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Type of lesson plans/

Grade

Term/
Learning theme

Numeracy lesson plans Primary 3

-

Term 2

Involving pupils in their learning

Weeks

11—15

Numeracy lesson plans
Primary 3 Term 2
Involving pupils
in their learning

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





Introduction

The quality of education is a key element to socioeconomic development in any society. Perhaps the most critical element in ensuring quality of education to output. The majority of is the teacher. Good teaching methodology, with the right textbooks. will quickly provide a good platform for a quality education system in Kano State.

The challenges are sometimes overwhelming when you have 5,335 schools with over 2.3 million children and 46.643 teachers. The Kano State Ministry of Education carried out a series of baseline surveys to assess classroom teachers, the role of the head teacher and the level of pupil learning outcomes.

The findings in most cases were alarmingly poor, with not much difference between aualified and unaualified teachers with respect teachers were themselves victims of an education system that was in a serious downward slope.

Following this, the Kano State Ministry of Education, the State Universal Basic **Education Board (SUBEB)** and local government education authorities (LGEAs), supported by the **Education Sector Support** Programme in Nigeria (ESSPIN), embarked on a series of reforms that will help strengthen schools.

This work has focused on classroom teaching skills in particular how to make teaching child-centred and the organisational structures needed for SUBEB and LGEA staff to provide effective support and advice to primary schools.

With many school leavers unable to read or write. a specific focus has been on improving the teaching of basic literacy and numeracy. To support this, Kano State has developed a benchmark for assessment and carefully designed literacy and numeracy lesson plans for Primary 1—3 teachers. These plans provide a step-by-step quide to teachers, while ensuring children become active learners.

The lesson plans, however, are not sufficient. Structures and processes have also been put in place so that teachers are continuously supported by both the State School Improvement Team and the LGFA-based school support officers.

We are sure that within a short time of these lesson plans being introduced, children's learning abilities will improve considerably. The materials will also enable teaching and learning to be more exciting – an important element in all classes, but in particular at the primary level. We are confident that these lesson plans will raise standards and improve the quality of children proceeding to higher levels of education.

We commend all those who have produced these lesson plans and trained our teachers to use them. We offer thanks to the UK Department for International Development (DFID) for its ongoing support to education reform in Kano State through its ESSPIN programme. Let's make every Kano school an improving school.

Barister Faroug Iva Sambo

Honourable Commissioner of Education Kano State

Wada Zakari

Executive Chairman SUBER Kano State



Term 2 Involving pupils in their learning

Introduction Involving pupils in their learning

Weeks 11—15





Learning must be an active process on the part of the learner.

How children learn

These lesson plans provide you with a variety of techniques to make learning faster, fun and more effective. The plans use activities that reflect the way in which pupils naturally learn, and attempt to bring the joy back into learning for children.

Every individual in your class responds to activities differently and learns their own way, but generally children learn best when they:

Have objects to see and hold.

Take part in the lesson.

Can talk to each other to share ideas and learning.

Practise what they have learned individually, in pairs and in groups.

Are given activities that challenge them and make them think.

Receive encouragement and praise.

Realise that making mistakes is an important part of the learning process.

This third set of lesson plans contains lots of activities to encourage learning through different methods.





Term 2 Involving pupils in their learning

Introduction Essential low-cost or free teaching aids

Weeks 11—15





Counters

Ask the pupils to help you collect together as many bottle tops, small sticks and small stones as they can. Put them into jars to keep in the classroom and use to help with counting.

Number cards

Make sets of cards numbered from 1—200. Cut up cardboard cartons into squares and write numbers on them. Make as many sets as you can so the pupils can use them to play games.

Metre sticks

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, to be used for measuring.

Measuring correctly

Show pupils how to measure the length in metres using their stick or rope.

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

Ask a pupil to put their finger on the floor at the metre mark, then lift up the rope/ stick and put the end 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.

of wood that can be turned into a metre length.

Ask the carpenter to make marks for centimetres.

their stick or rope the stick or rope their stick or rope their stick or rope their sti

Ask a local carpenter if

they have any long ends

with longer marks for 10,

the numbers next to them.

If you write the numbers

from 1—100 on the other side, these can also be used

as longer-lasting 1—100

number lines.

20, 30, and so on, then write

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Term 2 Involving pupils in their learning

Introduction Essential low-cost or free teaching aids

Weeks 11—15





Place value cards

Clocks

Use card to construct the cards below.

If possible, make one set per pair of pupils.

You could also make one large class set.

Collect old wall clocks that are no longer working for the cardboard. pupils to use.

Hang a working clock in vour classroom which the pupils can see. Use it to mention the times at different points in the day, eg: when they arrive in the morning, at the end of lessons, at break time.

Make clocks out of

Try to make at least one for each pair in your class, they will be used in literacy as well as numeracy lessons.

On a piece of cardboard, draw around a large circle and cut it out.

Find the middle of the circle and draw a dot.

Draw lines through the middle of the circle to divide it into quarters.

Write the numbers around the edge of the clock starting with 12, 6, 9 and 3 as they will be on the ends of the lines you have drawn.

Work out where the other numbers would be and write them on.

Make a hole in the middle of the circle.

Cut out two hands, a short one and a long one.

Attach them to the middle of the circle so they can move around.

Hundred card Ten card 1 set 10—90 1 set 100—900 3 0 0 4 0 5

Unit card

1 set 0—9

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Lesson title

Numeracy lesson plans Primary 3

Term 2
Involving pupils in their learning

Week 11 Subtracting three-digit numbers Day 1

Subtracting three-digit numbers

Learning outcomes

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

Explain how to tell the time on the hour and half hour.

Subtract three-digit numbers.

Teaching aids

Before the lesson:

Have ready a large clock with moveable hands.

Look at the weekly words, particularly the different terms for subtraction.

Daily practice

minutes

Whole class teaching

Show the pupils a clock and ask them to tell you anything they can about clocks and how to tell the time.

Write their ideas on the chalkboard.

Remind them that the long hand tells the hour and the short hand shows the minutes.

Make some o'clock and half past times on the clock and ask individual pupils to tell you the time they make.





25

minutes

minutes

Introduction

Main activity

Whole class teaching

Ask the pupils to list some of the terms used for subtraction, eg: How many more than?, take away, What's the difference?

Explain that you are going to the biggest number on the remind them how to subtract right-hand end). three-digit numbers.

Whole class teaching

Write the following sum on the chalkboard. 245 - 123 =

Ask them what you do first (draw a number line, writing

Ask them the next step (expand the smallest number) 123 = 100 + 20 + 3.

Ask them what they do next. (use the number line to do the sum):

Pair task

Give pupils the following sums one at a time to complete in pairs:

$$874 - 343 =$$
 $654 - 531 =$

Plenary

Whole class teaching

Ask four pupils to share what they have learned with the rest of the class.





Lesson title

Numeracy lesson plans **Primary 3**

Term 2 **Involving pupils in** their learning

Week 11 **Subtracting** three-digit numbers Day 2

Subtracting three-digit numbers

Learning outcomes

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

Use a clock to tell the time on the hour and half hour.

Use a number line to subtract threedigit numbers.

Teaching aids

Before the lesson:

Find or make a dummy clock, with moveable hands to show the hours and minutes.

Write the calculations shown in the main activity on the chalkboard.

Daily practice

minutes

Whole class teaching

Show the pupils a dummy clock.

Make different times involving o'clock and half past on the clock and ask the pupils to write each time down in their exercise books.

After each question, tell them the answer and ask them to check if they are correct.







25 minutes 10 minutes

Introduction

Whole class teaching

Write the following sum on the chalkboard and ask the pupils to remind you how to complete it using a number line: 642 – 521 =

Main activity

Pair task

Ask pupils to complete the following calculations: 356 - 132 = 476 - 254 = 538 - 316 =

Ask two or three pupils to explain how they did this to the rest of the class.

Plenary

Pair task

Give the pupils the following sums to answer orally, without using pencil and paper:

- 5 + 5
- 6 + 4
- 3 + 7
- 8 + 2
- 1+9
- 2 + 8





Lesson

Numeracy lesson plans **Primary 3**

Term 2 **Involving pupils in** their learning

Week 11 **Subtracting** three-digit numbers Day 3

title

Subtracting three-digit numbers

Learning outcomes

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

Tell the time on the hour and the half hour.

Use a number line to answer the question 'How many less than?'

Teaching aids

Before the lesson:

Collect dummy or cardboard clocks with moveable hands for each pair.

minutes

Daily practice

Pair task

Hand out the clocks with moveable hands to each pair.

Ask all pairs to make the different o'clock and half past times that you tell them and hold up their clocks for everyone to see.





10 minutes 25 minutes 10 minutes

Introduction

Main activity

Group task

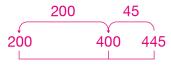
Ask each group to make as many sums as they can that make the number 50 in 5 minutes.

Time them carefully, telling them to stop as soon as the 5 minutes is finished.

Remind the pupils how to answer the question, 'How many less than?'

Ask them. 'How many less than 445 is 200?'

Ask them if they can remember how to do it.



200 is 245 less than 445

Whole class teaching

Give them a question to try in pairs, eg: 'How many less than 658 is 543?'

Come together and ask pupils how they answered it.

Give the pupils some more questions, one at a time to answer in pairs and discuss after each one has been completed:

'How many less than 563 is 232?'

'How many less than 777 is 444?'

'How many less than 569 is 343?'

Plenary

Pair task

Give the pairs the following sums to answer without pencil and paper:

60 + 40

30 + 70

50 + 50

20 + 80

80 + 20

40 + 60

90 + 10

10 + 90





Lesson title

Numeracy lesson plans Primary 3

Term 2
Involving pupils in their learning

Week 11 Subtracting three-digit numbers Day 4

Subtracting two-digit numbers, crossing the Ten

Learning outcomes

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

Tell the time in 5-minute intervals.

Use a number line to subtract two-digit numbers.

Teaching aids

Before the lesson:

Find a clock with moveable hands to use to make different times.

Make sure that you can easily explain the method to subtract two-digit numbers when the Unit in the second number is larger than the first (see opposite).

Daily practice

minutes

Whole class teaching

Ask the pupils if they can remember how many minutes there are in an hour.

Explain that there are 60 minutes in an hour and that to tell the time people often talk in sets of 5 minutes; eg: 5 minutes past, 10 minutes past.

Count in fives up to 60.

Repeat, this time moving the hands around the clock as you do so.





10 minutes

Introduction

Whole class teaching

Remind the pupils how to do the following sum, by expanding the smallest number and using a number line to work out the answer:

$$56 - 37 =$$
 $37 = 30 + 7$

Explain that you can break this down into steps further to make it easier.

Firstly,

$$56 - 30 = 26$$

 30
 26 56

To make the next jump easier, make a jump of 6 to 20.

Ask them,
'How many more do you need to take away so that you have taken 7 altogether?'

7 - 1 = 6

Complete the sum, 56 - 37 = 19

Main activity

Pair task

Ask the pupils to try the following in pairs, using the same method:

$$45 - 28 =$$
 $67 - 59 =$
 $83 - 46 =$
 $34 - 27 =$

57 - 19 =

Ask each pair to find another pair and compare answers.

Plenary

Whole class teaching

Ask each pupil to say one thing they have learned from the lesson.



Lesson

Numeracy lesson plans **Primary 3**

Term 2 **Involving pupils in** their learning

Week 11 **Subtracting** three-digit numbers Day 5

title

Subtracting two-digit numbers

Learning outcomes

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

Use the clock to tell the time in 5-minute intervals.

Subtract two-digit numbers that cross the Ten.

Teaching aids

Before the lesson:

Have ready 0—9 number cards for each pair.

Find enough clocks with moveable hands for each pair to use.

Make sure that you can explain how to subtract two-digit numbers when the Unit is larger in the second number, using the method from Day 4.

minutes

Daily practice

Whole class teaching

Give out dummy clocks to each pair.

Read out times in jumps of 5 minutes in order, and ask pupils to make those times on their clocks using the minute hand (the long hand), eg: 5 minutes past, 10 minutes past, 15 minutes past.







25 minutes 10 minutes

Introduction

Main activity

Plenary

Whole class teaching

Ask the pupils to remind you how to subtract the following:

54 - 35 =

36 - 18 =

Pair task

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

Ask them to choose four cards and make two, two-digit numbers using those cards.

Tell them to take the smallest number away from the largest number, drawing a number line to help them.

Tell them to repeat the task until they have completed about 10 sums.

Ask one or two pupils to show the rest of the class the sums they have made.

Pair task

Stand the pupils in a circle.

Throw a ball to a pupil and ask them a simple addition or subtraction sum which they can do without pencil and paper.

Ask that pupil to throw the ball to someone else and say another sum.

Continue until about six or seven pupils have had a turn.









Lesson title

Numeracy lesson plans Primary 3

Term 2
Involving pupils in their learning

Week 12 Subtracting three-digit numbers Day 1

Subtracting two- and three-digit numbers

Learning outcomes

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

State how many minutes there are in a quarter hour and a half hour.

Use a number line to subtract two-digit numbers from three-digit numbers.

Teaching aids

Before the lesson:

Find or make dummy clocks, with moveable hands to show hours and minutes, for each pair.

Make sure you can explain the method to subtract three-digit numbers as shown on the next page. minutes

Daily practice

Whole class teaching

Ask the pupils to help you draw a clock on the chalkboard, including the numbers.

Ask them to help you divide the clock in half by drawing a line from the 12 to the six.

Label the right half 'past' and the left half 'to'.

Ask the pupils to explain why you have done this.

Ask them where the lines would be to divide the clock into quarters.

Ask them,

'How many minutes in one half?'
'How many minutes in one quarter?'

Leave the clock on the chalkboard for the rest of the week.



25 minutes 10 minutes

Introduction

Main activity

Whole class teaching

Write the following sum on the chalkboard and ask the pupils to remind you how to answer it: 75 - 69 =

Whole class teaching

Tell the pupils that you are going show them how to subtract two-digit numbers from three-digit numbers.

Write the following sum on the chalkboard:

$$245 - 27 =$$
 $27 = 20 + 7$

Pair task

Give pupils the following sums to complete in pairs, using the same method: 476 - 85 = 563 - 72 = 485 - 94 =

Ask if anyone found a quicker method to complete the sum.

Plenary

Whole class teaching

Ask the pupils to put their hands up when they have worked out the answers to the following questions:

$$50 + 60 = 70 - 30 =$$

Ask them to tell you how they worked out the answers.





Lesson

Numeracy lesson plans **Primary 3**

Term 2 **Involving pupils in** their learning

Week 12 **Subtractina** three-digit numbers Day 2

title

Subtracting two-digit numbers

Learning outcomes

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

Tell the time using quarter past and quarter to.

Subtract two-digit numbers using a number line.

Teaching aids

Before the lesson:

Find or make dummy clocks, with moveable hands to show hours and minutes, for each pair.

Read New Method Mathematics 3, page 109, questions 1—6.

Read New Method Mathematics 3, page 41, questions 3—5.

Daily practice

minutes | Mathematics 3

Whole class teaching

New Method

Review yesterday's work, by looking at the clock and asking the pupils to tell you what the time is when the long hand is on the six (half past) and the 12 (o'clock).

Explain that when the long hand is on the three it is 'quarter past' and when it is on the nine it is 'auarter to'.

Explain that putting '.15' after an hour is another way of writing quarter past, and '.45' after an hour is another way of writing guarter to. So 4.15 is the same as quarter past 4.

Read New Method Mathematics 3, page 109, questions 1—6 with the pupils and ask them to tell you the answers.







25 minutes New Method Mathematics 3 10 minutes

Introduction

Whole class teaching

Recap yesterday's work by asking the pupils to do the following sum in their exercise books using a number line to help them: 564 - 72 =

Ask the pupils to look at each other's work and discuss how they found their answer.

Main activity

Pair task

Ask pupils to complete New Method Mathematics 3, page 41, questions 3—5, using the method they practised on Day 1.

Plenary

Whole class teaching

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





Lesson title

Numeracy lesson plans

Primary 3

Term 2

Involving pupils in their learning

Week 12 Subtracting three-digit numbers Day 3

Making 100 Learning outcomes

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

Recognise quarter to and quarter past on the clock.

Make up their own subtraction sums.

Identify number facts about the number 100.

Teaching aids

Before the lesson:

Find or make dummy clocks, with moveable hands to show hours and minutes, for each pair.

minutes

Daily practice

Whole class teaching

Use a clock to make different times using quarter to and quarter past.

Ask pupils to tell the class what times you have made.

Give each pair a clock with moveable hands.

Tell them to make the following times: quarter past 6

quarter to 5 quarter to 7 quarter past 4



25 minutes

minutes

Introduction

Main activity

Whole class teaching

Write the number 100 on the chalkboard.

Ask the pupils to tell you anything they know about the number 100 and record their ideas around the number, eg:

100 is the same as 10 times 10.

100 is a very large number.

I can jump 100 times in 1 minute.

Group task

Ask the pupils to work in groups to see how many subtraction sums they can write whose answer equals 100, eg: 101 - 1 = 100137 - 37 = 100

Tell the pupils they have 20 minutes to finish the task.

Whole class teaching

Ask the pupils to tell you how many sums they have.

Tell the group with the most sums to read out their sums to the rest of the class.

Ask other groups to check they are correct and mark any of their sums that match.

Tell other groups to read out any that they have not marked which are different from the other groups' sums.

Plenary

Whole class teaching

Song

Sing '100 green bottles' with the pupils, stopping when you reach 90.





Lesson title

Numeracy lesson plans **Primary 3**

Term 2 **Involving pupils in** their learning

Week 12 **Subtractina** three-digit numbers Day 4

Subtracting three-digit numbers

Learning outcomes

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

Draw guarter to and guarter past on a clock.

Subtract three-digit numbers.

Teaching aids

Before the lesson:

Find or make dummy clocks, with moveable hands to show hours and minutes, for each pair.

Read New Method Mathematics 3. page 109, qusetions 7—10.

Read New Method Mathematics 3. page 41, questions 6—9.

New Method

minutes | Mathematics 3

Daily practice

Pair task

Explain that some people also use the word 'after' instead of 'past', so quarter past 3 can also be quarter after 3.

Ask pupils to complete New Method Mathematics 3, page 109, questions 7—10, using the clocks with moveable hands to help them and drawing clocks in their exercise books to record the answers.







Ask the pupils to complete

New Method Mathematics

3, page 41, questions 6—9

10 minutes 25 minutes New Method Mathematics 3

Pair task

in pairs.

minutes

Introduction

Main activity

Whole class teaching

Write the following numbers on the chalkboard: 145 232

787 985

436 563

Ask the pupils to explain how to expand them.

Whole class teaching

Explain how to subtract two, three-digit numbers using the following example: 675 - 248 =248 = 200 + 40 + 840 200 8

675 427 435 475

Complete the sum, 675 - 248 = 427.

Whole class teaching

Plenary

Ask pupils to explain how they completed the sums.





Lesson

Numeracy lesson plans **Primary 3**

Term 2 **Involving pupils in** their learning

Week 12 **Subtractina** three-digit numbers Day 5

title

Learning outcomes What's the difference?

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

Write the time in two different ways.

Answer the question 'What's the difference?'

Teaching aids

Before the lesson:

Find or make dummy clocks, with moveable hands to show hours and minutes, for each pair.

minutes

Daily practice

Whole class teaching

Ask pupils to move the long hand on their clock around the numbers. counting in intervals of 5 minutes as they do so.

Remind them that each number means 5 minutes have passed.

Ask the pupils if they can tell you how many minutes there are in quarter of an hour.

Explain that quarter past can also be expressed as 15 minutes past.

Ask them to make the following times on their clocks:

15 minutes past 1

15 minutes past 2

15 minutes past 3

15 minutes past 4, and so on.

Repeat these times, saying them in a random order, to check the pupils understand.



25 minutes

minutes

Introduction

Main activity

Whole class teaching

Ask the pupils to answer the following questions without using pencil and paper:

- 25 3
- 32 7
- 45 + 8
- 57 6
- 23 + 16
- 16 + 17
- 65 34
- 43 27

Whole class teaching

Remind the pupils how to answer the question, 'What's the difference between 35 and 52?'

Start at the lowest number.

Jump to the nearest Ten.

Jump up in Tens.

Count on until you reach the 103 and 85? largest number, ie:

5	5	10	2
35	40	,	50 52

Add up the number of jumps.

Remind them to answer the question, 'The difference between 35 and 52 is 17.'

Pair task

Ask pupils to answer the following questions, using the method practiced. What's the difference between: 67 and 45 82 and 94

96 and 43 120 and 102

Plenary

Whole class teaching

Ask the pupils to tell you something they have learned during the past week about time or subtraction.



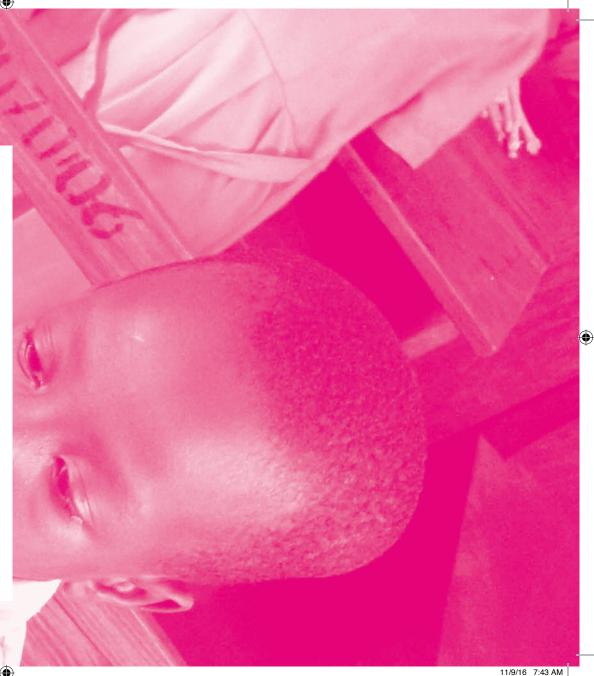


Words/phrases

estimate length metres centimetres cms record table measure width length breadth units of measurement

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.





Numeracy lesson plans **Primary 3**

Term 2 **Involving pupils in** their learning

Week 13 **Metres and** centimetres Day 1

Estimating length and width

Learning outcomes

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

Add three-digit numbers.

Use the vocabulary 'width' and 'length' to estimate and measure.

Teaching aids

Before the lesson:

Have ready a metre ruler for each pair.

Draw the table below on the chalkboard.

Daily practice

minutes

Whole class teaching

Give the pupils the following sums to answer using a number line:

11/9/16 7:43 AM

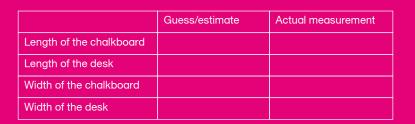
140 + 162 =

236 + 471 =

489 + 143 =

186 + 233 =

818 + 191 =





10 minutes

Introduction

Whole class teaching

Write the words 'width' and 'length' on the chalkboard.

Ask the pupils to look at their bench and tell you which part is the width and which is the length.

When measuring, the width is always the short side, and the length is always the long side.

Show the pupils a metre stick and explain that the measurement is a metre and they are going to estimate, or guess the length and width of classroom objects in metres.

Read through the table with the pupils and ask, 'How many metres long do you think the length of the chalkboard is?'

Write their guess/estimate in the first column.

Repeat the question for each object in the list.

Main activity

Pair task

Show the pupils a metre ruler and ask them if they know what it is used for.

Show them how to measure accurately with the ruler.

Put the end of the metre stick at the end of the object they want to measure and make a small mark at the other end of the ruler.

Move the metre stick so that the 0 is against the mark and repeat as above.

Count how many metre lengths the space that you are measuring is.

Provide each pair with a metre ruler.

Ask the pupils to copy the table into their exercise books, use the metre ruler to measure the objects in the table and record the answer in the second column.

Ask them to look at their guess/estimate and see if they were correct.

Plenary

Whole class teaching

Ask pupils to use the tips of their fingers to measure the length and width of their table.





Numeracy lesson plans Primary 3

Term 2 Involving pupils in their learning

Week 13 Metres and centimetres Day 2

Measuring in centimetres

Learning outcomes

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

Add three-digit numbers.

Explain why we need centimetres to measure objects.

Teaching aids

Before the lesson:

Have ready a metre ruler, with the centimetres clearly marked, for each pair.

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

Daily practice

Pair task

minutes

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

Ask them to each choose three numbers.

Tell one pupil to make the largest number they can with their cards.

Tell the other pupil to make the smallest number they can with their numbers.

Tell the pairs to add their two numbers together using a number line.

Ask them to repeat this process four or five times.







Introduction

Main activity

Whole class teaching

Ask the pupils to remind you how to use a metre stick to measure the length and width of objects.

Ask.

'How many metres long is the classroom?'

Make sure they measure correctly according to the instructions from Day 1.

Ask them what they do if the metre stick is too long for the last measurement.

Explain that on the stick there are smaller measurements called centimetres and these can be used to measure smaller lengths.

Pair task

number?'

Give each pair a metre stick and ask, 'How many centimetres are there in one metre?'

Tell them they can find out by counting the number of marks on the ruler.

When they have told you the answer ask,
'Did anyone find an easier way of counting such a large

Explain that the centimetres are broken into Tens so that they are easier to count.

Ask them to point to each Ten and count as they do, ie: 10, 20, 30, 40.

Tell each pair to measure their pencil.

Tell them to put the ruler flat on the table and put the end of the pencil right up against the 0.

Ask them to look at the place where the tip of the pencil finishes and count the number of centimetres to that point.

Record their answer on the chalkboard, eg: 15cms.

Explain that cms can be used instead of writing out the whole word.

Ask them to copy the table below and use their metre rulers to measure the objects and record their answers.

Plenary

Whole class teaching

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

Choose pupils to explain how easy or difficult it was to measure with a metre ruler.

Object Number of cms

Length of book

Width of book

Length of left hand

Length of right foot



Lesson

Numeracy lesson plans **Primary 3**

Term 2 **Involving pupils in** their learning

Week 13 **Metres and** centimetres Day 3

title

Metres and centimetres

Learning outcomes

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

Add three-digit numbers.

Measure in centimetres.

Teaching aids

Before the lesson:

Read New Method Mathematics 3, page 90.

Have ready a metre ruler, with the centimetres clearly marked, for each pair.

Have ready a small centimetre ruler for each pair.

minutes

Daily practice

Individual task

Give the pupils the following sums to do, in any way they can:

521 + 294 =

232 + 118 =

362 + 151 =

481 + 309 =

Ask some pupils to tell you how they answered the sums.







minutes

New Method Mathematics 3

minutes

Introduction

Whole class teaching

Ask the pupils, 'What is the smaller measurement than metres that we learned yesterday?'

Ask them to explain how to measure their finger using Ask: a metre ruler.

Explain that when you are measuring small things it is easier to use a smaller ruler.

Give each pair a centimetre ruler and a metre ruler.

Ask them to compare the centimetres on both and check that the measurements are the same size.

'How many cms on the smaller ruler?'

'How many small rulers are the same as one metre ruler?'

'How many cms is the same as one metre?'

Main activity

Pair task

Ask the pupils to measure the lines in New Method Mathematics 3, page 90, using a centimetre rule.

Ask them to record their answers in a table like the one shown below.

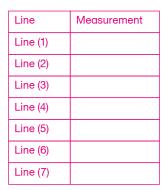
Make sure that they write cms after each measurement recorded.

Pair task

Plenary

Ask the pupils to find another pair and see if their results are the same.

Tell them to check that cms is written after each measurement.





Numeracy lesson plans **Primary 3**

Term 2 **Involving pupils in** their learning

Week 13 **Metres and** centimetres Day 4

Metres and centimetres

Learning outcomes

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

Add three-digit numbers.

Measure in centimetres and metres.

Teaching aids

Before the lesson:

Have ready a metre ruler, with the centimetres clearly marked, for each pair.

Have ready a small centimetre ruler for each pair.

Daily practice

minutes

Whole class teaching

Write the following sums one at a time on the chalkboard and ask the pupils to answer them without using pencil or paper:

100 + 145 =

200 + 145 =

300 + 145 =

400 + 145 =

500 + 145 =

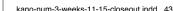
600 + 145 =

700 + 145 =

800 + 145 =

Write down the answers as the pupils say them and ask if anyone can notice a pattern.

Ask if anyone can tell you why the answers have that pattern.



25 minutes New Method Mathematics 3

10 minutes

Introduction

Whole class teaching

Remind the class that estimate means to guess and the reason why we estimate is to help us if numbers are too big to count or if we don't have anything to measure with.

Practise using the word estimate so they understand its meaning.

Ask:

'Can you estimate the number of pupils in the class today?'

'Can you estimate the number of chairs/benches in the room?'

'Can you estimate the height of the teacher's table in metres?'

'Can you estimate the width of the door in centimetres?'

Record their answers on the chalkboard in a table like the one below.

Ask a pupil to count the number of pupils and the number of chairs and record their answers on the table on the chalkboard.

Pair task

Main activity

Ask pupils to copy and complete the table in New Method Mathematics 3, page 89, using a ruler to draw the table.

Explain that first they have to estimate the length in centimetres and then measure it. Explain that 'breadth' is another word for width.

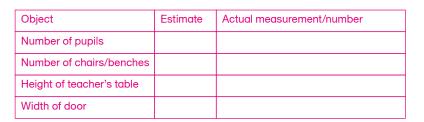
Remind them that they should make their best estimate but shouldn't change it if they find they are not correct when they measure the lines.

Plenary

Whole class teaching

Ask the pupils to say how close to the correct measurement their estimate was.

Ask them to compare answers to check they are correct.







Numeracy lesson plans **Primary 3**

Term 2 **Involving pupils in** their learning

Week 13 **Metres and** centimetres Day 5

Metres and centimetres

Learning outcomes

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

Add three-digit numbers.

Measure in metres and centimetres and record the measurement.

Teaching aids

Before the lesson:

Have ready a metre ruler, with the centimetres clearly marked, for each pair.

Have ready a small centimetre ruler for each pair.

Have ready some large blank paper for each group to draw and write on.

Daily practice

Whole class teaching

New Method

minutes | Mathematics 3

Ask the pupils to complete New Method Mathematics 3. page 29, questions 16-20 using a number line.

Ask them to write the sum as a horizontal sum first and then draw a number line to answer the questions, eg: 552 + 346 =







25 minutes 10 minutes

Introduction

Main activity

Plenary

Whole class teaching

Ask.

'Can someone tell me what we do when we estimate a length?'

Ask:

"Which two units of measurement have we been using this week?" (Metres and centimetres)

'Which is the largest unit of measurement?'

'Which would we use to measure the length of the classroom?'

'Which would we use to measure the width of a book?'

Group task

Give each group a large sheet of paper, and tell them they will need both their metre rulers and centimetre rulers.

Explain that they are going to measure some objects and draw a table to record their measurements.

Write the following list on the chalkboard: Length of the book Width of the classroom Width of your chair seat Length of your table

Tell the groups to draw a table on the back of their paper like the ones they have been completing all week. Remind them to think carefully which objects they will measure in metres and which they will measure in centimetres.

Ask them to complete their table together.

Whole class teaching

Ask each group to show the rest of their class their tables and then display them in the classroom.









Numeracy lesson plans Primary 3

Term 2
Involving pupils in their learning

Week 14
Working with
metres and
centimetres
Day 1

Measuring in metres and centimetres

Learning outcomes

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

Subtract three-digit numbers.

Measure in centimetres.

Teaching aids

Before the lesson:

Have ready a centimetre and a metre ruler for each group.

Have ready a large sheet of blank paper for each group.

minutes

Daily practice

Whole class teaching

Give the pupils the following sums to answer using a number line:

162 - 140 =

471 - 236 =

489 - 143 =

237 - 186 =

818 – 191 =

Walk around the room and help pupils who are finding it difficult.





25 minutes

10 minutes

Introduction

Main activity

Whole class teaching

Ask,

'Show me the length, width and height of your table.'

Ask the pupils to tell you something they learned about measurement the previous week.

Group task

Give each group a metre ruler and a small centimetre ruler. Ask them to tell you how many centimetres there are in a metre (100).

Ask them to measure the length of the classroom in centimetres (using the metre ruler, not the small ruler).

Remind them that the easiest way is to count a Hundred for each metre they measure.

Ask them to record their measurement in centimetres, eg: 750cms.

Ask them to measure the following in centimetres and record their answers in a table:

Width of the classroom Height of the window Width of the door Height of the teacher's table

Plenary

Whole class teaching

Ask groups to report their measurements back to the rest of the class.





Numeracy lesson plans Primary 3

Term 2
Involving pupils in their learning

Week 14
Working with
metres and
centimetres
Day 2

Measuring in metres and centimetres

Learning outcomes

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

Subtract three-digit numbers.

Measure in metres and centimetres and record those measurements in a table.

Teaching aids

Before the lesson:

Have ready metre rulers and centimetre rulers for each group.

Have ready a large sheet of blank paper for each group.

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

Daily practice

Pair task

minutes

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

Ask them to each choose three numbers.

Tell one member of each pair to make the largest number they can with their numbers.

Tell the other member of each pair to make the smallest number they can with their numbers.

Tell pupils to subtract the smallest number from the largest number.

Ask them to repeat this process four or five times.





Ask the pupils to record

example below.

this in the correct place on

their table as shown in the

Introduction

Whole class teaching

Ask.

'How did you measure in centimetres yesterday?'

Remind the pupils that instead of counting all the centimetres separately they counted each metre length as 100 because they know that one metre is the same as 100cms.

Ask them to find the tables recording their measurements from yesterday.

Ask them to repeat the measurements.

Explain that this time they are going to measure in metres and centimetres and record it on the table.

Ask them to make an extra column in their table headed 'metres and centimetres', so their table should look like the one below, with the 'centimetres' column already completed.

Main activity

Group task

Tell the groups to measure in metres, using their metre ruler, and write down the number of full metres.

If the final measurement is not a full metre they should measure it in centimetres.

This means they will have a measurement that is written in metres and centimetres, eg: 7 metres 50 centimetres or 7m 50cms.

Plenary

Whole class teaching

Tell the pupils to compare the two columns where they have recorded the measurements in centimetres and then in metres and centimetres.

Ask if there is any connection between the numbers.

	Centimetres	Metres and centimetres
Width of the classroom	750cms	7m 50cms
Height of the window		
Width of the door		
Height of the teacher's table		



Numeracy lesson plans Primary 3

Term 2
Involving pupils in their learning

Week 14
Working with
metres and
centimetres
Day 3

Recording measurements

Learning outcomes

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

Subtract three-digit numbers.

Measure in metres and centimetres.

Record measurements in a table.

Teaching aids

Before the lesson:

Have ready metre rulers and centimetre rulers for each pair.

Daily practice

minutes

Whole class teaching

Give the pupils the following sums to do, in any way they can:

521 - 294 =

232 - 118 =

362 - 171 =

481 - 300 =

Ask some pupils to tell you how they answered the sums.









25 minutes 10 minutes

Introduction

Whole class teaching

Ask the pupils if they can remember what they learned on Day 2 about metres and centimetres.

Tell the position following:
Length of

Explain that sometimes it is easier to write a measurement in centimetres and sometimes it is easier to write a measurement in metres and centimetres.

Main activity

Pair task

Tell the pairs to measure the following:

Length of their arm
Width of their foot
Height to the top of the
window in the classroom
Length of two desks/tables
joined together
Length of the school
building they are in

Ask them to record their measurements on a table in centimetres, and in metres and centimetres.

Plenary

Whole class teaching

Ask if anyone found an easy way of converting/changing centimetres to metres and centimetres.

Explain that if they look at the digit in the Hundreds column when they have measured in centimetres, that will tell them how many metres there are in the measurement.

The digits in the Tens and Units columns will tell them how many centimetres, eg:

HTU

234cms can be written as 2m 34cms.

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Lesson

Numeracy lesson plans **Primary 3**

Term 2 **Involving pupils in** their learning

Week 14 **Working with** metres and centimetres Day 4

title

Converting centimetres into metres

Learning outcomes

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

Subtract Hundreds from a threedigit number.

Convert centimetres into metres and centimetres.

Teaching aids

Before the lesson:

Read New Method Mathematics 3, page 89, questions 7—11.

minutes

Daily practice

Whole class teaching

Write the following sums one at a time on the chalkboard and ask the pupils to answer them without using pencil or paper:

973 - 100 =

973 - 200 =

973 - 300 =

973 - 400 =

973 - 500 =

973 - 600 =

973 - 700 =

973 - 800 =

Write down the answers as pupils say them and ask if anyone can notice a pattern.

Ask if anyone can tell you why the numbers have that pattern.









New Method Mathematics 3

25 minutes New Method Mathematics 3 10 minutes

Introduction

Whole class teaching

Remind the pupils that 1 metre = 100 centimetres.

Ask them if they can remember what they learned on Day 3 about converting centimetres into metres and centimetres.

Remind them that if they look at the centimetres the number of Hundreds will tell them how many metres.

Ask,

'Can you tell me why?'
(There are 100 centimetres in a metre)

Go through the examples at the top of New Method Mathematics 3, page 89 with the class.

Main activity

Pair task

Ask the pupils to complete New Method Mathematics 3, page 89, questions 7—11 in their exercise books.

Plenary

Whole class teaching

Ask the pupils to share their work and see who has understood it.





into centimetres

Numeracy lesson plans Primary 3

Term 2
Involving pupils in their learning

Week 14
Working with
metres and
centimetres
Day 5

Converting metres Learning outcomes

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

Add and subtract three-digit numbers.

Convert metres and centimetres into centimetres.

Teaching aids

Before the lesson:

Write the daily practice calculations on the chalkboard.

Have ready a metre ruler and a centimetre ruler for each pair.

15 minutes

Daily practice

Whole class teaching

Ask pupils to complete the following calculations: 145 + 253 = 674 - 431 =

Ask pupils to explain how they got the answers.







25 minutes New Method Mathematics 3

10 minutes

Introduction

Main activity

Pair task

Give each pair a centimetre ruler and a metre ruler.

Ask them to write down the number of centimetres there are in the following:

- 1 metre = (100cms)
- 2 metres = (200cms)
- 3 metres
- 4 metres
- 5 metres
- 6 metres
- 7 metres
- 8 metres
- 8 metres
- 9 metres 10 metres

Share their answers and check that they are correct.

Individual task

Explain to the class that they can change metres and centimetres back to centimetres by using their knowledge of metres and centimetres and Hundreds, Tens and Units, eg: 'How many centimetres are there in 2m 40cms?'

Explain that to get that answer you need to expand the metres and then put the number together, eg: 2m 40cms = 200 + 40

= 240cms

Ask the class,

'How many centimetres

are there in:

3m 20cms

2m 50cms

5m 43cms?'

Pair task

Ask pupils to complete New Method Mathematics 3, page 89, questions 12—16.

Go through the answers with them and check they are correct.

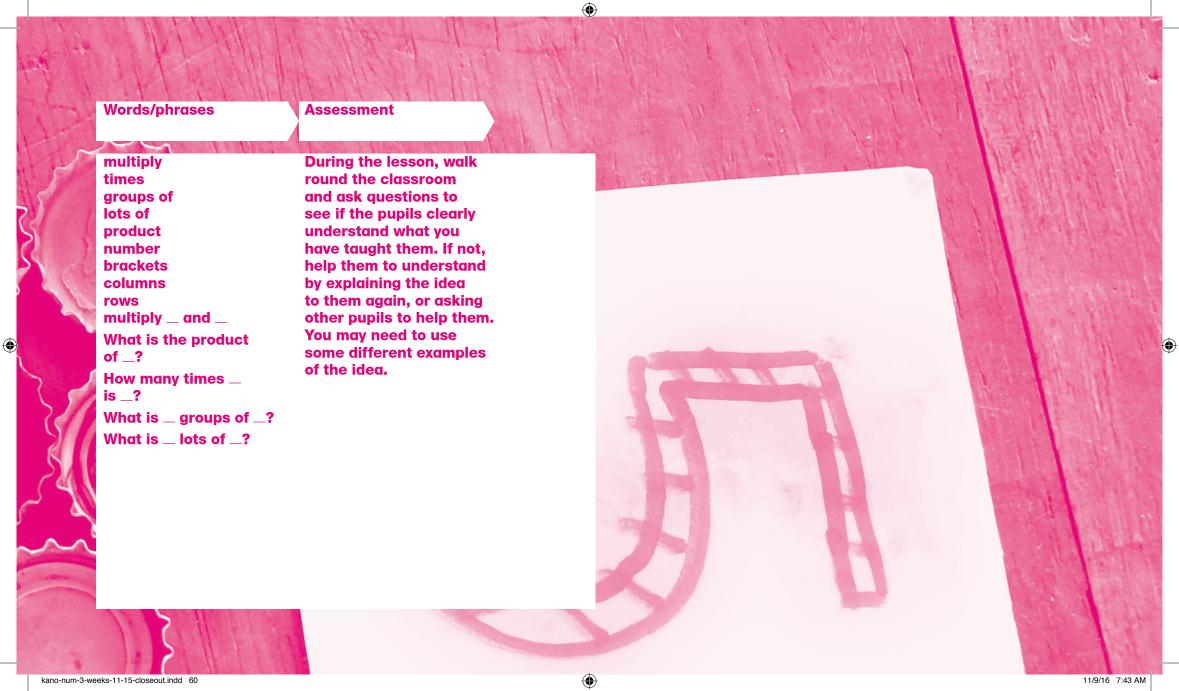
Plenary

Whole class teaching

Ask each pupil to tell you one thing they have learned about measuring during the past two weeks.









Numeracy lesson plans Primary 3

Term 2
Involving pupils in their learning

Week 15
Multiplying
two-digit numbers
by single digit
numbers
Day 1

Revisiting multiplication of single digit numbers

Learning outcomes

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

Know different terms for multiplication.

Multiply single digit numbers using repeated addition.

Teaching aids

Before the lesson:

Have ready a set of large flash cards with the following questions:

Multiply _ and _

What is the product of __?

What is _ times _?

What is groups of __?

What is __ lots of __?

Have ready a set of number cards from 1—25 for each pupil.

minutes

Daily practice

Whole class teaching

Show the pupils the flash cards and read them out, putting numbers in the spaces, eg:

'Multiply 2 and 3.'

'What is the product of 4 and 2?'

'What is 5 times 3?'

'What is two groups of 2?'

'What is three lots of 1?'

Put the number cards 1—5 on the table and ask a pupil to come out and pick two.

Tell them to hold up the numbers, while another pupil reads the question flash card, inserting those numbers in the correct places.

Ask pupils to show you the answer to each question by holding up their number cards.

Repeat with different numbers.



25 minutes 10 minutes

Introduction

Main activity

Whole class teaching

Ask the pupils to remind you how to do the following sum using a number line, 6 x 7 =

As they explain, work it through on the chalkboard with them.

Whole class teaching

Explain to the pupils that they are going to learn another way of doing multiplication which will be easier when the sums they are doing get more difficult.

Draw the table below on the chalkboard and ask the pupils to count the number of squares.

Explain that a table is easier to understand if you break it up into rows and columns. The rows go across and the columns go down.

row

Ask them.

'How many rows?' (3)
'How many columns?' (2)

Tell them that this can be written as $3 \times 2 = 6$

Explain that they can multiply the rows by the columns and they will get the same answer as counting the squares.

Repeat this for the table below.

Pair task

Tell pupils to work in pairs and repeat what you have just done on the chalkboard, with the following pairs of numbers:

- 4 columns 2 rows
- 3 columns 3 rows
- 2 columns 3 rows
- 5 columns 2 rows
- 3 columns 5 rows

Explain that they should draw the squares in their exercise books to help them.

Tell them to check that the answer to their sums and the number of squares are the same.

Plenary

Whole class teaching

Ask some pupils to share what they have learned and demonstrate to the rest of the class how they got their answers.





Numeracy lesson plans Primary 3

Term 2
Involving pupils in their learning

Week 15
Multiplying
two-digit numbers
by single digit
numbers
Day 2

Multiplying single digit numbers

Learning outcomes

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

Multiply single digit numbers from memory.

Multiply two-digit numbers by a single digit number.

Teaching aids

Before the lesson:

Read through this lesson's instructions carefully and practise using this method of multiplication so that you understand it.

15 minutes

Daily practice

Group task

Give each group a number from 1—5 and ask them to multiply that number by all numbers from 1—10, eg:

2 x 1 =

 $2 \times 2 =$

 $2 \times 3 =$

 $2 \times 4 =$

Ask them to write each sum in their exercise books.





Introduction

Main activity

Whole class teaching

Draw a table on the chalkboard as you did vesterday.

Ask the pupils to show you the columns and the rows.

Ask them:

'How many columns?' 'How many rows?'

Ask pupils to tell you how to do the following sum by drawing a table, $5 \times 3 =$

Whole class teaching

Explain that you are going to show them how to multiply a two-digit number by a single digit number.

Write the following sum on the chalkboard. 11 x 2 =

Explain that they could draw a table or a number line to help them do the multiplication, but when the sum gets more difficult it will take too long to use those methods so you are going to show them another way.

First of all they should expand the number 11. 11 = 10 + 1

Explain that they then need to multiply both numbers by 2.

Tell them that it can get confusing so to help them they should draw brackets around each sum as follows: $(10 \times 2) = 20$

$$(1 \times 2) = 2$$

Explain that they still haven't finished the sum as they need to add the answers together, 20 + 2 = 22

and write the completed sum,

 $11 \times 2 = 22$

Repeat for the following sum:

 $12 \times 3 = 10 + 2 \times 3$

Which should be written as:

$$(10 \times 3) = 30$$

$$(2 \times 3) = 6$$

$$30 + 6 = 36$$

$$12 \times 3 = 36$$

Pair task

Leave the sum on the chalkboard and ask pupils to follow the steps to complete these sums:

$$14 \times 5 =$$

Plenary

Whole class teaching

Ask five pupils to share with the rest of the class what they have learned and how they did their sums using the chalkboard.





Numeracy lesson plans Primary 3

Term 2
Involving pupils in their learning

Week 15
Multiplying
two-digit numbers
by single digit
numbers
Day 3

Multiplying two-digit numbers by single digit numbers

Learning outcomes

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

Multiply single digit numbers from memory.

Multiply two-digit numbers by a single digit number.

Teaching aids

Before the lesson:

Have ready a set of number cards from 1—100.

minutes

Daily practice

Group task

Give each group a set of cards between 1 and 100, eg: Group 1 (3 to 28) Group 2 (29 to 40) Group 3 (41 to 61)

Call out a number between one and five and ask each group to place their lowest number card on the table.

Ask them to add on the number you have just given them until they have finished all their numbers, eg: If you call out the number five, group 2 would lay these cards on the table, 29, 34, 39.

Repeat, calling out different numbers each time.







25 minutes 10 minutes

Introduction

Whole class teaching

Write the following sums on the chalkboard and ask the pupils to complete them in the way that they learned on Day 2:

13 x 5 =

11 x 6 =

14 x 5 =

When they have completed the sums, ask the class to tell you their answers.

Main activity

Individual task

Ask the pupils to complete the following calculations:

12 x 6 = 14 x 4 =

17 x 3 =

24 x 2 =

Sit with any pupils who are struggling to understand how to do the sums and help them.

Go through each sum step by step with them.

Once a pupil has understood the method they can carry on alone.

Plenary

Whole class teaching

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





Numeracy lesson plans Primary 3

Term 2
Involving pupils in their learning

Week 15
Multiplying
two-digit numbers
by single digit
numbers
Day 4

Multiplying two-digit numbers by single digit numbers

Learning outcomes

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

Multiply single digit numbers from memory.

Multiply two-digit numbers by single digit numbers.

Teaching aids

Before the lesson:

Have ready two sets of number cards from 1—100.

Read New Method Mathematics 3, page 64, questions 34—40.

Daily practice

Pair task

minutes

Repeat the activity from Day 3, giving number cards to pairs.







minutes

New Method Mathematics 3

10 minutes

Introduction

Pair task

it well.

12 x 2 =

14 x 3 =

 $22 \times 4 =$

Pair the pupils who are

struggling to multiply single

digit and two-digit numbers

with those who understand

Write the following sums

the pairs to work out the

answers together:

on the chalkboard and ask

Main activity

Pair task

In the same pairs, ask the pupils to complete New Method Mathematics 3. page 64, questions 34—40.

Plenary

Whole class teaching

Read out the following sums one at a time and ask pupils to quickly tell you the answers, without using pencil and paper to work them out:

- $4 \times 5 =$
- $2 \times 3 =$
- $5 \times 5 =$
- $3 \times 3 =$
- $2 \times 2 =$
- $4 \times 4 =$
- $2 \times 10 =$
- $4 \times 10 =$





Lesson

Numeracy lesson plans

Primary 3

Term 2

Involving pupils in their learning

Week 15 Multiplying two-digit numbers by single digit numbers Day 5

title

Word problems

Learning outcomes

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

Multiply single digit numbers from memory.

Multiply two-digit numbers by a single digit number.

Teaching aids

Before the lesson:

Write the following sequences of numbers on the chalkboard:

2, 4, , 8, 10

3, 6, 9, 12, , 18, 21

8, 12, 16, , 24

12, , 16, 18,

7, 10, , 16

Have ready the flash cards from Day 1.

minutes

Daily practice

Whole class teaching

Read out the first number sequence on the chalkboard and ask pupils to help you find the missing number.

Ask them to work out the missing numbers for each sequence of numbers on the chalkboard.







25 minutes 10 minutes

Introduction

Whole class teaching

Flash the cards with different word questions for multiplication and ask the pupils to read them.

Put the cards face down on the floor and ask one pupil to come out, choose a card, and read it out to the class.

Ask individual pupils to make up a sum using that phrase for the rest of the class to answer.

Main activity

Group task

Give each group a flash card and ask them to make up three sums using the multiplication term on that card and write their sums on the back of the card.

Ask them to pass the card on to the next group who should also write three sums (not the answers) on the back.

Continue until each group has had each card.

The cards should now be back with the first group.

Ask them to work together to answer all the sums on the card and write the answers on the back.

Plenary

Whole class teaching

Ask the pupils to tell you everything they have learned about multiplication this week.





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.

