MATHEMATICS

Grade 2

TERM 3 2019

Lesson Plans

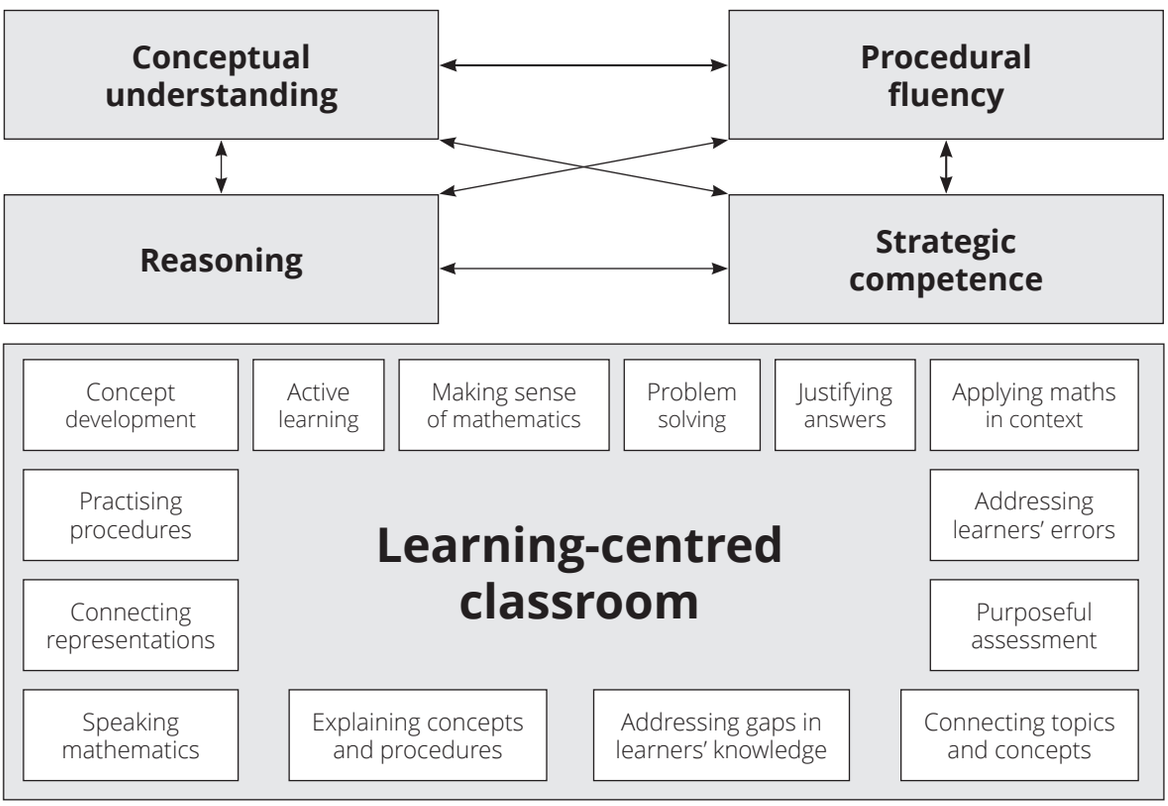
Acknowledgement:

These lesson plans have been developed based on previous sets of lesson plans (GPLMS and PILO) which have been adapted to align with the Mathematics Framework for South Africa: Teaching Mathematics for Understanding.

Contents

Teaching mathematics for Understanding (TMU)

You are participating in the pilot implementation of the Mathematic Framework – which calls for *Teaching Mathematics for Understanding*. Diagrammatically the framework is represented as shown below.



The Framework proposes that steps should be taken to bring about the transformation of mathematics teaching in South Africa. Teachers should strive to:

- teach mathematics for **conceptual understanding** to enable comprehension of mathematical concepts, operations, and relations;
- teach so that learners develop **procedural fluency** which involves skill in carrying out procedures flexibly, accurately, efficiently, and appropriately;
- develop learners' **strategic competence** – the ability to formulate, represent, and decide on appropriate strategies to solve mathematical problems;
- provide multiple and varied opportunities for learners to develop their mathematical **reasoning** skills – the capacity for logical thought, reflection, explanation and justification; and
- promote a **learning-centred classroom** which teachers support by engaging with learners in ways that foreground mathematical learning, thus enabling all of the above.

The lesson plans you will follow are designed to help you teach according to the framework dimensions.

Glossary of important terms used in the TMU lesson plans

The following terminologies are used in the TMU lesson plan. Some of them also appear in CAPS.

Calculation

ADDITION WITH CARRYING

The type of addition which occurs when we bridge ten, in single digit (or 2-digit and 3-digit) calculations. For example 9 + 4, 57 +26, 83 + 19. The term 'carrying' is used since the terminology is familiar to teachers. What happens when we 'carry' is that in order to bridge ten, 10 ones are 'exchanged' to make 1 ten.

SUBTRACTION WITH BORROWING

The type of subtraction which occurs when the units involved in the subtraction create an impasse (a temporary hurdle). For example 14 – 5, 52 – 27, 102 – 19. The units do not allow for subtraction 'on their own'. The term 'borrowing' is used since the terminology is familiar for teachers. What is happens when we 'borrow' is that 1 ten is 'exchanged' into 10 ones and grouped with the other ones in the question, to overcome the impasse so that the subtraction can be done.

BASE-TEN NUMBER SYSTEM

The most commonly used number system across the world. Our number system uses a base of ten which means it involves grouping in tens. There are ten ones in one ten, ten tens in one hundred and so on. Each digit in a number has a value according to the position it is in. The only digits we need to represent a number of any size are the digits 0 to 9. One focus of the TMU framework is to move from mathematics based on counting methods to methods managed by the base-ten number system.

MAKE-A-TEN METHOD

A calculation technique that learners can use to do addition with carrying and subtraction with borrowing. This method helps learners avoid calculation by counting.

COLUMN METHOD/VERTICAL ALGORITHM (GR2, 3)

A calculation technique used in addition and subtraction that helps reinforce number concept or number sense. Also known as the vertical algorithm or vertical method.
This structured method consolidates learners' understanding of place value because it is structured using place value. This should help learners to understand the concept of place value and to work meaningfully with numbers (rather than doing tallies and counting).

NUMBER BONDS

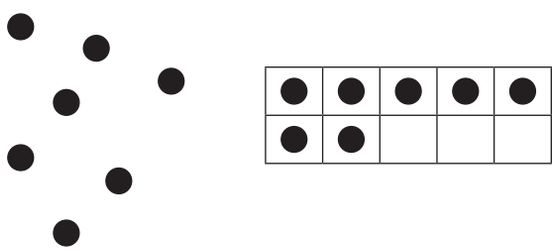
A calculation technique that consists of building up (composition) and breaking down (decomposition). For instance, 4 can be broken down into 1 and 3, 2 and 2 and 3 and 1. These are the number bonds of 4. The number bonds of 10 are the most important since they are used in all calculation strategies.

EXPANDED NOTATION

Representation of a number by writing it out using place value. For example 467 is expanded in the following way: 467 = 400 + 60 + 7. 'Expanded notation' and 'building up and breaking down of numbers' are used interchangeably in CAPS. In the lesson plans, building up and breaking down are only used as number bonds. Flard card can help learners to acquire knowledge of expanded notation.

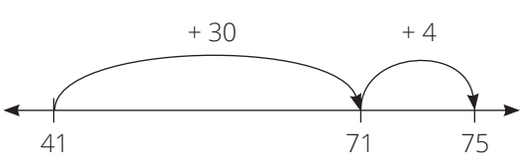
SUBITISING

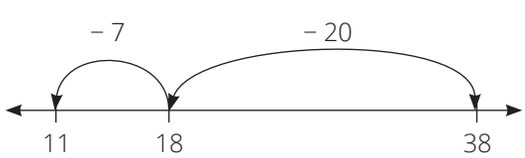
Subitising is 'an instant cognition of the number of objects'. This is one of the most important skills that learners should acquire in the Foundation Phase. A ten frame is a useful tool to help learners to subitise objects. In the example below, it is easier to recognise the number of dots by putting them in a ten frame.



JUMPING STRATEGIES ON A NUMBER LINE

When we solve addition or subtraction with number line, we use 'jump' strategies. This strategy builds on learners' knowledge of numbers and it can also help reinforce number concept or number sense. There are many ways in which 'jumps' can be made on number line, but efficient jumps (such as jumping to the next ten or jumping in tens) make the calculations easier. Choosing these 'efficient jumps' develops learners' number sense.





Representations

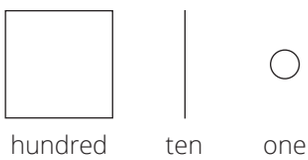
CPA APPROACH

The Concrete-Pictorial-Abstract (CPA) approach helps learners develop the concepts of numbers. The CPA approach uses several different representations for the concept of numbers 1, 10 and 100.

- **Concrete** objects are any materials that can be touched. In TMU, bottle tops are recommended as concrete objects.
- **Pictorial** representations are drawings that represent concrete objects.
- **Abstract** representations consist of number symbols and symbols such as '+', '−', '×', '÷'.

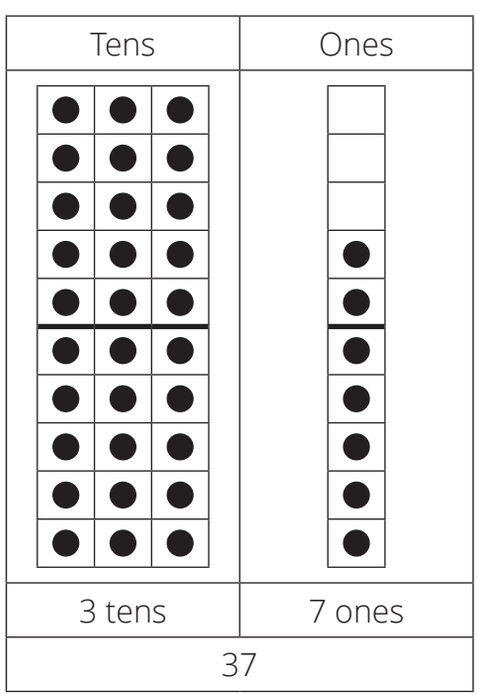
SIMPLIFIED PICTORIALS

A simplified pictorial representation of hundreds, tens and ones are used to write down in paper. The concept of the numbers represented by the pictorials is reinforced when learners draw simplified pictorials. By using simplified pictorials, an enormous time of writing can be saved compared with drawing tallies, circles etc. Simplified pictorials are much more effective than tallies. Tallies should not be drawn beyond ten or a maximum of 20 items. A simplified pictorial representation is introduced in Grade 2 Term 4 to represent 3-digit numbers and larger. A simplified pictorial representation is used in Grade 3 to show the mechanism of carrying and borrowing in the column method.



PLACE VALUE TABLE

A diagram showing a number using a display of concrete/semi-concrete objects (bottle tops as ones or base ten kit tens and hundreds) and abstract representations (numbers and number names). On the right is the sample of a number 37 shown in the place value table.



ARRAY DIAGRAM

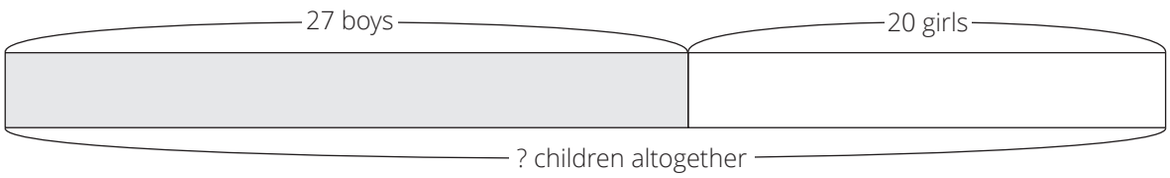
The following is the array diagram of 2 × 4. The order of multiplication is important and it is consistent with CAPS.

MULTIPLICATION TABLE

Multiplication tables show the multiples of numbers – the answers to the multiplication of several 1x1 digit multiplications, depending on the number of the multiplication table. For example, the 5 times table is ❑ × 5 and will show all the multiples of 5 by the numbers 1 to 10. Learners must memorise the multiplication tables, because once learners master the multiplication tables, they will be able to divide by applying their knowledge of multiplication.

BAR DIAGRAM

A diagram representing the relationships of numbers in word problems. The following is an example of bar diagram showing addition (combine).



Resources

MANIPULATIVES

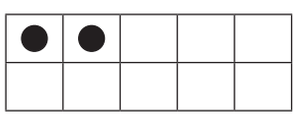
These are concrete apparatus such as counters, printed tens, printed hundreds, box and ball shapes, etc. that can be manipulated by learners.

COUNTERS

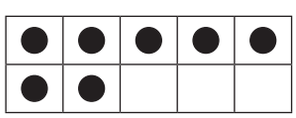
These are any (loose) concrete objects that learners can manipulate when counting. In the TMU bottle tops are recommended since they are freely available but other counters can also be used such as interlocking cubes (e.g. Unifix cubes). Teachers are expected to use concrete counters such as bottle tops on a big ten frame to help learners develop their number concept as they learn how to count and work with numbers, starting from the number 1. An abacus can be used for counting but since the numbers of the abacus are fixed onto the bars, learners cannot manipulate them as freely. In the lesson plans, all counters are referred to as bottle tops.

DOUBLE-DECKER TEN FRAME (GR1, TERM 1 AND 2)

A ten frame which is made of 2 × 5 frames. Double-decker ten frames are very helpful when working in the number range 0 to 10. The double decker ten frame helps learners to understand the numbers 6 to 10 as 5 + 1, etc. (numbers 1 to 5) by subitising. Learners must put bottle tops onto ten frames themselves when they learn about numbers. The double decker ten frame give visual clues about the numbers shown on it. This is the number 2 represented on a double decker ten frame:

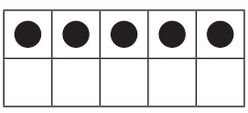


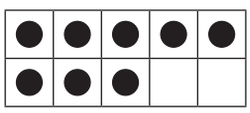
This is the number 7 represented on a double decker ten frame (visual of 5 plus 2):



TEN FRAME CARDS (GR 1)

Ten frames with counters already shown in the cards. The example of 5 and 8 are presented. These are also called number picture cards. Learners can start to recognise these cards after working with real ten frames and bottle tops themselves in class.





STRAIGHT TEN FRAME (GR 1 TERM 3 AND 4, GR 2, 3)

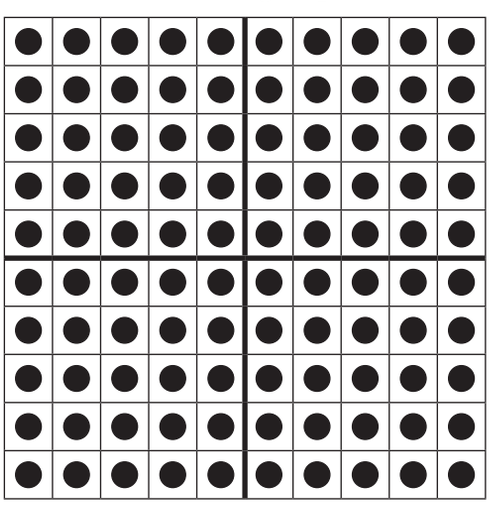
A ten frame which is straight. The thicker line in the middle shows the 5. This line is important because it helps learners to recognise the numbers 6 to 10 by using the building up skill of 5 and … (numbers 1 to 5). A straight ten frame is helpful to deal with numbers bigger than 10.

PRINTED TEN

Printed version of a group of 10 ones. You should call them 'ten(s)' in the lesson.

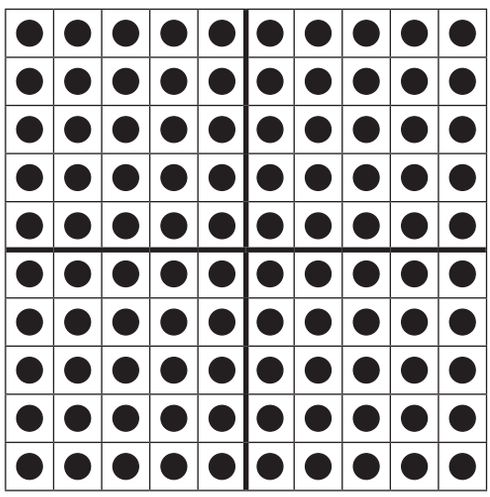
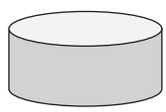
PRINTED HUNDRED (GR 2, 3)

Printed version of a group of 100 ones. You should call them 'hundred(s)' in the lesson.



BASE TEN KITS (ALL)

The concrete number representations used in the TMU lesson plans as 'counters' for ones, tens and hundreds. Bottle tops are used as single counters (to count ones), printed tens are used to count tens and printed hundreds are used to show hundred places. Each learner needs 1 printed hundred, 20 printed tens and 20 or 30 bottle tops. Teachers need 10 big printed hundreds, 20 big printed tens and 20 big bottle tops.

100	10	1
hundred	ten	one
		

About the Lesson Plans and Resources

The lesson plans and resources in this book are part of the Grade 2 Term 3 Teacher Toolkit for the pilot implementation of the mathematics framework.

The other documents in the toolkit are:

- a Lesson and Assessment Planner and Tracker
- a bilingual Learner Mathematics Activity Book
- a set of teacher printable resources
- a bilingual Dictionary of Mathematical Terms

A ABOUT THE LESSON PLANS

The lesson plans give detailed information about how to teach a CAPS-aligned lesson every day. By following the lesson plans, you will ensure that you cover the content and assessment tasks specified in the curriculum and give your learners the best possible chance of developing the knowledge and skills required for Mathematics in this grade.

1 CURRICULUM ALIGNMENT

The lessons are sequenced according to a reorganised CAPS unit planner. The content is CAPS aligned (all topics are covered and the CAPS weighting has been adhered to) but it covers a slightly different sequence to the regular CAPS. Your school has been given permission by the minister to follow this special reorganised curriculum. Lessons plans do show links to the CAPS content and skills being focussed on in the lesson.

2 DBE WORKBOOKS

Pilot implementation schools have been given permission **not** to use the DBE workbooks. You will use your CAPS and lesson plan aligned Learner Activity Books (LAB) instead. The LAB has been designed to include activities from the DBE workbook wherever possible. Bilingual LAB material is provided in English and the LoLT of the school in accordance with the Foundation Phase language policy.

3 BROAD OVERVIEW OF THE CONTENT OF THE LESSON PLANS

Each lesson plan provides a set of steps to guide you in delivering the lesson. In addition, it contains learner activities that will help learners develop the concepts and skills set for the lesson. There are mental maths activities, whole class activities led by the teacher, classwork and homework activities. The answers for the classwork and homework are included in the lesson plans. The classwork and homework activities form the content of the LAB which is provided in a bilingual workbook format.

4 ASSESSMENT

Assessment is provided for in the sequence of lessons. There is also a recommended mark record sheet in the tracker. You can first record your marks in the tracker and then transfer them to SA SAMS.

The programme of assessment suggested in the lesson plans complies with the CAPS as amended by Circular S1 of 2017 and provincial responses to this. Written, oral and practical assessments are provided. Rubrics and checklists with criteria for the oral and practical assessments are also included.

5 MANAGING YOUR TEACHING USING THE LESSON PLAN

A set of orientation activities on eight different topics aligned with the CAPS baseline assessment requirements is provided for the start of the first term. You should use all or a selection of these activities in the first week of term before the formal teaching of the numbered lesson plans begins. The formal curriculum for Term 3 of Grade 2 is covered in a set of 50 numbered lesson plans, paced to cover a 50-day teaching term. This includes 32 fully planned lessons, 8 assessment lessons and 10 consolidation lessons.

Each of the 32 fully planned lessons is designed to last 90 minutes. If your school's timetable has different period lengths, you will have to adjust the amount of work done in each lesson to accommodate this. However, each school should allow seven hours for Mathematics each week so it should be possible to fit in all the work for the week, even if the lengths of periods are not the same as in the lesson plans.

6 SEQUENCE ADHERENCE AND PACING

Each of the fully planned lessons and its contents has been carefully sequenced. You should not skip one of these lessons. Should you miss a school day for any reason, rather skip a consolidation lesson nearby to the lesson that you are busy teaching. You might choose to speed up the pace of delivery to catch up a missed lesson by covering the lesson concept content of two consecutive days in one day. To do this, you could cut out or cut back on some of the routine activities like mental mathematics or homework reflection to save time until you are back on track with the expected delivery of the plans.

Preparing to teach a lesson

The lesson plans provide a detailed lesson design for you to follow. However, to deliver the lessons successfully **you must do the necessary preparation yourself**.

Before you get started, study the contents page of the lesson plan document. This will give you an overview of the mathematics content you will cover during the term.

The information below outlines some key aspects of the preparation required before you teach are the lessons.

a **Prepare resources:** The resources needed for each lesson are listed in each lesson plan and in the tracker. It is very important that you check what is required for each lesson ahead of time, so that you have all your resources ready for use every day (e.g. bottle tops, number grids, paper cut-outs, examples of shapes, etc.).

- **Your lessons will not succeed if you have not prepared properly ahead of time.**
- If you do not have all the necessary resources readily available, see how best you can improvise, e.g. get learners to collect bottle tops or small stones to be used for counting, or make your own flard cards/number grids using pieces of cardboard and a marker pen.
- Collect empty cool drink cans, cereal boxes, washing powder boxes, plastic bottles etc. for the **shop activity** in the week long in advance, so that you have all the necessary goods to stock your shop.
- Use newspapers and magazines to cut out pictures that could be used in your teaching. If you have access to the internet, search for and print out pictures that you may need to use as illustrations in your lessons.

b **Prepare for the written classwork and homework activities:** When preparing your lessons, check the lesson activity requirements. In some instances you will need to write information or draw some diagrams on the board that you will use while you do the interactive whole-class-teaching component of the lesson. Also mark the homework activities as often as you can, so that you can give useful feedback to the learners each day, and be aware of any difficulties learners are having as soon as they become apparent.

c **Prepare to teach the concepts and skills associated with the lesson topic:** Think carefully about what it is that you will teach your learners in the lesson. Prepare a short introduction to the topic, so that you can explain it in simple terms to your learners. Make sure you have prepared for the teaching of the concepts before you teach – you need to be able to explain new Mathematics content and skills to the learners. Be sure you have gone through the oral teaching activities provided in the lesson plans. Also make sure that you have thought about how to use the resources in the lesson effectively. This preparation needs to be done in advance, so that you do not waste time during the lesson. Be sure you are familiar with the sequence of activities in the lesson plan. Prepare yourself to assist learners with any questions they might have during the lesson. Also give some thought to how you will accommodate learners with barriers to learning.

d **Lesson pace:** Think about how much time you will spend on each activity. It is important to plan how you will manage the pace of the lesson carefully; otherwise you will not manage to cover all the lesson content. Not all learners work at the same pace. You need to determine the pace – be guided by the average learner and the recommendations in the lesson plans. Be careful not to slow down to the pace of the slowest learners as this will disadvantage the other learners.

e **Organisation of learners:** Think about how you will organise learners when they do the classwork activities. Will they work alone, in pairs or in small groups? How will you organise the pairs or groups if you choose to use them? You need to organise the learners quickly at the beginning of the lesson, so that you do not waste too much time on this.

f **Inclusive education:** Consider the needs of any learners with barriers to learning in your class, and how best you can support them. The DBE has published some excellent materials to support you in working with learners with learning barriers. Two such publications are:

- Directorate Inclusive Education, Department of Basic Education (2011) *Guidelines for Responding to Learner Diversity in the Classroom Through Curriculum and Assessment Policy Statements.* Pretoria. www.education.gov.za, www.thutong.doe.gov.za/InclusiveEducation.
- Directorate Inclusive Education, Department of Basic Education (2010) *Guidelines for Inclusive Teaching and Learning. Education White Paper 6. Special needs education: Building an inclusive education and training system.* Pretoria. www.education.gov.za, www.thutong.doe.gov.za/InclusiveEducation.

Lesson Plan Outline

Each lesson plan has several components. Information about each one is given in the table below. This information tells you how to use each of the components of the lesson plans and how they fit together to create a well-paced and properly scaffolded Mathematics lesson each day. You should read this outline as you prepare each lesson until you are fully familiar with the general lesson plan components, pace and structure.

Teacher's notes

These notes include information for the teacher about the CAPS content to be covered in the lesson and the learning objective for the lesson.

A list of the lesson vocabulary is included in the teacher's notes. This is a list of the important mathematical vocabulary used in the lesson. The vocabulary, with explanations and diagrams, is also provided in the bilingual dictionary that is part of your Toolkit. You should go through the lesson vocabulary each day as you prepare for the lesson. These terms are important as they are the language of Mathematics that each learner needs to learn and understand in order to build a solid foundation and understanding of this subject. It is important to explain these words to your learners and encourage learners to use them as well. If you have learners in your class who are not yet comfortable in the Language of Teaching and Learning (LoLT), try and explain the word in a language they understand. Use gestures, pictures or enlist the help of another learner who is familiar with the home language of the learner who is struggling with a language barrier.

Finally, the resources that you should prepare for the days lesson are listed. You need to check what resources you need in advance for each lesson so that you are ready to teach each lesson each day.

Mental mathematics (10 minutes)

This is the first active component of the lesson. We recommend that you take at most 10 minutes to do the mental mathematics activity. The mental mathematics activity consists of a set of questions to drill number facts and basic mathematical strategies that are linked to the day's lesson.

Mental mathematics is not a concrete activity (as the title suggests). Remember a concrete activity uses actual material to scaffold learning. However, if there are learners who need concrete aids to complete the mental mathematics activities, we suggest that you allow them to use their fingers to count on.

- Observe which learners struggle with mental activities, and make sure you spend time later to help them reach the required level of competence by offering remediation activities using concrete aids.

- The answers to the mental mathematics questions are given in the answer column in the lesson plans.
- You should try and complete all of each day's mental mathematics questions, but if you find that your learners struggle to finish these in ten minutes, do a minimum of five questions.

Lesson content – concept development (45 minutes)

This is the second component of the lesson. It is the body of the lesson, in which learners are introduced to the new work planned for the day. We recommend that you actively teach your class for 45 minutes – going through the activities interactively with your learners.

- Activities on the content that you will teach with worked examples and suggested explanations are given. These activities have been carefully sequenced and scaffolded so that they support the teaching of the concepts for that day. You should work through each of these with your class.
- It is important to manage the pace of the lesson carefully otherwise you will not manage to cover all the lesson content. Once you have introduced the new concept, work through Activity 1 of the lesson with the whole class (or with learners in groups). Then immediately move on to the next activity, and provide a reasonable time for the learners to complete Activity 2, but do not wait for the last learner to finish before moving on. If there are further activities, continue pacing yourself in this way, so that you work through all of the activities in each lesson. A few activities are marked as *optional* – these need only be done if you have sufficient time.

Classwork activity and correction of homework (25 minutes)

This is the third component of the lesson. We recommend that you allocate 25 minutes to going over the previous day's homework and giving time to the learners to do the classwork.

First, take a minute or two to reflect on the homework. You might read out answers to all of the homework questions, allow learners/peers to mark the work. Try to check the homework yourself as often as you can. If you notice a question that many learners struggled with, especially if it is important for today's lesson, you could work through it in full with the whole class. Allow learners the opportunity to write corrections as needed.

When you assign the classwork, you could go over one or two of the classwork activities orally with the whole class before allowing the class to complete the activities independently (individually or in groups).

- Learners should do their classwork in the Learner Activity Book.
- Learners should work individually, in pairs and in groups so that they experience working alone as well as with their peers.
- Individual work is so important. Sometimes, in group work, only one or very few learners lead the group, they do all the work and present it to the class for the group.

Group work does not guarantee every learner's learning and understanding. Some of the group members may have been left behind without knowing exactly what has been has done. Learners should first work individually and then discuss what they have done with the rest of the group, based on what they have in their classwork book or worksheets.

- Wrap up the classwork activity each day by giving the learners the answers to the classwork, and allow time for corrections to be written if and when necessary. You should reflect on questions that learners have struggled with if necessary.

The bilingual learner resources contain all of the daily classwork activities.

Homework activity (5 minutes)

This is the fourth component of the lesson. We have allocated five minutes to give you time to tell the learners about the homework each day.

Homework consolidates the content that you have taught each day. Homework also promotes learner writing and development of their mathematical knowledge.

The bilingual learner resources contain all of the daily homework activities.

Reflection (5 minutes)

This is the fifth component of the lesson. You should wrap up the lesson every day by focussing the learners on the content covered and concepts they should have learned.

Week 1

Unit 1 Introduction

In this unit you will be able to focus on the four framework dimensions in the following ways:

- **Conceptual understanding**: In this unit conceptual understanding is developed through learners' discussion of solutions and strategies. Learners begin to understand why they are solving problems in a particular way as they verbalise their thought processes and exchange ideas with their peers.
- **Procedural fluency**: Some of the activities in this unit are quite repetitive. This is done intentionally so that learners develop procedural fluency as they become confident in working repeatedly with their times tables.
- **Strategies**: Learners need to understand and develop strategies to solve problems. Learners should be encouraged to verbalise their solutions to problems so that they can see other ways of finding answers.
- **Reasoning**: Learners will be given opportunities to justify their thoughts, solutions and strategies. It is important to allow learners opportunities to discuss and explain their strategies so that they can develop their knowledge and understanding of the concepts through reasoning.

Building a **learning centred classroom** in this unit will involve (amongst other things) attention to:

- **Connecting topics and concepts:** The concept of repeated addition links to the topic of multiplication, and provides a foundational understanding for the strategies used to solve problems.
- **Problem solving**: In this unit learners are given opportunities to develop their problem solving skills as they discuss word problems, and select strategies to solve them.
- **Applying maths in context**: Word problems enable learners to see the relevance of multiplication in a real-life context. Learners apply maths in context as they select strategies to solve these problems.
- **Practising procedures**: Learners are given multiple opportunities to practise solving problems in similar ways in order to develop their procedural fluency. This also helps learners to make connections between concepts and strategies.

Lesson 1: Repeated addition

Teacher's notes		
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.		
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.		
Lesson Objective: To solve problems using repeated addition.		
Lesson Vocabulary: Repeated addition, counting, groups.		
Resources: Bottle tops.		
Date:	Week	Day

1 MENTAL MATHS (10 MINUTES)

Ask the learners to stand up. Explain to them that they will be counting forwards in fives up to 50. Once they have counted they are to sit down. Let the learners begin to count. When they get to 20 stop the counting. Ask: **How many fives in 20?** Let the learners continue to count. Repeat the question 'how many fives' when you get to 30, 45 and 50. Let each learner have a chance to answer. You may need to repeat the counting exercise.

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson learners develop their understanding of the concept of multiplication. The concept will be introduced using repeated addition. **Repeated addition** can be defined as adding equal groups together. To solve a multiplication problem, we can repeatedly add the same number again and again to find the answer.

Today we are learning about repeated addition.

Activity 1: Whole class activity

- Invite 7 children to come to the front of the class.
- Ask: **How many eyes do 7 children have?** (14) **How did you get the answer?** (7 groups of 2 is 14.) Write the following on the board: 2 + 2 + 2 + 2 +2 +2 + 2 = 14, 14 eyes.
- Solve the following with the learners using repeated addition:
- *How many wheels do 5 cars have?* (4 + 4 + 4 + 4 + 4 = 20, 20 wheels)
- *How many fingers are there on 3 hands?* (5 + 5 + 5 = 15, 15 fingers)
- *How many wheels are there on 4 tricycles?* (3 + 3 + 3 + 3 = 12, 12 wheels)

Activity 2: Whole class activity

- Use bottle tops for this activity.
- Count out 12 bottle tops. Ask the learners to group the bottle tops in 2s.
- Ask: **How many groups of 2 are there?** (6). Write on the board 2 + 2 + 2 + 2 + 2 + 2 = 12.
- Let learners write the number sentence in their classwork books.
- Repeat this activity using different group sizes:
  - How many groups of 3 in 12? (4)
  - How many groups of 4 in 12? (3)
- Ask: **What is the relationship between 4 groups of 3 and 3 groups of 4?** (They are both 12. Use bottle tops to demonstrate this.).
- Let learners write the number sentences (repeated addition) of 4 groups of 3 and 3 groups of 4 in their classwork books. (3 + 3 + 3 + 3 = 12, 4 + 4 + 4 = 12)
- Write these number sentences on the board for correction.
- Discuss the relationship between 6 groups of 2 is 12, 4 groups of 3 is 12 and 3 groups of 4 is 12, using bottle tops.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: In this activity learners are expected to find the answers by counting forwards in 2s, 3s, 4s, and 5s.

Complete the table.

	What is?	Repeated Addition	Answer
1	5 groups of 2	2 +2 +2 +2 +2 =	10
2	3 groups of 3	3 + 3 + 3 =	(9)
3	6 groups of 4	(4 + 4 + 4 + 4 + 4 + 4 =)	(24)
4	3 groups of 5	(5 + 5 + 5 =)	(15)
5	10 groups of 2	(2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 =)	(20)
6	7 groups of 3	(3 + 3 + 3 + 3 + 3 + 3 + 3 =)	(21)
7	6 groups of 5	(5 + 5 + 5 + 5 + 5 + 5 =)	(30)
8	8 groups of 4	(4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 =)	(32)
9	9 groups of 3	(3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 =)	(27)
10	10 groups of 5	(5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 =)	(50)

4 HOMEWORK ACTIVITY (5 MINUTES)

Complete the table.

	What is?	Repeated Addition	Answer
1	6 groups of 2	(2 + 2 + 2 + 2 + 2 + 2 =)	(12)
2	7 groups of 3	(3 + 3 + 3 + 3 + 3 + 3 + 3 =)	(21)
3	5 groups of 4	(4 + 4 + 4 + 4 + 4 =)	(20)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt about repeated addition.

Lesson 2: Multiplication (1)

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.
Lesson Objective: To recognise the relationship between repeated addition and multiplication.
Lesson Vocabulary: Repeated addition, counting, groups, multiplication, and multiple.
Resources: Bottle tops.
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

Ask the learners to stand up. Explain to them that they will be counting forwards in twos up to 20. Let the learners begin to count. When they get to 14 stop the counting. Ask: **How many twos in 14?** Let the learners continue counting. Repeat the question 'how many twos' when you get to 16, 18 and 20. Let each learner have a chance to answer. Once they have finished counting they are to sit down. You may need to repeat the counting exercise.

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

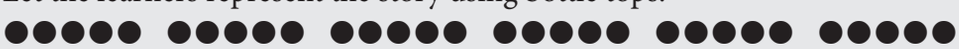
In this lesson learners continue to develop their understanding of the concept of multiplication. The relationship between repeated addition and multiplication is illustrated. The learners are also introduced to the multiplication sign. It is essential that the concept is introduced at the learners' pace and bottle tops are used as concrete aids to assist the learners in understanding the concept.

Today we are learning about multiplication.

Activity 1: Whole class activity

- Write the following word problem on the board.
  There are 4 bags and 2 mangoes in each bag.
  How many mangoes are there altogether?
- Read the problem.
- Ask: **What is the story about?** (Mangoes)
- Ask: **What numbers do you see in the story?** (4 and 2)
- Underline these numbers.
- Ask: **What is the question?** (How many mangoes are there altogether?)
- Underline the question with a wavy line.
- Let the learners read the problem until they read it fluently.
- Let the learners represent the story using bottle tops.
  ●● ●● ●● ●●

- Let some learners present their representation using bottle tops to the class.
- Ask: **How do we write a number sentence for this story?** (2 + 2 + 2 + 2 =).
- Let the learners write the number sentence in their classwork books.
- Write the number sentence (2 + 2 + 2 + 2 = __) on the board.
- Read the number sentence together several times.
- Let the learners solve the number sentence by counting forwards in 2s. (2 + 2 + 2 + 2 = 8, 8 mangoes)
- Ask one of the learners to write the answer to this word problem on the board for correction.
- Solve the following with the learners as solved above.
  There are 6 groups of 5 children in a classroom.
  How many children are there altogether?
- Let the learners represent the story using bottle tops.



- Let the learners solve the number sentence by counting forwards in 5s and writing it in their classwork books. (5 + 5 + 5 + 5 + 5 + 5 = 30, 30 children)
  Learners should write the second repeated addition leaving a space under the first number sentence. They will use this space to write the multiplication number sentence under the repeated addition in Activity 2.
- Keep these calculations on the board.

Activity 2: Whole class activity

- Refer to the two word problems from Activity 1.
- Explain to the learners that we can solve these word problems using multiplication. Write '×' on the board and explain that this is the multiplication sign.
- Let the learners write the multiplication sign in the air.
- Refer to problem 1 and write 4 × 2 = 8 under the repeated addition for this problem on the board.
- Say: **This means 4 groups of 2 and we say 'four times two'. Let's count 4 groups of 2. The answer is 8. This is the same as adding 4 twos together.**
- Let the learners write the multiplication number sentence with its answer under the repeated addition number sentence for problem 1 in their classwork books. (4 × 2 = 8, 8 mangoes)
- Repeat with problem 2. Write 6 × 5 = 30 under the repeated addition 2 on the board.
- Say: **This means 6 groups of 5 and we say 'six times five'. Let's count 6 groups of 5. The answer is 30. This is the same as adding 6 fives together.**
- Let the learners write the multiplication number sentence with its answer under the repeated addition number sentence for problem 2 in their classwork books. (6 × 5 = 30, 30 children)

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: You may give learners bottle tops to solve these problems. Walk around while the learners are solving these problems to check their understanding. Learners must change the multiplication to repeated addition.

Complete the table. Write multiplication as repeated addition.

	Multiplication	Repeated Addition
1	3 × 2 = 6	2 + 2 + 2 = 6
2	4 × 2 = (8)	(2 + 2 + 2 + 2 = 8)
3	3 × 3 = (9)	(3 + 3 + 3 = 9)
4	2 × 5 = (10)	5 + 5 = (10)
5	5 × 3 = (15)	(3 + 3 + 3 + 3 + 3 = 15)
6	6 × 5 = (30)	(5 + 5 + 5 + 5 + 5 + 5 = 30)
7	9 × 2 = (18)	(2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 18)
8	5 × 4 = (20)	4 + 4 + 4 + 4 + 4 = (20)

4 HOMEWORK ACTIVITY (5 MINUTES)

Complete the table. Write multiplication as repeated addition.

	Multiplication	Repeated Addition
1	3 × 5 = (15)	(5 + 5 + 5 = 15)
2	4 × 3 = (12)	(3 + 3 + 3 + 3 = 12)
3	8 × 2 = (16)	(2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 16)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have begun to learn how to multiply.

Lesson 3: Multiplication (2)

Teacher's notes		
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.		
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.		
Lesson Objective: To solve problems involving repeated addition and multiplication.		
Lesson Vocabulary: Repeated addition, counting, groups, multiplication, and multiple.		
Resources: Bottle tops.		
Date:	Week	Day

1 MENTAL MATHS (10 MINUTES)

Ask the learners to stand up. Explain to them that they will be counting forwards in threes up to 30. Once they have finished counting they are to sit down. Let the learners begin counting. When they get to 18 stop the counting. Ask: **How many threes in 18?** Let the learners continue counting. Repeat the question 'how many threes' for the numbers 21, 27 and 30. Let each learner have a chance to answer. You may need to repeat the counting exercise.

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson learners continue to build on their understanding of the relationship between repeated addition and multiplication. The learners continue to work with the multiplication sign and unpack multiplication problems. The learners will be introduced to the term multiple. A **multiple** of a number is that number multiplied by a whole number. The learners may wish to use bottle tops when solving the word problems. As discussed previously, the first step in learning a concept is to experience the concept through doing a concrete activity. For example, by working with bottle tops.

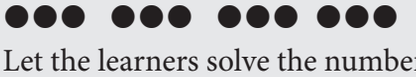
Today we are learning about multiplication and repeated addition.

Activity 1: Whole class activity

- Write the following word problem on the board.
  There are 5 bags with 4 apples in each bag.
  How many apples are there altogether?
- Read the problem.
- Ask: **What is the story about?** (Apples)
- Ask: **What numbers do you see in the story?** (5 and 4)
- Underline these numbers.
- Ask: **What is the question?** (How many apples are there altogether?)
- Underline the question with a wavy line.

- Let the learners read the problem until they read it fluently.
- Let the learners represent the story using bottle tops.

- Ask: **How do we write a number sentence for this story?**
- Write the number sentence (4 + 4 + 4 + 4 +4 = __) on the board.
- Let the learners write the number sentence in their classwork books.
- Read the number sentence together several times.
- Let the learners solve the number sentence by counting forwards in 4s. (4 + 4 + 4 + 4 +4 = 20, 20 apples)
- Ask one of the learners to write the answer to this word problem on the board for correction.
- Solve the following with the learners as solved above.
  There are 4 boxes with 3 chicken legs in each box.
  How many chicken legs are there altogether?
- Let the learners represent the story using bottle tops.



- Let the learners solve the number sentence by counting forwards in 3s and writing the answer it in their classwork books. (3 + 3 + 3 + 3 = 12, 12 chicken legs)
- *Learners should write the second repeated addition number sentence leaving a space under the first number sentence. They will write multiplication number sentences in Activity 2.*
- Keep these calculations on the board.

Activity 2: Whole class activity

- Refer to the two word problems from activity 1.
- Explain to the learners that we can solve these word problems using multiplication.
- Refer to problem 1and ask: **How do we write repeated addition 1 (5 groups of 4) in multiplication number sentence?** (5 ×4 = 20, 20 apples)
- Let the learners write the multiplication number sentence under repeated addition for problem 1 in their classwork books.
- Let a learner write his/her number sentence for problem 1 under the repeated addition for problem 1 on the board for correction.
- Say: **This means five groups of four. Let's count 5 groups of 4. The answer is 20. This is the same as adding 5 fours together. 4, 8, 12, 16 and 20 are multiples of 4. A *multiple* is the number you say when you 'count by' a number. For example, 8 is two groups of 4 so 8 is a multiple of 4.**
- Repeat with problem 2.
- Let the learners write 4 × 3 =12, 12 chicken legs, under the repeated addition number sentence for problem 2 in their classwork books.
- Write 4 × 3 =12, 12 chicken legs, under the repeated addition for problem 2 on the board for correction.
- Let learners explain: **This means four groups of 3.**

- Say: **Let's count 4 groups of 3. The answer is 12. This is the same as adding 4 threes together.**
- Ask: **Is 12 a multiple of 3? Why?** (It is because 4 × 3 = 12.)

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: You may give learners bottle tops to solve these problems. Walk around while the learners are solving these problems to check their understanding. Some learners will not need bottle tops since they may use counting forwards techniques. It is fine for them to do so. Let learners should use bottle tops for correction if necessary.

Complete the table. Write multiplication as repeated addition.

	Multiplication	Repeated Addition
1	3 × 3 = (9)	(3 + 3 + 3 = 9)
2	4 × 3 = (12)	(3 + 3 + 3 + 3 = 12)
3	6 × 2 = (12)	(2 + 2 + 2 + 2 + 2 + 2 = 12)
4	5 × 5 = (25)	(5 + 5 + 5 + 5 + 5 = 25)
5	6 × 4 = (24)	(4 + 4 + 4 + 4 + 4 + 4 = 24)
6	7 × 2 = (14)	(2 + 2 + 2 + 2 + 2 + 2 + 2 = 14)
7	9 × 3 = (27)	(3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 = 27)
8	4 × 4 = (16)	(4 + 4 + 4 + 4 =16)

4 HOMEWORK ACTIVITY (5 MINUTES)

Complete the table. Write multiplication as repeated addition.

	Multiplication	Repeated Addition
1	3 × 2 = (15)	(2 + 2 + 2 = 6)
2	4 × 5 = (20)	(5 + 5 + 5 + 5 = 20)
3	8 × 3 = (24)	(3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 = 24)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt about multiplication and repeated addition.

Lesson 4: Multiplication number sentences (1)

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.
Lesson Objective: To write multiplication number sentences.
Lesson Vocabulary: Number sentence, counting, groups, multiplication, and multiply.
Resources: Bottle tops.
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

Ask the learners to stand up. Explain to them that they will be counting forwards in fours up to 40. Once they have counted, they are to sit down. Let the learners begin counting. When they get to 16, stop the counting. Ask: **How many fours in 16?** Let the learners continue counting. Repeat the question 'how many fours' when you get to 24, 32 and 36. Let each learner have a chance to answer. You may need to repeat the counting exercise.

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

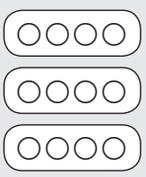
In this lesson learners continue to build on their understanding of multiplication. The learners, in pairs, will write their own multiplication number sentences after using bottle tops and drawing pictures. In this way you will be able to assess if the learners understand the concept and can address any misunderstandings. Encourage the learners to use bottle tops and draw circles to show their understanding.

Today we are learning about multiplication number sentences.

Activity 1: Whole class activity

- Write the following word problem on the board.
  There are 3 bags with 4 oranges in each bag.
  How many oranges are there altogether?
- Read the problem.
- Ask: **What is the story about?** (Oranges)
- Ask: **What numbers do you see in the story?** (3 and 4)
- Underline these numbers.
- Ask: **What is the question?** (How many oranges are there altogether?)
- Underline the question with a wavy line.
- Let the learners read the problem until they read it fluently.
- Let the learners represent the story using bottle tops.

- Let some learners present their representation using bottle tops to the class.
- Draw circles to represent the bottle tops on the board as follows.



- Learners should copy the same drawing into their classwork books.

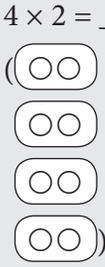
Activity 2: Whole class activity

- Ask:
  - **How many bags/groups are there in this diagram?** (3 bags)
  - **How many oranges are there in each bag?** (4 oranges)
- Say: **There are 3 groups of 4.**
  - **What is the number sentence?** (3 × 4 =, or 4 + 4 + 4 =)
- Write the number sentence (3 × 4 = __, or 4 + 4 + 4 = __) on the board. Read the multiplication number sentence together several times.
- Let the learners write 3 × 4 = in their classwork books. Then they should solve the problem and complete the number sentence and write the answer with the correct unit. (3 × 4 = 12, 12 oranges).
- *Learners may use counting forwards in 4s or bottle tops to find the answer.*

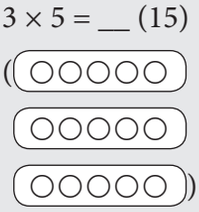
Activity 3: Whole class activity

Draw a diagram to calculate the answer.

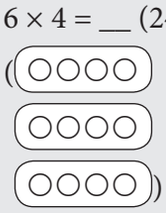
a 4 × 2 = __ (8)



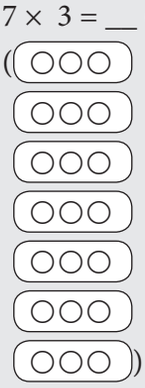
b 3 × 5 = __ (15)



c 6 × 4 = __ (24)



d 7 × 3 = __ (21)



3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: All the learners must complete at least the first 5 questions.

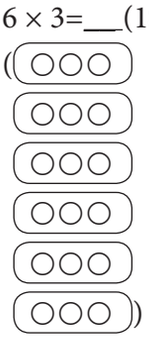
Complete the table.

	What is?	Multiplication	Repeated Addition
1	3 groups of 5	3 × 5 = (15)	(5 + 5 + 5 = 15)
2	4 groups of 3	(4 × 3 = 12)	(3 + 3 + 3 + 3 = 12)
3	6 groups of 2	(6 × 2 = 12)	(2 + 2 + 2 + 2 + 2 + 2 = 12)
4	5 groups of 5	(5 × 5 = 25)	(5 + 5 + 5 + 5 + 5 = 25)
5	6 groups of 4	(6 × 4 = 24)	(4 + 4 + 4 + 4 + 4 + 4 = 24)
6	8 groups of 2	(8 × 2 = 16)	(2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 16)
7	9 groups of 3	(9 × 3 = 27)	(3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 = 27)
8	4 groups of 4	(4 × 4 = 16)	(4 + 4 + 4 + 4 =16)

4 HOMEWORK ACTIVITY (5 MINUTES)

Draw a diagram to calculate the answer.

6 × 3=___(18)

()

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt about multiplication number sentences.

Lesson 5: Consolidation

Teacher's notes		
This lesson allows for consolidation of the previous days' lesson content.		
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.		
Lesson Objective: To consolidate repeated addition and multiplication.		
Lesson Vocabulary: Number sentence, counting, groups, multiplication, and multiply.		
Resources: Bottle tops.		
Date:	Week	Day

1 NOTES FOR THE TEACHER RELATING TO THIS WEEK'S WORK

This week's work introduced the concept of multiplication using repeated addition. The learners worked with the multiplication sign. They used bottle tops and drawings to show multiplication number sentences.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

Some learners may be experiencing difficulties with understanding multiplication. It is important that you work with the learners using bottle tops to show the multiples. Once they understand the concept of groups, you can write the number sentences. Let the learners work at their own pace. Give the learners a number of different examples and allow them to solve these at their own pace. They could also explain the steps to each other, which gives you the opportunity to check their understanding.

3 CLASSWORK/HOMEWORK – COMPLETE THIS WEEK'S CLASSWORK AS NEEDED

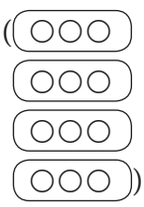
Today we are going over what we learned this week. We are learning more about multiplication.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

1 Complete the table**.**

	Groups	Multiplication	Repeated Addition
a	5 groups of (5)	5 × 5 = (25)	(5 + 5 + 5 + 5 + 5 = 25)
b	(8) groups of 3	8 × 3 = (24)	(3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 = 24)
c	7 groups of 4	(7 × 4 = 28)	(4 + 4 + 4 + 4 + 4 + 4 + 4 = 28)

2 Draw a diagram to show 4 groups of 3 and write the multiplication number sentence.
$4 \times 3 =$ _____ (12)



5 REFLECTION AND SUMMARY OF LESSON

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt about multiplication.

Week 2

Lesson 6: Assessment

Teacher's notes		
This lesson should be used for assessment of the content covered in this unit to date.		
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.		
Resources: Printable assessment in teacher's resources.		
Date:	Week	Day

1 SETTLE THE CLASS AND ADMINISTER THE ASSESSMENT (45 MINUTES)

The assessment for today is linked to the work covered in the unit to date.

You will find the printable version of the assessment in the teacher's resource pack.

Take some time to do the *oral and practical assessment* (see checklist below).

2 DISCUSS ASSESSMENT ITEMS WITH THE CLASS (45 MINUTES)

Take in the learners' work when they are done.

There should be time for you to discuss a few of the items with the class:

- use this opportunity to reflect on different methods used by learners (allow some learners to write their solutions on the board).
- speak about misconceptions that may have arisen in learners' responses.

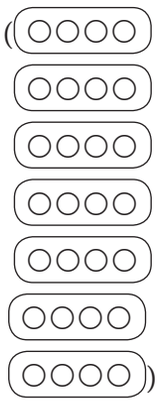
3 ASSESSMENT

WRITTEN ASSESSMENT (15)

1 Complete the table. (13)

	Groups	Multiplication	Repeated Addition
a	4 groups of 5	4 × 5 = 20	(5 + 5 + 5 + 5)
b	(9) groups of (2)	9 × 2 = (18)	(2 + 2 + 2 + 2 + 2 + 2 + 2 +2 +2)
c	7 groups of 3	7 × 3 = (21)	(3 + 3 + 3 + 3 + 3 + 3 + 3)
d	(5) groups of (4)	5 × 4 = (20)	(4 + 4 + 4 + 4 + 4)
e	10 groups of 3	10 × 3 = (30)	(3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3)

2 Draw a diagram to calculate the answer. 7 × 4 = _____ (28) (2)
(1 mark for the answer and 1 mark for the drawing)



ORAL AND PRACTICAL

CAPS: Numbers, operations and relationships: Multiplication **Activity: Assess learners' ability to work with introductory multiplication concepts.**	**Mark: 7**

Mark	**Criteria – Checklist: (1 mark for each criterion achieved)**
1	Able to interpret a multiplication word problem.
1	Able to display bottle tops to show the solution to a multiplication word problem.
1	Able to use bottle tops to find the solution to a multiplication word problem.
1	Able to write a repeated addition number sentence.
1	Able to calculate repeated addition of given numbers.
1	Able to write a multiplication number sentence.
1	Able to calculate the answer to a multiplication number sentence.

Lesson 7: Multiplication number sentences (2)

Teacher's notes		
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.		
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.		
Lesson Objective: To solve multiplication number sentences.		
Lesson Vocabulary: Number sentence, counting, groups, multiplication, and multiply.		
Resources: Bottle tops.		
Date:	Week	Day

1 MENTAL MATHS (10 MINUTES)

	Calculate:	Answer			Answer
1	2 + 2 + 2 =	6	**6**	3 + 3 + 3 + 3 + 3 + 3 =	18
2	5 + 5 =	10	**7**	5 + 5 + 5 + 5 =	20
3	4 + 4 + 4+ 4+ 4 =	20	**8**	2 + 2 + 2 + 2 + 2 + 2 + 2 =	14
4	3 + 3 + 3 =	9	**9**	4 + 4 + 4 + 4 + 4 + 4 + 4 =	28
5	2 + 2 + 2 + 2+ 2 + 2 =	12	**10**	5 + 5 + 5 + 5 + 5 + 5 + 5 =	35

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

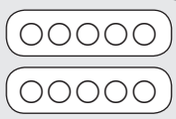
In this lesson learners continue to build their understanding of multiplication. The learners will start to move away from using repeated addition and solve the number sentences using only multiplication. In this way we are developing the learners' conceptual understanding of multiplication.

Today we are learning to multiply using number sentences.

Activity 1: Whole class activity

- Write the following word problem on the board.
  Tshilidzi has 5 apples.
  Jabu has 2 times as many apples as Tshilidzi.
  How many apples does Jabu have?
- Read the problem.
- Ask: **What is the story about?** (apples)
- Ask: **What numbers do you see in the story?** (5 and 2)

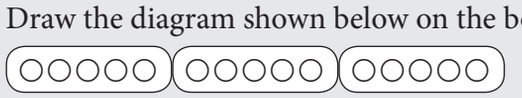
- Underline these numbers.
- Ask: **What is the question?** (How many apples does Jabu have?)
- Underline the question with a wavy line.
- Let the learners read the problem until they read it fluently.
- Draw the diagram as follows.



- Explain: When you say 2 times as many, it means if Tshilidzi has 1 group of 5 apples then Jabu has 2 groups of 5 apples.
- Ask: **How do we write the number sentence for Jabu's apples?** ($2 \times 5 = 10$, 10 apples.) **Why?** (Because Jabu has 2 groups of 5 apples.)
- Let the learners draw the diagram and write the number sentence with its answer in their classwork books.
- Let a learner write his/her multiplication number sentence on the board for correction.

Activity 2: Whole class activity

- Write the following word problem on the board.
  I have a 4 m piece of string.
  How long would the string be if it was 3 times longer?
- Read the problem.
- Ask: **What is the story about?** (String)
- Ask: **What numbers do you see in the story?** (4 and 3)
- Underline these numbers.
- Ask: **What is the question?** (How long would the string be if it was 3 times longer?)
- Underline the question with a wavy line.
- Let the learners read the problem until they read it fluently.
- Draw the diagram shown below on the board.



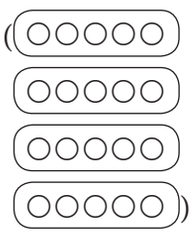
1 time 2 times 3 times

- Ask: **How do we write a number sentence for this story?** ($3 \times 4 =$ __) **Why?** (Because there are 3 groups of 4 circles).
- Learners solve the problem. Let the learners write the number sentence with the answer in their classwork books. ($3 \times 4 = 12$, 12m)
- Let a learner write his/her multiplication number sentence on the board for correction.
- *If some learners still write the number sentence as repeated addition, let them write the multiplication number sentence under the repeated addition. Gradually they need to shift from repeated addition to multiplication.*

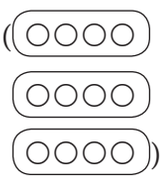
3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

Draw a diagram to calculate the answer.

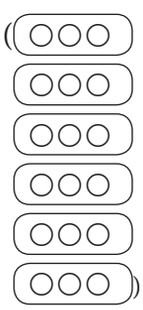
1 What is 4 times 5? _____ (20)



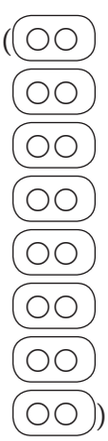
2 What is 3 times 4? _____ (12)



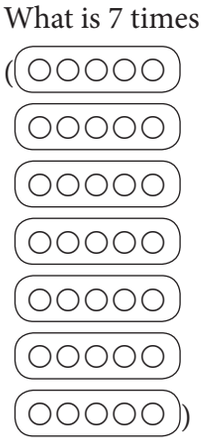
3 What is 6 times 3? _____ (18)



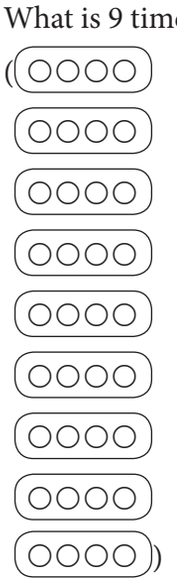
4 What is 8 times 2? _____ (16)



5 What is 7 times 5? _____ (35)



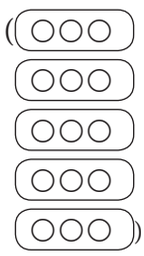
6 What is 9 times 4? _____ (36)



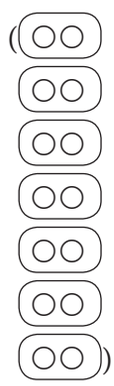
4 HOMEWORK ACTIVITY (5 MINUTES)

Draw a diagram to calculate the answer.

1 What is 5 times 3? _____ (15)



2 What is 7 times 2? _____ (14)



5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt to multiply using number sentences.

Lesson 8: 5 times table (1)

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.
Lesson Objective: To learn the 5 times table – building it up.
Lesson Vocabulary: Multiples, number patterns, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times.
Resources: Bottle tops.
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

Count forwards and backwards in 5s up to 50.

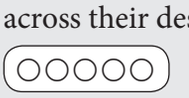
2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

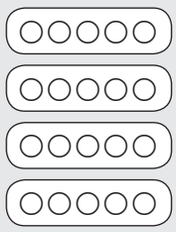
This is the first of two lessons on the 5 times table. In this lesson learners will learn the 5 times table and recognise the pattern of increasing by 5 each time. This activity shows the connection between repeated addition and multiplication.

Today we are learning the 5 times table.

Activity 1: Whole class activity

- Write the word problem on the board.
  There are 5 balls in a bag.
  How many balls are there in 1 bag?
- Read the story several times. First read it quite slowly but then read it using a normal speed of reading.
- Draw the diagram below on the board while learners place 5 bottle tops horizontally across their desks.

   $1 \times 5 = 5$
- Ask: **How can we write the multiplication sentence for this drawing?** ($1 \times 5 = 5$)
  Why? (Because there is 1 group of 5 bottle tops.)
- **How many balls are there?** (5 balls)
- Let the learners draw 5 circles in a horizontal line and write the multiplication number sentence $1 \times 5 = 5$ next to the drawing in their classwork books.
- Say: **This is 1 times 5**, writing $1 \times 5 = 5$ next to the drawing on the board.
- Continue this activity with 2 bags, 3 bags, and 4 bags.
- Draw the diagrams underneath each other and write the number sentence next to the drawing each time.



$1 \times 5 = 5$

$2 \times 5 = 10$

$3 \times 5 = 15$

$4 \times 5 = 20$

- Let the learners read the number sentence every time and draw the same diagram and write the multiplication number sentence in their classwork books.

Activity 2: Whole class activity

- Ask some learners to come to the board to complete the 5 times table up to 10 times 5, following the diagram in Activity 1.
- $5 \times 5 = 25$, $6 \times 5 = 30$ until you get to $10 \times 5 = 50$.
- Once all the number sentences are written on the board, ask: **Do you notice anything about the answers to these number sentences?** (They end in 0 or 5, the answers increase by 5 each time).
- Say: **We have found a pattern in the five times table.**
- Let the learners continue to complete the 5 times table by drawing in their classwork books.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: Learners may use bottle tops to help them do this activity.

The Grade 2 class is going to the zoo. Each car can take 5 children. How many children can go to the zoo each time?

Complete the table.

	Cars	Number sentence	Answer
1	1 car	$1 \times 5 = 5$	5 children
2	2 cars	$2 \times 5 = 10$	10 children
3	3 cars	($3 \times 5 = 15$)	(15 children)
4	4 cars	($4 \times 5 = 20$)	(20 children)
5	5 cars	($5 \times 5 = 25$)	(25 children)
6	6 cars	($6 \times 5 = 30$)	(30 children)
7	7 cars	($7 \times 5 = 35$)	(35 children)
8	8 cars	($8 \times 5 = 40$)	(40 children)
9	9 cars	($9 \times 5 = 45$)	(45 children)

4 HOMEWORK ACTIVITY (5 MINUTES)

Complete the number sequences counting in 5s:

1 0, 5, 10, (15), 20, (25), (30), 35, 40, (45), 50.

2 50, 45, (40), 35, 30, (25), 20, 15, (10), 5, 0.

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt the 5 times table.

Lesson 9: 5 times table (2)

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 1.14 Repeated addition leading to multiplication.
Lesson Objective: To consolidate knowledge of the 5 times table.
Lesson Vocabulary: Multiples, number patterns, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times.
Resources: Multiplication cards (×5) (see *Printable Resources*).
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

What is the multiplication number sentence? (See LAB)

	Repeated Addition	Multiplication
1	5 + 5 =	(2 × 5 =10)
2	5 + 5 + 5 + 5 + 5 + 5 =	(6 × 5 = 30)
3	5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 =	(8× 5 = 40)
4	5 + 5 + 5 + 5 =	(4 × 5 = 20)
5	5 + 5 + 5 + 5 + 5 =	(5 × 5 = 25)
6	5 + 5 + 5 + 5 + 5 + 5 + 5 =	(7 × 5 = 35)
7	5 + 5 + 5 =	(3 × 5 = 15)
8	5 + 5 + 5 + 5 + 5 + 5+ 5 + 5 + 5+ 5 =	(10 × 5 = 50)
9	5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 =	(9 × 5 = 45)

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the second of two lessons on the 5 times table. In this lesson learners will continue to learn the 5 times table and recognise the pattern of increasing by 5 each time. This activity shows the connection between repeated addition and multiplication. The learners will use the ×5 multiplication cards (you need to prepare these from the printable resources) to practise the 5 times table. This practice helps learners to memorise the multiplication tables.

Today we are learning the 5 times table.

Activity 1: Learners work in pairs

- Give each pair of learners a set of multiplication cards (5 times table).
- The learners should cut up the cards. They should write the answers on the back of each card, to prepare them for use in this and other lessons. Make sure that they write the correct answers on the backs of the cards.
- The learners should put their cards in order from $1 \times 5 = 5$ to $10 \times 5 = 50$ on their desks.
- Ask: What is the pattern in the answers? (The answers increase by 5 each time).
- Learners turn their cards over to show the answer side up.
- The teacher says a multiplication problem from the 5 times table.
- Learners grab the card with the correct answer.

Activity 2: Learners work in pairs

- Using the 5 times table cards play the following games.
- Explain one game at a time.
- When the fast learners become tired of the first game, let them move on to the next game.
- You should walk around the class and make sure all of the learners a playing a game and having fun learning the 5 times table.
- Help learners who have not understood the rules of the games if necessary.

Game 1

1. One learner picks up one card at a time and reads it out loud.
2. The other learner gives the answer.
3. Learners take turns to ask and answer questions, checking the answers at the back of the card each time.

Game 2

1. Both learners draw a card from the pile.
2. They say the answer to each other.
3. The learner who gets the bigger answer is the winner.
4. When you have completed the cards, you can play the game again but this time the learner who gets the smaller answer is the winner.

Game 3

1. Lay all the cards out with the answers facing up.
2. Pick a card and say the multiplication number sentence for which the number you chose is the answer.
3. Take turns.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

Complete the table. Write repeated addition as multiplication.

	Multiplication	Repeated addition	Answer
1	6 × 5	5 + 5 + 5 + 5+ 5 + 5	(30)
2	3 × 5	(5 + 5 + 5)	(15)
3	(2 × 5)	5 + 5	(10)
4	7 × 5	(5 + 5 + 5 + 5 + 5 + 5+ 5)	(30)

4 HOMEWORK ACTIVITY (5 MINUTES)

Complete the table. Write repeated addition as multiplication.

	Multiplication	Repeated addition	Answer
1	2 × 5	5 + 5	(10)
2	5 × 5	(5 + 5 + 5 + 5 + 5)	(25)
3	(4 × 5)	5 + 5 + 5 + 5	(20)
4	8 × 5	(5 + 5 + 5 + 5 + 5 + 5+ 5 + 5)	(40)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt the five times table.

Lesson 10: Consolidation

Teacher's notes
This lesson allows for consolidation of the previous days' lesson content.
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.
Lesson Objective: To revise multiplication and 5 times table.
Lesson Vocabulary: Multiples, number patterns, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times.
Resources: Multiplication cards (×5) (see *Printable Resources*).
Date: Week Day

1 NOTES FOR THE TEACHER RELATING TO THIS WEEK'S WORK

This week the learners learnt about multiplication, focusing on the 5 times tables.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

Learners need many opportunities to make connections between repeated addition and multiplication, so encourage learners to verbalise this as part of their consolidation. Make sure that learners understand that a multiplication number sentence such as 3×5 means that there are 3 groups of 5. Be sure that learners don't confuse addition with multiplication – make sure they know the difference between the signs and know how to read them correctly. They need to know the difference between 3×4 and $3 + 4$.

3 CLASSWORK/HOMEWORK – COMPLETE THIS WEEK'S CLASSWORK AS NEEDED

Today we are going over what we learned this week. We are learning more about multiplication by 5.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

NOTE: Refer to the lesson 9 classwork activity to explain the card game rules to the learners.

1 Complete the table. Write repeated addition as multiplication.

	Multiplication	Repeated addition	Answer
a	2 × 5	5 + 5	(10)
b	3 × 5	(5 + 5 + 5)	(15)
c	(4 × 5)	5 + 5 + 5 + 5	(20)
d	5 × 5	(5 + 5 + 5 + 5 + 5)	(25)
e	(6 × 5)	5 + 5 + 5 + 5 + 5 + 5	(30)
f	7 × 5	(5 + 5 + 5 + 5 + 5 + 5 + 5)	(35)
g	(8 × 5)	5 + 5 + 5 + 5 + 5 + 5 + 5 + 5	40
h	(9 × 5)	5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5	45

2 Play the 5 times table card game. Your teacher will explain the rules.

5 REFLECTION AND SUMMARY OF LESSON

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have revised multiplication.

Week 3

Lesson 11: 2 times table (1)

Teacher's notes		
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.		
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.		
Lesson Objective: To learn the 2 times table – building it up.		
Lesson Vocabulary: Multiples, number patterns, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times.		
Resources: Bottle tops.		
Date:	Week	Day

1 MENTAL MATHS (10 MINUTES)

Count forwards and backwards in 2s up to 20.

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the first of two lessons on the 2 times table. In this lesson learners will learn the 2 times table and recognise the pattern of increasing by 2 each time. This activity shows the connection between repeated addition and multiplication.

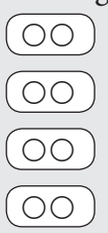
Today we are learning the 2 times table.

Activity 1: Whole class activity

- Write the word problem on the board.
  There are 2 apples on a plate.
  How many apples are there on 1 plate?
- Read the story several times. First read it quite slowly but then read it using a normal speed of reading.
- Draw the diagram below on the board while learners place 2 bottle tops horizontally across their desks.

   $1 \times 2 = 2$
- Ask: **How can we write the multiplication sentence for this drawing?** ($1 \times 2 = 2$)
  Why? (Because there is 1 group of 2 bottle tops.)
- **How many apples are there?** (2 apples)
- Let the learners draw 2 circles in a horizontal line and write the multiplication number sentence $1 \times 2 = 2$ next to the drawing in their classwork books.
- Say: **This is 1 times 2** and write $1 \times 2 = 2$ next to the drawing on the board.

- Continue this activity with 2 plates, 3 plates and 4 plates.
- Draw the diagrams underneath each other and write the number sentence next to the drawing each time.



- Let the learners read the number sentence every time and draw the same diagram and write the multiplication number sentence in their classwork books.

Activity 2: Whole class activity

- Ask some learners to come to the board to complete the 2 times table up to 10 times 2, following the diagram in Activity 1.
- 5 × 2 = 10, 6 × 2 = 12 until you reach 10 × 2 = 20.
- Once all the number sentences are written on the board, ask: **Do you notice anything about the answers to these number sentences?** (They end in 2, 4, 6, 8 or 0, the answers increase by 2 each time).
- Say: **We have found a pattern to the two times table.**
- Let the learners continue to complete the 2 times table with drawings in their classwork books.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: Learners may use bottle tops to help them do this activity.

The Grade 2 class sits on benches. 2 children can sit on each bench. How many children each time?

Complete the table.

	Benches	Number sentence	Answer
1	1 bench	1 × 2 = 2	2 children
2	2 benches	2 × 2 = 4	4 children
3	3 benches	(3 × 2 = 6)	(6 children)
4	4 benches	(4 × 2 = 8)	(8 children)
5	5 benches	(5 × 2 = 10)	(10 children)
6	6 benches	(6 × 2 = 12)	(12 children)
7	7 benches	(7 × 2 = 14)	(14 children)
8	8 benches	(8 × 2 = 16)	(16 children)
9	9 benches	(9 × 2 = 18)	(18 children)

4 HOMEWORK ACTIVITY (5 MINUTES)

If there are 6 children, how many feet are there altogether? _____

Draw a picture of the children showing the number of feet. (12 feet)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt the 2 times table.

Lesson 12: 2 times table (2)

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 1.14 Repeated addition leading to multiplication.
Lesson Objective: To consolidate knowledge of the 2 times table.
Lesson Vocabulary: Multiples, number patterns, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times.
Resources: Multiplication cards (×2) (see *Printable Resources*).
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

What is the multiplication number sentence? (see LAB)

	Repeated Addition	Multiplication
1	2 + 2 + 2 =	(3 × 2 = 6)
2	2 + 2 + 2 + 2 + 2 =	(5 × 2 = 10)
3	2 + 2 + 2 + 2 + 2 + 2 + 2 =	(7 × 2 = 14)
4	2 + 2 + 2 + 2 =	(4 × 2 = 8)
5	2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 =	(10 × 2 = 20)
6	2 + 2 =	(2 × 2 = 4)
7	2 + 2 + 2 + 2 + 2 + 2 =	(6 × 2 = 12)
8	2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 =	(8 × 2 = 16)
9	2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 =	(9×2 = 18)

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the second of two lessons on the 2 times table. In this lesson learners will continue to learn the 2 times table and recognise the pattern of increasing by 2 each time. This activity shows the connection between repeated addition and multiplication. The learners will use the ×2 multiplication cards (you need to prepare these from the printable resources) to practise the 2 times table. This practice helps learners to memorise the multiplication tables.

Today we are learning the two times table.

Activity 1: Learners work in pairs

- Give each pair of learners a set of multiplication cards (2 times table).
- The learners should cut up the cards. They should write the answers on the back of each card, to prepare them for use in this and other lessons. Make sure that they write the correct answers on the backs of the cards.
- The learners should put their cards in order from $1 \times 2 = 2$ to $10 \times 2 = 20$ on their desks.
- Ask: What is the pattern in the answers? (The answers increase by 2 each time).
- Learners turn their cards over to show the answer side up.
- The teacher says a multiplication problem from the 2 times table.
- Learners grab the card with the correct answer.

Activity 2: Learners work in pairs

- Using the 2 times table cards play the following games.
- Explain one game at a time.
- When the fast learners become tired of the first game, let them move on to the next game.
- You should walk around the class and make sure all of the learners a playing a game and having fun learning the 2 times table.
- Help learners who have not understood the rules of the games if necessary.

Game 1

1 One learner picks up one card at a time and reads it out loud.

2 The other learner gives the answer.

3 Learners take turns to ask and answer questions, checking the answers at the back of the card each time.

Game 2

1 Both learners draw a card from the pile.

2 They say the answer to each other.

3 The learner who gets the bigger answer is the winner.

4 When you have completed the cards, you can play the game again but this time the learner who gets the smaller answer is the winner.

Game 3

1 Lay all the cards out with the answers facing up.

2 Pick a card and say the multiplication number sentence for which the number you chose is the answer.

3 Take turns.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

Complete the table. Write repeated addition as multiplication.

	Multiplication	Repeated addition	Answer
1	6 × 2	2 + 2 + 2 + 2+ 2 + 2	(12)
2	3 × 2	(2 + 2 + 2)	(6)
3	(9 × 2)	2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	(18)
4	5 × 2	(2 + 2 + 2 + 2 + 2)	(10)

4 HOMEWORK ACTIVITY (5 MINUTES)

Complete the table. Write repeated addition as multiplication.

	Multiplication	Repeated addition	Answer
1	4 × 2	2 + 2 + 2 + 2	(8)
2	7 × 2	(2 + 2 + 2 + 2 + 2 + 2 + 2)	(14)
3	(8 × 2)	2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	(16)
4	10 × 2	(2 + 2 + 2 + 2 + 2+ 2 + 2 + 2 + 2 + 2)	(20)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt to the two times table.

Lesson 13: Assessment

Teacher's notes		
This lesson should be used for assessment of the content covered in this unit to date. CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication. Resources: Printable assessment in teacher's resources.		
Date:	Week	Day

1 SETTLE THE CLASS AND ADMINISTER THE ASSESSMENT. (45 MINUTES)

The assessment for today is linked to the work covered in the unit to date.

You will find the printable version of the assessment in the teacher's resource pack.

2 DISCUSS ASSESSMENT ITEMS WITH THE CLASS (45 MINUTES)

Take in the learners' work when they are done.

There should be time for you to discuss a few of the items with the class:

- use this opportunity to reflect on different methods used by learners (allow some learners to write their solutions on the board).
- speak about misconceptions that may have arisen in learners' responses.

3 ASSESSMENT

WRITTEN ASSESSMENT (15)

Complete the table. (15)

	Multiplication	Repeated addition	Answer
a	4 × 5	5 + 5 + 5 + 5	(20)
b	3 × 2	(2 + 2 + 2)	(6)
c	(9 × 5)	5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5	(45)
d	6 × 5	(5 + 5 + 5 + 5 + 5 + 5)	(30)
e	(9 × 2)	2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	(18)
f	7 × 5	(5 + 5 + 5 + 5 + 5 + 5 + 5)	(35)
g	(8 × 2)	2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	(16)
h	5 × 2	(2 + 2 + 2 + 2 + 2)	(10)

Lesson 14: 3 times table (1)

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.
Lesson Objective: To learn the 3 times table – building it up.
Lesson Vocabulary: Multiples, number patterns, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times.
Resources: Bottle tops.
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

Count forwards and backwards in 3s up to 30.

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the first of two lessons on the 3 times table. In this lesson learners will learn the 3 times table and recognise the pattern of increasing by 3 each time. This activity shows the connection between repeated addition and multiplication.

Today we are learning the 3 times table.

Activity 1: Whole class activity

- Write the word problem on the board.
  There are 3 chocolate bars in a box.
  How many chocolate bars are there in 1 box?
- Read the story several times. First read it quite slowly but then read it using a normal speed of reading.
- Draw the diagram below on the board while learners place 3 bottle tops horizontally across their desks.
  ○○○ $1 \times 3 = 3$
- Ask: **How can we write the multiplication sentence for this drawing?** ($1 \times 3 = 3$)
  Why? (Because there is 1 group of 3 bottle tops.)
- **How many chocolate bars are there?** (3 chocolate bars)
- Let the learners draw 3 circles in horizontal line and write the multiplication sentence $1 \times 3 = 3$ next to the drawing in their classwork books.
- Say: **This is 1 times 3** and write $1 \times 3 = 3$ next to the drawing on the board.
- Continue this activity with 2 boxes, 3 boxes, and 4 boxes.
- Draw the diagrams underneath each other and write the number sentence next to the drawing each time.


$1 \times 3 = 3$


$2 \times 3 = 6$


$3 \times 3 = 9$


$4 \times 3 = 12$

- Let the learners read the number sentence every time and draw the same diagram and write the multiplication number sentence in their classwork books.

Activity 2: Whole class activity

- Ask some learners to come to the board to complete the 3 times table up to 10 times following the diagram in Activity 1.
- $5 \times 3 = 15$, $6 \times 3 = 18$ until you reach $10 \times 3 = 30$.
- Once all the number sentences are written on the board, ask: **Do you notice anything about the answers to these number sentences?** (The answers increase by 3 each time).
- Say: **We have found a pattern in the three times table.**
- Let the learners continue to complete the 3 times table by drawing in their classwork books.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

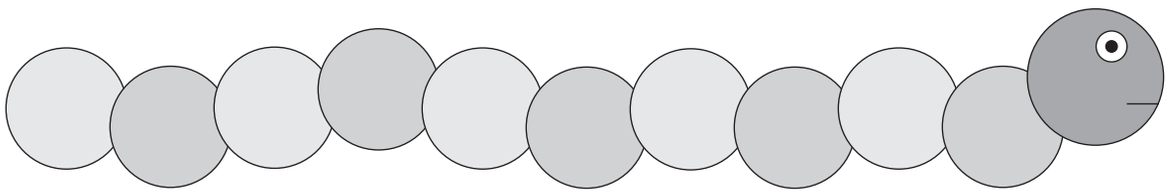
NOTE: Learners may use bottle tops to help them do this activity.

The Grade 2 class sits in groups. There are 3 children in each group. How many children each time?

Complete the table.

	Groups	Number sentence	Answer
1	1 group	$1 \times 3 = 3$	3 children
2	2 groups	$2 \times 3 = 6$	6 children
3	3 groups	($3 \times 3 = 9$)	(9 children)
4	4 groups	($4 \times 3 = 12$)	(12 children)
5	5 groups	($5 \times 3 = 15$)	(15 children)
6	6 groups	($6 \times 3 = 18$)	(18 children)
7	7 groups	($7 \times 3 = 21$)	(21 children)
8	8 groups	($8 \times 3 = 24$)	(24 children)
9	9 groups	($9 \times 3 = 27$)	(27 children)

4 HOMEWORK ACTIVITY (5 MINUTES)



Count in 3s starting from 0 and ending at 27.

Write your numbers inside the circles of the worm's body. (0, 3, 6, 9, 12, 15, 18, 21, 24, 27)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt the three times table.

Lesson 15: Consolidation

Teacher's notes
This lesson allows for consolidation of the previous days' lesson content.
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.
Lesson Objective: To revise the 2 and 3 times tables.
Lesson Vocabulary: Multiples, number patterns, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times.
Resources: Multiplication cards (×2) (see *Printable Resources*).
Date: Week Day

1 NOTES FOR THE TEACHER RELATING TO THIS WEEK'S WORK

This week the learners learnt about multiplication, focusing on the 2 and 3 times tables.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

Learners need many opportunities to make connections between repeated addition and multiplication, so encourage learners to verbalise this as part of their consolidation. Make sure that the learners understand that the multiplication number sentence 5×3 means that there are 5 groups of 3. Be sure that learners don't try to add 5 and 3.

3 CLASSWORK/HOMEWORK – COMPLETE THIS WEEK'S CLASSWORK AS NEEDED

Today we are going over what we learned this week. We are learning more about the 2 and 3 times tables.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

NOTE: Learners can play the 2 times table card games. Refer to the classwork activity in lesson 12.

1 Complete the table. Write repeated addition as multiplication.

	Multiplication	Repeated addition	Answer
a	2×3	$3 + 3$	(6)
b	3×2	$(2 + 2 + 2)$	(6)
c	(4×2)	$2 + 2 + 2 + 2$	(8)
d	5×3	$(3 + 3 + 3 + 3 + 3)$	(15)
e	(6×3)	$3 + 3 + 3 + 3 + 3 + 3$	(18)
f	7×2	$(2 + 2 + 2 + 2 + 2 + 2 + 2)$	(14)
g	(8×3)	$3 + 3 + 3 + 3 + 3 + 3 + 3 + 3$	24
h	(9×2)	$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2$	18

2 Arrange these numbers from the biggest to the smallest: 21, 12, 18, 24, 15. (24, 21, 18, 15, 12)

3 Play the 2 times table card game. Your teacher will explain the rules.

5 REFLECTION AND SUMMARY OF LESSON

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have revised the 2 and 3 times tables.

Week 4

Lesson 16: 3 times table (2)

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 1.14 Repeated addition leading to multiplication.
Lesson Objective: To consolidate knowledge of the 3 times table.
Lesson Vocabulary: Multiples, number patterns, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times.
Resources: Multiplication cards (×3) (see *Printable Resources*).
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

What is the multiplication number sentence? (see LAB)

	Repeated Addition	Multiplication
1	3 + 3 =	(2 × 3 =6)
2	3 + 3 + 3 + 3 + 3 + 3 =	(6 × 3 = 18)
3	3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 =	(8× 3 = 24)
4	3 + 3 + 3 + 3 =	(4 × 3 = 12)
5	3 + 3 + 3 + 3 + 3 =	(5 × 3 = 15)
6	3 + 3 + 3 + 3 + 3 + 3 + 3 =	(7 × 3 = 21)
7	3 + 3 + 3 =	(3 × 3 = 9)
8	3 + 3 + 3 + 3 + 3 + 3+ 3 + 3 + 3+ 3 =	(10 × 3 = 30)
9	3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 =	(9 × 3 = 27)

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the second of two lessons on the 3 times table. In this lesson learners will continue to learn the 3 times table and recognise the pattern of increasing by 3 each time. This activity shows the connection between repeated addition and multiplication. The learners will use the ×3 multiplication cards (you need to prepare these from the printable resources) to practise the 3 times table. This practice helps learners to memorise the multiplication tables.

Today we are learning the three times table.

Activity 1: Learners work in pairs

- Give each pair of learners a set of multiplication cards (3 times table).
- The learners should cut up the cards. They should write the answers on the back of each card, to prepare them for use in this and other lessons. Make sure that they write the correct answers on the backs of the cards.
- The learners should put their cards in order from $1 \times 3 = 3$ to $10 \times 3 = 30$ on their desks.
- Ask: What is the pattern in the answers? (The answers increase by 3 each time).
- Learners turn their cards over to show the answer side up.
- The teacher says a multiplication problem from the 3 times table.
- Learners grab the card with the correct answer.

Activity 2: Learners work in pairs

- Using the 3 times table cards play the following games.
- Explain one game at a time.
- When the fast learners become tired of the first game, let them move on to the next game.
- You should walk around the class and make sure all of the learners a playing a game and having fun learning the 3 times table.
- Help learners who have not understood the rules of the games if necessary.

Game 1

1. One learner picks up one card at a time and reads it out loud.
2. The other learner gives the answer.
3. Learners take turns to ask and answer questions, checking the answers at the back of the card each time.

Game 2

1. Both learners draw a card from the pile.
2. They say the answer to each other.
3. The learner who gets the bigger answer is the winner.
4. When you have completed the cards, you can play the game again but this time the learner who et the smaller answer is the winner.

Game 3

1. Lay all the cards out with the answers facing up.
2. Pick a card and say the multiplication number sentence for which the number you chose is the answer.
3. Take turns.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

Complete the table. Write repeated addition as multiplication.

	Multiplication	Repeated addition	Answer
1	3 × 3	3 + 3 + 3	(9)
2	5 × 3	(3 + 3 + 3 + 3 + 3)	(15)
3	(8 × 3)	3 + 3 + 3 + 3 + 3+ 3 + 3 + 3	(24)
4	10× 3	(3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3)	(30)

4 HOMEWORK ACTIVITY (5 MINUTES)

Complete the table. Write repeated addition as multiplication.

	Multiplication	Repeated addition	Answer
1	4 × 3	3 + 3 + 3 + 3	(12)
2	6 × 3	(3 + 3 + 3 + 3 + 3 +3)	(18)
3	(9 × 3)	3 + 3 + 3 + 3 + 3+ 3 + 3 + 3 + 3	(27)
4	7× 3	(3 + 3 + 3 + 3 + 3 + 3 + 3)	(21)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt the three times table.

Lesson 17: 4 times table (1)

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.
Lesson Objective: To learn the 4 times table – building it up.
Lesson Vocabulary: Multiples, number patterns, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times.
Resources: Bottle tops.
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

Count forwards and backwards in 4s up to 40.

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the first of two lessons on the 4 times table. In this lesson learners will learn the 4 times table and recognise the pattern of increasing by 4 each time. This activity shows the connection between repeated addition and multiplication.

Today we are learning the 4 times table.

Activity 1: Whole class activity

- Write the word problem on the board.
  There are 4 oranges in a packet. How many oranges are there in 1 packet?
- Read the story several times. First read it quite slowly but then read it using a normal speed of reading.
- Let the learners put out bottle tops to represent the story and draw circles to represent the bottle tops in their classwork books.
- Ask: **How can we write the multiplication sentence for this drawing?** ($1 \times 4 = 4$)
  Why? (Because there is 1 group of 4 bottle tops.)
- **How many oranges are there?** (4 oranges)
- Draw the diagram below on the board and write the number sentence next to the diagram for correction.

   $1 \times 4 = 4$
- Learners write the number sentence and the answer next to the circles in their classwork books. ($1 \times 4 = 4$, 4 oranges)
- Continue this activity with 2 packets, 3 packets and 4 packets.
- Draw the diagrams underneath each other and write the number sentence next to the drawing each time.

 $1 \times 4 = 4$

 $2 \times 4 = 8$

 $3 \times 4 = 12$

 $4 \times 4 = 16$

- Let the learners read the number sentence every time and draw the same diagram and write the multiplication number sentence in their classwork books.

Activity 2: Whole class activity

- Ask some learners to come to the board to complete the 4 times table up to 10 times following the diagram in Activity 1.
- $5 \times 4 = 20$, $6 \times 4 = 24$ until they reach $10 \times 4 = 40$.
- Once all the number sentences are written on the board. Ask: **Do you notice anything about the answers to these number sentences?** (They end in 4, 8, 2, 6; they are like 2 times table but skip a number in between; the answers increase by 4 each time).
- Let the learners complete the 4 times table with drawings in their classwork books.
- Say: **We have found a pattern in the four times table.**
- Discuss the links between the 2 *times table* and the *4 times table*. **Emphasise doubling.**

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: Learners may use bottle tops to help them do this activity.

The Grade 2 class sits in groups. There are 4 children in each group. How many children each time?

Complete the table.

	Groups	Number sentence	Answer
1	1 group	$1 \times 4 = 4$	4 children
2	2 groups	$2 \times 4 = 8$	8 children
3	3 groups	$(3 \times 4 = 12)$	(12 children)
4	4 groups	$(4 \times 4 = 16)$	(16 children)
5	5 groups	$(5 \times 4 = 20)$	(20 children)
6	6 groups	$(6 \times 4 = 24)$	(24children)
7	7 groups	$(7 \times 4 = 28)$	(28 children)
8	8 groups	$(8 \times 4 = 32)$	(32 children)
9	9 groups	$(9 \times 4 = 36)$	(36 children)

4 HOMEWORK ACTIVITY (5 MINUTES)

Complete the table. Write repeated addition as multiplication.

	Multiplication	Repeated addition	Answer
1	2 × 4	4 + 4	(8)
2	4 × 4	(4 + 4 + 4 + 4)	(16)
3	(5 × 4)	4 + 4 + 4 + 4 + 4	(20)
4	6 × 4	(4 + 4 + 4 + 4 + 4 + 4)	(24)
5	(8 × 4)	4 + 4 + 4 + 4 + 4 + 4+ 4 + 4	(32)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt the four times table.

Lesson 18: 4 times table (2)

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 1.14 Repeated addition leading to multiplication.
Lesson Objective: To consolidate knowledge of the 4 times table.
Lesson Vocabulary: Multiples, number patterns, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times.
Resources: Multiplication cards (×4) (see *Printable Resources*).
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

What is the multiplication number sentence? (see LAB)

	Repeated Addition	Multiplication
1	4 + 4 =	(2 × 4 =8)
2	4 + 4 + 4 + 4 + 4 + 4 =	(6 × 4 = 24)
3	4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 =	(8 × 4 = 32)
4	4 + 4 + 4 + 4 =	(4 × 4 = 16)
5	4 + 4 + 4 + 4 + 4 =	(5 × 4 = 20)
6	4 + 4 + 4 + 4 + 4 + 4 + 4 =	(7 × 4 = 28)
7	4 + 4 + 4 =	(3 × 4 = 12)
8	4 + 4 + 4 + 4 + 4 + 4+ 4 + 4 + 4+ 4 =	(10 × 4 = 40)
9	4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 =	(9 × 4 = 36)

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the second of two lessons on the 4 times table. In this lesson learners will continue to learn the 4 times table and recognise the pattern of increasing by 4 each time. This activity shows the connection between repeated addition and multiplication. The learners will use the ×4 multiplication cards (you need to prepare these from the printable resources) to practise the 4 times table. This practice helps learners to memorise the multiplication tables.

Today we are learning the four times table.

Activity 1: Learners work in pairs

- Give each pair of learners a set of multiplication cards (4 times table).
- The learners should cut up the cards. They should write the answers on the back of each card, to prepare them for use in this and other lessons. Make sure that they write the correct answers on the backs of the cards.
- The learners should put their cards in order from $1 \times 4 = 4$ to $10 \times 4 = 40$ on their desks.
- Ask: What is the pattern in the answers? (The answers increase by 4 each time).
- Learners turn their cards over to show the answer side up.
- The teacher says a multiplication problem from the 4 times table.
- Learners grab the card with the correct answer.

Activity 2: Learners work in pairs

- Using the 4 times table cards play the following games.
- Explain one game at a time.
- When the fast learners become tired of the first game, let them move on to the next game.
- You should walk around the class and make sure all of the learners a playing a game and having fun learning the 4 times table.
- Help learners who have not understood the rules of the games if necessary.

Game 1

1. One learner picks up one card at a time and reads it out loud.
2. The other learner gives the answer.
3. Learners take turns to ask and answer questions, checking the answers at the back of the card each time.

Game 2

1. Both learners draw a card from the pile.
2. They say the answer to each other.
3. The learner who gets the bigger answer is the winner.
4. When you have completed the cards, you can play the game again but this time the learner who gets the smaller answer is the winner.

Game 3

1. Lay all the cards out with the answers facing up.
2. Pick a card and say the multiplication number sentence for which the number you chose is the answer.
3. Take turns.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

Complete the table. Write repeated addition as multiplication.

	Multiplication	Repeated addition	Answer
1	4 × 4	4 + 4 + 4 + 4	(16)
2	6 × 4	(4 + 4 + 4 + 4 + 4 + 4)	(24)
3	(5 × 4)	4 + 4 + 4 + 4 + 4	(20)
4	8 × 4	(4 + 4 + 4 + 4 + 4 + 4 + 4 + 4)	(32)

4 HOMEWORK ACTIVITY (5 MINUTES)

Complete the table. Write repeated addition as multiplication.

	Multiplication	Repeated addition	Answer
1	3 × 4	4 + 4 + 4	(12)
2	7 × 4	(4 + 4 + 4 + 4 + 4 +4 + 4)	(28)
3	(9 × 4)	4 + 4 + 4 + 4 + 4+ 4 + 4 + 4 + 4	(36)
4	10 × 4	(4 + 4 + 4 + 4 + 4 + 4 + 4 + 4+ 4 + 4)	(40)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt the four times table.

Lesson 19: Assessment

Teacher's notes
This lesson should be used for assessment of the content covered in this unit to date.
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.
Resources: Printable assessment in teacher's resources.
Date: Week Day

1 SETTLE THE CLASS AND ADMINISTER THE ASSESSMENT. (45 MINUTES)

The assessment for today is linked to the work covered in the unit to date.

You will find the printable version of the assessment in the teacher's resource pack.

2 DISCUSS ASSESSMENT ITEMS WITH THE CLASS (45 MINUTES)

Take in the learners' work when they are done.

There should be time for you to discuss a few of the items with the class:

- use this opportunity to reflect on different methods used by learners (allow some learners to write their solutions on the board).
- speak about misconceptions that may have arisen in learners' responses.

3 ASSESSMENT

WRITTEN ASSESSMENT (15)

1 Complete the table. (5 × 2=10)

		Number sentence with answer
a	7 groups of 2	(7 × 2 = 14)
b	5 groups of 3	(5 × 3 = 15)
c	6 groups of 5	(6 × 5 = 30)
d	9 groups of 4	(9 × 4 = 36)
e	10 groups of 3	(10 × 3 = 30)

2 Complete the table. (5)

	Repeated addition	Number sentence with answer
a	4 + 4 + 4 + 4 + 4 + 4 =	(6 × 4 = 24)
b	3 + 3 + 3 + 3 =	(4 × 3 = 12)
c	2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 =	(8 × 2 = 16)
d	5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 =	(9 × 5 = 45)
e	5 + 5 + 5 + 5 + 5 + 5 + 5 =	(7 × 5 = 35)

Lesson 20: Consolidation

Teacher's notes
This lesson allows for consolidation of the previous days' lesson content.
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.
Lesson Objective: To revise the three and four times tables.
Lesson Vocabulary: Multiples, number patterns, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times.
Resources: Multiplication cards (×3 and ×4) (see *Printable Resources*).
Date: Week Day

1 NOTES FOR THE TEACHER RELATING TO THIS WEEK'S WORK

This week the learners learnt about multiplication, focusing on the 3 and 4 times tables.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

Make sure that learners understand that a multiplication number sentence such as 5 × 3 means that there are 5 groups of 3 and 5 × 4 means that there are 5 groups of 4.

3 CLASSWORK/HOMEWORK – COMPLETE THIS WEEK'S CLASSWORK AS NEEDED

Today we are going over what we learned this week. We are learning more about the 3 and 4 times tables.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

NOTE: Explain to the class that the flow diagrams in this activity are another way we can write multiples. Help them to understand how to use the flow diagram if necessary.

ALSO – Learners can play the 3 and 4 times table card games. Refer to the classwork activities in lessons 16 and 18.

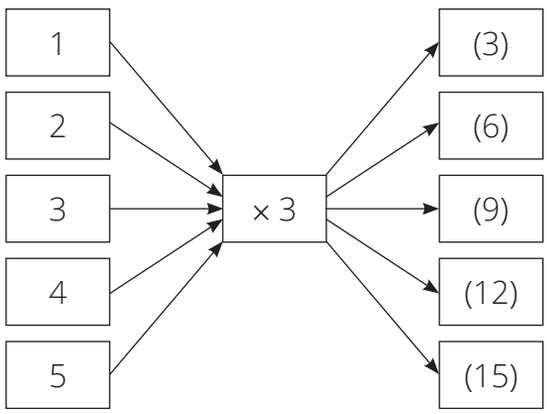
- Complete the table.

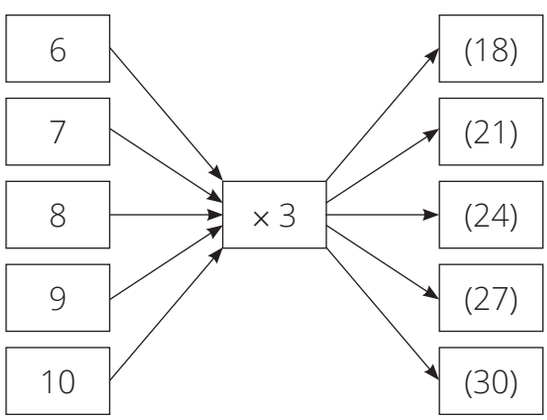
	1	(2)	3	4	(5)	6	7	8	9
× 4	(4)	8	(12)	(16)	20	(24)	(28)	(32)	(36)

- Complete the table.

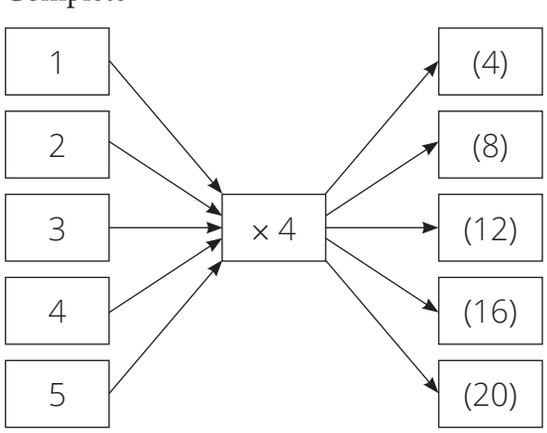
	1	(2)	3	4	(5)	6	7	8	9
× 3	(3)	6	(9)	(12)	15	(18)	(21)	(24)	(24)

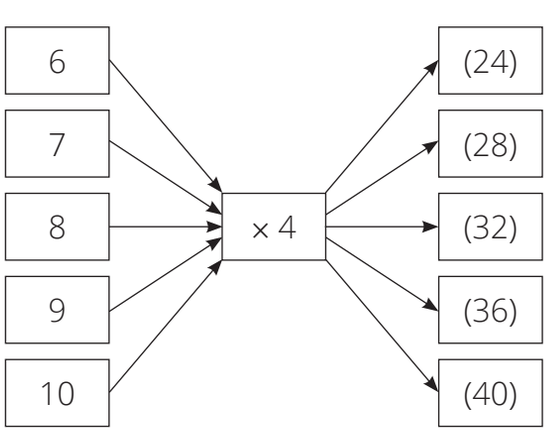
- Complete





- Complete





- Play the 3 and 4 times table card games. Your teacher will explain the rules.

5 REFLECTION AND SUMMARY OF LESSON

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have revised the 3 and 4 times tables.

Week 5

Lesson 21: Multiplication using arrays

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.
Lesson Objective: To solve multiplication number sentences.
Lesson Vocabulary: Multiples, array, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times.
Resources: Array diagram (see *Printable Resources*), scrap paper (2 sheets per learner), enlarged array diagram (teacher).
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

	Calculate:	Answer			Answer
1	4 × 3	12	**6**	5 × 3	15
2	3 × 4	12	**7**	4 × 5	20
3	2 × 4	8	**8**	5 × 4	20
4	4 × 2	8	**9**	2 × 5	10
5	3 × 5	15	**10**	5 × 2	10

Ask: **Do you notice anything about 4 × 3 and 3 × 4?** (They have the same answer but the numbers are in different order. For example, discuss 2 × 4 and 4 × 2, 3 × 5 and 5 × 3, 4 × 5 and 5 × 4 and finally 2 × 5 and 5 × 2 with the learners.)

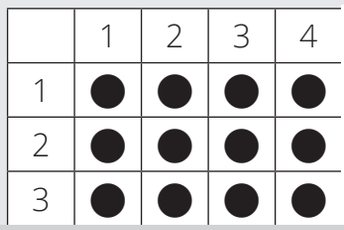
2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson learners will begin by solving multiplication number sentences. They will then move on to using the array diagram in order to solve multiplication calculations, which will help them to find one of the laws of multiplication. This is the first lesson where learners use the term array so you should refer to the bilingual dictionary for explanations of the terms array, row and column. It is important that learners know how to use an array table confidently.

Today we are learning to represent multiplication pictorially using an array diagram.

Activity 1: Whole class activity

- Give each learner an array diagram.
- Put an enlarged array diagram on the board.
- Write the following problem on the board (you will use this problem for Activity 1 and 2):
  You have 3 boxes which each have 4 oranges in them.
  How many oranges do you have?
- Read the problem several times.
- Let the learners read the problem until they read it fluently.
- Underline the numbers 3 and 4.
- Underline the question (How many oranges do you have?) with wavy line.
- Let the learners represent the story with bottle tops.
- Let them write a multiplication number sentence for the problem in their classwork books.
- Write the multiplication number sentence on the board for correction: 3 × 4 = __
- Say: **Let's find the answer using the array diagram.**
- Give learners time to use the array diagram to solve the problem. *This is experimental. You will show them how to use the array diagram after they have had a bit of time to experiment.*
- Ask: **How did you use the array diagram to find the answer?**
- Let some learners explain to the class how they found the answer to the problem.
- Show learners how to use the array diagram step by step, so that learners can follow what you do on the board. *The right way of using the array diagram to show* 3 × 4 = __ *is as follows.*
- Hide away some of the columns by holding paper (1) so that you leave 4 columns open. The number of columns gives us the size of the group: 3 × 4 = __ needs groups of 4 (see below).
- Then, hide away some of the rows, using a second piece of paper (2) as shown below. The number of rows gives us the multiple we need (in 3 × 4 = __ the multiple is 3 x)
- Paper 2 can be moved up and down, to show different multiples of 4.
- The diagram below shows an array and papers to show 3 × 4 = 12. (*NOTE: It is not 4 × 3. This would be shown by 4 rows with 3 dots in each row.*)



Paper 1

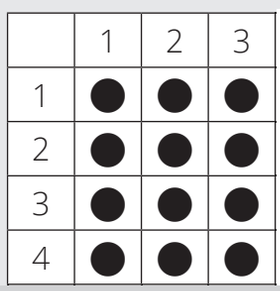
4 columns are shown – we have 4 dots in a row

Paper 2

Move this paper up or down to show different multiples of 4.

This position shows 3 groups of 4.

- By sliding paper 2 down from row 1 to row 3, row by row, learners can count the first three multiples of 4: 4, 8 and 12. (and so on)
- Ask: **What is the answer to the word problem?** (12 oranges)
- Let the learners record the number sentence and its answer in their classwork books. (3 × 4 = 12, 12 oranges)
- Repeat the above steps using the array to show 4 × 3 = ___
- Let the learners use the array diagram to show the multiple and find the answer.



Paper 1

Shows the correct group size by revealing the correct number of columns.

Paper 2

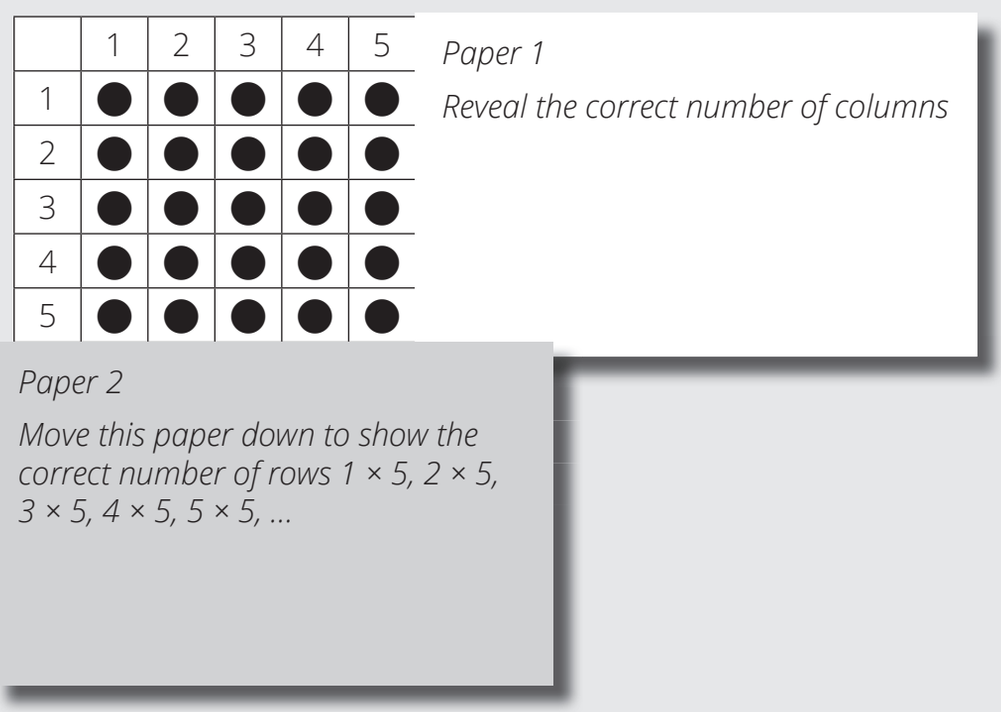
Move this paper down one row at a time to show 1 × 3, 2 × 3, 3 × 3, 4 × 3, ...

- Help learners to see that they can find the answers by counting in 3s.
- *As the number of groups (represented by the rows) increases, so the answer increases by 3 each time.*
- *The array diagram should always be used in the way shown above, i.e. by hiding unnecessary parts with paper.*

- Discuss with the learners the relationship between 3 × 4 and 4 × 3 (The answer is the same. It is 12).

Activity 2: Learners work in pairs

- Change the numbers in the word problem as follows:
  You have 4 boxes which each have 5 oranges in them.
  How many oranges do you have?
- Read the problem.
- Let the learners read the problem until they read it fluently.
- Underline the numbers 4 and 5.
- Underline the question (How many oranges do you have?) with wavy line.
- Show the story with tapes or drawing on the board.
- Let the learners represent the story with bottle tops.
- Let them write the multiplication number sentence in their classwork books.
- Write the following multiplication number sentence on the board for correction.
  4 × 5 = __
- Ask: **How can we find the answer using the array diagram?**
- Remind learners how to use the array diagram to help them solve the problem.
- Let a learner explain to the class how she/he solved the problem on the array diagram.
- Encourage learners to verbalise that the number 4 tells us the number of rows while the number 5 tells us the number of columns.



- Ask one of the learners (from each pair) to move the papers so that they now show the product 4 × 5. (They should show 4 rows with 5 dots in each row.)
- Let the learners record the number sentence and its answer in their classwork books. (4 × 5 = 20, 20 oranges)

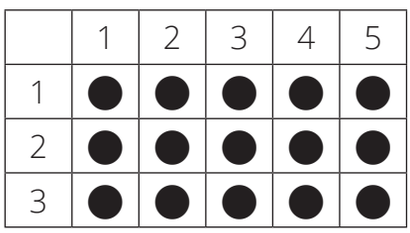
3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: The learners should use their array diagrams to calculate the answers to the problems.

1 Mangoes are R5 each. Thompho buys 3 mangoes. How much does she pay?

a Number sentence: _____ . (3 × 5= 15)

b She pays R _____ . (15)

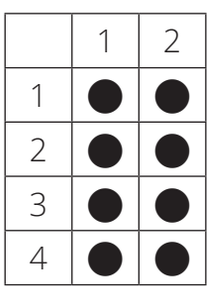
(Array Diagram: 

)

2 I have 4 packets of sweets. There are 2 sweets in each packet. How many sweets do I have?

a Number sentence: _____ . (4 × 2 = 8)

b You have _____ (8) sweets.

(Array Diagram: 

)

4 HOMEWORK ACTIVITY (5 MINUTES)

Complete the table.

		Reverse the factors
1	4 × 3 = 12	3 × 4 = 12
2	5 × 2 = 10	(2 × 5 = 10)
3	3 × 2 = 6	(2 × 3 = 6)
4	4 × 1 = 4	(1 × 4 = 4)
5	3 × 5 = 15	(5 × 3 = 15)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt to solve multiplication number sentences using array diagrams.

Lesson 22: Creating multiplication stories

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.
Lesson Objective: To create and solve multiplication number sentences using array diagrams.
Lesson Vocabulary: Multiples, array, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times.
Resources: Array diagram (see *Printable Resources*), enlarged array diagram (teacher), multiplication cards (×2, ×3, ×4 and ×5) (see *Printable Resources*).
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	5 × 4	20	**6**	2 × 2	4
2	4 × 2	8	**7**	5 × 5	25
3	2 × 3	6	**8**	4 × 4	16
4	3 × 3	9	**9**	5 × 3	15
5	5 × 2	10	**10**	4 × 3	12

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

In the next 3 lessons the learners will be solving multiplication word problems. In this lesson learners develop their understanding of the concept of multiplication. They will create and solve multiplication word problems using array diagrams. In the classwork activity the learners will play multiplication games to help them memorise the tables. The multiplication cards (×2, ×3, ×4 and ×5) will be used. They should have been cut up and prepared in lessons 9, 12, 16 and 18.

Today we are creating and solving multiplication number sentences.

Activity 1: Whole class activity

- Give each learner an array diagram.
- Write 2 × 5 = __ on the board.
- Put an enlarged array diagram on the board.
- Say: **Let's make up a multiplication word problem for 2 × 5**.
- Give learners time to think.
- Let them tell their word problems to the class.

- Write a few of the word problems on the board.
- Check that all of the problems are talking about 2 groups of 5 or 5 groups of 2. (Problems must be a story about 2 groups 5.)
- Select one problem and ask learners to use the array diagram to solve the problem.
- Ask a learner to show how to find the answer using the array diagram on the board.
- Refer to lesson 21 Activity 1 for the steps of how to use the array diagram.
- *Learners must not leave the answer as 2 × 5 = 10. Learners must write the answer to the problem with the unit. (e.g. 10 oranges, 10 children, 10 trees, 10 books, etc.)*

Activity 2: Whole class activity

- Learners continue working with their array diagrams.
- Write 3 × 4 = __ on the board.
- Say: **Let's make up a multiplication word problem for 3 × 4**.
- Give learners time to think.
- Let them tell their word problems to the class.
- Write a few of the word problems on the board.
- Check that all of the problems are talking about 3 groups of 4 or 4 groups of 3. (Problems must be a story about 3 groups of 4.)
- Select one problem and ask learners to use the array diagram to solve the problem.
- Ask a learner to show how to find the answer on the array diagram on the board.
- *Learners must not leave the answer as 3 × 4 = 12. Learners must write the answer to the problem with the unit. (e.g. 12 birds, 12 wheels, 12 apples, 12 pencils, etc.)*

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: Give each pair of learners a set of multiplication cards (×2, ×3, ×4 and ×5). The cards should have been cut up and prepared in lessons 9, 12, 16 and 18.

Rules of the game

1 Shuffle the cards.

2 One learner picks up a card (of the 2 to 5 multiplication cards) and reads it out loud.

3 The other learner gives the answer.

4 Learners take turns to ask and answer questions, checking the answers at the back of the card each time.

1 Learners arrange the multiplication cards in order for the following times tables:
- **a** × 2
- **b** × 3
- **c** × 4
- **d** × 5

2 Play the 2 to 5 multiplication card game. Your teacher will explain the rules.

4 HOMEWORK ACTIVITY (5 MINUTES)

	What is … ?	Answer
a	5 × 2 =	(10)
b	3 × 3 =	(9)
c	5 × 4 =	(20)
d	1 × 5 =	(5)
e	2 × 4 =	(8)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have created and solved multiplication word problems.

Lesson 23: Multiplication word problems (1)

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.
Lesson Objective: To solve multiplication word problems using a multiplication table.
Lesson Vocabulary: Multiples, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times, word problems, multiplication table.
Resources: Array diagram (see *Printable Resources*), enlarged array diagram (teacher), blank 1 to 5 enlarged multiplication table (teacher), multiplication cards (×2, ×3, ×4 and ×5) (see *Printable Resources*).
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	6 × 4	24	**6**	7 × 3	21
2	8 × 2	16	**7**	8 × 5	40
3	9 × 3	27	**8**	9 × 4	36
4	7 × 5	35	**9**	6 × 5	30
5	6 × 2	12	**10**	8 × 3	24

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

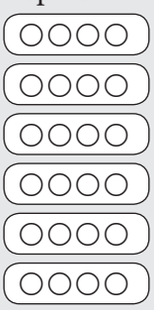
In this lesson learners will continue to develop their understanding of the concept of multiplication. The 1 to 5 multiplication table will be introduced. This table will be used to find answers to multiplication number sentences. The multiplication cards (×2, ×3, ×4 and ×5) will be used. They should have been cut up and prepared in lessons 9, 12, 16 and 18.

Today we are learning more about multiplication using the 1 to 5 multiplication table.

Activity 1: Whole class activity

- Give each learner an array diagram.
- Put an enlarged array diagram on the board.
- Write the problem on the board:
  They plant 4 avocado trees in a row.
  If there 6 rows,
  how many avocado trees do they plant?
- Read the problem several times.
- Underline the numbers 6 and 4.

- Underline the question (how many avocado trees do they plant?) with wavy line.
- Let the learners read the problem until they read it fluently.
- Represent the story with drawings on the board.



- Ask: **Can you show me this multiple on your array diagram?**
- Let the learners work on their array diagrams to show 6×4.
- Walk around to see if all the learners are working correctly.

	1	2	3	4
1	●	●	●	●
2	●	●	●	●
3	●	●	●	●
4	●	●	●	●
5	●	●	●	●
6	●	●	●	●

Paper 1

Paper 2

Move this paper down one row at a time to show 1 × 4, 2 × 4, 3 × 4, 4 × 4, 5 × 4, 6 × 4, …

- Let the learners move Paper 2 down row by row, one row at a time, counting while they do this:
  1 × 4 = 4, 2 × 4 = 8, 3 × 4 = 12 … 6 × 4 (4, 8, 12, …, 24).
- Show the movement of Paper 2 on the large array diagram on the board.
- Let the learners write the number sentence and answer in their classwork books. (6 × 4 = 24, 24 avocado trees)
- Let a learner write the number sentence and the answer on the board for correction. Learners must remember to write the answer with the correct unit.

Activity 2: Whole class activity

- Continue working with the array diagram used in Activity 1.
- Refer to the 1 to 5 multiplication table in the LAB, Lesson 23.
- Put an enlarged array diagram and an empty 1 to 5 multiplication table on the board.
- Say: **Show 1 × 1, 2 × 1, 3 × 1 … 10 × 1 using your array diagram.**
- Let the learners show 1 × 1 (up to 10 × 1) on their array diagrams.
- Ask: **Can you see '1' in your multiplication table in the same place as on the array diagram**?
- Give learners time to confirm that the 1 times table up to 10 × is correct in the multiplication table (in the LAB) by moving Paper 2 down one row at a time one.
- Fill in the first two columns in your blank multiplication table on the board (× 1 and × 2 tables).
- Let the learners show 1 × 2 on their array diagrams.
- Ask: **How many dots do you have?** (2)
- Say: **You see '2' in your multiplication table in the same place as on the array diagram.**
- Give learners time to confirm that the 2 times table up to 10 × is correct in the multiplication table (in the LAB) by moving Paper 2 down one row at a time one.
- Fill in the third column in your blank multiplication table on the board (× 3 table).
- Let the learners show 1 × 3 on their array diagrams.
- Ask: **How many dots do you have?** (3)
- Let the learners write '3' in their multiplication table in the same place as on the array diagram.
- Let the learners move down Paper 2 by one. Ask: **How many dots do you have?** (6)
- Say: Continue writing the answer of all 3 times table in your multiplication table checking them on the array diagram.
- Give learners time to finish the 3 times table up to 10× in their multiplication table.
- *Learners will complete the multiplication table in Lesson 24.*

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: Give each pair of learners a set of multiplication cards (×2, ×3, ×4 and ×5). The cards should have been cut up and prepared in lessons 9, 12, 16 and 18.

Rules of the game

1. Both learners pick up a card with the number sentence side facing and say the answer to the number sentence on their card.
2. The learner who gets the smaller answer is the winner.

Play the 2 to 5 multiplication card game. Your teacher will explain the rules.

4 HOMEWORK ACTIVITY (5 MINUTES)

Complete the following table.

	1	2	3	4	5	6	7	8	9
× 4	(4)	(8)	(12)	(16)	(20)	(24)	(28)	(32)	(36)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt more about the multiplication tables.

Lesson 24: Multiplication word problems (2)

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 1.14 Repeated addition leading to multiplication.
Lesson Objective: To solve multiplication number sentences.
Lesson Vocabulary: Multiples, array, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times, multiplication table.
Resources: Array diagram (see *Printable Resources*), enlarged array diagram (teacher), 1 to 5 enlarged multiplication table (teacher), multiplication cards (×2, ×3, ×4 and ×5) (see *Printable Resources*).
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	7 × 3	21	**6**	7 × 2	14
2	6 × 4	24	**7**	6 × 5	30
3	8 × 3	24	**8**	9 × 4	36
4	6 × 5	30	**9**	8 × 5	40
5	10 × 2	20	**10**	5 × 3	15

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

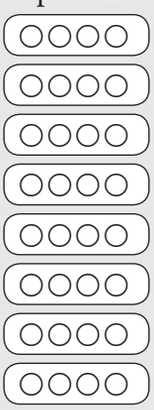
In this lesson we will consolidate multiplication. We will use an array diagram and a multiplication table (Lesson 23) in order to do multiplication calculations. Both of these aids will help the learners to develop procedural fluency. It is important that learners know how to use both an array table and a multiplication table confidently. The multiplication cards (×2, ×3, ×4 and ×5) will be used. They should have been cut up and prepared in lessons 9, 12, 16 and 18.

Today we are learning to solve multiplication word problems using array diagrams and a multiplication table.

Activity 1: Whole class activity

- Give each learner an array diagram.
- Put an enlarged array diagram on the board.
- Write the following problem on the board:
  There are 8 cars.
  Each car has 4 wheels.
  How many wheels are there altogether?

- Read the problem.
- Underline the numbers. (8 and 4)
- Underline the question with wavy line. (How many wheels are there altogether?)
- Let the learners read the problem until they read it fluently.
- Represent the story with drawings on the board.



- Ask: **Can you show me this multiple on your array diagrams?**
- Let the learners work on their array diagrams.
- Walk around to see that all learners are working correctly.

	1	2	3	4
1	●	●	●	●
2	●	●	●	●
3	●	●	●	●
4	●	●	●	●
5	●	●	●	●
6	●	●	●	●
7	●	●	●	●
8	●	●	●	●

Paper 1

Paper 2

Move this paper down one row at a time to show 1 × 4, 2 × 4, 3 × 4, 4 × 4, 5 × 4, 6 × 4, 7 × 4, 8 × 4, …

- Let the learners move Paper 2 down row by row, one row at a time, counting while they do this:
  1 × 4 = 4, 2 × 4 = 8, 3 × 4 = 12, … , 8 × 4 (4, 8, 12, …, 32).
- Show the movement of Paper 2 on the large array diagram on the board.

- Let the learners write the number sentence and answer in their classwork books. (8 × 4 = 32, 32 wheels)
- Let a learner write the number sentence and the answer on the board for correction. Learners must remember to write the answer with the correct unit.

Activity 2: Whole class activity

- Say: **Let's complete our multiplication tables today**.
- Follow the same steps as in Lesson 23 Activity 2 to complete the 4 and 5 times table on their multiplication tables (LAB Lesson 23).
- Ask for random multiples. Learners must use their completed multiplication tales to find the answers. For example:
  - **a** 3 × 5,
  - **b** 5 × 4,
  - **c** 6 × 3
  - **d** 8 × 2.
  - **e** Etc.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: Give each pair of learners a set of multiplication cards (×2, ×3, ×4 and ×5). The cards should have been cut up and prepared in lessons 9, 12, 16 and 18.

Rules of the game

1. Both learners pick up a card with the number sentence side facing up and say the answer to the number sentence on the card.
2. The learner who gets the bigger answer is the winner.

Play the 2 to 5 multiplication card game. Your teacher will explain the rules.

4 HOMEWORK ACTIVITY (5 MINUTES)

	What is … ?	Answer
a	5 × 4 =	(20)
b	3 × 5 =	(15)
c	5 × 2 =	(10)
d	7 × 4 =	(28)
e	6 × 3 =	(18)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt to solve multiplication problems.

Lesson 25: Consolidation

Teacher's notes
This lesson allows for consolidation of the previous days' lesson content.
CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication.
Lesson Objective: To revise solving multiplication word problems using arrays and a multiplication table.
Lesson Vocabulary: Multiples, array, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times, multiplication table.
Resources: Array diagram (see *Printable Resources*), enlarged array diagram (teacher), 1 to 5 enlarged multiplication table (teacher), multiplication cards (×2, ×3, ×4 and ×5) (see *Printable Resources*).
Date: Week Day

1 NOTES FOR THE TEACHER RELATING TO THIS WEEK'S WORK

This week the learners learnt about solving multiplication word problems using array diagrams and a multiplication table.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

Learners need many opportunities to solve multiplication word problems using an array diagram and/or a multiplication table, as the learners use these aids help them to visualise (and verbalise) what they are doing. Make sure that learners have many opportunities to practise using these aids and that they are able to work at their own pace.

3 CLASSWORK/HOMEWORK – COMPLETE THIS WEEK'S CLASSWORK AS NEEDED

Today we are going over what we learned this week. We are learning more about solving multiplication word problems using array diagrams and a multiplication table.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

NOTE: Learners should use the array diagrams and multiplication table to help them solve the problems on this activity. It is good if some learners are able to do these calculations mentally. They can check their answers on the multiplication table.

1 There are 5 groups of children. There are 3 children in each group. How many children are there altogether? ($5 \times 3 = 15$, 15 children)

2 Calculate using the multiplication tables.

a $9 \times 2 = \underline{(18)}$
b $8 \times 3 = \underline{(24)}$
c $8 \times 2 = \underline{(16)}$
d $7 \times 4 = \underline{(28)}$
e $7 \times 2 = \underline{(14)}$
f $9 \times 4 = \underline{(36)}$
g $7 \times 5 = \underline{(35)}$
h $7 \times 3 = \underline{(21)}$
i $9 \times 3 = \underline{(27)}$
j $6 \times 4 = \underline{(24)}$

5 REFLECTION AND SUMMARY OF LESSON

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt to solve multiplication word problems.

Week 6

Lesson 26: Assessment

Teacher's notes		
This lesson should be used for assessment of the content covered in this unit to date. CAPS topics: 1.8 Repeated addition leading to multiplication; 1.14 Repeated addition leading to multiplication. Resources: Printable assessment in Teacher's Resources.		
Date:	Week	Day

1 SETTLE THE CLASS AND ADMINISTER THE ASSESSMENT. (45 MINUTES)

The assessment for today is linked to the work covered in the unit to date.

You will find the printable version of the assessment in the Teacher's Resource pack.

2 DISCUSS ASSESSMENT ITEMS WITH THE CLASS (45 MINUTES)

Take in the learners' work when they are done.

There should be time for you to discuss a few of the items with the class:

- use this opportunity to reflect on different methods used by learners (allow some learners to write their solutions on the board).
- speak about misconceptions that may have arisen in learners' responses.

3 ASSESSMENT

WRITTEN ASSESSMENT (15)

NOTE: Learners can draw a diagram to help them solve the word problem if they want to.

1 Complete the table. (8)

		Answer			Answer
1	7 × 5 =	(35)	**5**	5 × 5 =	(25)
2	9 × 3 =	(27)	**6**	8 × 2 =	(16)
3	9 × 4 =	(36)	**7**	9 × 5 =	(45)
4	6 × 2 =	(12)	**8**	7 × 4 =	(28)

2 Complete the table. (4)

		Answer is the same as:
1	5 × 3= 15	3 × 5 = 15
2	4 × 2 = 8	(2 × 4 = 8)
3	3 × 5 = 15	(5 × 3 = 15)
4	5 × 4 = 20	(4 × 5 = 20)
5	2 × 5 = 10	(5 × 2 = 10)

3 There are 4 groups. Each group has 5 children in it. How many children are there altogether? _____ (4 × 5 = 20, 20 children) (3)

Unit 2 Introduction

This unit focuses on fractions. Fractions are often difficult for learners to fully comprehend. Teachers must find a variety of strategies to use in the classroom for teaching fractions. It is essential that you begin by using concrete aids such as paper to teach fractions. The learners can fold or cut paper into different fraction parts. In this way the learners have hands-on experience of making fraction parts which gives them better insight into the nature of fractions. Once the learners are able to represent fractions using concrete aids we move on to pictorial representations. It is important to note that concrete fractions are always parts of a whole. Half a rectangle is not just a half, it is half of the rectangle. It is always relative to the whole. In these activities the learners draw and shade in different fractions.

In this unit you will be able to focus on the four framework dimensions in the following way:

- **Conceptual understanding**: In this unit learners develop their conceptual understanding by having hands-on experience of making fraction parts which gives them better insight into the nature of fractions. The fundamental understanding that they need to develop is that the same fraction parts must be equal in size.
- **Procedural fluency**: When learners are introduced to fractions the work is more conceptual but the repetitive nature of the concrete (and other) activities will enable them to become efficient at making fraction parts. This familiarity with the procedures consolidates the conceptual understanding that fraction parts need to be equal in size.
- **Strategies**: Learners need to understand and develop strategies to solve problems. Learners should be encouraged to find their own ways to fold and cut papers to make equal sized fraction parts, since there is not only one way to do this.
- **Reasoning**: Learners are always encouraged to talk about their understanding of concepts and solutions, and to provide explanations and reasons for the methods they use to find solutions. They should do this when making fraction parts as it will consolidate their understanding of fraction concept.

Building a **learning centred classroom** in this unit will involve (amongst other things) attention to:

- **Speaking Mathematics:** Learners are encouraged to use the vocabulary of fractions when they speak about what they are doing – they should use all the vocabulary related to these concepts.
- **Concept development**: Learners need opportunities to construct their own understanding of fractions through thinking and reasoning. For example, when the teacher asks '**What fraction is shaded?',** learners need to reason and create a connection between a whole and the fraction.
- **Connecting representations**: In this unit, learners read and write fractions when they do and record their work. The lessons are designed to help them make connections between these representations in order to deepen their conceptual understanding of fractions.

Lesson 27: Fractions – Half

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 1.10 Sharing leading to fractions, 1.17 Fractions.
Lesson Objective: To identify and construct halves.
Lesson Vocabulary: Halves, share, divide, equal parts, a half/ one half.
Resources: Scrap paper, scissors.
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

	Calculate:	Answer			Answer
1	4 × 2	8	**6**	6 × 2	12
2	5 × 2	10	**7**	1 × 2	2
3	7 × 2	14	**8**	8 × 2	16
4	3 × 2	6	**9**	9 × 2	18
5	2 × 2	4	**10**	10 × 2	20

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

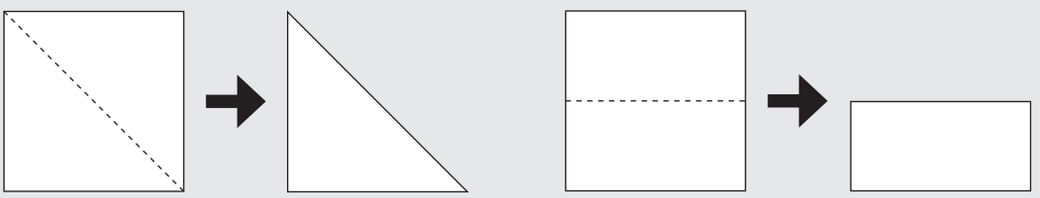
In this lesson learners develop their understanding of the concept of halving. They will use pieces of scrap paper to fold shapes in half. In this way they are constructing their understanding of halves through active learning. They will also learn to read and write the word 'half' and the numeral .

Today we are learning to halve.

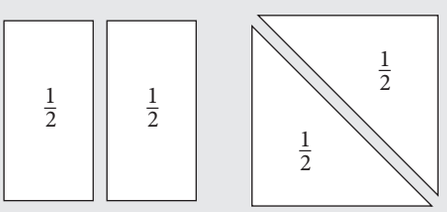
Activity 1: Whole class activity

- **Do you remember how to divide 1 loaf of bread in half?** (Yes, I must cut it into 2 equal parts.)
- Ask learners to draw a line through the big circle in their LAB to cut the circle into two halves.
- Give each learner a piece of square paper to use for the following activity.
- Let the learners fold their paper in half.
- Walk around and help the learners fold the paper properly (the edges of the folded paper must fit together perfectly).
- Find different ways to halve a square while you walk around and show shapes to learners.

- NOTE: The importance here is to fold the page in different ways to obtain different-looking halves.



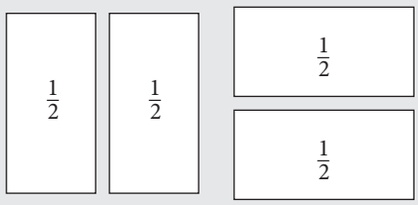
- Let the learners trace the fold line with a pencil and cut the paper along the fold line.
- Ask: **Do you now have 2 pieces?**
- Let the learners place the 2 pieces of paper on top of each other.
- Ask: **Are they the same size?** (Yes, they are the same. Yes, they fit exactly on top of each other.)
- Explain: **When you make two equal parts from one thing, you call each part a (one) half of the original thing.**
- Write $\frac{1}{2}$ and 'half' on the board.
- Let the learners read 'half' and write $\frac{1}{2}$ several times in the air.
- Let the learners write $\frac{1}{2}$ in each part of the circle drawn in their classwork books.
- Make $\frac{1}{2}$ of a square in the same way as learners did and paste the halves on the board (show two different shapes of halves).



- Let the learners reconstruct the original square with their 2 halves.
- Ask: **What do you have now?** (A square.)
- Ask: **Can I call the two pieces that make up the whole square shape the same name, namely one half of the square?** (Yes, because when I put them together I make the square. One half of the square together with the other half of the square makes the square.)
- Write on each half of the shapes pasted on the board.
- Let the learners paste their halves into their classwork books.

Activity 2: Learners work in pairsv

- Give each learner a piece of rectangular paper and ask them to make of the rectangle.
- Show the learners how to fold it. (Show 2 different ways; along the short side and along the long side.)
- Let one learner in each of the pairs fold their paper in half along the short side and the other learner of the pair along the long side.
- Let the learners trace the fold line with a pencil and cut the paper along the fold line.

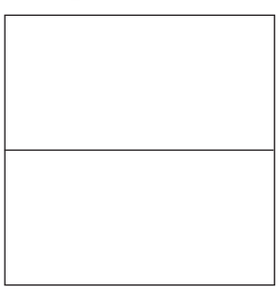


- Ask: **Do you now each have 2 pieces?**
- Let the learners place the 2 pieces of paper on top of each other.
- Ask: **Are they the same size?** (Yes, they are the same. Yes, they fit on top of each other.)
- Ask: **What do we call each of the 2 pieces?** (one half)
- Write $\frac{1}{2}$ on each half and paste it on the board.
- Let the learners write $\frac{1}{2}$ on their halves as well.
- Let the learners read $\frac{1}{2}$ several times.
- Ask: **Can I call these two shapes each one half of the whole rectangle?** (Yes, because the two half shapes make the original rectangle when we put the two halves together.)
- Let the learners paste their halves into their classwork books.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

1 Shade in $\frac{1}{2}$ of each shape.

a



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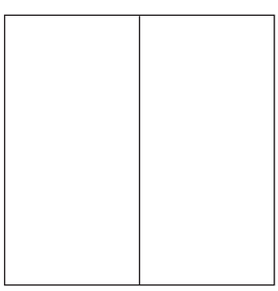

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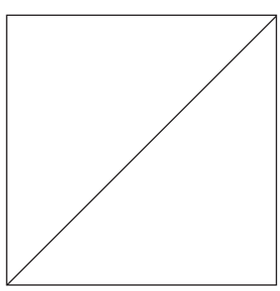

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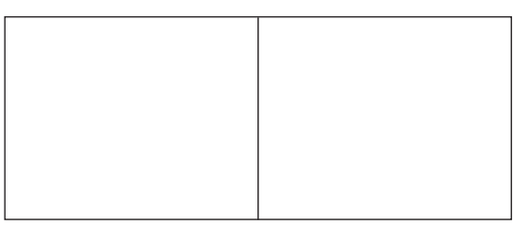

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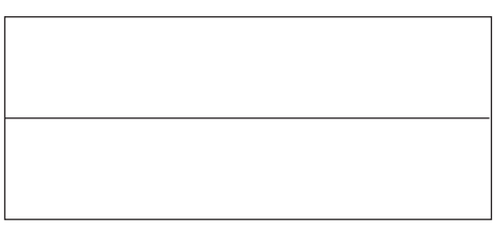

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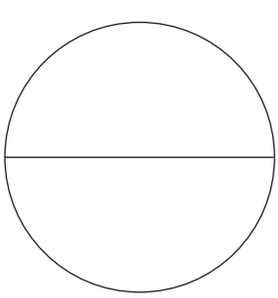


2 Serebolo and Mbali share 1 chocolate bar so they each get the same amount. Mbali says that they must each get one half. Is she correct? (Yes.) Draw a picture to show your answer.

4 HOMEWORK ACTIVITY (5 MINUTES)

Draw a picture of a round cake. Share the cake equally between you and your friend Ntombi. (The drawing must be of a cake shape cut into two equal halves.)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt to halve.

Lesson 28: Fractions – Quarter

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 1.10 Sharing leading to fractions, 1.17 Fractions.
Lesson Objective: To identify and construct quarters.
Lesson Vocabulary: Fractions, halves, quarters, share, divide, equal parts a whole.
Resources: Paper strips (learners), large paper strips (teacher).
Date: Week Day

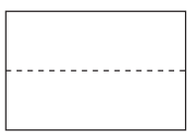
1 MENTAL MATHS (10 MINUTES)

	Calculate:	Answer			Answer
1	2 × 4	8	**6**	10 × 4	40
2	5 × 4	20	**7**	1 × 4	4
3	8 × 4	32	**8**	7 × 4	28
4	3 × 4	12	**9**	9 × 4	36
5	6 × 4	24	**10**	4 × 4	16

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson learners develop their understanding of the concept of quarters. They will use strips of scrap paper to fold quarters. They will fold a strip in half and in half again, in this way finding out that a half of one half is a quarter. They will also learn to read and write a quarter.

You need to prepare the learners' paper strips by folding and cutting A4 scrap paper in half (along the short side of the A4 page).



Prepare the teacher's paper strip by using a sheet of flip chart paper, folded and cut into quarters along the short side of the flip chart paper.

Today we are learning about quarters.

Activity 1: Whole class activity

- Use your large strip of paper made from flip chart paper.
- Fold the strip in half and then in half again.
- Open the strip and trace the fold lines with a kokie.
- Paste the strip on the board.

$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$

- Ask: **How many parts are there?** (4)
- Say: **Let's check whether all 4 parts are equal or not.**
- Cut the strip along the lines and put the pieces on top of each other.
- Say: **They are all the same size. That means they are equal.**
- Paste all 4 parts on the board to remake the original strip.
- Explain: **When you make four equal sized parts from one thing, you call each part a (one) quarter of the original thing.**
- Write $\frac{1}{4}$ and 'one quarter' on the board.
- Let the learners read 'a quarter' and write $\frac{1}{4}$ several times in the air.
- Let the learners write $\frac{1}{4}$ in their classwork book 4 times.
- Write $\frac{1}{4}$ in each part of the strip on the board.
- Explain: Numbers like $\frac{1}{2}$ and $\frac{1}{4}$ are called '**fractions**'.
- Let the learners say the word 'fractions' several times.

Activity 2: Whole class activity

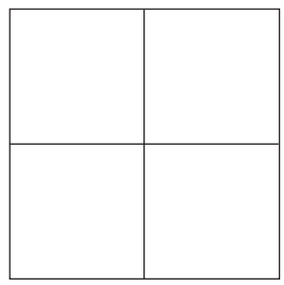
- Give each learner a strip of paper that you prepared using scrap A4 paper.
- Let the learners fold the strip in half twice, as you did in Activity 1.
- Let the learners open the strip and trace the fold lines with a pencil.
- Ask: **How many equal parts do you see on the strip?** (4)
- Ask: **What do we call each part of the strip?** (one quarter)
- Let the learners write $\frac{1}{4}$ in each part of the strip.
- Explain: **We call the original strip 'a whole'**.
- Let the learners say 'a whole' several times.
- Let the learners paste their strips into their classwork books.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

Shade $\frac{1}{4}$ of each shape.

a

b



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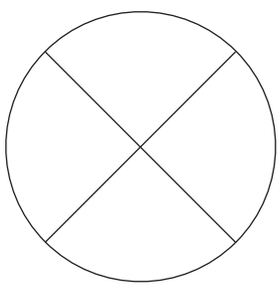

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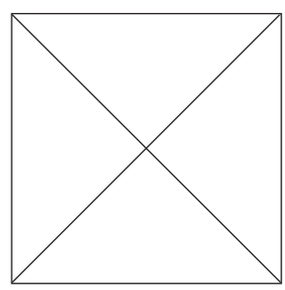


4 HOMEWORK ACTIVITY (5 MINUTES)

I cut an apple into quarters. How many children can get the same size piece of the apple? (4 children)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt what a quarter is.

Lesson 29: Fractions – Eighth

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 1.10 Sharing leading to fractions, 1.17 Fractions.
Lesson Objective: To identify and construct eighths.
Lesson Vocabulary: Fractions, half, quarters, eighths, share, divide, equal parts.
Resources: Paper strips (learners), large paper strip (teacher).
Date: Week Day

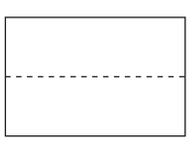
1 MENTAL MATHS (10 MINUTES)

	Calculate:	Answer			Answer
1	8 × 2	16	**6**	8 × 5	40
2	5 × 3	15	**7**	7 × 4	28
3	8 × 4	32	**8**	8 × 3	24
4	3 × 3	9	**9**	9 × 3	27
5	8 × 1	8	**10**	5 × 4	20

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

In today's lesson learners will continue to investigate fractions. The focus in this lesson is on eighths. Learners will actively explore the properties of eighths. They will do this by halving quarters. Ensure that each learner is given the opportunity to experience making eighths. They will also learn to read and write an eighth ($\frac{1}{8}$).

You need to prepare the learners' paper strips by folding and cutting A4scrap paper in half (along the short side of the A4 page).



Prepare the teacher's paper strip by using a sheet of flip chart paper, folded and cut into quarters along the short side of the flip chart paper.

Today we are learning about eighths.

Activity 1: Whole class activity

- Use your large strip of paper made from flip chart paper.
- Fold the strip in half three times.
- Open the strip and trace the fold lines with a kokie.
- Paste the strip on the board.

$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

- Ask: **How many parts are there?** (8)
- Say: **Let's check whether all 8 parts are equal or not.**
- Cut the strip along the lines and put the pieces on top of each other.
- Say: **They are all the same size. That means they are equal.**
- Paste all 8 parts on the board to remake the whole strip.
- Ask: **What do we call the original strip?** (the whole)
- Explain: **When you make 8 equal sized parts from a whole, you call each part an (one) eighth of the whole.**
- Write $\frac{1}{8}$ and 'eighth' on the board.
- Let the learners read 'eighth' and write $\frac{1}{8}$ several times in the air.
- Let the learners write $\frac{1}{8}$ in their classwork book 8 times.
- Write $\frac{1}{8}$ in each part of the strip on the board.
- Ask: **What do we call numbers like $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{8}$?** (fractions)
- Let the learners say 'fractions' several times.

Activity 2: Whole class activity

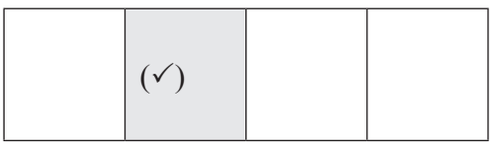
- Give each learner a strip of paper that you prepared using scrap A4 paper.
- Let the learners fold the strip in half three times like you did in Activity 1.
- Let the learners open the strip and trace the fold lines with a pencil.
- Ask: **How many equal parts do you see on the strip?** (8)
- Ask: **What do we call each part of the strip?** (An eighth)
- Let the learners write $\frac{1}{8}$ in each part of the strip.
- Let the learners paste their strips into their classwork books.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

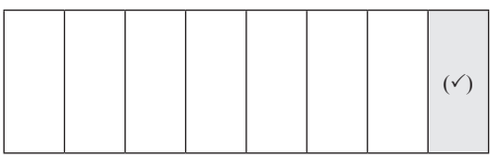
1 Divide the rectangle into halves. Shade in $\frac{1}{2}$. (Any one of the halves can be shaded.)

(✓)	

2 Divide the rectangle into quarters. Shade in $\frac{1}{4}$. (Any one of the quarters can be shaded.)



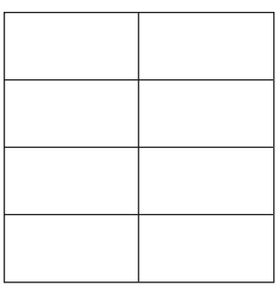
3 Divide a rectangle into eighths. Shade in $\frac{1}{8}$. (Any one of the eighths can be shaded.)



4 HOMEWORK ACTIVITY (5 MINUTES)

Shade in $\frac{1}{8}$ of each square. (Any one of the eighths of each square can be shaded.)

a



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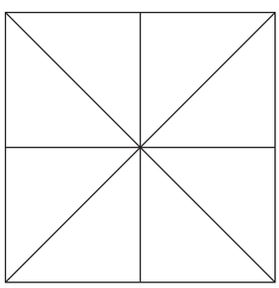

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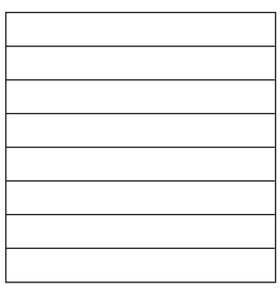


5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt to identify and fold eighths.

Lesson 30: Consolidation

Teacher's notes		
This lesson allows for consolidation of the previous days' lesson content.		
CAPS topics: 1.10 Sharing leading to fractions, 1.17 Fractions.		
Lesson Objective: To revise half, quarter and eighth.		
Lesson Vocabulary: Fractions, half, quarters, eighths, share, divide, equal parts, a whole.		
Resources: N/a.		
Date:	Week	Day

1 NOTES FOR THE TEACHER RELATING TO THIS WEEK'S WORK

This week the learners learnt about fractions, focusing on a half, a quarter and an eighth.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

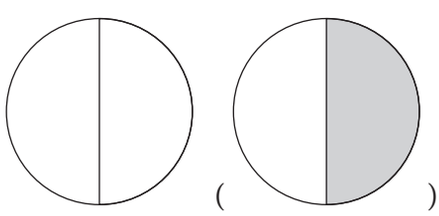
Learners need many opportunities to make connections between a half, a quarter and an eighth. Encourage learners to verbalise this relationship as part of their consolidation. Make sure that learners understand what each fraction is and that they are able to identify it. You may need to revisit the paper folding activities in the previous lessons to reinforce the concepts.

3 CLASSWORK/HOMEWORK – COMPLETE THIS WEEK'S CLASSWORK AS NEEDED

Today we are going over what we learned this week. We are learning more about fractions.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

1 Shade in $\frac{1}{2}$ of the circle.



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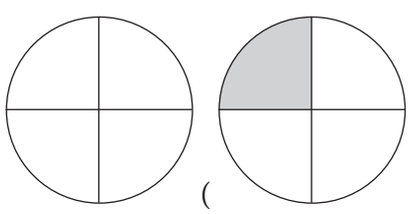
2 Shade in $\frac{1}{4}$ of the circle.



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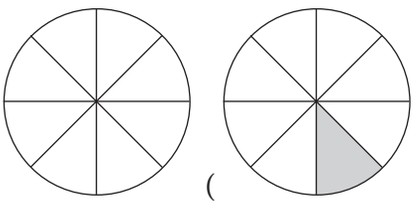
3 Shade in $\frac{1}{8}$ of the circle.



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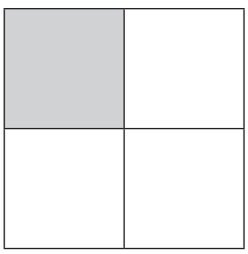
4 What fraction of the shape is shaded?

a



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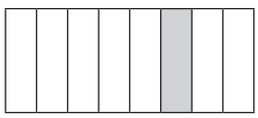
($\frac{1}{4}$)

b



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($\frac{1}{8}$)

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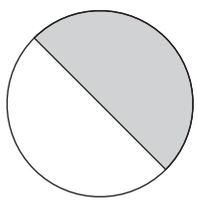

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($\frac{1}{2}$)

5 REFLECTION AND SUMMARY OF LESSON

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt about fractions.

Week 7

Lesson 31: Assessment

Teacher's notes		
This lesson should be used for assessment of the content covered in this unit to date.		
CAPS topics: 1.10 Sharing leading to fractions, 1.17 Fractions.		
Resources: Printable assessment in teacher's resources.		
Date:	Week	Day

1 SETTLE THE CLASS AND ADMINISTER THE ASSESSMENT. (45 MINUTES)

The assessment for today is linked to the work covered in the unit to date.

You will find the printable version of the assessment in the Teacher's Resource pack.

Take some time to do the *oral and practical assessment* (see checklist below).

2 DISCUSS ASSESSMENT ITEMS WITH THE CLASS (45 MINUTES)

Take in the learners' work when they are done.

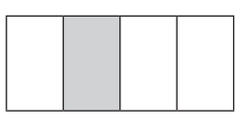
There should be time for you to discuss a few of the items with the class:

- use this opportunity to reflect on different methods used by learners (allow some learners to write their solutions on the board).
- speak about misconceptions that may have arisen in learners' responses.

3 ASSESSMENT

WRITTEN ASSESSMENT (10)

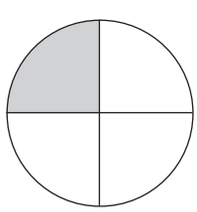
1 What fraction of the rectangle is shaded? (1)



the whole	one half	one quarter	one eighth
		X	

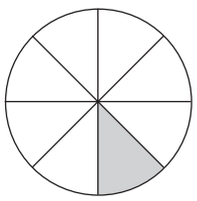
2 What fraction of the circle is shaded? Write your answer as a fraction number. (3)

a



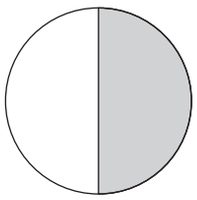
___ ($\frac{1}{4}$)

b



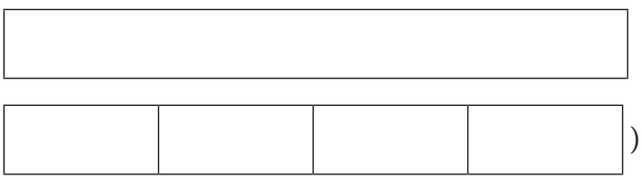
___ ($\frac{1}{8}$)

c

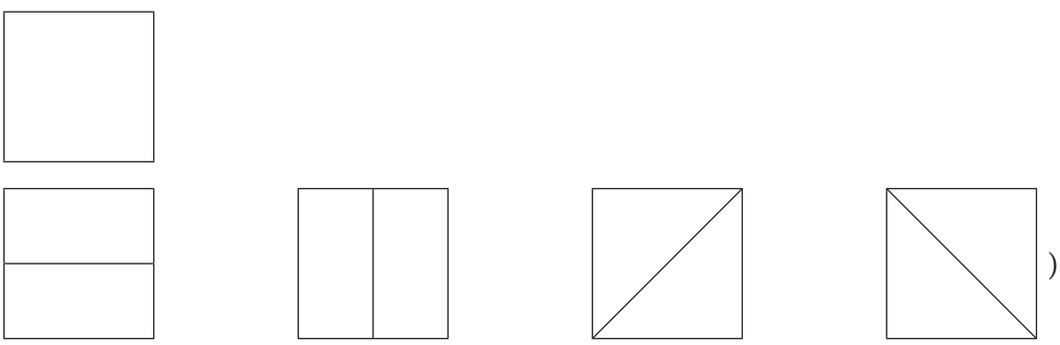


___ ($\frac{1}{2}$)

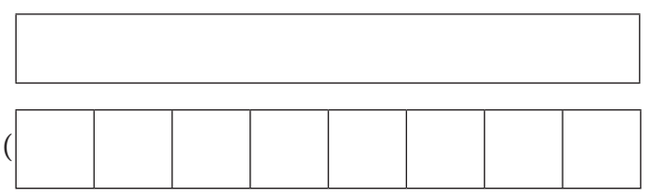
3 Divide the rectangle into quarters. (2)



4 Divide the square in half. (2)



5 Divide the rectangle into eighths. (2)



ORAL AND PRACTICAL

CAPS: Numbers, operations and relationships: Fraction concept **Activity: Assess learners knowledge and understanding of halves, quarters and eighths.**	**Mark: 7**

Mark	Criteria – Checklist: (1 mark for each criterion achieved)
1	Able to identify one half in a diagrammatic representation.
1	Able to identify one quarter in a diagrammatic representation.
1	Able to identify one eighth in a diagrammatic representation.
1	Able to draw one half in a diagrammatic representation.
1	Able to draw one quarter in a diagrammatic representation.
1	Able to draw one eighth in a diagrammatic representation.
1	Able to say and read the numbers one half, one quarter, one eighth.

Unit 3 Introduction

This unit focuses on 2-D shapes, symmetry and geometric patterns. 2-D (two-dimensional) shapes are also called polygons or flat shapes. In this unit, the learners will explore the properties of the following 2-D shapes: circles, squares, rectangles and triangles. They will also learn about symmetry. A shape has a line of symmetry if the shape on one side of the line 'mirrors' the shape on the other side. Symmetry can be seen in nature when looking at butterflies, flowers and leaves. In this unit, the learners identify and draw lines of symmetry using 2-D shapes. Lastly, geometric patterns are presented. A geometric pattern is an arrangement of shapes. During these lessons, the learners will identify, describe and extend patterns. The ability to recognise and create patterns helps learners make predictions based on their observations. Understanding patterns helps learners to recognise relationships and develop generalisations.

In this unit you will be able to focus on the four framework dimensions in the following way:

- **Conceptual understanding**: This unit addresses the key concepts of 2-D shapes, symmetry and geometric patterns.
- **Procedural fluency**: Learners will develop procedural fluency in the ability to identify shapes and their properties, draw in lines of symmetry and identify, extend and describe geometric patterns.
- **Strategies**: Learners will discover how to work with the properties of 2-D shapes and symmetry and how to extend geometric patterns.
- **Reasoning**: Learners will be able to justify and explain relationships between shapes using the properties of 2-D shapes. They will also be able to reason when they explain how they worked out how to use the rules they have identified to extend patterns.

Building a **learning centred classroom** in this unit will involve (amongst other things) attention to:

- **Active learning**: Learners are actively involved in the lessons in this unit as they are expected to identify and explore 2-D shapes, identify and draw lines of symmetry and identify, copy and extend geometric patterns.
- **Justifying answers**: Learners justify their answers by discussing the properties of 2-D shapes, symmetry and the rules of geometric patterns.
- **Explaining concepts and procedures**: Learners are required to discuss their thoughts and methods of solution with their peers. This is an important way of extending and deepening their conceptual understanding.
- **Addressing learners' errors**: In this unit there are a number of consolidation and assessment opportunities that will make it possible to identify and address learners' errors. There are clear links between lessons which enable learners to build upon their knowledge and to correct misunderstandings they may have formed.

Lesson 32: 2-D shapes (1)

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 3.3 2-D shapes.
Lesson Objective: To recognise, describe and name 2-D shapes: circles, triangles, squares and rectangles.
Lesson Vocabulary: 2-D shapes, circles, triangles, squares, rectangles, size, colour, shapes, straight sides, round (curved) sides, recognise, sort, compare, record.
Resources: Large square and rectangle (teacher), shape cut-outs (see *Printable Resources*).
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

- Ask the learners to start at 2 and count on in twos until they reach 20.

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson you revise the names of 2-D shapes that were taught in Grade 1 and you will introduce the rectangle. Allow learners to say the names of the shapes and to talk about their characteristics when they talk to you about the drawings of shapes that you have done on the board.

Learners often don't recognise shapes if they are not drawn in a familiar orientation. In this lesson you should encourage them to draw shapes in many different orientations and allow them to identify shapes that have been drawn in different positions and at different angles.

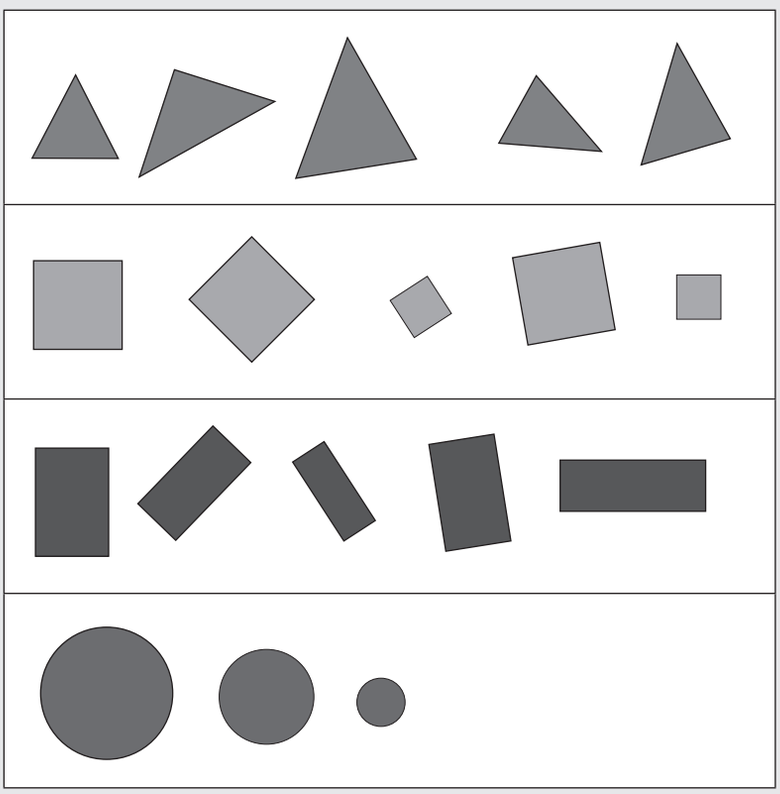
Today we are learning about 2-D shapes in different positions.

Activity 1: Whole class activity

- Paste a large square and rectangle that you have made from flip chart paper on the board.
- Hold up both shapes in the front of the class.
- Say: **This is a square and this is a rectangle.** (Show the learners each shape.)
- Ask: **What are the similarities between these 2 shapes?** (They both have 4 sides and 4 corners.)
- Ask: **What are the differences between these 2 shapes?** (The length of the sides. Two sides of a rectangle are long, while the other two sides are shorter.)
- Ask different learners to come to the board to draw squares and rectangles.
- Discuss the properties of the shapes with the learners each time.

Activity 2: Whole class activity

- Refer to the picture of mixed shapes in the LAB.



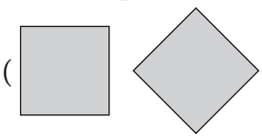
- Ask: Can you tell me what you notice about the shapes? Discuss ideas such as:
  - Triangles that are shaped differently and placed in different positions.
  - Squares of different sizes, placed in different positions.
  - Rectangles of different shapes, placed in different positions.
  - Circles of different sizes.
  - Discuss the position and orientation of the shapes.

Activity 3: Whole class activity

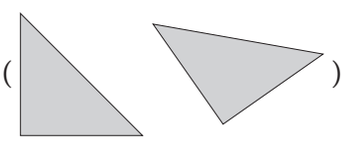
- Do this activity practically with the learners using the shape cut outs (or plastic shapes if you have them).
- Give the learners (in groups at their desks) a collection of plastic/cardboard shapes (shape cut outs) of different sizes.
- Ask the learners to sort the shapes according to shape, size (and colour if you have made different colour copies).
- Discuss the various ways in which the learners have sorted the shapes. Talk about the different groups that are formed when you sort according to different criteria.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

1 Draw a square in two different positions.

()

2 Draw a triangle in two different positions.

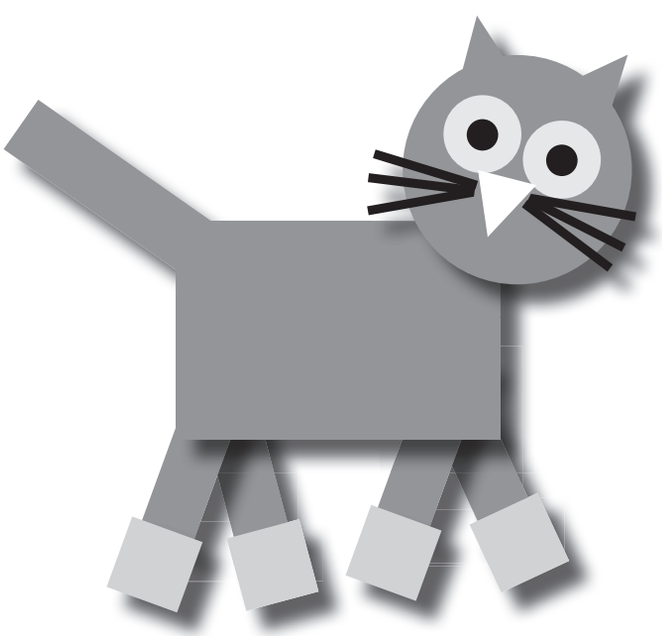
()

3 Draw a picture using different shapes. Count how many triangles, squares and rectangles were used in the picture. (Answers will vary.)

4 Colour your picture using the colours red, blue, yellow and green. (Answers will vary.)

4 HOMEWORK ACTIVITY (5 MINUTES)

1 Count the shapes in the drawing:



a Triangles _____ . (3)

b Squares _____ . (4)

c Rectangles _____ . (11)

d Circles _____ . (5)

2 If you change the position of a shape does the shape change? (No.)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt about 2-D shapes in different positions.

Lesson 33: 2-D shapes (2)

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 3.3 2-D shapes.
Lesson Objective: To describe, sort and compare 2-D shapes in terms of: shape, straight sides and round sides.
Lesson Vocabulary: 2-D shapes, circles, triangles, squares, rectangles, size, shapes, straight sides, round sides.
Resources: Shape cut-outs (see *Printable Resources*), large circle, square, triangle, rectangle (teacher).
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

- Ask the learners to start at 3 and count on in threes until they reach 30.

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson we will revise the names and properties of 2-D shapes. We will move on to discussing the sides of the 2-D shapes. We will discuss the number of sides and whether the sides are straight or round (curved).

Today we are learning about 2-D shapes and their sides.

Activity 1: Whole class activity

- Do this activity practically with the learners using the shape cut outs (or plastic shapes if you have them).
- Give the learners (in groups at their desks) a collection of plastic/cardboard shapes (shape cut outs) of different sizes.
- Select a triangle, circle, square and rectangle from the shape cut-outs.
- Hold up your large shapes while you discuss the properties of each of the the shapes with the learners
- The properties to discuss are the number of sides and corners.

Activity 2: Whole class activity

- Continue working with the shape cut-outs from the previous activity.
- Ask the learners to pick up a triangle and a circle.
- Ask: **Can you trace the sides of a circle and a triangle with your fingers?** (Show them how to do this if necessary.)
- Ask: **What is difference between a circle and a triangle?** (The triangle has straight sides. The circle has round sides. The triangle has 3 sides. The circle has one round (curved) side.)

- Ask: **Can you trace the sides of a circle and a rectangle with your fingers?** (Show them how to do this if necessary.)
- Ask: **What is difference between a circle and a rectangle?** (The rectangle has straight sides. The circle has round sides. The rectangle has 4 sides. The circle has one round (curved) side.)
- Ask: **Can you trace the sides of a square and a rectangle with your fingers?** (Show them how to do this if necessary.)
- Ask: **What is difference between a square and a rectangle?** (The rectangle and the square both have straight sides. The rectangle and the square both have 4 sides. The sides of the square are all the same length. The rectangle has two long and two short sides.)
- Ask: **Can you trace the sides of a triangle and a rectangle with your fingers?** (Show them how to do this if necessary.)
- Ask: **What is difference between a triangle and a rectangle?** (The rectangle and the triangle both have straight sides. The rectangle has 4 sides. The triangle has 3 sides.)
- Ask the learners to sort the shapes according to straight and round sides:
  - **Straight sides**: triangles, squares and rectangles.
  - **Round sides:** circles.
- Ask the learners to sort the shapes according to the number of sides:
  - **Three sides**: triangles.
  - **Four sides:** squares and rectangles.
  - **One side:** circles.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

1. Draw and name two shapes with straight sides. (Any two of square, rectangle, triangle.)
2. Draw and name a shape with round sides. (Circle. Some learners might say oval – this is also correct.)
3. Use all the shapes you know of with straight sides to draw your own picture. (Answers will vary.)
4. Use all the shapes you know of with round sides to draw your own picture. (Answers will vary.)
5. Choose one shape with straight sides and one shape with round sides to make your own pattern. (Answers will vary.)

4 HOMEWORK ACTIVITY (5 MINUTES)

Design a car using the following shapes: 2 circles, 2 rectangles, 3 squares and 2 triangles. (Answers will vary.)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt about 2-D shapes and their sides.

Lesson 34: 2-D shapes (3)

Teacher's notes		
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.		
CAPS topics: 3.3 2-D shapes.		
Lesson Objective: To describe, sort and compare 2-D shapes in terms of: shape, size, straight sides and round sides.		
Lesson Vocabulary: 2-D shapes, circles, triangles, squares, rectangles, size, shapes, straight sides, round sides.		
Resources: Scrap paper (1 piece per learner).		
Date:	Week	Day

1 MENTAL MATHS (10 MINUTES)

- Ask the learners to start at 5 and count on in 5s until they reach 50.

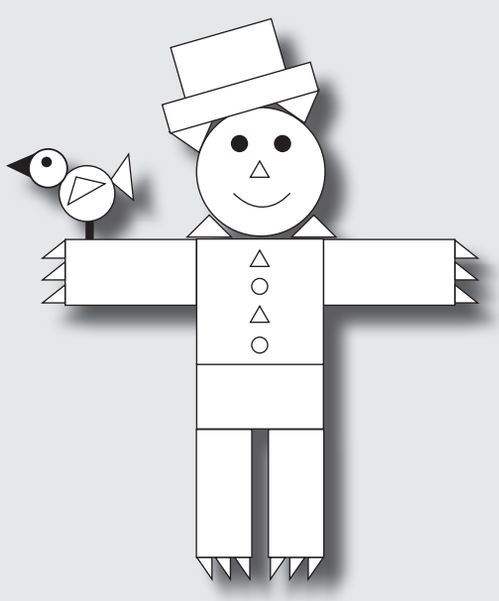
2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the third lesson on 2-D shapes. Make sure that the learners have plenty of practice using the mathematical terminology of 2-D shapes in these two lessons so that they remember the shape names and their characteristics for Grade 3.

Today we are learning more about 2-D shapes.

Activity 1: Whole class activity

- Refer to this picture in the LAB. It is made up of many different 2-D shapes that the learners should be able to recognise.



- Ask the learners to identify and name all the different shapes they can see. (Rectangles, triangles, circles.)
- When identifying the shapes, they should use sentences such as: The hat is made from two rectangles, etc.
- *Learners could colour each type of shape a different colour at the end of the lesson if they finish the classwork activity early.*

Activity 2: Whole class activity

- Give each learner a piece of scrap paper. Ask them to fold the scrap paper into four equal parts (quarters).
- Say: **Draw lines on the folds on your scrap paper.**
- Draw a grid on the board (like the scrap paper divide into quarters).
- Write the words circle, triangle, rectangle and square in the grid on the board.
- Say: **Copy the words and draw one of each shape on your scrap paper.** (Learners draw one of each shape in the correct blocks.)

Circle	Triangle
Square	Rectangle

- Say: **Now draw a similar, but smaller, shape next to each of the shapes.**
- Say: **Colour in the shape with round sides.** (Learners colour the circles.)
- Ask:
  - **What is the difference between a circle and a triangle?** (A circle has round sides and a triangle has straight sides.)
  - **How are triangles and rectangles the same?** (Both these shapes have straight sides.)
  - **What is the difference between a triangle and a rectangle?** (A triangle has 3 sides and a rectangle has 4 sides.)

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: The word grid activity in this lesson is in English. Teachers can adapt this and make a grid to include shape names in other languages if they wish to. Learners do need to know the shape names in English and so this lesson gives them the opportunity to learn them.

1 Find the following words in the word search and colour each word in a different colour: circle, triangle, square, rectangle.

i	i	t	h	a	p	m	l	y	Z
d	e	r	t	r	i	r	g	z	M
u	t	i	v	e	i	a	t	b	p
l	n	a	a	c	i	r	c	l	e
f	k	n	x	t	i	z	t	q	s
g	d	g	z	a	w	d	k	l	q
y	d	l	n	n	p	j	f	d	u
f	y	e	e	g	a	c	t	q	a
c	i	r	c	l	e	r		c	r
e	a	j	a	e	a	j	r	l	e

2 Draw and label the shapes that you have identified in the word search. (Learners should draw each of the shapes.)

3 What is the difference between a square and a triangle? (A square has four sides of equal length and a triangle has three sides.)

4 What is the difference between a circle and a square? (A circle has a round or curved side and a square has straight sides. A circle has one side and a square has four sides.)

5 Draw three squares of different size, from smallest to biggest. (Answers will vary. Check that they are drawn in the correct order.)

6 Draw three circles of different size, from smallest to biggest. (Answers will vary. Check that they are drawn in the correct order.)

4 HOMEWORK ACTIVITY (5 MINUTES)

(Answers will vary. Check they are drawn in the correct order.)

1 Draw three triangles of different size, from smallest to biggest.

2 Draw three rectangles of different size, from smallest to biggest.

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt more about 2D shapes.

Lesson 35: Consolidation

Teacher's notes		
This lesson allows for consolidation of the previous days' lesson content. CAPS topics: 3.3 2-D shapes. Lesson Objective: To revise the properties of 2-D shapes. Lesson Vocabulary: 2-D shapes, circles, triangles, squares, rectangles, size, shapes, straight sides, round sides. Resources: N/a.		
Date:	Week	Day

1 NOTES FOR THE TEACHER RELATING TO THIS WEEK'S WORK

This week the learners learnt about 2-D shapes in terms of shape, size and sides.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

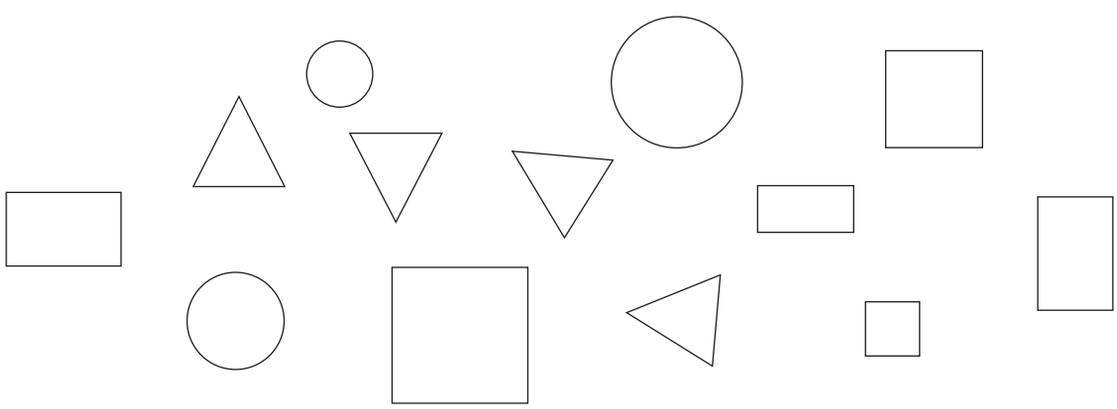
Certain learners may be experiencing difficulties using the terminology of 2-D shapes. Make sure that you model the correct mathematical language using the vocabulary when you discuss the shapes. In this way the learners will be encouraged to use the vocabulary when discussing 2-D shapes. For example, a learner may say edge instead of side.

3 CLASSWORK/HOMEWORK – COMPLETE THIS WEEK'S CLASSWORK AS NEEDED

Today we are going over what we learned this week. We are learning more about 2-D shapes.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

1 Colour the squares red, the triangles green, the circles blue and the rectangles yellow.



2 How many triangles are there? (4)

3 How many circles are there? (3)

4 How many rectangles are there? (3)
5 How many squares are there? (3)
6 Write on each shape whether the sides are round or straight. (Squares – straight sides; rectangles – straight sides; circles – round sides; triangles – straight sides.)

5 REFLECTION AND SUMMARY OF LESSON

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt about 2-D shapes.

Week 8

Lesson 36: 2-D shapes (4)

Teacher's notes		
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.		
CAPS topics: 3.3 2-D shapes.		
Lesson Objective: To revise and consolidate 2-D shapes and their properties.		
Lesson Vocabulary: 2-D shapes, circles, triangles, squares, rectangles, size, shapes, straight sides, round sides.		
Resources: Scrap paper, old magazines.		
Date:	Week	Day

1 MENTAL MATHS (10 MINUTES)

- Ask the learners to start at 4 and count on in 4s until they reach 40.

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the last lesson on 2-D shapes. In this lesson learners cut out 2-D shapes and discuss their properties. Ensure that the learners use the vocabulary outlined in the lesson vocabulary. If you don't have old magazines or newspapers to cut from, the learners can draw objects instead.

Today we are learning about 2-D shapes and their properties.

Activity 1: Learners work in pairs

- Give each pair of learners a piece of scrap paper. Ask them to fold the scrap paper into four equal parts (quarters).
- Say: **Draw lines on the folds on your scrap paper.**
- Write the names of the shapes on the board for them to copy onto their folded pieces of paper. One of the following names should go in each quarter: circle, rectangle, square and triangle (as in the previous lesson).

Circle	Triangle
Square	Rectangle

- Ask the learners to cut pictures from their magazine pages of objects that show the four shapes that they have written on their A4 pieces of paper.

- They can paste the pictures into the quarters on the scrap paper according to the labels written in the quarters.
- Learners may also draw pictures of four shapes.
- They need to find as many pictures as possible and/or include as many drawings as possible.

Activity 2: Whole class activity

- Call pairs of learners to the front of the class to show and explain their pictures to the rest of the class.
- Each pair of learners should have a chance. Let them explain only one type of shape if there is not enough time for them all to explain all of their shapes.
- They have to include the following in their explanations:
  - Shape
  - Size
  - Colour
  - Sides – straight or round.

  (One object may include several shapes or may be just one of the shapes that the learners are looking for).

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

(Answers will vary. Check that the drawings are according to the question specifications.)

1 Draw a house using the following shapes:
   a 2 circles.
   b 4 rectangles.
   c 1 triangle.
   d 2 squares.

2 Colour the shapes in the house in the following way:
   a One red circle.
   b One green rectangle.
   c One yellow triangle.
   d One blue square.

4 HOMEWORK ACTIVITY (5 MINUTES)

(Answers will vary. Check that the drawings are according to the question specifications.)

1 Draw a picture using different shapes and colour it in any way you choose.

2 Write about how you coloured your shapes.

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt about 2-D shapes and their properties.

Lesson 37: Symmetry (1)

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 3.4 Symmetry.
Lesson Objective: To identify lines of symmetry in 2-D shapes.
Lesson Vocabulary: Symmetry, line of symmetry, 2-D geometrical shapes, 2-D non-geometrical shapes, calculate circle, square, triangle.
Resources: Paper shapes (circle, square and triangle per group), pictures of butterflies (optional – e.g. from old magazines).
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

	Calculate:	Answer		Calculate:	Answer
1	20 – 6 =	14	**6**	26 – 5 =	21
2	19 – 4 =	15	**7**	24 + 4 =	28
3	14 + 4 =	18	**8**	28 + 4 =	32
4	15 + 2	17	**9**	30 + 10	40
5	21 – 1	20	**10**	20 – 10 =	10

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the first of three lessons on symmetry. If you can reflect (or flip) a figure over a *line* and the figure appears unchanged, then the figure has reflection *symmetry* or *line symmetry*. The *line* that you reflect over is called the *line of symmetry*. A *line of symmetry* divides a figure into two mirror-image halves.

Today we are learning about lines of symmetry.

Activity 1: Whole class activity

Symmetry in 2-D shapes:

- Use the prepared paper shapes. Give each group of learners a paper circle, square and triangle.
- Ask them to fold all three of the shapes exactly in half.
- Unfold the shapes and make a dotted line where the fold is.
- Explain to the learners that we call this the line of symmetry.
- Discuss the shape, the position of the fold in the shape and what the two halves of the shape on either side of the fold look like.

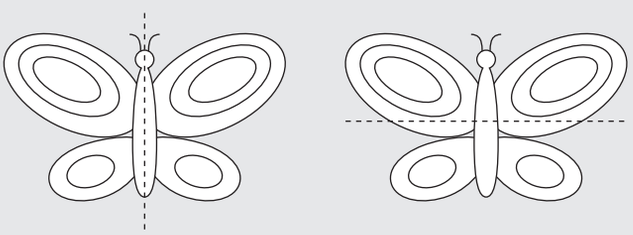
Activity 2: Whole class activity

Symmetry in ourselves:

- Call a learner to the front of the class and ask the learner to stand looking straight at the class.
- Discuss the symmetry of the human body. Point out:
  - **a** One eye on each side,
  - **b** One ear on each side.
  - **c** Etc.

Activity 3: Whole class activity

- Refer to the picture of the butterfly template in the LAB.
- Draw two similar butterflies on the board, as shown below.
- Draw the two lines as shown.

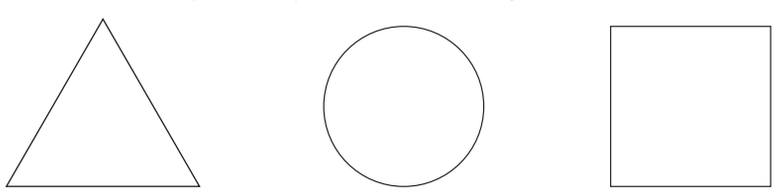


- Ask: **Which line is a line of symmetry?** (The vertical one.)
- Ask: **Which line is NOT a line of symmetry?** (The horizontal one.)
- Ask: **Why is the horizontal line not a line of symmetry?** (If you fold along the horizontal line, the two parts do not fit exactly onto each other; the two parts on either side of the horizontal line are not mirror images of each other.)
- Colour the two sides of the butterfly, using colours, in a symmetrical way.

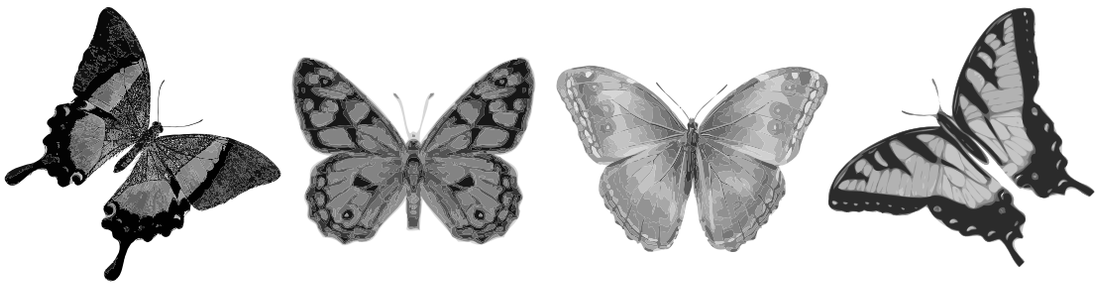
3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: Remind learners that when a shape is folded exactly in half a mirror image is created. The line of symmetry would go along that fold line. They can use that to imagine where a line of symmetry should go.

1 Draw lines of symmetry on the following shapes.



2 Draw the lines of symmetry in these butterflies.

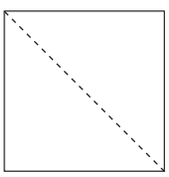


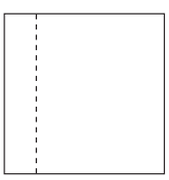
3 Draw a circle. How many lines of symmetry can you draw on a circle? (many)

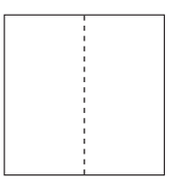
4 Draw a face. How many lines of symmetry can you draw on a face? (one)

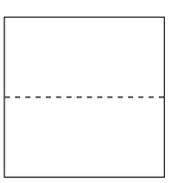
4 HOMEWORK ACTIVITY (5 MINUTES)

Do the drawings below show a line of symmetry? Answer yes or no each time.

a  (yes)

b  (no)

c  (yes)

d  (yes)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt about lines of symmetry.

Lesson 38: Symmetry (2)

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 3.4 Symmetry.
Lesson Objective: To identify and draw lines of symmetry in 2-D geometrical and non-geometrical shapes.
Lesson Vocabulary: Symmetry, line of symmetry, 2-D geometrical shapes, 2-D non-geometrical shapes, calculate circle, square, triangle.
Resources: N/a.
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

	Calculate:	Answer		Calculate:	Answer
1	20 – 6 =	14	**6**	26 – 5 =	21
2	19 – 4 =	15	**7**	24 + 4 =	28
3	14 + 4 =	18	**8**	28 + 4 =	32
4	15 + 2 =	17	**9**	30 + 10 =	40
5	21 – 1=	20	**10**	20 – 10 =	10

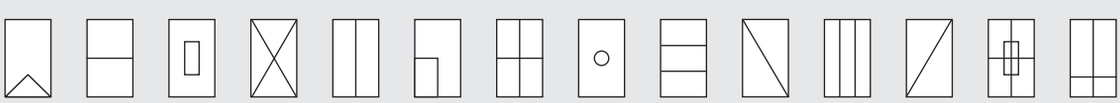
2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the second of three lessons on symmetry. In this lesson the learners consider if shapes have one or more than one line(s) of symmetry. This is done with the teacher guiding the learners as they experiment with drawing and folding lines of symmetry. A shape which is not symmetrical is called asymmetrical.

Today we are learning about finding lines of symmetry.

Activity 1: Whole class activity

- Refer to the picture of the shape strip in the LAB.
- Draw the same shapes on the board.
- The learners can look at the shapes on the board as well as those in the LAB.

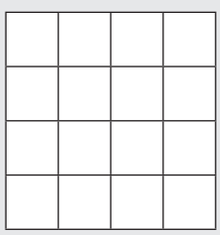


- Discuss each shape, one at a time.
- Ask: **How many lines of symmetry does the shape have?**

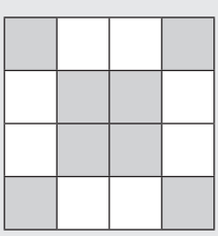
- **Where is (are) the line(s) of symmetry?**
  - **a** No lines of symmetry: shapes 6, 10, 12. (These shapes are called **asymmetrical**.)
  - **b** One line of symmetry: shapes 1, 14.
  - **c** Two lines of symmetry: shapes 2, 3, 4, 5, 7, 8, 9, 11, 13.
- Allow the learners to identify the lines of symmetry themselves and let them show you on the board where the lines must go.
- Allow some time for all of the learners to draw the lines of symmetry onto their shapes on the shape strips that you gave to them.

Activity 2: Learners work in groups

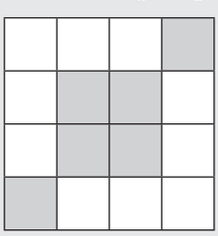
Draw a grid like the one below on the board and ask the learners to copy it into their classwork books.



- Ask them to show you where the lines of symmetry would lie on this shape (the grid).
- The shape has 4 lines of symmetry. (The diagonals and the horizontal and vertical lines through the centre of the grid.)
- Now colour some of the blocks to make a pattern that still has 4 lines of symmetry. An example is shown below.
- Show how the same 4 lines of symmetry still work.



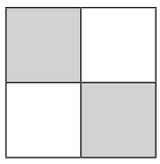
- Ask: **Can you do other grid patterns that would also have 4 lines of symmetry?** (Let learners show you drawings if they want to.)
- Draw this gird pattern on the board:

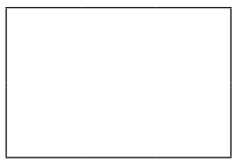


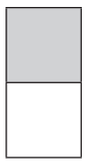
- Ask: **How many lines of symmetry does the following grid have?** (2 – the diagonals. In this pattern the vertical and horizontal lines are not lines of symmetry.)
- Discuss other grid pattern the learners have drawn of there is time.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

1 How many lines of symmetry can you draw in these shapes? Draw them.

a 

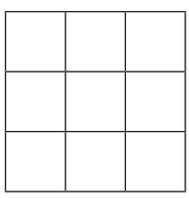
b 

c 

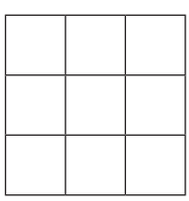
(a = 4 lines (diagonals, horizontal and vertical), b = 2 lines (horizontal and vertical), c = 1 line (vertical))

2 Use the grid to make a symmetrical design.
(Answers will vary. Check that learners have drawn designs with the correct lines of symmetry.)

a Make a pattern in it that has 2 lines of symmetry.



b Make a pattern in it that has 4 lines of symmetry.



4 HOMEWORK ACTIVITY (5 MINUTES)

(Answers will vary. Check that learners have drawn shapes with the correct lines of symmetry.)

1 Draw a shape with:

a One line of symmetry.

b Two lines of symmetry.

c Four lines of symmetry.

2 Draw the lines of symmetry in your shapes.

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt about lines of symmetry.

Lesson 39: Assessment

Teacher's notes		
This lesson should be used for assessment of the content covered in this unit to date.		
CAPS topics: 3.3 2-D shapes, 3.4 Symmetry.		
Resources: Printable assessment in teacher's resources.		
Date:	Week	Day

1 SETTLE THE CLASS AND ADMINISTER THE ASSESSMENT. (45 MINUTES)

The assessment for today is linked to the work covered in the unit to date.

You will find the printable version of the assessment in the teacher's resource pack.

Take some time to do the *oral and practical assessment* (see checklist below).

2 DISCUSS ASSESSMENT ITEMS WITH THE CLASS (45 MINUTES)

Take in the learners' work when they are done.

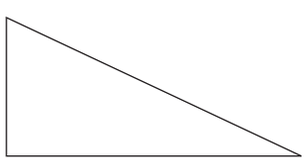
There should be time for you to discuss a few of the items with the class:

- use this opportunity to reflect on different methods used by learners (allow some learners to write their solutions on the board).
- speak about misconceptions that may have arisen in learners' responses.

3 ASSESSMENT

WRITTEN ASSESSMENT (10)

1 Name this shape. (1)



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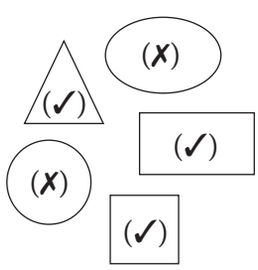
(Triangle)

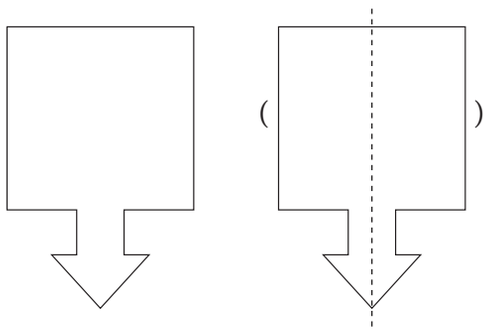
2 Look at the picture below.



a Put a tick on the shapes with straight sides. (3)
(tick: square, rectangle, triangle)

b Put a cross on the shapes with shapes have round sides. (2)
(cross: circle, oval)

3 Draw the line of symmetry in the drawing. (1)



( )

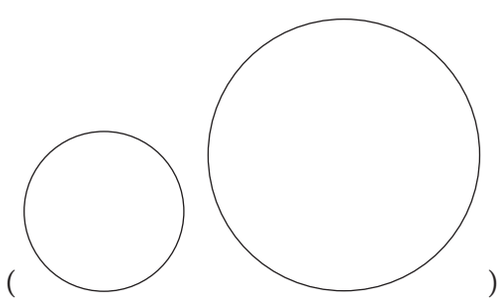
4 Draw one shape in each block. (2)

a A shape with round sides

b A shape with straight sides

(1 mark per correct answer; only one shape of each type.)

5 Draw two circles of different sizes. (1)



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ORAL AND PRACTICAL

CAPS: Space and shape – Symmetry **Activity: Observe learners ability to identify and recognise lines of symmetry in 2-D geometrical and non-geometrical shapes**	**Mark: 7**

Mark	**Criteria – Checklist: (1 mark for each criterion achieved)**
1	Able to identify objects in the classroom that are symmetrical.
1	Able to sort non-geometric shapes according to symmetrical and asymmetrical.
1	Able to sort geometric shapes according to symmetrical and asymmetrical.
1	Able to recognise a line of symmetry in a symmetrical non-geometric shape (e.g. a butterfly).
1	Able to recognise a line of symmetry in a symmetrical geometric shape (e.g. a square).
1	Able to draw a line of symmetry in a symmetrical non-geometric shape (e.g. a butterfly).
1	Able to draw a line of symmetry in a symmetrical geometric shape (e.g. a square).

Lesson 40: Consolidation

Teacher's notes		
This lesson allows for consolidation of the previous days' lesson content. CAPS topics: 3.4 Symmetry. Lesson Objective: To revise line(s) of symmetry. Lesson Vocabulary: Symmetry, line of symmetry, 2-D geometrical shapes, 2-D non-geometrical shapes, calculate circle, square, triangle. Resources: N/a.		
Date:	Week	Day

1 NOTES FOR THE TEACHER RELATING TO THIS WEEK'S WORK

This week the learners learnt about lines of symmetry.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

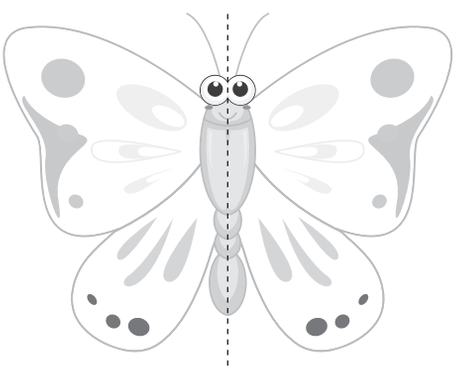
Some learners may be experiencing difficulties identifying lines of symmetry without the actual shape, especially if the shape has a number of lines of symmetry e.g.: circle. You may need to give these learners the cut out of a shape and allow them to physically explore the lines of symmetry for themselves.

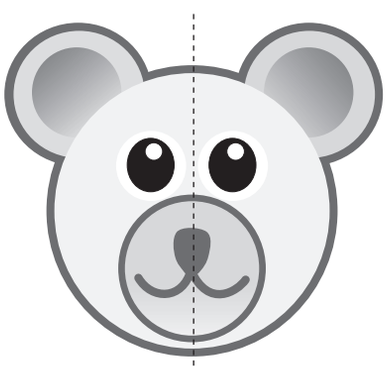
3 CLASSWORK/HOMEWORK – COMPLETE THIS WEEK'S CLASSWORK AS NEEDED

Today we are going over what we learned this week. We are learning more about lines of symmetry.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

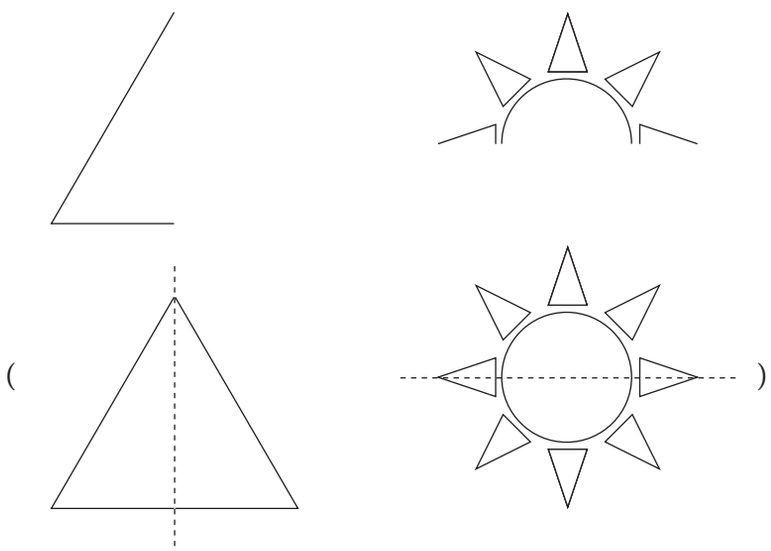
1 Draw a line of symmetry through each of the following pictures:





2 Colour each side of the picture a different colour.

3 Complete these pictures by:
- **a** Drawing the exact other half.
- **b** Drawing in the line of symmetry.



3 Draw a circle, a triangle and a rectangle. Draw the line of symmetry in each shape. (Answers will be various sizes. Learners should draw in the lines of symmetry correctly.)

5 REFLECTION AND SUMMARY OF LESSON

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt about lines of symmetry.

Week 9

Lesson 41: Symmetry (3)

Teacher's notes		
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.		
CAPS topics: 3.4 Symmetry.		
Lesson Objective: To identify horizontal and/or vertical lines of symmetry.		
Lesson Vocabulary: Line of symmetry, symmetry, 2-D geometrical shapes, non-geometrical shapes, horizontal, vertical, less than, most, least, square, triangle, rectangle, circle.		
Resources: N/a.		
Date:	Week	Day

1 MENTAL MATHS (10 MINUTES)

	What is 2 less than:	Answer		What is 2 less than:	Answer
1	100?	98	**6**	13?	11
2	50?	48	**7**	24?	22
3	12?	10	**8**	35?	33
4	40?	38	**9**	38?	36
5	45?	43	**10**	66?	64

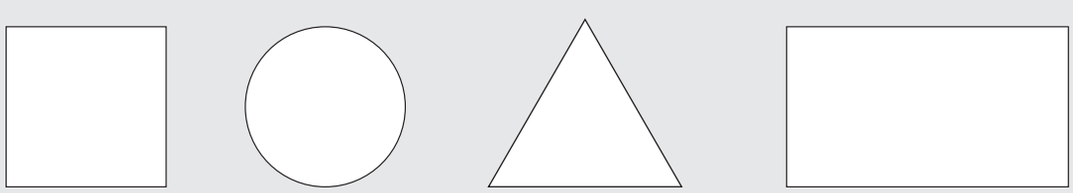
2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the last lesson on symmetry. In this lesson the learners identify lines of symmetry. They move on to identifying the lines as horizontal or vertical. It is important to use the words horizontal and vertical and not up/across/down. In this way you and the learners are using the language of mathematics.

Today we are learning about symmetry.

Activity 1: Whole class activity

- Draw the following shapes on the board:



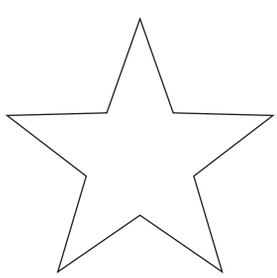
- Ask the learners to copy these shapes into their classwork books.

- Ask them to draw lines of symmetry in their shapes.
  (They can use horizontal lines and vertical lines.)
- Allow the learners to compare their pictures with one another and discuss their different answers.
- Discuss with the whole class:
- Ask: **For which shape can we use a vertical line to show a line of symmetry? (**All of the shapes.)
- Ask: **For which shape can we use a horizontal line to show the line of symmetry?** (All of the shapes BUT NOT the triangle.)
- Ask: **For which shape can we use a sloping line to show a line of symmetry?** (The triangle and the circle. A sloping line is not horizontal or vertical.))
- Ask: **Which shapes have more than one line of symmetry?** (All of the shapes.)
- Ask: **Which shape has the MOST lines of symmetry?** (The circle.)
- Ask: **Which shape has the LEAST lines of symmetry***?* (The rectangle – it has 2 lines of symmetry.)
- Ask: **Which shape has 4 lines of symmetry?** (The square.)
- Ask: **Which shape has 3 lines of symmetry?** (The triangle.)
- Ask: **Have you made any other observations? Discuss.** (Have an open discussion – keep it focused on shapes and symmetry.)

Activity 2: Whole class activity

- This is a question from a national test. Write it on the board and ask learners to draw the shape and the line of symmetry. (A vertical line can be used.)

10 Draw one line of symmetry on the shape below



- Were the learners able to answer the question? Go over more examples (draw more shapes on the board) if necessary to consolidate the concept of symmetry.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

1 Draw the following objects in the correct column of the table, using symmetry to make your choices: shoe, circle, banana, triangle, square, rectangle, knife, car.

Symmetrical objects	Non-symmetrical objects
(circle)	(shoe)
(triangle)	(banana)
(square)	(knife)
(rectangle)	(car)

(The answers in brackets in the table are the solutions. Shoes and cars are virtually symmetrical but they may have scratches or laces, for example, positioned in such a way that perfect symmetry is not possible in reality.)

2 Draw the lines of symmetry on the objects in the column.

3 Draw in the lines of symmetry in these letters.

B M H

(The letters B and H have a horizontal line of symmetry though the middle of the letter. The letters M and H have a vertical line of symmetry through the centre.)

4 HOMEWORK ACTIVITY (5 MINUTES)

(Answers will vary in this activity depending on the learners' names.)

1. Write your name in capital letters. (E.g. NOMA)
2. Which letters in your name are symmetrical? (E.g. O, M, A)
3. Draw the letters which you think are symmetrical and draw in the lines of symmetry for these letters. (E.g. O has 2 lines of symmetry – vertical and horizontal; M and A have a vertical line of symmetry.)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt about symmetry.

Lesson 42: Geometric patterns (1)

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 2.1 Geometric patterns.
Lesson Objective: To copy, extend, create and describe in words simple geometric patterns made with drawings of lines, shapes or objects.
Lesson Vocabulary: Patterns, geometric patterns, shapes.
Resources: Bottle tops and matchsticks/sticks
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

	Complete the pattern:	Answer			Answer
1	2, 4, ___	6	**6**	20, ___, 16	18
2	6, __, 10	8	**7**	4, 8, __	12
3	0, 3, 6, ___	9	**8**	30, 35, __	40
4	15, ___, 25	20	**9**	10, __, 30	20
5	12, 9, ___	6	**10**	24, 28, ___	30

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the first of two lessons on geometric patterns. In this lesson learners will be given the opportunity to describe patterns that they have made using shapes. Make sure that they describe the patterns accurately and that they describe patterns that repeat. An important aspect of patterns is that they repeat, and that each repetition is exactly the same as the other.

Today we are learning about geometric patterns.

Activity 1: Whole class activity

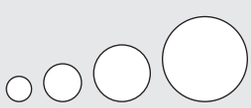
- All learners stand up.
- Clap a pattern with them (clap, clap, clap, clap, clap, clap). Discuss the pattern.
- Clap using different counts and discuss the pattern in the clapping each time.
- Call on a few individual learners to clap the pattern out on their own. Repeat with different patterns.
- Repeat with clicking fingers (click, click, click, click, click, click).
- Call on a few individual learners to click the pattern out on their own. Repeat with different patterns.
- Discuss the pattern each time, focusing on what is repeated.

Activity 2: Learners work in groups

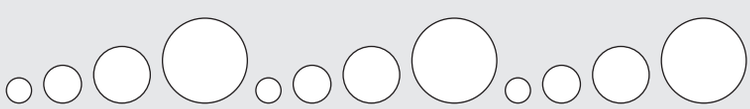
- Give each group of learners 20 bottle tops and 20 matchsticks.
- Ask the learners to design patterns, using the bottle tops and the matchsticks. (Learners' patterns will vary depending on the colours and bottle tops they have. They must make a pattern that repeats and be able to describe the pattern to you. For example: One bottle top, two bottle tops **or** One green bottle top, one silver bottle top, one matchstick **or** two matchsticks, two bottle tops **or** one bottle top, three matchsticks, etc.)
- Ask each group to describe at least one of the patterns they have made to the whole class. The key to these patterns is that the number/colour and/or type of shapes is changing and repeating.

Activity 3: Learners work in groups

- Ask the learners to draw a pattern of circles that changes in a regular way in their classwork books.
- For example, learners could draw circles that get smaller or bigger.
- For example: The next shape in this pattern would be an even bigger circle.

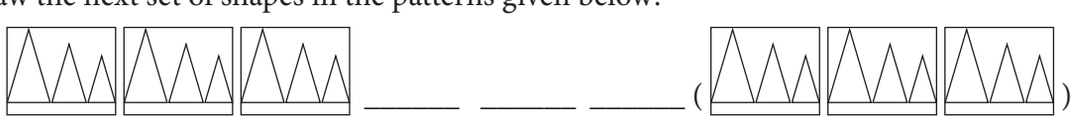


- BUT in another example: The next shape in this pattern would be the tiny circle – starting a new group of 4 circles.

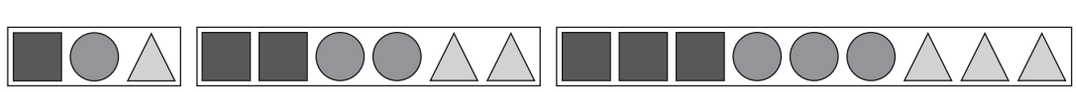


3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

1 Draw the next set of shapes in the patterns given below:

a 

b 

c 

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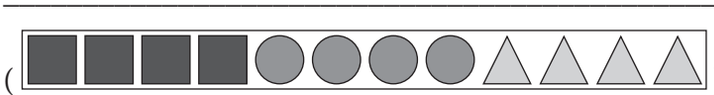
()

2 Extend these patterns.

a  _____

()

b  _____

()

c  _____

()

3 Draw your own pattern of squares that grows in a regular way.
(Learners' answers will vary. Note that the growth could happen in various ways – the squares could get bigger in size, or they could get smaller in size, or learners could make a pattern that starts with one square, then has 2 squares, then three squares and so on. Check all patterns to see if they follow a rule and are made of squares.)

4 HOMEWORK ACTIVITY (5 MINUTES)

Draw your own pattern using shapes. (Learner answers will vary.)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt about geometric patterns.

Lesson 43: Geometric patterns (2)

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 2.1 Geometric patterns.
Lesson Objective: To identify, describe in words and copy geometric patterns in nature, from everyday life and from our cultural heritage.
Lesson Vocabulary: Geometric patterns, lines, everyday life, nature, cultural heritage, regular, identify, describe.
Resources: N/a.
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

	Complete the pattern:	Answer			Answer
1	50, 40, ___	30	**6**	21, ___, 15	18
2	12, __, 20	16	**7**	20, __, 28	24
3	0, __, 8	4	**8**	50, 45, __	40
4	35, ___, 45	40	**9**	50, __, 70	60
5	15, 18, ___	21	**10**	20, 24, ___	28

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the second lesson on geometric patterns. In this lesson learners are introduced to geometric patterns in nature, from everyday life and from our cultural heritage. The learners are given the opportunity to discuss and describe the patterns that are around them.

Today we are learning about geometric patterns around us.

Activity 1: Whole class activity

Patterns in nature.

- Refer to the pictures of patterns in nature in the LAB.

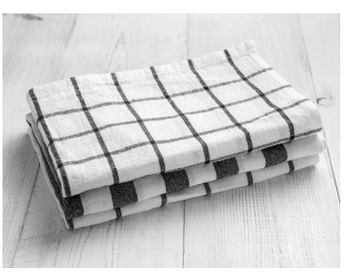
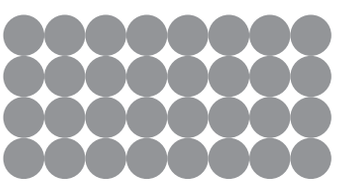
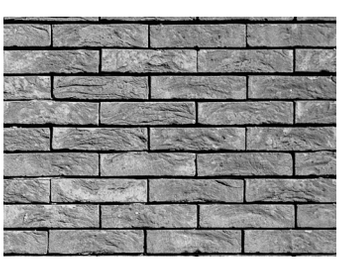
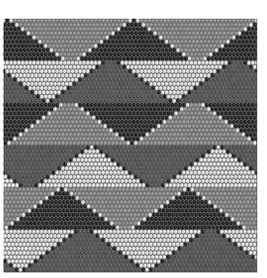
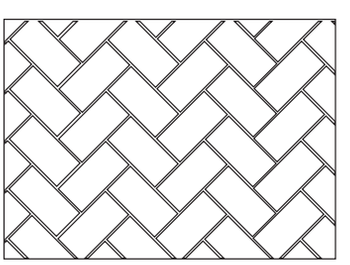


- Ask: **Can you guess where we would find patterns like these?** (In nature – animal skin.)
- Ask: **What animals are these?** (Leopard, zebra, giraffe.)
- Ask: **What type of pattern can you see?** (Irregular (not regular) lines or shapes.)

Activity 2: Whole class activity

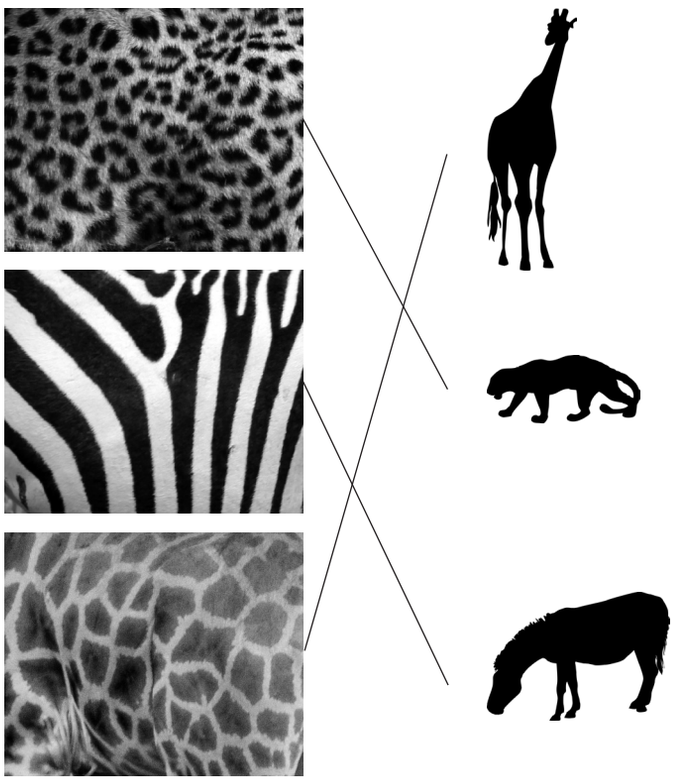
Patterns in everyday life.

- Refer to the pictures of patterns around us in the LAB.
- Ask: **How can we describe patterns that we see around us?**
- There are different ways to describe the patterns we see around us.
- Most patterns around us are made up of lines, shapes or objects.
- What we see is what is repeated, e.g. repeated dots, lines or any kind of shape.
- *Discuss other patterns learners can think about that they have seen around them.*

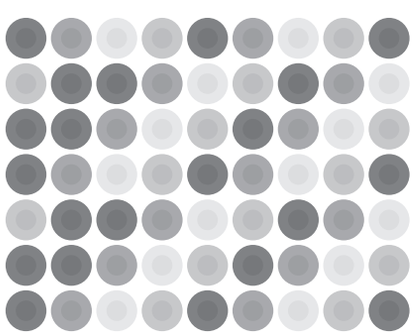
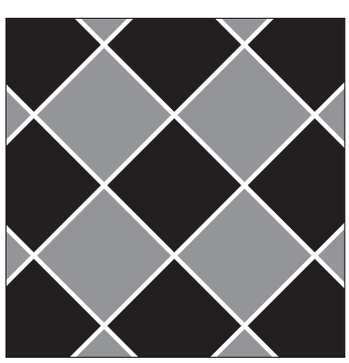
Dishcloths – straight lines that cross each other. 	Patterns in our cultural heritage – baskets. 	Dots – same size and evenly spread. 
Bricks in a wall or in paving – shapes that are the same size. 	Patterns in our cultural heritage – beads. 	Tiles. 

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

1 Match the animal to the animal skin pattern.



2 Describe the following patterns. Use the key words to help you.

a Circle, size, equal.  (The pattern is made of circles that are equal in size and evenly spread.)	**b** Lines, straight, cross.  (The pattern is made of straight lines that cross one another.)

4 HOMEWORK ACTIVITY (5 MINUTES)

Design your own geometric pattern using squares and triangles. (Answers will vary.)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt about geometric patterns around us.

Lesson 44: Assessment

Teacher's notes		
This lesson should be used for assessment of the content covered in this unit to date.		
CAPS topics: 3.4 Symmetry, 2.1 Geometric patterns.		
Resources: Printable assessment in teacher's resources.		
Date:	Week	Day

1 SETTLE THE CLASS AND ADMINISTER THE ASSESSMENT. (45 MINUTES)

The assessment for today is linked to the work covered in the unit to date.

You will find the printable version of the assessment in the teacher's resource pack.

Take some time to do the *oral and practical assessment* (see rubric below).

2 DISCUSS ASSESSMENT ITEMS WITH THE CLASS (45 MINUTES)

Take in the learners' work when they are done.

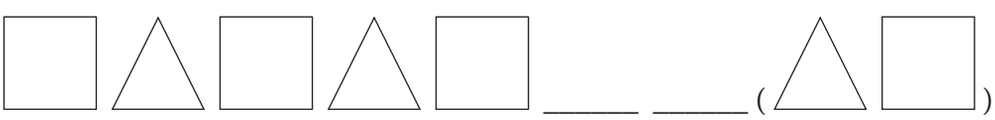
There should be time for you to discuss a few of the items with the class:

- use this opportunity to reflect on different methods used by learners (allow some learners to write their solutions on the board).
- speak about misconceptions that may have arisen in learners' responses.

3 ASSESSMENT

WRITTEN ASSESSMENT (10)

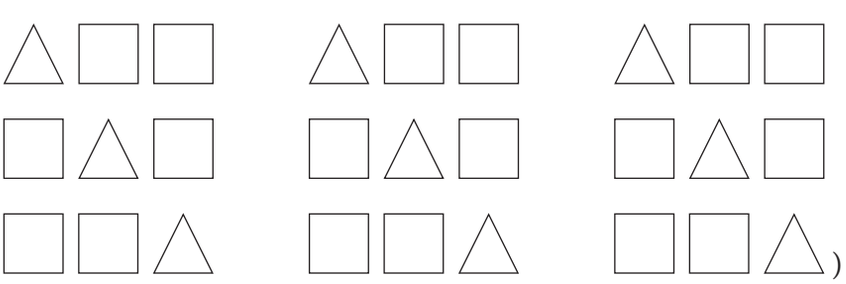
1 Draw the next two shapes in this pattern: (2)



2 Draw a pattern using one triangle and two squares. Repeat the pattern two times. (4)

_____ _____ _____ _____ _____ _____ _____ _____ _____

(Learners answers will vary. Draw the three shapes (2) and at least two repeats of the pattern (2). For example:



3 Draw the first three steps of a pattern using circles. The number of circles must increase each time. (4)

_____

(Learners' answers will vary but could be, for example: ○, ○○, ○○○ etc.)

NOTE: Pattern must be made of circles (1 mark) with changing numbers (1 mark), three steps in the pattern are drawn (1 mark) and the correct three consecutive steps are drawn (1 mark).

ORAL AND PRACTICAL

CAPS: Patterns **Activity: Assess the learners' ability to copy, extend and describe geometric patterns.**	**Mark: 7**

Mark	**Criteria – rubric**
1	Unable to copy, extend or describe geometric patterns.
2	Able to copy geometric patterns.
3	Able to extend geometric patterns when assisted but makes many mistakes.
4	Able to extend geometric patterns when assisted but makes a few mistakes.
5	Able to extend geometric patterns without assistance but makes a few mistakes.
6	Able to extend geometric patterns without assistance correctly always.
7	Able to extend geometric patterns confidently and correctly.

Lesson 45: Consolidation

Teacher's notes
This lesson allows for consolidation of the previous days' lesson content.
CAPS topics: 2.1 Geometric patterns.
Lesson Objective: To revise geometric patterns.
Lesson Vocabulary: Patterns, geometric patterns, shapes, identify, describe.
Resources: Shape cut-outs (see *Printable Resources*)
Date: Week Day

1 NOTES FOR THE TEACHER RELATING TO THIS WEEK'S WORK

This week the learners learnt about lines of symmetry and geometric patterns.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

Once again some learners may be experiencing difficulties in identifying and extending geometric patterns without concrete aids such as plastic shapes/ shape cut outs. You may need to give these learners cut out of shapes and allow them to copy, create, describe and extend geometric patterns. Once the learners have mastered creating patterns using concrete aids you can move onto pictorial representations.

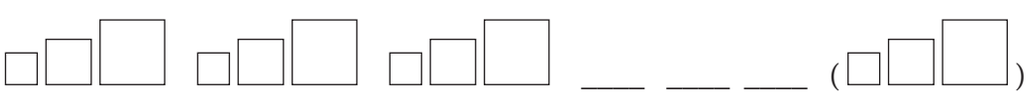
3 CLASSWORK/HOMEWORK – COMPLETE THIS WEEK'S CLASSWORK AS NEEDED

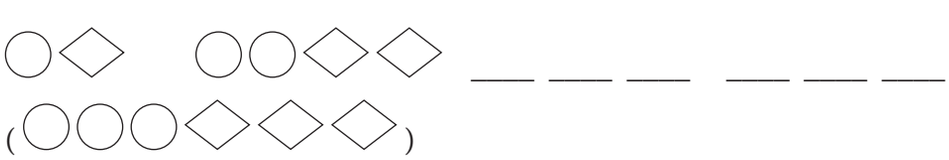
Today we are going over what we learned this week. We are learning more about geometric patterns.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

1 Draw the next set of shapes in the given patterns.

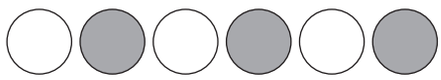
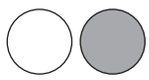
a 

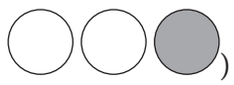
b 

c 

d 

2 Draw the next set of shapes in the given pattern.

a  ___ ___ ()

b  ___ ___ ___ ()

c  ___ ___ ___ ()

d  ___ ___ ___ ()

5 REFLECTION AND SUMMARY OF LESSON

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt about geometric patterns.

Week 10

Unit 4 Introduction

In this unit, learners will learn about time. Time is a measurement concept. We measure quantities of food ingredients (mass), time, objects (various aspects, e.g. capacity and mass) and space (e.g. volume). Learners often learn maths and measurement skills before they learn the words that represent what they are doing. The teaching of time is a difficult one because you cannot see or touch 'time'. The learners may become frustrated when learning to tell the time and teachers become frustrated with how difficult it is to teach time. The concepts of time include telling the time and measuring elapsed or time that has passed. Time is an abstract concept. Teachers should show learners how to tell the time by using physical aids such as clocks and calendars. Telling time is an essential life skill.

In this unit you will be able to focus on the four framework dimensions in the following way:

- **Conceptual understanding**: This unit addresses the key concept of time.
- **Procedural fluency**: Learners will develop procedural fluency in the ability to tell the time and measure time passed through doing a variety of tasks.
- **Strategies**: Learners will discover that measuring time involves many units, such as minutes and hours. Minutes are often grouped when telling the time, into 5s, 10s and so on.
- **Reasoning**: Learners are given opportunities to reason mathematically when they work with the units of time.

Building a **learning centred classroom** in this unit will involve (amongst other things) attention to:

- **Purposeful assessment**: The concept of time is abstract, yet it is part of our daily lives. Assessment of learners' ability to tell the time and work with the units of time should be related to meaningful daily experiences to help them make sense of the concept of time.
- **Addressing gaps in learners' knowledge**: In this unit there will be opportunities to address gaps in learners' knowledge. As learners work through the time activities, it will become clear where there are gaps in their understanding. Opportunities are provided to address these gaps through activities and engagement.
- **Addressing learners' errors**: In this unit there are a number of consolidation and assessment opportunities that will make it possible to identify and address learners' errors. There are clear links between lessons which enable learners to build upon their knowledge and to correct misunderstandings they may have formed.

Lesson 46: Telling the time

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 4.1 Time.
Lesson Objective: To tell 12-hour time in hours, half hours and quarter to/past on analogue clocks.
Lesson Vocabulary: Time, hour, analogue clock, long hand, short hands, clock face, o'clock, half past, quarter past, quarter to calculate, am (morning), pm (afternoon).
Resources: Analogue clock (see *Printable Resources*).
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

	What is 10 more than:	**Answer**		What is 10 less than:	**Answer**
1	84	94	**6**	53	43
2	65	75	**7**	10	0
3	33	43	**8**	56	46
4	44	54	**9**	71	61
5	1	11	**10**	16	6

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the first of three lessons on time. Learners will consolidate their knowledge of telling the time. They will use analogue and digital clocks. By using these clocks learners will learn about the concept of time (hours, half hours and quarter hours.) It is very important that the learners experience learning how to tell the time by being able to work with a 'real' clock. Learners learn best when they are actively involved in their learning.

Today we are learning to tell the time using analogue clocks.

Activity 1: Whole class activity

- This is a whole-class activity to revise minutes and hours with your learners.
- Use an old analogue clock for this activity or a paper one, or draw one on the board.
- Use a clock to show time in hours, e.g. 3 o'clock.
- Ask: **Where is the long hand?** (On the 12.)
- Ask: **Where is the short hand**? (On the 3.)
- Show the class more examples of time on the hour to revise the position of the long hand and the short hand of an analogue clock on the hour.
- Use a clock to show learners time in half hours, e.g. half past two.
- Ask: **Where is the long hand?** (On the 6, which shows 30 minutes past the hour.)

- Ask: **Where is the short hand?** (Half way between the 2 and the 3.)
- Show the class more examples of half past time to revise the position of the long hand and the short hand of an analogue clock on the half hour.

Activity 2: Whole class activity

- Draw or show learners clocks, showing times at **quarter past**.
- Quarter past one. Draw it onto the board.
- The short hand has just passed one.
- The long hand is on the 3, which shows fifteen minutes after the hour.
- We say that it is quarter past one.
- This means it is a quarter of an hour (15 minutes) after one.
- Show the class more examples of quarter past time – use the times shown below (or others – add as you wish – all **quarter past** times).
- The short hand has just passed (ten). The long hand stands on (fifteen) minutes. We say it is quarter past (ten).

- The short hand has just passed (two). The long hand stands on (fifteen) minutes. We say it is quarter past (two).

- The short hand has just passed (twelve). The long hand stands on (fifteen) minutes. We say it is quarter past (twelve).

Activity 3: Whole class activity

- Introduce **quarter to** to your learners.
- Quarter to three. Draw it onto the board.
- The short hand is just before the three.
- The long hand is on the 9, which shows fifteen minutes to hour, (OR 45 minutes past the hour).
- Let the learners count backwards from 12 in 5s until they have counted 15 minutes. Ask: **What do you notice?** (You are on the 9).
- Let the learners count forwards from 12 in 5s until they have counted 45 minutes.(Ask: **What do you notice?** (You are on the 9 again).
- Say: **15 minutes before OR 45 minutes after is in the same place – we call it 'quarter to'.**
- The short hand is just before three.
- The long hand stands on the 9.
- We say it is quarter to three.
- We mean it is a quarter of an hour (15 minutes) before three o'clock.

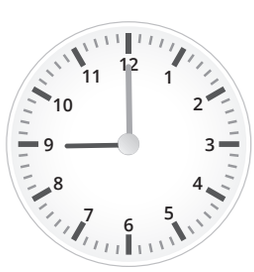
3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

Show the following times on the clock faces.

(Make sure that the learners draw the long hand and the short hand in the correct place each time.)

a 11 o'clock.

b 9 o'clock.



c 2 o'clock.

d 3 o'clock.

e Half past 9.

f Half past 11.

g Half past 4.

h Quarter past 10.

i Quarter to 3.

j Quarter past 2.

k Quarter to 7.

4 HOMEWORK ACTIVITY (5 MINUTES)

1 Which comes first, quarter to 10 or 10 o'clock? (Quarter to 10)
2 Which comes first, quarter to 11 or quarter past 11? (Quarter to 11)
3 Draw a picture of something you do at 7 o'clock in the morning. (Answers will vary, e.g. eat breakfast, walk to school etc.)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt to tell the time using analogue clocks.

Lesson 47: Calendars

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 4.1 Time.
Lesson Objective: Work with calendars. Name the days of the week and months of the year and place birthdays, religious festivals, public holidays, historical events and school events on a calendar.
Lesson Vocabulary: Days of the week, months of the year, calendar, religious festivals, historical days, public holidays, birthday, month, year, between.
Resources: Months of the year and days of the week name cards (see *Printable Resources*), different types of calendars (e.g. a daily, weekly, monthly, yearly).
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

	What is 5 less than ...	Answer		What is 5 more than ...	Answer
1	30	25	**6**	30	35
2	45	40	**7**	45	50
3	50	45	**8**	50	55
4	60	55	**9**	60	65
5	25	20	**10**	25	30

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the second lesson on time. In this lesson learners will work with calendars. They will read dates on a calendar. They will also place birthdays, religious festivals, public holidays, historical events and school events on a calendar.

Today we are learning to read calendars.

Activity 1: Whole class activity

- Use the months of the year and days of the week name cards that you have prepared from the printable resources.
- Explain**: Days of the week and months of the year are also ways of measuring and speaking about time. Days are made of hours, weeks are made of days and months are made of weeks. They are all longer or shorter times.** (Discuss the way these are all related. There are different ways we can talk about the relationships between these lengths of time.)
- Stick the days of the week name cards on the board (or write them on the board).

- Discuss what learners do on each day of the week. Allow several learners to respond. Each time they should say what they do and on which day of the week.
- Time can also be expressed in months of the year.
- Stick the months of the year name cards on the board (or write them on the board).
- Discuss the months in relation to birthdays and seasons.
- Discuss how time passed. Learners' responses will vary. Listen closely to them and make the conversation meaningful. This will build their positive attitude towards mathematics. Ask things such as:
  - **Do we all do things in the same way and at the same time?**
  - **Do you all leave at the same time to come to school?**
  - **Have you ever heard your parents/caregivers say, 'We don't have enough time'? What do they mean by this?**
  - **Who makes tea the fastest in your house?**
  - **The passing of time from one school holiday to another.**

Activity 2: Whole class activity

- Refer to the copy of the month of December in the LAB.
- Introduce learners to the three different types of calendars (daily, weekly, monthly, yearly).
- Pass the calendars around the class so that the learners can look at them.
- Stick the months of the year name cards on the board (or write them on the board).
- Read the names of the months of the year. Ask different individual learners to read the names of the months with you.
- Ask the learners to show the following dates on the calendar:
- Religious festivals e.g. Christmas, Day of Goodwill.
- Public holidays e.g. Day of Reconciliation.
- School events e.g. the last day of the school year.
- Learners' birthdays in the month of December.
- Etc.
- Discuss the different months of the year and which events are associated with them, e.g. the start of the school year in January.

Activity 3: Whole class activity

- Continue to refer to the copy of the month of December in the LAB.
- Ask: **How many weeks are there in December?** (4 and a bit)
- Discuss some questions, linking them to the calendar – to find out the lengths of time in days.
  - **How long is the school week?** (5 days)
  - **How many days are there from Monday to Friday?** (5 days)
  - **How long is the weekend?** (2 days)
  - **How many days are there from Saturday to Sunday?** (2 days)

- Ask other questions using the calendar and dates that have meaning to the learners in the class.
- E.g. find out who has birthdays this month. Calculate how long it is between two birthday dates you found. Etc.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: The LAB will have the calendar month of September above the activity questions.

Refer to the calendar month of September above.

a Put a triangle on 26 September to indicate the Mathematics quiz.
b Put a square on 12 September to indicate the school play.
c Put a red circle around 24 September to indicate a public holiday, and discuss this public holiday (Heritage Day) with your peers.
d Put a rectangle on 15 September to indicate the sports day.
e Put a circle around all the Sundays. (On the calendar.)
f How many days are there in September? (30)
g How many days from Heritage Day to the Mathematics quiz day? (3 if you count the quiz day, and 2 if you only count the days in between)
h How many days between the school play and the sports day? (12 if you count the sports day, and 11 if you only count the days in between)

4 HOMEWORK ACTIVITY (5 MINUTES)

1 Which is the first month of the year? (January)
2 Which two months come between April and July? (May, June)
3 Which is the last month of the year? (December)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt to read calendars.

Lesson 48: Time passed

Teacher's notes
This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.
CAPS topics: 4.1 Time.
Lesson Objective: To calculate elapsed time.
Lesson Vocabulary: Time, time passed, hour (quarter hour, half hour), analogue clock, long hand, short hand, clock face, calculate, am (morning), pm (afternoon), past/to, backwards, minutes, hours, seconds, left hand side, right hand side.
Resources: **A**nalogue clock (see *Printable Resources*).
Date: Week Day

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	7 × 2	14	**6**	7 × 3	21
2	6 × 4	24	**7**	7 × 5	35
3	5 × 3	15	**8**	9 × 4	36
4	6 × 5	30	**9**	8 × 5	40
5	5 × 4	20	**10**	5 × 5	25

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the third lesson on time. In this lesson you show learners how to calculate time that has passed. You should actively involve learners in the activities in order for them to discuss time 'passing.'

Today we are learning to work out how much time has passed.

Activity 1: Whole class activity

Revise **past** and **to**.

- Ask: **What does the short hand on the clock show us?** (The hours.)
- Ask: **What does the long hand on the clock show us?** (The minutes.)
- Draw a clock on the board, which is divided into halves.
- Show the learners that when the long hand is on the left-hand-side it is 'to' and on the right-hand-side it is 'past'.
- Give them some examples to show past and to.

quarter past 2

quarter to 6

- Draw other examples of times which are past and to.
- Use the time half past. (e.g. half past 5.)
- Use the times quarter past and quarter to. (e.g. quarter past 7 or quarter to 12.)
- Revise time on the hour. (e.g. 5 o'clock or 7 o'clock.)

Activity 2: Whole class activity

Revise the length and passing of time.

- Ask: **How many hours are there from 3 o'clock to 5 o'clock?** (2 hours.)
- Ask: **How many hours are there from 8 o'clock in the morning to 2 o'clock in the afternoon?** (6 hours.)
- Ask: **How many hours are there from quarter to 5 to quarter past 5?** (15 minutes + 15 minutes = 30 minutes = half an hour.)
- Ask learners to tell you about two things they do in the morning – write down the times that they do these things (to the nearest hour/half hour/quarter hour).
- Then work out the time passed between doing these two things, e.g. I wake up (6 o'clock). I eat breakfast (7 o'clock). Time passed = 1 hour.
- Allow a few different times to be discussed and then move on to the classwork activity.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

1 How many hours are there between 8 o'clock and 10 o'clock? (2)
2 How many hours are there between 10 o'clock and 12 o'clock? (2)
3 It is the 1st of September. School breaks up on the 13th of September. How many days until break up day? (12 days)
4 It is the 26th of December. How many days are there until the 1st of January? (6 days)

4 HOMEWORK ACTIVITY (5 MINUTES)

1 How many hours are there between 4 o'clock and 8 o'clock? (4)
2 How many hours are there between 8 o'clock and 11 o'clock? (3)
3 It is the 1st of June. Your birthday is on the 12th of June. How many days are there until your birthday? (11)

5 REFLECTION AND SUMMARY OF LESSON (5 MINUTES)

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt to calculate how much time has passed.

Lesson 49: Assessment

Teacher's notes		
This lesson should be used for assessment of the content covered in this unit to date.		
CAPS topics: 4.1 Time.		
Resources: Printable assessment in teacher's resources.		
Date:	Week	Day

1 SETTLE THE CLASS AND ADMINISTER THE ASSESSMENT. (45 MINUTES)

The assessment for today is linked to the work covered in the unit to date.

You will find the printable version of the assessment in the teacher's resource pack.

2 DISCUSS ASSESSMENT ITEMS WITH THE CLASS (45 MINUTES)

Take in the learners' work when they are done.

There should be time for you to discuss a few of the items with the class:

- use this opportunity to reflect on different methods used by learners (allow some learners to write their solutions on the board).
- speak about misconceptions that may have arisen in learners' responses.

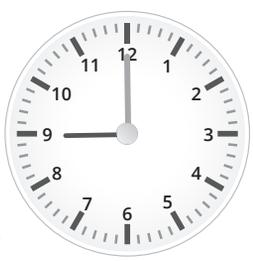
3 ASSESSMENT

WRITTEN ASSESSMENT (10)

1 Draw the long hand and the short hand on this analogue clock to show 5 o'clock. (2)

(Must show both long and short hands)

2 Draw the hands on this analogue clock to show 9 o'clock. (2)



(Must show both long and short hands)

3 Draw the arms on this analogue clock to show quarter past six. (2)

(Must show both long and short hands)

4 What is the time shown on the clock below? (2)

_____ (Quarter to 4)

5 How many hours are there between 9 o'clock and 2 o'clock? _____ (5 hours) (2)

Lesson 50: Consolidation

Teacher's notes
This lesson allows for consolidation of the previous days' lesson content.
CAPS topics: 4.1 Time.
Lesson Objective: To revise time.
Lesson Vocabulary: Time, hour, analogue clock, long hand, short hands, clock face, o'clock, half past, quarter past, quarter to calculate, am (morning), pm (afternoon).
Resources: N/a
Date: Week Day

1 NOTES FOR THE TEACHER RELATING TO THIS WEEK'S WORK

This week we have learnt about the concept of time. The learners have practised telling the time using analogue clocks. They have solved problems that involve time passing as well as used calendars to measure time.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

Learners often struggle with time. Time passed (elapsed) can be a challenging concept for them. It is important that we use physical objects and pictorial representations of time so that the learners can experience time. While you provide opportunities for learners to practise working with time, encourage them to explain their understanding of the concepts. In this way, you are able to address any gaps in their knowledge.

3 CLASSWORK/HOMEWORK – COMPLETE THIS WEEK'S CLASSWORK AS NEEDED

Today we are going over what we learned this week. We are learning more about time.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

1 What is the time on these clocks?

_____ (5 o'clock)

_____ (Quarter past 1)

_____ (Quarter to 4)

_____ (9 o'clock)

2 Draw clocks showing the following times:
(Answers must show a clock face with both arms in the correct places.)

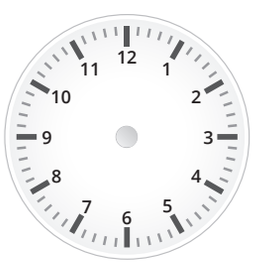
a Six o'clock.

( )

b Half past one.

( )

c Quarter to twelve.



( )

3 Which month has fewer days- November or December? (November.)

4 What was the date 3 days ago? (Answer will depend on when the learners do the exercise.)

5 REFLECTION AND SUMMARY OF LESSON

Call the whole class to attention and summarise the key concepts of the lesson.

Today we have learnt to tell and measure time.