Produced with the
esspin , Ukaid
Education Sector
Supoort Programme
Support in Nigeria

from the Department for International Development

Numeracy
lesson plans
Primary 2
Term 1
Organising the
classroom for
effective learning

## Weeks

6-10

## Numeracy lesson plans Primary 2 Term 1 Organising the classroom for effective learning

This is the second
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 StateNumeracy lesson plans Primary 2

$$
\text { Term } 1
$$

Organising the classroom for effective learning

## Introduction

 Organising the classroom for effective learningWeeks
6-10

Organising the classroom for effective learning

Your classroom is a flexible space. You can change it to suit the learning activities.

Pupils take part in many different activities during each week, eg: games, role plays, circle discussions, group tasks, copying from the chalkboard, using teaching aids, working with a partner, working alone, etc. All these activities need different ways of organising your classroom, eg:
Tables arranged around the edge of the room so there is a space in the middle for games, songs or role play. Pupils can see each other and this helps communication.

Tables arranged in rows so that the pupils can see the chalkboard. This is useful when they need to see something you have written or drawn on the chalkboard.

## Tables arranged in groups.

This helps pupils to talk together and share ideas. They can see each other clearly and can easily work with one set of number cards or one sheet of paper to produce a joint end product.
Each time you start the day you should think about the activities you need to do and decide if your classroom needs to be arranged differently. Work with the other teachers in your school and cluster, your head teacher and SSO to discuss different ways of arranging your classroom for learning.

Group and pair work

Group and pair work is the basis of a learner-centred classroom, they allow pupils to work together:
To discuss, solve problems or to play learning games.
To find their own way in their learning.
The main benefits of group and pair work are:
More pupils can be active at one time. Pupils can talk and listen to each other, or work on a problem together.
The teacher can walk around the room to monitor what groups and individuals are doing, and can stop with each group to help them with their task. Spending more time with the pupils helps teachers better understand what individual pupils know and can do.

Group work is also one of the best ways of teaching social skills to pupils. While working in groups, pupils are learning a variety of skills including:
Co-operation.
Taking turns.
Listening to others.
Sharing.
Working harmoniously with others.
Solving problems.
The development of these life skills is a major reason why group and pair work is undertaken in most modern classrooms.

Numeracy

## lesson plans

Primary 2

## Term 1

Organising the classroom for effective learning

## Weeks

6-10

Show pupils how to measure metre lengths using a stick or rope.

Put one end of the rope/ stick right up against the end of the object and stretch it out until it reaches the metre mark.

Ask a pupil to put their finger at the metre mark and then put the end of the rope/stick right up against their finger to measure the next metre (there should be no space between the pupil's finger and the measuring tool).
Repeat the process until they have finished measuring the length.

Making a large Hundred square

Stick 10 empty, dry, water bags together in a row to make 10 rows.

Place a number card inside each bag to make a Hundred square, as shown below.

Store the cards in a box below the square and ask the pupils to put them in the correct place each morning.

Display it somewhere in the classroom so that the pupils can see it.

Hundred square

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

Metre sticks
Containers for capacity

Cut strips of card to
the same size as a metre stick and carefully mark the centimetres (cms) on the card in the correct place.
These can then be used for measuring.

Cut lengths of string to the same size as a metre stick, these can then be used for measuring.
Ask a local carpenter if they have any long ends of wood that can be turned into a metre length.

Ask the carpenter to make marks for cms , with longer marks for 10, 20,30 , etc, then write the numbers next to them.

## If you write numbers

 from 1-100 on the other side, these can also be used as longer-lasting $1-100$ number lines.Collect as many
different types of cups, jugs or bottles as you can for the pupils to use to measure capacity.

If possible, find at least one container that is marked with a litre so you have one standard measure.

Allow pupils to pour the water between containers themselves, as this is how they will learn.

Numeracy lesson plans Primary 2

## Term 1

Organising the classroom for effective learning

Introduction
Songs and rhymes for the term

Weeks
6-10

| 5 little monkeys | 5 long yams | 5 little ducks | 10 green bottles |
| :---: | :---: | :---: | :---: |
| 5 little monkeys jumping on the bed / <br> 1 fell off and bumped his head / <br> Mummy called the doctor, <br> The doctor said / <br> 'No more monkeys jumping on the bed'. <br> 4 little monkeys... <br> 3 little monkeys... <br> 2 little monkeys... <br> 1 little monkey... | 5 long yams in a farmer's field / <br> Round and fat, and ready to be picked / <br> Along came (sing the name of a pupil) with a hoe one day / <br> Picked a yam and took it away. <br> 4 long yams... <br> 3 long yams... <br> 2 long yams... <br> 1 long yam... | 5 little ducks went swimming one day / Over the hills and far away / Mummy duck called, 'quack, quack, quack, quack,' / But only 4 little ducks came back. <br> 4 little ducks... <br> 3 little ducks... <br> 2 little ducks... <br> 1 little duck... | 10 green bottles standing on the wall (x2) / If 1 green bottle should accidentally fall / There'd be 9 green bottles standing on the wall / 9 green bottles standing on the wall... <br> (Repeat until no more bottles are left standing.) |



Words/phrases
Assessment
largest
smallest
most
least
container
capacity
total
record
table
How much do you think it holds?
Which container holds the most?
Which container holds the least?

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.

## Term 1

Organising the classroom for effective learning

## Week 6

Capacity
Day 1

Lesson
title

## Containers

|  | 15 <br> minutes |
| :--- | :--- | :--- |
| Learning outcomes | Daily practice |
| By the end of the lesson, most |  |
| pupils will be able to: |  |$\quad$| Whole class teaching |
| :--- |


| 10 minutes | 25 minutes | $\begin{array}{\|l\|l} 10 \\ \text { minutes } \end{array}$ |
| :---: | :---: | :---: |
| Introduction | Main activity | Plenary |
| Whole class teaching | Whole class teaching | Whole class teaching |
| Ask the pupils to tell you the names of any container which can be used to store liquid, sand or food, eg: rice. | Stand the pupils in a circle, with the pots you brought placed in the middle. | Have a look at the pictures the class has drawn and ask the pupils the following questions to help them think about capacity: |
| Ask some pupils to draw their suggestions on the chalkboard. | Ask one or two pupils to put the containers in order of their size, helped by the rest of the pupils. | 'Which is the biggest container?' |
|  | Take the pupils outside and ask them to use sticks to draw the containers in order of size on the ground. | 'Which is the smallest |
| Ask them to write what their container is used for underneath the picture. |  | 'Which container holds the most water?' |
|  |  | 'Which container holds the least water?' |
|  |  | 'Which container would be the easiest to carry if it was full of water, and why?' |
|  |  | 'Which container would be the best to carry rice?' |

## Term 1

Organising the
classroom for
effective learning

## Week 6

Capacity
Day 2

## Which container holds the most?

15
minutes

## Learning outcomes

By the end of the lesson, most pupils will be able to:
Add two-digit numbers together.
Measure the capacity of a container for sand and water.

## Teaching aids

Before the lesson:
Collect a selection of cups of different sizes.

Collect a container for each pair, eg: buckets, bowls, etc.
Fill one bowl with sand and one bowl with water for each group.

Draw a table like the one opposite on the chalkboard.

## Daily practice

## Whole class teaching

Write $25+34=$
Ask individuals the following
questions to make sure
they understand the method.
Do each stage on the chalkboard
as they tell you:
'Which number do we work with first?' (The largest, 34.)
'What do we do with this number?' (Write it on a number line.)
'What do we do with the smallest number, 25?' (Expand it into Tens and Units.)
'When we have expanded it, what do we do with it?' (Use the number line to add it to 34)

Ask the pupils to complete the following sum in their exercise books using the same method: $26+22=$


## Term 1

Organising the classroom for effective learning

## Week 6

Capacity
Day 3

Measuring
capacity

| Learning outcomes | Daily practice |
| :---: | :---: |
| By the end of the lesson, most | Whole class teaching |
| Add together two-digit numbers using a number line. | Ask the pupils to quickly remind you how to do the following sum using a number line: $63+32=$ |
| Measure the capacity of a container. |  |
| Explain why the containers hold different quantities of the same object. | Read out the sums below, one at a time, and ask the pupils to complete them using the number line:$\begin{aligned} & 23+46= \\ & 45+34= \\ & 62+25= \end{aligned}$ |
| Teaching aids |  |
| Before the lesson: | After each sum, stop and ask individuals to explain how they worked out the answer. |
| Have ready the selection of pots and bowls, calabashes, bottles, etc. | If there is time, ask them to put their hands up if they can say the answers to the following, without writing them down: |
| Read Macmillan New Primary |  |
| Mathematics 2, page 98. | $\begin{aligned} & 5+5= \\ & 3+7= \end{aligned}$ |
|  | $6+4=$ |
|  | $2+8=$ |

```
10 minutes
```

25
minutes

## Main activity

Whole class teaching
Ask the class to record the number of stones or leaves they have collected by making a table in their exercise books, like the one on Day 2.

Write two columns on the chalkboard, one labelled 'stones' and one labelled 'leaves’.

## Individual task

Ask the pupils to complete Macmillan New Primary Mathematics 2, page 98, activities $A$ and $B$ in their exercise books.

10 minutes

## Introduction

Pair task
Give each pair a cup and ask them to fill their cup with as many stones or leaves as they can in 5 minutes.

## Numeracy

lesson plans
Primary 2

## Term 1

Organising the
classroom for effective learning

## Week 6

Capacity
Day 4

Estimating capacity

By the end of the lesson, most pupils will be able to:
$\overline{\text { Add together two-digit numbers }}$ using a number line.
Estimate capacity using nonstandard measures.


## Before the lesson:

Draw four targets in chalk in different places, on the floor of the classroom or on the ground outside. Write the numbers $25,33,41,50,13$ in each target.
Collect eight small stones.
Have ready a bowl and a cup.
Have ready a bucket full of water or sand to use for measuring.


Daily practice

## Group task

Divide the pupils into four groups and ask each group to stand around one of the targets, with their pencils and exercise books.
Give each group two stones and ask them to throw them on to the target and record the two numbers they land on, or closest to.
$\overline{\text { Ask them to add the two numbers }}$ together using a number line and write it in their exercise books.
Ask the pupils to compare their answers in their groups, and help each other if they have different answers.

Repeat two or three times.

## Introduction

25
minutes

## Main activity

## Group task

Hand out a selection of containers and cups to each group and ask them to repeat the activity you have just demonstrated in their groups.
Ask each group to think of a method they can use to record each individual's guess and the correct total for each container.
$\overline{\text { Ask them to record }}$ their guesses and the correct total.

## Plenary

## Whole class teaching

Ask the groups to tell you which pupil was the closest in their guesses.

Ask them if anyone got better at guessing as they filled more containers.

Ask them why they think that happened.

## Term 1

Organising the classroom for effective learning

## Week 6

Capacity
Day 5

Ordering containers by capacity


By the end of the lesson, most pupils will be able to:
Write sums.
Work as a team to design a way to order containers based on their capacity.

## Teaching aids

## Before the lesson:

Have ready three containers, a cup or teaspoon and a bucket or bowl of water or sand for each group.

## Daily practice

## Pair task

Write the number 24 on the chalkboard and ask each pair to see how many sums they can write down in 10 minutes that give that answer.

Ask each pair how many correct sums they think they have.
Ask the pair with the most to read them out and write them on the chalkboard as they read.
Go round each pair and ask them to say any sums that they have which are not written on the chalkboard.

Write the total number of sums that you have collected
Check the answers with the pupils, using a number line to help if necessary.

| $\begin{array}{\|l\|l} 10 \\ \text { minutes } \end{array}$ | 25 minutes |  | 10 minutes |
| :---: | :---: | :---: | :---: |
| Introduction | Main activity |  | Plenary |
| Whole class teaching | Group task | Whole class teaching | Whole class teaching |
| Remind the pupils that at the beginning of the week they were given a selection of containers and asked to decide, by looking at them, which held the most water or sand and to place them in order of size. | Give each group three containers, a cup or teaspoon and a bucket or bowl of water/sand. <br> Ask them to use these items to help them put the containers in the correct order according | Ask each group to tell the rest of the class how they completed the task and explain the method they used to record their answers. | Sit or stand the pupils in a circle. <br> Ask each of them to say one thing they have learned about capacity from the week's activities. |
| Explain that today they are going to put the containers in order from the one that holds the most to the one that holds the least by measuring their capacity. | to their capacity. <br> Ask each group to record their answer using any method they have learned, eg: putting the pots in a line in the correct order with a number card by them, drawing a table, etc. |  |  |




Numeracy
lesson plans
Primary 2

## Term 1

Organising the
classroom for
effective learning

## Week 7

Subtracting
two-digit numbers
from 0-99
Day 1

## Number lines

|  | 15 <br> minutes | Macmillan <br> New Primary <br> Mathematics 2 |
| :--- | :--- | :--- |
| Learning outcomes | Daily practice |  |
| By the end of the lesson, most |  |  |
| pupils will be able to: | Whole class teaching |  |
| Find numbers on a | Ask individual pupils to count <br> forwards from any given starting <br> point within 0-99, using the |  |
| Hundred square. | Hundred square in Macmillan New <br> Primary Mathematics 2, page 22. |  |
| Use a number line to subtract <br> numbers from 0-99. | Call out different numbers <br> between 0-99 and ask pupils <br> to touch the numbers. |  |
| Teaching aids | Ask them to touch the number <br> that is 10 more than and the |  |
| number that is 10 less than the |  |  |
| Before the lesson: | number you mentioned. |  |
| Look at the Hundred square <br> in Macmillan New Primary |  |  |
| Mathematics 2, page 22. |  |  |


| 10 minutes |  | $\begin{array}{\|l\|l} 25 \\ \text { minutes } \end{array}$ | 10 minutes |
| :---: | :---: | :---: | :---: |
| Introduction |  | Main activity | Plenary |
| Whole class teaching |  | Pair task | Whole class teaching |
| Write the following subtraction sum on the chalkboard: $19-3=$ | Ask the pupils to help you complete the sum using a number line, by asking the following questions: <br> 'Which number do you start with?' <br> 'What do you do with it?' <br> 'What do you do with the smallest number?' <br> 'Where do you find the answer?' <br> Write the final answer at the end of the sum. | Write the following subtraction sums on the chalkboard for the pairs to complete using the same method: $\begin{aligned} & 19-8= \\ & 15-9= \\ & 14-3= \\ & 17-12= \end{aligned}$ <br> If pupils complete these sums early, give them a number lower than 20 and ask them to make up as many sums as they can which make that number. | Ask individual pupils to tell you how they completed the tasks. |

Numeracy
lesson plans
Primary 2

## Term 1

Organising the
classroom for
effective learning

## Week 7

Subtracting
two-digit numbers
from 0-99
Day 2

## Odd and even



By the end of the lesson, most pupils will be able to:
Explain the meaning of the terms 'odd' and 'even'.

Use a number line to subtract two-digit numbers.

Answer simple addition and subtraction sums orally.

## Teaching aids

Before the lesson:
Read Macmillan New Primary Mathematics 2, page 16.

Have ready at least 20 counters per pair.

15
minutes

Lesson
title

## Daily practice

## Whole class teaching

Ask pupils if they can tell you what odd and even numbers are. Give each pair 20 counters.

Call out a number between 1 and 20 and ask the pupils to find that number of counters and group them in pairs.
Tell them that if there is a pair for each counter it is an even number but if there is one left over then it is an odd number.
Write a list of numbers from 1 to 20 on the chalkboard and ask pupils to use their counters to work out whether they are odd or even.

## Introduction

Whole class teaching
Remind the pupils that on Day 1 they looked at ways of subtracting numbers less than 20.
Explain that this week they will be learning how to subtract numbers from $0-99$ using a number line.

## Main activity

Whole class teaching
Write the following sum on the chalkboard: 38-17 =

Show the pupils how to do this sum.

Draw a line on the chalk-
board and write 38 on the right-hand end.
Expand the number 17 into Tens and Units, eg: $17=10+7$

Jump backwards on the number line as in the diagram. Remind pupils that they can use the Hundred square in Macmillan New Primary Mathematics 2, page 22 to help jump backwards
in Tens.


## Whole class teaching

Read out the following sums one at a time, asking pupils to complete them using the number line: $28-14=$ $43-12=$ $85-13=$

Stop after pupils have had the chance to complete each one and go through the method on the chalkboard with the pupils.

Call out addition and subtraction sums using numbers from 1-20 and ask the pupils to tell you the answers orally.

## Term 1

Organising the classroom for effective learning

## Week 7

Subtracting
two-digit numbers
from 0-99
Day 3

## Subtracting <br> numbers <br> from 0-99

15
15
minutes


Before the lesson:
Read Macmillan New Primary Mathematics 2, page 17, Exercise 1, question 1.
Have ready at least 20 counters per pair.

## Daily practice

## Whole class teaching

Write the words 'odd' and 'even on the chalkboard.
Ask someone to count how many pupils there are in the class and write the number on the chalkboard so everyone can see.
Ask each individual pupil to say whether that number is odd or even.
Ask everyone to find a partner and stand with them.
Ask them again if there is an odd or even number of pupils in the class at that time, and how they know.
Ask each pair to complete Macmillan New Primary Mathematics 2, page 17, Exercise 1, question 1.


Primary 2

## Term 1

Organising the classroom for effective learning

## Week 7

Subtracting
two-digit numbers
from 0-99
Day 4

## Subtracting <br> numbers <br> from 0-99

15
minutes Macmillan
New Primary
Mathematics 2


By the end of the lesson, most pupils will be able to:
$\overline{\text { Identify odd and even numbers. }}$
Subtract two-digit numbers using a number line.

## Teaching aids

Before the lesson:
Read Macmillan New Primary
Mathematics 2, page 17,
Exercise 1, questions 2 and 3.

## Daily practice

Whole class teaching
Ask the pupils to open Macmillan New Primary Mathematics 2, page 22.
Ask them to look at the Hundred square and say any even numbers that they can find.
Ask them to look closely and see if there is any pattern in the numbers, ie: all the even numbers end with $0,2,4,6$ or 8 .
Ask them to complete Macmillan New Primary Mathematics 2, page 17, Exercise 1, questions 2 and 3.


Primary 2

## Term 1

Organising the classroom for effective learning

## Week 7

Subtracting
two-digit numbers
from 0-99
Day 5

## Subtracting <br> numbers <br> from 0-99

15
minutes

## Learning outcomes

By the end of the lesson, most pupils will be able to:
Identify odd and even numbers.
Subtract two-digit numbers using a number line.

## Teaching aids

Before the lesson:
Write the word 'odd' on one side of the room and the word 'even' on the other side of the room. the winner.

## Daily practice

## Whole class teaching

Call out any number and ask the pupils to move to the correct side of the room, according to whether it is an odd or even number.
Those pupils that are standing on the wrong side of the room should sit down.
Repeat until there is only one pupil left standing. That pupil is

Share this example with the pupils: $6+4=10$ is an even number $7+6=13$ is an odd number
Ask them to complete the
following and say whether the answers are odd or even:
$8+8$
$10+6$
$3+6$
$5+5$
$8+9$
even + even
odd + odd

| 10 minutes |  | 25 minutes | 10 minutes |
| :---: | :---: | :---: | :---: |
| Introduction |  | Main activity | Plenary |
| Whole class teaching |  | Individual task | Whole class teaching |
| Ask pupils to remind you how to subtract twodigit numbers. <br> Give them the following sum and ask them to tell you step by step what they have to do: $54-22=$ | As someone explains each stage, ask the rest of the pupils to do what they say, even if it is wrong. <br> After the pupils have tried each step, ask them: <br> 'What does your sum look like now?' <br> 'Was that the correct way of doing it?' <br> 'Is there another stage?' | Give the pupils the following sums to try in their exercise books: | Ask the pupils to tell you something they know about subtracting two- |
|  |  | $\begin{aligned} & 33-21= \\ & 65-43= \\ & 87-65= \\ & 74-52= \\ & 48-35= \\ & 99-67= \end{aligned}$ | digit numbers. |
|  |  | While they are doing them, move around the class and check which |  |
|  | Continue until you have completed the sum. | pupils understand. <br> Write down the names of those pupils who don't understand so that you can give them extra help in the following week. |  |

Week
Subtracting twodigit numbers


## count in Tens

subtract from
take away
What's the difference
between...?
Start with the
largest number
Expand the
smallest number
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.

## Term 1

Organising the classroom for effective learning

## Week 8

Subtracting
two-digit numbers
Day 1

| 15 |
| :--- |
| minutes |



Before the lesson:
Find the Hundred square in Macmillan New Primary Mathematics 2, page 22.

## Daily practice

## Whole class teaching

Ask pupils to find the Hundred square in Macmillan New Primary Mathematics 2, page 22.
Ask them to put their fingers on 0 and count forwards in Tens until they reach 100.
Draw a number line on the chalkboard, as shown opposite below, and ask the pupils to use it to count in Tens.
Ask them:
'How many is each jump?'
Ask the class to count backwards in Tens from 100, using first the number square and then the number line.
Leave the number line on the chalkboard for use in the plenary.

| 10 minutes | 25 <br> minutes |
| :---: | :---: |
| Introduction | Main activity |
| Whole class teaching | Pair task |
| Write the sum: <br> $65-23=$ <br> Explain to the class that <br> you are going to show <br> them a quicker way of doing these sums. <br> Ask them to expand the smallest number, eg: $23=20+3$ <br> Explain that instead of making two jumps of 10 they should now try make a jump of 20 on the number line, eg: <br> Remind them they can use the Hundred square to help them count in Tens. | Ask pupils to complete their following in their exercise books: $\begin{aligned} & 55-32= \\ & 26-11= \\ & 43-23= \\ & 37-6= \end{aligned}$ |
| Daily practice number line |  |

10
minutes

## Plenary

## Whole class teaching

Ask pupils questions which they can answer using the number line, eg:
'Which number is 20 more than 10?'
'Which number is 40 more than 10?'
'If I add 40 and 20, what is the answer?'

## Term 1

Organising the
classroom for
effective learning

## Week 8

Subtracting
two-digit numbers
Day 2

## Subtracting twodigit numbers

15
minutes Macmillan
New Primary
Mathematics 2


By the end of the lesson, most pupils will be able to:
Count in Tens from any given number.
Subtract two-digit numbers.

## Teaching aids

Before the lesson:
Find the Hundred square in Macmillan New Primary Mathematics 2, page 22.

## Daily practice

## Whole class teaching

Ask pupils to find the Hundred square in Macmillan New Primary Mathematics 2, page 22.

Ask them to put their fingers on 5 and count in Tens until they reach 95.

Draw a number line on the chalkboard, as shown opposite below, and ask the class to use it to count in Tens from 5 .
Ask pupils:
'How many is each jump?'
Ask them to count backwards in Tens from 95, using first the Hundred square and then the number line.

| 10 minutes | 25 minutes | $\left\lvert\, \begin{aligned} & 10 \\ & \text { minutes } \end{aligned}\right.$ |
| :---: | :---: | :---: |
| Introduction | Main activity | Plenary |
| Whole class teaching | Pair task | Whole class teaching |
| Write the sum: $55-33=$ <br> Ask the pupils to show you how to do it, using as few jumps as they can. | Give the pupils the following sums to do in pairs: $\begin{aligned} & 64-22= \\ & 85-34= \\ & 76-35= \\ & 92-61= \end{aligned}$ | Write each sum on the chalkboard and ask individual pupils to tell you how many their first jump in each sum was, eg: 20, 30, etc. |
|  | Ask each pair to practise counting in Tens from different starting points, using a number line and the Hundred square to help them. |  |
| Daily practice number line |  |  |
| $\underbrace{+10}_{5}+\underbrace{+10+10}_{25}+10+10$ |  |  |

Numeracy
lesson plans
Primary 2

## Term 1

Organising the
classroom for
effective learning

## Week 8

Subtracting
two-digit numbers
Day 3

## Subtraction



By the end of the lesson, most pupils will be able to:
Count in Tens from any number between 0-100.

Identify different words for subtraction: 'take away', 'minus' and


## Before the lesson:

Provide flash cards containing the following terms: 'take away', 'minus', 'difference between', 'subtract from', etc.
Have ready a set of 10 blank cards for each group.
Have ready a long stick for each group.
'difference between'.

## Teaching aids

15
minutes

## Daily practice

## Whole class teaching

Give each group a number between 0 and 10.
Give each group a set of blank cards and a long stick.
Ask them to make number cards that count in Tens from their group number, eg: 3, 13, 23, etc.
Ask the groups to make a number line that counts in Tens using their cards and the large stick.
Remind them to use the Hundred square to help them if they need to.
Choose one pupil as the 'expert' to stay with their number line and ask the other groups to move around and visit each number line in turn and count with the 'expert'.

| 10 minutes | $\left\lvert\, \begin{aligned} & 25 \\ & \text { minutes } \end{aligned}\right.$ | $\left\lvert\, \begin{aligned} & 10 \\ & \text { minutes }\end{aligned}\right.$ | Song |
| :---: | :---: | :---: | :---: |
| Introduction | Main activity | Plenary |  |
| Group task | Individual task | Group task |  |
| Ask a group of pupils to come out and stand in front of the class. | Write the following on the chalkboard for the pupils to complete in their exercise books, using a number line: | Sing a counting song that the pupils enjoy. |  |
| Take away one or two pupils. |  |  |  |
| Ask the rest of the class to say words which describe what has happened to the missing group members, eg: ‘subtracted', 'taken away', etc. | $87-35=$ |  |  |
|  | $58-24=$ |  |  |
|  | $71-20=$ |  |  |
|  | $93-42=$ |  |  |
|  | $65-44=$ |  |  |
|  | Ask pupils to swap books and compare their answers with a partner. |  |  |
| Write the '-' sign on the chalkboard and ask the pupils if they can tell you any names for the symbol, eg: 'minus', 'subtract', etc. |  |  |  |
|  | Ask them to check that they have used the smallest number of jumps possible to complete the sum. |  |  |
|  |  |  |  |
|  |  |  |  |

Numeracy
lesson plans
Primary 2

## Term 1

Organising the
classroom for
effective learning

Week 8
Subtracting
two-digit numbers
Day 4

## Subtracting twodigit numbers

15
minutes

Learning outcomes

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

Identify and use words or terms that mean 'take away'.

Subtract two-digit numbers using a number line.

## Teaching aids

## Before the lesson:

Have ready a ball or another object to throw and catch.
Have ready flash cards: 'take away', 'minus', 'What's the difference between?', 'subtract from', '-', enough for each group to have one card.

## Daily practice

## Whole class teaching

Stand the pupils in a circle and tell them that you are going to play a game that involves counting in Tens.
Throw the ball to someone across the circle and say a number from 1-10.
Ask them to add 10 to the number and throw it to the next pupil to do the same.

Continue until someone drops the ball or you reach 100
Repeat, this time going backwards from 100, taking away 10 each time.

| 10 minutes | 25 minutes | 10 minutes |
| :---: | :---: | :---: |
| Introduction | Main activity | Plenary |
| Whole class teaching | Group task | Group task |
| Hold up the flash cards with the different words for subtraction on them. | Give each group a flash card with a different term for take away on them. | Ask groups to count to 100 in 10 s, 20 s and 50 s, and record them on |
| Ask pupils to give you a simple sum using each term so that everyone is clear about their meaning. | Ask each group to make up a sum using that term for other pupils to answer, eg: subtract 22 from 35. | a number line, eg: 20, 40, $\text { 60, 80, } 100 .$ |
|  | Write all the sums on the chalkboard and ask the groups to work together to answer them. |  |
|  | Share the answers as a class and check they are correct. |  |
|  | Ask if there were any sums the pupils had any problems with and couldn't answer. |  |

Numeracy
lesson plans
Primary 2

## Term 1

Organising the
classroom for
effective learning

## Week 8

Subtracting
two-digit numbers
Day 5

## Writing <br> instructions



Week
Non-standard measures


## Numeracy

 lesson plans Primary 2
## Term 1

Organising the
classroom for
effective learning

## Week 9

Non-standard
measures
Day 1

Measuring length using feet and arms

Before the lesson:
Have ready two sets of flash cards for each group with the following units of measurement: 'foot', 'hand span', 'arm span', 'finger', 'finger tip to elbow', 'stride', 'rope', 'short stick', 'long stick', 'metre', 'centimetre'.

Read Macmillan New Primary Mathematics 2, page 82.


15
minutes

## Daily practice

## Whole class teaching

Divide the chalkboard into two columns. Label one column 'numbers greater than 55 ' and the other 'numbers less than 55 '.
Ask pupils to call out numbers greater than 55 and write them in the correct column.
Ask pupils to call out numbers less than 55 and write them in the correct column.
Ask the pupils to take a number from each column and subtract the lowest number from the highest.
Repeat with different pairs of numbers.

## Introduction

## Group task

Give each group two sets of flash cards.

Tell them to turn the cards face down and spread them out over the table.
The first player picks a card and turns it face up.
They must try to pick another card that has the same measuring unit on it as the first card.

If they succeed, they keep the two cards.

## Main activity

If not, they turn the cards face down on the same spot and the next pupil tries.

The pupil who has most cards at the end of the game has won.

## Group task

Explain the meaning of the words on the flash cards. Ask the pupils to look at the example of foot, arm and stride measurements in Macmillan New Primary Mathematics 2, page 82.

## Ask one or two groups

 to measure the distance from one edge of their chair to the other using their hand span.Ask different groups to measure the distance from one end of the classroom to the other using their stride.

Ask other groups to measure the distance between one edge of their table to the other using their arm span.

## Ask a representative

of each group to say the how long their measurement was.

## Whole class teaching

Ask pupils to estimate the length and distance of the chalkboard using their hand span and arm span.

Numeracy
lesson plans
Primary 2

## Term 1

Organising the
classroom for
effective learning

Week 9
Non-standard
measures
Day 2

## Comparing length



By the end of the lesson, most pupils will be able to:
Subtract two-digit numbers.
Measure with non-standard units.
Record measurements.
Identify which length is longer.


Before the lesson:
Have ready a set of number cards from 0-20

Have ready a short stick, a long stick and two pieces of rope.

15
minutes

| 10 <br> minutes | 25 minutes |  | 10 minutes |
| :---: | :---: | :---: | :---: |
| Introduction | Main activity |  | Plenary |
| Group task | Group task |  | Whole class teaching |
| Divide the pupils into four groups. | Ask each group to discuss the various objects that can be measured and that can be used to measure. | Ask group three to measure each side of the classroom with a rope. | Ask the pupils if the measuring instrument they used was a good one for their task, and why or why not. |
| Ask each group to measure any distance in the classroom using their arm length, hand span, stride or foot. |  |  |  |
|  | Write their ideas on the chalkboard. | Ask group four to measure each side of the classroom door with a long stick. |  |
|  | Ask the pupils in group one to measure each side of the chalkboard with rope. | Ask them to write down the measurement of each side so they don't forget. |  |
| Ask pupils to tell you the length of the object they measured. |  |  |  |
|  |  |  |  |
| Repeat the task with three or more pupils in the classroom. | Ask group two to measure each side of your table with a short stick. | Ask each group to look at their results and say which side is longer than the other. |  |
|  |  | Ask the pupils from each group to mention the number of units measured. |  |

Numeracy lesson plans Primary 2

## Term 1

Organising the
classroom for
effective learning

Week 9
Non-standard
measures
Day 3

## Measuring with a metre stick



| 10 minutes | 25 minutes |  | 10 minutes |
| :---: | :---: | :---: | :---: |
| Introduction | Main activity |  | Plenary |
| Whole class teaching | Pair task |  | Whole class teaching |
| Spread out the two sets of flash cards on the floor and ask each pair to come out and pick one from each pile. | Ask each pair to measure their object and write/ record their answers in a table like the one shown below. | Ask them to continue until they have measured four or five different objects. <br> Ask the pairs to tell you which was the longest | Ask each pair to read out their sentences to the class. <br> Ask them to tell you how writing their answers |
| Explain that one card is the object they have to measure and the other card is the object they will use to measure with. | Ask them to choose another card with an object to measure and record it in the same way. | object they measured and which was the shortest object they measured. <br> Ask them to write a sentence to describe what they found, using the words on the cards to help them: <br> 'The $\qquad$ is longer than the $\qquad$ <br> 'The $\qquad$ is shorter than the $\qquad$ | in a table helped them. |

Measurement table

| Object | Number of hand spans |
| :--- | :--- |
| Table | 12 |

Numeracy
lesson plans
Primary 2

## Term 1

Organising the
classroom for
effective learning

Week 9
Non-standard
measures
Day 4

Lesson
title

## The metre

15
minutes

| Learning outcomes | Daily practice |
| :--- | :--- |
|  |  |
| By the end of the lesson, most | Whole class teaching |
| pupils will be able to: | Ask the pupils to take the |
| Subtract two-digit numbers | following numbers away from 99: |
| without using pencil or paper. | $33,57,49,22,45,87,98,1,50$. |
| Use a metre stick to | Remind them they can use |
| measure objects. | a number line to help them if |
| Record results in a table. | they wish. |
|  | When the pupils have finished, <br> Teaching aids |

## Before the lesson:

Have ready a metre stick.
Have ready pieces of rope, long sticks and long strips of paper or card which are longer than a metre.
Read the instructions in the teaching aids section of this booklet which tell you how
to measure correctly.
(


Whole class teaching
Ask four different pupils to measure the length of the classroom with their stride.

Record their measurements in a table like the one shown below.

Ask the pupils to tell you why the number of strides
is different for each pupil.

Measurement table

| Name | Number of strides |
| :--- | :--- |
|  |  |

## Main activity

## Group task

Show the class a metre stick and ask them if they can tell you what it is.

Explain that a metre is a way of measuring longer lengths so that you always get the same measurement.

Give out a stick or a rope to each group and ask them to put it against the metre stick and use it to measure a metre.

Ask them to mark the metre on their stick/rope.

Explain that sometimes we need to have an exact measurement so that things are the same size, eg: when a carpenter builds a set of chairs for a classroom they all have to be the same size.

## Term 1

Organising the
classroom for
effective learning

## Week 9

Non-standard
measures
Day 5

Measuring with metres


Subtract two-digit numbers without using paper or pencil.

Measure accurately using a metre measure.


## Before the lesson:

Have ready a set of number cards: 10, 20, 30, 40, 50.

Have ready the metre measures from Day 4.
Have ready the measure flash cards from Day 1, adding another two cards with the word 'metre'.

Read the instructions in the teaching aids section, which explain how to measure accurately.

Daily practice

## Whole class teaching

Give each pair a number card with one of the following numbers on it: 20, 50, 30, 10, 40.
Read the following sums and ask those with the number card showing the correct answer to hold up their cards for
everyone to see:
$50-20=$
$30-10=$
$100-60=$
$40-30=$
$100-50=$
$40-10=$
$50-30=$
$70-30=$

| 10 Game <br> minutes  | 25 minutes |  |
| :---: | :---: | :---: |
| Introduction | Main activity |  |
| Group task | Group task |  |
| Play the matching game from Day 1, this time including the extra 'metre' flash cards. | Ask each grou nominate one be the 'record <br> Ask them to h recorder write shown below i exercise book <br> Ask them whic think will be th distance and they think will shortest distan | to erson to '. <br> p the he table their <br> they longest hich e the e. |
| Table |  |  |
| Object | Longest or shortest distance | Measurement |
| Along the side of one school block |  | metres |
| From one end of the school block to the other |  | metres |
| From a tree back to the building |  | metres |
| From the head teacher's office to your classroom |  | metres |

## Introduction

## Group task

Pay the matching game ay 1, this time including the extra 'metre flash cards.

Group task
Ask each group to be the 'recorder'.

Ask them to help the write the tabl exercise books.

Ask them which they think will be the longes they think will be the they think will be the shortest distance.

Explain that an estimate is a guess. Before they measure they should guess which distance is the longest and which distance is the shortest and mark them on the table. It doesn't matter if this guess is wrong.

## Ask one or two pupils to

 tell or show you how to use a metre measure to measure accurately.Take the pupils outside and ask each group to use their metre measure to measure the items listed in the table.

## Ask them to make

 a sensible estimate first and write it in the table.
## Plenary

## Whole class teaching

Ask each group to compare their measurements, asking the following questions:
'Which were the longest and shortest distances? 'Did you guess the longest and shortest distances correctly?'
'Were the measurements of each distance the same for each group? Why, or why not?'

## Ask them to carefully

 measure each distance and record it on their table.


Numeracy
lesson plans
Primary 2

## Term 1

Organising the
classroom for
effective learning

Week 10
Adding and
subtracting 0-99
Day 1

## Addition of twodigit numbers

|  | $\begin{aligned} & 15 \\ & \text { minutes } \end{aligned}$ |
| :---: | :---: |
| Learning outcomes | Daily practice |
| By the end of the lesson, most pupils will be able to: | Whole class teaching |
|  | Write the following sums on the chalkboard for the pupils to |
| Add two-digit numbers. |  |
| Add and subtract two-digit numbers using a number line. | complete, using a number line: $24+11=$ |
|  | $15+13=$ |
|  | $29+0=$ |
| Teaching aids | $32+15=$ |
|  | $25+62=$ |
|  | $33+22=$ |
| Before the lesson: | Ask pupils to tell you how they found the answers. |
| Have ready a set of number cards from 0-5. |  |
| Have ready flash cards with |  |
| different terms for addition and |  |
| subtraction, eg: 'add', 'subtract', |  |
| 'take away', 'plus' and 'equals'. |  | from 0-5.

Have ready flash cards with different terms for addition and subtraction, eg: 'add', 'subtract', 'take away', 'plus' and 'equals'.

15

| $\begin{array}{\|l\|} 10 \\ \text { minutes } \end{array}$ | 25 minutes |  | 10 minutes |
| :---: | :---: | :---: | :---: |
| Introduction | Main activity |  | Plenary |
| Whole class teaching | Whole class teaching |  | Individual task |
| Quickly flash the cards at the pupils, asking them to read the different terms for addition and subtraction. | Explain to pupils that they are going to have a mixture of addition and subtraction sums to complete. | Ask the pupils to stand at the front of the class and hold the cards in order, to make a sum, eg: 43 take away 21 equals $\square$ | Ask pupils to tell you the answers to the sums they have completed and check that they chose the correct operation, ie: add or subtract. |
| Show them again more |  |  |  |
| slowly, asking pupils to give you an example of a sum for each card. | Remind them to look closely at the sign so they know whether they are addition or subtraction sums. | Ask the pupils if it is an addition or subtraction sum. |  |
|  | Ask six pupils to come out. Ask four of them to take a number card between 0 and 5 and use them to make two, twodigit numbers. Ask another pupil to hold the word 'equals' and the final pupil to pick a card with a term for addition or subtraction. | Ask the rest of the pupils to write that sum in their exercise books. |  |
|  |  | Repeat until you have five sums. |  |
|  |  | Ask pupils to answer the sums, using a number line to help them. |  |

## Term 1

Organising the
classroom for
effective learning

## Week 10

Adding and
subtracting 0-99
Day 2

## Addition and subtraction



By the end of the lesson, most pupils will be able to:
$\overline{\text { Add together two-digit }}$ numbers without using pencil and paper.
Add and subtract twodigit numbers.


## Before the lesson:

Have ready a set of number cards from 0-5 for each group.
Have ready flash cards for each group, with different terms for addition and subtraction, eg: 'add', 'subtract', take away', 'plus' and 'equals'.

| Learning outcomes | Daily practice |
| :---: | :---: |
| By the end of the lesson, most pupils will be able to: | Whole class teaching |
|  | Ask the pupils an additio |
| $\overline{\text { Add together two-digit }}$ numbers without using pencil and paper. | sum with an answer of less than 50 . |
|  | Tell them to try and answer it without using pencil and paper. |
| Add and subtract twodigit numbers. | $\overline{\text { Ask two or three pupils to }}$ tell you how they worked out the sum. |
| Before the lesson: | Repeat with different sums, stopping after each one for the pupils to tell you their answer. |
| Have ready a set of number cards from $0-5$ for each group. | Ask each pupil to write down a new addition sum with an answer |
| Have ready flash cards for each group, with different terms for addition and subtraction, eg: 'add', 'subtract’, take away', 'plus' and 'equals'. | up to 50 . <br> Tell each pupil to ask their sum for the rest of the class to answer. It doesn't matter how easy or difficult it may be. |


| 10 minutes | 25 minutes |  | 10 <br> minutes |
| :---: | :---: | :---: | :---: |
| Introduction | Main activity |  | Plenary |
| Whole class teaching | Group task |  | Whole class teaching |
| Repeat the activity from the Day 1 main activity. | Give each group a set of cards and ask them to place the numbers face down in one pile on the table and the cards with the addition and subtraction terms face down on the other side of the table. <br> Ask them to take it in turns to pick cards from each pile to make addition and subtraction sums, as they did in the introduction. | Ask all the pupils in the group to copy the sum into their exercise book, then work on their own to answer it. <br> Ask all the pupils in the group to compare their answers and help each other if they have different answers. <br> Ask them to repeat the activity until each group has completed 10 sums. | Ask each group to show the rest of the class one sum and tell them the answer. |

Numeracy
lesson plans
Primary 2

## Term 1

Organising the
classroom for
effective learning

Week 10
Adding and
subtracting 0-99
Day 3

## Addition and subtraction

|  | 15 minutes |
| :---: | :---: |
| Learning outcomes | Daily practice |
| By the end of the lesson, most pupils will be able to: | Group task |
| Add and subtract twodigit numbers. | bigger than 50 and ask them to write as many addition |
| Solve problems involving addition and subtraction. | sums as they can where the answer is the number you have given them. |
| Teaching aids |  |
| Before the lesson: |  |
| Bring string or rope and pegs or paper clips to the class. |  |
| Have ready a set of flash cards for each pair with a ' + ', ' - ' and ' $=$ ' sign on them. |  |
| Have ready a set of number cards from $0-5$. |  |



$|$| 10 |
| :--- |

minutes

## Plenary

## Whole class teaching

Ask pupils to share their answers with the rest of the class.

Numeracy
lesson plans
Primary 2

## Term 1

Organising the
classroom for
effective learning

Week 10
Adding and
subtracting 0-99
Day 4

## Addition and subtraction

|  | 15 minutes |
| :---: | :---: |
| Learning outcomes | Daily practice |
| By the end of the lesson, most pupils will be able to: | Pair task |
| Add and subtract twodigit numbers. | the Day 3 daily practice, but this time in pairs. |
| Solve problems involving addition and subtraction. |  |
| Teaching aids |  |
| Before the lesson: |  |
| Bring string or rope and pegs or paper clips to the class. |  |
| Have ready a set of flash cards for each pair with different terms for addition and subtraction, eg: 'add', ‘subtract', take away', 'plus' and 'equals'. |  |
| Have ready a set of number cards from 10-99. |  |


| $\left\lvert\, \begin{aligned} & 10 \\ & \text { minutes } \end{aligned}\right.$ | $\begin{array}{\|l\|} 25 \\ \text { minutes } \end{array}$ | 10 minutes |
| :---: | :---: | :---: |
| Introduction | Main activity | Plenary |
| Whole class teaching | Individual task | Whole class teaching |
| Play the washing line game as yesterday, using the following sums: | Give pupils the following sums to complete in their exercise books: | Ask some of the pupils to explain how they worked out the answers. |
| $10 \square 5=5$ | $35 \square 23=58$ |  |
| $20 \square 20=0$ | $24 \square 4=20$ |  |
| $45 \square 30=15$ | $56 \square 32=24$ |  |
| $33 \square 64=97$ | $41 \square 20=21$ |  |
| $72 \square 12=84$ | $55 \square 23=78$ |  |
| Encourage pupils to | $55 \square 23=32$ |  |
| use pencils and paper to | $46 \square 54=100$ |  |
| work out the answers. | $54 \square 25=79$ |  |
|  | Ask them to find a partner and compare their answers to see if they are both correct. |  |

Numeracy
lesson plans
Primary 2

## Term 1

Organising the
classroom for
effective learning

Week 10
Adding and
subtracting 0-99
Day 5

## Addition and subtraction

## Learning outcomes

By the end of the lesson, most pupils will be able to:
Add and subtract twodigit numbers.

## Teaching aids

## Before the lesson:

Write the following sums on
the chalkboard:
Add 23 and 32
28 take away 14
Subtract 36 from 58
42 plus 33
Find the sum of 45 and 22
What's the difference
between 48 and 34 ?
How many more than
52 is 64?

| 10 minutes | Song | 25 minutes | 10 minutes |
| :---: | :---: | :---: | :---: |
| Introduction |  | Main activity | Plenary |
| Whole class teaching |  | Individual task | Whole class teaching |
| Sing any counting song that the pupils enjoy such as '5 little monkeys', or '10 green bottles'. |  | Ask pupils to look at the sums you have written on the chalkboard. | Ask pupils to tell you something they have learned this week about addition and subtraction. |
|  |  | Ask them to decide which sums are subtraction and which are addition. |  |
|  |  | Ask them to answer the questions in their exercise books. |  |
|  |  | Ask pupils to compare their answers with a partner to see if they both agree. |  |
|  |  | If partners have different answers, ask them to think about which one is correct. |  |

## Credits

Special thanks go to:

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.

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.


