

Monday 1st February 2021

01/02/21

Year 4 maths - Chapter 4 Lesson 16

WALT: divide 3-digit numbers with a remainder.

Give me 5!

You have 5 minutes to answer these 5 questions.

In the back of your journal, write the date.

Try your best and show all of your working out (making sure your final answer is clear).

If you finish, check your working.

Can you beat your best score?

Can you beat your best time?

Give me 5! 

1. $9386 + 3952 =$

2. $3385 - 2958 =$

3. $47 \div 7 =$

4. $90 \times 3 =$

5. $82 \times 6 =$

Give me 5! 

1. $9386 + 3952 = 13338$

2. $3385 - 2958 = 427$

3. $47 \div 7 = 6 \text{ r. } 5$

4. $90 \times 3 = 270$

5. $82 \times 6 = 492$

WALT: divide 3-digit numbers with a remainder.

In Focus

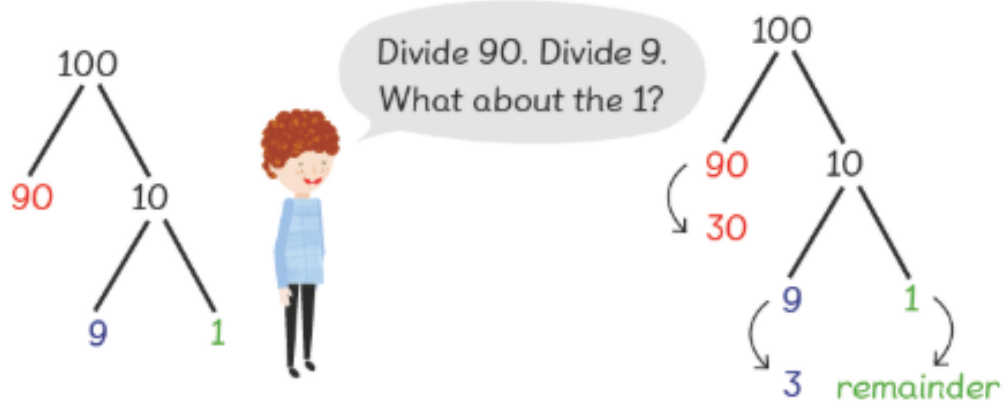
A shopkeeper repacks 100 kg of rice into 3-kg bags to sell.
How many bags does he get?



What methods can we use to solve this?

1 $100 \div 3 =$ 100 \rightarrow 10 10 10 10 10 10 10 10 10 10

Method 1



Who can talk us through this method?

Who can talk us through this method?

Method 2

$$\begin{array}{r} 3 \overline{) 100} \\ \underline{- 9} \\ 10 \\ \underline{- 9} \\ 1 \end{array}$$
$$\begin{array}{r} \boxed{3} \boxed{3} \text{ remainder } \boxed{1} \\ 3 \overline{) 100} \\ \underline{- 9} \\ 10 \\ \underline{- 9} \\ 1 \end{array}$$

→ 3 tens
→ 3 ones
→ remainder

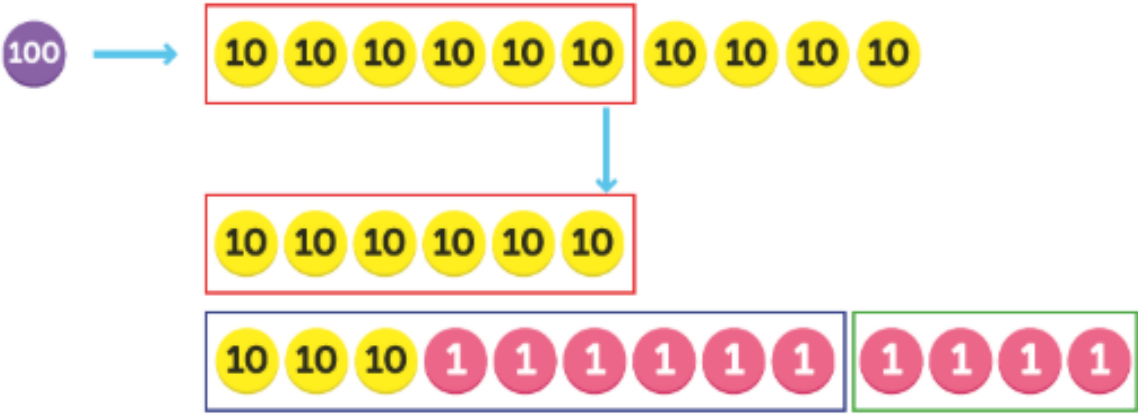
$$100 \div 3 = 33 \text{ remainder } 1$$

He gets 33 bags and a remainder of 1 kg of rice.

Why did we subtract 9 ones?

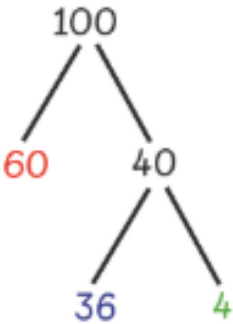
Have we grouped all of the ones?

2 What if he wants to pack the rice into 6-kg bags?



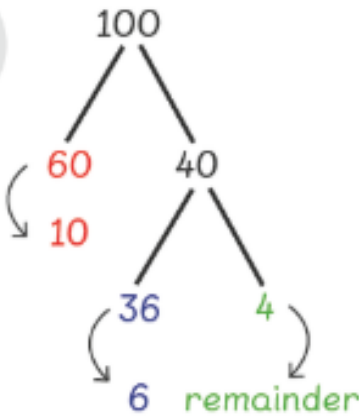
Can you predict what the quotient and remainder will be?

Method 1



Divide 60. Divide 36.
We can get a quotient.

Take 60 from 100. 40 is left.
Take 36 from 40. 4 is left.



Method 2

$$\begin{array}{r}
 6 \overline{) 100} \\
 \underline{- 6 } \\
 40 \\
 \underline{- 36} \\
 4
 \end{array}$$

$$\begin{array}{r}
 \boxed{} \boxed{1} \boxed{6} \text{ remainder } \boxed{4} \\
 6 \overline{) 100} \\
 \underline{- 6 } \quad \rightarrow \text{1 ten} \\
 40 \\
 \underline{- 36} \quad \rightarrow \text{6 ones} \\
 4 \quad \rightarrow \text{remainder}
 \end{array}$$

$$100 \div 6 = 16 \text{ remainder } 4$$

He gets 16 bags and a remainder of 4 kg of rice.

More practice of long division:

$$853 \div 3 =$$

Divide	Multiply	Subtract	Bring Down
$\begin{array}{r} 1 \\ 6 \overline{)753} \\ \underline{6} \\ 15 \end{array}$ $7 \div 6$	$\begin{array}{r} 1 \\ 6 \overline{)753} \\ \underline{6} \end{array}$ 1×6	$\begin{array}{r} 1 \\ 6 \overline{)753} \\ \underline{-6} \\ 1 \end{array}$	$\begin{array}{r} 1 \\ 6 \overline{)753} \\ \underline{6} \downarrow \\ 15 \end{array}$
$\begin{array}{r} 12 \\ 6 \overline{)753} \\ \underline{6} \\ 15 \end{array}$ $15 \div 6$	$\begin{array}{r} 12 \\ 6 \overline{)753} \\ \underline{6} \\ 15 \\ \underline{12} \end{array}$ 2×6	$\begin{array}{r} 12 \\ 6 \overline{)753} \\ \underline{6} \\ 15 \\ \underline{-12} \\ 3 \end{array}$	$\begin{array}{r} 12 \\ 6 \overline{)753} \\ \underline{6} \downarrow \\ 15 \\ \underline{12} \downarrow \\ 33 \end{array}$
$\begin{array}{r} 125 \\ 6 \overline{)753} \\ \underline{6} \\ 15 \\ \underline{12} \\ 33 \end{array}$ $33 \div 6$	$\begin{array}{r} 125 \\ 6 \overline{)753} \\ \underline{6} \\ 15 \\ \underline{12} \\ 33 \\ \underline{30} \end{array}$ 5×6	$\begin{array}{r} 125 \\ 6 \overline{)753} \\ \underline{6} \\ 15 \\ \underline{12} \\ 33 \\ \underline{-30} \\ 3 \end{array}$	

More practice of long division:

$$853 \div 3 = 284 \text{ r } 1$$

$$\begin{array}{r} 284 \\ 3 \overline{)853} \\ \underline{6} \\ 25 \\ \underline{24} \\ 13 \\ \underline{12} \\ 1 \end{array}$$

Divide	Multiply	Subtract	Bring Down
$\begin{array}{r} 1 \\ 6 \overline{)753} \\ \underline{6} \\ 15 \end{array}$ $7 \div 6$	$\begin{array}{r} 1 \\ 6 \overline{)753} \\ \underline{6} \end{array}$ 1×6	$\begin{array}{r} 1 \\ 6 \overline{)753} \\ \underline{-6} \\ 1 \end{array}$	$\begin{array}{r} 1 \\ 6 \overline{)753} \\ \underline{6} \downarrow \\ 15 \end{array}$
$\begin{array}{r} 12 \\ 6 \overline{)753} \\ \underline{6} \\ 15 \end{array}$ $15 \div 6$	$\begin{array}{r} 12 \\ 6 \overline{)753} \\ \underline{6} \\ 15 \\ \underline{12} \end{array}$ 2×6	$\begin{array}{r} 12 \\ 6 \overline{)753} \\ \underline{6} \\ 15 \\ \underline{-12} \\ 3 \end{array}$	$\begin{array}{r} 12 \\ 6 \overline{)753} \\ \underline{6} \downarrow \\ 15 \\ \underline{12} \downarrow \\ 33 \end{array}$
$\begin{array}{r} 125 \\ 6 \overline{)753} \\ \underline{6} \\ 15 \\ \underline{12} \\ 33 \end{array}$ $33 \div 6$	$\begin{array}{r} 125 \\ 6 \overline{)753} \\ \underline{6} \\ 15 \\ \underline{12} \\ 33 \\ \underline{30} \end{array}$ 5×6	$\begin{array}{r} 125 \\ 6 \overline{)753} \\ \underline{6} \\ 15 \\ \underline{12} \\ 33 \\ \underline{-30} \\ 3 \end{array}$	

Now try Worksheet 16 on pages 127-128.

Name: _____ Class: _____ Date: _____

Worksheet 16**Dividing 3-Digit Numbers****1** Divide.

(a) $163 \div 3$

$= \boxed{}$

$3 \overline{) 163}$

(b) $254 \div 4$

$= \boxed{}$

$4 \overline{) 254}$

(c) $357 \div 6$

$= \boxed{}$

$6 \overline{) 357}$

(d) $436 \div 8$

$= \boxed{}$

$8 \overline{) 436}$

(e) $590 \div 7$

$= \boxed{}$

$7 \overline{) 590}$

(f) $825 \div 9$

$= \boxed{}$

$9 \overline{) 825}$

- 2 There are 500 pupils.
They are asked to form groups of a fixed size.
What is the largest number of groups they can form?

- (a) What if there are 6 pupils in each group?

$$500 \div 6 = \boxed{}$$

$$6 \overline{) 500}$$

The largest number of groups they can form is $\boxed{}$.

- (b) What if there are 7 pupils in each group?

$$500 \div 7 = \boxed{}$$

$$7 \overline{) 500}$$

The largest number of groups they can form is $\boxed{}$.

- (c) What if there are 8 pupils in each group?

$$500 \div 8 = \boxed{}$$

$$8 \overline{) 500}$$

The largest number of groups they can form is $\boxed{}$.

- (d) What if there are 9 pupils in each group?

$$500 \div 9 = \boxed{}$$

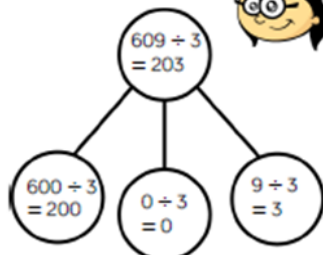
$$9 \overline{) 500}$$

The largest number of groups they can form is $\boxed{}$.

Digging deeper extension:

1. Annie is dividing 609 by 3 using place value counters.

Hundreds	Tens	Ones
100 100		1 1 1
100 100		1 1 1
100 100		1 1 1



Use Annie's method to calculate the divisions.

$$906 \div 3 \quad 884 \div 4 \quad 884 \div 8 \quad 489 \div 2$$

2. True or false?

The calculations below all have the same divisor.

$57 \div \underline{\quad} = 19$

$72 \div \underline{\quad} = 18$

$85 \div \underline{\quad} = 17$

3. Sian has the calculation
-
- $85 \div 3 = 28 \text{ r } 1$

She says 85 must be 1 away from a multiple of 3
Do you agree?

4. Whitney is thinking of a 2-digit number.

When it is divided by 2 or 4, there is no remainder.

When it is divided by 3, there is a remainder of 1

When it is divided by 5, there is a remainder of 3

It has an odd digit total.

What number is Whitney thinking of?

Answers:

Name: _____ Class: _____ Date: _____

Worksheet 16

Dividing 3-Digit Numbers

1 Divide.

(a) $163 \div 3$

$$= \boxed{\begin{array}{l} 54 \\ \text{remainder} \\ 1 \end{array}}$$

$$\begin{array}{r} 054 \\ 3 \overline{) 163} \\ \underline{-0} \\ 16 \\ \underline{-15} \\ 13 \\ \underline{-12} \\ 1 \end{array}$$

(b) $254 \div 4$

$$= \boxed{\begin{array}{l} 63 \\ \text{remainder} \\ 2 \end{array}}$$

$$\begin{array}{r} 063 \\ 4 \overline{) 254} \\ \underline{-0} \\ 25 \\ \underline{-24} \\ 14 \\ \underline{-12} \\ 2 \end{array}$$

(c) $357 \div 6$

$$= \boxed{\begin{array}{l} 59 \\ \text{remainder} \\ 3 \end{array}}$$

$$\begin{array}{r} 059 \\ 6 \overline{) 357} \\ \underline{-0} \\ 35 \\ \underline{-30} \\ 57 \\ \underline{-54} \\ 3 \end{array}$$

(d) $436 \div 8$

$$= \boxed{\begin{array}{l} 54 \\ \text{remainder} \\ 4 \end{array}}$$

$$\begin{array}{r} 054 \\ 8 \overline{) 436} \\ \underline{-0} \\ 43 \\ \underline{-40} \\ 36 \\ \underline{-32} \\ 4 \end{array}$$

(e) $590 \div 7$

$$= \boxed{\begin{array}{l} 84 \\ \text{remainder} \\ 2 \end{array}}$$

$$\begin{array}{r} 084 \\ 7 \overline{) 590} \\ \underline{-0} \\ 59 \\ \underline{-56} \\ 30 \\ \underline{-28} \\ 2 \end{array}$$

(f) $825 \div 9$

$$= \boxed{\begin{array}{l} 91 \\ \text{remainder} \\ 6 \end{array}}$$

$$\begin{array}{r} 091 \\ 9 \overline{) 825} \\ \underline{-0} \\ 82 \\ \underline{-81} \\ 15 \\ \underline{-9} \\ 6 \end{array}$$

Answers:

- 2 There are 500 pupils.
They are asked to form groups of a fixed size.
What is the largest number of groups they can form?

(a) What if there are 6 pupils in each group?

$$500 \div 6 = \begin{array}{r} 83 \\ \text{remainder} \\ 2 \end{array}$$

The largest number of groups they can form is 83.

$$\begin{array}{r} 083 \\ 6 \overline{) 500} \\ \underline{-0} \\ 50 \\ \underline{-48} \\ 20 \\ \underline{-18} \\ 2 \end{array}$$

(b) What if there are 7 pupils in each group?

$$500 \div 7 = \begin{array}{r} 71 \\ \text{remainder} \\ 3 \end{array}$$

The largest number of groups they can form is 71.

$$\begin{array}{r} 071 \\ 7 \overline{) 500} \\ \underline{-0} \\ 50 \\ \underline{-49} \\ 10 \\ \underline{-7} \\ 3 \end{array}$$

(c) What if there are 8 pupils in each group?

$$500 \div 8 = \begin{array}{r} 62 \\ \text{remainder} \\ 4 \end{array}$$

The largest number of groups they can form is 62.

$$\begin{array}{r} 062 \\ 8 \overline{) 500} \\ \underline{-0} \\ 50 \\ \underline{-48} \\ 20 \\ \underline{-16} \\ 4 \end{array}$$

(d) What if there are 9 pupils in each group?

$$500 \div 9 = \begin{array}{r} 55 \\ \text{remainder} \\ 5 \end{array}$$

The largest number of groups they can form is 55.

$$\begin{array}{r} 055 \\ 9 \overline{) 500} \\ \underline{-0} \\ 50 \\ \underline{-45} \\ 50 \\ \underline{-45} \\ 5 \end{array}$$

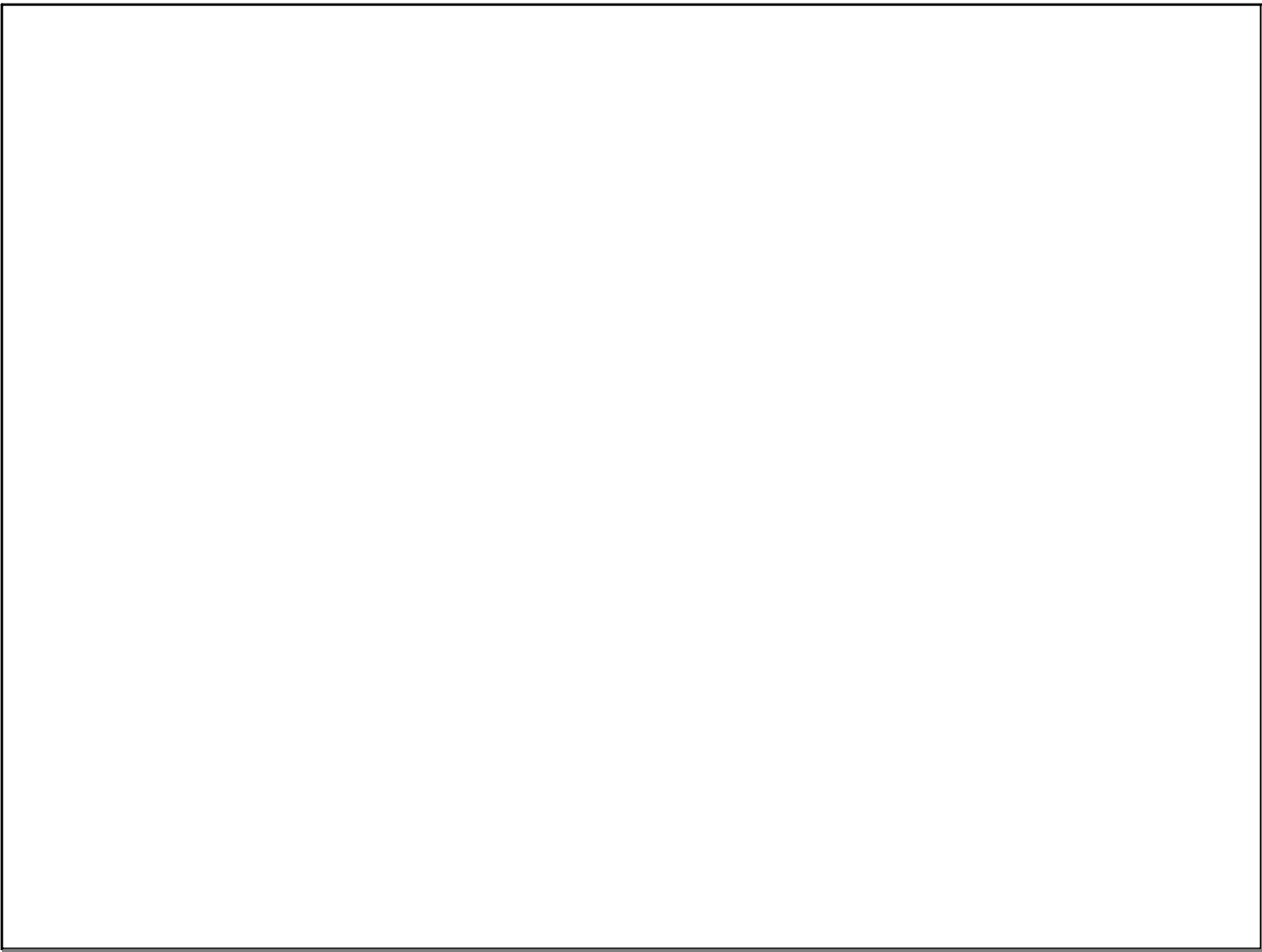
Plenary.

You have 2 minutes, can you explain one of these new division methods to the person next to you?

Then swap over.



Did you understand your partner's explanation?



Attachments

Wed Reading wk 5.pdf

Fri Reading wk 5.pdf

Mon Reading wk 5.pdf

Thurs Reading Postcard.pdf

Thurs Reading wk 5.pdf

Tues Reading Feelings graph .pdf

Tues Reading wk 5.pdf