Numeracy lesson plans
Primary 5, term 2, weeks 11—15
Decimals, measurements, perimeter and area of shapes

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Introduction

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

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

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

Nneka Onuora
Executive Chairman,
Enugu State Universal
Basic Education Board

Foreword

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

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

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

Professor Uche Eze
Honourable Commissioner
for Education Enugu State

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

How

How?

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

Learning expectations

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

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

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

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

Assessment

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

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

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

Daily practice

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

Introduction

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

Main activity

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

Plenary

Finishes the lesson with different ways of reviewing learning.

Weekly page

Primary 5, numeracy lesson plans

Week 11:

Numbers

Words/phrases

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

backwards
forwards
thousands
ten thousands
digits
greater than
less than

Learning expectations

By the end of the week:

All pupils will be able to:
Multiply whole numbers by 10 and 100.

Most pupils will be able to:
Identify place value and expand five-digit numbers.

Some pupils will be able to:
Write any given number in words and digits.

Assessment task

Instructions:

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

1
Write down two different five-digit numbers.

2
Write the correct headings (Tth Th H T U) above the numbers.

3
Multiply these numbers by 10: 34, 71

Multiply these numbers by 100: 26, 58

Multiply these numbers by 100: 45, 19

4
Complete and explain the following pattern:

$3 \times 4 = 12$
$30 \times 4 =$
$300 \times 4 =$
$3000 \times 4 =$

Example of a pupil's work

This pupil can:

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

Multiply whole numbers by 10, 100 and 1000.

Complete a pattern of numbers that increases by x 10, x 100 and x 1000 each time.

Tth Th H T U   Tth Th H T U
2 4 6 1 5   6 7 3 8 4

$10 \times 34 = 340$
$10 \times 71 = 710$
$100 \times 26 = 2600$
$100 \times 58 = 5800$
$1000 \times 45 = 45000$
$1000 \times 19 = 19000$

$3 \times 4 = 12$
$30 \times 4 = 120$
$300 \times 4 = 1200$
$3000 \times 4 = 12000$

Week 11:
Numbers

Day 1:
Place value

Learning outcomes

Preparation

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

Recall the 8 times table quickly.
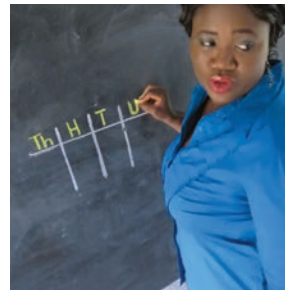
Identify the place value of four-digit numbers.

Before the lesson:

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

Copy the place value chart, shown opposite, on to the chalkboard.

Read How? Guess my number, as shown below.

How?
Guess my number

Draw a place value chart on the chalkboard.

Choose a pupil to write a four-digit number on a piece of paper and keep it secret.

Choose some pupils to say four-digit numbers and write them on the chalkboard.

If any digits match part of the secret number, add them to the chart.

Ask the pupils to continue until they guess the secret number.

Daily practice

Whole class teaching

Ask the pupils to stand in a circle and count forwards in eights, starting at zero (0).

Ask them to count backwards in eights, starting at 96.

Ask some individual pupils questions from the 8 times table.

Ask the following questions:

'If you know what 3 x 2 is, what is 30 x 2?'

'If you know the answers to 3 x 2 and 30 x 2, what is 300 x 2?'

Introduction

Whole class teaching

Write the following numbers (with the underlined digits) on the chalkboard:
5632
2341
5764
4782
1047

Write, 'Th H T U' on the chalkboard.

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

Ask the pupils to write the numbers in the correct place value and say the numbers, eg: five thousand six hundred and thirty-two.

Main activity

Pair task

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

Ask them to put the cards face down.

Tell the pairs to turn over four cards and write all the numbers that they can make with those numbers.

Remind them to say the numbers as they make them.

Ask the pairs to copy the place value chart from the chalkboard into their exercise books.

Tell them to use the following numbers to complete the chart:
1094
3676
4978
8465
6930

Place value chart

	Th	**H**	**T**	**U**	**Expand**
5632	5	6	3	2	5000 + 600 + 30 + 2
1094					

Plenary

Whole class teaching

Play How? Guess my number, as shown left.

When the pupils have played this several times, they can play in small groups.

Week 11: Numbers

Day 2: Place value to tens of thousands

Learning outcomes

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

Recall the 9 times table quickly.

Identify the place value of five-digit numbers.

Preparation

Before the lesson:

Copy the place value chart, shown opposite, on to the chalkboard.

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

Read How? Tens of thousands, as shown below.

How? Tens of thousands

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

Ask them to choose five cards.

Tell them to make five-digit numbers with the cards.

Show the pairs how to write the numbers in a place value chart.

Tell them to write the chart in their exercise books and expand the numbers.

| Daily practice | Introduction | Main activity | Plenary |

Daily practice

Whole class teaching

Ask the pupils to stand in a circle and count forwards in nines, starting from 0.

Ask the pupils to count backwards in nines, starting from 108.

Ask individual pupils questions from the 9 times table.

Ask, 'If you know that 3 x 9 = 27, what are the answers to the following?'
30 x 9 =
300 x 9 =
30 x 90 =
300 x 90 =

Introduction

Whole class teaching

Remind the pupils that yesterday they identified the place value of four-digit numbers.

Write the following on the chalkboard:
'TTh Th H T U'.

Remind the class that:
Units x Ten = Tens
Tens x Ten = Hundreds
Tens x Hundred = Thousands

Ask, 'What is the next column on the place value chart?' (Tens of Thousands, TTh)

Write, '36426' under the correct place value headings and ask the pupils to say the number, then repeat with:
24548, 38971, 82792.

Main activity

Whole class teaching

Teach How? Tens of thousands, as shown left.

Use the chart below to explain to the class that with the five cards they have chosen they can make many five-digit numbers, eg: 41296, 64921, 91264.

Place value chart

	TTh	Th	H	T	U	Expand
41296	4	1	2	9	6	40000 + 1000 + 200 + 90 + 6
64921						
91264						

Remind the pupils to say the numbers they have made to their partner, eg: forty one thousand, two hundred and ninety-six.

Repeat with five new cards.

Plenary

Whole class teaching

Play guess my number, as shown in Day 1 (yesterday).

When the pupils have played this several times, they can play in small groups.

Week 11:
Numbers

Day 3:
Multiplying by 10, 100 and 1000

Learning outcomes

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

Understand the pattern in the 9 times table.

Multiply whole numbers by 10, 100 and 1000.

Preparation

Before the lesson:

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

Copy the multiplication calculations from today's main activity, shown right, on to the chalkboard.
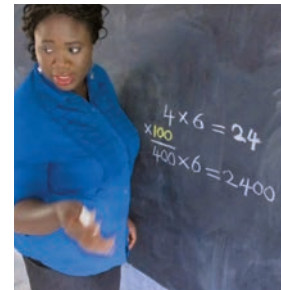
Read How? Multiply by 10, 100, 1000, as shown below.

How? Multiply by 10, 100, 1000

Ask the pupils to choose two number cards and multiply the numbers.

Multiply one side by 10.

Multiply one side by 100.

Multiply one side by 1000.

Explain the pattern: the multiplication increases by 10, so does the answer.

Daily practice

Whole class teaching

Explain that the 9 times table can be tricky.

Write the following sums on the chalkboard and ask the pupils to complete the pattern:

09 = 9 x 1

18 = 9 x 2

27 = ☐ x ☐

36 = ☐ x ☐

45 = 9 x 5

54 = ☐ x ☐

63 = ☐ x ☐

72 = ☐ x ☐

81 = ☐ x ☐

90 = ☐ x ☐

Look together at the pattern and discuss.

Introduction

Whole class teaching

Remind the pupils of the following:

$4 \times 6 = 24$

$40 \times 6 = 240$ (x 10)

$400 \times 6 = 2400$ (x 100)

$4000 \times 6 = 24000$ (x 1000)

Ask, 'What is happening to the answer in each of these sums?'

Explain that when we multiply by Tens, Hundreds or Thousands then the answer will be 10, 100 or 1000 times bigger.

Repeat with:

$3 \times 9 =$

$4 \times 7 =$

Main activity

Individual task

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

☐ x 8 = 24

☐ x 8 = 240

☐ x 8 = 2400

☐ x 8 = 24000

☐ x 9 = 36

☐ x 9 = 360

☐ x 9 = 3600

☐ x 9 = 36000

Ask the pupils to complete the patterns for the following sum in their exercise books:

☐ x 7 = 21

Whole class teaching

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

Teach How? Multiply by 10, 100, 1000, as shown left.

Repeat the pattern with two new cards.

Plenary

Whole class teaching

Play multiplication bingo, as shown in Week 4, Day 2, with the 9 times table.

Week 11:
Numbers

Day 4:
Numbers in words and digits

Learning outcomes

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

Recall the 7, 8 and 9 times tables quickly.

Read and write numbers in words and digits.

Preparation

Before the lesson:

Have ready the number words chart used in Week 1, Day 4.

Read How? Read and write numbers to 10000, as shown below.

How?
Read and write numbers to 10000

Display the number word chart and choose some pupils to read the number words.

Write some five-digit numbers on the chalkboard.

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

Choose some pupils to read the five-digit numbers in words on the chalkboard.

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

| 15 minutes | Game | 10 minutes | | 20 minutes | **How** | Number words chart | | 15 minutes | Game |

Daily practice	**Introduction**	**Main activity**		**Plenary**

Whole class teaching

Play the clock times tables game with the 7, 8 and 9 times tables, as shown in Week 3, Day 2.

Whole class teaching

Ask the pupils to stand in a circle and count round the circle in 100s and then in 1000s.

Write the following numbers on the chalkboard:
4539
9371
23645
16593

Choose some pupils to read the numbers.

Choose some pupils to write the TTh, Th, H, T and U place values above the numbers.

Whole class teaching

Look together at the number words chart from Week 1, Day 4.

Teach How? Read and write numbers to 10000, as shown left.

Individual task

Tell the pupils to write the following numbers in words in their exercise books:
4539
9371
23645
16593

Remind them to use the number word chart.

Whole class teaching

Play guess my number, as shown in Week 11, Day 1.

Week 11:
Numbers

Day 5:
Using < and >

Learning outcomes

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

Recall the 7, 8 and 9 times tables quickly.

Use the symbols < and > between four- and five-digit numbers.

Preparation

Before the lesson:

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

Write the pairs of numbers from the main activity, shown right, on the chalkboard.

Read How? Less then, greater than, as shown below.

How? Less than, greater than

Ask the pupils to read the numbers and say them correctly.

Ask, 'Which is the greater number in each pair?' and 'How do you know that?'

Explain that the smallest part of the sign points to the smallest number.

Explain that the largest part of the sign points to the largest number.

Ask the pupils to hold up the correct sign to go between the numbers.

Daily practice | Introduction | Main activity | Plenary

Whole class teaching

Ask the pupils to stand in a circle.

Tell them to count around the circle forwards in nines.

If pupils hesitate for too long or give an incorrect number, they sit down.

Play until only two pupils are left standing.

Repeat with smaller groups and the 7 and 8 times tables.

Whole class teaching

Write the following on the chalkboard:

2578 ☐ 3472

98457 ☐ 23412

Teach How? Less than, greater than, as shown left.

Whole class teaching

Give out the < and > cards.

Write more pairs of numbers on the chalkboard:

4391 ☐ 6828

56483 ☐ 34592

90761 ☐ 90671

Ask the pupils to show the correct symbol to go between the numbers, eg: less than < or greater than >.

Pair task

Ask the pairs to copy the following pairs of numbers into their exercise books and put < or > between them:

2344 ☐ 4763

3462 ☐ 4504

32395 ☐ 19467

87367 ☐ 78364

27930 ☐ 65841

Pair task

Give each pair a set of <, > and 0—9 number cards and tell them to put the number cards face down.

Tell one pupil in each pair to choose five cards and make a five-digit number.

Their partner should make a five-digit number with the remaining cards.

Tell the pairs to place their < or > card between the numbers.

Tell the pairs to repeat the exercise with other numbers.

Weekly page

Primary 5, numeracy lesson plans

Week 12: Decimals

Words/phrases

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

digits
forwards
backwards
decimals
difference
sum

Learning expectations

By the end of the week:

All pupils will be able to:
Solve simple addition and subtraction calculations.

Most pupils will be able to:
Solve addition and subtraction calculations involving decimal numbers.

Some pupils will be able to:
Solve word problems involving addition and subtraction.

Assessment task

Example of a pupil's work

Instructions:

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

1
Solve these sums using the vertical method:
62.13 + 36.45 =
46.27 + 21.54 =

2
Solve these sums using the vertical method:
3.86 – 2.54 =
9.45 – 4.26 =

This pupil can:

Use the vertical method to add four-digit decimal numbers, including carrying hundredths.

Use the vertical method to subtract four-digit decimal numbers, including renaming tenths.

$62.13 + 36.45 =$

$$+\begin{array}{r} 62.13 \\ 36.45 \\ \hline 98.58 \end{array}$$

$46.27 + 21.54 =$

$$+\begin{array}{r} 46.27 \\ 21.54 \\ \hline 67.81 \end{array}$$

$3.86 - 2.54 =$

$$-\begin{array}{r} 3.86 \\ 2.54 \\ \hline 1.32 \end{array}$$

$9.45 - 4.26 =$

$$-\begin{array}{r} 9.\overset{3}{4}{}^{1}5 \\ 4.26 \\ \hline 5.19 \end{array}$$

Week 12:
Decimals

Day 1:
Addition with decimals

Learning outcomes	Preparation

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

Add two-digit numbers quickly.

Add four-digit decimal numbers.

Before the lesson:

Prepare 20 question sum cards involving adding two-digit numbers (eg: 39 + 13 =) and 20 answer cards (eg: 52).

Copy the decimal and fraction chart, shown opposite, on to the chalkboard and read How? Fractions and decimals, as shown below.

How? Fractions and decimals

Ask, 'What are the numbers to the right of the Units?' (tenths and hundredths).

Invite some pupils to change decimals to fractions (tenths) on the chalkboard.

Invite some pupils to help you change decimals to fractions (hundredths) on the chalkboard.

Choose some pupils to say decimal numbers, eg: '346.58'.

Ask a pupil to identify the value of each digit.

Daily practice

Whole class teaching

Explain how useful it is to be able to quickly add numbers in your head.

Draw the addition squares, shown below, on the chalkboard and tell the pupils to add the numbers across in the first square:
(5 + 7, 4 + 9) and down
(5 + 4, 7 + 9).

Add the sums together:
(12 + 13) (9 + 16) to find the total sum (25).

Look at the second addition square with the pupils.

Addition squares

5	7	
4	9	

8	10	
11	15	

Introduction

Whole class teaching

Explain to the pupils that we know the place value of whole numbers.

Remind them that fractions and decimals are both part of a whole.

Teach How? Fractions and decimals, as shown left, using the decimal and fraction chart on the chalkboard.

Ask the pupils to write the following numbers as fractions: 452.6, 34.81

Decimal and fraction chart

	tenths	fraction
1	0.1	$\frac{1}{10}$
2	0.2	$\frac{2}{10}$
10		$\frac{10}{10}$

Main activity

Pair task

Look together at the following calculation:
13.252 + 4.347 =

Write the calculation in the vertical form:

```
  T U . t  h th
  1 3 . 2 5 2
+    4 . 3 4 7
```

Write the following calculations on the chalkboard and tell the pupils to complete them in their exercise books:
11.416 + 0.463 =
6.808 + 53.16 =
7.382 + 0.795 =

Remind them to write the place values 'T U.t h th' above the calculations.

Plenary

Whole class teaching

Play find a friend using the question and answer sum cards.

Week 12:
Decimals

Day 2:
Addition with decimals

Learning outcomes

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

Add two-digit numbers quickly.

Add four-digit decimal numbers.

Preparation

Before the lesson:

Have ready the question and answer cards from Day 1 (yesterday).

Copy the three new addition squares, shown opposite, on to the chalkboard.

Read How? Decimal addition, as shown below.

How? Decimal addition

Look together at the calculation on the chalkboard and ask a pupil to read it.

Write the calculation vertically.

Invite a pupil to calculate the answer and explain each step.

Daily practice | Introduction | Main activity | | Plenary

Individual task

With the class, look at one of the addition squares on the chalkboard.

Remind the pupils how to add the numbers across and down to find the total sum.

Give the pupils 5 minutes to complete the squares and find the total sums.

Addition squares

13	10	
25	34	

17	22	
15	33	

19	15	
28	13	

Whole class teaching

Teach How? Decimal addition, as shown left.

Individual task

Ask the pupils to complete the following calculations in their exercise books:
9.782 + 8.467 =
2.765 + 3.218 =
4.345 + 5.324 =

Remind the pupils to write the calculations vertically.

Remind them to write 'U.t h th' place values above the calculations.

Remind them that the rules for crossing boundaries are the same as when adding whole numbers.

When most of the pupils have finished, tell the pupils to exchange books with their partner.

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

Whole class teaching

Play find a friend using the question and answer cards from Day 1 (yesterday).

Week 12:
Decimals

Day 3:
Subtraction
with decimals

Learning outcomes

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

Add two-digit
numbers quickly.

Subtract four-digit
decimal numbers.

Preparation

Before the lesson:

Write the calculations from today's
main activity on the chalkboard.

Copy the six new addition squares,
shown opposite, on to the chalkboard.

Read How? Decimal subtraction,
as shown below.

How?
Decimal subtraction

Look together at
the calculation
on the chalkboard
and ask a pupil
to read it.

Write the calculation
vertically.

Invite a pupil to
write in the place
value above the
numbers.

Invite a pupil to
calculate the
answer and explain
each step.

Daily practice

Individual task

With the class, look at one of the addition squares on the chalkboard.

Remind the pupils how to add the numbers across and down to find the total sum.

Give the pupils 10 minutes to complete the squares and find the total sums.

Addition squares

11	25	
42	30	

25	17	
12	33	

41	17	
19	32	

29	12	
15	35	

31	14	
26	45	

22	36	
44	13	

Introduction

Whole class teaching

Teach How? Decimal subtraction, as shown left.

Main activity

Pair task

Ask the pairs to solve the following calculations in their exercise books:
5.23 – 3.21 =
8.469 – 4.253 =
5.42 – 1.37 =
7.636 – 3.342 =

Remind the pairs to write the calculations vertically.

Remind them to write 'U.t h th' place values above the calculations.

Remind them that the rules crossing boundaries are the same as when subtracting whole numbers.

When most of the pupils have finished, tell the pairs to exchange books with another pair.

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

Plenary

Whole class teaching

Play guess my number, as shown in Week 11, Day 1.

Week 12: Decimals

Day 4: Subtraction with decimals

Learning outcomes

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

Quickly multiply a two-digit and a three-digit number.

Subtract four-digit decimal numbers.

Preparation

Before the lesson:

Prepare the question cards from today's daily practice and keep them for tomorrow.

Have ready nine counters for each pair and a large paper circle for each group.

Read How? Multiplication bingo, as shown below.

How? Multiplication bingo

Write answers to the question cards on the chalk-board and give out the counters.

Ask the pairs to draw a 3 x 3 grid and choose nine numbers from the chalkboard.

Tell the pairs to write one number in each square.

Ask the questions from the cards. If pairs have the correct answer, they should cover it.

The first pair to cover all the numbers in their grid correctly should shout, 'Bingo!'.

| **Daily practice** | **Introduction** | **Main activity** | **Plenary** |

Whole class teaching

Teach How? Multiplication bingo, as shown left, using the following question cards:

20 x 4 =
70 x 10 =
4 x 30 =
6 x 70 =
60 x 7 =
35 x 100 =
25 x 3 =
9 x 20 =
10 x 63 =
45 x 3 =
30 x 7 =
4 x 25 =
50 x 5 =
75 x 3 =
80 x 6 =

Whole class teaching

Write '3.746 – 2.251 =' on the chalkboard.

Ask a pupil to work through the calculation, explaining what they are doing as they work out the answer.

Pair task

Write the following calculations on the chalkboard and ask the pairs to solve them in their exercise books:
4.261 – 3.151 =
6.592 – 3.271 =
2.543 – 3.436 =

Remind the pairs to write the calculations vertically.

Remind them to write 'U.t h th' place values above the calculations.

Remind the pupils that the rules crossing boundaries are the same as when subtracting whole numbers.

When most of the pupils have finished, tell the pairs to exchange books with another pair.

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

Group task

Tell the groups to write the following around the outside of their circles, like a clock face: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120.

Play clock times tables, as shown in Week 3, Day 2, with the 7 times table, working out the answers to the sums around the clock, ie: from 7 x 10 to 7 x 120.

Repeat with the 8 and 9 times tables.

Week 12:
Decimals

Day 5:
Word problems

Learning outcomes

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

Quickly multiply two-digit and three-digit numbers.

Solve addition and subtraction word problems.

Preparation

Before the lesson:

Write the answers to the bingo questions, from Week 12, Day 4 (yesterday) on the chalkboard.

Copy the word problems from today's main activity on to the chalkboard.

Read How? Solving word problems, as shown below.

How? Solving word problems

Read the word problem and ask a pupil to under-line the key words.

To find the number of children, first add together the number of men and women.

Next, subtract that answer from the total population.

Then write the answer in a sentence.

Daily practice	Introduction	Main activity		Plenary

Whole class teaching

Play multiplication bingo, as shown in Week 12, Day 4 (yesterday).

Whole class teaching

Write the following word problem on the chalkboard: 'The population of a town is 22372. There are 4897 men, 5164 women, and the rest are children. How many children are there?'

Teach How? Solving word problems, as shown left.

Remind the pupils that they have to pick out key information to solve word problems.

Whole class teaching

Work through some other word problems together, as a class:

'Mr Okon earned N40600 in January and N46300 in February. His total expenses for the two months were N23700. How much did he have left after paying his expenses?'

'A fruit seller bought 1060 oranges from one market and 2350 from another. He sold 2030 oranges. His sister sold the remaining oranges the next day. How many oranges did his sister sell?'

Pair task

Ask the pairs to answer the following word problems in their exercise books:

'A trader mixed 2250kg of yam flour with 425kg of cassava flour. 1655kg of the flour was sold on market day. How much of the flour was left?'

'A market seller started the day with N960. She sold some goods for N5470 and paid a debt of N390. How much money does she have left?'

Whole class teaching

Choose some pairs to give their answers and explain how they solved the problem.

Ask the pairs:

'What did you do first?'

'Which numbers did you add together?'

'Which numbers did you subtract?'

Ask the rest of the class if they agree with the answer. If not, go through the method as a class.

Weekly page

Primary 5, numeracy lesson plans

Week 13:

Perimeter and area

Words/phrases

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

length
breadth
width
area
distance
around
centimetres
perimeter
right-angled

Learning expectations

By the end of the week:

All pupils will be able to:
Find the perimeter of squares and rectangles.

Most pupils will be able to:
Find the perimeter and area of squares and rectangles.

Some pupils will be able to:
Find the perimeter and area of compound shapes.

Instructions:

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

1

Find the perimeter of the following rectangle.
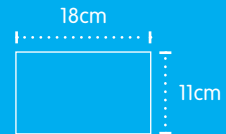
18cm

11cm

2

Find the area of the following rectangle.

16cm

23cm
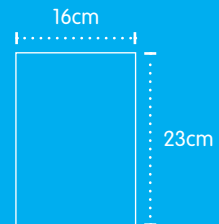
This pupil can:

Find the perimeter of a rectangle.

Find the area of a rectangle.

18cm

11cm

$18cm \times 2 = 36cm$
$11cm \times 2 = 22cm$

$$\begin{array}{r} 36 \\ + 22 \\ \hline 58 \end{array}$$

Perimeter = 58cm

16cm

23cm

$16cm \times 23cm =$

X	10	6
20	200	120
3	30	18

$$\begin{array}{r} 200 \\ 120 \\ + 30 \\ 18 \\ \hline 368 \end{array}$$

Area = 368cm²

Week 13:
Perimeter and area

Day 1:
The perimeter of shapes

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

Find patterns in multiplication.

Find the perimeter of squares and rectangles.

Before the lesson:

Have ready a 30cm ruler, a card rectangle or square and a paper circle for each group.

Copy the chart from today's main activity on to the chalkboard.

Read How? Find the perimeter, as shown below.

How? Find the perimeter

Explain that the 'perimeter' is the distance around the outside of a shape.

Show the pupils how to measure each side of the shape and record the length and breadth.

Write the formula, 'l + b x 2' (length + breadth x 2).

Invite a pupil to add l + b.

Invite a pupil to multiply the answer by 2 to show the perimeter.

Daily practice	Introduction	Main activity		Plenary

Whole class teaching

Write the following on the chalkboard for the pairs to answer:

26 x 1 =
26 x 2 =
26 x 3 =
26 x 4 =
26 x 10 =
26 x 20 =
26 x 30 =
26 x 40 =

15 x 1 =
15 x 2 =
15 x 3 =
15 x 4 =
15 x 10 =
15 x 20 =
15 x 30 =
15 x 40 =

Ask a pupil to explain the pattern.

Whole class teaching

Teach How? Find the perimeter, as shown left.

Demonstrate with another shape with the following measurements:
length = 26cm
breadth = 18.5cm

Group task

Give each group a card rectangle or square and a ruler.

Remind the pupils of the formula perimeter = length + breadth x 2 (p = l + b x 2).

Tell the pupils to measure the sides of their shape and record them in their exercise books in a chart like the one drawn on the chalkboard.

Perimeter chart

Length	Breadth	Perimeter = l + b x 2

Tell the groups to swap their shape with another group and find the perimeter of their new shape.

Then tell the groups to exchange their answers to see if they agree.

Group task

Give each group a paper circle.

Tell them to write the following around the outside of their circles, like a clock face: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120.

Play clock times tables, as in Week 12, Day 4, working out the answers to the 8 times table, from 8 x 10 to 8 x 120.

Repeat with the 4 and 7 times tables.

Week 13:
Perimeter and area

Day 2:
The area of shapes

Learning outcomes

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

Multiply two-digit by single-digit numbers.

Find the area of rectangles and squares using the formula l x b.

Preparation

Before the lesson:

Have ready the rectangles and squares from yesterday and a ruler for each group.

Copy the chart from today's main activity and the word problems from today's plenary on to the chalkboard.

Read How? Find the area of a rectangle, as shown below.

**How?
Find the area of a rectangle**

Draw a rectangle on the chalkboard.

Measure each side of the shape. Record the length and breadth.

The formula for area is length x breadth (l x b) and the answer is written as 45cm^2.

Look at another rectangle and invite a pupil to identify the calculation.

Invite a pupil to multiply l x b to find the area.

Daily practice

Introduction

Main activity

Plenary

Individual task

Write the following on the chalkboard for the pupils to answer in their exercise books:

42 x 8 =

25 x 3 =

34 x 7 =

19 x 7 =

53 x 5 =

Choose some pupils to share their answers and explain the method they used to solve the calculations.

If the class agrees, they should mark it with a small tick.

Whole class teaching

Ask the pupils to discuss their learning from yesterday.

Explain that today they are going to find the area of a shape.

Remind the pupils that area is the measurement of a surface.

Teach How? Find the area of a rectangle, as shown left.

Remind the pupils that a square is a special type of rectangle because all of its sides are equal.

Group task

Give each group a card rectangle or square and a ruler.

Remind the pupils of the formula area = length x breadth (a = l x b).

Tell the groups to measure the sides of their shape and record them in their exercise books in a chart like the one on the chalkboard.

Area chart

Length	Breadth	Area (cm²)

Tell the groups to swap their shape with another group and find the area of their new shape.

Then tell the groups to exchange their answers to see if they agree.

Pair task

Read the following word problems with the class and ask the pairs to discuss and find the answers:

'A garden is 8 metres long and 2 metres wide. What is the area of the garden?'

'A playground is 20 metres long and 15 metres wide. What is the area of the playground?'

Choose some pairs to give their answer and explain how they solved the problem.

Week 13:
Perimeter and area

Day 3:
The area of squares and rectangles

Learning outcomes

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

Multiply two-digit numbers by two-digit numbers.

Find the area of shapes using the formula l x b.

Preparation

Before the lesson:

Have ready a ruler for each pair and copy the chart from today's main activity on to the chalkboard.

Read How? Find the area, as shown below.

How? Find the area

Draw a rectangle on the chalkboard and label the sides '19cm' and '12cm'.
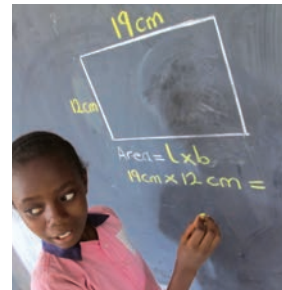
Invite a pupil to write the formula to calculate the area: l x b (19cm x 12cm).

Invite a pupil to calculate the answer.

Remind the pupils to record the answer in cm^2.

Look at another rectangle and invite a pupil to calculate the area.

| **Daily practice** | **Introduction** | **Main activity** | **Plenary** |

Individual task

Write the following on the chalkboard for the pupils to answer in their exercise books:

27 x 16 =
36 x 28 =
19 x 32 =

Choose some pupils to share their answers and explain the method they used to solve the calculations.

If the class agrees, they should mark it with a small tick.

Whole class teaching

Draw a rectangle and a square on the chalkboard.

Ask, 'Can anyone say what is special about the sides of a square? (They are the same length.)

Tell the pupils that to find the area of a square we can use the formula $a = l^2$.

Teach How? Find the area, as shown left.

Pair task

Ask the pairs to use their rulers to measure some rectangular classroom objects and find the area of the objects using the chart below.

Area chart

Object	Length	Breadth	Area
exercise book			
textbook			
table			

Remind the pupils that to find the area of a rectangle we use the formula $a = l \times b$.

Whole class teaching

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

If the class agrees, they should mark it with a small tick.

Week 13:
Perimeter and area

Day 4:
The area of compound shapes

Learning outcomes

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

Multiply two-digit numbers by two-digit numbers.

Find the area of compound shapes.

Preparation

Before the lesson:

Copy the compound shapes from today's main activity on to the chalkboard.

Read How? Find the area of a compound shape, as shown below.

How? Find the area of a compound shape
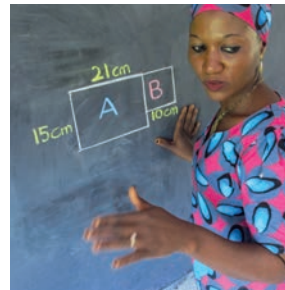
Draw a rectangle (A) and a square (B) on the chalkboard and label the sides.

Write the formula to calculate the area for each shape (l x b).

Invite a pupil to calculate the answer for each shape (A and B).

Add the answers together to find the area of the compound shape.

Remind pupils to record the answer in cm^2.

Daily practice | Introduction | Main activity | Plenary

Individual task

Write the following on the chalkboard for the pupils to answer in their exercise books:

34 x 15 =

28 x 32 =

82 x 12 =

Choose some pupils to share their answers and explain the method they used.

If the class agrees, they should mark it with a small tick.

Whole class teaching

Teach How? Find the area of a compound shape, as shown left.

Pair task

Ask the pairs to find the area of the compound shapes on the chalkboard.

Tell them to record the measurements in a chart in their exercise books as they have done earlier this week.

Remind the pupils to calculate the area of each shape, then add the two together to find the total area.

Whole class teaching

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

If the class agrees, they should mark it with a small tick.

Compound shapes

Week 13:
Perimeter and area

Day 5:
The perimeter of compound shapes

Learning outcomes

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

Recall the 7, 8 and 9 times tables quickly.

Find the perimeter of compound shapes.

Preparation

Before the lesson:

Copy the compound shapes from today's main activity on to the chalkboard.

Read How? Find the perimeter of a compound shape, as shown below.

How?
Find the perimeter of a compound shape

Draw a compound shape (A and B) on the chalkboard and label the sides.

To find the perimeter of a shape we calculate the total length around the outside.

Explain how to work out the measurements of the missing length.

Add together the measurements to find the total perimeter.
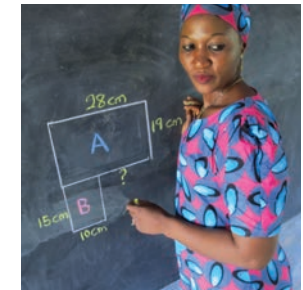
Look at another compound shape and calculate the perimeter together.

| 10 minutes | Game | 15 minutes | How | 25 minutes | Compound shapes | 10 minutes | |

Daily practice

Whole class teaching

Play multiplication bingo, as shown in Week 12, Day 4, with the 7, 8 and 9 times tables.

Introduction

Whole class teaching

Teach How? Find the perimeter of a compound shape, as shown left.

Main activity

Pair task

Ask the pairs to find the perimeter of the compound shapes on the chalkboard and record their measurements in a chart in their exercise books.

Remind the pairs to calculate the perimeter of the shapes carefully.

Plenary

Whole class teaching

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

If the class agrees, they should mark it with a small tick.

Compound shapes
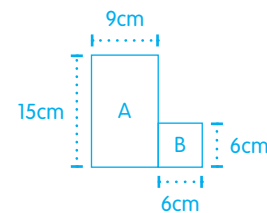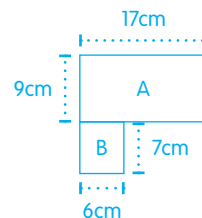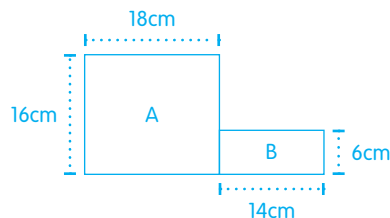
Weekly page

Primary 5, numeracy lesson plans

Week 14:

Shapes and measuring

Words/phrases

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

slope
slant
oblique
diagonal
horizontal
vertical
parallel
perpendicular
symmetry
perimeter
intersecting

Learning expectations

By the end of the week:

All pupils will be able to:
Recognise a range of different lines.

Most pupils will be able to:
Find the perimeter and area of triangles and quadrilaterals.

Some pupils will be able to:
Find the perimeter and area of compound shapes.

Assessment task

Example of a pupil's work

Instructions:

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

1
Draw the following lines one at a time, saying which one they are drawing:
vertical
horizontal
oblique
parallel
perpendicular

2
Draw two circles and label the radius on one circle and the diameter on the other circle.

3
Draw a quadrilateral and label, or explain, two of its properties.

This pupil can:

Draw examples the following lines:
vertical
horizontal
oblique
parallel
perpendicular

Draw and explain the radius and diameter of a circle.

Draw a quadrilateral and label two of its properties.
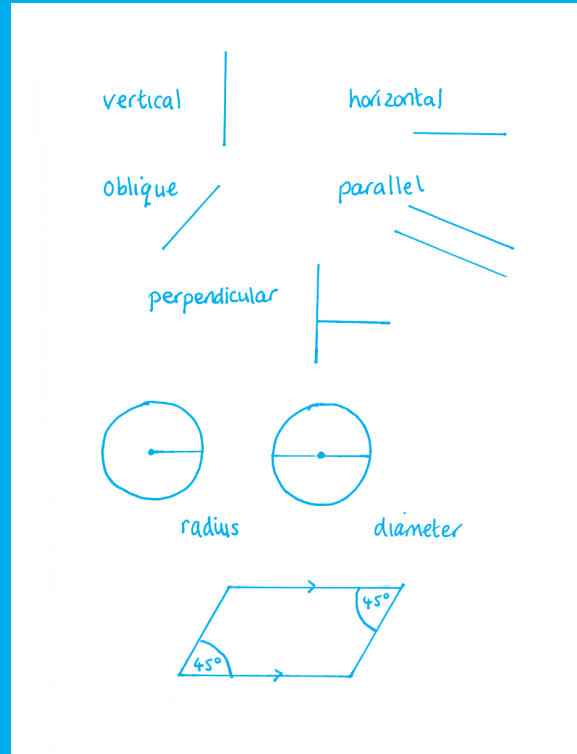
Week 14:
Shapes and measuring

Day 1:
Lines and triangles

Learning outcomes

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

Position the hands on a clock to make o'clock, half past, quarter past and quarter to.

Recognise different types of lines.

Preparation

Before the lesson:

Draw a large circle on the chalkboard for each group.

Have ready two long pieces of string or rope for each group.

Read How? Recognising lines, as shown below.

How? Recognising lines

Invite some pupils to the chalkboard to draw a horizontal and vertical line.

'Parallel lines' are lines side by side, always the same distance apart.

'Perpendicular lines' cross or meet (intersect) to make a right angle (90°).

'Oblique lines' slant – they are not horizontal or vertical.
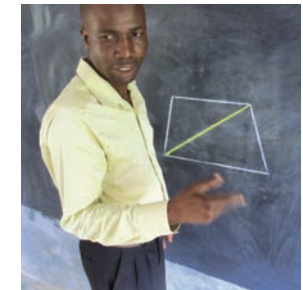
Remind the pupils that 'diagonal lines' are drawn from one corner to another inside a shape.

| 15 minutes | 10 minutes **How** | 25 minutes | String/Rope | 10 minutes |

Daily practice

Whole class teaching

Divide the pupils into small groups, lined up in front of a circle on the chalkboard.

Tell the pupils they will make their circles into clocks.

The first pupil from each group should write 1—6 in the correct place on their clock face and the second pupil should write 7—12.

The third pupil should draw the hour hand on o'clock. The fourth pupil should make the clock show 9 o'clock.

Ask other pupils to set the clock hands at other times, eg: half past 8, quarter to 8.

Introduction

Whole class teaching

Teach How? Recognising lines, as shown left.

Main activity

Group task

Ask the pupils to get into groups of four or five and give each group two long pieces of string or rope.

Call out a type of line, eg: parallel or horizontal, and ask the groups to show the lines.

Then ask the pupils to use the string or rope to make a triangle, a rectangle and a rhombus.

Ask, 'How many lines are parallel?', 'How many lines are perpendicular?'

Individual task

Write: 'horizontal', 'vertical', 'parallel', 'oblique', 'intersecting' and 'diagonal' on the chalkboard.

Ask the pupils to draw these lines and label them in their exercise books.

Tell the pupils to give their books to their partner to check.

Plenary

Whole class teaching

Draw the flag of Nigeria on the chalkboard, including the measurements shown below.

Make sure that each part of the flag is the same.

Ask:

'How many pairs of parallel lines are there?'

'How many perpendicular lines are there?'

Nigerian flag

0.6m

1.2m
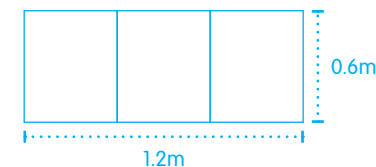
Week 14:
Shapes and measuring

Day 2:
Triangles

Learning outcomes

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

Convert hours to minutes, minutes to hours and minutes to seconds.

Recognise different types of triangles and know some of their properties.
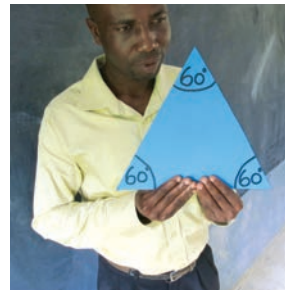
Preparation

Before the lesson:

Have ready a set of card triangles (equilateral, isosceles, scalene, right-angled) for each group.

Have ready a clock or watch with a second hand.

Read How? Properties of triangles, as shown below.

How? Properties of triangles

Explain that an equilateral triangle has three sides of the same length. All angles are 60°.

An isosceles triangle has two sides of the same length and two angles that are equal.
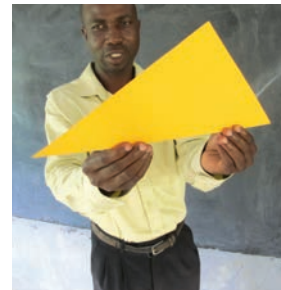
A scalene triangle has no sides of the same length, and all three angles are different.

A right-angled triangle has one angle of 90°.

Angles can be 'obtuse' (more than 90°) or 'acute' (less than 90°).

| Daily practice | Introduction | Main activity | | Plenary |

Group task

Ask the groups to discuss the following questions.

If 1 hour = 60 minutes, how many hours are in:
120 minutes?
360 minutes?
150 minutes?
75 minutes?

How many minutes are in:
1 hour and 20 minutes?
3 hours and 40 minutes?
5 hours and 30 minutes?
12 hours?

If 1 minute = 60 seconds, how many seconds are in:
3 minutes?
5 minutes?
$2\frac{1}{2}$ minutes?

Whole class teaching

Ask the class, 'Can you name any triangles?'

Teach How? Properties of triangles, as shown left.

Ask, 'What else do you know about these triangles?'

Give each group of pupils a set of card triangles.

Choose some groups to name one of their triangles and say some-thing about it.

Individual task

Tell the pupils to draw and label an equilateral, isosceles, scalene and right-angled triangle in their exercise books.

Tell them to write at least one property of each shape.

Pair task

Copy the counting triangles shape, shown below, on to the chalkboard.

Ask the class, 'How many triangles can you find?'

Tell the pupils to discuss in pairs.

Ask, 'How many did you find?' (There are 13 triangles altogether.)

Counting triangles shape
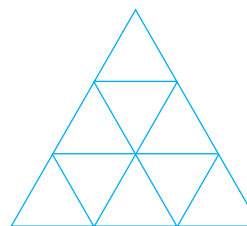
Whole class teaching

Explain to the pupils that they are going to estimate time.

Ask them to:

'Put up your hand for 30 seconds.'

'Stand on one leg for 20 seconds.'

'Shake your partner's hand for 10 seconds.'

'Sit perfectly still for 40 seconds.'

Using the clock or watch, tell the pupils when the time for each activity is up.

Choose some pupils to suggest other actions and timings.

Week 14:
Shapes and measuring

Day 3:
Quadrilaterals

Learning outcomes

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

Sort daily activities into a morning, afternoon and evening table.

Name a range of quadrilaterals and explain their properties.

Preparation

Before the lesson:

Have ready a set of card quadrilaterals (square, rectangle, rhombus, parallelogram, trapezium).

Copy the daily activities table from today's daily practice, shown opposite, on to the chalkboard.

Read How? Properties of quadrilaterals, as shown below.

How? Properties of quadrilaterals
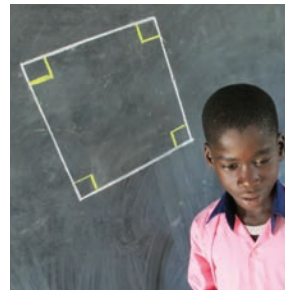
Invite a pupil to draw a square on the chalkboard and locate the right angles.

Invite a pupil to draw a rectangle and locate one pair of parallel lines.

Invite a pupil to draw a rhombus and locate one pair of parallel lines.
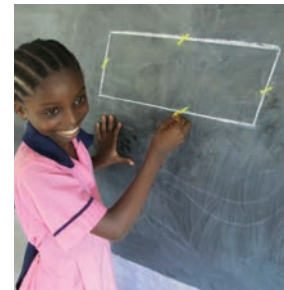
Invite a pupil to draw a parallelogram and locate one pair of parallel lines.
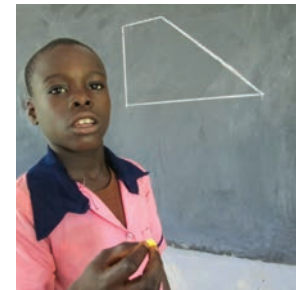
Invite a pupil to draw a trapezium. Ask, 'Does it have parallel lines and right angles?' (Yes.)

| **Daily practice** | **Introduction** | **Main activity** | | **Plenary** |

Whole class teaching

Ask the pupils to copy the table on the chalkboard into their exercise books.

Ask them to write the following activities in the correct part of their table: breakfast, lunch, dinner, play football, go to the market, play with friends, sleep, watch TV.

Choose some pupils to share what they have written.

Daily activities table

Morning	Afternoon	Evening

Whole class teaching

Ask the pupils, 'Can you name any quadrilaterals?'

Teach How? Properties of quadrilaterals, as shown left.

Give each group of pupils a card quadrilateral.

Choose some groups to name the quadrilateral they have and say some of its properties.

Individual task

Copy the 2D shapes chart, shown right, on to the chalkboard. Tell the pupils to copy and label the shapes.

Tell them to write at least one property for each shape.

Group task

Ask the pupils to draw a picture using as many quadrilateral shapes as possible.

Choose some groups to show their pictures and name the shapes that they used.

2D shapes chart

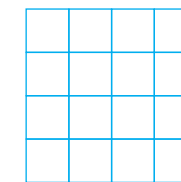| Shape	Name
	Square
	Rectangle
	Rhombus
	Parallelogram
	Trapezium

Whole class teaching

Copy the counting squares shape, shown below, on to the chalkboard.

Ask the class, 'How many squares can you find?'

Tell the pupils to discuss in pairs.

Ask, 'How many did you find?' (There are 30 squares in this diagram.)

Counting squares shape

Week 14:
Shapes and measuring

Day 4:
Circles

Learning outcomes

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

Extract information from a timetable.

Recognise the radius, diameter and circumference of a circle.

Preparation

Before the lesson:

Have ready a ruler for each pair and all of the card shapes used this week.

Copy the properties of circles, shown right, on to the chalkboard.

Read How? Reading a timetable, as shown below.

How? Reading a timetable

Divide the pupils into groups for a quiz, and give each group a piece of paper.

Tell the groups to discuss time-table information and be ready to answer questions.

Ask, 'How many assemblies are there each week?'

Tell the groups to write their answer on their paper.

The winner is the group with the highest score.

Daily practice	**Introduction**	**Main activity**	**Plenary**

Group task

Explain to the pupils that they are going to use the class weekly timetable for a quiz.

Tell them that for each correct answer their group will win five points, and the group with the most points wins.

Teach How? Reading a timetable, as shown left.

Make up other questions to ask the groups, eg: What time is lunch?, What day is double maths?, How long is the English lesson on Monday?'

Whole class teaching

Look with the pupils at the properties of circles on the chalkboard.

Explain that the distance around the outside of a circle is called the 'circumference'.

Explain that the 'radius' is the distance from the centre to any point on the circumference.

Explain that the 'diameter' is the distance across the circle, passing through the centre.

Explain that the diameter of a circle is always 2 x the radius.

Individual task

Tell the pupils to draw and label the circles on the chalkboard in their exercise books.

Tell them to take care to draw the radius and diameter inside their circles.

The diagrams below show the various properties of circles:

Centre of circle

Radius of circle (r) = 2cm

Diameter of circle (d) = 4cm
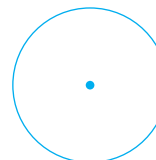
Group task

Ask the pupils to sit in small groups.

Share all the card shapes you have used this week equally among the groups.

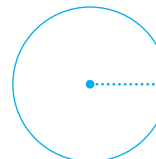Tell the groups to use all of their shapes to make a design.

Choose some groups to explain the shapes they used in their design.
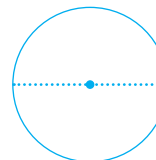
Week 14:
Shapes and measuring

Day 5:
Perimeter of compound shapes

Learning outcomes

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

Calculate the time difference between Nigeria and some major world cities.

Calculate the perimeter of compound shapes.

Preparation

Before the lesson:

Draw the compound shape, in the main activity, shown opposite, on the chalkboard.
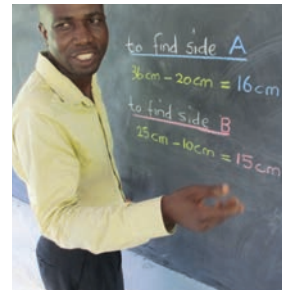
Have ready a world map or a globe and draw the world time chart, shown opposite, on to the chalkboard.

Read How? Perimeter of compound shapes, as shown below.
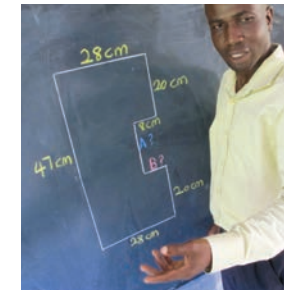
How? Perimeter of compound shapes

Draw a compound shape on the chalkboard.

Find the missing measurements.

Add all the outside measurements to find the perimeter of the shape.

Repeat with a different compound shape.

Daily practice

Whole class teaching

Show the pupils the world map or globe.

Ask, 'Do you think it is the same time all over the world?'

Ask the pupils to explain their answers.

Explain that there are different time zones across the world, and look together at the world time chart on the chalkboard.

Ask the pupils, 'If it is 11am in Abuja, what is the time in Paris, London and New York?'

Ask other questions about the chart, eg: 'How many hours difference between Abuja and Hong Kong?'

World time chart

Place	Time
Abuja: Nigeria	11am
Beijing: China	6pm
Paris: France	11am
Washington DC: United States of America	6am
Hong Kong: China	6pm
New Delhi: India	3.30pm
Baghdad: Iraq	1pm
London: United Kingdom	10am

Introduction

Whole class teaching

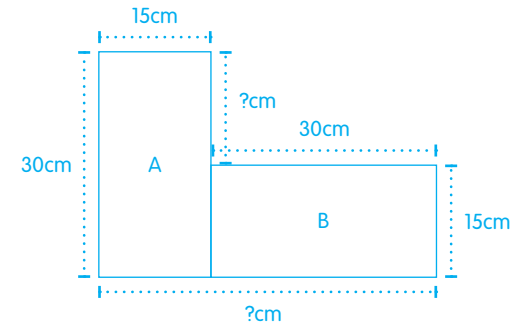Teach How? Perimeter of compound shapes, as shown left.

Main activity

Pair task

Together with the pupils, look at the compound shape on the chalkboard, and add together the measurements.

Ask the pairs to copy the shape in to their exercise books and find the missing measurements.

Ask them to decide how they will divide the shape to find the area.

Compound shape

Plenary

Whole class teaching

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

Ask one pupil to read out their answer. If the class agrees, they should mark it with a small tick.

Weekly page

Primary 5, numeracy lesson plans

Week 15: Multiplication

Words/phrases

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

factors
multiply
decimal
grid method
vertical method

Learning expectations

By the end of the week:

All pupils will be able to:
Multiply a decimal number with a single-digit number.

Most pupils will be able to:
Multiply a decimal number with a two-digit number.

Some pupils will be able to:
Solve word problems using multiplication.

Instructions:

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

1
Multiply these numbers using the grid method:
65.2 x 6 =
34.7 x 22 =

2
Multiply these numbers using the vertical method:
51.2 x 4 =

This pupil can:

Multiply a decimal number by a single-digit number using the grid method.

Multiply a decimal number by a two-digit number using the grid method.

Multiply a decimal number by a single-digit number using the vertical method.

$$65.2 \times 6 =$$

x	60	5	0.2
6	360	30	1.2

$$
\begin{array}{r}
360 \\
+ \ 30 \\
1.2 \\
\hline
391.2
\end{array}
$$

$$34.7 \times 22 =$$

x	30	4	0.7
20	600	80	14
2	60	8	1.4

$$
\begin{array}{r}
680 \\
14 \\
+ \ 68 \\
1.4 \\
\hline
763.4 \\
11
\end{array}
$$

$$51.2 \times 4 =$$

$$
\begin{array}{r}
51.2 \\
\times \ 4 \\
\hline
0.8 \quad (4 \times 0.2) \\
4.0 \quad (4 \times 1) \\
200.0 \quad (4 \times 50) \\
\hline
204.8
\end{array}
$$

Week 15:
Multiplication

Day 1:
Multiplication grid method

Learning outcomes

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

Find the factors for a given product.

Multiply decimal numbers by a two-digit number using the grid method.

Preparation

Before the lesson:

Copy the calculations from today's daily practice and main activity on to the chalkboard.

Read How? Multiply decimals: grid method, as shown below.

How? Multiply decimals: grid method

Ask a pupil to read the calculation on the chalkboard.

Invite a pupil to write the calculation in a multiplication grid.

Choose some pupils to complete the grid.

Choose some pupils to calculate the answer.

| Daily practice | Introduction | Main activity | | Plenary |

Whole class teaching

Remind the class that factors are numbers you can multiply together to get another number, and a product is the answer when two or more numbers are multiplied.

Ask the pupils to discuss the answers to the following calculations, in pairs:

☐ x ☐ = 24
☐ x ☐ = 48
☐ x ☐ = 100
☐ x ☐ = 56
☐ x ☐ = 18
☐ x ☐ = 63
☐ x ☐ = 70

Choose some pairs to share their answers with the class.

Whole class teaching

Ask the pupils to expand the following numbers:
28.36
158.34

Teach How? Multiply decimals: grid method, as shown left.

Repeat with the following calculation:
28.36 x 12 =

Individual task

Ask the pupils to complete the following calculations in their exercise books using the grid method:
42.50 x 21 =
63.30 x 32 =
28.10 x 75 =

Tell the pupils to discuss how to work out the answers with their partner.

Whole class teaching

When most of the pupils have finished, tell them to exchange books with their partner.

Ask one pair to read out their answers. If the class agrees, they should mark it with a small tick.

Tell the pupils that they have to solve the following sums quickly:

23.67 x 10 = ☐
23.67 x 100 = ☐
45.98 x 10 = ☐
45.98 x 100 = ☐
345.67 x 10 = ☐
345.67 x 100 = ☐

Pair task

Give the pupils the following word problem to solve in pairs:
'If a sack of rice weighs 1.65 kg, what would 10 sacks of rice weigh? What would 15 sacks of rice weigh?'

Ask, 'How would you solve these problems?'

Discuss the pupils' answers.

Week 15:
Multiplication

Day 2:
Multiplying decimals

Learning outcomes

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

Find factors of numbers.

Multiply a decimal number using the grid method.

Preparation

Before the lesson:

Have ready a set of 0—9 number cards and two decimal point cards for each pair.

Read How? Factor bugs, as shown below.

How? Factor bugs

Explain to the pupils that factor bugs can help to show factors of numbers.

Look at the factor bug for 32.

Invite some pupils to add the factors.

Check by multiplying the factors.

Daily practice	Introduction	Main activity	Plenary

Whole class teaching

Ask the pupils to discuss what a factor is.

Teach How? Factor bugs, as shown left.

Ask the pupils to draw factor bugs in their exercise books to find the factors of 28, 52 and 90.

Whole class teaching

Discuss different methods for multiplying decimal numbers.

Demonstrate the following calculation using the grid method: 16.42 x 23 =

Pair task

Give each pair a set 0—9 number cards and two decimal point cards.

Tell the pairs to share the number cards equally and take a decimal point card each.

Tell each pupil to make a four-digit number with their cards.

Then tell them to multiply the number they have made with their last digit card and write the answer in their exercise books.

Repeat this exercise three times, choosing new cards each time.

Whole class teaching

Copy the grid, shown right, on to the chalkboard and teach the pupils how to play the noughts and crosses game with calculations.

Choose one pupil to be 'O' and another to be 'X'.

Ask them to choose a square and explain that they win the square if they answer the question correctly.

The first person to get three correct answers in a line wins the game.

Play several times, changing the calculations.

Noughts and crosses grid

13 x 3	40 x 3	22 x 6
5 x 3	6 x 12	52 x 3
30 x 4	3 x 20	5 x 12

Week 15: Multiplication

Day 3: Vertical multiplication

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

Find factors of numbers.

Multiply decimal numbers using the vertical method.

Preparation

Before the lesson:

Copy the calculations from today's introduction and main activity on to the chalkboard.

Read How? Decimal multiplication, as shown below.

How? Decimal multiplication

Ask a pupil to read the calculation on the chalkboard.

Invite a pupil to write the calculation vertically.

Ask a pupil to work out the next steps.

Remind the pupils to set out the numbers in their correct place value.

Calculate the answer.

Daily practice

Introduction

Main activity

Plenary

Whole class teaching

Ask the pupils to discuss what a factor is.

Look at a factor bug for 42 together.

Ask the pupils to help you complete factor bugs for 80, 120 and 144.

Group task

Look at the following calculations on the chalkboard with the pupils:

0.2 x 3 = ☐

0.21 x 3 = ☐

0.3 x 2 = ☐

0.32 x 2 = ☐

0.5 x 3 = ☐

0.51 x 3 = ☐

0.6 x 4 = ☐

0.62 x 4 = ☐

Ask the groups to discuss the answers.

Choose some groups to give their answers and explain how they solved the sum.

Teach How? Decimal multiplication, as shown left.

Repeat with 45.16 x 6 =

Pair task

Ask the pairs to discuss the following calculations and complete them in their exercise books:

$$
\begin{array}{r}
32.61 \\
\times \quad 8 \\
\hline
\end{array}
$$

$$
\begin{array}{r}
45.61 \\
\times \quad 8 \\
\hline
\end{array}
$$

$$
\begin{array}{r}
32.34 \\
\times \quad 9 \\
\hline
\end{array}
$$

$$
\begin{array}{r}
65.32 \\
\times \quad 3 \\
\hline
\end{array}
$$

Whole class teaching

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

Ask one pair to read out their answers. If the class agrees, they should mark it with a small tick.

Whole class teaching

Explain to the pupils that they have to solve the following calculations quickly:

23.67 x 10 =

23.67 x 100 =

45.98 x 10 =

45.98 x 100 =

345.59 x 10 =

345.59 x 100 =

Choose some pupils to explain how they worked out the answer.

Ask, 'What happens when you multiply decimal numbers by 10?', 'What happens when you multiply decimal numbers by 100?'

# Week 15:
Multiplication

Day 4:
Multiplication

Learning outcomes

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

Understand prime numbers.

Multiply decimal numbers by two-digit numbers.

Preparation

Before the lesson:

Copy the calculations from today's main activity on to the chalkboard.

Read How? Finding prime numbers, as shown below.

How? Finding prime numbers

Draw a Hundred square on the chalkboard or on paper and cross out the number 1.
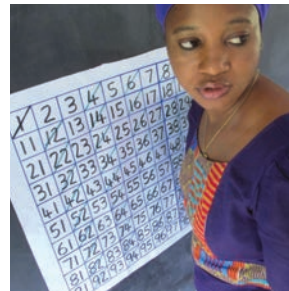
Leave number 2 but cross out all multiples of 2 (even numbers).

Leave the number 3 but cross out all multiples of 3.

Leave the numbers 5 and 7 but cross out all multiples of 5 and 7.

Look at the numbers you have left. They are called 'prime numbers'.

Daily practice

Introduction

Main activity

Plenary

Whole class teaching

Explain to the pupils that a 'prime number' has only two factors: itself and the number 1.

Teach How? Finding prime numbers, as shown left.

Ask the pupils, 'How many prime numbers are there?' (25)

Whole class teaching

Choose some pupils to demonstrate the grid method and vertical method with the following calculations – let them choose which method to use:
62.36 x 15 =
342.7 x 6 =

Pair task

Ask the pairs to complete the following calculations in their exercise books, choosing the method they want for each calculation:
9.66 x 8 =
3.19 x 23 =
14.62 x 37 =
35.45 x 16 =
21.94 x 11 =

Whole class teaching

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

Ask one pair to read out their answers. If the class agrees, they should mark it with a small tick.

Group task

Ask the groups to find the factors of the following numbers:
28, 42 and 56.

Choose some groups to share their answers and ask if the class agrees.

Week 15:
Multiplication

Day 5:
Solving word problems

Learning outcomes

Preparation

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

Identify odd, even and prime numbers.

Solve multiplication word problems involving decimals.

Before the lesson:

Copy the word problems from today's introduction and main activity on to the chalkboard.

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

Read How? Odd, even, prime?, as shown below.

**How?
Odd, even, prime?**

Give each pair 0—9 cards and tell them to keep them in a pile between them.

Tell the pupils to take turns to take one or two cards.

Tell them to make a single-digit or two-digit number.

Tell them to discuss with their partner whether it is an odd, even or prime number.

Go around and support the pairs, discussing the pupils' thinking.

Daily practice ▶ **Introduction** ▶ **Main activity** ▶ **Plenary** ▶

Whole class teaching

Ask the pupils to discuss what a prime number is.

Choose a pupil to explain it to the class.

Teach How? Odd, even, prime?, as shown left.

Whole class teaching

Read the following word problems with the pupils and discuss how to work out the answers:

'If an exercise book costs N65.30, what is the cost of 10 exercise books?'

'If 10 exercise books cost N653.00, what is the cost of 20, 30 and 40 exercise books?'

'If each pupil in this class has to have 2 exercise books, what is the total cost?' (Calculate the number of pupils in the class x the cost of 2 exercise books.)

Pair task

Ask the pairs to discuss and complete the following word problems:

'The cost of feeding a boarder at secondary school is N125.50 per meal. If she eats three meals a day, what is the cost per day? If she eats three meals a day for 7 days, what is the cost for a week?'

'A man earns N328.60 per day. How much does he earn in: 7 days, 10 days and 31 days?'

Whole class teaching

When most of the pupils have finished, choose some pairs to say their answers and explain how they solved the problem.

If the class agrees, they should mark it with a small tick.

Whole class teaching

Remind the pupils that 0.25 is the same as $\frac{1}{4}$

Choose some pupils to work out the answers to the following calculations and explain how they did it:

$0.25 \times 8 =$

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

$0.25 \times 64 =$

$0.25 \times 176 =$

$\frac{1}{4} \times 36 =$

Credits

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

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

Special thanks go to

This publication is not for sale

Enugu State Government

Produced with the support of

esspin

Education Sector
Support Programme
in Nigeria

UKaid

from the Department for
International Development