

A photograph of a classroom scene. A teacher, seen from the back, is writing on a large clock face on a table. Two young students in light blue uniforms are leaning over the table, looking at the clock. The clock face is a large circle with numbers 1 through 8 visible. The teacher's hand is holding a black marker and is positioned near the number 5. The students are looking intently at the clock. The background is a plain wall.

Numeracy lesson plans
Primary 4,
term 2, weeks 16—20

**Multiplication, division,
statistics and time**

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Introduction

Good teaching can help learners achieve positive outcomes, even in difficult circumstances. But learners have little chance of making progress where the teaching is poor.

Throughout 2010 in Kaduna State, the Ministry of Education carried out baseline surveys to assess classroom teachers, headteachers and pupil learning outcomes. Sadly, the findings were alarmingly poor. It was clear that despite substantial inputs into education, the majority of teachers were themselves victims of an education system that was in a serious downward spiral.

Following this research, the State Ministry of Education, the State Universal Basic Education Board and local government education authorities, supported by the Education Sector Support Programme in Nigeria (ESSPIN), embarked on a series of reforms to strengthen schools.

To improve the teaching of basic literacy and numeracy in primary schools, Kaduna is introducing a carefully designed series of literacy and numeracy lesson plans for primary 1—5 teachers. These provide a step-by-step guide to teachers, while ensuring that teaching and learning become more exciting and children become active learners.

Alongside the lesson plans, structures and processes have been put in place so that teachers are continuously supported by the State School Improvement Team and specially-trained school support officers.

I am confident that these lesson plans will raise standards in our schools. I commend all those who have worked hard to produce these plans and train our teachers to use them, and I offer thanks to the UK Department for International Development (DFID) for its ongoing support for education reform in Kaduna State through its ESSPIN programme.

Professor Andrew Jonathan Nok
DSc, PhD, OON, FAS, NNOM
Honourable Commissioner
of Education, Science
and Technology, Kaduna 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 4, numeracy lesson plans

Week 16: Multiplication

Multiplication square

x	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Words/phrases

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

fraction
equivalent
multiplication square
grid method
place value
decimal numbers
tenths

Learning expectations

By the end of the week:

All pupils will be able to:
Multiply a two-digit number by a single-digit number, using the grid method.

Most pupils will be able to:
Multiply decimal numbers using the grid method.

Some pupils will be able to:
Solve multiplication word problems that involve decimals.

Assessment task

Instructions:

1
Ask individual pupils to write two three-digit numbers with one decimal place.

2
Ask the pupils to place the numbers under the correct place value headings.

3
Ask the pupils to solve the following sums using the grid method:
 $23.5 \times 3 =$
 $78.3 \times 4 =$

4
Ask the pupils to solve the following word problem:
Hassan wants to travel to his family four times a year. His family lives 256.7km away from Hassan. How many km does Hassan travel in one year?

Example of a pupil's work

This pupil can:

Place a decimal number under the correct value headings.

Multiply decimal numbers using the grid method.

Solve a word problem using decimal multiplication.

H T U . t
2 5 6 . 7

X	200	50	6	0.7
4	800	200	24	2.8

Th H T U . t

	8	0	0	
	2	0	0	
+		2	4	
			2	.4
	1	0	2	6.4

Hassan needs to travel 1026.4 km in 1 year.

Week 16: Multiplication

Day 1: The grid method

Learning outcomes

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

Identify simple fractions.

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

Preparation

Before the lesson:

Have ready **three pieces of paper**.

Read **How? Fractions**, as shown below.

Draw a **multiplication square** on the chalkboard, as shown on this week's weekly page, and leave it there for the week.

How? Fractions



Draw a rectangle
divided into eighths.



Shade in two eighths
and ask a pupil
to write the fraction
that is shaded.



Draw a square,
shade three quarters
and ask a pupil
to write the fraction.



Repeat the
process, drawing
more squares.



Ask the pupils
to say and write
the fractions.

15
minutes

How

Paper

Daily practice

Whole class teaching

Remind the class that a fraction is a part of a whole.

Demonstrate by folding **pieces of paper** into halves, quarters and eighths.

Teach **How? Fractions**, as shown left.

Ask the pupils to draw squares in their exercise books showing the following fractions:

$$\frac{5}{8} \quad \frac{4}{10} \quad \frac{1}{4}$$

10
minutes

Multiplication square

Introduction

Pair task

Ask the pairs to say the 2, 3, 4 and 5 times tables to each other.

Show the class how to find the answer to 7×8 , using the **multiplication square**.

Put a finger on the 7 in the first column and a finger on the 8 in the first row. Move one finger down the column and the other finger along the row until they meet at the answer, 56.

Ask the pairs to find the answers to the following multiplication sums, using the **multiplication square**:

$$\begin{array}{l} 6 \times 9 \\ 8 \times 6 \\ 7 \times 9 \\ 4 \times 7 \end{array}$$

25
minutes

Main activity

Whole class teaching

Write ' $48 \times 3 =$ ' on the chalkboard and ask the pupils what method they could use to work it out.

Revise the grid method with them:

$$\begin{array}{r|rr} \times & 40 & 8 \\ 3 & 120 & 24 \end{array}$$

$$120 + 24 = 144$$

Remind them to add the Units, then the Tens.

Repeat with $28 \times 3 =$

Pair task

Write the following sums on the chalkboard for the pairs to complete in their exercise books:

$$13 \times 4 =$$

$$19 \times 4 =$$

$$25 \times 5 =$$

$$26 \times 3 =$$

$$57 \times 5 =$$

$$56 \times 3 =$$

Remind them to use the grid method.

10
minutes

Plenary

Pair task

Choose some pairs to show how they worked out their answers on the chalkboard.

Ask the other pairs to check that they are correct.

Week 16: Multiplication

Day 2: Multiplying decimal numbers

Learning outcomes

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

Order fractions.

Multiply a simple decimal
number by one digit.

Preparation

Before the lesson:

Display the [multiplication square](#) from
Week 16, Day 1 (yesterday).

Read [How? Multiply decimals](#), as
shown below.

How? Multiply decimals



Write, '0.3' on the
chalkboard and
write the place values
above the digits.



Write, '0.3 x 3 =',
explain that we now
have nine tenths
and write the answer.



Write, '0.4 x 3 ='
and explain that the
answer is 12 tenths.



Explain that
12 tenths is 1 Unit
and 2 tenths.
Write in the answer.



Write, '0.8 x 4 ='
then multiply the
tenths and change
the answer to
Units and tenths.

15
minutes

Daily practice

Pair task

Choose some pupils to help you draw squares on the chalkboard showing the following fractions:

$$\frac{1}{4} \quad \frac{1}{2} \quad \frac{1}{6} \quad \frac{1}{5}$$

Ask the class, 'Which is the biggest fraction?', 'Which is the smallest fraction?'

Remind the pupils of the meaning of the symbols < and >.

Ask the pairs to use the correct symbol to complete these number sentences in their exercise books:

$$\frac{1}{8} \square \frac{1}{10}$$

$$\frac{1}{6} \square \frac{1}{2}$$

10
minutes

Multiplication square

Introduction

Whole class teaching

Remind the pupils how to use the **multiplication square**.

Choose some pupils to come and find the answers to the following sums:

$$8 \times 8 =$$

$$7 \times 7 =$$

$$4 \times 8 =$$

Ask the pairs to write four sums from the times tables in their exercise books.

Tell them to swap books and write the answers using the **multiplication square**.

25
minutes

How

Main activity

Whole class teaching

Ask the pupils, 'How many tenths are there in a whole?' (10)

Explain that if we have 14 tenths then we have 1 Unit and 4 tenths.

Write it on the chalkboard under the correct place value headings.

Ask, 'If I have 16 tenths, how many Units and tenths do I have?'

Teach **How? Multiply decimals**, as shown left.

Multiplication square

Pair task

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

$$0.7 \times 2 =$$

$$0.6 \times 3 =$$

$$0.5 \times 5 =$$

$$0.4 \times 7 =$$

$$0.6 \times 6 =$$

$$0.4 \times 9 =$$

$$0.8 \times 7 =$$

$$0.6 \times 8 =$$

Remind them to look at the **multiplication square** if they need to.

10
minutes

Plenary

Whole class teaching

Write this word problem on the chalkboard, 'Kassim needs 0.4m of fabric to make a skirt. How many metres does he need to make eight skirts?'

Ask a pupil to write the calculation needed to solve this on the chalkboard. (0.4 x 8 =)

Choose some pupils to help you complete the calculation on the chalkboard.

Week 16: Multiplication

Day 3: Multiplying decimals with the grid method

Learning outcomes

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

Generate equivalent
fractions.

Multiply decimal numbers
using the grid method.

Preparation

Before the lesson:

Read [How? Grid method with decimals](#),
as shown below.

Display the [multiplication square](#) from
Week 16, Day 1 (earlier this week).

Have ready a large [piece of paper](#).

How? Grid method with decimals



Write '45.4 x 4 =' on
the chalkboard.



Expand the number,
draw the grid
underneath and
write 'x 4'.



Multiply the tenths,
Units and Tens.



Add the tenths, Units,
Tens and Hundreds.



Put the number
together:
 $100 + 80 + 1.6 =$
181.6

15 minutes | Paper

Daily practice

Whole class teaching

Remind the pupils that 'equivalent fractions' are fractions that have the same value.

Fold the large **piece of paper** to demonstrate that two quarters are the same as one half.

Remind the pupils that we can make equivalent fractions by multiplying the numerator and the denominator by the same number.

Choose some pupils to help you make equivalent fractions for $\frac{3}{4}$ and $\frac{2}{3}$

10 minutes

Introduction

Whole class teaching

Expand 368.2 on the chalkboard:
 $300 + 60 + 8 + 0.2$

Ask different pupils to help you expand the following numbers:
908.7
560.2
770.9
888.8

Write on the chalkboard:
 $600 + 80 + 0.3 =$
 $500 + 40 + 0.7 =$
 $500 + 90 + 7 + 0.3 =$

Ask the pupils to help you write the numbers under the correct place value headings.

25 minutes

How

Multiplication square

Main activity

Whole class teaching

Teach **How? Grid method with decimals**, as shown left.

Repeat, asking the pupils to help you solve the following:
 $38.3 \times 5 =$
 $27.5 \times 6 =$

Pair task

Write the following sums on the chalkboard and ask the pairs to complete them in their exercise books, using the grid method:
 $37.8 \times 2 =$
 $25.6 \times 3 =$
 $33.7 \times 4 =$
 $42.9 \times 5 =$

Remind the pupils that they can use the **multiplication square** to help with the times tables.

10 minutes

Plenary

Whole class teaching

Write this word problem on the chalkboard, 'Each sack of mangoes weighs 28.8kg. How much do five sacks weigh?'

Ask a pupil to write the calculation needed to solve this on the chalkboard ($28.8 \times 5 =$).

Choose some pupils to help you complete the calculation on the chalkboard.

Week 16: Multiplication

Day 4: Word problems

Learning outcomes

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

Identify some common
equivalent fractions.

Solve multiplication word
problems involving decimals.

Preparation

Before the lesson:

Prepare a set of [fraction flash cards](#) for
each group, as outlined in [How? Matching
fractions game](#), below.

Display the [multiplication square](#)
from Day 1.

How? Matching fractions game



Make a set of
fraction flash cards
for all the eighths
and quarters.



Also make flash
cards for thirds
and sixths, and
make three 'half'
flash cards.



Place all of the
flash cards face
up so the pupils can
see them.



Ask the pupils, in
turn, to pick two
equivalent fractions.



Continue until
there are no more
equivalent fractions.

15
minutes

How

Flash cards

10
minutes

25
minutes

Multiplication square

10
minutes

Daily practice

Introduction

Main activity

Plenary

Whole class teaching

Write 'a half' on the chalkboard and ask the pupils to say some equivalent fractions.

Teach [How? Matching fractions game](#), as shown left.

Give each group a set of [fraction flash cards](#) to play the game.

Tell the pupils they can only keep the cards if they have equivalent fractions.

The pupil with the most cards at the end is the winner.

Group task

Remind the pupils that they have been using the grid method to multiply numbers containing decimals.

Teach [How? Grid method with decimals](#), as shown in Week 16, Day 3 (yesterday).

Demonstrate with the following sums:

$$63.4 \times 3 =$$
$$24.8 \times 6 =$$

Whole class teaching

Write the following word problems on the chalkboard:

'Nura travels 466.8km. Sani travels three times as far. How far does Sani travel?'

'A fence measures 56.4m. How much do four fences of the same length measure?'

'A sack of bricks weighs 30.5kg. How much do six sacks of bricks weigh?'

'A family uses 45.2 litres of water every day. How much water does the family use in a week?'

Read and explain each word problem.

Ask each group to say the calculation needed for one of the problems.

Ask each group to complete a different problem in their exercise books.

If there is time, tell the groups to complete some of the other problems.

Remind the pupils that they can use the [multiplication square](#) to help with the times tables.

Pair task

Ask the pupils to work with a partner to make up their own word problem.

Ask one or two pairs to share their problem with the rest of the class.

Week 16: Multiplication

Day 5: More word problems

Learning outcomes

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

Write the 9 times table
quickly.

Solve multiplication word
problems.

Preparation

Before the lesson:

Have ready a set of matching **fraction
flash cards** for each group.

Display the **multiplication square** from
Week 16, Day 1 (earlier in the week).

Read about the grid method in Week 16,
Days 1 and 3 (earlier this week).

Read **How? Times tables**, as shown below.

How? Times tables



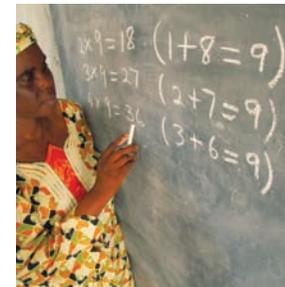
Ask a pupil to find
the answer to 7×7
on the multiplication
square.



Write the 9 times
table on the
chalkboard, using
the multiplication
square.



Ask the pupils if
they can see
any patterns in the
9 times table.



Explain that the
digits in each answer
add to 9.



Explain that the first
digit of each answer
is one less than the
number multiplied, so
 $2 \times 9 = 18$.

15 minutes | Flash cards

Daily practice

Group task

Give each group the matching **fraction flash cards**.

Tell the groups to place the flash cards face up on the desk.

Tell the pupils to take turns picking two cards.

Remind them that they can only keep the cards if they have equivalent fractions.

The pupil with the most cards at the end is the winner.

Ask some of the pupils to read their equivalent **fraction cards**.

10 minutes | **How** | Multiplication square

Introduction

Whole class teaching

Teach **How? Times tables**, as shown left.

Ask the pupils to think about the patterns as you ask them questions from the 9 times table.

Choose some pupils to come and check their answers on the **multiplication square**.

25 minutes

Main activity

Whole class teaching

Ask some pupils to help you demonstrate how to solve the following sums on the chalkboard using the grid method:

$$56 \times 3 =$$

$$31.2 \times 9 =$$

Remind them to think carefully about the place value of each number.

Group task

Write the following word problems on the chalkboard:

'A farmer planted five rows of yams, with 39 yams in each row. How many yams did he plant?'

'A school has four classes, with 39 pupils in each. How many pupils are in the school?'

'Yakub walks 28.5km every week. How many km does he walk in nine weeks?'

Read and explain the word problems.

Ask the groups to complete each problem in their exercise books, using the grid method.

10 minutes

Plenary

Whole class teaching

Ask the pupils some questions from the 9 times table.

Ask the pupils some questions from the 2, 3, 4 and 5 times tables.

Weekly page

Primary 4, numeracy lesson plans

Week 17:

Division

Words/phrases

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

multiplication
division
divide
share
repeated subtraction
multiples
chunking
tricky sixes
remainder
relay

Songs

Write this song on the chalkboard and leave it there for the week.

Tricky sixes:
Beat the drums,
Clap your hands,
We know these sums:
 6×1 is 6
 6×2 is 12
 6×3 is 18
 6×4 is 24
 6×5 is 30
Tricky sixes! Tricky sixes!
Pick up sticks,
 6×6 is 36
Touch your shoe,
 6×7 is 42
Shut the gate,
 6×8 is 48
Lock the door,
 6×9 is 54
and 6×10 is 60
Beat the drums,
Clap your hands,
We know these sums!

Learning expectations

By the end of the week:

All pupils will be able to:

Divide small numbers using times tables.

Most pupils will be able to:

Divide a two-digit number by a single-digit number with remainders, using repeated subtraction.

Some pupils will be able to:

Solve word problems involving three-digit numbers and remainders.

Assessment task

Instructions:

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

1

Ask individual pupils to solve the following sums:

$$3 \times 6 =$$

$$7 \times 5 =$$

$$9 \times 6 =$$

2

Ask the pupils to solve the following sums using repeated subtraction:

$$112 \div 8 =$$

$$75 \div 5 =$$

$$95 \div 4 =$$

3

Ask the pupils to solve the following word problem using repeated subtraction: Aisha sells oranges at the weekends. She has 123 oranges and sells them in bags of eight. How many bags can she sell? How many oranges does she have left?

Example of a pupil's work

This pupil can:

Use the 5 and 6 times tables to solve simple multiplication sums.

Solve division sums using repeated subtraction and remainders.

Solve a division word problem with remainders.

$$3 \times 6 = 18$$

$$7 \times 5 = 35$$

$$9 \times 6 = 54$$

$$123 \div 8 =$$

	H T U	
	1 2 3	
-	8 0	<u>10</u> × 8
	4 3	
-	4 0	<u>5</u> × 8
	3	

$$10 + 5 = 15 \quad r3$$

Aisha can sell 15 bags of oranges.
She will have 3 oranges left.

Week 17: Division

Day 1: Using multi- plication for division

Learning outcomes

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

Say answers to questions
from the 5 times table.

Solve simple division
problems.

Preparation

Before the lesson:

Copy the [multiplication square](#) from
the Week 16 weekly page and display it
in the classroom.

Read [How? Quick division](#),
as shown below.

How? Quick division



Tell the pairs to write
a division sum in
their exercise books.



Tell them to swap
books.



Tell them to write the
multiplication sum
needed to work out
the division sum.



Tell them to give the
book back to their
partner and write in
the answer.



Repeat this process
several times.

15 minutes | Multiplication square

10 minutes | How

25 minutes | Fraction strips

10 minutes

Daily practice

Introduction

Main activity

Plenary

Whole class teaching

Ask some pupils to point to answers to the 2, 3 and 4 times tables in the [multiplication square](#).

Choose some pupils to help you write the 5 times table on the chalkboard.

Ask the class, 'What do you notice?' (They end in 0 or 5.)

Ask the pupils to help you write the 10 times table.

Ask, 'What do you notice about the answers in the 5 times table and the 10 times table?' (Answers in the 5 times table are half of the answers in the 10 times table.)

Ask the pupils questions from the 5 times table.

Pair task

Write ' $5 \times 7 = 35$ ' on the chalkboard and remind the pupils that this means 5 groups of 7.

Ask them what other facts they know using these numbers, ie:

$$7 \times 5 = 35$$
$$35 \div 7 = 5$$
$$35 \div 5 = 7$$

Remind the class that we can use times tables to work out division sums.

Teach [How? Quick division](#), as shown left.

Whole class teaching

Write these word problems on the chalkboard:

'Five friends pick 40 mangoes. How many can they have each?'

'A rope measures 36cm. It is cut into four equal pieces. How long is each piece?'

'Fumni collects 24 litres of water. How many three-litre jugs can she fill with water?'

'Bayo's book has 96 pages. He reads six pages every day. How many days will it take him to read the book?'

Read and explain the questions and ask the pupils to say the calculation needed for each problem (division).

Pair task

Tell the pairs to work out the word problems in their exercise books.

Remind them to use the times tables to help them.

Whole class teaching

Tell the pupils to get into a circle.

Tell one pupil to say a division sum from the 5 times table, eg: $40 \div 5 =$ and tell the next pupil to say the multiplication sum needed to answer it, eg: $5 \times 8 = 40$.

Repeat this process until all the pupils have had a turn.

Week 17: Division

Day 2: Division using repeated subtraction

Learning outcomes

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

Say answers to questions
from the 6 times table.

Use repeated subtraction
to solve division calculations
with remainders.

Preparation

Before the lesson:

Have ready the [multiplication square](#)
from Week 17, Day 1 (yesterday).

Write the [Tricky sixes song](#) from the
weekly page on the chalkboard and leave
it there for the rest of the week.

Read [How? Repeated subtraction](#),
as shown below.

How? Repeated subtraction



To solve $95 \div 5$,
ask the pupils to
think of about
the 5 times table.



$10 \times 5 = 50$, so tell
the pupils to subtract
50 from 95 (45).



Ask them to think of
a multiple nearest
to 45 in the 5 times
table ($9 \times 5 = 45$).



Ask them to add
together the answers.



$10 + 9 = 19$ so the
answer is 19.

15
minutes

Multiplication square/
Song

10
minutes

How

25
minutes

10
minutes

Song

Daily practice

Group task

Ask the class questions from the 5 times table and check their answers in the [multiplication square](#).

Ask the pupils to help you write the 6 times table on the chalkboard.

Explain that they already know some of it from the other times tables they have learned.

Teach the class the [Tricky sixes song](#) and make up actions for it.

Ask the pupils questions from the 6 times table and check their answers in the [multiplication square](#).

Introduction

Group task

Remind the class that they can use 'repeated subtraction' to solve division sums with bigger numbers.

Ask the pupils to use repeated subtraction, as shown left in [How?](#)

[Repeated subtraction](#), to help you solve $95 \div 5 =$

Repeat with $96 \div 4 =$

Explain that this method is also called 'chunking', because we try to find big chunks to take away.

Explain that sometimes there will be remainders (numbers left over).

Main activity

Whole class teaching

Write ' $85 \div 6 =$ ' on the chalkboard and use repeated subtraction to solve it:

$$\begin{array}{r} \text{T U} \\ 85 \\ - 60 \text{ (10 x 6)} \\ \hline 25 \end{array}$$

Ask, 'What multiple in the 6 times table is closest to 25?' ($4 \times 6 = 24$).

Continue the calculation:

$$\begin{array}{r} \text{T U} \\ 85 \\ - 60 \text{ (10 x 6)} \\ \hline 25 \\ - 24 \text{ (4 x 6)} \\ \hline 1 \end{array}$$

Explain that we cannot subtract further multiples of 6 so 1 is a remainder, or 'R'.

Add the multiples and the remainder ($10 + 4 \text{ R}1$) to find the answer: 14 R1.

Pair task

Ask the pairs to help you calculate $73 \div 4 =$ in the same way.

Write the following sums on the chalkboard for the pairs to complete in their exercise books:

$$\begin{array}{l} 81 \div 4 = \\ 56 \div 5 = \\ 55 \div 6 = \\ 92 \div 6 = \end{array}$$

Plenary

Whole class teaching

Ask one of the pairs to solve $92 \div 6 =$ on the chalkboard.

Sing the [Tricky sixes song](#) with the class.

Week 17: Division

Day 3: Remainders

Learning outcomes

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

Say answers to questions
from the 5 and 6 times tables.

Solve division word problems
involving remainders.

Preparation

Before the lesson:

Make a set of **1—10 flash cards** for
each group.

Read **How? Multiplication bingo**,
as shown below.

Make sure the **Tricky sixes song**,
from this week's weekly page, is still on
the chalkboard.

How? Multiplication bingo



Tell the pairs to look
at the multiples
of 6 and 5 on the
chalkboard.



Ask the pairs to
write 10 of the
multiples in their
exercise books.



Call out questions
from the 5 and 6
times table.



If the pupils have
the correct answer
in their exercise
book, tell them to
cross it out.



Tell them to shout,
'Bingo' when all
of their numbers are
crossed out.

15
minutes

How

Daily practice

Pair task

Choose some pupils to write the multiples of 6, up to 10×6 , on the chalkboard.

Repeat, with multiples of 5.

Teach [How? Multiplication bingo](#), as shown left.

10
minutes

Introduction

Whole class teaching

Remind the class that they have been using repeated subtraction for division calculations.

Ask the pupils to use repeated subtraction, as shown in [How? Repeated subtraction](#) on Week 17, Day 2 (yesterday) to help you solve the following:
 $72 \div 5 =$
 $87 \div 4 =$

Explain that these sums will have remainders (numbers left over).

25
minutes

Main activity

Group task

Write the following word problems on the chalkboard:

'Lola has 88 pens. She shares them between her five friends. How many will each friend get? How many are left?'

'Tade has 74 apples. He has six bags. He needs to put an equal amount of apples in each bag. Can he do this? Will any apples be left over?'

'There are 59 pupils in Primary 4. They need to be split equally into two classes. How many pupils should there be in each class? Is there a problem?'

10
minutes

Song

Plenary

Whole class teaching

Sing the [Tricky sixes song](#) with the class.

Ask the class questions from the 5 and 6 times tables.

Week 17: Division

Day 4: Division of bigger numbers

Learning outcomes

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

Use the 6 times table to
solve division calculations.

Use repeated subtraction to
divide bigger numbers.

Preparation

Before the lesson:

Read [How? Quick division](#), as shown
in Week 17, Day 1.

Read [How? Repeated subtraction
with bigger numbers](#), as shown below.

How? Repeated subtraction with bigger numbers



Ask a pupil to say
a multiple of 5
($10 \times 5 = 50$). Subtract
50 from 165 (115).



Tell pupils a bigger
multiple of 5
can be used, eg:
 $20 \times 5 = 100$.



Subtract 100 from
115 (15). Ask pupils
for a multiple near
to 15 ($3 \times 5 = 15$).



Subtract 15 from
15 (0).



Add the multiples
($10 + 20 + 3$) and
write in the answer:
 $165 \div 5 = 33$.

15
minutes

Daily practice

Whole class teaching

Remind the class that we can use times tables to work out simple division sums.

Ask, 'Which times table will help me solve $54 \div 6$?' ($6 \times 9 = 54$, so the answer is the 9 times table).

Teach [How? Quick division](#), as shown in Week 17, Day 1 (earlier in the week).

10
minutes

How

Introduction

Whole class teaching

Write ' $165 \div 5 =$ ' on the chalkboard.

Explain that we can use repeated subtraction to solve calculations with big numbers but we need to find bigger chunks to take away.

Teach [How? Repeated subtraction with bigger numbers](#), as shown left.

Repeat with $96 \div 3 =$

25
minutes

Main activity

Group task

Write the following division calculations on the chalkboard:

$$186 \div 6 =$$

$$82 \div 2 =$$

$$145 \div 5 =$$

$$148 \div 4 =$$

Ask each group to work on a different calculation in their exercise books.

If there is time, ask them to choose other calculations to work on.

Ask each group to explain their calculation on the chalkboard.

10
minutes

Song

Plenary

Whole class teaching

Ask each group division questions from the 6 times table, eg: $48 \div 6$, $24 \div 6$.

Sing the [Tricky sixes song](#).

Week 17: Division

Day 5: Division word problems

Learning outcomes

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

Say answers from the 2, 3,
4, 5 and 6 times tables.

Solve division word problems
involving bigger numbers.

Preparation

Before the lesson:

Make sets of **flash cards** of the
multiples of 5 and 6 for each group
and shuffle each set well.

Read **How? Multiplication relay**,
as shown below.

How? Multiplication relay



Mark a starting
line and place the
sets of flash cards
at intervals.



Tell each group to
stand in a line behind
a set of cards.



Shout, 'Go!' and
tell the pupils
to run, in turn, to
collect a card.



Tell each group to
arrange their cards,
in order, into the
5 and 6 times tables.



The first group ready
is the winner.

15
minutes

How

Daily practice

Group task

Ask the class to say the 5 and 6 times tables with you.

Find a space for the pupils, inside or outside of the classroom, and play [How? Multiplication relay](#), as shown left.

10
minutes

Introduction

Whole class teaching

Write '143 ÷ 5 =' on the chalkboard.

Ask the class, 'What method can I use to calculate this?'

Tell the pupils to think of big multiples and demonstrate:

$$\begin{array}{r}
 \text{H T U} \\
 143 \\
 - 100 \text{ (20 x 5)} \\
 \quad 43 \\
 - 40 \text{ (8 x 5)} \\
 \quad \quad 3
 \end{array}$$

Explain we cannot subtract further multiples of 5, so 3 is the remainder.

Add the multiples:
 $20 + 8 = 28$

Write the answer:
 $143 \div 5 = 28 \text{ R}3$.

25
minutes

Main activity

Group task

Write the following word problems on the chalkboard:

'Five girls share N152.00 equally among them. How much does each girl get?'

'A log of wood 220cm long is sawn into pieces 6cm long. How many 6cm pieces are there? What is the remainder?'

'A book contains 186 pages. How many days would it take to read the book if you read two pages a day?'

Read and explain each problem carefully.

Ask the groups to complete the word problems in their exercise books using repeated subtraction.

10
minutes

Song

Plenary

Pair task

Sing the [Tricky sixes song](#).

Ask the pupils division questions from the 3, 4, 5 and 6 times tables.

Weekly page

Primary 4, numeracy lesson plans

Week 18:

Statistics

Words/phrases

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

tally
frequency
pictogram
symbol
most popular
least popular
bar chart
vertical axis
horizontal axis
mode
data
statistics

Songs

Write this song on the chalkboard and leave it there for the week.

Tricky sevens:

Beat the drums,
Clap your hands,
We know these sums:
 7×1 is 7
 7×2 is 14
 7×3 is 21
 7×4 is 28
 7×5 is 35
 7×6 is 42
Tricky sevens! Tricky sevens!
Hang the washing
on the line, 7×7 is 49.
Feed the chicks, chick,
chick, chicks! 7×8 is 56.
Climb the ancient
mango tree, 7×9 is 63
and 7×10 is 70
Beat the drums,
Clap your hands,
We know these sums!

Learning expectations

By the end of the week:

All pupils will be able to:

Interpret a simple pictogram.

Most pupils will be able to:

Draw a simple but accurate pictogram.

Some pupils will be able to:

Draw a bar chart with intervals labelled in twos.

Assessment task

Instructions:

1
Ask individual pupils to draw a pictogram representing the following numbers:

Fish	12	
Cat	7	
Goat	15	

2
Ask the pupils to make a bar chart with intervals of two, using the following information from the hockey world cup:

Country	Goals
Ghana	12
Spain	23
Nigeria	18
England	22
Brazil	27
United States	14
South Africa	18
Sweden	6

3
Ask the pupils to find the mode of the hockey goals in this bar chart.

Example of a pupil's work

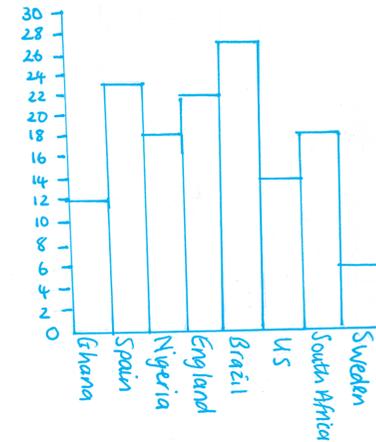
This pupil can:

Draw a pictogram for the correct number of animals.

Draw a bar chart with intervals of two showing information from the hockey world cup.

Find the mode of the hockey world cup goals from the bar chart.

fish	12	
cat	7	
goat	15	



The mode is 17

Week 18: Statistics

Day 1: Tally charts

Learning outcomes

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

Say some answers for
the 7 times table.

Make and interpret a simple
tally chart.

Preparation

Before the lesson:

Write the [Tricky sevens song](#), from this
week's weekly page, on the chalkboard.

Read the [Tricky sixes song](#) from the Week 17
weekly page (last week).

Read [How? Tally chart](#), as shown below.

How? Tally chart



On the chalkboard,
demonstrate how
to count to 20 using
a tally.



Write the months of
the year vertically
on the chalkboard.



Ask the pupils
to say their birthday
month.



Record the results
as a tally next
to each month.



Write 'Tally chart
of pupils' birthdays'
above the results.

15
minutes

Songs

10
minutes

How

25
minutes

10
minutes

Daily practice

Introduction

Main activity

Plenary

Whole class teaching

Sing the [Tricky sixes song](#) with the class.

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

Choose some pupils to point to parts that they already know.

Teach the class the [Tricky sevens song](#) and make up some actions for it.

Ask the pupils some questions from the 7 times table.

Whole class teaching

Tell the class that we can use a tally chart when we are collecting information.

Teach [How? Tally chart](#), as shown left.

Ask the pupils to look at the tally chart you have made and find the frequency for each month.

Explain that 'frequency' means 'how many?' or 'how often'. Explain that the table is called a 'frequency table'.

Ask the pupils, 'What other information does this tally chart show?' (The most common/least common month for birthdays.)

Whole class teaching

Choose some pupils to write the following numbers as a tally on the chalkboard: 7, 11, 22, 18 and 34.

Take the class outside and ask the pupils to collect as many pebbles (or leaves) as they can in 2 minutes.

Tell them that each group is going to make a tally chart to show the number of pebbles they collected.

Group task

Write 'Pebbles collected' on the chalkboard and ask the groups to copy it into their exercise books.

Ask each group to write the names of the pupils in their group vertically under this title.

Tell them to write the number of pebbles each pupil collected by their name.

Tell them to write the number as a tally.

Group task

Ask each group to say some of the information their tally chart shows, eg: who collected the most and the least.

Week 18: Statistics

Day 2: Pictograms

Learning outcomes

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

Say the answers to the
7 times table.

Interpret a pictogram.

Preparation

Before the lesson:

Make a set of 1—10 flash cards
for each group and shuffle each set.

Display the multiplication square
from Week 16 in the classroom.

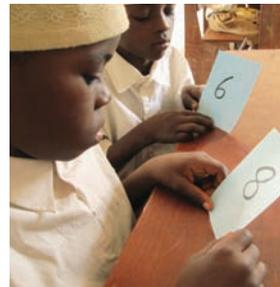
Draw the pictogram, shown opposite,
on the chalkboard.

Read **How? Multiplication cards**,
as shown below.

How? Multiplication cards



Place a set of
number flash cards
face down in front
of each group.



Tell the pupils, in
turn, to take a card
and say the number.



Ask them to times
the number by 7 in
their exercise books.



Tell the pupils to
check the answer
on the multi-
plication square.



Continue until all
the number cards
have been taken.

15 minutes

How

Daily practice

Group task

Teach [How? Multiplication cards](#), as shown left.

10 minutes

Learn Mathematics 4

Introduction

Whole class teaching

Remind the pupils that we can also use pictograms to present information.

Look together at the pictogram representing the number of mangoes children have in [Learn Mathematics 4, page 336](#).

Ask 'How many mangoes does Garba have?', 'Who has 3 mangoes?'

25 minutes

Main activity

Whole class teaching

Look at the pictogram 'Houses built in a city per year'.

Explain that one symbol represents 100 houses. Ask, 'Why is this a good way to represent information?'

Explain that having a symbol to represent 100 means that we have fewer symbols to draw.

Read and discuss the following questions.

10 minutes

Song

Plenary

Whole class teaching

Sing the [Tricky sevens song](#) from Week 18, Day 1 (yesterday).

Individual task

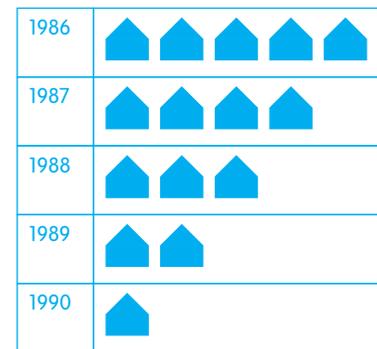
Ask the pupils to write the answers in their exercise books:

'How many houses were built in each year?'

'In which year were the largest number of houses built?'

'In which year were the smallest number of houses built?'

Houses built in a city per year



Key  = 100 houses

Week 18: Statistics

Day 3: Late for school

Learning outcomes

Preparation

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

Give division facts
corresponding to the 6
and 7 times tables.

Draw a simple pictogram.

Before the lesson:

Draw the [frequency table](#), shown
opposite, on the chalkboard.

Read [How? Pictograms](#), as shown below.

How? Pictograms



Discuss the frequency table and explain that you are going to make it into a 'pictogram'.



Explain that a circle will represent 2 pupils.



On the chalkboard, write the days of the week in a vertical list.



Choose some pupils to draw circles for the pupils who were late each day.



Remind them that some numbers (odd numbers) will need half a circle.

15
minutes

Songs/
Game

10
minutes

25
minutes

How

Frequency table

10
minutes

Daily practice

Whole class teaching

Sing the **Tricky sixes** and **Tricky sevens songs** with the pupils.

Explain to the class that they are going to play a game called '**call back**'.

Start with the 6 times table.

Explain that you are going to say an answer from the 6 times table.

Tell the pupils to shout out the number that would go with 6 to get the answer, eg: for 54 the pupils shout '9'.

Introduction

Whole class teaching

Remind the class that pictograms use symbols to represent numbers.

Draw a square on the chalkboard and say, 'This represents 2 sheep.'

Choose some pupils to draw squares to represent 6 sheep and 10 sheep.

Ask the class, 'How can I represent 7 sheep?' (Draw 3 squares and half a square.)

Choose some pupils to draw squares to represent 11 sheep and 15 sheep.

Main activity

Whole class teaching

Teach **How? Pictograms**, as shown left, using the **frequency table** on the chalkboard.

Group task

Rub out the pictogram on the chalkboard.

Ask the groups to draw a pictogram in their exercise books using the **frequency table of pupils who came to school late**, as shown below.

Frequency table

Day	Pupils
Monday	16
Tuesday	13
Wednesday	8
Thursday	3
Friday	2

Plenary

Whole class teaching

Ask the class to use their pictograms to answer the following questions:

'How many pupils were late on Tuesday?'

'Which day had the most number of late pupils?'

'How many pupils were late altogether that week?'

Week 18: Statistics

Day 4: A bar chart

Learning outcomes

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

Say answers from the
7 times table.

Interpret a simple bar chart.

Preparation

Before the lesson:

Copy the [bar chart of favourite colours](#) on
to the chalkboard, as shown right.

Read [How? Bar chart](#), as shown below.

Have ready the [word/phrase flash cards](#).

How? Bar chart



Explain that you
need to add more
information
to the bar chart.



Tell the class that
19 pupils like yellow.



Choose a pupil
to draw a bar to
represent 19.



Ask a pupil to draw
a bar to show that
18 pupils like pink.



Ask a pupil to
draw a bar to show
the fact that 10
pupils like orange.

15 minutes | Songs/
Game

Daily practice

Whole class teaching

Sing the **Tricky sixes** and **Tricky sevens songs** with the pupils.

Play the **call back game** from Week 18, Day 3 (yesterday) with the 7 times table.

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

10 minutes | Bar chart

Introduction

Whole class teaching

Tell the class that we can also present information in a bar chart.

Discuss the **bar chart** on the chalkboard.

Explain that the bars show the number of pupils who prefer each colour.

Tell the pupils that the line with the colour names is called the 'horizontal axis' and the line with the numbers is called the 'vertical axis'.

Ask the class, 'What do you notice about the numbers?' (They go up in twos.)

Choose some pupils to point to 6, 8, 7 and 11 on the vertical axis.

25 minutes | **How** | Bar chart

Main activity

Whole class teaching

Teach **How? Bar chart**, as shown left. Ask the class, 'What do you notice about green and orange?' (Both are liked by 10 pupils.)

Explain that 'mode' is the number that appears the most often in a set of numbers.

The number 10 appears the most in this **bar chart**, and so it is the 'mode of the data' (information).

Write these questions on the chalkboard:

'What is the most popular colour?'

'What is the least popular colour?'

'How many more pupils like pink than green?'

10 minutes | Flash cards

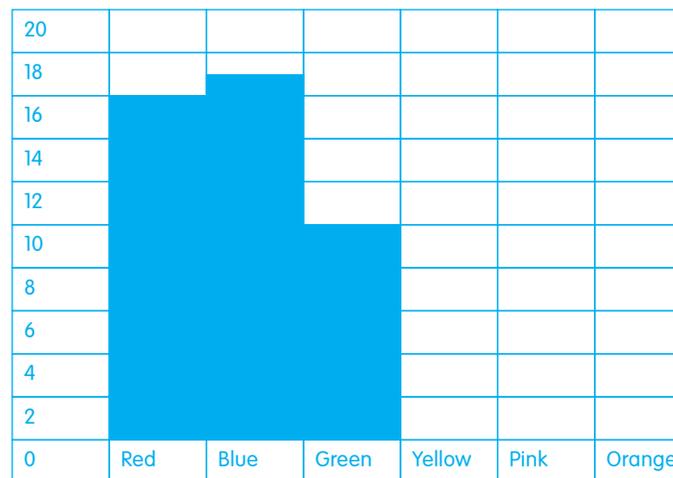
Plenary

Whole class teaching

Flash the **word/phrase cards** and read and explain them to the class.

Read and discuss the questions and ask the groups to complete them in their exercise books.

Bar chart



Week 18: Statistics

Day 5: Absent from school

Learning outcomes

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

Answer questions from
the 6 and 7 times tables.

Draw a simple bar chart.

Preparation

Before the lesson:

Write **frequency table of pupils
absent from school**, as shown opposite,
on the chalkboard.

Read **How? Bar chart 2**, as shown below.

Have ready **rulers** for each group,
and the **word/phrase flash cards**.

How? Bar chart 2



Draw a horizontal
axis and write the
days of the week
(Monday to Friday)
along it.



Draw a vertical
axis and write the
numbers 0—10
in twos.



Make sure that
each number space
is the same – check
with the ruler.



Ask a pupil to draw
a bar to show
that 9 pupils were
late on Monday.



Ask other pupils to
draw the bars for
the rest of the week.

15 minutes | Songs

Daily practice

Whole class teaching

Sing the [Tricky sixes](#) and [Tricky sevens songs](#) with the pupils.

Play [How? Multiplication bingo](#) from Week 17, Day 3 (last week), using the 6 and 7 times tables.

10 minutes

Introduction

Pair task

Remind the pupils that mode is the number that appears the most often in a set of numbers.

Ask the pairs to find the mode in each of the following sets of data:

Set 1
8, 7, 9, 9, 10, 14, 12

Set 2
7, 8, 5, 7, 8, 7, 8, 6, 7

Set 3
3, 4, 3, 3, 3, 4, 5, 5, 2, 4

25 minutes

How

Frequency table

Rulers

Main activity

Whole class teaching

Discuss the [frequency table of pupils absent from school](#), shown below, with the pupils.

Ask, 'What number is the mode?' (8)

Teach [How? Bar chart 2](#), as shown left.

Frequency table

Day	Number
Monday	9
Tuesday	8
Wednesday	5
Thursday	6
Friday	8

Group task

Rub the bars off the chart, leaving the horizontal and vertical axis on the chalkboard.

Ask the groups to use the [frequency table](#) on the chalkboard to draw a bar chart in their exercise books.

Give each group a [ruler](#) and tell them to use the [rulers](#) to keep their lines straight.

Ask the groups to make sure that the number spaces are the same and try to draw the bars accurately.

Go and help each group in turn.

10 minutes | Flash cards

Plenary

Whole class teaching

Flash the [word/phrase cards](#) and choose some pupils to read and explain them.

Grade/
Type of lesson plan

Lesson
title

Weekly page

Primary 4, numeracy lesson plans

Week 19:

Statistics and time

Words/phrases

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

seconds
minutes
hours
weeks
months
year
tally chart
bar chart
analogue clock
digital clock
24-hour clock
am
pm

Learning expectations

By the end of the week:

All pupils will be able to:
Tell the time using an
analogue clock.

Most pupils will be able to:
Tell the time using
a digital clock.

Some pupils will be able to:
Change analogue times
to digital times.

Assessment task

Instructions:

1
Ask individual pupils to draw a clock and set the time for half past 8.

2
Ask individual pupils to show these times on an analogue clock:

03:00
19:30
22:45

3
Ask individual pupils to draw clocks showing the following times:
4 o'clock in the afternoon
half past 5 in the morning
quarter to 10 at night

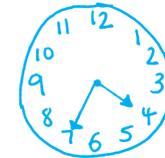
Example of a pupil's work

This pupil can:

Record the time on an analogue clock.

Record the time on a digital clock.

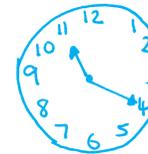
Change the time from analogue to digital.



25 minutes to 4



10 minutes past 9



Week 19: Statistics and time

Day 1: Three minute tally chart

Learning outcomes

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

Use number bonds
to complete subtraction
sums quickly.

Make a tally chart to record
information about time.

Preparation

Before the lesson:

Have ready a [stopwatch](#) (or the timer
on a mobile phone).

Read [How? Time tally](#), as shown below.

How? Time tally



Ask six pupils to
come out. Give each
pupil a space
on the chalkboard.



Set the stopwatch
for 3 minutes.



Tell the pupils
to write their first
names as many
times as they can.



Count the
names and write
the results in
a frequency table.



Choose some
pupils to help you
write the results as
a tally chart.

15
minutes

Daily practice

Whole class teaching

Ask the class to help you to write the number bonds for 12 and 13 on the chalkboard.

Write the following sums on the chalkboard:

$$12 - 9 =$$

$$12 - 7 =$$

$$12 - 6 =$$

$$12 - 8 =$$

$$12 - 5 =$$

$$13 - 7 =$$

$$13 - 9 =$$

$$13 - 8 =$$

$$13 - 5 =$$

$$13 - 6 =$$

Remind the pupils how to use the number bonds to complete these sums quickly in their exercise books.

10
minutes

Introduction

Whole class teaching

Ask the pupils to say some of the units used to measure time.

Write their ideas on the chalkboard.

Ask the following questions:

'What is the smallest unit of time?' (seconds)

'How many seconds are there in a minute?'

'How many minutes are there in an hour?'

'How many hours are there in a whole day and night?'

'How many days are there in a year?'

'How many weeks are there in a year?'

25
minutes

How

Stopwatch

Frequency table

Main activity

Whole class teaching

Ask the pupils to estimate how many jumps they can do in 1 minute.

Write some of their estimates on the chalkboard.

Use the **stopwatch** to time the pupils as they jump for 1 minute and ask them to count their jumps.

Ask some pupils, 'How many jumps did you do? Did you do more or less than your estimate?'

Ask some pupils, 'How many times do you think you can write your name in 3 minutes?'

Teach **How? Time tally**, as shown left.

Group task

Ask the groups to say two things that the tally chart shows, eg: who wrote their name the most number of times.

Rub the tally chart off the chalkboard.

Ask the groups to draw the tally chart in their exercise books using the **frequency table** to help them.

10
minutes

Stopwatch

Plenary

Whole class teaching

Explain that you want to find out if the pupils know how long a minute is.

Set the **stopwatch** or timer for 1 minute but do not let the class see it.

Tell the pupils to put up their hands when they think a minute has passed.

Ask them to say some units of time and put them in order from the smallest to the biggest.

Week 19: Statistics and time

Day 2: Times taken to run 60m

Learning outcomes

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

Use place value to add
numbers quickly.

Draw bars on a bar chart
to represent times.

Preparation

Before the lesson:

Write the following sums on **large
flash cards**: $180 + 19 =$, $140 + 28 =$,
 $130 + 27 =$, $120 + 48 =$, $600 + 150 =$,
 $600 + 270 =$, $400 + 340 =$

Find a **measuring tape** or a **metre stick**
and a **ruler** for each group.

Read **How? Times taken to run 60m**,
as shown below.

How? Times taken to run 60m



Mark out 60 metres
with the measuring
tape, to use as
a running track.



Time each pupil
as they run 60
metres and tell them
their time.



Go back inside
and write the pupils'
names and times
on the chalkboard.



Draw a bar chart
and write the
pupils' names on
the horizontal axis,
evenly spaced.



Evenly space the
seconds in twos on
the vertical axis.

15 minutes | Game/
Flash cards

Daily practice

Group task

Remind the class that they can use place value to add quickly.

Tell them they are going to play the **speedy addition game**.

Hold up a **sum flash card** and ask the groups to discuss the answer.

Tell them to put up their hands when they have an answer and ask the first group with their hands up to answer.

Give points if the answer is correct.

Repeat until you have shown all the **flash cards**.

The group with the most points wins.

10 minutes

Introduction

Whole class teaching

Ask the pupils, 'How many seconds are there in 1 minute?'

Demonstrate changing 3 minutes into seconds on the chalkboard:

$3 \times 60 =$
First multiply by 6:
 $3 \times 6 = 18$

Then move the numbers in the answer one place value to the left:
 $3 \times 60 = 180$

Demonstrate changing 4 minutes and 25 seconds into seconds:
 $4 \times 60 = 240$
 $240 + 25 = 265$ seconds

Ask the pupils to change 2 minutes and 13 seconds into seconds in their exercise books.

25 minutes

How

Main activity

Whole class teaching

Tell the pupils that they are going to find out how quickly some pupils can run 60 metres.

Ask some pupils to say some estimates in seconds.

Ask, 'How can we record these results?' (In a tally chart, frequency table or bar chart.)

Choose three girls and three boys to be the runners and take the class outside.

Teach **How? Times taken to run 60m**, as shown left.

Bar chart

Group task

Ask a pupil to help you shade in the first bar on the **bar chart**.

Remind them that they are counting in twos. Explain that some numbers will be in between the twos, so you will need to position them carefully.

Ask the groups to copy and complete the bar chart in their exercise books.

Give the groups the rulers to keep their lines straight.

Ask the groups to make sure the number spaces are the same and try to draw the bars accurately.

Go and help each group in turn.

10 minutes | Bar chart

Plenary

Whole class teaching

Ask some pupils to draw their bars on the **bar chart** on the chalkboard.

Ask the pupils, 'Who had the fastest time?'

Week 19: Statistics and time

Day 3: Telling the time

Learning outcomes

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

Subtract single-digit
numbers from two-digit
numbers quickly.

Tell the time using an
analogue clock.

Preparation

Before the lesson:

Make a set of 1—10 flash cards
for each group.

Make **card clocks** with moveable
hands for each group, leaving blank
boxes for the numbers and have
ready a real **clock**.

Read **How? Telling the time**,
as shown below.

How? Telling the time



Ask the groups to
write the numbers on
their card clocks.



Tell them to write
'past' on one half
and 'to' on the
other half of the
clock face.



Ask the groups to
make 8 o'clock
and half past 7 with
their clocks.



Ask them to make
times with minutes
past the hour.



Ask them to make
times with minutes
to the hour.

15 minutes | Game/
Flash cards

Daily practice

Group task

Explain to the pupils that they are going to play the **final countdown game**.

Give each group a set of **1—10 flash cards**, and ask them to shuffle them and put them in the middle of the table.

Tell the pupils to choose a number card, take that number away from 99 and write down the answer.

Ask them to choose another card, then subtract that number from their answer.

Tell them to repeat until they can't subtract any more numbers.

The group with the lowest number is the winner.

10 minutes | How

Introduction

Group task

Teach **How? Telling the time**, as shown left.

25 minutes | Clock/
Card clocks

Main activity

Group task

Hold up the **clock**.

Move the hands to make times, and ask the pupils to say the time.

Continue until most of the pupils have had a turn.

Ask, 'If it is 5 past 4 now, what time will it be in 10 minutes?'

Tell the groups to move the hands on their **card clocks** to find the answer.

Ask, 'If it is 5 to 7 now, what time will it be in 10 minutes?'

10 minutes

Plenary

Whole class teaching

Ask the class the following questions:

'How many days are there in a week?'

'How many days are there in a year?'

'How many months are there in a year?'

Ask the class to say the names of the months with you, in order.

Week 19: Statistics and time

Day 4: 24-hour clock

Learning outcomes

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

Use renaming to subtract
two-digit numbers.

Convert analogue times to
24-hour digital times.

Preparation

Before the lesson:

Have ready an [analogue clock](#)
and a [digital clock](#), eg: on a mobile phone.

Read [How? Digital clock](#), as shown below.

How? Digital clock



Show the time for
midnight on the
digital clock and the
analogue clock.



Show the hours
from 1am to midday
on both clocks.



Write both times on
the chalkboard.



Choose pupils to
write the times from
1pm to midnight.



Ask the pupils to
say the digital
and analogue times
with you.

15
minutes

Daily practice

Whole class teaching

Write '76 – 28 =' on the chalkboard.

Set the sum out vertically, expand the numbers and rename them:

$$\begin{array}{r} \text{T U} \\ 76 \\ - 28 \\ \hline \end{array}$$

Step 1:

$$\begin{array}{r} 70 + 6 \\ - 20 + 8 \\ \hline \end{array}$$

Step 2:

$$\begin{array}{r} 60 + 16 \\ - 20 + 8 \\ \hline 40 + 8 \end{array}$$

$$40 + 8 = 48 \\ 76 - 28 = 48$$

Write this sum on the chalkboard for pupils to complete: $82 - 36 =$

10
minutes

Introduction

Whole class teaching

Ask the class to say how many hours there are in a day.

Remind the class that we say 'am' for times from midnight to midday and 'pm' for times from midday to midnight.

Ask some pupils to say what they do at 11am and 11pm.

Repeat, with 8am and 8pm, and 6am and 6pm.

Remind the class that an analogue clock breaks the day into two halves.

It measures 12 hours for 'am' times and 12 hours for 'pm' times.

25
minutes

How

Main activity

Pair task

Explain that digital time does not break up the 24 hours of the day into two halves.

It does not use 'am' or 'pm'. Instead, it counts each of the 24 hours of the day.

Teach [How? Digital clock](#), as shown left.

Ask a pupil to write 2am as digital time (02:00).

Ask a pupil to write 2pm as digital time.

Explain that it is 14:00 because it is two hours after 12:00.

Repeat with 3pm (three hours after 12 so it is 15:00).

10
minutes

Plenary

Whole class teaching

Write the following word problems on the chalkboard:

'Tunde starts work at 08:00 and finishes at 16:00. How long does he work for?'

'Lola leaves home at 14:00 and returns at midnight. How long is she away from home?'

Read and explain the problems to the class, then ask the pairs to work them out.

Choose some pairs to say the answers to the class.

Week 19: Statistics and time

Day 5: Digital time

Learning outcomes

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

Solve simple subtraction word
problems with renaming.

Convert analogue times to
digital times.

Preparation

Before the lesson:

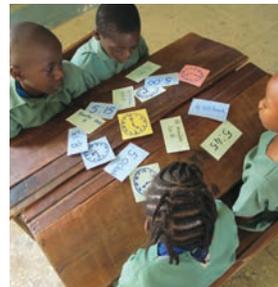
Make a set of [analogue and digital clock
cards](#) for each group, as shown below
in [How? Clock matching game](#) and shuffle
each set well.

Have ready an [analogue clock](#)
and a [digital clock](#).

How? Clock matching game



Show the 4 o'clock
card and the
matching analogue
and digital clock
time cards.



Give the groups a
set of analogue and
digital time cards.



Ask the groups to
match the analogue
times with
the digital times.

15
minutes

Daily practice

Pair task

Write the following word problems on the chalkboard:

'Sabo had 44 apples in a box. He sold 27. How many are left?'

'There are 93 books on a shelf. The teacher takes 58. How many are left?'

Read and explain the problems and ask the pairs to say the calculations needed.

Tell the pairs to complete the problems in their exercise books.

10
minutes

Introduction

Whole class teaching

Ask, 'How many minutes are there in an hour?'

Explain that on analogue clocks we break each hour into two halves.

We say the first 30 minutes are 'past' the hour and the next 30 minutes are 'to' the hour.

Explain that on a digital clock, we count all the 60 minutes. So 20 to 8 o'clock in the morning is 07:40 because 40 minutes have passed since 7am.

25
minutes

How

Main activity

Group task

Play [How? Clock matching game](#), as shown left.

Write the following times on the chalkboard:
10 past 6am
25 past 7am
quarter past 9am
10 to 7am
20 past 6pm
half past 9pm

Ask the groups to say the times as 24-hour digital times.

Remind them to change the hour to the 24-hour time for the pm times.

Ask the groups to write the 24-hour digital times in their exercise books.

10
minutes

Analogue clock

Plenary

Whole class teaching

Make times on the [analogue clock](#) and choose some pupils to say them.

Ask them to write the times as digital times on the chalkboard.

Weekly page

Primary 4, numeracy lesson plans

Week 20:

Time problems

Words/phrases

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

calendar
leap year
date
number line
slow
fast
hour boundary
day boundary
timetable
journey times

Rhymes

Write this rhyme on the chalkboard and leave it there for the week.

Days in the months:
30 days have September,
April, June and November.
All the rest have 31
Except February alone,
Which has 28 days clear
And 29 in each leap year.

Learning expectations

By the end of the week:

All pupils will be able to:

Use a calendar to say what day a date falls on.

Most pupils will be able to:

Use a number line to calculate time problems.

Some pupils will be able to:

Use a timetable to calculate how long a journey takes.

Assessment task

Instructions:

1
Ask individual pupils to use the November calendar on the chalkboard and tell you what day of the week 22nd November was.

2
Ask individual pupils to tell you the time difference between 9.45 and 10.25, using a number line.

3
Ask individual pupils to use the Nigerian train timetable and tell you how long the journey from Lagos to Kano will take.

Example of a pupil's work

This pupil can:

Use a train timetable to calculate the time a journey will take.

Use a number line to calculate time differences.

Timetable

Departs: Lagos Friday 09:25
Arrives: Kano Saturday 14:55



$$35 \text{ mins} + 55 \text{ mins} = 1 \text{ hr } 30 \text{ mins}$$
$$14 \text{ hrs} + 12 \text{ hrs} + 2 \text{ hrs} = 28 \text{ hrs}$$

$$28 \text{ hrs} + 1 \text{ hr } 30 \text{ mins} = 29 \text{ hrs } 30 \text{ mins}$$

Lagos to Kano takes $29\frac{1}{2}$ hrs.

Week 20: Time problems

Day 1: A calendar

Learning outcomes

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

Say the time 10 minutes
before a given time.

Work out the length of
time between dates, using
a calendar.

Preparation

Before the lesson:

Have ready the [card clocks](#) from Week 19
(last week) for each group.

Write the [Days in the months rhyme](#)
on the chalkboard, as shown on this week's
weekly page.

Read [How? Calendar](#), as shown below.

How? Calendar



Ask some pupils
to help you make
a November
2014 calendar on
the chalkboard.



Ask some pupils
to find what day the
27th was on. Repeat
with other dates.



Ask, 'How many
Mondays are there?'



Ask, 'Can you work
out which day
December 2nd falls
on?' (Wednesday).



Ask, 'Can you work
out which day
was October 29th?'

15 minutes | Card clocks

Daily practice

Group task

Give a **card clock** to each group.

Ask the groups to make the following times on the **clocks**:

10 to 7
5 to 6
half past 1
quarter to 8
20 past 2
25 to 7
10 past 4
5 past 1
2 o'clock

After they make each time ask the groups, 'What time was it 10 minutes earlier?'

10 minutes | Rhyme

Introduction

Whole class teaching

Choose some pupils to help you write the months of the year on the chalkboard.

Ask the class:

'How many days are there in a year?'

'How many months are there in a year?'

Remind them that some months have different numbers of days.

Ask them to say the **Days in the months rhyme** with you and explain it.

Ask pupils to help you to write the number of days in each month on the chalkboard.

25 minutes

How

Main activity

Whole class teaching

Teach **How? Calendar**, as shown left.

Ask, 'If it is November 24th now, what date will it be in 2 weeks?'

Choose some pupils to explain how to solve the problem, helping them to count the days into the next month and the previous month.

10 minutes | Rhyme

Plenary

Whole class teaching

Tell the pupils to say the **Days in the months rhyme** with you.

Ask them to write the number of days in each month in their exercise books.

Group task

Write on the chalkboard:
'It is my birthday on October 24th. I am having a party on the Saturday after my birthday. When is my party? How many days is it after my birthday?'

Ask the groups to discuss the answer and choose a group to explain their answer.

Give each group a different date, eg: November 10th, 3rd, 18th, 2nd.

Ask them to work out what the date and day is 10 days later.

Tell the groups to say their answers and ask the class if they agree.

Week 20: Time problems

Day 2: Time number lines

Learning outcomes

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

Work out the correct time
if a clock is fast or slow.

Use a number line to
calculate time problems.

Preparation

Before the lesson:

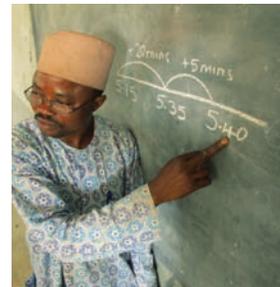
Have ready the [card clocks](#) from
Week 20, Day 1 (yesterday).

Read [How? Time number line](#),
as shown below.

How? Time number line



Ask the pupils, 'If
it is 05:15 now, what
will the time
be in 15 minutes?'



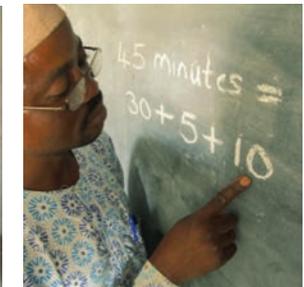
Explain how to solve
the problem
with a number line.



Ask, 'If it is 06:15
now, what will
the time be
in 35 minutes?'



Repeat with, 'If it
is 06:25 now, what
will the time
be in 45 minutes?'



Explain how to
expand the minutes
to cross the
hour boundary.

15
minutes

Card clocks

10
minutes

How

25
minutes

10
minutes

Daily practice

Introduction

Main activity

Plenary

Group task

Explain that sometimes clocks can go wrong and become too slow or too fast.

Ask the groups to make 25 past 2 on their **card clocks**.

Tell them that the clocks are 10 minutes slow and ask them to show the real time (25 to 3).

Tell them to return the time to 25 past 2.

Tell the groups that the clocks are 10 minutes fast and ask them to show the real time (quarter past 2).

Repeat with different times.

Ask the groups to try to work out the correct times without using the clocks.

Whole class teaching

Teach **How? Time number line**, as shown left.

Whole class teaching

Write the following word problems on the chalkboard, then read and explain them:

'Musa leaves home at 07:45. It takes him 20 minutes to walk to school. When does he get to school?'

'Break lasts 45 minutes. It starts at 11:20. When does it finish?'

'Taibat reads for 50 minutes. She starts at 10:30. When does she finish?'

'The clock says 02:15. It is 50 minutes slow. What is the real time?'

Group task

Ask the groups to complete the problems in their exercise books, using a number line.

Tell the pupils they can expand the minutes in any way to make them easier to count on.

Whole class teaching

Ask one or two groups to draw the number line they used for one of the word problems on the chalkboard.

Ask them to explain their calculations and ask the rest of the class if they agree.

Week 20: Time problems

Day 3: How much time has passed?

Learning outcomes

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

Add minutes on
a digital clock.

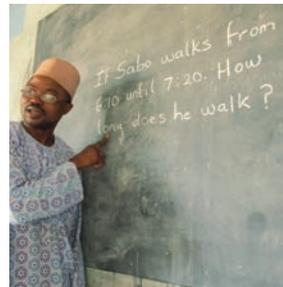
Calculate time that has
passed using a number line.

Preparation

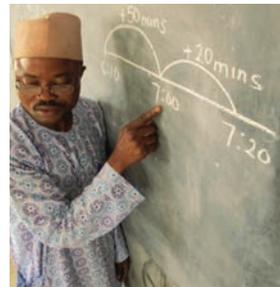
Before the lesson:

Read [How? Time passed number lines](#),
as shown below.

How? Time passed number lines



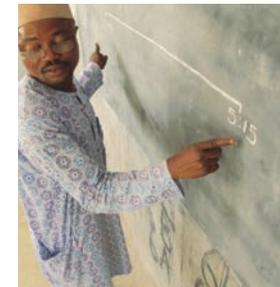
Ask, 'If Sabo walks from 6:10 until 7:20, how long does he walk for?'



Draw a number line and count the jumps.



Explain that 70 minutes = 1 hour and 10 minutes.



Draw a number line from 3:05 to 5:15 and ask, 'How much time has passed?'



Add up hours and minutes together to find the answer.

15
minutes

Daily practice

Whole class teaching

Ask the class to write the following as digital times on the chalkboard:

10 past 8 in the morning
5 to 9pm
25 past 4 in the afternoon
quarter to 12am

Write the following digital times on the chalkboard: 11:45, 04:05, 02:55, 12:40, 09:50.

Tell the pupils that these times are 10 minutes slow and ask them to write the correct times in their exercise books.

Remind them to add 10 minutes to each time and take care crossing the hour boundary.

10
minutes

Introduction

Whole class teaching

Ask the pupils, 'How many minutes are there in an hour?'

Ask some pupils to help you change 250 minutes to hours on the chalkboard:
 $250 \div 60 =$

$$\begin{array}{r} \text{H T U} \\ 250 \\ - 120 \quad (60 \times 2 = 120) \\ \hline 130 \\ - 120 \quad (60 \times 2 = 120) \\ \hline = 10 \end{array}$$

Add the hours and the remaining minutes: 4 hours and 10 minutes.

Ask the pupils to write 180 minutes and 210 minutes as hours and minutes in their exercise books.

25
minutes

How

Main activity

Whole class teaching

Teach **How? Time passed number lines**, as shown left.

Write the following word problems on the chalkboard:

'Musa went shopping at 09:30. He arrived home at 10:45. How long was he out?'

'A lesson starts at 08:15 and finishes at 10:10. How long does the lesson last?'

'Jamila arrived at the party at 14:03. She left at 16:10. How long did she stay at the party?'

Read and explain the problems.

Individual task

Ask the pupils to complete the word problems in their exercise books.

Tell them to use a number line.

Go round the class and help pupils.

10
minutes

Plenary

Whole class teaching

Choose a pupil to explain, on the chalkboard, how they solved the first word problem.

Ask the class to say if they are correct and if not, to explain why.

Week 20: Time problems

Day 4: A train timetable

Learning outcomes

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

Subtract minutes on
a digital clock.

Use a timetable to
calculate journey times.

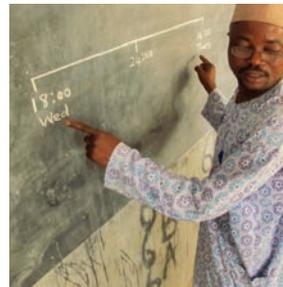
Preparation

Before the lesson:

Copy the [Nigerian train timetable](#)
from the introduction, shown right, on to
a large piece of card.

Read [How? Journey times](#),
as shown below.

How? Journey times



Draw a number
line starting at
18:00 on Wednesday
and finishing at
14:00 on Thursday.



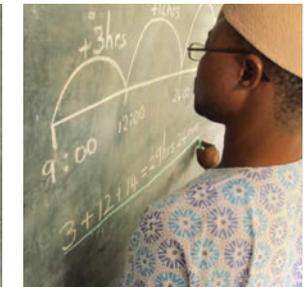
Calculate the time
that passes, and
explain that this
crosses the 24-hour
boundary.



Add up the hours.



Demonstrate finding
the time of the
train from Kano
to Lagos on the train
timetable.



Calculate how long
the journey takes
using a number line.

15
minutes

Daily practice

Pair task

Tell the class that your digital clock says 11:05 but it is 15 minutes fast.

Use a number line to count back to find the answer (10:50).

Write the following times on the chalkboard: 10:15, 12:03, 08:13.

Explain that these times are 20 minutes fast.

Ask the pairs to calculate the real times in their exercise books, using a number line to help them.

10
minutes

Train timetable

Introduction

Pair task

Show the class the **time-table** below:

Nigerian train timetable:

Lagos – Ilorin (Tuesdays, Fridays and Saturdays)

Departs: Iddo 09:00

Arrives: Ilorin 18:34

Lagos – Kano (Every Friday)

Departs: Iddo 12:00

Arrives: Kano 17:01 (the next day)

Kano – Lagos (Every Monday)

Departs: Kano 09:00

Arrives: Lagos 14:24 (the next day)

Offa – Kano (Every Tuesday)

Departs: Offa 22:00

Arrives: Kano 18:05 (the next day)

25
minutes

How

Train timetable

Main activity

Whole class teaching

Ask 'How many hours are there in a day?'

Explain to the pupils that they are going to work out times that cross the 24-hour (day) boundary.

Teach **How? Journey times**, as shown left.

Write the following word problems on the chalkboard and discuss:

'How long is the journey from Lagos to Ilorin?'

'How long is the journey from Offa to Kano?'

'How long is the journey from Lagos to Kano?'

Ask the groups to calculate the answers using a number line and the **train timetable**.

10
minutes

Plenary

Whole class teaching

Choose one group to explain, on the chalkboard, how they solved the first word problem.

Ask the rest of the class to say if they are correct and if not, to explain why.

Week 20: Time problems

Day 5: Multiplication time problems

Learning outcomes

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

Say the numbers of days
in each month.

Calculate multiplication
time problems.

Preparation

Before the lesson:

Make a set of [month flash cards](#) for
each group.

Write the [Days in the months rhyme](#)
from Week 20, Day 1 (earlier this week)
on the chalkboard.

Read [How? Months](#), as shown below.

How? Months



Ask the groups
to shuffle the month
flash cards.



Ask them to
arrange them in
the correct order
on their desks.



Ask the groups to
choose the months
that have 31 days.



Ask them to choose
the months that
have 30 days.



Ask them to hold up
the first month of
the year, the seventh
month, and so on.

15
minutes

How

Rhyme

Daily practice

Whole class teaching

Ask each group to read the **Days in the months rhyme** with you.

Teach **How? Months**, as shown left.

10
minutes

Introduction

Whole class teaching

Write the following on the chalkboard and ask the pupils to help you fill in the missing numbers:

- seconds in a minute.
- minutes in an hour.
- hours in a day.
- days in a week.
- weeks in a year.
- months in a year.
- days in a year.

Ask the pupils how they could calculate the number of days in six weeks, ie:
 $6 \times 7 = 42$.

25
minutes

Main activity

Whole class teaching

Write this word problem on the chalkboard:
'A hen lays four eggs every week. How many eggs does she lay in a year?'

Ask a pupil to write the calculation needed:
 $52 \times 4 =$

Remind the class how to use the grid method:

$$\begin{array}{r|l} \times & 50 & 2 \\ 4 & 200 & 8 \end{array}$$

$$200 + 8 = 208 \text{ eggs}$$

10
minutes

Rhyme

Plenary

Whole class teaching

Ask the pupils to say the **Days in the months rhyme**.

Tell the pupils the correct time.

Ask some pupils to say what the time will be 30 minutes later and what time it was 10 minutes earlier.

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.

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