A young boy with short hair, wearing a pink shirt with a dark collar, is looking upwards and to the right. He is holding a yellow envelope in his right hand. The background is a dark, textured surface, possibly a wall or a large piece of paper. The overall lighting is soft, highlighting the boy's face and the envelope.

**Numeracy lesson plans**  
**Primary 5,**  
**term 3, weeks 21—25**  
**Constructing shapes, angles,**  
**ratio and proportion**

**Numeracy lesson plans  
Primary 5,  
term 3, weeks 21—25  
Constructing shapes, angles,  
ratio and proportion**

## 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 understand the ideas.

### Plenary

Finishes the lesson with different ways of reviewing learning.

Grade/  
Type of lesson plan

Lesson  
title

## Weekly page

Primary 5,  
numeracy  
lesson plans

## Week 21:

Multiplication  
and division

### Words/phrases

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

multiply  
divide  
short method  
grid method  
vertical method  
remainder  
decimal

### Learning expectations

By the end of the week:

**All pupils will be able to:**

Begin to multiply and divide two-digit numbers by single-digit numbers.

**Most pupils will be able to:**

Solve three-digit by single-digit multiplication and division sums.

**Some pupils will be able to:**

Solve word problems that involve dividing three-digit numbers by two-digit numbers.

## Assessment task

### Instructions:

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

1

Solve the following calculations:

$$348 \times 8 =$$

$$148 \times 6 =$$

$$21.16 \times 9 =$$

2

Solve the following calculations:

$$534 \div 6 =$$

$$508 \div 9 =$$

3

Solve the following word problem:  
A goat farmer has 876 goats. He sells all goats equally to 8 market sellers. How many goats does each seller get? Are there any goats left for the farmer?

## Example of a pupil's work

### This pupil can:

Multiply three-digit by one-digit numbers.

Divide three-digit by one-digit numbers.

Solve a word problem on division.

1  $348 \times 8 =$

x	300	40	8
8	2400	320	64

$$\begin{array}{r} \text{Th H T U} \\ 2400 \\ 320 \\ + 64 \\ \hline 2784 \end{array}$$

2  $534 \div 6 =$

$$\begin{array}{r} 534 \\ - 300 \\ \hline 234 \\ - 180 \\ \hline 54 \\ - 54 \\ \hline 0 \end{array}$$

$$50 \times 6$$

$$30 \times 6$$

$$9 \times 6$$

$$50 + 30 + 9 = 89$$

3  $876 \div 8 =$

$$\begin{array}{r} 876 \\ - 800 \\ \hline 76 \\ - 72 \\ \hline 4 \end{array}$$

$$100 \times 8$$

$$9 \times 8$$

$$100 + 9 = 109$$

There are 4 goats left.

## Week 21: Multiplication and division

## Day 1: Multiplication

### Learning outcomes

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

Use times tables to solve  
division calculations.

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

### Preparation

**Before the lesson:**

Copy the [calculations](#) for today's  
main activity, shown opposite, on to  
the chalkboard.

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

### How? Multiplication



Ask a pupil to read  
the calculation  
on the chalkboard.



Draw a grid  
and set the  
calculation out.



Ask the pupils,  
'What do you do  
first?'



Choose some  
pupils to complete  
the grid.



Ask a pupil  
to calculate the  
answer.



15  
minutes

## Daily practice

### Pair task

Ask the pupils to help write the 4, 5 and 6 times tables on the chalkboard.

Ask the class, 'If we know that  $8 \times 6 = 48$ , what division calculations do we know?' ( $48 \div 6 = 8$  and  $48 \div 8 = 6$ )

Ask the pairs to write five division calculations in their exercise books using the times tables on the chalkboard.

Tell the pairs to swap their books. Ask them to write the multiplication calculation to help solve each division calculation and the answer.

15  
minutes

How

## Introduction

### Whole class teaching

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

Repeat with the following examples:  
 $238 \times 9 =$   
 $745 \times 8 =$

20  
minutes

Calculations

## Main activity

### Pair task

Ask the pupils to complete the following **calculations** in their exercise books using the grid method:

$325 \times 4 =$   
 $169 \times 8 =$   
 $253 \times 7 =$   
 $420 \times 9 =$   
 $540 \times 6 =$

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

10  
minutes

## Plenary

### 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.

## Week 21: Multiplication and division

## Day 2: Multiplying decimal numbers

### Learning outcomes

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

Use times tables to solve  
division calculations.

Multiply decimal numbers.

### Preparation

**Before the lesson:**

Copy the [calculations](#) for today's  
introduction and main activity, shown  
opposite, on to the chalkboard.

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

### How? Multiply decimals



Ask a pupil to read  
the calculation.



Invite a pupil to  
complete the  
calculation using  
the grid method.



Ask a pupil to  
calculate the  
answer vertically.



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



Calculate the answer.

15  
minutes

## Daily practice

### Individual task

Remind the class that the times tables can be used to work out division sums.

Write '40 ÷ 8 = ' on the chalkboard.

Ask the pupils what multiplication fact they can use to solve this, ie:  
 $8 \times 5 = 40$ , so  $40 \div 8 = 5$

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

$$\begin{aligned} 81 \div 9 &= \\ 48 \div 8 &= \\ 54 \div 9 &= \\ 64 \div 8 &= \\ 63 \div 9 &= \end{aligned}$$

Remind them to use the 8 and 9 times tables to help them.

10  
minutes

Calculations

## Introduction

### Whole class teaching

Show the pupils the following **calculations** on the chalkboard:

$$\begin{aligned} 0.2 \times 10 &= \\ 2 \times 10 &= \\ 20 \times 10 &= \\ 12 \times 10 &= \\ 1.2 \times 10 &= \end{aligned}$$

Ask the pairs to discuss the pattern in these calculations.

Choose a pupil to explain the pattern.

25  
minutes

How

## Main activity

### Whole class teaching

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

Using the vertical method, repeat with the following calculations:  
 $20.54 \times 7 =$   
 $63.42 \times 8 =$

Calculations

### Pair task

Read through the following **calculations** with the pupils and ask the pairs to complete them in their exercise books:  
 $35.21 \times 4 =$   
 $61.35 \times 6 =$   
 $42.82 \times 2 =$   
 $123.34 \times 5 =$

10  
minutes

## Plenary

### 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.

## Week 21: Multiplication and division

## Day 3: Dividing three- digit numbers

### Learning outcomes

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

Use the times tables to  
solve division calculations.

Divide a three-digit number  
using the short method.

### Preparation

**Before the lesson:**

Copy the [calculations](#) for today's  
main activity, shown opposite, on to  
the chalkboard.

Read [How? Dividing three-digit  
numbers](#), as shown below.

### How? Dividing three-digit numbers



Remind the pupils  
how to set out  
a short division  
calculation.



Demonstrate  
where to write  
the 2 Tens from  
 $20 \times 7 = 140$ .



Demonstrate  
where to write  
the 8 Units from  
 $8 \times 7 = 56$ .



Repeat with  
 $495 \div 9 =$



Remind the pupils  
to set the calculation  
out carefully.

15  
minutes

## Daily practice

### Individual task

Write the 3 and 6 times tables on the chalkboard with the pupils.

Remind pupils that if they know one multiplication fact, then they know 3 more number facts. For example if they know  $3 \times 8 = 24$ , then they also know:

$$8 \times 3 = 24$$
$$24 \div 8 = 3$$
$$24 \div 3 = 8$$

Write the following calculations on the chalkboard for the pupils to write the corresponding number facts in their exercise books:

$$3 \times 12 =$$
$$6 \times 7 =$$
$$12 \times 3 =$$
$$6 \times 8 =$$

10  
minutes

## Introduction

### Pair task

Write the following on the chalkboard:

$$10000 \div 2 = 5000$$
$$10000 \div 20 = 500$$
$$10000 \div 200 = 50$$

Ask the pairs to look at the sums and discuss the pattern.

Choose a pupil to explain the pattern.

Write the following on the chalkboard and choose some pupils to complete them:

$$30000 \div 2 =$$
$$30000 \div 20 =$$
$$30000 \div 200 =$$

25  
minutes

How

## Main activity

### Whole class teaching

Teach **How? Dividing three-digit numbers**, as shown left.

Calculations

### Pair task

Read through the following **calculations** with the pupils and ask the pairs to complete them in their exercise books:

$$366 \div 6 =$$
$$432 \div 4 =$$
$$343 \div 7 =$$
$$648 \div 4 =$$
$$852 \div 6 =$$

When the pupils have finished, tell them to check their answers with another pair.

10  
minutes

## Plenary

### Whole class teaching

Choose some pairs to explain how they worked the sums out on the chalkboard.

## Week 21: Multiplication and division

## Day 4: Division with a remainder

### Learning outcomes

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

Use number knowledge  
to work out the operation  
in a sum.

Solve division calculations  
with a remainder.

### Preparation

**Before the lesson:**

Copy the [calculations](#) for today's  
main activity, shown opposite, on to  
the chalkboard.

Read [How? Short division with remainder](#),  
as shown below.

### How? Short division with remainder



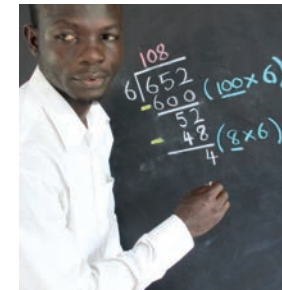
Remind the pupils  
how to set out  
a short division  
calculation.



Ask the pupils to  
think of a multiple  
of 100 nearest to 600,  
in the 6 times table  
( $100 \times 6 = 600$ ).



Demonstrate  
where to write the  
1 Hundred from  
 $100 \times 6 = 600$ .



Demonstrate  
where to write  
the 8 Units from  
 $8 \times 6 = 48$ .



Write the answer,  
reminding pupils  
to include the  
remainder.

15  
minutes

## Daily practice

### Whole class teaching

Write the four operations (+ – x ÷) on the chalkboard and choose some pupils to say all the different vocabulary they know for them.

Write the following sums on the chalkboard and invite some pupils to complete the calculations by adding the correct operation:

$$125 \square 20 = 105$$

$$18 \square 6 = 12$$

$$36 \square 3 = 12$$

$$20 \square 5 = 25$$

15  
minutes

How

## Introduction

### Whole class teaching

Teach **How? Short division with remainder**, as shown left.

25  
minutes

Calculations

## Main activity

### Pair task

Read through the following **calculations** with the pupils and ask the pairs to complete them in their exercise books:

$$254 \div 4 =$$

$$344 \div 6 =$$

$$268 \div 7 =$$

$$379 \div 8 =$$

$$642 \div 9 =$$

5  
minutes

## Plenary

### Whole class teaching

Choose some pairs to come to the chalkboard and explain to the class how they solved the calculations.

## Week 21: Multiplication and division

## Day 5: Solving word problems

### Learning outcomes

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

Find number facts.

Solve division word  
problems.

### Preparation

Before the lesson:

Copy the [word problems](#) for today's  
main activity, shown opposite, on to  
the chalkboard.

Read [How? Solving word problems](#),  
as shown below.

### How? Solving word problems



Write the problem on  
the chalkboard.



Ask the pupils to  
underline the  
key words to answer  
the word problem.



Invite a pupil to  
begin working out  
the calculation.



Ask them to explain  
what calculation  
will be needed  
and then write it on  
the chalkboard.



Remind them to  
answer the question.



15  
minutes

## Daily practice

### Group task

Divide the class into small groups and give each group a two-digit number, eg: 25, 32, 44, 55 or 64.

Explain that they have 5 minutes to write down all the different calculations they can think of where the answer will be the number they have been given.

Remind them they can use all four operations (+ – × ÷) and fractions or decimals.

Share some examples with the whole class, eg:

$$25 =$$

$$100 \div 4$$

$$5 \times 5$$

$$20 + 5$$

$$50 - 25$$

15  
minutes

How

## Introduction

### Whole class teaching

Use the following word problem to teach **How? Solving word problems**, as shown left:

'Mrs Adeyemi has N600 to spend on oranges that cost N50 each. How many oranges can she buy?'

20  
minutes

Word problems

## Main activity

### Whole class teaching

Read out the following **word problem** with the pupils and ask one of them to complete it on the chalkboard.

'A chicken farmer collected 24080 eggs each week. He sold them to 50 market women. Each woman bought the same number of eggs. How many did he sell to each woman? How many eggs will he have left over?'

### Pair task

Read out the following word problems on the chalkboard and ask the pairs to complete them in their exercise books:

'The total weight of 70 equal bags of rice is 7500kg. Find the weight of one bag of rice.'

'30 students each gave a school donation of the same amount. The total donation was N3630. How much did each student give?'

'A stallholder had 1.85m of ribbon. She cut it into 25cm lengths. How many lengths did she have?'

10  
minutes

## Plenary

### Whole class teaching

When most of the pupils have finished, go through the answers as a class.

If the pupils have the correct answer, they should mark it with a small tick.

Ask the pupils to make up a word problem for  $675 \div 15 =$

Choose some pupils to share their word problem with the class.

Grade/  
Type of lesson plan

Lesson  
title

---

## Weekly page

---

# Primary 5, numeracy lesson plans

---

## Week 22:

---

# Ratio and proportion

### Words/phrases

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

mode  
range  
median  
proportion  
ratio  
simplest form  
probability  
unlikely  
likely  
equally likely  
certain  
impossible

### Learning expectations

By the end of the week:

---

**All pupils will be able to:**  
Solve simple problems  
involving proportion.

---

**Most pupils will be able to:**  
Describe the relationship  
between two quantities.

---

**Some pupils will be able to:**  
Solve problems involving  
the ratio and proportion  
of quantities.

## Assessment task

### Instructions:

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

1

Write the proportion for the following diagrams:



2

Write the following ratios in their simplest form:

24:8

18:6

32:4

3

Mark the likelihood of the following events on individual probability lines:

Seeing a wild monkey in the forest

Seeing goats on the way home after school

Seeing an elephant in real life

## Example of a pupil's work

### This pupil can:

Work out the proportion of shaded shapes.

Simplify ratio to its simplest form.

Explain probability in different situations.

$$\bullet \circ \circ \bullet \circ \circ \bullet \circ \circ = 3:6$$

$$\begin{array}{c} \blacktriangle \blacktriangle \blacktriangle \blacktriangle \\ \triangle \triangle \triangle \triangle \\ \triangle \triangle \triangle \triangle \end{array} = 4:8$$

$$24:8 = 3:1$$

$$18:6 = 6:2 = 3:1$$

$$32:4 = 8:1$$

likely X unlikely

likely X unlikely

likely X unlikely

## Week 22: Ratio and proportion

### Day 1: Ratio

#### Learning outcomes

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

Work out the mode,  
range and median of  
a set of numbers.

Describe the relationship  
between two numbers  
using a ratio.

#### Preparation

**Before the lesson:**

Draw the **circles** and **questions** for  
today's main activity, shown opposite,  
on to the chalkboard.

Copy the **word problem** for  
today's plenary, shown opposite,  
on to the chalkboard.

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

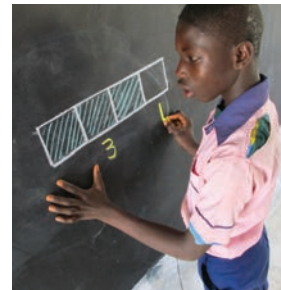
#### How? Ratio



Look at the squares  
on the chalkboard  
(3 blue squares  
and 1 white square).



Ask, 'How many  
blue squares  
are there?' Invite  
a pupil to write  
the number.



Ask, 'How many  
white squares  
are there?' Invite  
a pupil to write  
the number.



Explain that the ratio  
of blue to white  
squares is written  
like this: 3:1.



Draw 5 bananas  
and 3 apples. Invite  
a pupil to write  
the ratio of bananas  
to apples.

15  
minutes

## Daily practice

### Pair task

Write the following set of numbers on the chalkboard and look at them with the pupils:

'2, 9, 5, 4, 2, 6, 10, 12, 2.'

Ask the pairs to write the numbers in order, from smallest to largest, in their exercise books.

Tell them to underline the number that occurs most often and ask, 'What is this number called?' (The mode)

Ask the pairs to say the range of the numbers.

Ask them to find the median of the numbers.

10  
minutes

How

## Introduction

### Whole class teaching

Explain that 'ratio' is a way of directly comparing the value or frequency of two or more things.

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

25  
minutes

Circles/  
Questions

## Main activity

### Pair task

Ask 10 pupils (6 girls and 4 boys) to come to the front of the class.

Ask: 'How many pupils are standing here?'; 'What is the ratio of girls to boys?' (6:4)

Explain that the ratio is written to answer the question, the smaller number does not always come first.

Ask, 'How can we show the pupils in groups of 3:2?'

Repeat with 16 pupils (10 girls and 6 boys).

10  
minutes

Problem

## Plenary

### Whole class teaching

Read out the following **problem** on the chalkboard: 'A recipe for pancakes uses 3 cups of flour to 2 cups of milk.'

Ask, 'What would the ratio be if four times as much was needed?'

Choose some pupils to answer.

## Week 22: Ratio and proportion

## Day 2: Reducing ratio

### Learning outcomes

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

Quickly recall number facts.

Reduce a ratio to its  
simplest form.

### Preparation

**Before the lesson:**

Draw the [circles](#) and [questions](#) for  
today's main activity, shown opposite,  
on to the chalkboard.

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

### How? Number facts



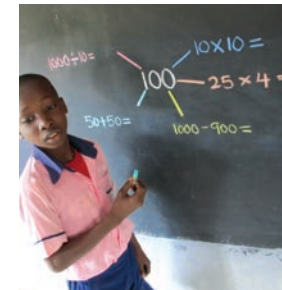
Look at the number  
64 on the chalkboard  
and ask the pupils,  
'What could the  
calculation be?'



Invite some pupils to  
write answers  
around the number,  
eg:  $8 \times 8 = 64$ .



Look at the number  
facts and ask,  
'Are they correct?'  
Invite some pupils  
to check.



Repeat with the  
number 100.



Repeat with the  
number 93.

15  
minutes

How

## Daily practice

### Whole class teaching

Teach **How? Number facts**, as shown left.

10  
minutes

## Introduction

### Whole class teaching

Ask 6 girls and 8 boys to come to the front of the class and ask the following questions:

'Altogether, how many pupils are standing here?'

'What is the ratio of girls to boys?'

Explain that there are 6 girls to every 8 boys and write '6:8' on the chalkboard.

Explain that ratios can be reduced to their simplest form.

Ask the standing pupils to divide themselves in half so there is the same ratio of girls to boys in each group. Write '3:4' under 6:8.

25  
minutes

Circles

## Main activity

### Whole class teaching

Have ready 14 **circles** on the chalkboard, 6 white and 8 blue.

Write the following on the chalkboard: '6:8'.

Say, 'There are 6 white circles to every 8 blue circles'.

Explain that to write the ratio in its simplest form, each side is divided by the same number:  
 $6 \div 2 = 3$  :  $8 \div 2 = 4$

Explain that the ratio in its simplest form is 3:4.

Repeat with the ratio of 4:12.

Questions

### Pair task

Read the following **questions** with the pupils and demonstrate how to write the first example in its simplest form:

5:10

6:18

20:10

25:15

16:24

52:40

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

10  
minutes

## Plenary

### Whole class teaching

Write the following on the chalkboard:  
'A class contains 30 girls and 20 boys.'

Ask, 'What is the ratio of girls to boys in its simplest form?'

Choose some pupils to answer.

## Week 22: Ratio and proportion

## Day 3: Proportion

### Learning outcomes

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

Use the symbols  $<$  and  $>$   
between decimal numbers.

Understand proportion.

### Preparation

**Before the lesson:**

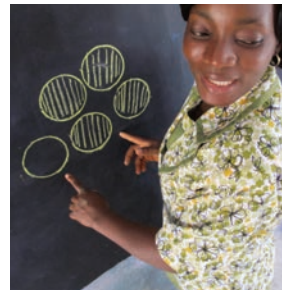
Copy the [word problem](#) for  
today's plenary, shown opposite,  
on to the chalkboard.

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

### How? Proportion



Look at the pattern  
on the chalkboard  
(4 yellow circles  
and 1 white circle).



Ask, 'What is  
the proportion of  
yellow circles  
to white circles?'



Say: '4 out of 5  
circles are yellow',  
'1 out of 5 circles  
is white'.



Repeat with another  
pattern.



15  
minutes

## Daily practice

### Whole class teaching

Write '<' and '>' on the chalkboard and ask the pupils what they mean.

Write the following pairs of numbers on to the chalkboard and choose some pupils to read them out:

54.6  56.4

74.83  32.91

34.2  34.21

Invite some pupils to put the correct < or > symbol between the numbers.

Tell the pupils to copy the following pairs of numbers into their exercise books and add < or > between each pair:

43.5  34.5

62.73  62.77

21.9  21.96

15  
minutes

How

## Introduction

### Whole class teaching

Tell the pupils that 'proportion' compares part of something to the whole.

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

20  
minutes

## Main activity

### Whole class teaching

Draw a row of 12 identical boxes on the chalkboard.

Demonstrate colouring 2 of every 6 squares blue.

### Pair task

Tell the pupils to draw the row of 12 boxes 5 times in their exercise books and complete the following:

Colour 1 out of every 3 squares blue.

Colour 2 out of every 4 squares blue.

Colour 2 out of every 3 squares blue.

Colour 4 out of every 6 squares blue.

10  
minutes

Word problem

## Plenary

### Pair task

Read out the following [word problem](#) on the chalkboard and ask the pairs to discuss the answer: 'One ticket to see a show costs N25. How much would it cost for 3 people, 5 people, 7 people to see the show?'

Choose a pair of pupils to explain how they worked out their answer.

## Week 22: Ratio and proportion

## Day 4: Probability

### Learning outcomes

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

Quickly recall number facts.

Understand a line  
of probability.

### Preparation

**Before the lesson:**

Have ready [probability flash cards](#):  
'unlikely', 'likely', 'equally likely', 'certain',  
'impossible', a [die](#) and an [N1 coin](#).

Copy the [table](#) for today's  
main activity, shown opposite,  
on to the chalkboard.

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

### How? Probability



Look at the line  
of probability on  
the chalkboard.



Ask a pupil to mark  
on the line the  
probability that it  
will rain tomorrow.



Ask, 'What is the  
probability that  
the sun will shine  
tomorrow?'



Invite a pupil to  
mark the probability  
on the line.



Show the pupils  
a die and ask, 'What  
is the probability  
that I will roll an odd  
number?'

15 minutes | Questions

### Daily practice

#### Whole class teaching

Copy these **questions** on to the chalkboard:  
Is it odd?  
Is it higher than 100?  
Is it lower than 50?  
Is it a multiple of 5?  
Is it between 70 and 90?

Say, 'I am thinking of a number.' (eg: 72)

Tell the pupils that they must guess what the number is by asking questions like the ones on the chalkboard.

Tell the pupils to notice the answers to help them guess the number.

When a pupil guesses correctly, repeat with another number.

10 minutes | **How** | Flash cards

### Introduction

#### Whole class teaching

Explain to the pupils that the 'probability' of an outcome or event is a measure of how likely it is to happen.

Show the pupils the **probability flash cards**.

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

25 minutes

### Main activity

#### Whole class teaching

Ask the pupils to discuss where the following events will fit on the line of probability:

'You will see a lizard in the playground.'

'You will eat yam today.'

'You will go to the moon one day.'

'It will get dark tonight.'

'You will go to the shop today.'

Go round the class and show the pupils a **1 Naira coin**.

Ask, 'What is the probability that it will land head up?' (Herbert Macaulay).

Coin/ Table

Ask, 'What is the probability that it will land tails up?' (coat of arms)

Flip the coin and show the pupils which side up it landed.

Ask one pupil to flip the coin 5 times and another pupil to record the result in the **table** on the chalkboard.

Table

Throw	heads	tails
1		
2		
3		
4		

10 minutes

### Plenary

#### Pair task

Ask each pair to think of things that are certain, unlikely and impossible.

Choose some pairs to say what they have discussed.

Ask the other pupils in the class if they agree or disagree, and explain why.

## Week 22: Ratio and proportion

### Day 5: Making a die

#### Learning outcomes

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

Find the value of 'x'.

Investigate probability.

#### Preparation

**Before the lesson:**

Have ready a **2cm x 2cm card square**, a **piece of paper**, **scissors** and **tape** for each pair of pupils.

Draw the **score card**, shown opposite, on the chalkboard.

Read **How? Making a die**, as shown below.

#### How? Making a die



Give each pair a 2cm x 2cm square of card and a piece of paper.



Tell the pairs to draw round the square to make the net of a cube.



Show them how to add the die dots, taking care that the dots on opposite sides add up to 6.



Tell them to cut round the net and tape the edges carefully.



Roll the die to check that it works.

15 minutes

## Daily practice

### Pair task

Write, ' $x + 37 = 110$ ' on the chalkboard and ask, 'What is the value of  $x$ ?'

Choose a pupil to explain how they worked out the answer.

Tell the pairs to discuss the answers to the following number sentences:

If  $x = 6$ ,  
what is  $6x$ ?

If  $x = 7$ ,  
what does  $8x + 20 =$

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

15 minutes

How

Card squares/  
Paper/Scissors/  
Tape/

## Introduction

### Whole class teaching

Teach **How? Making a die**, as shown left, using the **card squares**, **paper**, **scissors** and **tape**.

25 minutes

Flash cards/  
Score card

Die

## Main activity

### Pair task

Show the pupils the **probability flash cards**.

Ask, 'What is the probability that you will roll a 6 on your die?' (There is a one in six chance, so it is unlikely.)

Show the pupils the **score card** on the chalkboard and tell them to copy it into their exercise books.

Score card

Number of 1s	Number of 4s
Number of 2s	Number of 5s
Number of 3s	Number of 6s

Tell each pair to roll the die 10 times and record each result with a small tick in the right place on the score card.

Ask a pair which number had the highest and lowest score (ie: which number appeared most and least often).

Say, 'The probability of rolling a \_\_\_\_\_ is higher than \_\_\_\_\_.'

Ask pupils to say the number they think has a higher probability.

Roll the **die** to see if you are correct.

5 minutes

## Plenary

### Whole class teaching

Ask the pupils to discuss where the following events will fit on a line of probability:

'One person in the class will become a famous footballer.'

'It will be sunny tomorrow.'

'You will find a N100 note on your way home today.'

'You will walk to school in the morning.'

Grade/  
Type of lesson plan

Lesson  
title

## Weekly page

# Primary 5, numeracy lesson plans

## Week 23:

# Angles

### Words/phrases

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

angle  
acute  
obtuse  
right angle  
straight line  
degrees (°)  
estimate  
measure  
protractor  
calculate

### Learning expectations

By the end of the week:

**All pupils will be able to:**  
Understand angles as a measurement of turn.

**Most pupils will be able to:**  
Identify different types of angles.

**Some pupils will be able to:**  
Use a protractor to measure angles to the nearest 5°.

## Assessment task

### Instructions:

Draw the angles in the assessment questions and ask individual pupils to:

1

Explain what a protractor is and where it is used for.

2

Calculate the following angles on a straight line:

$90^\circ$   
 $120^\circ$   
 $45^\circ$

3

Use a protractor to calculate angles of:

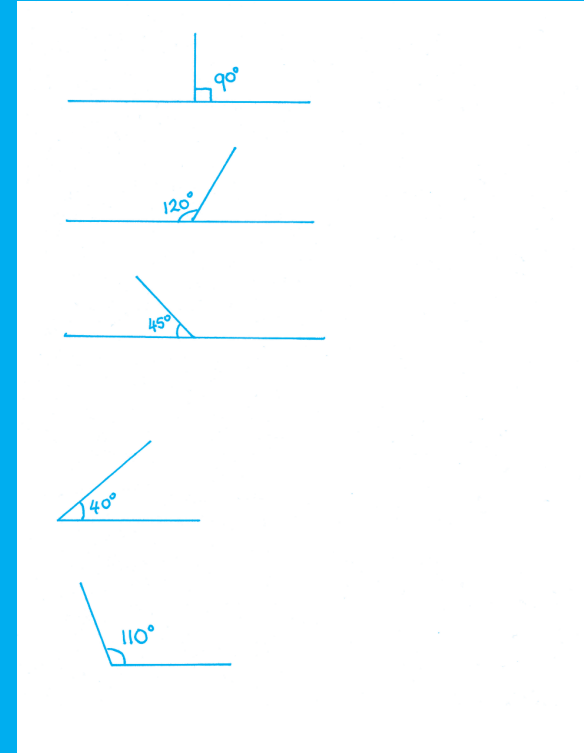
$40^\circ$   
 $110^\circ$

## Example of a pupil's work

### This pupil can:

Calculate an angle on a straight line.

Use a protractor to measure different angles.



## Week 23: Angles

## Day 1: Understanding angles

### Learning outcomes

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

Order sets of numbers.

Understand angles  
as a measurement  
of turn.

### Preparation

**Before the lesson:**

Have ready a [small stick](#) for  
each pupil.

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

### How? Angles



Write '360°' on the  
chalkboard. Explain  
that there are  
360° in a circle or  
complete turn.



Ask, 'How many  
degrees are there  
in a half turn?'



Ask, 'How many  
degrees are there  
in a quarter turn?'



Ask, 'How many  
degrees are  
there in a three-  
quarter turn?'



Ask a pupil to hold  
their arms out  
to show a quarter  
turn (90°).



15  
minutes

## Daily practice

### Pair task

Tell the pairs to order the following sets of numbers in the following ways:

from coldest to hottest:  
 $34^\circ$ ,  $25^\circ$ ,  $17^\circ$ ,  $23^\circ$ ,  
 $52^\circ$ ,  $43^\circ$

from heaviest to lightest:  
539kg, 593kg, 359kg,  
395kg

from emptiest to fullest:  
254ml, 425ml, 245ml,  
524ml

Write the following  
digits on the chalkboard:  
'5 7 3 2'.

Tell the pairs to use these  
digits to make as many  
numbers as they can.

Ask, 'What is the largest  
and the smallest number  
you can make?'

15  
minutes

How

## Introduction

### Whole class teaching

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

Ask the pupils to stand  
up and turn themselves  
to make a half turn ( $180^\circ$ ),  
a three-quarter turn  
( $270^\circ$ ) and a complete  
turn ( $360^\circ$ ).

Explain that  $90^\circ$  is also  
called a 'right angle'.

25  
minutes

Sticks

## Main activity

### Pair task

Take the pupils outside  
and give each pair  
a **small stick**.

Turn a stick on the ground  
to demonstrate the  
following angles:  $90^\circ$ ,  $180^\circ$ ,  
 $270^\circ$ ,  $360^\circ$ .

Tell the pupils to do the  
same. Repeat several  
times in a different order.

### Individual task

Tell the pupils to draw  
the following angles in  
their exercise books  
and label them:  $90^\circ$ ,  $180^\circ$ ,  
 $270^\circ$ ,  $360^\circ$ .

Show the pupils how to  
draw the following angles:

$45^\circ$  (by dividing a right  
angle in half)

$135^\circ$  (by extending a right  
angle by  $45^\circ$ )

Ask the pupils to draw  
a  $45^\circ$  and a  $135^\circ$  angle in  
their exercise books.

5  
minutes

## Plenary

### Pair task

Ask the pupils to look  
around the classroom  
for angles.

Ask, 'Where can you  
see  $90^\circ$  angles in the  
classroom?'

Choose some pupils  
to say where they have  
found right angles.

## Week 23: Angles

## Day 2: Different types of angles

### Learning outcomes

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

Double and halve numbers.

Identify different types  
of angles.

### Preparation

**Before the lesson:**

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

Copy the **2D shapes chart** from  
today's main activity, shown opposite,  
on to the chalkboard.

Read **How? Different angles**, as  
shown below.

### How? Different angles



Explain that an  
angle is made  
when two straight  
lines meet or  
cross each other.



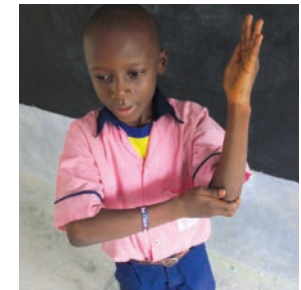
Explain that angles  
are measured  
in degrees ( $^{\circ}$ ) with  
a protractor.



Ask a pupil to  
make a right angle  
with their arms.



Ask a pupil to  
demonstrate  
an 'acute' angle  
(an angle less  
than  $90^{\circ}$ ).



Ask a pupil to  
demonstrate  
an 'obtuse' angle  
(an angle larger  
than  $90^{\circ}$ ).

15 minutes

0—9 number cards

### Daily practice

#### Pair task

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

Tell them to lay the cards face-down on the table.

Tell the pupils to take turns to choose two cards and turn them over to make a number, eg: 52.

Tell the pupils to double and halve the number and tell their partner the answer, eg: 104 and 26.

Tell the pairs to repeat this several times with different numbers.

15 minutes

How

### Introduction

#### Pair task

Teach **How? Different angles**, as shown left.

Choose some pupils to answer the following questions:

'What is an acute angle?' (smaller than a right angle)

'What is an obtuse angle?' (bigger than a right angle)

20 minutes

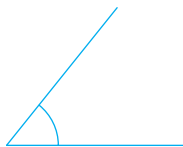
Rulers

### Main activity

#### Individual task

Tell the pupils to draw and label an acute angle and an obtuse angle in their exercise books, using a ruler.

Acute angle



Obtuse angle



Chart

#### Pair task

Ask the pairs to look at the **2D shapes chart** on the chalkboard.

Tell the pupils to copy the shape chart and label the acute and obtuse angles.

2D shape chart

shape	name
	hexagon
	parallelogram
	trapezium

10 minutes

### Plenary

#### Whole class teaching

Invite some pupils to the chalkboard to draw and label examples of different types of angles.

## Week 23: Angles

### Day 3: An angle on a straight line

#### Learning outcomes

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

Double and halve numbers.

Calculate angles on  
a straight line.

#### Preparation

**Before the lesson:**

Have ready **scissors** and a piece  
of **newspaper** approximately 10cm x 10cm  
for each pupil.

Copy the **instructions** for today's  
daily practice, shown opposite, on  
to the chalkboard.

Read **How? Angle on a straight line**,  
as shown below.

#### How? Angle on a straight line



Invite a pupil to  
draw an angle  
on a straight line.



Ask, 'What is the  
size of this angle?'



Invite a pupil to  
estimate the  
missing angle.



Explain there are  
 $180^\circ$  in a half turn so  
the other angle can  
be calculated without  
measuring.



Repeat with  
another example.

15 minutes | Instructions

### Daily practice

#### Whole class teaching

Read out the following instructions from the chalkboard:

'Think of a number between 1 and 100.'

'Double the number.'

'Add 6 to the number.'

'Divide the number in half.'

'Subtract the number that you started with.'

'The number you have is 3.'

Choose a pupil to come to the chalkboard and demonstrate with the number 16.

Ask the pupils to follow the instructions with a partner.

15 minutes | How

### Introduction

#### Whole class teaching

Teach **How? Angle on a straight line**, as shown left.

20 minutes | Diagrams

### Main activity

#### Pair task

Draw the **missing angles diagrams** on the chalkboard with 3 further examples.

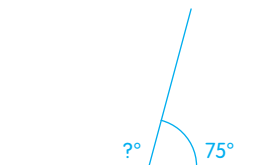
Ask the pupils to copy them into their exercise books.

Ask the pupils to work out the missing angles.

Missing angle 1



Missing angle 2



10 minutes | Newspaper/ Scissors

### Plenary

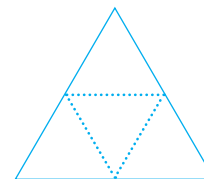
#### Pair task

Give each pair a piece of **newspaper** and some **scissors**.

Ask them to draw a triangle on the newspaper.

Tell them to cut out the triangle, and then cut the triangle into four parts, as shown below.

Investigating angles



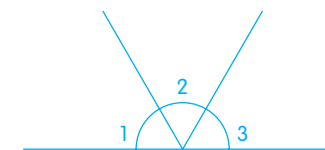
Tell the pupils to lay the angles on a line, as shown below.

Ask, 'What can you say about the three angles in your triangle?'

Ask the pupils to estimate the size of each angle.

Remind them that the angle of a straight line equals 180°.

Angles on a straight line



## Week 23: Angles

## Day 4: Measuring angles

### Learning outcomes

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

Round numbers to the  
nearest Ten and Hundred.

Use a protractor to measure  
angles to the nearest  $5^\circ$ .

### Preparation

**Before the lesson:**

Have ready a **large protractor** to use  
on the chalkboard, and a **protractor** for  
each pair of pupils.

Have ready a piece of **newspaper**  
approximately 10cm x 10cm for each pupil.

Read **How? Using a protractor 1**,  
as shown below.

### How? Using a protractor 1



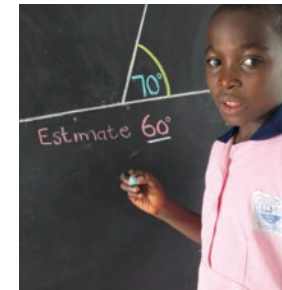
Look at the protractor  
and show pupils  
the inside scale for  
measuring angles.



Ask some pupils  
to estimate the angle  
on the chalkboard.



Place the protractor  
over the angle  
and measure it  
carefully.



Write the measure-  
ment of the angle.



Choose some  
pupils to estimate  
and carefully  
measure angles on  
a straight line.

15  
minutes

## Daily practice

### Whole class teaching

Remind the pupils that 'rounding' numbers to the nearest Ten or Hundred helps us to estimate the answer.

Remind them how to round 432 to the nearest Ten and Hundred.

Write the following numbers on the chalkboard and ask the pairs to round them to the nearest Ten and Hundred in their exercise books:

347  
263  
168  
321  
445  
776

15  
minutes

How

Protractors

## Introduction

### Whole class teaching

Teach **How? Using a protractor 1**, as shown left, using the **protractors**.

Ask the pairs to discuss how close their estimate was to the actual measurement.

20  
minutes

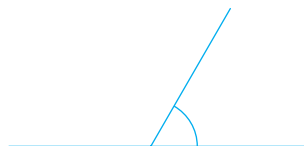
Protractors

## Main activity

### Pair task

Tell the pupils to draw a straight line in their exercise books and add an angle line, as shown below.

Estimating angles



Ask them to estimate the size of the angle and swap exercise books with a partner.

Tell them to measure their partner's angle carefully with a **protractor**.

Ask them to compare the estimate and the actual measurement.

Repeat the activity and go round the class to support the pupils.

10  
minutes

Newspaper

## Plenary

### Whole class teaching

Give each pupil a piece of **newspaper**.

Tell them to fold it in half, fold again into a quarter, and fold in half again diagonally, as shown below.

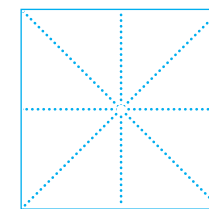
Ask the pupils to discuss the following questions:

'How many angles are there?'

'What will one angle equal?'

'What will four angles equal?'

Discussing angles



## Week 23: Angles

## Day 5: Using a protractor

### Learning outcomes

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

Find factors of numbers.

Use a protractor  
to measure angles  
to the nearest  $5^\circ$ .

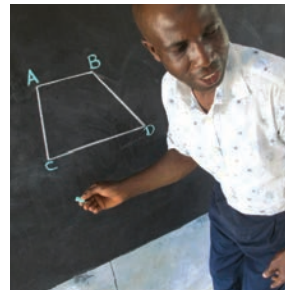
### Preparation

**Before the lesson:**

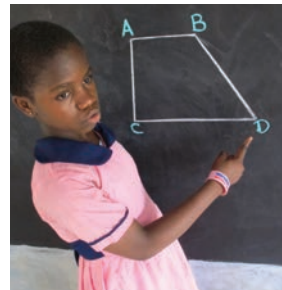
Have ready a **piece of paper** for each pupil, and a **protractor** and a **ruler** for each pupil or pair.

Read **How? Using a protractor 2**, as shown below.

### How? Using a protractor 2



Draw a trapezium  
on the chalkboard  
and label each  
inside angle.



Ask, 'Which angle  
is the smallest'?



Ask, 'Which angles  
are obtuse?'



Invite some pupils  
to estimate the  
size of each angle.



Ask the pupils to  
measure the angles  
and compare them  
with the estimates.



15 minutes | Game

## Daily practice

### Whole class teaching

Ask the pupils to discuss what a factor is.

Write '36' on the chalkboard and choose some pupils to write the factors for it.

Invite some pupils to write the factors for the following numbers on the chalkboard:

27  
48  
50  
88  
144

15 minutes | How

## Introduction

### Whole class teaching

Teach **How? Using a protractor 2**, as shown left.

20 minutes | Paper/Protractors/  
Rulers

## Main activity

### Individual task

Give each pupil a **piece of paper**, a **protractor** and a **ruler** (pairs can share if necessary).

Tell them to draw a quadrilateral with at least one obtuse angle on the paper.

Tell them to carefully measure each angle with their protractor and record the measurement next to the angle.

Go round the class to support the pupils.

10 minutes

## Plenary

### Pair task

Tell the pairs to swap their work and check their partner's measurements.

Tell them to put a small tick if they are correct.

Grade/  
Type of lesson plan

Lesson  
title

**Weekly page**

**Primary 5,  
numeracy  
lesson plans**

**Week 24:**

**Shape**

**Words/phrases**

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

polygon  
vertices  
edges  
faces  
quadrilateral  
square-based pyramid  
triangular prism  
cuboid  
cone  
tessellation  
net

**Learning expectations**

**By the end of the week:**

**All pupils will be able to:**  
Say some properties of 2D and 3D shapes.

**Most pupils will be able to:**  
Make tessellated patterns with two regular polygons.

**Some pupils will be able to:**  
Construct a range of 3D shapes from nets.

## Assessment task

### Instructions:

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

1  
Fill in the following template:

Shape	Sides	Vertices	Angles
Triangle			
Pentagon			
Octagon			
Heptagon			

2  
Draw a tessellation with a triangle and square.

3  
Draw the net of one of the following shapes:  
Cuboid  
Square based pyramid  
Cone

## Example of a pupil's work

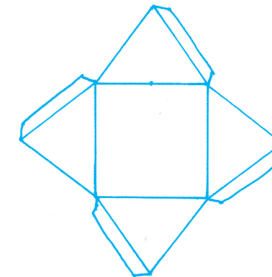
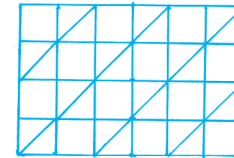
### This pupil can:

Identify properties of 2D shapes.

Draw a tessellation pattern with two given shapes.

Draw the net of a shape.

	Sides	Vertices	angles
Triangle	3	3	3
Pentagon	5	5	5
Octagon	8	8	8
heptagon	7	7	7



## Week 24: Shape

### Day 1: Properties of 2D shapes

#### Learning outcomes

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

Identify 2D shapes.

Explain the properties  
of 2D shapes.

#### Preparation

**Before the lesson:**

Copy the [table](#) from today's main activity,  
shown opposite, on to the chalkboard.

Prepare a set of [small 2D shapes](#) for  
each group and a [large set of 2D shapes](#).

Read [How? What can you tell me  
about...?](#), as shown below.

**How?  
What can you tell  
me about...?**



... this equilateral  
triangle? (It has  
three equal sides,  
three vertices, three  
equal angles.)



... this rectangle?  
(Its opposite sides  
are parallel.)



... this octagon?  
(All of its sides are  
equal. It has  
8 equal angles.)



... this rhombus?  
(Its opposite angles  
are equal.)



Give each group  
a set of 2D shapes  
and ask them  
to discuss their  
properties.

15 minutes | 2D shapes

### Daily practice

#### Whole class teaching

Show the pupils the large 2D shapes, one at a time.

Ask the pupils to tell the person next to them the name of each shape as it is shown.

Remind them that a 2D-shape has two measurements or dimensions (length and width).

Tell the pupils to draw and label three 2D shapes in their exercise books.

15 minutes | How

### Introduction

#### Whole class teaching

Teach **How? What can you tell me about...?**, as shown left.

20 minutes | Table

### Main activity

#### Individual task

Tell the pupils to complete the 2D shape table, as shown below, in their exercise books.

2D shape table

Shape	Sides	Vertices	Angles
Triangle			
Square			
Rectangle			
Pentagon			
Hexagon			
Heptagon			
Octagon			
Rhombus			
Trapezium			

10 minutes | Game/ 2D shapes

### Plenary

#### Group task

Remind the pupils how to play **What am I?**

Choose a 2D shape but don't let the pupils see it. Ask, 'What am I?'

Give clues to help them answer, eg: 'I am a 2D shape. I have four equal sides.'

Give the groups a set of 2D shapes to play the game several times.

## Week 24: Shape

## Day 2: Properties of 3D shapes

### Learning outcomes

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

Identify 3D shapes.

Explain the properties  
of 3D shapes.

### Preparation

**Before the lesson:**

Copy the [table](#) from today's  
main activity, shown opposite, on  
to the chalkboard.

Have ready a set of [3D shapes](#).

Read [How? What can you tell me  
about...?](#), as shown below.

**How?  
What can you tell  
me about...?**



... a cylinder?  
(It has three faces,  
no vertices and  
two edges.)



... a cube and  
a cuboid? (Both  
have six faces,  
eight vertices and  
12 edges.)



... a sphere? (It has  
one face, no vertices  
and no edges.)



... a cone? (It has  
two faces, no vertices  
and one edge.)



... a triangular  
prism? (It has five  
faces, six vertices  
and nine edges.)

15 minutes | Game

### Daily practice

#### Whole class teaching

Ask the pupils to say the names of some 3D shapes and write them on the chalkboard.

Give the groups time to play **What am I?** several times to guess different 3D shapes.

Remind them to give clues, eg: 'I am a 3D shape. I have no edges, no vertices and one curved face.'

15 minutes | How | Table

### Introduction

#### Whole class teaching

Look together at the 3D shape **table** on the chalkboard and explain the meaning of faces, vertices and edges.

Teach **How? What can you tell me about...?**, as shown left.

20 minutes | Table

### Main activity

#### Pair task

Tell the pupils to complete the 3D shape **table**, as shown below, in their exercise books.

10 minutes

### Plenary

#### Whole class teaching

Tell the pupils to look around the classroom for examples of 2D and 3D shapes.

Ask the pupils to share the shapes they have found with the whole class.

3D shape table

Shape	Faces	Vertices	Edges	Names of faces
Cylinder				
Cuboid				
Sphere				
Cone				
Triangular prism				

## Week 24: Shape

## Day 3: Tessellation

### Learning outcomes

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

Identify lines of symmetry  
on 2D shapes.

Make tessellations with  
two regular polygons.

### Preparation

**Before the lesson:**

Prepare a set of **2D shapes** for each  
group: an equilateral triangle,  
square, rectangle, pentagon, hexagon,  
octagon, rhombus, trapezium.

Have ready a **card rectangle**, **square**  
and **octagon**, a **large piece of paper**,  
a **ruler** and **scissors** for each pair.

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

### How? Tessellation



Draw a tile pattern  
on the chalkboard  
with hexagons.  
Make sure there  
are no gaps.



Ask a pupil to  
help you draw a  
triangle tile pattern  
with no gaps.



Ask a pupil to  
help you make  
a tile pattern with  
a hexagon  
and a triangle.



Tell the pairs to  
draw round their  
rectangle and  
square to make  
a tile pattern.



Tell the pairs to  
draw round their  
octagon and  
square to make  
a tile pattern.



15 minutes | 2D shapes

## Daily practice

### Group task

Give each group a set of **2D shapes**.

Remind them that if a shape can be folded into equal parts it is 'symmetrical'.

Tell them they are going to investigate how many lines of symmetry each shape has.

Explain that they can fold the shapes horizontally, vertically and diagonally to check for symmetry.

Ask the groups to say how many lines of symmetry they found for each shape.

15 minutes | How

## Introduction

### Whole class teaching

Remind the pupils that fitting shapes together in a pattern with no spaces is called 'tessellation'.

Teach **How? Tessellation** steps 1, 2 and 3, as shown left.

Remind the pupils that 'regular tessellations' use the same regular polygon.

Explain that 'semi-regular tessellations' use two or more types of regular polygons.

25 minutes | Card shapes/Paper/Rulers/Scissors

## Main activity

### Group task

Give each group a **card rectangle, square and octagon**, a **large piece of paper**, a **ruler** and **scissors**.

Teach **How? Tessellation** steps 4 and 5, as shown left.

5 minutes

## Plenary

### Whole class teaching

Ask each group to show the class their tile patterns.

Ask the pupils to discuss where they have seen tessellation, eg: bricks, floor tiles.

## Week 24: Shape

## Day 4: Constructing 3D shapes

### Learning outcomes

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

Explain the properties  
of 2D shapes.

Construct 3D shapes  
and say some properties  
of the shape.

### Preparation

**Before the lesson:**

Have ready a set of **large 2D shapes**  
for each group.

Have ready **scissors, tape or glue**  
and **nets of cuboids or square-based  
pyramids** for each group.

Read **How? Constructing 3D shapes 1**,  
as shown below.

### How? Constructing 3D shapes 1



Show the pupils the  
net of a cuboid.



Give half of the  
groups a cuboid  
net to cut out.



Show the pupils  
the net of a square-  
based pyramid.



Give half of the  
group a square-  
based pyramid net  
to cut out.



Tell the groups  
to fold their nets  
to make cuboids  
and square-  
based pyramids.

15 minutes | 2D shapes/  
Game

## Daily practice

### Group task

Give each group a set of **2D shapes** to play **What am I?** several times.

Remind them to give useful clues, eg: 'I am a 2D shape. I have six equal sides.'

10 minutes | **How** | Scissors/  
Nets/Glue

## Introduction

### Group task

Remind the pupils that the faces of 3D shapes are 2D shapes.

Tell the groups to think about the 2D shapes in a cuboid and a square-based pyramid and ask them to name them.

Give the groups **scissors**, a **net** and **tape** or **glue**.

Teach **How? Constructing 3D shapes 1** steps 1, 2, 3 and 4, as shown left.

25 minutes

## Main activity

### Group task

Remind the pupils to think about how they will need to fold the nets to make their 3D shapes.

Teach **How? Constructing 3D shapes 1** step 5, as shown left.

Tell the pupils to discuss the properties of their 3D shapes.

10 minutes

## Plenary

### Whole class teaching

Ask the pupils to leave their 3D shapes on their tables.

Tell them to walk around the classroom and look at the shapes other groups have made.

Tell them to discuss what they found difficult when constructing their 3D shapes.

Ask them to think about what they might do differently next time they make a net.

Keep the shapes to make a display.

## Week 24: Shape

## Day 5: Constructing 3D shapes

### Learning outcomes

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

Say the properties  
of 3D shapes.

Construct 3D shapes  
and say some properties  
of the shape.

### Preparation

**Before the lesson:**

Have ready a set of **3D shapes**.

Have ready **scissors**, **tape** or **glue**  
and **nets of triangular prisms** or **cones**  
for each group.

Read **How? Constructing 3D shapes 2**,  
as shown below.

### How? Constructing 3D shapes 2



Show the pupils  
the net of a  
triangular prism.



Give half of the  
groups a triangular  
prism net to cut out.



Show the pupils  
the net of a cone.



Give half of the  
groups a cone net  
to cut out.



Tell the groups to  
make triangular  
prisms and cones  
from their nets.

15  
minutes

3D shapes/  
Game

## Daily practice

### Group task

Show the pupils the **3D shapes** and choose some pupils to name them.

Tell them they should look at the 3D shapes to decide which one they are going to describe to play **What am I?**

Give the groups time to play the game several times.

15  
minutes

How

Scissors/  
Nets/Glue

## Introduction

### Group task

Ask the pupils to think about the activities they did yesterday constructing 3D shapes.

Choose some pupils to say what they would do differently when constructing 3D shapes.

Give the groups **scissors**, a **net** and **tape** or **glue**.

Teach **How? Constructing 3D shapes 2** steps 1, 2, 3 and 4, as shown left.

25  
minutes

## Main activity

### Group task

Remind the pupils to think about how they will need to fold the nets to make their 3D shapes.

Teach **How? Constructing 3D shapes 2** step 5, as shown left.

Tell the pupils to discuss the properties of their 3D shapes.

5  
minutes

## Plenary

### Whole class teaching

Ask the pupils to leave their 3D shapes on their tables.

Tell them to walk around the classroom and look at the shapes other groups have made.

Keep the shapes to make a display.

Grade/  
Type of lesson plan

Lesson  
title

**Weekly page**

**Primary 5,  
numeracy  
lesson plans**

**Week 25:**

**Money**

**Words/phrases**

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

shopping  
money  
Naira  
kobo  
bank notes  
calculation  
two-step

**Learning expectations**

**By the end of the week:**

**All pupils will be able to:**

Give the correct bank notes to pay for an item.

**Most pupils will be able to:**

Find the total cost of three or more items on a shopping list.

**Some pupils will be able to:**

Solve two-step word problems involving money.

## Assessment task

## Example of a pupil's work

### Instructions:

Ask an individual pupil to:

1  
Go to the shopping corner and write the amount for each item on their list and write the total of the six items.

If you pay with N2000, how much change would you get?

2  
Solve the following word problem:  
Matthew goes to a shop and buys a book of N450, a notebook of N280 and a set of biro's for N75. If he pays with N1000, how much change will he get?

### This pupil can:

Make a shopping list with realistic prices.

Calculate the correct change.

Solve a two-step word problem.

### 1 Shopping list

Milk	₦ 135
Sugar	₦ 170
Tea	₦ 180
Egg	₦ 30
Juice	₦ 240
Bread	₦ 100

---

Total cost ₦855

If I pay with ₦2000, my change is  $₦2000 - ₦855 = ₦1145$

2  $₦450 + ₦280 + ₦75 = ₦805$

If you pay with ₦1000, the change is  $₦1000 - ₦805 = ₦195$

## Week 25: Money

## Day 1: Naira

### Learning outcomes

### Preparation

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

Multiply numbers by  
10 and 100 and describe  
what happens.

Work out the cost of items  
to buy at the shop.

**Before the lesson:**

Copy the [place value grid](#), shown  
right, on to the chalkboard and keep  
it there for the week.

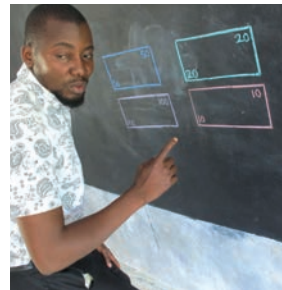
Have ready some [bank notes](#), a [large  
piece of paper](#), and enough [paper](#)  
and [crayons](#) for pupils to make their own  
bank notes.

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

### How? Naira



Show the pupils  
different bank notes.



Invite pupils to  
draw some of the  
bank notes on  
the chalkboard.



Give the pupils  
paper and crayons  
to make their own  
paper money.



Ask the pupils to  
show you ways  
to make N100 using  
different notes.



Ask the pupils to  
show you ways  
to make N200 using  
different notes.



15  
minutes

Grid

## Daily practice

### Whole class teaching

Ask the class:

'What happens when we multiply numbers by 10?'

'What happens when we multiply numbers by 100?'

Choose a pupil to write '452' in the **place value grid** and another pupil to multiply it by 10 and 100 and write the answers in the grid.

Place value grid

Tth	Th	H	T	U	.	t	u

Ask, 'What has happened to the place value of the 5 Tens?'

Tell the pupils to multiply the following numbers by 10 and 100 in their exercise books:

583  
160  
467  
791

15  
minutes

How

## Introduction

### Whole class teaching

Ask the pupils to discuss the Naira notes that people use.

Choose some pupils to describe the bank notes and ask questions to prompt them if needed, eg: 'What colour is the N100 note?', 'Who is on the N500 note?'

Remind the pupils that kobo coins are very rarely used now.

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

20  
minutes

## Main activity

### Pair task

Ask the pairs to discuss the things they go to the shop to buy.

Tell them to think about how much each item costs.

Ask them to draw some items in their exercise books and write the price each item would cost.

Tell them to add together the cost of their items and draw the notes they would use to pay for them.

10  
minutes

Paper

## Plenary

### Whole class teaching

Explain to the class that they are going to create a price list for a shopping corner.

Choose some pupils to say the items they have drawn and the prices of their items.

Ask the class if they agree, then write the agreed price on the **large piece of paper**.

Price list

Item	Cost
Eggs	
Bread	
Indomie	
Biscuits	
Tea	

## Week 25: Money

## Day 2: Shopping corner

### Learning outcomes

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

Multiply decimal numbers  
by 10 and 100 and describe  
what happens.

Give the correct money  
for items and count back  
change.

### Preparation

**Before the lesson:**

Make sure the [place value grid](#) from  
Week 25, Day 1 is on the chalkboard.

Have ready the [price list](#) and [paper  
money](#) prepared yesterday, some [items](#)  
and [labels](#) for a shopping corner.

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

### How? Shopping corner



Set up a shopping  
corner and display  
the price list  
made yesterday.



Ask the pupils to  
write price labels  
for the items in  
the shop.



Choose some  
pupils to take turns  
to buy and sell  
items in the shop.



Tell the buyer to  
choose some items  
and pay for them.



Tell the seller  
to count back  
the change.

10  
minutes

Grid

## Daily practice

### Whole class teaching

Ask, 'What happens when we multiply numbers by 10 and 100?'

Choose a pupil to write '72.4' in the [place value grid](#) and another pupil to multiply it by 10 and 100 and write the answers in the grid.

Ask, 'What has happened to the place value of the 4 tenths?'

Tell the pupils to multiply the following numbers by 10 and 100 in their exercise books:

23.6  
46.10  
37.8

15  
minutes

How

## Introduction

### Whole class teaching

Teach [How? Shopping corner](#), as shown left.

20  
minutes

## Main activity

### Group task

Explain to the pupils that they are going to prepare a shopping list for another group.

Tell them that the shopping list must have between 4 and 6 items from the shopping corner, and their prices.

Let the pupils go to the shopping corner to look at the items and prices while they are working.

15  
minutes

## Plenary

### Whole class teaching

Choose a shopping list from one of the groups and write it on the chalkboard.

Invite a pupil to add the items together and write the total price.

Ask the following questions:

'How much money altogether does this group need to take to the shop?'

'How much change will they get from N2000?'

Tell the pupils to keep their shopping lists for the next day.

## Week 25: Money

## Day 3: Shopping lists

### Learning outcomes

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

Divide numbers by  
10 and 100 and describe  
what happens.

Give the correct money  
for items and count back  
change.

### Preparation

**Before the lesson:**

Make sure the [place value grid](#)  
from Week 25, Day 1 is on the chalkboard  
and the [shopping corner](#) is ready.

Have ready [paper money](#) for each  
group and their [shopping lists](#) from  
Week 25, Day 2 (yesterday).

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

### How? Shopping lists



Choose some  
pupils to take their  
shopping list and  
paper money to the  
shopping corner.



Tell them to pick  
the items on their  
shopping list.



Tell them to work  
out how much  
money to give the  
shopkeeper.



Tell them to pay the  
shopkeeper.

10 minutes | Grid

### Daily practice

#### Whole class teaching

Ask, 'What happens when we divide numbers by 10 and 100?'

Choose a pupil to write '455' in the **place value grid** and another pupil to divide it by 10 and 100 and write the answers in the grid.

Ask, 'What has happened to the place value of the 4 Hundreds?'

Tell the pupils to divide the following numbers by 10 and 100 in their exercise books:

36  
74  
126  
339

15 minutes

### Introduction

#### Whole class teaching

Remind the pupils that when they give change they count on from the total spent.

Write on the chalkboard: 'If I spend N1220, what is my change from N1500?'

Explain that we count on using the following steps:

$1220 \text{ to } 1250 = 30$   
 $1250 \text{ to } 1300 = 50$   
 $1300 \text{ to } 1500 = 200$   
 $30 + 50 + 200 = 280$

The answer = N280

Work through other examples together, eg: 'If I spend N1665, what is my change from N2000?'

25 minutes | Shopping lists/  
Paper money

How

### Main activity

#### Group task

Tell each group to swap their **shopping list** with another group.

Give the groups **paper money** and choose two pupils in each group to be the buyer and shopkeeper.

Ask each group to work out the total cost of their shopping and show the paper money they will need.

Ask the class if they could use different notes and if they will need any change.

#### Whole class teaching

Teach **How? Shopping lists**, as shown left.

Give each group time to go to the shopping corner and buy the items on their list.

Ask the class to check that the buyer gives the correct money and that the shopkeeper gives the correct change.

10 minutes

### Plenary

#### Whole class teaching

Ask the pupils to think about the following problem: 'Which two items could I buy from the class shop if I had N200 to spend?'

Invite some pairs to go to the shopping corner to show the two items to the class.

## Week 25: Money

### Day 4: Charity goes to the zoo

#### Learning outcomes

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

Write a family of facts for  
simple sums.

Identify the calculations  
needed to solve word  
problems.

#### Preparation

**Before the lesson:**

Write the family of facts [calculations](#)  
from today's daily practice, shown  
opposite, on the chalkboard.

Have ready [paper money](#) for each group.

Read [How? Charity goes to the zoo](#),  
as shown below.

#### How? Charity goes to the zoo



Charity has N2000  
to go to the zoo.



She pays N450 for  
the bus.



She pays N850 to  
get into the zoo.



She buys a drink  
and snack for N175.



Later she gets  
a bike home  
and pays N200.

15  
minutes

Calculations

## Daily practice

### Whole class teaching

Remind the pupils that when they know one number fact they know a whole family of facts.

If they know the answer to  $3 \times 4 =$ , they also know the answer to three more calculations:

$$4 \times 3 =$$
$$12 \div 3 =$$
$$12 \div 4 =$$

Ask the pupils to write the family of facts for these **calculations** in their exercise books:

$$9 \times 3 =$$
$$7 \times 6 =$$
$$10 \times 8 =$$
$$20 \div 5 =$$
$$36 \div 3 =$$

15  
minutes

How

Paper money

## Introduction

### Group task

Explain the story in **How? Charity goes to the zoo**, as shown left.

Give some pupils the **paper money** and ask them to role play Charity going to the zoo.

Ask the groups to check that the correct change is given in each part of the story.

Ask, 'How much money has Charity got at the end of the story?'

Choose a pupil to show the class how much money Charity had left by working it out on the chalkboard.

20  
minutes

## Main activity

### Pair task

Tell the pupils they are going to write their own character story word problem.

Give them some examples, eg: Samson takes his sister to the park or Joseph takes a boat trip.

Remind them to think about the following:

How much money will their character start the day with?

What will the money be spent on?

How much money will be left?

Tell the pairs to write their problem in their exercise books.

10  
minutes

## Plenary

### Whole class teaching

Choose one or two pairs to read out their story problem.

Invite other pupils to write the amount of money and what was spent on the chalkboard.

Ask the pupils to work out how much is left at the end of the story problem.

## Week 25: Money

## Day 5: Two-step word problems

### Learning outcomes

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

Recall answers to the 5  
and 10 times tables quickly.

Solve two-step word  
problems.

### Preparation

**Before the lesson:**

Copy the [word problems](#) from today's  
introduction and main activity,  
shown opposite, on to the chalkboard.

Read [How? Play the fizz buzz game](#),  
as shown below.

### How? Play the fizz buzz game



Tell the pupils to  
stand in a circle  
and count round  
from 1.



When a pupil  
reaches a multiple  
of 5, they say 'fizz'.



When they reach  
a multiple of 5  
and 10, they say  
'fizz buzz'.



If anyone forgets  
to say 'buzz' or 'fizz  
buzz', or says it  
in the wrong place,  
they are out.



This can be played  
in smaller groups  
with two different  
times tables.



15  
minutes

How

Game

## Daily practice

### Whole class teaching

Play **Fizz buzz** with the class, as shown left in **How? Play the fizz buzz game**.

15  
minutes

Word problem

## Introduction

### Whole class teaching

Read out the following **word problem** on the chalkboard:  
'A teacher is planning a surprise party for the 34 pupils in her class. She is going to buy a soda and a meat pie for each pupil. The sodas cost N110 each and the meat pies cost N60 each. How much will she spend altogether?'

Ask a pupil to underline the key information.

Explain that this word problem needs two calculations.

20  
minutes

Word problems

## Main activity

### Individual task

Read out the following **word problems** for the pupils to solve in their exercise books:

'For a birthday party, a baker has to bake 35 small cakes at a cost of N75 each and one large iced cake at a cost of N4500. He adds N600 to his bill for the cost of transport. How much is his bill?'

'Mr Abeke is celebrating the birth of a grandchild. He has N10000 and buys 23 cakes at a cost of N115 each, and 23 cans of Malta at a cost of N120 each on his way to work. How much change will he have?'

10  
minutes

## Plenary

### Whole class teaching

Choose one or two pupils to explain how they calculated one of the problems.

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