

**Numeracy
lesson plans**
Primary 2

Term 3
Asking questions

Weeks
21—25

Type of lesson plans/
Grade

Term/
Learning theme

Numeracy lesson plans

Primary 2 Term 3

▶ Asking questions

This is the fifth in a series of six numeracy lesson plan publications, designed to be used throughout the three academic school terms.



Introduction

Teacher training remains a key element in improving schools and increasing learning outcomes. Where teachers are not supported, there may be high rates of teacher absenteeism, pupil drop out and apathy from parents. Jigawa State Ministry of Education, Science and Technology and the State Universal Basic Education Board (SUBEB) are working with the UK Department for International Development (DFID) and Education Sector Support Programme in Nigeria (ESSPIN) to increase the capacity of teachers and school heads to be effective and accountable.

Following the 2010 Teacher Development Needs Assessment, we collectively embarked on a series of reforms to strengthen teacher quality and school leadership. This work has focused on how to make teaching child-centred, and the organisational structures needed to improve service delivery.

These lesson plans are not designed to replace professional teachers' preparations. They address gaps in linking theory and practice and focus on improving pupils' literacy and numeracy through a step-by-step guide for teachers, while ensuring children that become active learners. Alongside the plans, new structures and processes ensure that teachers are continuously supported by both the State School Improvement Team (SSIT) and the LGEA-based school support officers (SSOs).

I am confident that with correct implementation and targeted support, these lesson plans will raise standards and improve the quality of teaching and learning outcomes.

The Ministry of Education, Science and Technology appreciates all those who have worked hard to produce these lesson plans and train our teachers to use them. Specifically, I offer thanks to DFID for its ongoing support through the ESSPIN programme.

Professor Haruna Wakili
Honourable Commissioner,
Ministry of Education,
Science and Technology,
Jigawa State

Numeracy
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Primary 2

Term 3
Asking questions

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Introduction

▶ Asking questions

Effective questioning in the classroom

Questioning is a very useful way to find out what pupils already know and whether they understand what they are learning. It is also a strategy to measure how successful your teaching is.

When you use questioning as part of your teaching, you are involving pupils in their learning, and giving them immediate feedback. This is a good way to develop motivation.

Pupil participation

Ask pupils to discuss questions in pairs or small groups. This is a good way to get the whole class talking. It gives pupils the chance to explain their thinking.

Explain to your class that the question is for them to discuss in a pair or a group. Tell them they have 2—3 minutes to discuss it. Ask the question and walk around the class listening to the pupils talk. You can then ask further questions to extend their thinking or help their understanding.

Thinking time

It is really important that when you ask pupils questions you count to 15 in your head before you choose someone to answer. This gives all pupils the chance to think of something to say, not just the ‘quick thinkers’.

When asking questions remember to choose pupils from different areas of the classroom – choose pupils who do not have their hand up and choose pupils whose understanding you want to check.

Different questions

The main types of questions are ‘closed’ questions and ‘open’ questions. When you ask closed questions there will only be one answer, eg: ‘What is 3×4 ?’, ‘What colour is the dog in the story?’. It is easier to ask closed questions. An open question is one that has many answers, eg: ‘What do you think Musa likes doing on a Saturday?’ Asking open questions makes children think of different ideas.

If pupils give you a different answer to the one you are expecting, think carefully about their reasoning – it could be that it is a reasonable answer, just not the one you are expecting.

Numeracy
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Primary 2

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Introduction

▶ Low-cost teaching
aids for the term

Properties of two-dimensional (2D) shapes

A **square** has four equal sides and four corners. All the sides are straight.

A **rectangle** has four sides and four corners. It has two short sides and two long sides. All the sides are straight.

A **triangle** has three corners and three sides. All the sides are straight.

A **circle** has one curved side and no corners.

Properties of three-dimensional (3D) shapes

A **cube** has six flat faces the same size. Each face is a square. It has 12 straight edges and eight corners.

A **cuboid** has six flat faces. Four faces are rectangles and the same size. Two faces are the same size and can be rectangles or squares. It has 12 straight edges and eight corners.

A **cylinder** has one curved face and two faces that are circles.

A **sphere** has no flat faces and no straight edges. It has one curved face.

Place value cards

Make the cards pictured below.

Make one set per pair of pupils.

You could also make one large class set.

Shopping corner

Collect examples of things to buy in a shop, eg: empty cartons, packets and tins. Display them on a desk, table or in a corner. Use labels to say how much each item costs. Keep the prices simple.

Hundred cards
1 set 100—900

Ten cards
1 set 10—90

Unit cards
1 set 0—9



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Introduction

▶ Songs and games
for the term

10 in the bed song

There were 10 in the bed,
and the little one said, /
'Roll over, roll over!' /
So they all rolled over
and 1 fell out. /

(Continue as before,
reducing the number
each time)

There was 1 in the bed,
and the little one said, /
'Goodnight' (sing slowly).

The shape in the bag game

Hide some two-dimensional
and/or three-dimensional
shapes in a bag.

Dip your hand into the
bag and choose a shape.
Without pulling it out,
describe the shape
to the class according
to its properties.

Ask the pupils to guess
what shape you are holding.

Repeat this exercise but
invite the pupils to choose
a shape and describe
its properties for the class
to guess.

Find my friend game

Write the numbers
0—10 on cards.

Make two number 5 cards.

Make enough cards for
each pupil to have one card.
If there is an odd number
of pupils in the class also
make yourself a card.


Give out the cards and
tell the pupils to find
someone who has a card
that will make 10 when
added to the number on
their own card.

Guess my number game

Think of a number and
give the pupils clues to
guess what it is.

Clues could involve:

- 1 The phrases 'more than' and 'less than',
eg: if you are thinking
of 73 say, 'My number
is 2 less than 75'.
- 2 The terms 'odd' and
'even', eg: if you are
thinking of 25 say,
'My number is odd
and it comes between
20 and 30'.



Week
21
Addition and
subtraction

Words/phrases

square
rectangle
circle
triangle
cube
cuboid
faces
sides
corners
Hundreds
Tens
Units
add
plus
sum
increase
total
altogether
subtract
take away
minus

What's the difference?

How many less than?

Assessment

During the lesson, walk round the classroom and ask questions to see if the pupils clearly understand what you have taught them. If not, help them to understand by explaining the idea to them again, or asking other pupils to help them. You may need to use some different examples of the idea.

Adding numbers from 0—99 using number lines

Learning outcomes

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

Say the properties of a square and a rectangle.

Use a number line to add two two-digit numbers.

Teaching aids

Before the lesson:

Read 'Properties of two-dimensional (2D) shapes' in the introduction.

Make a large square and a rectangle for each group.

Make addition word flash cards, eg: 'add', 'plus', 'sum', 'increase', 'total', 'altogether'.

Daily practice

Group task

Hold up the card shapes and ask the pupils to name them.

Remind the pupils that these are flat or **two-dimensional (2D) shapes**.

Give out the shapes and ask the pupils to say how they are different.

Ask, 'How many sides has it got?', 'Are the sides the same length?'

Write the properties of a square and a rectangle on the chalkboard.

Ask the groups to look at the shapes they have and check if they are correct.

10
minutes

Introduction

Whole class teaching

Ask the pupils if they can tell you other words for 'add'.

Hold up the flash cards and read them with the pupils.

Ask the pupils to explain how to solve $25 + 21$.

25
minutes

Main activity

Pair task

Write the following sums on the chalkboard:

$$23 + 35 =$$

$$16 + 13 =$$

$$46 + 32 =$$

$$50 + 49 =$$

$$48 + 31 =$$

Ask the pairs to solve the sums in the same way.

10
minutes

Plenary

Whole class teaching

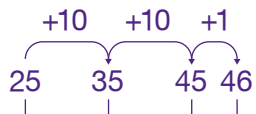
Ask some of the pupils to explain how they worked out their answers.

First, expand the smallest number:

$$21 = 10 + 10 + 1$$

Draw a number line starting from the largest number.

Add on the expanded number by jumping along the line as shown below.



$$25 + 21 = 46$$

Repeat with $34 + 35 =$

Hundreds, Tens and Units

Learning outcomes

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

Say the properties of a circle and
a triangle.

Identify the place value of
Hundreds, Tens and Units.

Teaching aids

Before the lesson:

Read 'Properties of two-
dimensional (2D) shapes' in
the introduction.

Have ready one of the squares
and one of the rectangles
from yesterday.

Make a large circle and a triangle
out of card for each group.

Daily practice

Group task

Hold up the square and
ask the pupils to say some
of its properties.

Repeat with the rectangle.

Give out the circles and
triangles and ask the groups
to say sentences about them.

Write the properties of
a circle and a triangle on
the chalkboard.

Ask the groups to look at
the shapes and check if they
are correct.

10
minutes

Introduction

Whole class teaching

Ask the pupils to count in groups of 100 up to 1000.

Remind them that numbers between 100 and 999 are three-digit numbers.

Write '436' on the chalkboard with H T U above it.

Ask the pupils to read the number and then tell you how many Hundreds, how many Tens and how many Units.

25
minutes

Main activity

Whole class teaching

Choose some pupils to help you work out $48 + 31$ using a number line.

Remind them how to expand numbers: 31 is 3 Tens and 1 Unit, ie: $10 + 10 + 10 + 1$.

Write the following sums on the chalkboard:

$$56 + 33 =$$

$$36 + 42 =$$

$$21 + 48 =$$

$$43 + 45 =$$

$$27 + 41 =$$

$$54 + 43 =$$

Ask the pupils to complete the sums in their exercise books using number lines.

10
minutes

Plenary

Pair task

Ask the pupils to show their work to a partner and discuss their answers.

Choose some pairs to explain their answers on the chalkboard.

Subtracting two-digit numbers

Learning outcomes

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

Identify the properties of common 2D shapes.

Subtract two-digit numbers using a number line.

Teaching aids

Before the lesson:

Read instructions for 'The shape in the bag' game and have ready a bag containing a square, a rectangle, a triangle and a circle.

Make a set of three-digit place value cards for each pair.

Read Macmillan New Primary Mathematics 2, page 55, Exercise 7.

Daily practice

Whole class teaching

Ask some pupils to draw a square, rectangle, triangle and circle on the chalkboard.

Ask the class if they are correct.

Choose some pupils to say the properties of each shape.

Play 'The shape in the bag'.

10
minutes

Introduction

Pair task

Give each pair of pupils a set of three-digit number place value cards.

Say some three-digit numbers for them to make using their place value cards.

Ask the pupils to hold up their cards and see if they are correct.

Ask each pair to make numbers and read them to each other

25
minutes

Macmillan
New Primary
Mathematics 2

Main activity

Whole class teaching

Write on the chalkboard: 'take away', 'minus', 'how many less than?', 'subtract' and 'what's the difference between?'

Read and discuss the meaning of these words.

Ask the pupils if they can tell you how to subtract two-digit numbers using a number line, eg: $44 - 22$.

10
minutes

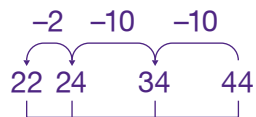
Plenary

Pair task

Choose some pairs to explain their answers on the chalkboard.

First, start with the largest number and expand the smallest:
 $22 = 10 + 10 + 2$

Count back in jumps along the number line.



Ask pupils in pairs to turn to Macmillan New Primary Mathematics 2 and complete the word problems in page 55, Exercise 7, questions 1—5 in their exercise books using a number line.

Subtraction of two-digit numbers

Learning outcomes

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

Say some of the properties of a cube.

Subtract two-digit numbers.

Teaching aids

Before the lesson:

Collect different examples of cubes.

Read 'The properties of three-dimensional (3D) shapes'.

Read Macmillan New Primary Mathematics 2, page 55.

Daily practice

Group task

Ask the pupils to name some of the 2D shapes they have been looking at.

Give out the cubes and ask if anyone knows what they are called.

Tell the pupils that these are solid shapes and are called **three-dimensional (3D) shapes**.

Ask the groups to name and count the 2D shapes they can see on the cubes.

Ask what else they notice about the cubes.

10
minutes

Introduction

Group task

Ask the groups to discuss how to solve $44 - 20$ using a number line.

Ask them to tell you their ideas.

Remind them that they should start with the largest number and subtract the smallest number.

25
minutes

Macmillan
New Primary
Mathematics 2

Main activity

Pair task

Ask if anyone can remember other words for 'take away'.

Write them on the chalkboard.

Ask the pupils to complete the word problems in Macmillan New Primary Mathematics 2, page 55, Exercise 7, questions 6—10 using a number line.

Tell them to expand the numbers and use big jumps as often as they can.

10
minutes

Plenary

Whole class teaching

Choose some pairs to say their answers and ask the class if they agree.

Lesson
title

Addition and subtraction of two-digit numbers

15
minutes

Learning outcomes

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

Say some of the properties of a cuboid.

Solve simple word problems using addition and subtraction.

Teaching aids

Before the lesson:

Collect different examples of cubes and cuboids.

Read 'The properties of three-dimensional (3D) shapes'.

Have ready a large piece of card for each group.

Write the word problems in the main activity on the chalkboard.

Daily practice

Group task

Ask the pupils to say some of the properties of a cube.

Give out the cuboids and ask if anyone knows what they are called.

Ask the pupils to say some properties of a cuboid.

Ask them to share their ideas with the class and check they have said all the properties.

10
minutes

Introduction

Whole class teaching

Ask the pupils to think how they use subtraction and addition of numbers every day, eg: buying and selling.

Ask them to say words that mean 'add' and write them on the chalkboard.

Repeat with words that mean 'take away'.

25
minutes

Main activity

Group task

Read the following problems from the chalkboard and explain them to the class:

There are 47 oranges. 22 are bad. How many are good?

There are 22 girls and 44 boys in class. How many pupils are there altogether?

The teacher has 65 books. She gives 24 to the pupils. How many are left?

Sabo has 21 carrots. Ali gives him 47 more. How many carrots has Sabo got now?

Jamila has 62 eggs. She sells 31. How many has she got now?

Ask the pupils to say whether they need to add or take away to solve each problem.

Give each group a problem and ask them to write the sum in their exercise books.

Tell them to use a number line to solve the problem.

Swap the problems as they finish so the groups get a turn at solving all the problems.

10
minutes

Plenary

Whole class teaching

Ask each group to explain their answer to a different problem.

Ask the other groups if they agree.



Week
22
Addition

Words/phrases

square
rectangle
circle
triangle
cube
cuboid
cylinder
sphere
Hundreds
Tens
Units
addition
add
plus
sum
increase
total
altogether
find the sum of
add together
How many?

Assessment

During the lesson, walk round the classroom and ask questions to see if the pupils clearly understand what you have taught them. If not, help them to understand by explaining the idea to them again, or asking other pupils to help them. You may need to use some different examples of the idea.

Addition of two-digit numbers

Learning outcomes

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

Identify 2D shapes on a cube and a cuboid.

Add two-digit numbers that involve crossing the Ten.

Teaching aids

Before the lesson:

Read the instructions for 'The shape in the bag' game.

Have ready the 2D shapes and a cube and cuboid from last week.

Read Macmillan New Primary Mathematics 2, page 39, Exercise 12.

Daily practice

Whole class teaching

Hold up the 2D shapes and ask pupils to say the names.

Play 'The shape in the bag' with the 2D shapes.

Remind the pupils that flat shapes are 2D and solid shapes are 3D.

Show the pupils the cube and the cuboid and ask what they are called.

Ask them to name the flat faces they can see on each 3D shape.

10
minutes

Introduction

Whole class teaching

Write '10' on the chalkboard and ask the pupils to tell you as many different addition sums using two numbers they can think of to make the number 10, eg: $6 + 4$.

Write their list of sums on the chalkboard as they say them.

Tell the pupils they will need to use their knowledge of addition sums to 10.

25
minutes

Macmillan
New Primary
Mathematics 2

Main activity

Pair task

Remind the pupils how to add two numbers together that involve crossing the Ten.

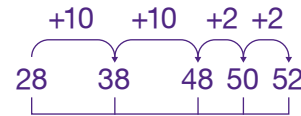
Demonstrate how to work out $24 + 28$.

Start with the largest number and expand the smallest number:

$$28 + 24 =$$

$$24 = 10 + 10 + 4$$

Jump to the nearest Ten by breaking up the 4 ($2 + 2$) and then add the rest.



$$28 + 24 = 52$$

Ask the pupils to use the same method to complete Macmillan New Primary Mathematics 2, page 39, Exercise 12, questions 1—4 in their exercise books.

10
minutes

Plenary

Whole class teaching

Invite some pupils to draw their number lines on the chalkboard.

Addition of two-digit numbers

Learning outcomes

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

Say the properties of a cylinder.

Add two-digit numbers that involve crossing the Ten.

Teaching aids

Before the lesson:

Find an everyday object that is a cylinder, eg: a can or a tin and have ready the cube and cuboid from yesterday.

Have ready a set of three-digit number place value cards for each pair.

Read Macmillan New Primary Mathematics 2, page 120.

Daily practice

Group task

Hold up the cube and the cuboid and ask the pupils to name them.

Tell the groups to look at Macmillan New Primary Mathematics 2, page 120.

Ask the pupils to point to and name the cubes.

Repeat with the cuboid.

Show the groups the cylinder and ask them to say some of its properties.

10
minutes

Introduction

Pair task

Ask the pupils to use their place value cards to make the following numbers: 103, 340, 708, 660, 280.

Ask them to help you put the numbers in the correct order.

Ask, 'Which is the largest number?'

Ask, 'How do you know?' (Tell them to look for the largest number in the Hundreds column first, then check the Tens column and finally the Units column.)

25
minutes

Main activity

Group task

Ask pupils to discuss and do the following sums using a number line: $36 + 26$, $45 + 56$.

Remind the pupils how to add two numbers together that involve crossing the Ten, using their knowledge of addition to 10 and a number line.

Ask each pupil in the group to say one number between 0 and 49.

10
minutes

Song

Plenary

Whole class teaching

Sing '10 in the bed'.

Addition of two-digit numbers

Learning outcomes

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

Say the properties of some 3D shapes.

Add two-digit numbers that involve crossing the Ten.

Teaching aids

Before the lesson:

Have ready a cylinder and a sphere.

Have ready a set of 0—10 number cards and a set of three-digit number place value cards for each pair.

Read Macmillan New Primary Mathematics 2, page 39, Exercise 11.

Daily practice

Pair task

Ask the pupils to name some 2D shapes.

Ask them to name some 3D shapes.

Show the pairs the cylinder and ask them to say some of its properties.

Show them the sphere and ask them to describe it.

10
minutes

Introduction

Whole class teaching

Show the pupils how to put 120 and 152 in order according to size.

Tell them that as the Hundreds are the same, they need to look at the Tens. Explain that 5 Tens is more than 2 Tens, so 152 is the larger number.

Write the following numbers on the chalkboard: 339, 335.

25
minutes

Macmillan
New Primary
Mathematics 2

Main activity

Pair task

Give each pair a set of 0—10 number cards.

Call out a number from 1—10 and ask the pairs to hold up a number card to add to it to make 10.

Ask them to write in their exercise books as many pairs of numbers that make 10 as they can.

10
minutes

Song

Plenary

Whole class teaching

Sing '10 in the bed' with the class.

Addition of two-digit numbers

Learning outcomes

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

Identify common 2D and 3D shapes.

Add two-digit numbers that involve crossing the Ten.

Teaching aids

Before the lesson:

Have ready a set of three-digit number place value cards for each pair.

Make addition word flash cards using the last 10 items in the weekly words/phrases list.

Read Macmillan New Primary Mathematics 2, page 40, Exercise 13.

Daily practice

Whole class teaching

Play 'The shape in the bag' with all of the 2D and 3D shapes learned in the last two weeks.

Ask the pupils to explain to each other how they knew which shapes they were.

10
minutes

Introduction

Pair task

Give out the three-digit number place value cards.

Write the following pairs of numbers on the chalkboard and ask the pupils to use their place value cards to tell you which is the largest:

456 or 432
135 or 235
356 or 346
582 or 581

25
minutes

Main activity

Whole class teaching

Show the addition flash cards to the pupils and read the words.

Ask,
'What sum would you do if you saw any of these words?'

Display the words along the edge of the chalkboard so all the pupils can see them easily.

Macmillan
New Primary
Mathematics 2

10
minutes

Plenary

Pair task

Ask the pairs to make three-digit numbers less than 200 using their place value cards.

Ask them to read out some of their answers.

Ordering three-digit numbers

Learning outcomes

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

Name common 2D and 3D shapes.

Arrange three-digit numbers in increasing order.

Teaching aids

Before the lesson:

Have ready a set of three-digit number place value cards for each pair.

Read Macmillan New Primary Mathematics 2, pages 7, 120 and 123.

Daily practice

Whole class teaching

Ask the pupils to name some 3D shapes.

Ask them to name some 2D shapes.

Ask them to look at Macmillan New Primary Mathematics 2, pages 120 and 123.

Ask them to say the names of the objects where they can see a circle, a square and a cylinder.

10
minutes

Introduction

Whole class teaching

Write '387, 492, 457' on the chalkboard and ask the pupils to say which is the smallest number and how they worked it out.

Ask which number is the next smallest and then ask the pupils to say the numbers in order.

Tell the pupils they have arranged them in increasing order, ie: the numbers are in order of size with the biggest last.

25
minutes

Macmillan
New Primary
Mathematics 2

Main activity

Pair task

Explain Macmillan New Primary Mathematics 2, page 7, Exercise 2, questions 1—6 to the class.

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

Go through the answers as a whole class.

Give out the place value cards.

Ask the pupils to make some three-digit numbers less than 200.

Ask the pupils to read out some of their answers.

Repeat with numbers more than 750, less than 150 and more than 890.

10
minutes

Plenary

Whole class teaching

Tell the pupils the number of boys in the school and the number of girls.

Ask them if there are more boys than girls. Ask them how they can use their place value cards to check the answer.



Week
23
Money

Words/phrases

Naira
money
change
total
shopping
Tens
Units
addition
add
sum
altogether
find the sum of
add together
How many?

Assessment

During the lesson, walk round the classroom and ask questions to see if the pupils clearly understand what you have taught them. If not, help them to understand by explaining the idea to them again, or asking other pupils to help them. You may need to use some different examples of the idea.

Shopping lists

Learning outcomes

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

Add two-digit numbers that involve crossing the Ten.

Add together money to work out the cost of two items.

Teaching aids

Before the lesson:

Have ready a set of place value cards for each pair of pupils.

Set up a 'shopping corner' as explained in the introduction.

Read Macmillan New Primary Mathematics 2, pages 75—76.

Daily practice

Whole class teaching

Demonstrate adding two numbers together that involve crossing the Ten, using a number line, eg: $27 + 34$.

Write ' $33 + 58$ ' on the chalkboard.

Give each pair a set of place value cards.

Ask the pupils to do the sum in pairs and show the answer by holding up their place value cards.

10
minutes

Introduction

Whole class teaching

Ask the pupils to tell you any Nigerian coins or notes they know.

Write them down on the chalkboard.

Ask the pupils to tell you something that you might buy for each amount and draw it by the side of the Naira. Stop at 50 Naira.

Leave this shopping list on the chalkboard for the rest of the week.

Choose some pupils to go to the shopping corner and find items that cost N5 and N10.

25
minutes

Main activity

Pair task

Ask,
'If I bought 4 mangoes that cost N10 each, how much money would I need?'
Repeat with 7 mangoes and 5 mangoes.

Ask the pupils to say how they worked the answer out, ie: by counting in Tens.

Ask how much 2 sweets, 5 sweets and 8 sweets cost if one sweet costs N5. Check that the pupils are counting in 5s.

Tell them to think of a quick way to add up the cost of 4 toys if one toy costs N20.

10
minutes

Plenary

Whole class teaching

Tell the pupils to look at the bank notes in Macmillan New Primary Mathematics 2, pages 75—76.

Say some items and ask the pupils to say the notes they would need to buy them, eg: exercise book and a small tin of milk.

Macmillan
New Primary
Mathematics 2

Making 50 Naira

Learning outcomes

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

Add two-digit numbers.

Make 50 Naira using notes of different denominations.

Teaching aids

Before the lesson:

Make money cards on small pieces of paper. Write N5 on 20 pieces, N10 on 10 pieces, N20 on 5 pieces and N50 on 2 pieces. Make a set for each group.

Have ready the shopping list and shopping corner from yesterday.

Read Macmillan New Primary Mathematics 2, pages 75—76.

Daily practice

Pair task

Ask the pairs to write 6 numbers from 10—50 in their exercise books.

Ask them to choose two numbers to add together.

Ask them to first of all guess the answer without using pencil and paper.

Tell them to write their sums in their exercise books.

Ask them to choose different numbers to make two more sums and work them out.

10
minutes

Macmillan
New Primary
Mathematics 2

25
minutes

10
minutes

Introduction

Whole class teaching

Tell the pupils to look at the notes in Macmillan New Primary Mathematics 2, pages 75—76.

Ask them to tell you the different ways that Naira is written on the notes and write them on the chalkboard.

Main activity

Whole class teaching

Give out the money cards.

Write down the following amounts on the chalkboard: N35, N25, N10, N30, N40.

Say each price and ask the groups to hold up the money cards they would need to pay for it.

Explain that there are different ways to make the same amount of money, eg: for N35 they could use seven N5 notes or one N20, one N10 and one N5 note.

Hold up five N10 cards and ask the pupils to say how much money you have got.

Write $N10 + N10 + N10 + N10 + N10 = N50$.

Ask the groups to use their money cards to find different ways to make N50.

Tell them to write their answers as sums in their exercise books, eg: $N20 + N10 + N10 + N5 + N5 = N50$.

Ask each group to write a different way to make N50 on the chalkboard.

Plenary

Group task

Choose some pupils to go to the shopping corner and choose two items.

Ask groups to find and hold up the money cards needed to pay for them.

**Numeracy
lesson plans
Primary 2**

**Term 3
Asking questions**

**Week 23
Money
Day 3**

Lesson
title

Giving change

15
minutes

Macmillan
New Primary
Mathematics 2

Learning outcomes

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

Add two-digit numbers.

Work out change from 50 Naira.

Teaching aids

Before the lesson:

Read Macmillan New Primary Mathematics 2, page 37, Exercise 8, questions 1—6.

Have ready the money cards and the shopping corner.

Daily practice

Whole class teaching

Remind the pupils that they have been using a number line to work out addition sums.

Ask them to complete Macmillan New Primary Mathematics 2, page 37, Exercise 8, questions 1—6.

Tell them to write the sums horizontally before using a number line to answer the questions.

Ask the pairs to check each other's work.

10
minutes

Introduction

Group task

Ask the groups to say the Naira notes they have seen.

Give out the money cards and ask the groups to find different ways to make N100, writing their answers as sums in their exercise books.

Ask each group to write a different way to make N100 on the chalkboard.

25
minutes

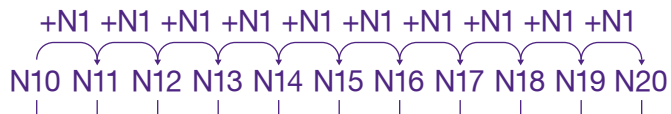
Main activity

Whole class teaching

Tell the pupils that you are going to buy a toy for N10 but you only have an N20 note.

Explain that in shops people count on from the cost of the item to the amount you have given them, to make sure they give the correct change, as shown below.

Number line



10
minutes

Plenary

Pair task

Ask the pupils to draw a number line to work out the change from an N50 note if they were buying a banana for N25.

Choose a pair to draw their number line on the chalkboard.

Giving change

Learning outcomes

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

Solve problems by adding two-digit numbers.

Work out the change needed and identify the correct notes.

Teaching aids

Before the lesson:

Write the problems in the daily practice on the chalkboard.

Have ready the money cards and the shopping corner from yesterday.

Daily practice

Whole class teaching

Read the word problems on the chalkboard to the class:

- 1 If Musa had 10 mangoes and he bought 25 more from the shop, how many would he have altogether?
- 2 Rakiya has 12 chickens and her brother has 15. How many chickens do they have altogether?

Ask the pupils what they need to do to work out the problems.

Tell them to complete the problems in their exercise books using a number line.

Choose some pupils to explain their answers on the chalkboard.

10
minutes

Introduction

Group task

Give out the money cards to each group.

Ask them to make the following amounts using as few cards as possible: N25, N30, N40, N10.

Call out each amount and ask the groups to hold up the cards.

Check which group has the fewest cards.

25
minutes

Main activity

Whole class teaching

Tell pupils you are going to buy a packet of sweets for N20.

Explain that you only have an N50 note and you need to work out how much change you would get.

Ask the pupils to solve the problem using a number line. Explain that they should only make jumps that are the size of the notes that are available.

10
minutes

Plenary

Group task

Tell the pupils they have bought a toy that cost N15. They only have an N50 note.

Ask them to work out the change in their exercise books using a number line and the money cards.

Choose one group to draw and explain their number line on the chalkboard.

In the shop

Learning outcomes

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

Solve money word problems by adding two-digit numbers.

Work out the change needed from different amounts of money.

Teaching aids

Before the lesson:

Have items ready in the shopping corner.

Have ready the money cards for each group.

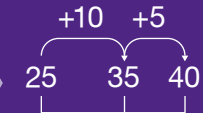
Write the problems in the plenary on the chalkboard.

Daily practice

Whole class teaching

Tell the pupils that adding money is exactly the same as adding numbers.

Show them how to do this on a number line, eg: N25 + N15 = N40.



Tell each group to choose two items from the shopping corner.

Tell them to draw number lines in their exercise books to find the total cost.

10
minutes

Introduction

Group task

Give each group a set of money cards.

Ask them to hold up money cards to make amounts as you say them, eg: N30, N45.

Ask the pupils to use as few cards as possible.

25
minutes

Main activity

Group task

Remind the pupils that giving the correct change is very important.

Put a few items from the shopping corner in front of each group.

Tell the pupils to take it in turns to be the shopkeeper and the customer.

Tell the customer to choose an item and give the shopkeeper the money cards.

Ask the rest of the group to say if the customer needs change.

Tell them to work out the change needed.

The shopkeeper can then count the change into the customer's hand.

Swap roles until everyone has had a turn.

10
minutes

Plenary

Whole class teaching

Read the following problems to the class:

1 I spend N5. How much change will I have from N50? What notes will I get?

2 I spend N15. How much change will I have from N50? What notes will I get?

Ask the pupils to draw number lines in their exercise books to work out the change.



Week
24
Weight



Words/phrases

count
three-digit numbers
sequence
heavy
heavier
heaviest
light
lighter
lightest
balance
weigh
hand balance
seesaw
kilogram
scales

Assessment

During the lesson, walk round the classroom and ask questions to see if the pupils clearly understand what you have taught them. If not, help them to understand by explaining the idea to them again, or asking other pupils to help them. You may need to use some different examples of the idea.

Heavy and light

Learning outcomes

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

Count numbers above 300.

Use the terms 'heavy' and 'light' to describe weight.

Teaching aids

Before the lesson:

Have ready two pieces of paper or card for each group.

Daily practice

Whole class teaching

Gather the pupils in a circle.

Tell them they are going to count in Tens.

Choose a pupil to say 310, tell the next pupil to say 320.

Continue round the circle until everyone has had three turns.

Repeat, starting at 438 and counting in 2s.

Help the pupils as they cross over the Hundreds boundary, eg: 498, 500, 502

Ask them to write '688, 670' in their exercise books.

Tell them to count on in 2s and write the numbers down.

After 3 minutes, ask them to tell you which number they have reached.

10
minutes

Introduction

Whole class teaching

Explain the meaning of **weight** in the pupils' local language.

Write the words 'heavy' and 'light' on the chalkboard.

Explain to the pupils that these words describe the weight of an object.

Give them an example of something heavy and something light, eg: a goat is heavy, a leaf is light.

Ask the pupils to tell you other things that are light and heavy and write their ideas on the chalkboard.

25
minutes

Main activity

Group task

Tell each group to gather a selection of objects found inside and outside the classroom.

Ask them to discuss whether the objects they have collected are heavy or light.

Give out two pieces of paper or card to each group and ask them to write **heavy** on one and **light** on the other.

Ask the groups to sort their objects and put the heavy objects by the 'heavy' label and the light objects by the 'light' label.

10
minutes

Plenary

Whole class teaching

Ask each group to say which objects they put by each label.

Ask the other groups if they agree or disagree. If they disagree, ask them to say why.

Put the objects in a 'weight' display at the back of the room and sort them into two piles with the labels 'light' and 'heavy'. Keep for the next day.

Heavier and lighter

Learning outcomes

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

Order three-digit numbers.

Use the words 'heavier', 'heaviest' and 'lighter', 'lightest' to compare weights.

Teaching aids

Before the lesson:

Have ready a set of three-digit number place value cards for each group.

Have ready the weight display from yesterday and add some heavier objects.

Have ready small pieces of paper, containers and small objects, eg: buckets, bowls, balls and stones.

Daily practice

Group task

Give each group a set of three-digit number place value cards.

Write a selection of three-digit numbers, randomly spread across the chalkboard.

Ask each group to use their place value cards to help them put the numbers in the correct order, from the smallest to the highest.

Tell the pupils to write the numbers in order in their exercise books.

Remind them to compare the Hundreds first, then the Tens and finally the Units.

Ask the groups to swap exercise books and discuss the correct order of the numbers.

10
minutes

Introduction

Whole class teaching

Ask the pupils to discuss the meaning of heavy and light.

Tell them that when you have two objects you can say that one is **heavier** and one is **lighter**.

Write 'goat' and 'chicken' on the chalkboard. Ask, 'Which is heavier?', 'Which is lighter?'

Ask a pupil to hold up two objects of different weight. Ask, 'Which is heavier?', 'Which is lighter?'

Repeat with other objects and different pupils.

25
minutes

Main activity

Pair task

Give each pair a piece of paper and a stone.

Ask them to drop both together and see which one lands first.

Ask,
'Why do you think the stone landed first?'
(The stone is heavier.)

Give each pair two containers. Ask them to put five large stones in one container and five small stones in the other.

10
minutes

Plenary

Whole class teaching

Tell the class that when we compare different weights we say 'lightest' and 'heaviest'.

Ask which they think is the lightest and heaviest container.

Choose some pupils to arrange the containers in order of weight.

Ask other pupils to come and lift them and see if they agree.

Heaviest and lightest

Learning outcomes

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

Identify the value of each digit in a three-digit number.

Use hand balancing to compare weights.

Teaching aids

Before the lesson:

Have ready the three-digit number place value cards.

Read Macmillan New Primary Mathematics 2, pages 105—106 and collect as many as possible of each object featured on these pages.

Have ready the weight display from yesterday.

Daily practice

Pair task

Give each pair a set of place value cards.

Say any three-digit number and ask the pairs to make that number using their cards and hold them up for you to see.

Ask the pupils to tell you how many Hundreds, Tens and Units there are in that number.

Repeat five times with different numbers.

10 minutes | Macmillan
New Primary
Mathematics 2

25 minutes | Macmillan
New Primary
Mathematics 2

10 minutes

Introduction

Pair task

Ask the pupils to look at Macmillan New Primary Mathematics 2, pages 105—106.

Ask them to compare the weight of the objects in each row.

Ask,
'Which is the heaviest?'
'Which is the lightest?'

Tell the pupils to use 'heavier' and 'lighter' to describe two objects in each row.

Main activity

Group task

Demonstrate 'hand balancing' to the pupils.

Give each group some of the objects shown in Macmillan New Primary Mathematics 2, pages 105—106.

Ask them to put the objects in weight order, using hand balancing.

Ask each group, 'How did you decide the order?'

Pair task

Write 'heavier' and 'lighter' on the chalkboard.

Write sentences about objects in the classroom on the chalkboard, eg:
The maths book is ___ than the exercise book. The key is ___ than the tin of milk.

Read the sentences and ask the pupils to say if they think the missing words are 'heavier' or 'lighter'.

Ask them to complete the sentences in their exercise books.

Plenary

Whole class teaching

Let the pupils use hand balancing to check their answers.

Ask if anyone can think of a more accurate way of finding out how heavy objects are.

Comparing weights using improvised scales

Learning outcomes

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

Continue three-digit number sequences.

Estimate weights.

Teaching aids

Before the lesson:

Make a pair of scales.

Make an 'Estimate, measure and compare' grid as shown left for each group.

Have ready the objects listed in the grid, including stones or sticks.

object	Estimated number of stones	Actual number of stones
pen		
exercise book		
textbook		
bowl		

Daily practice

Whole class teaching

Say, '228, 230, 232'. Ask the pupils what the next number will be.

Tell them to join in as you count to 250.

Ask them to say what you are counting in (2s).

Repeat with '455, 460, 465'.

Write the following number sequences on the chalkboard:

678, 680, 682, , ,

703, 706, 709, , ,

560, 570, 580, , ,

655, 660, 665, , ,

Ask them to complete the number sequences in their exercise books.

10
minutes

Introduction

Whole class teaching

Ask the pupils to look at the scales you have made.

Put some objects of different sizes or quantities on each side of the scales.

Ask the pupils to comment on the weights on the scales, using the words 'heavier' and 'lighter'.

25
minutes

Main activity

Group task

Give each group an 'Estimate, measure and compare' chart and some stones or sticks.

Explain the word 'estimate' and tell the groups to estimate how many sticks or stones will weigh the same as each object.

Tell them to write their estimates on the chart.

Ask each group to read out their estimates and discuss.

10
minutes

Plenary

Group task

Ask the groups if the answers were bigger or smaller than their estimates.

Whole class teaching

Choose some pupils to use the improvised scales.

Put an object in one bucket and fill up the other bucket with stones or sticks until both buckets balance.

Count the stones or sticks and tell them to write it in on their chart.

Repeat until all the objects have been weighed.

The kilogram

Learning outcomes

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

Add two-digit numbers.

Estimate weights in kilograms.

Teaching aids

Before the lesson:

Write the following sums on flash cards: '48 + 26 =', '32 + 59 =', '37 + 47 =', '48 + 48 =', '37 + 18 ='.

Read Macmillan New Primary Mathematics 2, page 108, question 5 and try to make a simple seesaw using a drum and a piece of wood.

Find some scales and a kilogram weight or an object that weighs exactly a kilogram, eg: a yam or a stone.

Daily practice

Group task

Give each group a sum card and ask them to complete it in their exercise books.

Swap the cards round so that each group does two or three sums.

Choose some groups to say the answers and ask the class if they are correct.

Introduction

Whole class teaching

Ask the pupils to look at the picture in Macmillan New Primary Mathematics 2, page 108, question 5.

Discuss and explain the seesaw. Ask if anyone has ever been on one.

Take two objects from the weight display.

Use your seesaw to check which is heavier and which is lighter.

Main activity

Whole class teaching

Tell the pupils that we use kilograms to weigh accurately.

Pass the kilogram weight around and let them all hold it.

Choose some pupils to fetch objects from the weight display that they estimate are lighter than a kilogram.

Write 'lighter than a kilogram' on the chalkboard and list the objects underneath.

Choose some pupils to fetch objects that they estimate are heavier than a kilogram.

Write 'heavier than a kilogram' on the chalkboard and list the objects underneath.

Show the pupils the scales and explain how they work.

Use the scales to weigh the objects.

Read the weights to the nearest kilogram and ask the pupils if their estimates were correct.

Plenary

Whole class teaching

Sing '10 in the bed' with the class.



Week
25
Capacity

Words/phrases

Assessment

capacity
containers
less
least
more
most
spoonful
bottleful
litre

During the lesson, walk round the classroom and ask questions to see if the pupils clearly understand what you have taught them. If not, help them to understand by explaining the idea to them again, or asking other pupils to help them. You may need to use some different examples of the idea.

Taller and smaller

Learning outcomes

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

Order numbers from 0—100.

Compare different capacities.

Teaching aids

Before the lesson:

Read the instructions for the 'Guess my number' game in the introduction.

Read Macmillan New Primary Mathematics 2, pages 98—99.

Have ready a variety of small containers, enough for each group to have two containers with different capacities, and pieces of paper to label them.

Daily practice

Whole class teaching

Gather the pupils in a circle.

Start at 45 and tell them to count forwards around the circle.

Stop at 93 and ask them to count backwards around the circle.

Play 'Guess my number' with the class.

10 minutes | Macmillan
New Primary
Mathematics 2

Introduction

Whole class teaching

Ask the pupils to look in Macmillan New Primary Mathematics 2, pages 98—99.

Discuss the use of each item.

Tell the pupils they are all containers and the amount they can hold is called the 'capacity'.

25 minutes | Macmillan
New Primary
Mathematics 2

Main activity

Group task

Write 'less' and 'more' on the chalkboard and remind the pupils what they mean.

Ask the pupils to look in Macmillan New Primary Mathematics 2, pages 98—99 and discuss the answers in their groups.

Ask each group to say an answer and ask the other groups if they agree.

Give each group two containers and pieces of paper.

Ask them to decide which container will hold less and which will hold more.

10 minutes

Plenary

Whole class teaching

Ask the pupils to discuss how they can check if their labels are correct.

Write some of their ideas on the chalkboard.

Lesson
title

15
minutes

Game

**Numeracy
lesson plans
Primary 2**

**Term 3
Asking questions**

**Week 25
Capacity
Day 2**

Longer and shorter

Learning outcomes

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

Say the number bonds to 10.

Order containers according to capacity.

Teaching aids

Before the lesson:

Read the instructions for the 'Find my friend' game in the introduction and have ready number cards for the game.

Have ready the containers from yesterday, a bucket of water and a large spoon for each group.

Daily practice

Pair task

Play 'Find my friend' and ask 'friends' to sit down together.

Choose some pairs to say their numbers and write them on the chalkboard.

Remind the pupils that these are the number bonds to 10.

Write the following sums on the chalkboard:

$$20 + \square = 100$$

$$30 + \square = 100$$

$$40 + \square = 100$$

$$50 + \square = 100$$

Ask the pupils to complete the sums in their exercise books.

Explain that these sums are number bonds to 100 and ask if anyone can see how they are similar to number bonds to 10.

10
minutes

Introduction

Group task

Give each group the containers and labels from yesterday.

Tell them they are going to check if the labels are correct.

Give each group a bucket and spoon.

Tell them to spoon water into the containers and count how many they use until it is full.

Ask them to write the number of spoonfuls used on the labels.

Ask each group to say what they have found out. Tell them to use the words **'less than'** and **'more than'**.

25
minutes

Main activity

Whole class teaching

Ask each group to bring their containers to the front and arrange them in a line.

Tell the pupils when we compare the amount two containers can hold we say, 'less' or 'more' but when we compare more than two containers we say, **'least'** and **'most'**.

Ask the pupils to look at the containers and labels and say which holds the most.

Place this container at the beginning of the line.

Ask them which holds the least and place this at the end of the line.

Choose some pupils to help you place the rest of the containers in order in the line.

10
minutes

Plenary

Whole class teaching

Ask the pupils to draw two different containers in their exercise books and write 'less' or 'more' under each one.

Ask them to draw three containers and write 'most' and 'least' under two of them.

Estimating capacity

Learning outcomes

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

Add 9 to numbers quickly.

Estimate the capacity of containers.

Teaching aids

Before the lesson:

Have ready a large bucket or container of the same size for each group.

Have ready a variety of smaller containers for each group, including a cup.

Have ready several large containers of water.

Daily practice

Whole class teaching

Say '28' and ask the pupils to add 10. Repeat with other numbers.

Remind the pupils that it is easy to add 10 as they only have to change the Ten digit.

Write '28 + 9' on the chalkboard and ask if anyone knows a quick way to add this up.

Explain that they can add 10, ie: $28 + 10 = 38$.

Explain that 10 is one more than 9, so they must now take away 1, ie: $38 - 1 = 37$ so $28 + 9 = 37$.

Repeat with other numbers, adding 9 each time.

10
minutes

Introduction

Whole class teaching

Tell the pupils to look at the containers in the 'capacity' display.

Fill one cup with water and pour it into a bucket.

Ask the pupils to look at the level of the water.

Choose some pupils to show you where they think the level will be when you add another cup of water.

Repeat twice with the same container and then with different containers.

25
minutes

Main activity

Group task

Give each group a bucket and a smaller container.

Ask them to estimate how many of the smaller containers will fill the bucket.

Ask them if each group will have the same answer. (No, because some containers are smaller).

Ask them to share their estimates and discuss.

Ask each group to use the smaller container to fill the bucket.

10
minutes

Plenary

Whole class teaching

Collect all the containers and ask the pupils to help you arrange them in order in the capacity display.

Use the words 'least' and 'most' and 'less than' and 'more than' as you do this.

A litre

Learning outcomes

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

Add and subtract 9 quickly.

Identify containers that hold more or less than a litre.

Teaching aids

Before the lesson:

Write the following sums on the chalkboard:

$$56 - 9 =$$

$$73 - 9 =$$

$$88 - 9 =$$

$$67 - 9 =$$

$$81 - 9 =$$

Have ready a litre bottle, a bucket of water and an empty bucket.

Daily practice

Whole class teaching

Write '23 + 9', '67 + 9' and '78 + 9' on the chalkboard.

Choose a pupil to demonstrate the quick way to add 9.

Write '76 - 9' on the chalkboard and ask if anyone can suggest a quick way to work it out.

Tell the pupils they can take away 10, ie: $76 - 10 = 66$.

Tell them that 10 is 1 more than 9 so they must add 1, ie: $66 + 1 = 67$ so $76 - 9 = 67$.

Repeat with the sums written on the chalkboard.

10
minutes

Introduction

Whole class teaching

Show the pupils the containers they used to measure the capacity of the buckets yesterday.

Ask them why the results were different.

Tell them that we use litres to weigh accurately.

Show them the litre bottle.

Ask how many litres they think the bucket will hold.

25
minutes

Main activity

Group task

Choose some pupils to help you fill the bottle and pour it into the bucket. Choose some pupils to help you fill the bottle and pour it into the bucket.

Ask them all to keep a count of how many bottlefuls you use.

Write 'less than a litre' on the chalkboard and list the objects underneath.

Choose some pupils to fetch containers that they estimate hold more than a litre.

Write 'more than a litre' on the chalkboard and list the objects underneath.

10
minutes

Plenary

Whole class teaching

Ask the pupils to help you arrange the containers in order. Put the container with the least capacity at the front of the line.

Check the estimates by filling the containers with water from the litre bottle.

Tell the groups to discuss the results and compare them with their estimates on the chalkboard.

Estimating a litre

Learning outcomes

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

Use a variety of strategies to work out simple sums.

Identify containers that hold more or less than a litre.

Teaching aids

Before the lesson:

Write the following sums on the chalkboard:

$$30 + 60 =$$

$$28 + 16 =$$

$$67 + 9 =$$

$$56 - 9 =$$

$$65 + 28 =$$

Have ready some drinks bottles, cans and cartons that contain 1 litre or more and a bucket of water.

Have ready a litre bottle of sand for each group.

Daily practice

Pair task

Choose some pupils to explain quick ways they have learned to calculate, ie: adding Tens ($20 + 30 = 50$) and adding and taking away 9.

Ask them to look at the sums on the chalkboard and say which ones they can do quickly.

Ask the pupils to complete the sums on the chalkboard, choosing a quick method or a number line as needed.

10
minutes

Introduction

Whole class teaching

Show the pupils the drinks bottles, cans and cartons.

Ask them what is used to measure the amount of drink they contain, ie: a litre.

Choose some pupils to help you put the containers in order of capacity.

Use the terms 'least', 'most', 'less than' and 'more than'.

25
minutes

Main activity

Group task

Give each group a litre bottle full of sand.

Ask them to select some containers from the capacity display that they think hold more than a litre of sand.

Tell them to check by pouring the bottleful of sand into the container.

Ask each group to say which containers held more than a litre of sand.

10
minutes

Plenary

Whole class teaching

Collect the containers that held more than a litre of sand.

Ask the pupils if they think they will hold more than a litre of water.

Check by pouring a bottleful of water in each one.

Tell the class that a litre is the same amount, whether it is liquid like water or solid like sand.

Credits

In 2008, Kwara State carried out a Teachers' Development Needs Assessment for all primary school teachers. This showed that most teachers in Kwara State did not have strong literacy and numeracy skills. The Kwara State Government responded by developing a strategy to support existing teachers and improve new teachers' pre-service training.

These literacy and numeracy lesson plans, developed by the Kwara State School Improvement Team, were part of that strategy. Two years after introducing these plans alongside the training and support programme, Kwara State began to see strong improvements in teachers' teaching skills and pupils' learning outcomes.

Special thanks go to:

The Honourable Commissioner and staff of the Kwara State Ministry of Education and Human Capital Development, as well as the Kwara State Universal Basic Education Board for their support and valuable input and for agreeing to share these plans with other states.

The UK's Department for International Development (DFID) and the DFID-funded ESSPIN programme for their input, focus, guidance and constructive criticism throughout the development of the plans.

Thanks also go to the teachers of Kwara State who have used these plans to bring about change in their classrooms.

