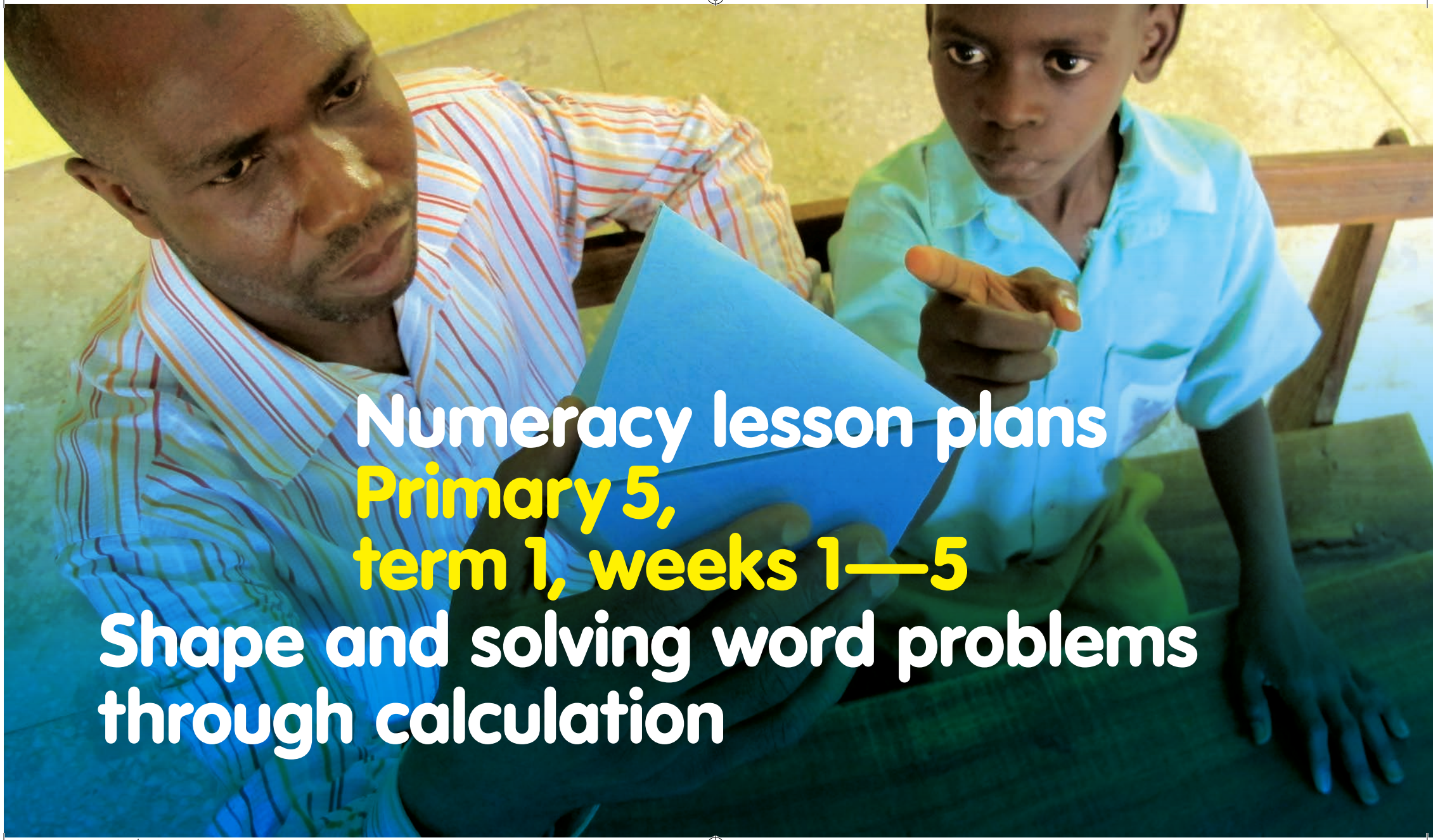


Numeracy lesson plans Primary 5, term 1, weeks 1—5

Shape and solving word problems through calculation

Numeracy lesson plans Primary 5, term 1, weeks 1—5

Shape and solving word problems through calculation

Introduction

The literacy and numeracy lesson plans arising from the School Improvement Programme (SIP) are part of efforts to improve teaching and learning in response to the baseline surveys and classroom observations in 2010. These indicated that teachers had challenges with lesson delivery, which in turn negatively affected children's learning.

To improve children's learning, ESSPIN (Education Sector Support Programme in Nigeria) supported the State to provide lesson plans to primary 1—3 teachers in all 1,223 public primary schools during the 2014/15 school year.

In the 2015/16 school year, we are glad to extend the lesson plans to primary 4—5 teachers to enable more children to benefit from the innovation.

Nneka Onuora
Executive Chairman,
Enugu State Universal
Basic Education Board

Foreword

Quality education comes about as a mix of factors. The teacher is the most important element in ensuring that a child acquires the right kind of education to meet acceptable learning outcome benchmarks. It takes a lot to bring a teacher to exhibit the right mix of attitudes, aptitudes and skills, which is why the state has partnered with ESSPIN to develop literacy and numeracy lesson plans.

I hope the lesson plans will empower our teachers to equip our children with the literacy and numeracy skills they need to succeed in both school and society.

Finally, I commend all who have worked hard to develop and produce the lesson plans, especially the Enugu State Universal Basic Education Board, the UK Department for International Development (DFID) and the DFID-funded Education Sector Support Programme in Nigeria (ESSPIN).

Professor Uche Eze
Honourable Commissioner
for Education Enugu State

The numeracy lessons teach calculation, shape, symmetry, fractions and time. Each week focuses on one of these topics.

How?

How

This section illustrates a key concept through simple instructions and photographs. A sign at the top of the column shows you which part of the lesson uses this resource.

Learning expectations

Every pupil in the class will be at a different stage of understanding in maths. The first page of each week outlines learning expectations for the week. These learning expectations are broken into three levels:

What **all** pupils will be able to do.

What **most** pupils will be able to do.

What **some** pupils will be able to do.

Assessment

On each weekly page there is an assessment task for you to carry out with five pupils at the end of the week. This will help you find out whether they have met the learning expectations.

Next to the task, there is an example of a pupil's work, which shows what a pupil can do if they have met the learning expectations.

If most pupils have not met the learning expectations, you may have to teach some of the week again.

Daily practice

Helps the pupils to practise something they have previously learned. It should only last 15 minutes and move at a fairly fast pace.

Introduction

Provides the focus for the lesson. Often involves a variety of fun, quick activities which prepare the pupils for the main topic.

Main activity

Gives the pupils the opportunity to explore the main topic in different ways. This usually involves group, pair or individual tasks. Your role as a teacher during the main activity is to work with groups and individuals to help them understand the ideas.

Plenary

Finishes the lesson with different ways of reviewing learning.

Grade/
Type of lesson plan

Lesson
title

Weekly page

Primary 5, numeracy lesson plans

Week 1:

Number

Words/phrases

Write these words on the chalkboard and leave them there for the week.

Thousands
Hundreds
Tens
Units
digits
equal
order
What is the value of this digit?
three-digit numbers
four-digit numbers
place value
ascending
descending

Learning expectations

By the end of the week:

All pupils will be able to:
Identify and order numbers up to 1000.

Most pupils will be able to:
Identify the place value of four-digit numbers.

Some pupils will be able to:
Read and write numbers up to 9999 in digits and words.

Assessment task

Instructions:

Ask the individual pupils to complete these tasks.

1
Hold up flash cards with different numbers from 0—9999 and ask individual pupils to call out the numbers.

2
Give individual pupils a set of five flash cards with four-digit numbers and ask them to place the cards in ascending order.

3
Point to numbers on the four-digit flash cards and ask, 'What is the value of this digit?'.

4
Give two flash cards with a four-digit number to each individual pupil and ask them to write them in their exercise books, placing the correct value on top of each number.

Example of a pupil's work

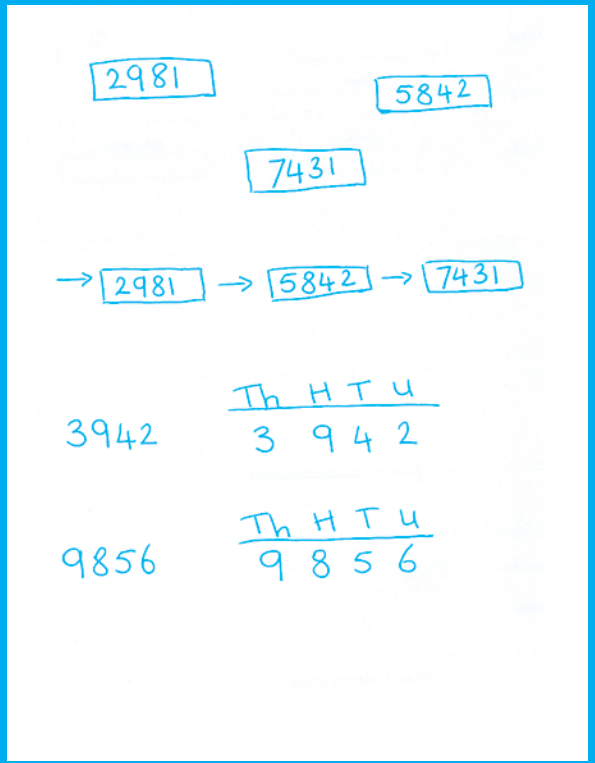
This pupil can:

Identify, order and write a four-digit number.

Order four-digit numbers correctly.

Identify the place value of each digit in a four-digit number.

Write out the expansion of a four-digit number.



Lesson title

Week 1: Number

Day 1: Revising place values

Learning outcomes

By the end of the lesson, most pupils will be able to:

Recall the 2 and 4 times tables.

Identify the place value of four-digit numbers.

Preparation

Before the lesson:

Have ready a set of 0—9 number cards for each pair.

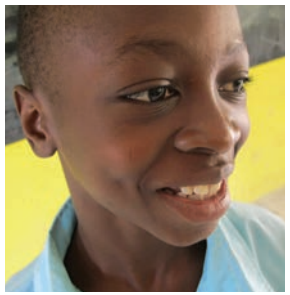
Read How? Play the buzz game, as shown below.

0—9 number cards

How? Play the buzz game

Ask the pupils to stand in a circle.

Tell the pupils to count round in turn, from 1.



When a pupil reaches a multiple of 4, they should say 'buzz'.

If anyone forgets to say 'buzz', or says it in the wrong place, they are out.

This can be played in small groups.

15 minutes	How	10 minutes	25 minutes	0—9 number cards	10 minutes

Daily practice

Whole class teaching

Choose some pupils to help you write the 2 times table on the chalkboard.

Ask them to help you write the 4 times table.

Ask, 'What do you notice about the 2 and 4 times tables ?' (Answers in the 4 times table are double those in the 2 times table.)

Teach How? Play the buzz game, as shown left.

Introduction

Whole class teaching

Write '3546' on the chalkboard and ask the class to say it with you.

Remind them that the position of the digit within a number is very important.

Ask, 'How many Thousands are in this number?',
'How many Hundreds?',
'How many Tens?',
'How many Units?'

Choose some pupils to come and write 'Th', 'H', 'T' and 'U' above each digit.

Write the number in its expanded form:
3546 = 3000 + 500 + 40 + 6.

Repeat with 5821.

Main activity

Pair task

Give each pair a set of 0—9 number cards.

Ask the pairs to make four, four-digit numbers.

Ask them to write each number they make, and its expanded form, in their exercise books, eg:
3748 = 3000 + 700 + 40 + 8.

Ask the pairs to choose four number cards and make the biggest and then the smallest number they can with the cards.

Tell them to repeat this task with four different number cards.

Plenary

Pair task

Write the following four-digit numbers on the chalkboard and underline the following digit in each number:
3546
2873
5832
9154
1432

Ask, 'What is the value of the underlined digit?'

Ask the pairs to explain the value of the underlined digit to each other.

Lesson title

Week 1: Number

Day 2: Revising place values to 9999

Learning outcomes

By the end of the lesson, most pupils will be able to:

Halve and double numbers.

Identify the place value of numbers up to 9999.

Preparation

Before the lesson:

Draw the place value grid from the main activity, shown right, on the chalkboard.

Read How? Place value, as shown below.

Place value grid

How? Place value

Write '1000' in the place value grid.

Choose some pupils to read the number. Ask, 'How many digits are in this number?'

Change one digit and ask, 'Which digit has changed?', 'What is the number now?'

Write other numbers in the place value grid and ask pupils to read them.

Ask, 'How many Thousands are in this number?' Repeat with Hundreds, Tens and Units.

15 minutes

Daily practice

Whole class teaching

Ask the pupils doubling questions, eg:
'What is double 3?'

Remind them that to 'double' is the same as multiplying by 2.

Ask the pupils how they will find half of 12.

Remind them to think about how many sets of 2 there are in 12.

Write some three- and four-digit numbers on the chalkboard and choose some pupils to read them.

Ask, 'What is double this number?', 'What is half this number?' and 'How did you work it out?'

10 minutes

Introduction

Pair task

Write some three-digit numbers on the chalkboard and choose some pairs to read the numbers.

Point to each number and ask the following questions:

'Which number is 10 more than this?'

'Which number is 10 less than this?'

'Which number is 100 more than this?'

'Which number is 100 less than this?'

Tell the pairs to discuss each answer, and choose different pairs to say the answers.

25 minutes

Main activity

How

Whole class teaching

Teach How? Place value, as shown left.

Write the following numbers on the chalkboard:
1923
6425
4281
3886

Choose some pupils to say the value of the underlined digit, eg:
1923 = 900.

Ask the pupils to write the answers in their exercise books.

Place value grid

Th	H	T	U
1	0	0	0

10 minutes

Plenary

Pair task

Write, '48, 822, 460' on the chalkboard.

Ask the pairs to find half of each number.

Choose some pairs to explain their answers to the class.

Lesson title

Place value grid/
1—9 number cards

Week 1: Number

Day 3: Multiply by 10 and 100

Learning outcomes

By the end of the lesson, most pupils will be able to:

Find a quarter of a number.

Multiply numbers by 10 and 100.

Preparation

Before the lesson:

Write the 4 times table on the chalkboard.

Display the place value grid from yesterday.

Have ready 1—9 number cards for each pair of pupils.

Practise How? Card game, as shown below.

How? Card game

Write '45, 74, 82' on the chalkboard.

Multiply the numbers by 10.

Multiply the numbers by 100.

Give each pair a set of 1—9 number cards and tell them to make a two-digit number.

Ask the pupils to multiply each number they make by 10 and 100.

15 minutes	10 minutes	30 minutes	How	Card game	5 minutes

Daily practice

Whole class teaching

Tell the pupils to join you in saying the 4 times table.

Ask, 'What is a quarter of 8?'

Explain how to use the 4 times table to solve this, by asking how many sets of 4 there are in 8.

Ask if anyone can remember how to write a quarter.

Write on the chalkboard:

$\frac{1}{4}$ of 16 =

$\frac{1}{4}$ of 24 =

$\frac{1}{4}$ of 20 =

Ask the pairs to complete these calculations in their exercise books.

Introduction

Whole class teaching

Ask the pupils to say the 10 times table, up to 12 x 10.

Remind them that when we multiply by 10 the Unit moves one place to the left.

Ask, 'What happens to the 3 in 10 x 3?'

Ask, 'What happens when we multiply 3 by 100?' (The Unit moves two places to the left.)

Write '28, 45, 3, 58, 16' on the chalkboard.

Ask the pupils to multiply each number by 100 and write the answer in their exercise books.

Main activity

Whole class teaching

Teach How? Card game, as shown left.

Pair task

Tell the pupils to play the card game.

Tell them to write their results in their exercise books, eg: 32
32 x 10 = 320
32 x 100 = 3200

Tell them to repeat this activity four or five times.

Plenary

Whole class teaching

Call out a variety of numbers and ask the pupils to multiply them by 10 without using pencil and paper.

Lesson title

Week 1: Number

Day 4: Numbers in figures and words

Number words chart/
0—9 number cards

Learning outcomes

By the end of the lesson, most pupils will be able to:

Recall the 3 and 4 times tables quickly.

Read and write numbers in figures and words.

Preparation

Before the lesson:

Copy the number words chart from the introduction, shown right, on the chalkboard.

Have ready a set of 0—9 number cards for each pair of pupils.

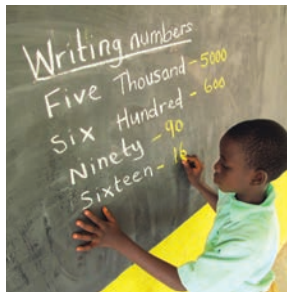
Read How? Numbers in figures and words, as shown below.

How? Numbers in figures and words

Write some numbers on the chalkboard. Choose pupils to read the numbers.

Choose some pupils to write 'Th', 'H', 'T' and 'U' in the correct place above the numbers.

Ask the pupils to read the number words chart.



Choose some pupils to write the correct numbers to match the words on the chalkboard.

15 minutes	Buzz game	10 minutes	How	25 minutes	0—9 number cards/ Number words chart	10 minutes

Daily practice

Whole class teaching

Play the buzz game with the 4 times table.

Tell the pupils to think as quickly as they can and ask them questions from the 4 times table, eg:
'What is 4 x 4?'
'What is a quarter of 32?'

Play the buzz game with the 3 times table.

Ask questions from the 3 times table and choose some pupils to answer as quickly as they can.

Introduction

Pair task

Write the following numbers on the chalkboard:
'2164, 821, 547, 9053'.

Remind the pupils that the 0 in 9053 shows that there are no Hundreds (nine thousand and fifty three).

Teach How? Numbers in figures and words, as shown left.

Number words chart

1	One	16	Sixteen
2	Two	17	Seventeen
3	Three	18	Eighteen
4	Four	19	Nineteen
5	Five	20	Twenty
6	Six	10	Ten
7	Seven	20	Twenty
8	Eight	30	Thirty
9	Nine	40	Forty
10	Ten	50	Fifty
11	Eleven	60	Sixty
12	Twelve	70	Seventy
13	Thirteen	80	Eighty
14	Fourteen	90	Ninety
15	Fifteen	100	Hundred

Main activity

Pair task

Give a set of 0—9 number cards to each pair.

Ask them to choose four cards to make a four-digit number.

Tell the pairs to write their number in a place value chart in their exercise books and write the number in words next to it.

Remind the pupils to look at the number words chart to help them spell their number in words and to take care with the zero if the number has one.

Repeat with four more four-digit numbers.

Plenary

Whole class teaching

Choose some pupils to share their work with the whole class.

Ask the rest of the class if they are correct. If they are not, ask why.

Lesson title

Week 1: Number

Day 5: Order numbers

Flash cards/ Number sets

Learning outcomes

By the end of the lesson, most pupils will be able to:

Recall the 3 and 6 times tables.

Order numbers up to 1000.

Preparation

Before the lesson:

Have ready large number sequence flash cards.

Copy the number sets from the main activity, shown right, onto the chalkboard and large flash cards.

Read How? Ordering numbers, as shown below.

How? Ordering numbers

Give out the number set flash cards to a group of pupils.

Ask the pupils to hold up the flash cards and read the numbers to the class.

Ask the class to discuss how to order the numbers.

Ask the group to arrange themselves (with their flash cards) in ascending number order (going up).

Ask the rest of the class if the numbers are in the correct order.

10 minutes	15 minutes	How	20 minutes	15 minutes

Daily practice

Whole class teaching

Choose some pupils to help you write the 3 times table on the chalkboard.

Ask them to help you to write the 6 times table next to it.

Ask the pupils what they notice about these times tables (the answers in the 6 times table are double the answers in the 3 times table).

Rub out the 6 times table and ask the pupils to write it in their exercise books.

Introduction

Whole class teaching

Teach How? Ordering numbers, as shown left.

Main activity

Individual task

Tell the pupils they are going to order numbers from smallest to largest (ascending order).

Look together at the following sets of numbers on the chalkboard:

a)
473, 207, 512, 401, 675

b)
111, 101, 247, 145, 243

c)
332, 323, 121, 303, 369

d)
132, 412, 217, 421, 142

Remind the pupils to look at the first digit in each number. If there is more than one number with the same first digit, they must look at the second digit.

Look together at the first set of numbers.

Ask the pupils, 'Which is the smallest number?', 'Which number is next?'

Ask the pupils to write the sets in ascending order in their exercise books.

If any pupils finish early, ask them to arrange the sequence in descending order, from largest to smallest.

Plenary

Whole class teaching

Write '6743' on the chalkboard.

Cover all the digits except the units and ask, 'What is this number?'

Uncover the Tens and ask, 'What is the number now?

Uncover the Hundreds and ask, 'What is the number now?'

Uncover the Thousands and ask, 'What is the number now?'

Repeat with other four-digit numbers.

Grade/
Type of lesson plan

Lesson
title

Weekly page
Primary 5, numeracy lesson plans

Week 2:
Addition

Words/phrases

Write these words on the chalkboard and leave them there for the week.

square
circle
rectangle
triangle
pentagon
hexagon
octagon
sphere
cube
cuboid
cylinder
cone
square-based pyramid
kite
word problem
vertical method
calculation

Learning expectations

By the end of the week:

All pupils will be able to:
Expand two-digit and three-digit numbers.

Most pupils will be able to:
Use the vertical addition method to add two-digit and three-digit numbers.

Some pupils will be able to:
Solve word problems involving two-digit and three-digit numbers.

Assessment task

Instructions:

Ask the individual pupils to complete these tasks in their exercise books.

1
Solve these sums using the vertical method:
342 + 54 =
684 + 35 =
266 + 421 =
348 + 426 =

2
Solve this word problem:
On Monday, Funmi sells 426 yams. On Tuesday, she sells 121 yams.
How many yams did she sell in total?

Example of a pupil's work

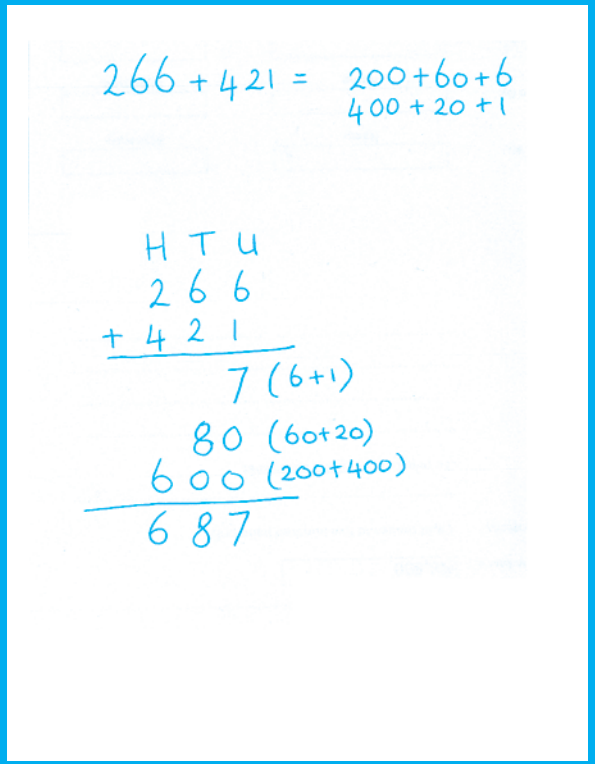
This pupil can:

Write out an addition sum horizontally.

Place two- and three-digit numbers under the right headings.

Add up Hundreds, Tens and Units vertically.

Identify the key words to solve a word problem.



Week 2:
Addition

Day 1:
Adding two- and three-digit numbers

Learning outcomes

By the end of the lesson, most pupils will be able to:

Recognise 2D shapes.

Use the vertical method to add two- and three-digit numbers.

Preparation

Before the lesson:

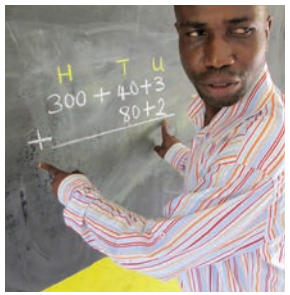
Write the addition calculations from the main activity, shown right, on the chalkboard.

Have ready a set of large 2D shapes (a triangle, square, rectangle, kite, pentagon, hexagon and octagon).

Read How? Vertical addition, as shown below.

How? Vertical addition

Remind the pupils to keep digits in the correct place when writing calculations.



Remind them to expand the numbers first.

Remind the pupils to add the Units, then the Tens, then the Hundreds.

Set out a calculation for pupils to do in their exercise books.

Tell the pupils to exchange books and mark each other's work.

15 minutes	Large 2D shapes	15 minutes	How	20 minutes	10 minutes

Daily practice

Whole class teaching

Show the pupils the large 2D shape cards.

Remind them that a 2D-shape has two measure-ments or dimensions (length and width).

Ask if they can remember the names of the shape as you hold up each card.

Show the cards again and ask the pupils to point to the matching words on the chalkboard.

Tell the pupils to draw and name three 2D shapes in their exercise books.

Introduction

Whole class teaching

Teach How? Vertical addition, as shown left.

Main activity

Pair task

Ask the pairs to complete the following sums in their exercise book:

```
  H T U
  3 2 6
+   8 3

  H T U
  2 8 5
+   2 7

  H T U
  4 3 2
+   4 6

  H T U
  6 5 2
+   3 4

  H T U
  3 5 5
+   4 1
```

Remind the pupils that it is important to line the digits in their place value.

If the pupils finish early, ask them to make up their own addition calculations using three-digit and two-digit numbers.

Plenary

Whole class teaching

When all the pupils have finished, tell the pairs to exchange books.

Ask one pupil to read out the answers. If the class agrees, they should mark it with a small tick (√).

Lesson title

Large 2D shapes/
3D shapes/Calculations

Week 2: Addition

Day 2: Adding with renaming

Learning outcomes

By the end of the lesson, most pupils will be able to:

Recognise the properties of 3D shapes.

Use the vertical method to add two- and three-digit numbers.

Preparation

Before the lesson:

Have ready the large 2D shapes from yesterday and a set of 3D shapes (a cube, cuboid, sphere, cyclinder and square-based pyramid).

Write the calculations from the main activity, shown right, on the chalkboard.

Read How? What am I?, as shown below.

How? What am I?

Write the names of some shapes on the chalkboard.

Show the pupils some shapes and ask them to name them.

Choose a shape but don't let the pupils see it. Ask, 'What am I?'

Give clues to help them answer, eg: 'I am a 2D shape, I have six edges.'

Or, 'I am a 3D shape. I have no edges, no corners and one curved face.'

15 minutes	How	Large 2D shapes/ 3D shapes	10 minutes	25 minutes	10 minutes

Daily practice

Whole class teaching

Show the pupils the large 2D shapes in turn and ask, 'What is this shape?'

Hold up the 3D shapes and choose some pupils to write the names of the shapes on the chalkboard.

Remind the pupils that 3D shapes have three dimensions (width, length and height).

Teach How? What am I?, as shown left.

Introduction

Whole class teaching

Revise vertical addition with the class. Remind the pupils to expand the numbers and make sure the digits are in the correct place value.

Write '328' on the chalkboard.

Ask the pupils to help you expand each digit:
328 = 300 + 20 + 8

In pairs, ask the pupils to expand the following numbers:
459
784
501

Main activity

Whole class teaching

Write, '426 + 15 =' on the chalkboard and demonstrate the vertical addition method.

Ask, 'What do we have to take care with when writing calculations in the vertical method?' (Expanding the numbers and lining up the digits in their correct place value.)

Write, '226 + 47 =' on the chalkboard.

Choose some pairs to complete the sum, asking them to explain each step.

Individual task

Ask the pupils to complete the following calculations in their exercise books:

```
  H T U
  4 2 7
+   6 4
```

```
  H T U
  4 7 2
+   4 7
```

```
  H T U
  5 4 2
+   7 6
```

```
  H T U
  7 6 4
+   5 6
```

```
  H T U
  5 2 1
+   8 7
```

Plenary

Pair task

Tell the pupils to exchange books with a partner and mark each other's work.

Lesson title

Large 2D shapes/
3D shapes/Calculations

Week 2: Addition

Day 3: Adding three-digit numbers

Learning outcomes

By the end of the lesson, most pupils will be able to:

Identify 2D and 3D shapes.

Use the vertical method to add three-digit numbers.

Preparation

Before the lesson:

Have ready the large 2D shapes and 3D shapes.

Write the addition calculations from the main activity, shown right, on the chalkboard.

Read How? Differences between 2D and 3D shapes, as shown below.

How? Differences between 2D and 3D shapes

Hold up some 2D and 3D shapes. Ask the pupils to name them.

Ask the pupils to point out 2D shapes in the classroom.

Ask them to point out 3D shapes in the classroom.

Ask the pupils to look for 2D shapes in 3D shapes.

Repeat with other 3D shapes.

15 minutes **How**

15 minutes

25 minutes

5 minutes What am I? game

Daily practice

Whole class teaching

Teach How? Differences between 2D and 3D shapes, as shown left.

Ask the pupils to explain to a partner the difference between 2D and 3D shapes.

Introduction

Whole class teaching

Remind the pupils that they have been doing addition calculations using the vertical method.

Tell them that today they are going to add two three-digit numbers.

Demonstrate the method on the chalkboard.

Remind them to expand the numbers carefully and line up the digits in the correct place value.

Main activity

Pair task

Ask the pairs to complete the following addition calculations in their exercise books:

	H	T	U
	2	4	7
+	1	3	4

	H	T	U
	4	3	2
+	2	5	7

	H	T	U
	5	4	2
+	3	3	6

	H	T	U
	4	5	8
+	4	3	7

	H	T	U
	7	4	1
+	1	9	7

When the pairs have finished, tell them to give their exercise books to their partner.

Tell them to put a small tick if they think the calculation is correct.

Choose some pupils to solve one of the calculations on the chalkboard.

Ask them to explain each step of the calculation.

Plenary

Whole class teaching

Play What am I? using 2D and 3D shapes.

Week 2: Addition

Day 4: Solving word problems

Learning outcomes

By the end of the lesson, most pupils will be able to:

Identify 2D and 3D shapes.

Solve word problems by adding two- and three-digit numbers.

Preparation

Before the lesson:

Write the word problems from the main activity, shown right, on the chalkboard.

Have ready some everyday 3D shapes.

Read How? Solving word problems, as shown below.

How? Solving word problems

Read the word problem and ask, 'What do we need to do first?'

Ask a pupil to underline the key words in the problem.

Ask a pupil to write the calculation on the chalkboard.

Choose another pupil to expand the numbers.

Ask a pupil to finish the calculation.

15 minutes	10 minutes	25 minutes	10 minutes
3D shapes		How	What am I? game

Daily practice

Whole class teaching

Show the pupils the 3D shapes and ask them to say the names of each shape.

Ask them to name some 2D shapes.

Tell them to look at the 3D shapes and ask if they can see any 2D shapes on them, eg: a circle on a cylinder, a square on a cube.

Introduction

Pair task

Write '5, 6, 2' on the chalkboard.

Tell the pairs to use these digits to make the biggest three-digit number they can.

Choose one pair to write their number on the chalkboard and read it to the class.

Ask the pair to expand the number and ask the class if they are correct.

Repeat, asking pairs to use the digits to make the smallest three-digit number they can.

Main activity

Whole class teaching

Remind the pupils that they have been adding two- and three-digit numbers using the vertical method.

Teach How? Solving word problems, as shown left.

Pair task

Read through the following word problems and tell the pupils to complete them in their exercise books:

'What is the sum of 436 yams and 89 yams?'

'Mrs Okon drives 467km to visit her sister. She then drives a further 64km to visit her mother. How far did she travel altogether?'

'Last season, Enyimba FC scored 253 goals and this season they scored 74 goals. How many goals have they scored in two seasons?'

'Mr Ojo has 143 goats and 74 chickens. How many animals does he have altogether?'

Plenary

Whole class teaching

Play What am I? using 2D and 3D shapes.

Lesson title

Word problems/
Large 2D shapes/3D shapes

Week 2: Addition

Day 5: Word problems

Learning outcomes

By the end of the lesson, most pupils will be able to:

Know the properties of 2D and 3D shapes.

Solve word problems by adding three-digit numbers.

Preparation

Before the lesson:

Write the word problems from the main activity, shown right, on the chalkboard.

Have ready the large 2D shapes and 3D shapes.

Read How? Naming 2D and 3D shapes, as shown below.

How? Naming 2D and 3D shapes

Draw two large circles on the chalkboard.

Write '2D' above one circle and '3D' above the other.

Choose some pairs to come and write the names of 2D shapes in the circle.

Choose some pairs to come and write the names of 3D shapes in the other circle.

Ask the class if they are correct.

15 minutes	How	Large 2D shapes/ 3D shapes	10 minutes	25 minutes	10 minutes

Daily practice

Whole class teaching

Ask the pupils to think about the differences between 2D and 3D shapes.

Teach How? Naming 2D and 3D shapes, as shown left.

Introduction

Whole class teaching

Write the following problem on the chalkboard:
'There are 516 pupils at school A and 162 at school B. How many pupils are there in both schools?'

Discuss the calculation needed to solve this problem.

Choose some pupils to help you demonstrate the sum.

Remind them to take care to line up the digits in the correct place.

Main activity

Pair task

Read the word problems on the chalkboard with the pupils.

Ask, 'What do we need to do to solve these problems?'

Tell the pairs to complete the word problems in their exercise books using the vertical method:

'Bayo has 428 marbles. His friend gives him 187 more. How many does he have altogether?'

'On Monday Temi read 153 pages of her book. On Tuesday she read 174 pages. How many pages did she read altogether?'

'Mr Abeke baked 764 large loaves and 153 small loaves. How many did he bake altogether?'

'Mrs Okon picked 346 mangoes and her son, Nura, picked 76 mangoes. How many mangoes did they pick altogether?'

Plenary

Whole class teaching

Mark the work together as a class.

Grade/
Type of lesson plan

Lesson
title

Weekly page

Primary 5, numeracy lesson plans

Week 3: Subtraction

Words/phrases

Write these words on the chalkboard and leave them there for the week.

multiple
subtract
subtraction
calculation
estimate
nearest Ten
expand
rename
take away
how many are left/left over?
difference between
what is the difference?

Learning expectations

By the end of the week:

All pupils will be able to:
Subtract two-digit numbers without renaming.

Most pupils will be able to:
Subtract two- and three-digit numbers with renaming of Tens and Units.

Some pupils will be able to:
Solve subtraction word problems using mental as well as written methods.

Assessment task

Instructions:

Ask the individual pupils to complete these tasks in their exercise books.

1
Solve these sums using the vertical method:
68 – 34 =
689 – 234 =

2
Solve these sums using the vertical method:
365 – 137 =
873 – 459 =

3
Solve this word problem:
Kehinde saved N836. She buys some gifts for her friends. This will cost her N479. How much money does she have left?

Example of a pupil's work

This pupil can:

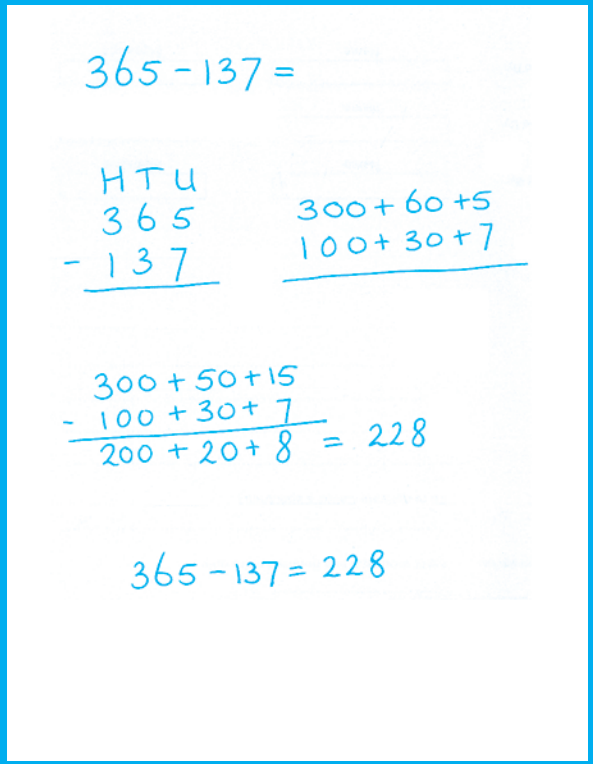
Write out a subtraction calculation horizontally.

Subtract the Tens and the Units.

Expand numbers and place them under the correct place value.

Add up the expanded or renamed number.

Write out the answer horizontally as a final result.



Lesson title

Times table/ Calculations

Week 3: Subtraction

Day 1: Estimating answers

Learning outcomes

By the end of the lesson, most pupils will be able to:

Recall the 5 and 6 times tables quickly.

Estimate answers to help solve subtraction problems.

Preparation

Before the lesson:

Write the 6 times table on the chalkboard without the answers.

Write the subtraction calculations from the main activity, shown right, on the chalkboard.

Read How? Estimating, as shown below.

How? Estimating

Write the sum on the chalkboard.

Tell the pupils to round the numbers to the nearest Ten.

Tell them to estimate the answer.

Next, tell the pupils to expand the digits.

Tell them to subtract the Units, then the Tens, then the Hundreds.

10 minutes	Times table/ Buzz game	10 minutes	30 minutes	How	10 minutes	Find my friend game

Daily practice

Whole class teaching

Choose some pupils to help you write the answers to the 6 times table on the chalkboard.

Ask them to say the 5 times table with you.

Play the Buzz game with the 6 and 5 times tables.

Introduction

Whole class teaching

Explain to the pupils that if they know their number bonds to 100 it will help them to solve calculations quickly without using paper and pencil.

Choose some pupils to help you write the number bonds to 100 on the chalkboard.

Demonstrate how to find:
100 – 72 =
100 – 70 = 30
30 – 2 = 28
100 – 72 = 28

Write six more calculations on the chalkboard and ask the pupils to write the answers in their exercise books.

Main activity

Whole class teaching

Explain that estimating an answer can often help us check if the answer is correct.

Teach How? Estimating, as shown left.

Individual task

Ask the pupils to estimate first, then solve the following subtraction calculations in their exercise books:

	H	T	U
	2	7	6
–	1	5	5

	H	T	U
	6	7	8
–	4	7	6

	H	T	U
	4	5	1
–	3	3	0

	H	T	U
	8	6	9
–	6	4	7

	H	T	U
	5	7	9
–	3	3	8

Plenary

Whole class teaching

Go through the answers together as a class.

Ask some pupils to explain to the class how they worked out some of the calculations.

Week 3: Subtraction

Day 2: Three-digit numbers without renaming

Learning outcomes

By the end of the lesson, most pupils will be able to:

Say the 7 times table.

Use the vertical method to subtract three-digit numbers.

Preparation

Before the lesson:

Write the subtraction calculations from the main activity, shown right, on the chalkboard.

Practise How? Clock times tables, as shown below.

How? Clock times tables

Draw a clock face and write the numbers 1—12 inside it.

Write the times table you want to use inside the clock.

Point to a number on the outside of the clock and ask one pupil to answer the sum.

Point to a different number on the outside of the clock each time.

Each pupil answers in turn until one pupil answers incorrectly.

10 minutes	How	10 minutes	25 minutes	15 minutes	Buzz game

Daily practice

Whole class teaching

Ask the pupils to write the 7 times table in their exercise books.

Tell the pupils to check the times table in their partner's book.

Play How? Clock times tables, as shown left.

Introduction

Whole class teaching

Remind the pupils they can do some calculations without using paper and pencil.

Choose some pupils to write the number bonds to 100 on the chalkboard.

Look together at
800 – 400 =

Ask, 'What do you already know that can help you to work out the answer?' (number bonds, rounding and estimating).

Tell the pupils to write the answers to the following sums in their exercise books:
500 – 300 =
600 – 250 =
700 – 400 =
800 – 450 =

Main activity

Whole class teaching

Remind the pupils that they have been subtracting using the vertical method.

Write '356 – 235 =' on the chalkboard.

Teach How? Estimating, from Week 3, Day 1 (yesterday).

Individual task

Ask the pupils to complete the following sums in their exercise books:
395 – 280 =
389 – 217 =
382 – 107 =
887 – 516 =

Plenary

Whole class teaching

Play the buzz game with the 6 and 7 times tables.

Lesson title

Week 3: Subtraction

Day 3: Solving word problems

Hundred square/
Word problems

Learning outcomes

By the end of the lesson, most pupils will be able to:

Recall the 6 and 7 times tables.

Use the vertical method to subtract three-digit numbers.

Preparation

Before the lesson:

Draw a Hundred square on a large piece of paper or card, and keep it for the week.

Write the word problems from the main activity, shown right, on the chalkboard.

Read How? Using a Hundred square, as shown below.

How? Using a Hundred square

Explain it can be used for counting in 7s or any other number.

Use to round numbers, eg: look at 56 and ask, 'What is the nearest whole Ten?'

Counters can be used to find the difference between 75 and 100.

Use to add numbers, eg: '63 + 19 =', starting at 63 count on 19.

Use to subtract numbers, eg: '63 – 19 =', starting at 63 count back 19.

15 minutes | How | Hundred square

10 minutes

25 minutes

10 minutes

Daily practice

Whole class teaching

Choose some pupils to help you write the 7 times table on the chalkboard.

Ask the class to say the 6 times table with you.

Demonstrate how useful a Hundred square is to the pupils.

Teach How? Using a Hundred square, as shown left.

Introduction

Whole class teaching

Write the following on the chalkboard:
800 – 500 =
650 – 250 =
240 – 120 =
240 – 180 =
490 – 420 =

Ask the pupils to discuss the answers in pairs, without writing anything.

Choose some pairs to share their answers and explain how they worked them out.

Main activity

Pair task

Read the following problem on the chalkboard:
'Mrs Abeke has N750 when she goes to the market. She spends N420 on yams and bananas. How much does she have left?'

Ask, 'What are the key words? What calculations do we need to do?'

Look together at the sum 750 – 420 =

Remind the pupils to estimate an answer, then expand the numbers, then subtract the Units, Tens and Hundreds.

Ask the pairs to do the calculation and solve the word problem.

Individual task

Ask the pairs to solve the following word problems in their exercise books using vertical subtraction:

'Temi picked 786 oranges but 125 were rotten. How many good oranges did she have?'

'Samson has saved N875. He went to the bookshop and spent N450. How much did he have left?'

'Mr Duru has a plank of wood that is 959cm long. He wants a piece of wood which measures 625cm. How much does he need to cut off the plank?'

'There are 857 pupils in the local school. 421 are girls. How many boys are there at the school?'

Plenary

Whole class teaching

Go through the answers together as a class.

Ask some pupils to explain to the class how they worked out some of the calculations.

Lesson title

Week 3: Subtraction

Day 4: Renaming

Hundred square/ Calculations

Learning outcomes

By the end of the lesson, most pupils will be able to:

Recall the 7 and 8 times tables.

Subtract three-digit numbers using renaming of Tens and Units.

Preparation

Before the lesson:

Have ready a Hundred square.

Write the subtraction calculations from the main activity, shown right, on the chalkboard.

Practise How? Subtracting three-digit numbers, as shown below.

How? Subtracting three-digit numbers

Write the sum on the chalkboard.

Remind the pupils to round the numbers to estimate the answer.

Invite some pupils to expand the numbers.

Explain that 8 Units cannot be taken away from 3, so we rename.

To complete the calculation, add the Hundreds, Tens and Units together.

5 minutes	Hundred square	10 minutes		30 minutes	How		15 minutes	Clock times tables game

Daily practice

Whole class teaching

Show the pupils the Hundred square.

Ask them to discuss how the Hundred square can help with sums.

Point to a number on the Hundred square and ask, 'What Ten do we round this number to?'

Choose some pupils to look for the 5 times table pattern in the Hundred square.

Introduction

Whole class teaching

Write the following three-digit numbers on the chalkboard: '831, 279, 164, 973, 263'.

Tell the pupils they are going to practise renaming the Tens and Units, eg:

H T U
8 3 1

8 Hundreds +
3 Tens +
1 Unit

8 Hundreds +
2 Tens +
11 Units

Choose some pupils to help you rename the Tens and Units in the remaining three-digit numbers.

Main activity

Whole class teaching

Teach How? Subtracting three-digit numbers, as shown left.

Ask the pupils to help you solve 273 – 190 = in the same way.

Individual task

Ask the pupils to complete the following in their exercise books:

563 – 248 =
840 – 213 =
871 – 636 =
594 – 268 =
775 – 366 =

Remind them they should remember to estimate, expand and rename the numbers.

Plenary

Whole class teaching

Play clock times tables, as described in Week 3, Day 2, with the 7 and 8 times tables.

Lesson title

Hundred square/
Times tables/Word problems

Week 3: Subtraction

Day 5: Solving word problems

Learning outcomes

By the end of the lesson, most pupils will be able to:

Recall the 7 and 8 times tables quickly.

Solve word problems using subtraction.

Preparation

Before the lesson:

Have ready a Hundred square.

Write the 7 and 8 times tables on the chalkboard without answers.

Write the word problems from the main activity, shown right, on the chalkboard.

Read How? Solving word problems, as shown below.

How? Solving word problems

Read a word problem and ask a pupil to underline the key words.

Ask a pupil to estimate the answer to the nearest Ten.

Invite some pupils to expand the numbers.

Remind the pupils that 6 Units cannot be taken away from 5, so we rename.

To complete the calculation, add the Hundreds, Tens and Units together.

10 minutes	Hundred square	15 minutes	25 minutes	How	10 minutes

Daily practice

Whole class teaching

Look together at the Hundred square.

Remind the pupils how to make number bonds to 100.

Point to a number, eg: 62.

Ask, 'How many more do we need to make 100?'

Repeat with another number.

Introduction

Whole class teaching

Remind the pupils that they have been renaming Tens and Units for subtraction calculations.

Write '343, 280, 566, 781' on the chalkboard.

In pairs, tell the pupils to rename the Tens and Units and write them in their exercise book.

Ask some pairs to give one of their answers. Ask the class if they are correct.

Main activity

Whole class teaching

Read the following word problem on the chalkboard:
'In the school library there are 895 books. 676 are story books. How many are not story books?'

Teach How? Solving word problems, as shown left.

Individual task

Ask the pupils to solve the following problems:

'A bus is carrying 182 people. 68 people get off. How many are left?'

'Mrs Bello is travelling to Jigawa from Kano. It is 655km. She has travelled 236km. How much further does she have to travel?'

'A baker can bake 935 loaves a day. If he sells 728 loaves, how many does he have left?'

'A school is collecting vouchers. They need 755. They have 449. How many more do they need?'

Plenary

Whole class teaching

Go through the answers together as a class.

Ask some pupils to explain to the class how they worked out some of the calculations.

Grade/
Type of lesson plan

Lesson
title

Weekly page
Primary 4, numeracy lesson plans

Week 4:
Multiplication

Words/phrases

Write these words on the chalkboard and leave them there for the week.

digits
times
multiply
multiplication
multiplied by
rounding to the nearest Hundred
grid method
Tens of thousands

Learning expectations

By the end of the week:

All pupils will be able to:
Use the grid method to multiply a two-digit number by a single-digit number.

Most pupils will be able to:
Use the grid method to multiply a two-digit number by a two-digit number.

Some pupils will be able to:
Use the grid method to solve word problems.

Assessment task

Instructions:

Ask the individual pupils to complete these tasks in their exercise books.

1
Multiply these numbers using the grid method:
58 x 33 =
76 x 48 =

2
Solve this word problem:
Desmond has 46 class-mates. He wants to give 236 counters to each friend. How many counters does he have to collect in total?

Example of a pupil's work

This pupil can:

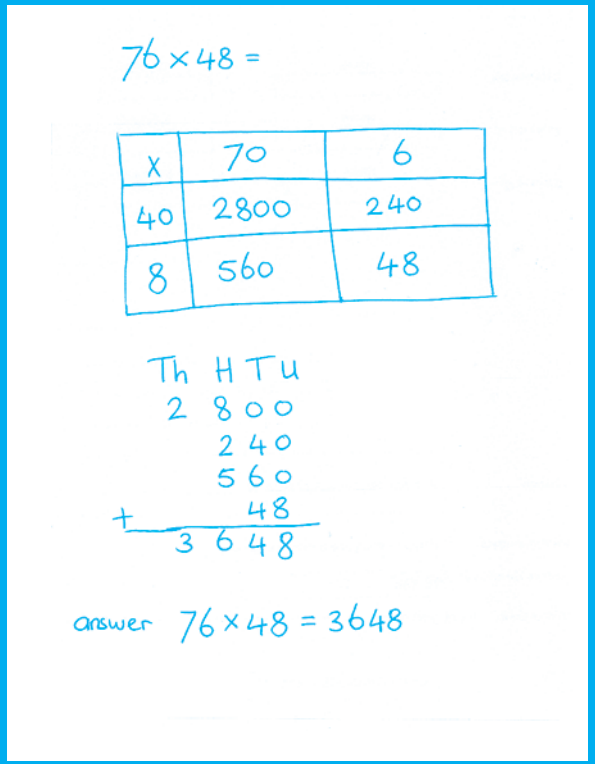
Identify the key information to solve a word problem.

Set out a multiplication calculation using the grid method.

Multiply the expanded numbers and write the answers in the correct boxes.

Add up the numbers.

Write the answer horizontally.



Lesson title

Week 4: Multiplication

Day 1: Grid method

Number line

Learning outcomes

By the end of the lesson, most pupils will be able to:

Round numbers to the nearest Ten and Hundred.

Use the grid method to multiply three-digit numbers by single-digit numbers.

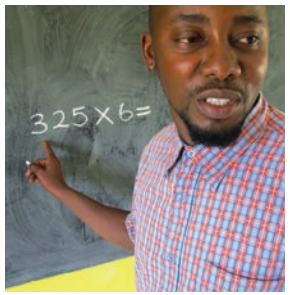
Preparation

Before the lesson:

Draw a 0—1000 number line on the chalkboard.

Practise How? Grid method, as shown below.

How? Grid method



Write the calculation on the chalkboard.

Draw a grid and write in '325 x 6'.

Ask the pupils, 'What do you do first?'

Choose some pupils to help fill the answers in the grid.

Ask a pupil to calculate the answer.

10 minutes | Number line

15 minutes | How

25 minutes

10 minutes | Buzz game

Daily practice

Pair task

Ask the pairs to round the following numbers to the nearest Ten:
28
67
16
47
51
85
99

Choose a pupil to point to where they think 470 is on the number line.

Ask, 'What is the nearest Hundred?' (500)

Remind the pupils that this is called 'rounding to the nearest Hundred'. Numbers ending in 50 are rounded up to the next Hundred, eg: 250 is rounded to 300.

Choose some pairs to use the number line to round some numbers to the nearest Hundred, eg:
280
560
440
750
930
190

Introduction

Whole class teaching

Remind the pupils that they have used the grid method for multiplication.

Teach How? Grid method, as shown left.

Ask the pupils to use the grid method to help you calculate 236 x 7 = on the chalkboard.

Main activity

Individual task

Write the following on the chalkboard:
175 x 6 =
246 x 3 =
562 x 4 =
297 x 4 =
632 x 5 =

Ask the pupils to complete these calculations, using the grid method, in their exercise books.

Ask the pupils to share their work with a partner and check that they have used the correct method.

Plenary

Whole class teaching

Play the buzz game using the 5 and 6 times tables.

Lesson title

Week 4: Multiplication

Day 2: Two-digit numbers

Counters

Learning outcomes

By the end of the lesson, most pupils will be able to:

- Recall the nine times table quickly.
- Use the grid method to multiply two-digit numbers by two-digit numbers.

Preparation

Before the lesson:

- Have ready six counters for each pupil.
- Read How? Grid method from Week 4, Day 1 (yesterday).
- Read How? Multiplication bingo, as shown below.

How? Multiplication bingo

Write multiples of 9 on the chalkboard.

Give out six counters to each pupil and ask them to draw a 2 x 3 grid in their exercise books.

Ask the pupils to choose six numbers from the chalk-board and write one in each square.

Ask questions from the 9 times table and tell pupils to cover the answer if it is in their grid.

The first pupil to cover all their numbers correctly shouts 'bingo'.

15 minutes	How	10 minutes		25 minutes		10 minutes	Clock times tables game

Daily practice

Whole class teaching

Play How? Multiplication bingo, as shown left.

Introduction

Whole class teaching

Remind the pupils that they have used the grid method for multiplication.

Write '325 x 6 =' on the chalkboard.

Choose some pupils to draw a grid and set the calculation out.

Ask, 'What do you do first?', 'What happens next?'

Complete the calculation together and work through another sum, eg: 43 x 24 =

Main activity

Individual task

Write the following sums on the chalkboard:
43 x 48 =
34 x 25 =
23 x 14 =
29 x 36 =
63 x 24 =

Ask the pupils to complete these calculations using the grid method in their exercise books.

Go through the answers together as a class.

Plenary

Whole class teaching

Play clock times tables with the 4 and 7 times tables.

Lesson title

Week 4: Multiplication

Day 3: Multiplication using the grid method

Chart

Learning outcomes

By the end of the lesson, most pupils will be able to:

Read numbers up to 99999.

Use the grid method to multiply two-digit numbers by two-digit numbers.

Preparation

Before the lesson:

Read How? Grid method from Week 4, Day 1.

Display the number words chart from Week 1, Day 4.

Read How? Titanic game, as shown below.

How? Titanic game

Make a space for the pupils to move around, either inside or outside.

Explain they are on a boat that is sinking and the life-boats only take four people each.

Explain that when you say 'go', pupils will have to make groups of four to survive.

Pupils that are not in a group are out and need to stand to the side.

The game is over when only one boat is left.

10 minutes	10 minutes	25 minutes	15 minutes How

Daily practice

Whole class teaching

Write the following on the chalkboard:
Th H T U
45 6 7 1

Ask, 'Can anyone say this number?'

Point to each digit in turn and ask, 'What is this worth?' (4 = forty thousand).

Tell the pupils to write a five-digit number in their exercise books for their partner to read.

Choose some pupils to write their numbers on the chalkboard.

Ask the pupils, 'What is this digit worth?'

Introduction

Whole class teaching

Remind the pupils that if they know the answer to 7 x 5 they also know the following:
7 x 50 =
70 x 50 =
5 x 7 =
5 x 70 =

Write '4 x 3 =' on the chalkboard.

Ask, 'What else do I know?'

Write '72 x 51 =' on the chalkboard.

Invite some pupils to help you calculate the sum using the grid method.

Main activity

Pair task

Write the following on the chalkboard:
61 x 43 =
44 x 36 =
84 x 32 =
32 x 57 =
51 x 37 =

Ask the pairs to complete these calculations in their exercise books using the grid method.

Mark this work together as a class.

Whole class teaching

Write the following word problem on the chalkboard: 'Joseph earns N65 a day. How much does he earn in 24 days?'

Choose a pupil to underline the key information needed to calculate the answer.

Choose some pupils to help solve the problem using the grid method.

Plenary

Whole class teaching

Play How? Titanic game, as shown left.

Lesson title

Week 4: Multiplication

Day 4: Solving word problems

Arrow cards/
Word problems

Learning outcomes

By the end of the lesson, most pupils will be able to:

Identify place value up to 99999.

Use the grid method to solve word problems.

Preparation

Before the lesson:

Make a set of arrow cards for each group (Tens of thousands, Thousands, Hundreds, Tens and Units).

Write the word problems from the main activity, shown right, on the chalkboard.

Read How? Using arrow cards, as shown below.

How? Using arrow cards

Show the pupils the sets of arrow cards.

Ask the groups to take a Unit, Ten, Hundred, Thousand and a Tens of thousands cards.

Tell the groups to place the cards on top of each other.

Ask the pupils to say the numbers made.

Repeat with a different set of cards.

15 minutes	How	Arrow cards	10 minutes	20 minutes	15 minutes

Daily practice

Whole class teaching

Teach How? Using arrow cards, as shown left.

Write some five-digit numbers on the chalkboard, eg: 10834, 72012, 57345.

Use the arrow cards to demonstrate expanding the numbers, eg:
10834 =
10000 + 800 + 30 + 4

Ask the pupils to write the expanded numbers in their exercise books.

Introduction

Pair task

Remind the pupils to use what they already know to work out multiplication facts, eg: If they know that
6 x 6 = 36, they also know that:
60 x 6 = 360
60 x 60 = 3600
600 x 60 = 36000

Tell the pairs to write what the following helps them to know:
5 x 5 = 25
9 x 6 = 54

Choose some pupils to share their answers with the class.

Ask the pairs to mark each other's work.

Main activity

Whole class teaching

Look at the first word problem on the chalkboard together. Ask, 'What are the key words?', 'What calculation is needed?'

Write '37 x 32 =' on the chalkboard and draw a multiplication grid.

Tell the pupils to expand the numbers and use their times tables knowledge to work out the answers.

Tell them to write the answers in the grid and add them up to get the final answer, eg:
'Lydia will take 1184 paces in 32 minutes.'

Individual task

Ask the pupils to solve the following problems:

'Lydia takes 37 paces in a minute. How many paces will she take in 32 minutes?'

'There are 35 eggs in a box. How many eggs are there in 47 boxes?'

'A train travels 64km in one hour. What distance does it cover in 15 hours?'

'If there are 32 pupils in each of the 15 classes in a school, how many pupils are in the whole school?'

'Find the cost of 24 lemons at N55 each.'

Plenary

Whole class teaching

Go through the answers together as a class.

Ask the pupils to make up a word problem for
8 x 20 =

Choose some pupils to share their word problem with the class.

Week 4: Multiplication

Day 5: Multiplication to find square numbers

Learning outcomes

By the end of the lesson, most pupils will be able to:

Use times tables knowledge to write sums.

Use the grid method to find square numbers.

Preparation

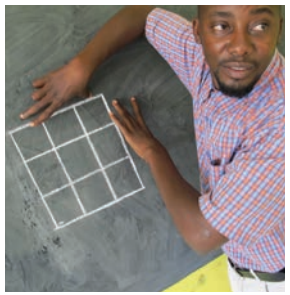
Before the lesson:

Draw 2 x 2, 3 x 3 and 4 x 4 multiplication grids on the chalkboard.

Practise How? Square numbers, as shown below.

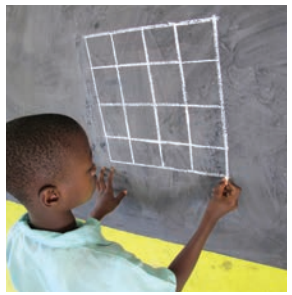
How? Square numbers

Show the pupils the square grid for 3 x 3.



Ask, 'How many squares are there across?', 'How many squares are there down?'

Choose a pupil to count the number of squares altogether.



Ask a pupil to draw the next square number in the pattern.

Ask a pupil to draw the next square number.

10 minutes	15 minutes	How	25 minutes	10 minutes	Titanic game

Daily practice

Pair task

Ask the class, 'If the answer is 42, what could the question be?'

Tell the pupils to write a calculation using +, –, x or ÷, eg:
30 + 12 = 42
2 x 21 = 42

Record the pupils' answers on the chalkboard.

Give each pair a two-digit number.

Tell them to write as many calculations using that number as they can in their exercise books, in 2 minutes.

Introduction

Whole class teaching

Teach How? Square numbers, as shown left.

Ask, 'Can anyone explain what a square number is?' (It is the answer we get when we multiply a number by itself.)

Main activity

Pair task

Tell the pupils they are going to find the square numbers of large numbers by using the grid method.

Demonstrate how to calculate 25 x 25 using this method.

Remind the pupils to estimate the answer first, eg: 30 x 30 = 900

Ask the pairs to multiply any two-digit number by itself to make their own square numbers.

Tell them to write their calculations in their exercise books.

Whole class teaching

Choose some pairs to tell the class their square numbers.

Discuss the different methods the pairs used to find their square numbers.

Plenary

Whole class teaching

Play the Titanic game.

This time, call out a simple multiplication sum instead of a number, eg: '2 x 3' (pupils must form groups of 6) or '5 x 1' (pupils must form groups of 5).

Grade/
Type of lesson plan

Lesson
title

Weekly page
Primary 4, numeracy lesson plans

Week 5:
Division

Words/phrases

Write these words on the chalkboard and leave them there for the week.

decimal
fraction
place value
double
divide
division
repeated subtraction
share

Learning expectations

By the end of the week:

All pupils will be able to:
Divide a two-digit number by a single-digit number.

Most pupils will be able to:
Divide a three-digit number by a single-digit number, using repeated addition.

Some pupils will be able to:
Solve problems using repeated subtraction.

Assessment task

Instructions:

Ask the individual pupils to complete these tasks in their exercise books.

1
Solve these sums using repeated subtraction:
78 ÷ 6 =
64 ÷ 8 =
192 ÷ 4 =
476 ÷ 7 =

2
If they can do the above calculations easily, ask them to solve the following word problem: Yemi saved 104 milk cans to play a game. He needs eight cans for every game. How many games can Yemi play with his saved cans?

Example of a pupil's work

This pupil can:

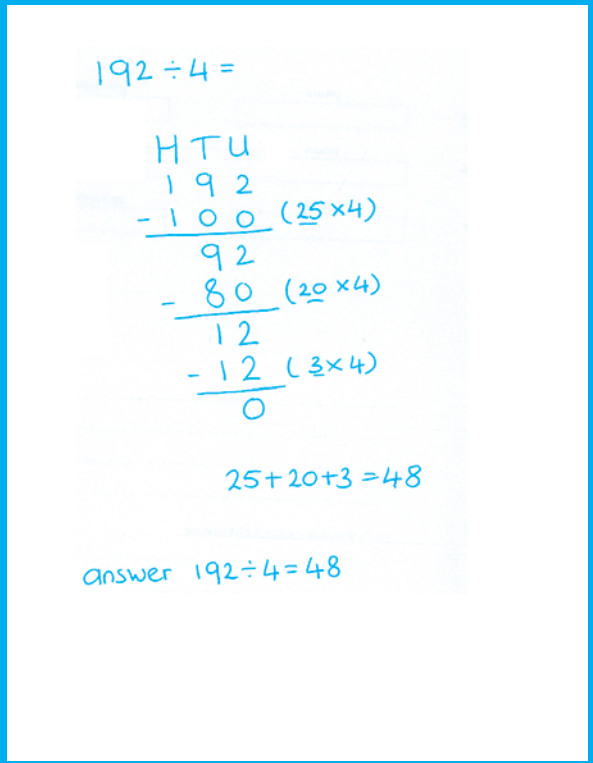
Set out the calculation vertically using the Hundreds, Tens and Units headings.

Subtract larger multiples of a number.

Follow the steps for repeated subtraction.

Add up the answers for repeated subtraction.

Write the answer horizontally.



Lesson title

Decimal place value grid

Week 5: Division

Day 1: Using repeated subtraction

Learning outcomes

By the end of the lesson, most pupils will be able to:

Identify the place value of decimals.

Divide a two-digit number by a single-digit number.

Preparation

Before the lesson:

Draw the decimal place value grid from today's daily practice, opposite, on the chalkboard.

Read How? Repeated subtraction, as shown below.

How? Repeated subtraction

To solve 340 ÷ 4, ask the pupils to think about the 4 times table.

Remind the pupils how to set out the calculation, subtracting multiples of 4.

Explain that larger multiples of 4 can be subtracted.

Remind pupils to add the answers together.

Ask the pupils to write the answer.

10 minutes | Decimal place value grid

10 minutes | How

30 minutes

10 minutes | Titanic game

Daily practice

Whole class teaching

Write '1.46' in the decimal place value grid (shown below).

Remind the pupils that 1.46 = 1 Unit + 4 tenths + 6 hundredths.

Repeat with 2.89, asking the pupils to help you write it in the decimal place value grid.

Write these numbers on the chalkboard, tell pupils to write them in a chart in their exercise books:
6.95
4.30
5.03

Decimal place value grid

T	U	.	t	h
	1	.	4	6

Introduction

Whole class teaching

Remind the pupils that they can divide numbers using repeated subtraction and that knowing the times tables is very useful when dividing.

Teach How? Repeated subtraction, as shown left.

Repeat with 98 ÷ 7 =

Remind the pupils that it is important to line up the digits in their correct place value.

Main activity

Pair task

Write the following sums on the chalkboard:
91 ÷ 7 =
92 ÷ 4 =
84 ÷ 6 =
96 ÷ 8 =

Ask the pairs to complete these in their exercise books using repeated subtraction.

Discuss the following word problem with the pupils: 'Mrs Jala shares 48 sweets between her three children. How many sweets do they get each?'

Ask, 'What are the key words to help you solve the problem?'

Ask the pairs to solve the problem using any method.

Ask one pair to explain how they worked out their answer.

Ask, 'Did anyone do it a different way?'

Discuss other methods used.

Plenary

Whole class teaching

Play the Titanic game.

Call out any simple number sums, eg:
5 + 3 =
(pupils form groups of 8)
12 – 7 =
(pupils form groups of 5)
2 x 3 =
(pupils form groups of 6)

Lesson title

Week 5: Division

Day 2: Times tables for repeated subtraction

Decimal place value grid

Learning outcomes

By the end of the lesson, most pupils will be able to:

Double decimal numbers.

Divide a three-digit number by a single-digit number using repeated subtraction.

Preparation

Before the lesson:

Read How? Repeated subtraction, from Week 5, Day 1 (yesterday).

Draw a decimal place value grid on the chalkboard.

Read How? Double decimals, as shown below.

How? Double decimals

Write '4.38' in the correct place in the decimal place value grid.

Write each place value as a fraction and double them.

Write the doubled fractions as decimals.

Choose a pupil to add these decimals together to find the answer.

Ask a pupil to write the answer in the decimal grid.

10 minutes	How	Decimal place value grid	15 minutes	25 minutes	10 minutes

Daily practice

Whole class teaching

Call out the following numbers and choose some pupils to write them in the correct place in the decimal place value grid:
30.78
4.88
13.02
45.09

Teach How? Double decimals, as shown left.

Ask the pairs to use this method to double 1.48 in their exercise books.

Introduction

Whole class teaching

Remind the pupils that they have been dividing using repeated subtraction.

Explain that they are now going to divide three-digit numbers by single-digit numbers.

Write '294 ÷ 6 =' on the chalkboard.

Ask, 'What times table will we need to use?'

Demonstrate how to solve this using repeated subtraction.

Main activity

Pair task

Write '266 ÷ 7 =' on the chalkboard.

Choose some pairs to work out the answer using repeated subtraction:

	H	T	U	
	2	6	6	
–		5	6	(8 x 7 = 56)
	2	1	0	
–	2	1	0	(30 x 7 = 210)
	0	0	0	

30 + 8 = 38
266 ÷ 7 = 38

Whole class teaching

Write the following on the chalkboard:
244 ÷ 4 =
165 ÷ 5 =
246 ÷ 6 =
364 ÷ 7 =
216 ÷ 6 =

Ask the pairs to complete the calculations in their exercise books.

Tell them to check their method and answers with their partner.

Plenary

Whole class teaching

Give each group a number between 1 and 100.

Tell them to write down as many calculations as they can where the answer is the number they have.

Tell the groups they can use +, –, x and ÷

Lesson title

Week 5: Division

Day 3: Solving a word problem

Decimal place value grid

Learning outcomes

By the end of the lesson, most pupils will be able to:

Double decimal numbers.

Divide a three-digit number by a single-digit number using repeated subtraction.

Preparation

Before the lesson:

Draw a decimal place value grid on the chalkboard.

Read How? Double decimals from Week 5, Day 2 (yesterday).

Read How? Titanic game, as shown below.

How? Titanic game

Make a space for the pupils to move around, either inside or outside.

Call out a simple multiplication, eg: '2 x 4'. Tell pupils to get into groups of that number.

Call out a simple division sum, eg: '12 ÷ 4'. Tell pupils to get in groups of that number.

Invite the pupils to take turns calling out the sums.

Any pupils not in groups are out. The winners are the last group left in the game.

10 minutes	Decimal place value grid	10 minutes	25 minutes	15 minutes	How

Daily practice

Whole class teaching

Write the following on the chalkboard:
7.09
22.38
30.48

Demonstrate how to double 3.29 using the decimal place value grid.

Ask the pupils to double the numbers on the chalkboard in their exercise books using a decimal place value grid.

Introduction

Whole class teaching

Remind the pupils that they have been dividing using repeated subtraction and times tables.

Write '275 ÷ 5 =' on the chalkboard.

Choose some pupils to help you answer the sum.

Remind them that it is important to line up the digits in their correct place value.

Main activity

Pair task

Write the following on the chalkboard:
348 ÷ 3 =
390 ÷ 6 =
336 ÷ 7 =

Ask the pairs to complete these sums in their exercise books using repeated subtraction.

Write the following word problem on the chalkboard:
'Farmer Abeke shares 357 yams equally among seven goats. How many yams will each goat get?'

Discuss the key information with the pupils.

Ask the pairs to solve the problem using any method.

Choose some pairs to explain how they solved the problem to the rest of the class.

Plenary

Whole class teaching

Play the game explained in How? Titanic game, shown left.

Lesson title

Decimal place value grid/ Calculations

Week 5: Division

Day 4: Dividing numbers

Learning outcomes

By the end of the lesson, most pupils will be able to:

Halve decimal numbers.

Divide numbers by 10 and 100 and explain what happens.

Preparation

Before the lesson:

Draw the decimal place value grid, from Week 5, Day 2 (earlier this week) on the chalkboard.

Write the division calculations from the main activity, shown right, on the chalkboard.

Read How? Divide decimals, as shown below.

How? Divide decimals

Write '4560' in the decimal place value grid on the chalkboard.

Ask, 'What happens when we divide by 10?'

Choose a pupil to write the answer: 456.0

Ask, 'What happens when we divide by 100?'

Choose a pupil to write the answer: 45.60

10 minutes	15 minutes	How	25 minutes	10 minutes

Daily practice

Whole class teaching

Ask, 'How do we find half of a number?' (divide it by 2).

Write the following decimal numbers on the chalkboard:
4.86
2.68
8.64
6.84

Demonstrate how to halve 4.86 on the chalkboard.

Tell the pupils to halve the other decimal numbers in their exercise books using a decimal place value grid.

Introduction

Whole class teaching

Ask the pupils, 'What happens when we divide a number by 10?'

Teach How? Divide decimals, as shown left.

Main activity

Individual task

Read the following division calculations on the chalkboard with the pupils:
678 ÷ 10 =
2345 ÷ 10 =
983 ÷ 100 =
3840 ÷ 100 =
5067 ÷ 100 =

Ask the pupils to complete these calculations in their exercise books.

Remind them that they can use either repeated subtraction or a place value grid.

Whole class teaching

Choose some pupils to share the method they used to solve the calculations.

Ask, 'Does anyone have a different method of solving this calculation?'

Plenary

Whole class teaching

Write this problem on the chalkboard: 'There are 3400 books in a library. The teacher arranges them on shelves. Each shelf holds 100 books. How many shelves are needed?'

Discuss the problem with the class.

Ask the pupils to explain the quickest method to solve this problem (move the digits two places).

Work out the answer.

Lesson title

Week 5: Division

Day 5: Solving division problems

Learning outcomes

By the end of the lesson, most pupils will be able to:

Halve decimals.

Use repeated subtraction to answer division word problems.

Preparation

Before the lesson:

Write the word problems from the main activity, shown right, on the chalkboard.

Read How? Solving word problems, as shown below.

How? Solving word problems

Choose a pupil to read out the word problem.

Ask the pupils, 'What are the key words to help us work out the calculation?'

Demonstrate using repeated subtraction to solve the problem.

Invite a pupil to complete the calculation.

Remember to write the answer.

15 minutes	15 minutes	How	25 minutes	5 minutes

Daily practice

Whole class teaching

Remind the pupils that they have been halving decimal numbers (dividing them by 2).

Write the following numbers on the chalkboard:
687.22
865.48
843.20

Tell the pupils to draw a place value grid in their exercise books.

Ask them to halve the decimal numbers.

Introduction

Whole class teaching

Teach How? Solving word problems, as shown left.

Main activity

Pair task

Read through the word problems on the chalkboard with the pupils.

Ask the pupils to complete these problems in their exercise books using repeated subtraction.

Choose some pairs to come to the chalkboard to explain how they worked out the answer.

Individual task

Ask the pupils to solve the following problems:

'328 cakes have been delivered to a primary school. There are eight classes. How many cakes are there for each class?'

'There are 296 people. There are eight seats in a row. How many rows are needed for everyone?'

'Grace knows there are 91 days until her birthday. How many weeks is that?'

'328 oranges have been picked. They are sold in packs of four. How many packs will there be?'

Plenary

Whole class teaching

Call out numbers between 1 and 100 and ask the pupils to tell you a calculation which has that number as its answer.

If you call out the number 100, these are some of the possible answers:
75 + 25 = 100
200 – 100 = 100
25 x 4 = 100
400 ÷ 4 = 100

Credits

Many different stakeholders have contributed to the development and production of these lesson plans.

Much of the work was done by the Kwara State School Improvement Team.

Special thanks go to

Honourable Commissioner of Education and Human Capital Development (MOEHCD), Alhaji Mohammed Atolagbe Raji, the Executive Chairman of the State Universal Basic Education Board (SUBEB), Alhaji (Barr) Lanre Daibu and their staff for their time and valuable input.

The Teacher Development Division School, MOEHCD, School Improvement Unit, SUBEB and the State School Improvement Team (SSIT) for their contributions.

Thanks also go to all the teachers who have used these plans and started to bring about change in their classrooms.

These materials were produced with UKaid technical assistance from DFID under ESSPIN.

This publication is not for sale

These numeracy lesson plans belong to:

Enugu State Government

Produced with the support of

esspin
Education Sector Support Programme in Nigeria

UKaid
from the Department for International Development