}{2} = \end{array}$$
$$\begin{array}{r} \overline{2) 84} \end{array}$$

Check

$$\begin{array}{l} 84 \div 4 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{84}{4} = \end{array}$$
$$\begin{array}{r} \overline{4) 84} \end{array}$$

Check

$$\begin{array}{l} 48 \div 3 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{48}{3} = \end{array}$$
$$\begin{array}{r} \overline{3) 48} \end{array}$$

Check

$$\begin{array}{l} 80 \div 5 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{80}{5} = \end{array}$$
$$\begin{array}{r} \overline{5) 80} \end{array}$$

Check

$$\begin{array}{l} 79 \div 5 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{79}{5} = \end{array}$$
$$\begin{array}{r} \overline{5) 79} \end{array}$$

Check

$$\begin{array}{l} 91 \div 4 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{91}{4} = \end{array}$$
$$\begin{array}{r} \overline{4) 91} \end{array}$$

Check

Represent the problem using fraction bars and connect it to the long division standard algorithm. Check your answer using multiplication.

$$\begin{array}{l} 91 \div 6 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{91}{6} = \end{array}$$
$$6 \overline{) 91}$$

Check

$$\begin{array}{l} 91 \div 7 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{91}{7} = \end{array}$$
$$7 \overline{) 91}$$

Check

$$\begin{array}{l} 87 \div 3 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{87}{3} = \end{array}$$
$$3 \overline{) 87}$$

Check

$$\begin{array}{l} 87 \div 6 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{87}{6} = \end{array}$$
$$6 \overline{) 87}$$

Check

$$\begin{array}{l} 94 \div 8 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{94}{8} = \end{array}$$
$$8 \overline{) 94}$$

Check

$$\begin{array}{l} 94 \div 6 = m \\ \text{Standard} \\ \text{Algorithm} \end{array} \quad \begin{array}{l} \text{Fraction} \\ \frac{94}{6} = \end{array}$$
$$6 \overline{) 94}$$

Check

Homeroom: R

Name: _____

Date: _____



Show the division using discs. Relate your work on the place value chart to long division. Check your quotient and remainder by using multiplication and addition.

$$93 \div 7$$

Check:

T	O
---	---

$$7 \overline{) 93}$$

$$99 \div 8$$

Check:

T	O
---	---

$$8 \overline{) 99}$$

