

MATHEMATICS

Grade 3

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.

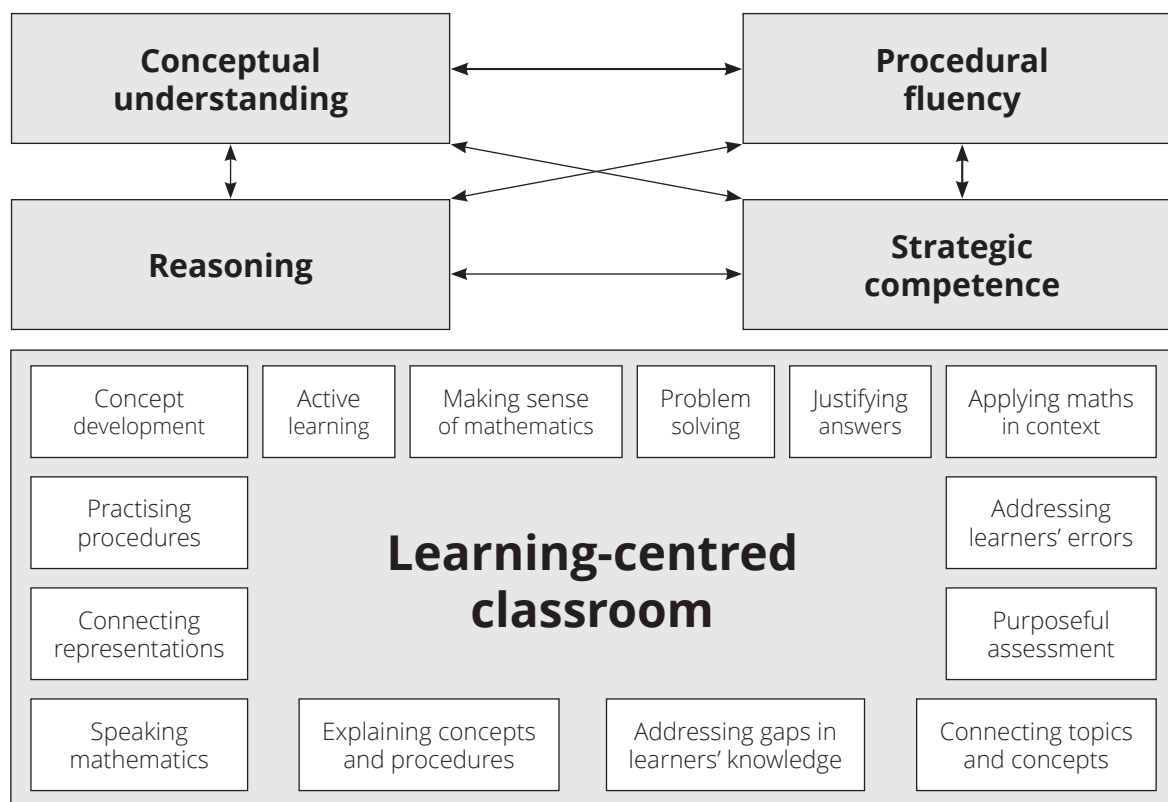
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Teaching mathematics for Understanding (TMU)

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 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

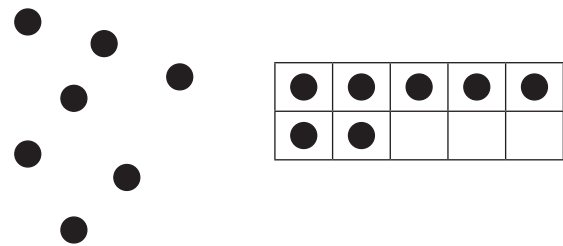
A calculation technique that consists of building up (composition) and breaking down (decomposition). For instance, 4 can be broken down into 1 and 3, 2 and 2 and 3 and 1. These are the number bonds of 4. The number bonds of 10 are the most important since they are used in all calculation strategies.

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

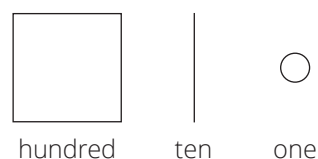
CPA APPROACH

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.

Tens			Ones
●	●	●	
●	●	●	
●	●	●	
●	●	●	●
●	●	●	●
●	●	●	●
●	●	●	●
●	●	●	●
●	●	●	●
3 tens			7 ones
37			

ARRAY DIAGRAM

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

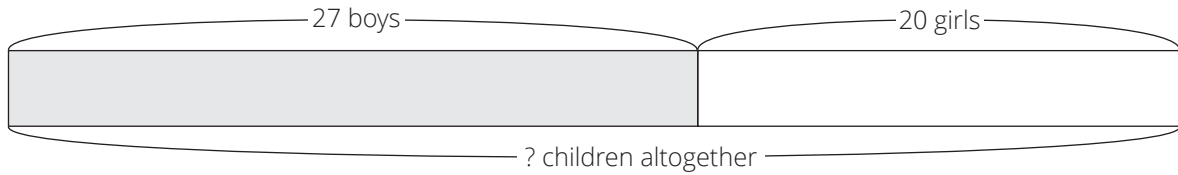


MULTIPLICATION TABLE

Multiplication tables show the multiples of numbers – the answers to the multiplication of several 1×1 digit multiplications, depending on the number of the multiplication table. For example, the 5 times table is $\square \times 5$ 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

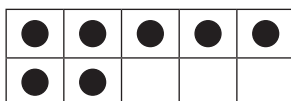
These are any (loose) concrete objects that learners can manipulate when counting. In the TMU bottle tops are recommended since they are freely available but other counters can also be used such as interlocking cubes (e.g. Unifix cubes). Teachers are expected to use concrete counters such as bottle tops 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:

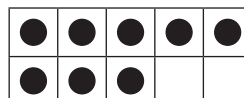
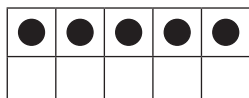


This is the number 7 represented on a double-decker ten frame (visual of 5 plus 2):



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.



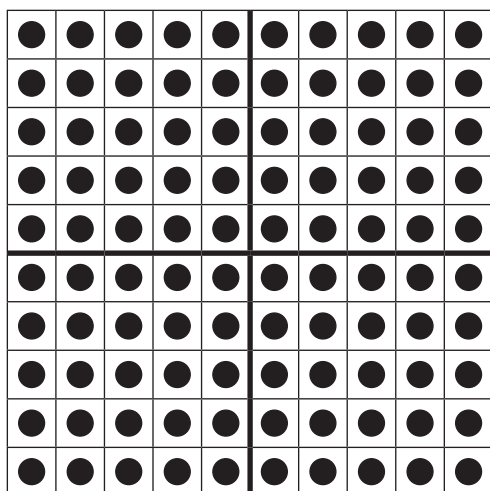
PRINTED TEN

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



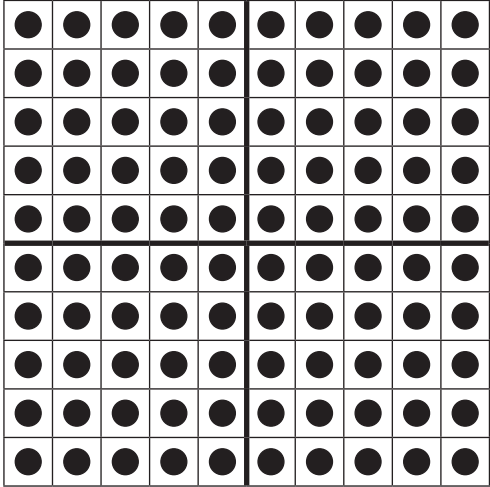

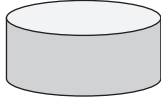
PRINTED HUNDRED (GR 2, 3)

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 3 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. Lesson 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 3 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 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 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

This unit focuses on division as the inverse of multiplication, without remainders. Learners will initially revise multiplication, in order to establish a firm foundation on which to develop their understanding of division. Learners will investigate the difference between sharing and grouping problems, and practice creating their own division stories. It is essential that learners be given opportunities to discuss what they are learning so as to clarify their own understanding throughout the process. Learners will initially solve problems using bottle tops, but will then move on to solving division problems by finding the missing number through multiplication.

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

- **Conceptual understanding:** In this unit, a conceptual understanding of division will be developed. Learners will build on their knowledge of multiplication, and extend their understanding to include the inverse operation of division.
- **Procedural fluency:** Learners will develop procedural fluency through the memorisation of their tables. They will become fluent in their recall of these tables, thereby helping them to become more efficient in their solution of division problems.
- **Strategies:** Learners will learn to solve division problems through identifying the appropriate multiplication times table to help them find the missing number.
- **Reasoning:** Learners will verbalise their understanding of sharing and grouping by providing reasons for their identification of a particular problem type.

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

- **Concept development:** In this unit, learners will develop their conceptual knowledge of division. Learners will develop their understanding of sharing and grouping, and recognise division as the inverse operation to multiplication.
- **Speaking Mathematics:** Learners are consistently encouraged to verbalise their understanding of division as they solve problems. This verbalisation aids their conceptual development, enabling them to work with understanding rather than simply working through a procedure as if it were a recipe.
- **Connecting topics and concepts:** In this unit, learners connect topics and concepts as there is a clear relationship between multiplication and division. These are inverse operations, and learners discover how to solve division problems through the use of multiplication.

Lesson 1: 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: 1.2 Count forwards and backwards; 1.14 Repeated addition leading to multiplication.

Lesson Objective: Revise multiplication up to 5×5 .

Lesson Vocabulary: Multiples, number patterns, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times.

Resources: Array diagram (see *Printable Resources*), enlarged array diagram (teacher), multiplication cards (see *Printable Resources*).

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	Count forwards in:	Answer
1	2s up to 20	2, 4, 6, 8, 10, 12, 14, 16, 18, 20
2	3s up to 30	3, 6, 9, 12, 15, 18, 21, 24, 27, 30
3	4s up to 40	4, 8, 12, 16, 20, 24, 28, 32, 36, 40
4	5s up to 50	5, 10, 15, 20, 25, 30, 35, 40, 45, 50

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson, the learners revise the concept of multiplication that was addressed in Term 2. The learners will use the array diagram to solve multiplication calculations which will help them to develop procedural fluency. You should refer to the bilingual dictionary for explanations of the terms 'array', 'row' and 'column'. It is important that the learners know how to use an array table confidently. The learners will also use multiplication cards to help them practise and memorise their multiplication tables in order to prepare the learners to use their multiplication knowledge and skills to solve division as the inverse operation.

Today we are revising the multiplication calculations that we learned in Term 2.

Activity 1: Learners work in pairs

- Give each learner an array diagram and 2 pieces of paper.
- Put an enlarged array diagram on the board.
- Write the following multiplication number sentence on the board: $3 \times 4 = \underline{\quad}$
- Ask the learners to use the array diagram to help them solve the problem.
- Ask: **How did you use the array diagram to find the answer?** (Hide the diagram to show only the four columns and three rows.)

- Select a learner to come up to the board and explain to the class how they solved the problem.
- Let the learners record the number sentence and answer in their classwork books.
- 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: $3 \times 4 = \underline{\quad}$ 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 $3 \times 4 = \underline{\quad}$ the multiple is $3 \times$)
- Paper 2 can be moved up and down, to show different multiples of 4.
- The diagram below shows an array and papers to show $3 \times 4 = 12$. (*NOTE: It is not 4×3 . This would be shown by 4 rows with 3 dots in each row.*)

	1	2	3	4	
1	●	●	●	●	<i>Paper 1</i> 4 columns are shown – we have 4 dots in a row
2	●	●	●	●	
3	●	●	●	●	

Paper 2

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

This position shows 3 groups of 4.

- Ask the learners to discuss the following problems in pairs:
 - $4 \times 4 =$
 - $5 \times 4 =$
 - $6 \times 4 =$
 - $7 \times 4 =$
 - $8 \times 4 =$
 - $9 \times 4 =$
- Allow the learners time to use the array diagram for each problem.
- Let the learners record all the number sentences with answers in their classwork books.
- Corrections should be done on the board.
- Encourage the learners to verbalise what they are doing each time they solve a problem. It is important for the learners to be able to identify the number of rows and columns so that they can clearly verbalise the number sentences.

Activity 2: Learners work in pairs

- Learners continue working with the array diagram.
 - Write the following number sentence on the board: $5 \times 6 = \underline{\quad}$

- Ask the learners to solve the problem in their pairs.
- Remind the learners that they can use their array diagram as they did in Activity 1. Encourage the learners to discuss their solution methods with each other.
- Select a learner to come up to the board and explain to the class how they solved the problem.
- Ask: **Did anyone find the answer to the problem without having to use the array diagram?** (The learners need to get to a point where they are able to solve problems mentally without the use of an array diagram, so it is necessary to begin the conversation about this. By asking this question, the learners will begin to realise it is possible to solve multiplication problems mentally.)
- Let them record the number sentence and answer in their classwork books.
- Repeat the same process with more problems, such as:
 - $2 \times 7 = \underline{\quad}$
 - $4 \times 9 = \underline{\quad}$
- Repeat this activity with as many examples as possible. Encourage the learners to solve the problems as quickly as possible.
- Let the learners record all the number sentences with answers in their classwork books.
- Correction should be done on the board.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: Give pairs of the learners a set of multiplication cards (for the 1 to 5 times tables). Make sure that the correct answers are on the backs of the cards! (The cards should have been prepared in Term 2, but make more if you need to this term.)

In this classwork session, the learners will first do an activity in which they order the cards. After that they will play a multiplication card game using the cards, in pairs. The intention of these activities is to help the learners memorise the multiplication tables.

Rules of the game

- 1 One learner picks up a card (from the 1 to 5 multiplication cards) 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 if necessary.

- 1 Arrange the multiplication cards in order for the following times tables:
 - a $\times 1$
 - b $\times 2$
 - c $\times 3$
 - d $\times 4$
 - e $\times 5$
- 2 Play the 1 to 5 multiplication card game. Your teacher will explain the rules.

4 HOMEWORK ACTIVITY (5 MINUTES)

Complete the table:

	Multiple	Answer
1	2×3	(6)
2	4×4	(16)
3	5×2	(10)
4	4×5	(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 learned to the multiplication tables up to the 5 times table.

Lesson 2: 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: 1.2 Count forwards and backwards; 1.14 Repeated addition leading to multiplication.

Lesson Objective: Revise multiplication tables up to 10×10 .

Lesson Vocabulary: Multiples, number patterns, counting, extend, difference, increasing, forwards, backwards, calculate, multiply, times.

Resources: Multiplication table (see *Printable Resources*), enlarged multiplication table (teacher), multiplication cards (see *Printable Resources*).

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	5×2	10	6	2×3	6
2	3×5	15	7	4×2	8
3	4×3	12	8	5×5	25
4	6×4	24	9	9×4	36
5	8×2	16	10	3×2	6

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

In today's lesson the learners will continue to revise what they have learned about multiplication. An important aspect of this lesson is an emphasis on the commutative law of multiplication. The learners do not need to learn the name of the law but they need to learn that multiplication is commutative (the factors in a multiplication sentence are reversible, e.g. $5 \times 4 = 4 \times 5$). Ensure that the learners are given opportunities to see that (for example) 5×4 being equal to 4×5 .

Today we are learning multiply up to 10×10 .

Activity 1: Learners work in pairs

- Give each learner an array diagram.
- Make pairs and let one learner show 3×6 using their array diagram.

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

- Ask: **How many groups of dots are there?** (3 groups of 6 dots.)
- Let the other learner (in the pair) show 6×3 using their array diagram.

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

- Ask: **How many groups of dots are there?** (6 groups of 3 dots.)
- Ask: **What do you notice about the total number of dots in the two array diagrams?** (They both have 18 dots).
- Ask: **Why do 3×6 and 6×3 have the same number of dots?** (If we rotate the array diagram, it becomes the same arrangement.)
- Ask: **What can we say about the number sentence from this activity?** (When we calculate 3×6 and 6×3 , the answers are the same).
- Ask the learners to use array diagrams for the following problems to find if they have the same answer:
 - 5×7 and 7×5
 - 3×8 and 8×3
- Let the learners record all the number sentences with answers in their classwork books. Corrections should be done on the board. (e.g. $5 \times 7 = 7 \times 5 = 35$)

Activity 2: Learners work in pairs

- Make sure that each pair of learners has an array diagram.
 - Write the following number sentence on the board: $8 \times 6 = \underline{\quad}$
- Ask the learners to solve the problem in their pairs.
- Remind the learners that they can use their array diagrams to help them solve the problem. Encourage the learners to discuss their solution methods with each other.
- Select a learner to come up to the board and explain to the class how they solved the problem.
- Ask: **Did anyone find the answer to the problem without having to use the array diagram?** (The learners need to get to a point where they are able to solve problems mentally without the use of an array diagram).
- Let the learners record the number sentence and answer in their classwork books.
- Repeat the same process with more problems, such as:
 - $6 \times 9 = \underline{\quad}$
 - $8 \times 7 = \underline{\quad}$

- Repeat this activity with as many examples as possible. Encourage the learners to solve the problems as quickly as possible.
- Let the learners record all the number sentences with answers in their classwork books.
- Corrections should be done on the board.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: Give each learner, each pair, or each group of learners a set of multiplication cards of the 1 to 9 times table with the answers written at the back (these should have been prepared for previous lesson/term, prepare more if necessary). Activity 2 is important as it consolidates teaching on the commutative law. The intention of these activities is to help the learners begin to memorise the multiplication tables.

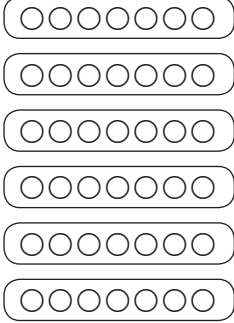
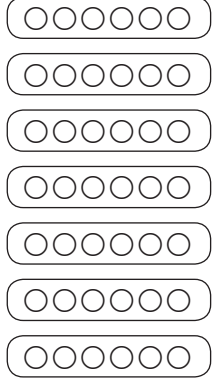
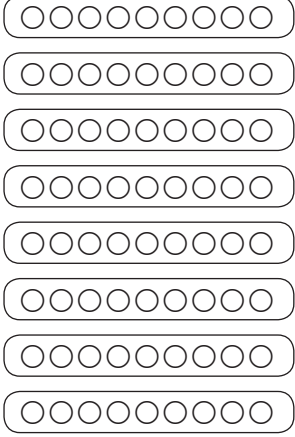
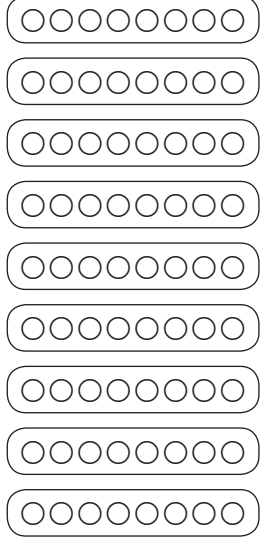
Rules of the game

- 1 Learners work in pairs.
 - a Learners shuffle the cards.
 - b One learner holds up a number sentence.
 - c The second learner must read the number sentence and give the answer.
 - d Learners check the answers by looking at the back of the card.
 - e The second learner then holds up a number sentence card for the first learner.
 - f Keep going until all the cards have been read.
- 2 Learners work alone.
 - a Learners shuffle the cards.
 - b Learners lay out the cards with the answers facing up.
 - c Learners give a number sentence for which the answer is shown.
 - d Learners check the answers by looking at the back of the card. (Note that they might find the factors written in reverse to what they have said because of the commutative law.)

Play the 1 to 9 multiplication card game. Your teacher will explain the rules.

4 HOMEWORK ACTIVITY (5 MINUTES)

Draw an array to show the multiple and write the answer below the array:

	Multiple	Array		Multiple	Array
a	6×7	 42	b	7×6	 42
c	8×9	 72	d	9×8	 72

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 learned to multiply up to 10×10 .

Lesson 3: Grouping and sharing

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.9 Grouping and sharing leading to division; 1.10 Sharing leading to fractions.

Lesson Objective: Recognise the difference between grouping and sharing.

Lesson Vocabulary: Group, grouping, share, sharing.

Resources: Bottle tops, multiplication cards (see *Printable Resources*).

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	5×6	30	6	2×7	14
2	3×6	18	7	4×6	24
3	4×7	28	8	5×7	35
4	6×6	36	9	9×7	63
5	8×7	56	10	7×6	42

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson the learners will investigate the difference between grouping and sharing. It is important for the learners to understand the difference so that they have a better conceptual understanding of division. The learners will be provided with problems involving sharing and grouping and they will be encouraged to discuss and share their ideas.

In grouping, you have to make groups of objects first. You can find answers to questions of this form through repeated subtraction. In sharing, you can't make groups of objects because you don't know how many objects should be in one group. Instead, when you share, you have to distribute the objects one by one.

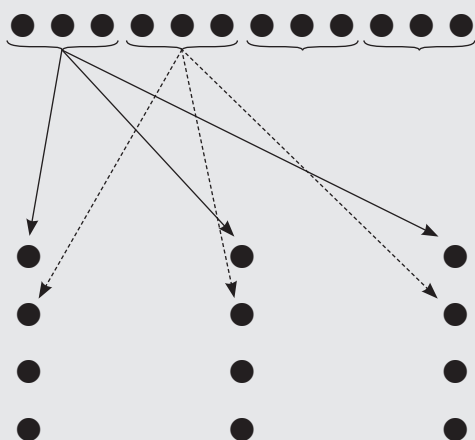
Today we are learning to recognise the difference between grouping and sharing.

Activity 1: Learners work in groups

- Make sure that each group has 12 bottle tops in front of them.
- Ask: **Can you arrange your bottle tops in groups of 3 on your desk?**
- Allow the learners time to arrange the bottle tops.
- Ask: **What can you tell me about your bottle tops?** (There are 3 bottle tops in a group; there are 4 groups of bottles tops.)
- Draw circles on the board to represent what the learners are describing.



- Ask the learners to put all 12 of their bottle tops in one pile in the middle of their desks again.
- Ask: **Could you share your bottle tops between 3 learners? Pretend to do it on your desk.**
- Allow the learners time to share out the bottle tops (e.g. Give one bottle top to each of the 3 the learners. We still have more bottle tops, so we give another one to each learner and continue doing the same until all of the bottle tops are finished).
- Ask: **What can you tell me about your bottle tops?** (We shared out the bottle tops between 3 people; we said ‘One for you, one for you, and one for you’ until all the bottle tops were finished; each person got 4 bottle tops.)
- Draw circles on the board to represent what the learners are describing.



- Ask: **What did you notice about the two different arrangements drawn on the board?** (One has 4 groups of 3 and the other has 3 groups of 4).
- For the first task (arrange your bottle tops in groups of 3) the 3 tells us how many bottle tops had to be in each group. But we don't know how many groups there are. **We call this grouping.**
- For the second task (share your bottle tops between 3 learners) the 3 tells us how many groups (learners) we must have. But we don't know how many bottle tops in each group (learners). **We call this sharing.**

Activity 2: Learners work in pairs

- Make sure that each pair of learners has 6 bottle tops in front of them.
- Write the following story on the board:
There are 6 eggs.
The teacher shares them between 3 learners equally.
 How many eggs will each learner get?
- Read the problem.
- Let the learners read the problem until they read it fluently.
- Underline the numbers (6 and 3).

- Ask: **What is the question?** (How many eggs will each learner get?)
- Underline the question with a wavy line.
- When the learners understand the story, let them read the word problem until they read it fluently.
- Give the learners time to find the number of eggs using bottle tops.
- Ask: **What did you do to solve the problem?** (We shared the bottle tops one by one between the 3 learners)
- *Help the learners to recognise that in this problem they know the number of groups they need (3 learners), and that they are trying to find out how many eggs (represented as bottle tops) will be in each group. This means that they are **sharing**.*
- Ask: **What can you tell me about your bottle tops?** (There are 2 bottle tops in a group; there are 3 groups of 2 bottles tops).
- Draw circles on the board to represent what the learners are describing.



- Confirm that the answer is 'Each of the 3 learners will get 2 eggs.'
- Write the following story next to the previous one on the board:
There are 6 eggs.
We give 3 eggs each to some learners.
How many learners can each get 3 eggs?
- Read the problem.
- Let the learners come to the board and underline the numbers and the question.
- Let the learners read the problem until they read it fluently.
- Underline the numbers (6 and 3).
- Ask: **What do you see the difference between 2 problems?** (3 learners and 3 eggs, How many learners and how many eggs)
- Give the learners time to find the number of learners (groups) using bottle tops
- Ask: **What did you do to solve the problem?** (We grouped the bottle tops into groups of 3)
- *Help the learners to recognise that in this problem they know the number of eggs (represented as bottle tops) in each group (3 bottle tops), and they are trying to find out how many groups they will have. This means that they are **grouping**.*
- Ask: **What can you tell me about your bottle tops?** (There are 3 bottle tops in a group; there are 2 groups of 3 bottle tops).



- Confirm that the answer is '2 learners can get 3 eggs each.'
- Ask: **What did you notice about the two different arrangements drawn on the board?** (One has 3 groups of 2 and the other has 2 groups of 3).
- For the first problem, the 3 tells us *how many groups (people) we must have*.
- For the second problem, the 3 tells us *how many bottle tops (eggs) had be in each group*.
- Repeat the steps above using different number combinations, with a total number range up to 20 and without remainder if there is time.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: Give each learner, each pair or each group of learners a set of multiplication cards of the 1 to 9 times table with the answers written at the back (these should have been prepared for previous lesson). Activity 2 is important as it consolidates teaching on the commutative law. The intention of these activities is to help the learners begin to memorise the multiplication tables.

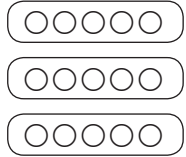
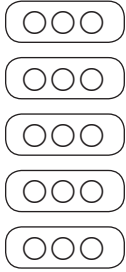
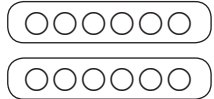
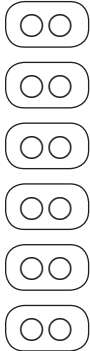
Rules of the game

- 1** Learners work alone.
 - a** Learners shuffle the cards.
 - b** Learners take a number sentence card.
 - c** Learners need to say the answer to the number sentence shown on each card to themselves.
 - d** Learners check the answers by looking at the back of the card.
- 2** Learners work in pairs.
 - a** Learners shuffle the cards.
 - b** One learner holds up a number sentence for the second learner to read.
 - c** The second learner must read the number sentence and give the answer.
 - d** Learners check the answers by looking at the back of the card.
 - e** The second learner then holds up a number sentence card for the first learner.
 - f** Keep going until all the cards have been read.

Play the multiplication card games. Your teacher will explain the rules.

4 HOMEWORK ACTIVITY (5 MINUTES)

Calculate the multiple. Draw an array to show it.

	Multiple	Array		Multiple	Array
a	$3 \times 5 = \underline{(15)}$		b	$5 \times 3 = \underline{(15)}$	
c	$2 \times 6 = \underline{(12)}$		d	$6 \times 2 = \underline{(12)}$	

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 learned to recognise the difference between grouping and sharing.

Lesson 4: Division

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.15 Division.

Lesson Objective: Introduce the concept of division and how to write division number sentences.

Lesson Vocabulary: Sharing, divide, groups.

Resources: Bottle tops.

Date: _____ Week _____ Day _____

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	5×8	40	6	2×9	18
2	3×9	27	7	7×8	56
3	4×8	32	8	5×9	45
4	6×8	48	9	9×8	72
5	8×9	72	10	7×9	63


2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson, the learners will be introduced to division through the use of word problems. The learners will write number sentences using the division sign, and solve problems using bottle tops. In this lesson, focus only on sharing so as not to confuse the learners initially. Make sure that the learners use number sentences for each problem that they solve.

Today we are learning about the concept of division and how to write number sentences for sharing problems using the division sign.

Activity 1: Learners work in pairs

- Make sure that each pair of learners has some bottle tops in front of them.
- Write the following story on the board:
There are 12 oranges.
Share them between 3 learners equally.
 How many oranges will each learner get?
- Read the problem.
- Underline the numbers (12 and 3).
- Ask: **What is the question?** (How many oranges will each learner get?).
- Underline the question with a wavy line.

- When the learners understand the story, let them read the word problem until they read it fluently.
- Ask: **What do you think you need to do to solve this problem?** (We need to share 12 oranges between 3 learners).
- Write the number sentence for this problem on the board.
 $12 \div 3 =$
 Explain: **this number sentence is division. 12 is the total number of oranges; 3 is the number of learners; we are trying to find out how many oranges each learner will get.**
- Read it by saying: **Twelve divided by three.**
- **Let the learners write the division sign several times in the air.**
- **Let the learners read and write the number sentence in the air several times.**
- Ask the learners to write the number sentence in their classwork books.
- Give the learners time to find the number of oranges each of the 3 learners can get using bottle tops.
- Ask: **What did you do to solve the problem?** (We shared the bottle tops one by one into 3 groups.)
- *Help the learners to recognise that in this problem they know the number of groups they need (3), and they are trying to find out how many oranges (represented as bottle tops) will be in each group. This means that they are **sharing**.*
- Ask: **What can you tell me about your bottle tops?** (There are 4 bottle tops in a group; there are 3 groups of 4 bottles tops).
- Draw circles on the board to represent what the learners are describing.

- Call a learner to the board to complete the number sentence and write the answer: $12 \div 3 = 4$, 4 oranges
- Ask the learners to complete the number sentence (and the answer with the units) in their classwork books.

Activity 2: Learners work in pairs

- Make sure that each pair of learners has some bottle tops in front of them.
- Write the following story on the board:
There are 15 oranges.
Share them between 5 learners equally.
 How many oranges will each learner get?
- Read the problem.
- Underline the numbers (15 and 5).
- Ask: **What is the question?** (How many oranges will each learner get?).
- Underline the question with a wavy line.
- When the learners understand the story, let them read the word problem until they read it fluently.

- Ask: **What do you think you need to do to solve this problem?** (We need to share 15 oranges between 5 the learners).
- Write the number sentence for this problem on the board.
 $15 \div 5 =$
- Explain: **We are solving division. 15 is the total number of oranges; 5 is the number of the learners; we are trying to find out how many oranges each learner will get.**
- Read it by saying: **Fifteen divided by five.**
- **Let the learners read and write the number sentence in the air several times.**
- Ask the learners to write the number sentence in their classwork books.
- Give the learners time to find the number of oranges each of 5 the learners can get using bottle tops.
- Ask: **What did you do to solve the problem?** (We shared the bottle tops one by one into 5 groups)
- *Help the learners to recognise that in this problem they know the number of groups they need (5), and they are trying to find out how many oranges (represented as bottle tops) will be in each group. This means that they are **sharing**.*
- Ask: **What can you tell me about your bottle tops?** (There are 3 bottle tops in a group; there are 5 groups of 3 bottles tops).
- Draw circles on the board to represent what the learners are describing.



- Call a learner to the board to complete the number sentence and write the answer: $15 \div 5 = 3$, 3 oranges
- Ask the learners to complete the number sentence in their classwork books.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: For this classwork activity it is important to encourage verbalisation and discussion. The learners need to be able to explain what they understand when they read word problems, and they need to practice writing number sentences using the division sign. Use Activities 1 and 2 from this lesson to guide your discussions with the learners. Make sure that the learners develop the number sentences themselves.

Solve the problem:

There are 14 mangoes. Give all the mangoes to 2 children equally. How many mangoes does each child get?	
Draw a diagram.	()
Write the number sentence.	$(14 \div 2 = 7)$
Write the answer.	(7 mangoes each)

4 HOMEWORK ACTIVITY (5 MINUTES)

Solve the problem:

<p>There are 8 chocolates. Share the chocolates between 4 children. How many chocolates will each child get?</p>	
<p>Draw a diagram.</p>	
<p>Write the number sentence.</p>	$(8 \div 4 = 2)$
<p>Write the answer.</p>	<p>(2 chocolates each)</p>

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 learned about the concept of division and how to write number sentences using the division sign.

Lesson 5: Consolidation

Teacher's notes

This lesson allows for consolidation of the previous days' lesson content.

CAPS topics: 1.9 Grouping and sharing leading to division; 1.10 Sharing leading to fractions; 1.15 Division.

Lesson Objective: Recognise the difference between grouping and sharing as two different ways to divide.

Lesson Vocabulary: Group, grouping, share, sharing, divide.

Resources: Bottle tops.

Date: _____ Week _____ Day _____

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

This week the learners have revised multiplication, and the commutative property. The learners practised representing multiplication problems and the commutative property using bottle tops and array diagrams. The learners were also introduced to division after having considered the difference between sharing and grouping.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

It is extremely important that the learners begin to understand the difference between grouping and sharing. The learners need to recognise that in *grouping we know how many items are in a group*, so we are looking for how many groups there are, whereas in sharing we know how many groups there are, so *sharing means we are looking for how many items there are in a group*. This is essential to understand in order for the learners to be able to solve division problems correctly.

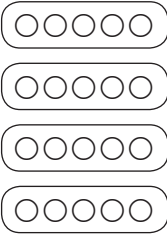
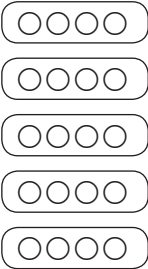
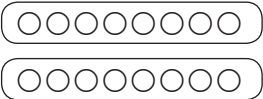
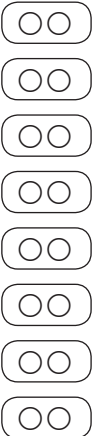
3 CLASSWORK/HOMEWORK – COMPLETE THIS WEEK'S CLASSWORK AS NEEDED

Today we are going over what we learned this week. We are learning more about the difference between grouping and sharing as part of division problems.



4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

NOTE: For this classwork activity it is important to encourage verbalisation and discussion. The learners need to be able to explain what they understand when they read word problems, and they need to practice writing number sentences using the division sign. Learners should use bottle tops to solve the problems if they would like to.

1 Draw an array to show the multiple and write the answer below the array:

	Multiple	Array		Multiple	Array
a	4×5	 20	b	5×4	 20
c	2×8	 16	d	8×2	 16

2 Solve the problems:

a	There are 15 apples. Put all the apples into 3 bags equally. How many apples will go in each bag?	
	Draw a diagram.	()
	Write the number sentence.	$(15 \div 3 = 5)$
	Write the answer.	(5 apples each)
b	There are 18 sweets. Share the sweets between 2 children equally. How many sweets will each child get?	
	Draw a diagram.	()
	Write the number sentence.	$(18 \div 2 = 9)$
	Write the answer.	(9 sweets each)

c	There are 20 pieces of litter. 5 children each pick up equal amounts of litter. How many pieces of litter will each child pick up?	
	Draw a diagram.	((●●●●) (●●●●) (●●●●) (●●●●) (●●●●))
	Write the number sentence.	$(20 \div 5 = 4)$
	Write the answer.	(4 pieces of litter each)

5 REFLECTION AND SUMMARY OF LESSON

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

Today we have learned to recognise the difference between grouping and sharing as part of division problems.

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: 1.9 Grouping and sharing leading to division; 1.10 Sharing leading to fractions; 1.15 Division.

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:

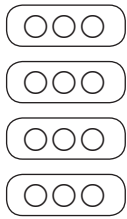
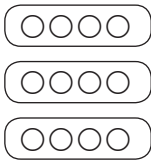
- use this opportunity to reflect on different methods used by learners (allow some learners to write their solutions on the board).
- speak about misconceptions that may have arisen in learners' responses.

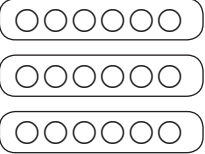
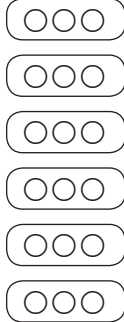
3 ASSESSMENT

WRITTEN ASSESSMENT (16)

NOTE: The learners may use bottle tops when they do this assessment if they need to.

- 1 Draw an array to show the multiple and write the answer below the array: (4)

	Multiple	Array		Multiple	Array
a	4×3	 12	b	3×4	 12

	Multiple	Array		Multiple	Array
c	3×6	 18	d	6×3	 18

2 Solve the problems: $(3 \times 4 = 12)$

a	There are 8 flowers. Share the flowers equally between 4 children. How many flowers will each child get?	
	Write the number sentence.	$(8 \div 4 = 2)$
	Write the answer.	(2 flowers each)
b	There are 16 oranges. Share the oranges between 4 children equally. How many oranges will each child get?	
	Write the number sentence.	$(16 \div 4 = 4)$
	Write the answer.	(4 oranges each)
c	There are 12 books. Share the books between 4 learners. How many books will each learner get?	
	Write the number sentence.	$(12 \div 4 = 3)$
	Write the answer.	(3 books each)

Lesson 7: Division (sharing)

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.15 Division; 4.2 Length.

Lesson Objective: Reinforce the concept of sharing division and how to use known multiplication facts to do division.

Lesson Vocabulary: Sharing, share, divide, multiplication, multiply.

Resources: Bottle tops.

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	2×3	6	6	3×6	18
2	4×3	12	7	7×3	21
3	5×6	30	8	6×6	36
4	9×6	54	9	4×6	24
5	5×3	15	10	9×3	27


2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson, the learners will continue to investigate the concept of division while doing word problems. The learners will focus on the idea of sharing in this lesson, and will consider how to use their knowledge of multiplication to find the answers to problems.

Today we are learning about the concept of sharing and how to use multiplication to find the answers to sharing problems.

Activity 1: Learners work in pairs

- Make sure that each pair of learners has some bottle tops in front of them.
- Write the following story on the board:
There are 24 chocolate bars.
Share them between 3 learners equally.
 How many chocolate bars will each learner get?
- Read the problem.
- Underline the numbers (24 and 3).
- Ask: **What is the question?** (How many chocolate bars will each learner get?)
- Underline the question with a wavy line.

- When the learners understand the story, let them read the word problem until they read it fluently.
 - Ask: **What do you think you need to do to solve this problem?** (We need to share 24 chocolate bars between 3 learners.)
 - Ask the learners to write the number sentence for this problem in their classwork books ($24 \div 3 =$).
 - Write the number sentence on the board for correction.
 - Ask a learner to explain what the number sentence is saying (24 is the total number of chocolate bars; 3 is the number of learners; we are trying to find out how many chocolate bars each learner will get).
 - Give the learners time to find the number of chocolate bars that each learner can get using bottle tops.
 - Ask: **What did you do to solve the problem?** (We shared the bottle tops one by one into 3 groups.)
 - *Help the learners to recognise that in this problem they know the number of groups they must make (3), and they are trying to find out how many oranges (represented by bottle tops) will be in each group. This means that they are **sharing**.*
 - Ask: **What can you tell me about your bottle tops?** (There are 8 bottle tops in a group; there are 3 groups of 8 bottles tops.)
 - Draw circles on the board to represent what the learners are describing.
- 
- Call a learner to the board to complete the number sentence and write the answer: $24 \div 3 = 8$, 8 chocolate bars.
 - Ask the learners to complete the number sentence with the answer (and the answer with the units) in their classwork books.

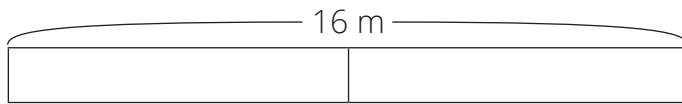
Activity 2: Learners work in pairs

- Ask the learners to look at the number sentence $24 \div 3 =$
- Ask: **Can anyone solve this problem without needing to use bottle tops?**
- Discuss possible ways of solving the problem without needing to use bottle tops.
- Discuss with the learners what the number sentence means:
24 is the total number of chocolate bars; 3 is the number of learners; we are trying to find out how many chocolate bars each learner will get.
- Say: We can rewrite the division as
 $24 \text{ chocolate bars} \div 3 \text{ learners} = \boxed{\text{number of chocolates per learner}}$
- Say: **We can also think about it as a multiplication problem referring to the drawing of Activity 1.**
 $3 \text{ learners} \times \boxed{\text{number of chocolates per learner}} = 24 \text{ chocolate bars}$
- Say: **So we need to find** $3 \times \square = 24$.
- Write the number sentence $3 \times \square = 24$ on the board.
- Give the learners time to discuss what they think the missing number could be.

- Encourage the learners to think of their 3 times table to find the missing number ($\boxed{1} \times 3 = 3$; $\boxed{2} \times 3 = 6$; $\boxed{3} \times 3 = 9 \dots$; the answer is the same when you swap the numbers in multiplication).
- Ask a learner to come up to the board to complete the number sentence $3 \times \square = 24$ ($3 \times 8 = 24$).
- Ask some learners to explain to the class how they solved the problem.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

In this classwork activity, draw the following diagram on the board:



- Make sure that each pair of learners has some bottle tops.
- Read the problem from the LAB:
I have a 16 m length of rope.
A learner divides it into 2 pieces.
How long is one of the pieces of rope?
- Read the problem.
- Underline the numbers (16 and 2).
- Ask: **What is the question?** (How long is one of the pieces of rope?)
- Underline the question with a wavy line.
- When the learners understand the story, let them read the word problem until they read it fluently.
- Ask: **What do you think you need to do to solve this problem?** (We need to divide.)
- Write the number sentence for this problem ($16 \div 2 =$).
- Ask a learner to explain what the number sentence is saying (16 is the total number of metres (length); 2 is the number of pieces; we are trying to find out how many metres in each piece).
- Encourage the learners to recognise that this means they are sharing.
- Ask the learners to write the number sentence in their classwork books.
- Give the learners time to solve the problem.
- Ask: **What did you do to solve the problem?**
- Some learners may say:
 - We shared 16 bottle tops one by one into 2 groups. There were 8 bottle tops in each group so one piece is 8 m.
 - We turned $16 \div 2 =$ into $2 \times \square = 16$. We know that $2 \times 8 = 16$ so one piece is 8 m.
- If the learners don't mention using multiplication to find the missing number then encourage them to think about it by using the steps and questions in Activity 2 as a guide.
- Draw circles on the board to represent what the learners are describing.



- Call a learner to the board to complete the number sentence and write the answer: $16 \div 2 = 8$, 8 m.
- Ask the learners to complete the number sentence (and the answer with the units) in their classwork books.

Solve the problem:

I have a 16 m length of rope. A learner divides it into 2 pieces. How long is one of the pieces of rope?	
Write the number sentence.	
Turn it into multiplication.	
Write the answer.	

4 HOMEWORK ACTIVITY (5 MINUTES)

Solve the problem:

There are 9 sweets. Share the sweets equally between 3 children. How many sweets will each child get?	
Draw a diagram.	((●●●) (●●●) (●●●))
Write the number sentence.	$(9 \div 3 = 3)$
Write the answer.	(3 sweets each)

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 learned about the concept of sharing and how to use multiplication to find the answers to sharing problems.

Lesson 8: Division (grouping)

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.15 Division; 4.2 Length.

Lesson Objective: Reinforce the concept of grouping division and how to use known multiplication facts to do division.

Lesson Vocabulary: Grouping, groups, divide.

Resources: Bottle tops.

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	6×4	24	6	7×8	56
2	2×4	8	7	4×8	32
3	9×4	36	8	9×8	72
4	5×4	20	9	3×8	24
5	4×4	16	10	5×8	40


2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson, the learners will continue to investigate the concept of division while doing word problems. The learners will focus on the idea of grouping in this lesson, and will revise how to use their knowledge of multiplication to find the answers to sharing problems. The learners may use repeated subtraction to solve problems, but they should realise that using multiplication is quicker.

Today, we are learning about the concept of grouping and how to use multiplication to find the answers to grouping problems.

Activity 1: Learners work in pairs

- Make sure that each pair of learners has some bottle tops in front of them.
- Write the following story on the board:
There are 15 sweets.
Give 3 sweets to each learner.
 How many learners can get sweets?
- Read the problem.
- Underline the numbers (15 and 3).
- Ask: **What is the question?** (How many learners can get sweets?)

- Underline the question with a wavy line.
- When the learners understand the story, let them read the word problem until they read it fluently.
- Ask: **What do you think you need to do to solve this problem?** (We need to divide the 15 sweets into groups of 3.)
- Ask: **What operation do we have to do to solve the problem?** (Division.)
- Ask the learners to write the number sentence for this problem in their classwork books ($15 \div 3 =$).
- Write the number sentence on the board for correction.
- Ask a learner to explain what the number sentence is saying (15 is the total number of sweets; 3 is the number of sweets each learner will get; we are trying to find out how many the learners will get 3 sweets).
- Give the learners time to find the number of the learners that will each get 3 sweets using bottle tops.
- Ask: **What did you do to solve the problem?**
- Some learners may say:
 - ‘We grouped the bottle tops into groups of 3. There were 3 bottle tops in each group, so we ended up with 5 groups.’
 - ‘We had 15 bottle tops, and then we took away 3 bottle tops. That left us with 12 bottle tops. We kept taking away 3 bottle tops until there were no more bottle tops. We saw that we took away 5 groups of 3 bottle tops.’
 - ‘We turned $15 \div 3 =$ into $\square \times 3 = 15$. We know that 5×3 is 15 so there must be 5 learners.’
- If the learners don’t mention using multiplication to find the missing number then encourage them to think about it, reinforcing that this method is quicker than the other methods.
- *Help the learners to recognise that in this problem they know the number of sweets (represented as bottle tops) in each group (3 bottle tops), and they are trying to find out how many groups they need. This means that they are **grouping**.*
- Ask: **What can you tell me about your bottle tops?** (There are 5 groups of 3 bottles tops.)
- Draw circles on the board to represent what the learners are describing.
 
- Call a learner to the board to complete the number sentence and write the answer: $15 \div 3 = 5$, 5 learners.
- Ask the learners to complete the number sentence with the answer (and the answer with the units) in their classwork books.

Activity 2: Learners work in pairs


- Make sure that each pair of learners has some bottle tops in front of them.
- Write the following story on the board:

There are 12 pencils.

Teacher gives 4 pencils to each learner.

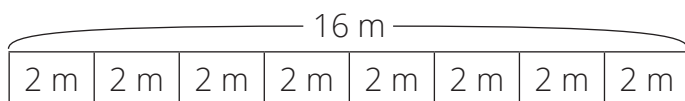
How many learners can get pencils?

- Read the problem.
- Underline the numbers (12 and 4).
- Ask: **What is the question?** (How many learners can get pencils?)
- Underline the question with a wavy line.
- When the learners understand the story, let them read the word problem until they read it fluently.
- Ask: **What do you think you need to do to solve this problem?** (We need to divide the 12 pencils into groups of 4.)
- Ask: **What operation do we have to do to solve the problem?** (Division.)
- Ask the learners to write the number sentence for this problem in their classwork books ($12 \div 4 =$).
- Write the number sentence on the board for correction.
- Ask a learner to explain what the number sentence is saying (12 is the total number of pencils; 4 is the number of pencils each learner will get; we are trying to find out how many learners will get 4 pencils).
- Give the learners time to find the number of learners that will each get 3 sweets using bottle tops.
- Ask: **What did you do to solve the problem?**
- Some learners may say:
 - ‘We grouped the bottle tops into groups of 4. There were 4 bottle tops in each group so we ended up with 3 groups.’
 - ‘We had 12 bottle tops, and then we took away 4 bottle tops. That left us with 8 bottle tops. We took away another 4 bottle tops and then we saw that we had 3 groups of 4 bottle tops.’
 - ‘We turned $12 \div 4 =$ into $\square \times 4 = 12$. We know that 3×4 is 12 so there must be 3 learners.’
- *Help the learners to recognise that in this problem they know the number of pencils (represented as bottle tops) in each group (4 bottle tops), and they are trying to find out how many groups they need. This means that they are **grouping**.*
- Ask: **What can you tell me about your bottle tops?** (There are 3 groups of 4 bottles tops.)
- Draw circles on the board to represent what the learners are describing.


- Ask the learners to complete the number sentence with the answer (and the answer with the units) in their classwork books.
- Call a learner to the board to complete the number sentence and write the answer: $12 \div 4 = 3$, 3 learners.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

In this classwork activity, draw the following diagram on the board:



- Make sure that each pair of learners has some bottle tops.
- Write the following story on the board:
I have a 16 m length of rope.
Risuna cuts the rope into 2 m lengths.
How many pieces of rope will she get?
- Read the problem.
- Underline the numbers (16 and 2).
- Ask: **What is the question?** (How many pieces of rope will she get?)
- Underline the question with a wavy line.
- When the learners understand the story, let them read the word problem until they read it fluently.
- Ask: **What do you think you need to do to solve this problem?** (We need to divide.)
- Let the learners write a number sentence in their classwork books ($16 \div 2 =$).
- Ask: **In this problem, are you grouping or are you sharing?** (Allow time for the learners to discuss.)
- Encourage the learners to use the number sentence to help them decide if they are sharing or grouping.
 - Ask a learner to explain what the number sentence is saying (16 is the total number of metres (length); 2 is the number of metres each piece is cut into; we are trying to find out how many 2 m pieces the learner will have).
 - Encourage the learners to recognise that this means they are grouping.
- Give the learners time to solve the problem.
- Ask: **What did you do to solve the problem?**
- Some learners may say:
 - ‘We used our bottle tops and made groups of 2. We ended up with 8 groups of 2 bottle tops.’
 - ‘We turned $16 \div 2 =$ into $\square \times 2 = 16$. We know that 8×2 is 16 so the answer must be 8 pieces of rope.’
- Draw circles on the board to represent what the learners are describing.
- Ask: **How did you know that this wasn't a sharing problem?** (Because we didn't know how many pieces of rope the learner had (we don't know how many groups of 2 m rope there are), we only knew how many metres of rope were in each piece.)
- Ask the learners to complete the number sentence with the answer (and the answer with the units) in their classwork books.

- Complete the number sentence and write the answer for correction: $16 \div 2 = 8$, 8 pieces of rope.

Solve the problem:

I have a 16 m length of rope. Risuna cuts the rope into 2 m lengths. How many pieces of rope will she get?	
Write the number sentence.	
Turn it into multiplication.	
Write the answer.	

4 HOMEWORK ACTIVITY (5 MINUTES)

Solve the problem:

There are 18 chocolates. You give 3 chocolates to each of your friends. How many friends do you have?	
Write the number sentence.	$(18 \div 3 = 6)$
Turn it into multiplication.	$(\square \times 3 = 18)$
Write the answer.	(6 friends)

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 learned about the concept of grouping and how to use multiplication to find the answers to grouping problems.

Lesson 9: Division (sharing and grouping)

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.15 Division.

Lesson Objective: Reinforce the concept of division (sharing and grouping) using known multiplication facts to do division.

Lesson Vocabulary: Sharing, share, divide, grouping, group, multiply, multiplication.

Resources: Bottle tops.

Date: _____ Week _____ Day _____

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	2×7	14	6	3×9	27
2	4×9	36	7	9×7	63
3	5×7	35	8	6×9	54
4	5×9	45	9	4×7	28
5	7×7	49	10	9×9	81

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson, the learners will continue to consolidate the concept of division while doing word problems. The learners will solve both sharing and grouping problems in this lesson, and will revise how to use their knowledge of multiplication to find the answers to division problems.

Today we are learning about sharing and grouping.

Activity 1: Learners work in pairs

- Write the following story on the board:
There are 12 cookies.
Share them between 4 learners equally.
How many cookies will each learner get?
- Read the problem.
- Underline the numbers (12 and 4).
- Ask: **What is the question?** (How many cookies will each learner get?)
- Underline the question with a wavy line.
- When the learners understand the story, let them read the word problem until they read it fluently.

- Ask: **What do you think you need to do to solve this problem?** (We need to divide.)
- Ask: **In this problem, are you grouping or are you sharing?** (Sharing because we know that there are 4 learners (groups), but we don't know how many cookies each learner gets.)
- Ask the learners to write the number sentence in their classwork books ($12 \div 4 =$).
- Give the learners time to solve the problem.
- Ask: **Which multiplication table can you use to find the answer?** (4 times table.)
- Ask a learner to come to the front to explain how they can use the 4 times table to find the answer; the answer is the same when you swap the numbers in multiplication. (We turned $12 \div 4 =$ into $4 \times \square = 12$. We know that 4×3 is 12 so each learner will get 3 cookies).
- Draw circles on the board to represent what the learners are describing.



- Ask the learners to complete the number sentence with the answer (and the answer with the units) in their classwork books.
- Call a learner to the board to complete the number sentence and write the answer: $12 \div 4 = 3$, 3 cookies.

Activity 2: Learners work in pairs

- Write the following story on the board:
There are 12 cookies.
Give 3 cookies to each learner.
How many learners can get cookies?
- Read the problem.
- Underline the numbers (12 and 3).
- Ask: **What is the question?** (How many learners can get cookies?)
- Underline the question with a wavy line.
- When the learners understand the story, let them read the word problem until they read it fluently.
- Ask: **What do you think you need to do to solve this problem?** (We need to divide the 12 cookies into groups of 3.)
- Ask: **In this problem, are you grouping or are you sharing?** (Grouping, because we know that each learner can get 3 cookies, but we don't know how many learners (groups) can get 3 cookies).
- Ask the learners to write the number sentence in their classwork books ($12 \div 3 =$).
- Give the learners time to solve the problem.
- Ask: **Which multiplication table can you use to find the answer?** (3 times table.)
- Ask a learner to come to the front to explain how they can use the 3 times table to find the answer. (We turned $12 \div 3 =$ into $\square \times 3 = 12$. We know that 4×3 is 12 so 4 learners will get cookies.)
- Draw circles on the board to represent what the learners are describing.



- Ask the learners to complete the number sentence with the answer (and the answer with the units) in their classwork books.
- Call a learner to the board to complete the number sentence and write the answer: $12 \div 3 = 4$, 4 the learners.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

Use multiplication facts to complete the table.

		$\square \times \underline{\quad} = \underline{\quad}$	$\square = \underline{\quad}$
a	$16 \div 2 = \square$	$(\square \times 2 = 16)$	(8)
b	$12 \div 4 = \square$	$(\square \times 4 = 12)$	(3)
c	$15 \div 3 = \square$	$(\square \times 3 = 15)$	(5)
d	$20 \div 5 = \square$	$(\square \times 5 = 20)$	(4)
e	$14 \div 7 = \square$	$(\square \times 7 = 14)$	(2)
f	$25 \div 5 = \square$	$(\square \times 5 = 25)$	(5)
g	$54 \div 9 = \square$	$(\square \times 9 = 54)$	(6)
h	$63 \div 7 = \square$	$(\square \times 7 = 63)$	(9)

4 HOMEWORK ACTIVITY (5 MINUTES)

Use multiplication facts to complete the table.

		$\square \times \underline{\quad} = \underline{\quad}$	$\square = \underline{\quad}$
a	$14 \div 7 = \square$	$(\square \times 7 = 14)$	(2)
b	$8 \div 4 = \square$	$(\square \times 4 = 8)$	(2)
c	$12 \div 2 = \square$	$(\square \times 2 = 12)$	(6)

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 learned to solve sharing and grouping problems.

Lesson 10: Consolidation

Teacher's notes

This lesson allows for consolidation of the previous days' lesson content.

CAPS topics: 1.15 Division

Lesson Objective: Reinforce the concept of division (Sharing and grouping).

Lesson Vocabulary: Sharing, share, divide, grouping, group, multiply, multiplication.

Resources: Bottle tops.

Date:

Week

Day

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

This week the learners have consolidated their understanding of sharing and grouping. The learners have solved both sharing and grouping problems, and have used multiplication to find the answer to sharing problems.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK


It is important that the learners are given the opportunity to verbalise their understanding of sharing and grouping as they solve problems. The learners need to recognise that in grouping we know how many items are in a group, so we are looking for how many groups there are, whereas in sharing we know how many groups there are, so we are looking for how many items are in a group. As the learners write their own number sentences, they should be able to identify what information each number in the number sentence is giving them, and be able to use this to determine how to solve the division problems correctly.

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 sharing and grouping.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

1 Solve the problems:

a	There are 14 apples. Share the apples between 2 children equally. How many apples will each child get?	
	Draw a diagram.	()
	Write the number sentence.	$(14 \div 2 = 7)$
	Write the answer.	(7 apples each)

b	There are 10 sweets. You give 2 sweets to each of your friends. How many friends did you give sweets to?	
	Draw a diagram.	((●●) (●●) (●●) (●●) (●●))
	Write the number sentence.	$(10 \div 2 = 5)$
	Write the answer.	(5 friends)
c	There are 9 books. The books are put into piles of 3. How many piles of books are there?	
	Draw a diagram.	((●●●) (●●●) (●●●))
	Write the number sentence.	$(9 \div 3 = 3)$
	Write the answer.	(3 piles of books)
d	There are 12 pencils. Share the pencils equally between 6 learners. How many pencils will each learner get?	
	Draw a diagram.	((●●) (●●) (●●) (●●) (●●) (●●))
	Write the number sentence.	$(12 \div 6 = 2)$
	Write the answer.	(2 pencils each)

2 Use multiplication facts to complete the table.

		$\square \times _ = _$	$\square = _$
a	$20 \div 4 = \square$	$(\square \times 4 = 20)$	(5)
b	$40 \div 5 = \square$	$(\square \times 5 = 40)$	(8)
c	$27 \div 9 = \square$	$(\square \times 9 = 27)$	(3)
d	$48 \div 6 = \square$	$(\square \times 6 = 48)$	(8)

5 REFLECTION AND SUMMARY OF LESSON

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

Today we have learned to solve sharing and grouping problems.

Week 3

Lesson 11: Assessment

Teacher's notes

This lesson should be used for assessment of the content covered in this unit to date.

CAPS topics: 1.15 Division.

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 (17)

1 Solve the problems:

(3 × 3 = 9)

a	There are 20 apples. Share the apples between 2 children equally. How many apples will each child get?	
	Draw a diagram.	(●●●●●●●●●● ●●●●●●●●●●)
	Write the number sentence.	(20 ÷ 2 = 10)
	Write the answer.	(10 apples each)

b	There are 15 sweets. You give 5 sweets to each learner. How many learners will get sweets?	
	Draw a diagram.	((●●●●●) (●●●●●) (●●●●●))
	Write the number sentence.	$(15 \div 5 = 3)$
	Write the answer.	(3 learners)
c	There are 20 books. 4 children each take an equal number of books. How many books will each child take?	
	Draw a diagram.	((●●●●●) (●●●●●) (●●●●●) (●●●●●))
	Write the number sentence.	$(20 \div 4 = 5)$
	Write the answer.	(5 books each)

2 Use multiplication facts to complete the table. (8)

		$\square \times _ = _$	$\square = _$
a	$81 \div 9 = \square$	$(\square \times 9 = 81)$	(9)
b	$35 \div 7 = \square$	$(\square \times 7 = 35)$	(5)
c	$32 \div 8 = \square$	$(\square \times 8 = 32)$	(4)
d	$42 \div 6 = \square$	$(\square \times 6 = 42)$	(7)

ORAL AND PRACTICAL

CAPS: Number operations and relationships		Mark: 7
Activity: Assess the learners' ability to solve multiplication and division problems.		
Mark	Criteria - Checklist: (1 mark for each criterion achieved)	
1	Knows multiplication tables up to 5×5 .	
1	Knows multiplication tables.	
1	Able to solve multiplication problems using rectangular arrays	
1	Able to explain the difference between grouping and sharing division	
1	Able to solve division problems involving grouping	
1	Able to solve division problems involving sharing	
1	Able to use multiples (up to 10×10) to calculate answers to division number sentences	

Lesson 12: Practicing division

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.15 Division.

Lesson Objective: Reinforce the concept of division (sharing and grouping).

Lesson Vocabulary: Sharing, share, divide, grouping, group, multiply, multiplication.

Resources: Bottle tops.

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	3×6	18	6	8×7	56
2	5×7	35	7	9×8	72
3	4×8	32	8	5×9	45
4	6×9	54	9	6×6	36
5	7×6	42	10	7×7	49

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson, the learners will continue to consolidate the concept of division through the solving of problems. The learners will solve both sharing and grouping problems in this lesson, and will revise how to use multiplication to find the answers to sharing problems.

Today, we are learning to divide using sharing and grouping.

Activity 1: Learners work in pairs

- Write the following problems on the board (they are also in the LAB):

1 $6 \div 3 = \square$ (2)

2 $8 \div 2 = \square$ (4)

3 $12 \div 6 = \square$ (2)

4 $21 \div 7 = \square$ (3)

5 $32 \div 8 = \square$ (4)

6 $40 \div 5 = \square$ (8)

7 $18 \div 2 = \square$ (9)


8 $12 \div 6 = \square$ (2)

9 $42 \div 7 = \square$ (6)

10 $32 \div 4 = \square$ (8)

- Ask: **How are you going to solve these problems?** (Allow the learners time to discuss. Encourage them to think about how to use multiplication tables to find the answers).
- Ask the learners to write the first problem in their classwork books.
- Allow the learners time to solve the problem, asking them to work as quickly as possible.
- Give the learners time to discuss their solution methods in their pairs.
- Ask: **In your pairs, who solved the problem the quickest? How did they solve the problem?**
- Encourage the learners to practice solving problems by using their multiplication tables.
- This means that $6 \div 3$ is the same as $\square \times 3 = 6$, which helps us work out quickly that $\square = 2$.
- Repeat the steps above for the problems numbered 2 to 10 above.

Activity 2: Whole class activity

- Write the following story on the board:
There are 12 apples.
Each learner gets 3 apples.
 How many learners can get apples?
- Read the problem.
- Underline the numbers (12 and 3).
- Ask: **What is the question?** (How many learners can get apples?)
- Underline the question with a wavy line.
- When the learners understand the story, let them read the word problem until they read it fluently.
- Ask: **What do you think you need to do to solve this problem?** (We need to divide the 12 apples into groups of 3.)
- Ask: **In this problem, are you grouping or are you sharing?** (Grouping because we know that each learner gets 3 apples, but we don't know how many learners (groups) there are.)
- Ask the learners to write the number sentence in their classwork books. ($12 \div 3 =$)
- Give the learners time to solve the problem.
- Ask: **Which multiplication table can you use to find the answer?** (3 times table.)
- Ask a learner to come to the front to explain how they can use the 3 times table to find the answer. (We turned $12 \div 3 =$ into $\square \times 3 = 12$. We know that 4×3 is 12 so 4 the learners will get apples.)
- Draw circles on the board to represent what the learners are describing.

- Ask the learners to complete the number sentence in their classwork books ($12 \div 3 = 4$, 4 learners).
- Call a learner to the board to complete the number sentence and write the answer.
- Next to the first problem, write the following story on the board:

There are 12 apples.

There are 3 learners.

How many apples will each learner get?

- Read the problem.
- Underline the numbers (12 and 3).
- Ask: **What is the question?** (How many apples will each learner get?)
- Underline the question with a wavy line.
- When the learners understand the story, let them read the word problem until they read it fluently.
- Ask: **What do you think you need to do to solve this problem?** (We need to divide.)
- Ask: **In this problem, are you grouping or are you sharing?** (Sharing because we know there are 3 learners (groups), but we don't know how many apples each learner gets).
- Ask the learners to write the number sentence in their classwork books.
- Give the learners time to solve the problem.
- Ask: **Which multiplication table can you use to find the answer?** (3 times table.)
- Ask a learner to come to the front to explain how they can use the 3 times table to find the answer. (We turned $12 \div 3 =$ into $3 \times \square = 12$. We know that 3×4 is 12 so each learner will get 4 apples.)
- Draw circles on the board to represent what the learners are describing.



- Ask the learners to complete the number sentence in their classwork books ($12 \div 3 = 4$, 4 apples.)
- Write the number sentence and the answer on the board for correction.
- Ask the learners to discuss in their groups whether they were sharing or grouping in problem **a** and problem **b**. (Encourage the learners to use the number sentence to help them decide if they are sharing or grouping).

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

Calculate:

- a** $63 \div 9 = \square$ (7)
- b** $36 \div 9 = \square$ (4)
- c** $56 \div 7 = \square$ (8)
- d** $81 \div 9 = \square$ (9)
- e** $64 \div 8 = \square$ (8)
- f** $9 \div 9 = \square$ (1)
- g** $6 \div 1 = \square$ (6)
- h** $6 \div 6 = \square$ (1)
- i** $4 \div 1 = \square$ (4)
- j** $1 \div 1 = \square$ (1)

4 HOMEWORK ACTIVITY (5 MINUTES)

Calculate:

a $15 \div 3 = \square$ (5)

b $24 \div 8 = \square$ (3)

c $27 \div 9 = \square$ (3)

d $35 \div 7 = \square$ (5)

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 learned to divide using sharing and grouping.

Lesson 13: Division of 0

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.15 Division.

Lesson Objective: Introduce division of zero.

Lesson Vocabulary: Sharing, share, divide, grouping, group, multiply, multiplication.

Resources: N/A.

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	$12 \div 2$	6	6	$3 \div 3$	1
2	$9 \div 3$	3	7	$36 \div 4$	9
3	$8 \div 4$	2	8	$15 \div 5$	3
4	$25 \div 5$	5	9	$18 \div 2$	9
5	$14 \div 2$	7	10	$20 \div 4$	5

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

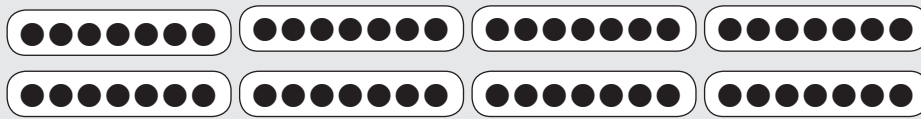
In this lesson, the learners will continue to consolidate the concept of division through the solving of problems. The learners will investigate what happens when they try to share a zero quantity. They will discover that division problems involving zero (as in $0 \div \square$) will equal 0.

Today we are learning to divide using zero.

Activity 1: Whole class activity

- Write the following story on the board:
There are 56 learners in a class.
The learners make netball teams with 7 players in each team.
 How many teams will they make?
- Read the problem.
- Underline the numbers (56 and 7).
- Ask: **What is the question?** (How many netball teams will the learners make?)
- Underline the question with a wavy line.
- When the learners understand the story, let them read the word problem until they read it fluently.

- Ask: **What do you think you need to do to solve this problem?** (We need to divide the 56 learners into groups of 7).
- Ask: **In this problem, are you grouping or are you sharing?** (Grouping because we know there are 7 learners in each team, but we don't know how many teams or groups there are.)
- Ask the learners to write the number sentence in their classwork books ($56 \div 7 =$).
- Give the learners time to solve the problem.
- Ask: **Which multiplication table can you use to find the answer?** (7 times table.)
- Ask a learner to come to the front to explain how they can use the 7 times table to find the answer. (We turned $56 \div 7 =$ into $\square \times 7 = 56$. We know that 8×7 is 56 so there will be 8 teams of 7 learners in each team.)
- Draw circles on the board to represent what the learners are describing.



- Ask the learners to complete the number sentence with the answer (and the answer with the units) in their classwork books. ($56 \div 7 = 8$, 8 teams).
Call a learner to the board to complete the number sentence and write the answer.

Activity 2: Whole class activity

- Write the following on the board:
There are 4 learners.
The learners share coloured pieces of paper evenly between them.
- a** If there are 24 pieces of red paper, how many pieces will each learner get?
- b** If there are 0 pieces of blue paper, how many pieces will each learner get?
- Read the first problem (a).
- Underline the numbers (24 and 4).
- Ask: **What is the question?** (How many pieces of red paper will each learner get?)
- Underline the question with a wavy line.
- When the learners understand the story, let them read the word problem until they read it fluently.
- Ask: **What do you think you need to do to solve this problem?** (We need to divide.)
- Ask the learners to write the number sentence in their classwork books ($24 \div 4 =$).
- Give the learners time to solve the problem.
- Ask: **Which multiplication table can you use to find the answer?** (4 times table.)
- Ask a learner to come to the front to explain how they can use the 4 times table to find the answer. (We turned $24 \div 4 =$ into $4 \times \square = 24$. We know that 4×6 is 24 so each learner will get 6 pieces of red paper.)
- Draw circles on the board to represent what the learners are describing.



- Ask the learners to complete the number sentence in their classwork books ($24 \div 4 = 6$, 6 pieces of red paper).
- Call a learner to the board to complete the number sentence and write the answer.
- Read the second problem (b).
- Underline the numbers (0 and 4).
- Ask: **What is the question?** (How many pieces of blue paper will each learner get?)
- Underline the question with a wavy line.
- When the learners understand the story, let them read the word problem until they read it fluently.
- Ask: **What do you think you need to do to solve this problem?**
- Allow the learners time to discuss as they need to realise that they do not actually have any blue paper to share out between the learners.
- Ask: **Can you share out 0 pieces of blue paper?** (No.)
- Say: **So what do you think the number sentence will be?** ($0 \div 4 =$)
- Ask the learners to write the number sentence in their classwork books.
- Give the learners time to solve the problem.
- Ask: **How could we solve this by turning our division problem into a multiplication problem?** ($4 \times \square = 0$)
- Ask: **What happens we multiply by 0?** (The answer will be 0.)
- Ask a learner to come to the board to explain how they solved the problem. (We turned $0 \div 4 =$ into $4 \times \square = 0$. We know that 4×0 is 0 so each learner will get 0 pieces of blue paper.)
- Ask the learners to complete the number sentence in their classwork books ($0 \div 4 = 0$, 0 pieces of blue paper.)
- Write the number sentence and the answer on the board for correction.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

Calculate:

- a $0 \div 2 = \square$ (0)
- b $42 \div 6 = \square$ (7)
- c $54 \div 9 = \square$ (6)
- d $24 \div 3 = \square$ (8)
- e $21 \div 7 = \square$ (3)
- f $0 \div 4 = \square$ (0)
- g $50 \div 10 = \square$ (5)
- h $16 \div 2 = \square$ (8)
- i $45 \div 5 = \square$ (9)
- j $0 \div 8 = \square$ (0)

4 HOMEWORK ACTIVITY (5 MINUTES)

Calculate:

a $0 \div 7 = \square$ (0)

b $36 \div 6 = \square$ (6)

c $48 \div 6 = \square$ (8)

d $81 \div 9 = \square$ (9)

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 learned to divide using zero.

Lesson 14: Division stories

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.15 Division.

Lesson Objective: Create stories for division.

Lesson Vocabulary: Sharing, share, divide, grouping, group, multiply, multiplication.

Resources: N/A.

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	$18 \div 6$	3	6	$56 \div 7$	8
2	$21 \div 7$	3	7	$24 \div 8$	3
3	$8 \div 8$	1	8	$63 \div 9$	7
4	$45 \div 9$	5	9	$48 \div 6$	8
5	$36 \div 6$	6	10	$28 \div 7$	4

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson, the learners will create stories for division. This helps them to work with numbers in context, making maths more relevant for the learners. The learners need to be able to identify the key information in division stories (word problems) so that they are able to solve the problems. Make sure you encourage the learners to listen carefully to the stories, and help them to identify the relevant information.


Today we are learning to create division stories.

Activity 1: Learners work in pairs

- Make sure that each learner in the pair has some bottle tops.
- Ask the learners to put 12 bottle tops on their desks.
- Write the following sentence on the board:
There are 12 sweets.
- Ask the learners to use the sentence written on the board to help them make up a division story about their bottle tops.
- For example, the problem could be as follows:
There are 12 sweets.
4 learners share the sweets equally.
How many sweets will each learner get?

- Ask one learner to share their division story with the class.
- Write the story on the board so that the learners can see the problem in three lines.
- Provide opportunities for other learners to share their stories.

Activity 2: Whole class activity

- Select one of the division stories suggested in Activity 1, such as:
There are 12 sweets.
6 learners share the sweets equally.
How many sweets will each learner get?
- Read the problem.
- Ask: **What is the story about?** (Sweets.)
- Ask: **What numbers do you see in the story?** (12 and 6.)
- Underline these numbers.
- Ask: **What is the question?** (How many sweets will each learner get?)
- Underline the question with wavy line.
- Ask: **How can you solve this problem?** (We do division and can use the 6 times table to find the answer.)
- Give the learners time to solve the problem in pairs.
- Ask a learner to come to the front to explain how they can use the 6 times table to find the answer. (We turned $12 \div 6 =$ into $6 \times \square = 12$. We know that 6×2 is 12 so each learner will get 2 sweets.)
- Draw circles on the board to represent what the learners are describing.

- Ask the learners to complete the number sentence in their classwork books ($12 \div 6 = 2$, 2 sweets).
- Write the number sentence and answer on the board for correction.

Activity 3: Learners work in pairs

- Encourage the learners to identify items around them that they can use as part of new division stories.
- Ask: **What questions must we think about when writing division stories?** (What is the story about? What are the numbers in the story? What is the question?)
- Ask: **What are the two types of division stories you could write?** (Sharing and grouping.)
- Allow the learners time to come up with division stories in their pairs.
- If some the learners find it difficult to create new division stories, you can show them a basic template on the board:

There are _____.

They are shared equally between _____.

How many _____ will each _____ get?

There are _____.

Each _____ gets _____.

How many _____ can get _____?

- The learners can fill in the missing spaces using their own numbers and words:

There are 21 books.

They are shared equally between 7 learners.

How many books will each learner get?

There are 24 cookies.

Each child gets 4 cookies.

How many children can get cookies?

- Ask the learners to come to the front of the class to present their division stories.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

Calculate:

- a $30 \div 5 = \square$ (6)
- b $36 \div 9 = \square$ (4)
- c $49 \div 7 = \square$ (7)
- d $40 \div 10 = \square$ (4)
- e $56 \div 8 = \square$ (7)
- f $28 \div 4 = \square$ (7)
- g $48 \div 6 = \square$ (8)
- h $0 \div 9 = \square$ (0)
- i $9 \div 1 = \square$ (9)
- j $18 \div 3 = \square$ (6)

4 HOMEWORK ACTIVITY (5 MINUTES)

Calculate:

- a $0 \div 10 = \square$ (0)
- b $21 \div 3 = \square$ (7)
- c $30 \div 10 = \square$ (3)
- d $12 \div 2 = \square$ (6)

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 learned to create division stories.

Lesson 15: Consolidation

Teacher's notes

This lesson allows for consolidation of the previous days' lesson content.

CAPS topics: 1.15 Division.

Lesson Objective: Reinforce the concept of division (Sharing and grouping).

Lesson Vocabulary: Sharing, share, divide, grouping, group, multiply, multiplication.

Resources: Bottle tops.

Date:

Week

Day

WEEK 3

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

This week, the learners have practiced division, becoming more confident in their ability to solve division problems through the use of multiplication tables. It is important that the learners are able to solve problems quickly and efficiently, and the use of their multiplication tables will help them to achieve this. The learners have covered division by 10 and division of zero, and are able to create their own sharing and grouping stories.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

The learners may find division of zero to be quite confusing. It is essential that the learners have practiced verbalising their division stories and their solutions of problems, as this helps them to understand the concept rather than them just following the procedures without 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 division.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

1 Solve the problems:

a	There are 20 boys.	
	The boys must be put in teams of 5.	
	How many teams will there be?	
	Write the number sentence.	$(20 \div 5 = \square)$
	Turn it into multiplication.	$(4 \times 5 = 20)$
	Write the answer.	(4 teams)

b	There are 36 eggs. 6 eggs fit in one box. How many boxes will we need?	
	Write the number sentence.	$(36 \div 6 = \square)$
	Turn it into multiplication.	$(6 \times 6 = 36)$
	Write the answer.	(6 boxes)
c	There are 42 sweets. Share the sweets equally between 7 learners. How many sweets will each learner get?	
	Write the number sentence.	$(42 \div 7 = \square)$
	Turn it into multiplication.	$(7 \times 6 = 42)$
	Write the answer.	(6 sweets each)

2 Calculate:

- a** $72 \div 9 = \square$ (8)
- b** $64 \div 8 = \square$ (8)
- c** $27 \div 3 = \square$ (9)
- d** $63 \div 9 = \square$ (7)
- e** $35 \div 7 = \square$ (5)
- f** $30 \div 5 = \square$ (6)
- g** $42 \div 6 = \square$ (7)
- h** $32 \div 8 = \square$ (4)
- i** $50 \div 10 = \square$ (5)
- j** $54 \div 6 = \square$ (9)

5 REFLECTION AND SUMMARY OF LESSON

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

Today we have learned to divide.

Week 4

Lesson 16: Division using multiples

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.15 Division.

Lesson Objective: Solve division problems by finding the appropriate multiples.

Lesson Vocabulary: Sharing, share, divide, grouping, group, multiply, multiplication.

Resources: Bottle tops.

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	$10 \div 2$	5	6	$40 \div 5$	8
2	$32 \div 8$	4	7	$28 \div 4$	7
3	$16 \div 4$	4	8	$27 \div 3$	9
4	$30 \div 6$	5	9	$72 \div 9$	8
5	$21 \div 7$	3	10	$42 \div 7$	6

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

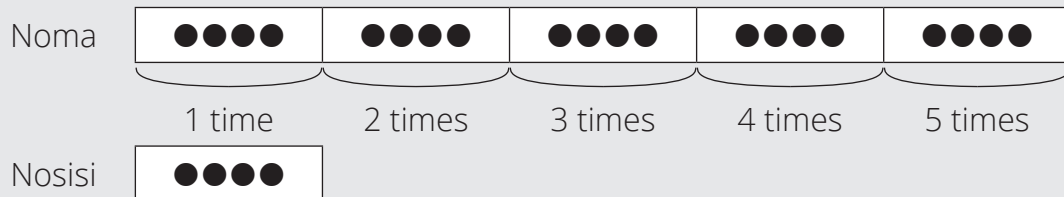
In this lesson, the learners use multiples to work out how many times a number fits into another number. They will use word problems to create a context for their problems, helping them to understand the concept of multiples.

Today we are learning to solve division problems by finding multiples.

Activity 1: Whole class activity

- Write the following story on the board:
Noma has 20 books.
Nosisi has 4 books.
 How many times more books does Noma have than Nosisi?
- Read the problem.
- Underline the numbers (20 and 4).
- Ask: **What is the question?** (How many times more books does Noma have than Nosisi?)
- Underline the question with a wavy line.

- Discuss with the learners what this question actually means. Encourage the learners to realise that the question is asking them to find out how many bundles of 4 books there are in the collection of 20 books.
- Draw the diagram below on the board:

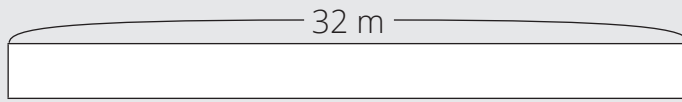


- Ask: **What are we trying to find out in this problem?** (How many times a bundle of 4 will make up 20.)
- Ask: **What should our number sentence be?**
- Write $20 \div 4 = \underline{\quad}$ on the board.
- Ask the learners to write the number sentence in their classwork books.
- Give the learners time to solve the problem.
- Ask: **Which multiplication table can you use to find the answer?** (4 times table.)
- Ask: **Look at the circles drawn on the board. How many bundles of 4 books will we make up?** (5)
- Call a learner to the board to complete the number sentence and write the answer: $20 \div 4 = 5$, 5 times.
- Say: **Noma has 5 times more books than Nosisi.**
- Ask the learners to complete the number sentence with the answer (and the answer with the units) in their classwork books.

Activity 2: Whole class activity

- Write the following story on the board:
There are 32 m of green tape and 4 m of blue tape.
How many times longer is the green tape than the blue tape?
- Read the problem.
- Underline the numbers (32 and 4).
- Ask: **What is the question?** (How many times longer is the green tape than the blue tape?)
- Underline the question with a wavy line.
- Discuss with the learners what this question actually means. Encourage the learners to realise that the question is asking them to find out how many times the 4 m of blue tape would fit into the 32 m of green tape.
- Draw the diagram below on the board:

Green tape:



Blue tape:

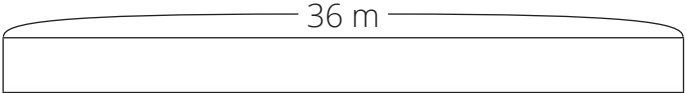
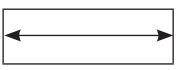
4 m

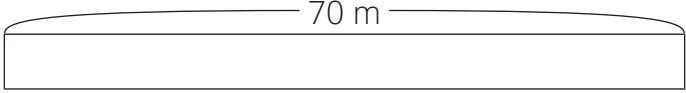
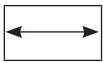
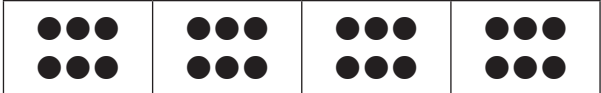



- Ask: **What are we trying to find out in this problem?** (How many times a length of 4 m will fit into a 20 m length.)
- Ask: **What should our number sentence be?** (Call a learner to write $32 \div 4 =$ on the board).
- Ask the learners to write the number sentence in their classwork books.
- Give the learners time to solve the problem.
- Ask: **Which multiplication table can you use to find the answer?** (4 times table.)
- Ask: **Look at the drawing on the board. How many 4m lengths will fit onto the green tape?** (8)
- Ask the learners to complete the number sentence in their classwork books ($32 \div 4 = 8$, 8 times).
- Say: **The green tape is 8 times longer than the blue tape.**
- Write the number sentence and the answer on the board for correction.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)



Solve the problems:

a	Stick 1 is 36 m long. Stick 2 is 9 m long. How many times longer is Stick 1 than Stick 2?	
	Draw the diagram.	Stick 1:  Stick 2: 9 m 
	The number sentence.	$(36 \div 9 = 4)$
	Write the answer.	(4 times)

b	<p>There are 70 m of thin rope and 10 m of thick rope. How many times longer is the thin rope than the thick rope?</p>	
Draw the diagram.	<p>Thin rope: </p> <p>Thick rope: </p>	
The number sentence.	<p>$(70 \div 10 = 7)$</p>	
Write the answer.	<p>(7 times)</p>	
c	<p>There are 24 jars in the cupboard. There are 6 jars on the shelf. How many times more jars are there in the cupboard than on the shelf?</p>	
Draw the diagram.	<p>in the cupboard </p> <p>on the shelf </p>	
The number sentence.	<p>$(24 \div 6 = 4)$</p>	
Write the answer.	<p>(4 times)</p>	

4 HOMEWORK ACTIVITY (5 MINUTES)

Solve the problem:

There are 21 sweets in a tub. There are 3 sweets in a bag. How many times more sweets are there in the tub than in the bag?	
Draw the diagram.	tub  bag 
The number sentence.	$(21 \div 3 = 7)$
Write the answer.	(7 times)

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 learned to solve division problems by finding the multiples.

Lesson 17: Assessment

Teacher's notes

This lesson should be used for assessment of the content covered in this unit to date.

CAPS topics: 1.15 Division.

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.

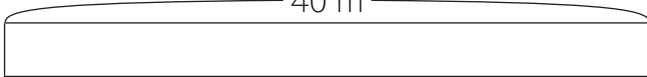

3 ASSESSMENT

WRITTEN ASSESSMENT (22)

1 Solve the problems:

(4 × 3 = 12)

a	There are 60 marbles. Share the marbles between 10 friends. How many marbles will each friend get?	
	Write the number sentence.	$(60 \div 10 = 6)$
	Turn it into multiplication.	$(\boxed{6} \times 10 = 60)$
	Write the answer.	(6 marbles)
b	There are 24 flowers. Share the flowers between 3 teachers. How many flowers will each teacher get?	
	Write the number sentence.	$(24 \div 3 = \square)$
	Turn it into multiplication.	$(\boxed{8} \times 3 = 24)$
	Write the answer.	(8 flowers)

c	There are 72 apples. The apples need to be packed into bags with 9 apples in a bag. How many bags will you need?	
	Write the number sentence.	$(72 \div 9 = \square)$
	Turn it into multiplication.	$(\square \times 9 = 72)$
	Write the answer.	(8 bags)
d	There are 40 m of orange ribbon and 5 m of blue ribbon. How many times longer is the orange ribbon than the blue ribbon?	
	Draw the diagram.	<p>Orange ribbon</p>  <p>Blue ribbon</p> <p>5m</p> 
	Turn it into multiplication.	$(40 \div 5 = 8)$
	Write the answer.	(8 times)

2 Calculate: (10)

- a** $56 \div 8 = \square$ (7)
- b** $42 \div 7 = \square$ (6)
- c** $9 \div 9 = \square$ (1)
- d** $15 \div 5 = \square$ (3)
- e** $7 \div 1 = \square$ (7)
- f** $48 \div 6 = \square$ (8)
- g** $12 \div 4 = \square$ (3)
- h** $72 \div 8 = \square$ (9)
- i** $63 \div 9 = \square$ (7)
- j** $0 \div 8 = \square$ (0)

Unit 2 Introduction

This unit focuses on fractions, and provides learners with the opportunity to investigate fractions in a practical way. Learners revise fractions and how they are represented using paper strips, bar diagrams and number lines. Encourage learners to use number lines as they gain confidence in their own knowledge and understanding of fractions as numbers. Learners will learn about unitary and non-unitary fractions, and will practice adding and subtracting fractions that have the same denominator. Learners will also solve problems involving fractions of a collection, where they identify fractions of whole numbers and where they use division together with fractions.

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

- **Conceptual understanding:** Learners will develop their conceptual understanding of fractions, as they build on their prior knowledge and extend it to include fraction problem-solving.
- **Procedural fluency:** Learners will develop procedural fluency as they recognise patterns in solution methods, and will become able to transfer their knowledge of division to the way they solve fraction problems.
- **Strategies:** Learners will use paper strips and bar diagrams to lead them to an understanding of using number lines as a solution method.
- **Reasoning:** Learners will discuss their solution methods and share their ideas, thereby developing their ability to justify their solution methods using the correct vocabulary.

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

- **Purposeful assessment:** In this unit, there is a clear progression of learning which leads learners to a more abstract understanding of fractions. The assessment tasks in this unit are designed to help learners progress from a concrete understanding to a more abstract understanding.
- **Explaining concepts and procedures:** It is essential for learners to be given the opportunity to explain their solution methods and procedures as this helps them to consolidate their understanding.
- **Connecting representations:** In this unit learners initially use paper strips before moving on to bar diagrams and finally on to number lines. This connection between various representations helps learners to shift to a more abstract understanding of fractions.

Lesson 18: Sharing leading to fractions

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.1 Count objects.

Lesson Objective: Identify the relationship between sharing and fractions.

Lesson Vocabulary: Half, quarter, eighth, third, fifth, tenth, share, divide, fraction.

Resources: Paper strips (learners), large paper strip (teacher).

Date:

Week

Day

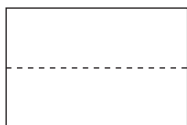
1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	$45 \div 5$	9	6	$10 \div 2$	5
2	$35 \div 5$	7	7	$20 \div 5$	4
3	$14 \div 2$	7	8	$16 \div 2$	8
4	$15 \div 5$	3	9	$40 \div 5$	8
5	$18 \div 2$	9	10	$12 \div 2$	6

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

This lesson creates a link between Unit 1 and Unit 2. Unit 1 covered the concept of division, and this concept is further extended in this lesson by introducing learners to sharing which leads to fractions. The learners will revise the fractions learned in Grade 2 (half, quarter and eighth) and expand their knowledge to include thirds, fifths and tenths.

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.

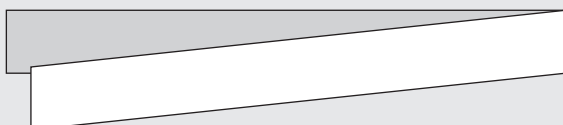
Today we are learning to identify the relationship between sharing and fractions.

Activity 1: Whole class activity

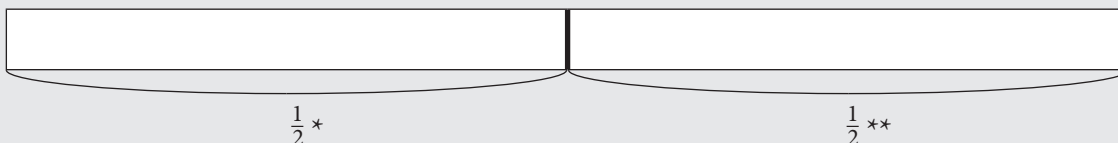
- Make sure that each learner has 3 paper strips to work with.
- Hold up a large strip of paper for the learners to see.



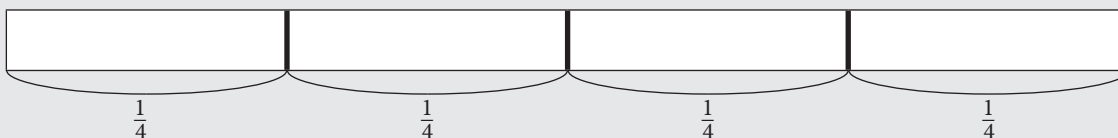
- Fold the paper strip in half. Make sure that it is folded neatly so that the edges of the paper line up.



- Ask: **What can you tell me about the length of the paper strip now that I have folded it?** (It is shorter; it is half the length of the original strip.)
- Ask: **How do you know that it is half the length of the original strip?** (Because when we open it up we see 2 rectangles that are the same size, if one rectangle is laid on the other one, it fits exactly.)
- Open the strip and paste it on the board, tracing the centre line with kokie.

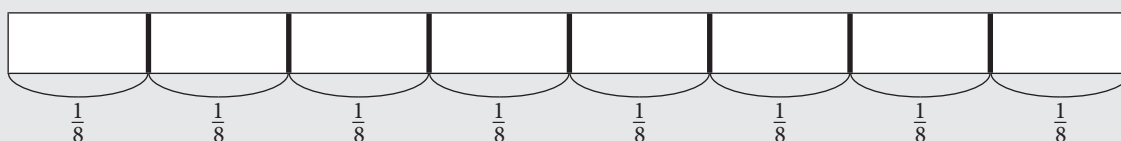


- Ask: **What do we call the half of the original paper** (indicating the left-side part of the strip)? (A half or one half.)
- Ask: **Do you remember how we write a half?** ($\frac{1}{2}$)
- Write $\frac{1}{2}$ under the strip.*
- Let the learners read $\frac{1}{2}$ several times.
- Ask: **How about the right-side part of the strip?** (It is a half as well.)
- Write another $\frac{1}{2}$ under the strip. **
- Confirm: we have 2 equal parts in the strip.
- Let the learners fold their paper strips in half and open them.
- Let them trace a centre line with a pencil and write $\frac{1}{2}$ in both parts.
- Fold another large paper strip in half twice.
- Open the strip and paste it under the $\frac{1}{2}$ strip, aligning with the centre line of strip on the board, and tracing the 3 fold lines with kokie.



- Ask: **What can you tell me about paper strip now?** (It has been folded into even smaller pieces than before; there are 4 parts; all the parts are the same size.)
- Ask: **What do we call one part of the strip when it is divided into 4 equal parts?** (a quarter, one quarter, a fourth, one fourth.)
- Ask: **Do you remember how we write a quarter?** ($\frac{1}{4}$)

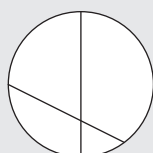
- Write $\frac{1}{4}$ under the strip.
- Let the learners read $\frac{1}{4}$ several times.
- Continue asking the same question for the second part, the third part and fourth part, writing $\frac{1}{4}$ under each part.
- Let the learners fold another paper strip in half and in half again and then open it.
- Let them trace the 3 fold lines with a pencil and write $\frac{1}{4}$ in the 4 parts.
- Fold the third large paper strip in half three times.
- Open the strip and paste it under the $\frac{1}{4}$ strip on the board, tracing the 7 fold lines with a kokie.



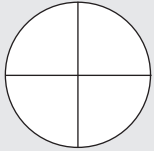
- Ask: **What can you tell me about paper strip now?** (It has been folded into even smaller than before; there are 8 parts; all the parts are the same size.)
- Ask: **What do we call one part of the strip when it is divided into 8 equal parts?** (one eighth, an eighth)
- Ask: **Do you remember how we write one eighth?** ($\frac{1}{8}$)
- Write $\frac{1}{8}$ under the first part of the strip.
- Let the learners read $\frac{1}{8}$ several times.
- Continue asking the same question for the second part, the third part and so on, up to the eighth, writing $\frac{1}{8}$ under each part.
- Let the learners fold another paper strip in half 3 times and open it.
- Let them trace the 7 fold lines with a pencil and write $\frac{1}{8}$ in the 8 parts.
- Let the learners keep the 3 strips of paper in their classwork book

Activity 2: Whole class activity

- Write the following story on the board:
There is one pizza.
Share the pizza between 4 children equally.
How much pizza will each child get?
- Read the problem.
- Underline the numbers (one and 4).
- Ask: **What is the question?** (How much pizza will each child get?).
- Underline the question with a wavy line.
- Ask: **How do you think we can solve this problem?** (We have to cut the pizza into 4 pieces).
- Draw a circle on the board as shown below.



- Ask: **Could I cut the pizza like this?** (No! That's not fair. All the pieces need to be the same size.)
- Ask: **So should I cut my pizza like this?** (Yes – that's better.)



- Ask: **How many pieces has the pizza been cut into?** (4)
- Ask: **How much of the pizza is one slice?** (One quarter.)
- Say: **One piece out of 4 pieces is one quarter.**
- Ask: **How much of the pizza will each child get?** (Encourage the learners to recognise that each child would get $\frac{1}{4}$ of the pizza.)
- Ask: **How many $\frac{1}{4}$ of the pizza do we need to make a whole pizza?** (4 of $\frac{1}{4}$)

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

1 Colour in the fraction parts. (any one block of each paper strip can be coloured in)

	Fraction									
a	$\frac{1}{2}$	<table border="1" style="width: 100%;"><tr><td style="width: 50%; text-align: center;">(✓)</td><td style="width: 50%;"></td></tr></table>	(✓)							
(✓)										
b	$\frac{1}{8}$	<table border="1" style="width: 100%;"><tr><td style="width: 12.5%; text-align: center;">(✓)</td><td style="width: 12.5%;"></td><td style="width: 12.5%;"></td><td style="width: 12.5%;"></td><td style="width: 12.5%;"></td><td style="width: 12.5%;"></td><td style="width: 12.5%;"></td><td style="width: 12.5%;"></td></tr></table>	(✓)							
(✓)										
c	$\frac{1}{4}$	<table border="1" style="width: 100%;"><tr><td style="width: 25%; text-align: center;">(✓)</td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr></table>	(✓)							
(✓)										

2 What fraction is shaded in each diagram?

	Fraction									
a	$(\frac{1}{2})$	<table border="1" style="width: 100%;"><tr><td style="width: 50%; background-color: #cccccc;"></td><td style="width: 50%;"></td></tr></table>								
b	$(\frac{1}{8})$	<table border="1" style="width: 100%;"><tr><td style="width: 12.5%;"></td><td style="width: 12.5%;"></td><td style="width: 12.5%;"></td><td style="width: 12.5%;"></td><td style="width: 12.5%;"></td><td style="width: 12.5%; background-color: #cccccc;"></td><td style="width: 12.5%;"></td><td style="width: 12.5%;"></td></tr></table>								
c	$(\frac{1}{4})$	<table border="1" style="width: 100%;"><tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%; background-color: #cccccc;"></td></tr></table>								

4 HOMEWORK ACTIVITY (5 MINUTES)

Colour in the fraction parts: (any one block of each paper strip can be coloured in)

	Fraction									
a	$\frac{1}{2}$	<table border="1" style="width: 100%;"><tr><td style="width: 50%; text-align: center;">(✓)</td><td style="width: 50%;"></td></tr></table>	(✓)							
(✓)										
b	$\frac{1}{4}$	<table border="1" style="width: 100%;"><tr><td style="width: 25%; text-align: center;">(✓)</td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr></table>	(✓)							
(✓)										
c	$\frac{1}{8}$	<table border="1" style="width: 100%;"><tr><td style="width: 12.5%; text-align: center;">(✓)</td><td style="width: 12.5%;"></td><td style="width: 12.5%;"></td><td style="width: 12.5%;"></td><td style="width: 12.5%;"></td><td style="width: 12.5%;"></td><td style="width: 12.5%;"></td><td style="width: 12.5%;"></td></tr></table>	(✓)							
(✓)										

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 learned to identify the relationship between sharing and fractions.

Lesson 19: Fractions (1)

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.17 Fractions; 4.2 Length.

Lesson Objective: Develop an understanding of fractions and their representations.

Lesson Vocabulary: Half, quarter, eighth, third, divide, fraction, long, length.

Resources: Paper strips (learners), large paper strip (teacher).

Date:

Week

Day

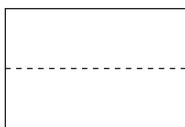
1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	$9 \div 3$	3	6	$42 \div 6$	7
2	$30 \div 6$	5	7	$27 \div 3$	9
3	$15 \div 3$	5	8	$12 \div 6$	2
4	$24 \div 6$	4	9	$24 \div 3$	8
5	$21 \div 3$	7	10	$48 \div 6$	8

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson the learners will focus on the representation of fractions. It is essential that the learners understand what the symbolic representation of a fraction actually means. The learners should be able to read a fraction symbol such as $\frac{1}{3}$ as a number sentence, by saying 'one part of three equal parts'. This lays the foundation for learners to be able to understand and solve fraction problems later on.

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).

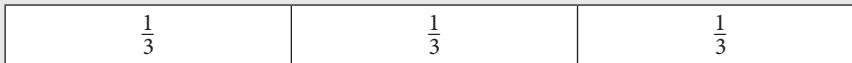


Prepare the teacher's paper strip by using a sheet of flip chart paper, folded and cut into quarters along the short side of the flip chart paper.

Today we are learning about fractions and their representations.

Activity 1: Whole class activity

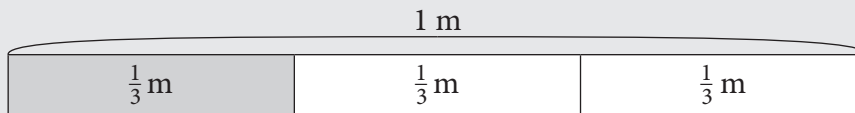
- Make sure that each learner has a paper strip so that they can follow each step as you demonstrate using your large paper strip.
- Fold the paper strip into 3 equal parts.
- Allow time for the learners to fold their paper strips into 3 equal parts.
- Open your paper strip and use a kokie to trace the fold lines.
- Allow time for the learners to copy this step.
- Ask: **What do we call one of these blocks on the paper strip?** ($\frac{1}{3}$; one third)
- Write $\frac{1}{3}$ on each block of the paper strip.



- Let the learners read $\frac{1}{3}$ several times.
- Ask: **What does $\frac{1}{3}$ mean?** (It means we divided one thing into 3 equal parts and 1 of them is $\frac{1}{3}$.)
- Allow time for the learners to copy this step.
- Leave the paper strip on the board for use in Activity 2.

Activity 2: Whole class activity

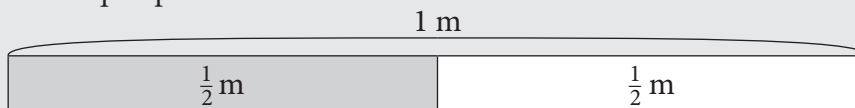
- Say: **This paper strip is 1m in length.**
- *The length of the paper strip might not be quite 1 m, but for the purposes of this activity just pretend that it is.*
- Ask: **How long is one third of the paper strip?** ($\frac{1}{3}$ m)



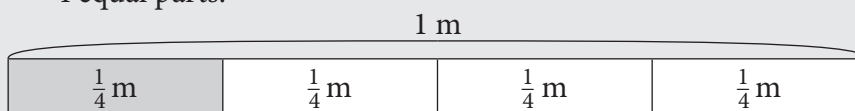
- Encourage the learners to understand that the paper strip has been divided into 3 equal parts, and that this means that the total length of the paper strip will be divided by 3 as well. This means that the length of one third of the paper strip will be $\frac{1}{3}$ m. 3 of $\frac{1}{3}$ m make 1 m.

Activity 3: Whole class activity

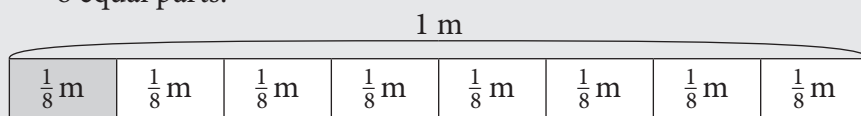
- Repeat Activity 1 and Activity 2 using new paper strips that you fold into:
 - 2 equal parts:



- 4 equal parts:



- 8 equal parts:



- Once you have completed the activities for each paper strip, place the demonstration papers on the board in the order $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{8}$
- Keep all the demonstration paper strips for use in the next lesson.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

Colour in the fraction parts: (any one block of each paper strip can be coloured in)

	Fraction	
a	$\frac{1}{2}$	(✓)
b	$\frac{1}{8}$	(✓)
c	$\frac{1}{4}$	(✓)
d	$\frac{1}{3}$	(✓)

4 HOMEWORK ACTIVITY (5 MINUTES)

Colour in the fraction parts: (any one block of each paper strip can be coloured in)

	Fraction	
a	$\frac{1}{2}$	(✓)
b	$\frac{1}{4}$	(✓)
c	$\frac{1}{3}$	(✓)

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 learned about fractions and their representations.

Lesson 20: Consolidation

Teacher's notes

This lesson allows for consolidation of the previous days' lesson content.

CAPS topics: 1.17 Fractions; 4.2 Length.

Lesson Objective: Develop an understanding of fractions and their representations.

Lesson Vocabulary: Half, quarter, eighth, third, divide, fraction, long, length.

Resources: Paper strips (learners).

Date:

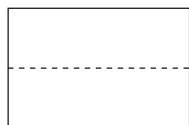
Week

Day

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

This week the learners have focused on revising the concept of fractions (as they were taught in Grade 2), as well as the representation of these fractions. The learners have only focused on unitary fractions so far, but have begun to relate the fractions to the concept of length. From this point, it is important to relate the fractions to length so that learners can see the fractions as a continuous quantity. This means that a fraction could be any number from an infinite amount of possible numbers.

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).



2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

Learners can find fractions quite confusing, and so it is important to ensure that the learners are exposed to fractions as a continuous quantity. Make sure that the learners do not only identify fractions as pie pieces or pizza slices, but that they recognise that one third of a 1 m length would be $\frac{1}{3}$ m.

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 and their representations.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

1 Write the fractions:

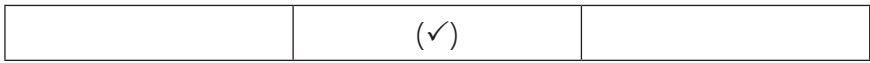

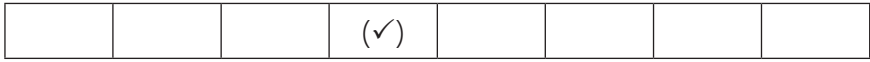

a One third. _____ ($\frac{1}{3}$)

b One quarter. _____ ($\frac{1}{4}$)

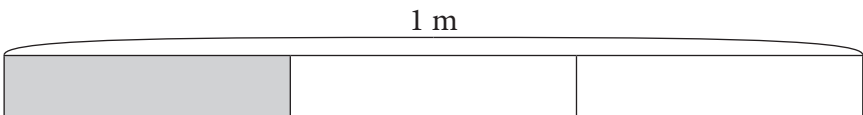
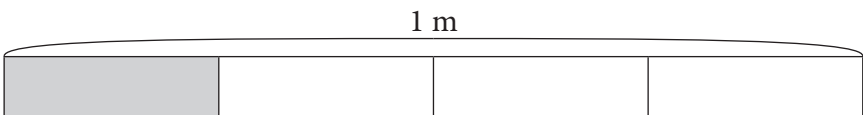
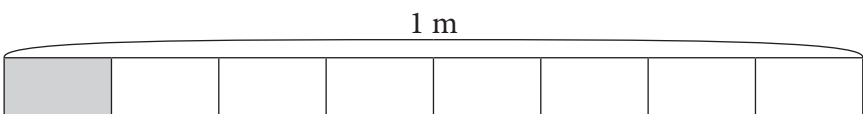
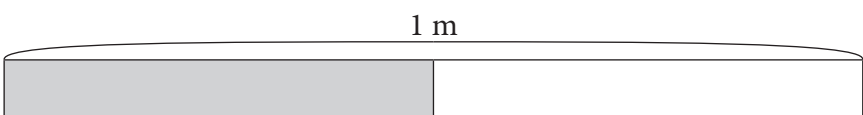
c One half. _____ ($\frac{1}{2}$)

d One eighth. _____ ($\frac{1}{8}$)

2 Colour in the fraction parts: (any one block of each paper strip can be coloured in)

	Fraction	
a	$\frac{1}{3}$	
b	$\frac{1}{4}$	
c	$\frac{1}{8}$	
d	$\frac{1}{2}$	

3 What is the length of the shaded part?

		Length
a		($\frac{1}{3}$ m)
b		($\frac{1}{4}$ m)
c		($\frac{1}{8}$ m)
d		($\frac{1}{2}$ m)

5 REFLECTION AND SUMMARY OF LESSON

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

Today we have learned about fractions and their representations.

Week 5

Lesson 21: Fractions (2)

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.17 Fractions.

Lesson Objective: Differentiate between unitary and non-unitary fractions.

Lesson Vocabulary: Half, quarter, eighth, third, fifth, sixth, divide, fraction, a whole.

Resources: Paper strips (learners), large paper strip (teacher).

Date:

Week

Day

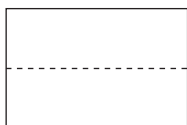
1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	$32 \div 8$	4	6	$36 \div 4$	9
2	$24 \div 4$	6	7	$48 \div 8$	6
3	$16 \div 8$	2	8	$12 \div 4$	3
4	$40 \div 8$	5	9	$20 \div 4$	5
5	$16 \div 4$	4	10	$24 \div 8$	3

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson the learners will work with non-unitary fractions. The representation and verbalisation of fractions in Lesson 19 will be an important base from which the learners will extend their knowledge to include non-unitary fractions. As for Lesson 19, it is essential that the learners are able to verbalise their understanding of fraction symbols and how these relate to the visual representation of the fractions.

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).

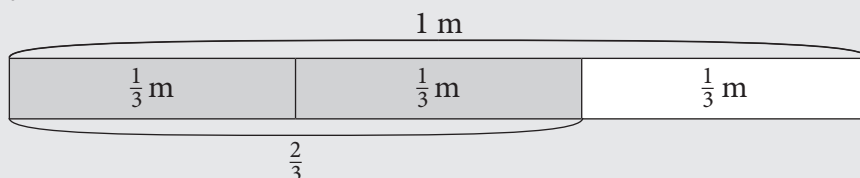


Prepare the teacher's paper strip by using a sheet of flip chart paper, folded and cut into quarters along the short side of the flip chart paper.

Today we are learning to differentiate between unitary and non-unitary fractions.

Activity 1: Whole class activity

- Use the demonstration papers created in Lesson 19.
- Place a 1 m paper strip on the board.
- Fold another paper strip that has the $\frac{1}{3}$ markings on it so that only one third of the paper strip is visible.
- Ask: **How many of these $\frac{1}{3}$ m pieces of paper will fit on the 1 m paper strip?** (Three $\frac{1}{3}$ m pieces will fit on the 1 m paper strip.)



- Say: **So three $\frac{1}{3}$ m makes 1 m.** (Demonstrate the answer by opening folded strip one by one under 1 m strip.)
- Keep the demonstration paper strip on the board for use in Activity 2.

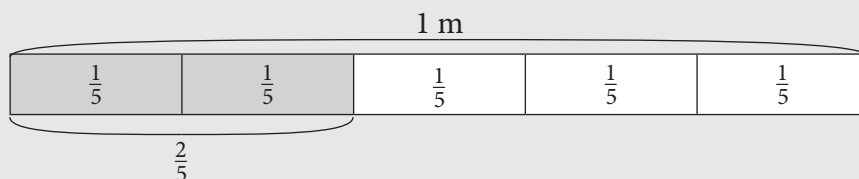
Activity 2: Whole class activity

- Make sure that each learner has their $\frac{1}{3}$ paper strip in front of them.
- Ask: **What do we call one of the parts of your 1m paper strip?** ($\frac{1}{3}$ m)
- Ask: **What would we call two of the parts of your 1 m paper strip** (indicating 2 parts of $\frac{1}{3}$ on the large $\frac{1}{3}$ strip)? (The learners may suggest ‘two $\frac{1}{3}$ s.’)
- Explain: **We call two $\frac{1}{3}$ s two thirds.**
- Let the learners read $\frac{2}{3}$ several times.
- Write $\frac{2}{3}$ under the strip.
- Let the learners write $\frac{2}{3}$ in the air several times and write it down in their classwork books.
- Ask: **So, what does the bottom number in a fraction 3 tell us?** (That there are 3 equal parts in total.)
- Ask: **And what does the number 2 at the top of the fraction tell us?** (That there are 2 parts on the 1 m paper strip.)
- Say: **So if we are looking at 2 parts of the 1 m paper strip, then we know that they are $\frac{2}{3}$ m of the 1 m paper strip.**
- Ask: **What would we call three of the parts on your 1 m paper strip?** (The learners may suggest ‘three thirds m, $\frac{3}{3}$ m or 1 whole, 1 m applying the knowledge of $\frac{2}{3}$).
- Ask: **How do we read the fraction $\frac{3}{3}$?** (We can say three thirds.)
- Let the learners read three thirds several times and write it down in their classwork books.
- Ask: **So, what does the bottom of the fraction number 3 tell us?** (That we divide the whole strip into 3 equal parts.)
- Ask: **And what does the number 3 at the top of the fraction tell us?** (That we are looking at all of the 3 parts on the 1 m paper strip.)

- Say: **So if we are looking at 3 parts of the 1 m paper strip, then we know that we are looking at the whole paper strip, which means that $\frac{3}{3}$ m is the same as 1 m.**

Activity 3: Whole class activity

- In preparation for this activity you need to prepare a new large paper strip to show fifths.
- Make sure that the learners have an unfolded paper strip that they will use to show fifths.
- Place the large paper strip that has the $\frac{1}{5}$ markings on it on the board.
- Ask the learners to fold one of their paper strips to create five equally sized parts.
- Explain: **we call one of the 5 equal parts 'one fifth' and write $\frac{1}{5}$ as you see in my strip.**
- Let the learners read and write $\frac{1}{5}$ several times in the air.
- Let the learners write $\frac{1}{5}$ in all 5 parts in their folded strips.
- Ask the learners to shade in two of the five equal parts.



- Let a learner show how they shaded 2 parts of $\frac{1}{5}$.
- Ask: **What would we call two of the parts of your 1 m paper strip?** (The learners may suggest $\frac{2}{5}$ from their experience with $\frac{2}{3}$).
- Explain: **We read the fraction $\frac{2}{5}$ as two fifths.**
- Write $\frac{2}{5}$ under the large strip.
- Let the learners read $\frac{2}{5}$ several times in the air and write it in their classwork books.
- Let the learners paste the shaded strip into their classwork books as well.
- Ask: **So, what does the bottom of the fraction number 5 tell us?** (That we divide one whole strip into 5 equal parts.)
- Ask: **So, what does the number 2 at the top of the fraction tell us?** (That we are looking at 2 parts on the 1 m paper strip.)
- Say: **So, if we are looking at 2 parts of the 1 m paper strip, then we know that they are $\frac{2}{5}$ m of the 1 m paper strip.**

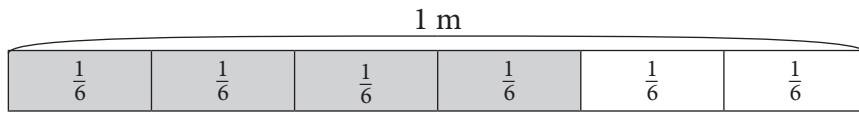
3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: In preparation for this activity you need to prepare a new large paper strip to show sixths. Make sure that the learners have an unfolded paper strip that they will use to show sixths. The learners will also need their paper strips that show thirds from Lesson 19 for this activity.

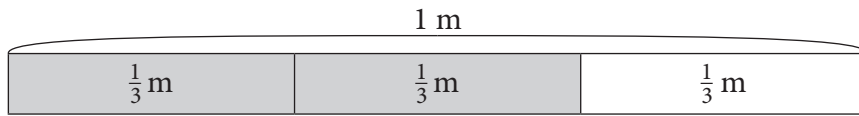
For the classwork activity, you will repeat Activity 3, using different fractions.

- Ask the learners to fold their paper strips to create six equally sized parts.
- Ask: **How did you make 6 equal parts in your strip?** (I fold it in 3 equal parts and then fold it in half).

- The learners must practice reading $\frac{1}{6}$ several times and write it on their strips.
- Ask the learners to shade in four of the $\frac{1}{6}$.



- Explain: We call these four $\frac{1}{6}$ four sixths.
- Ask: **What number can we write at the bottom of the fraction?** (6, because we divide a whole strip into 6 equal parts.)
- Ask: **And what number can we write at the top of the fraction?** (4, because we shade 4 out of 6 parts of the whole strip.)
- Ask: **How can we write four sixths?** ($\frac{4}{6}$)
- Ask the learners to look at their paper strips that show thirds (from Lesson 19).



- Give the learners time to place their $\frac{1}{3}$ strips under their $\frac{4}{6}$ strips, and to compare them.
- Allow the learners to discuss what they notice with the learners sitting near them.
- Ask: **What do you notice about $\frac{4}{6}$ and $\frac{2}{3}$?** (The fractions are different, but they are the same length.)

4 HOMEWORK ACTIVITY (5 MINUTES)

What is the length of the shaded parts?

		Length
a	<p>A horizontal strip representing 1 m, divided into 5 equal rectangular sections. The first three sections from the left are shaded grey, and the last two are white. The label '1 m' is centered above the strip.</p>	$(\frac{3}{5} \text{ m})$
b	<p>A horizontal strip representing 1 m, divided into 4 equal rectangular sections. The first three sections from the left are shaded grey, and the last one is white. The label '1 m' is centered above the strip.</p>	$(\frac{3}{4} \text{ m})$
c	<p>A horizontal strip representing 1 m, divided into 8 equal rectangular sections. The first five sections from the left are shaded grey, and the last three are white. The label '1 m' is centered above the strip.</p>	$(\frac{5}{8} \text{ m})$
d	<p>A horizontal strip representing 1 m, divided into 2 equal rectangular sections. The first section from the left is shaded grey, and the last one is white. The label '1 m' is centered above the strip.</p>	$(\frac{1}{2} \text{ m})$

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 learned to differentiate between unitary and non-unitary fractions.

Lesson 22: Fractions as numbers

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.17 Fractions.

Lesson Objective: Develop an understanding of the relationship between unitary fractions and wholes.

Lesson Vocabulary: Half, quarter, eighth, third, fifth, sixth, tenth, divide, fraction.

Resources: Paper strips (learners), large paper strip (teacher).

Date: _____ Week _____ Day _____

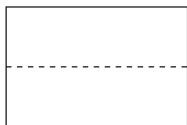
1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	$21 \div 7$	3	6	$35 \div 7$	5
2	$36 \div 9$	4	7	$63 \div 7$	9
3	$14 \div 7$	2	8	$72 \div 9$	8
4	$27 \div 9$	3	9	$56 \div 7$	8
5	$45 \div 9$	5	10	$54 \div 9$	6

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson, the learners will investigate the relationship between fractions and a whole. The progression of learning in this unit is important in order for learners to understand the representation of fractions and non-unitary fractions before moving on to understanding fractions as numbers. The use of a bar diagram is helpful in enabling learners to visualise the relationship between fractions and a whole.

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 the relationship between unitary fractions and 1 whole.

Activity 1: Whole class activity

- Draw a large bar diagram (showing quarters) on the board.
- Ask the learners to fold a strip into 4 equal parts and open it, tracing the fold lines with a pencil. (fold the strip in half twice and open it)
- Ask: **How many equal parts can you see on your strip?** (4)
- Ask: **What do we call one of these parts on the bar diagram?** ($\frac{1}{4}$; one quarter.)
- Let the learners write $\frac{1}{4}$ on each part of the strip.
- Write $\frac{1}{4}$ on each part of the diagram on the board for correction.
- Ask the learners to shade in $\frac{3}{4}$ of the strip.
- Ask: **How many parts did you shade in?** (We shaded in 3 out of the four parts.)



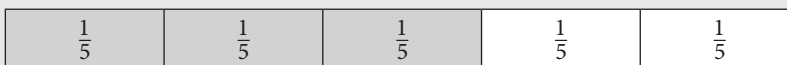
- Ask: **What would we call three of the parts of your paper strip?** (The learners may suggest $\frac{3}{4}$ from their experience with $\frac{2}{5}$).
- Explain: **We read the fraction $\frac{3}{4}$ as three quarters.**
- Write $\frac{3}{4}$ on the board.
- Let the learners read $\frac{3}{4}$ several times and write it in their classwork books.
- Ask: **How many $\frac{1}{4}$ s are there in $\frac{3}{4}$?** (There are three $\frac{1}{4}$ s in $\frac{3}{4}$.)
- Say: **Now shade in the last part on your strip.**



- Ask: **How many parts are shaded in?** (4)
- Ask: **What number is made of four $\frac{1}{4}$ s?** (1 whole, 1.)
- Ask: **How do you know that four $\frac{1}{4}$ s is the same as one whole?** (Because with 4 equal parts shaded I reach the same size of the original strip. I don't have any unshaded part in my strip now.)
- Explain: **We write four $\frac{1}{4}$ s as the fraction $\frac{4}{4}$.**
- Write $\frac{4}{4} = 1$ (whole) on the board and read '4 quarters is 1 whole.'
- Let the learners write $\frac{4}{4} = 1$ (whole) in their classwork books.

Activity 2: Whole class activity

- Draw a bar diagram showing fifths on the board.
- Ask the learners to fold a strip into 5 equal parts and open it, tracing the fold lines with a pencil.
- Ask: **How many equal parts can you see on your strip?** (5)
- Ask: **What do we call one of these parts on the bar diagram?** ($\frac{1}{5}$; one fifth.)
- Let the learners write $\frac{1}{5}$ on each part of their strip while you write $\frac{1}{5}$ on the diagram.
- Ask the learners to shade in $\frac{3}{5}$ of their strip.
- Ask: **How many parts did you shade in?** (We shaded in 3 out of the five parts.)



- Ask: **What would we call three of the parts of your paper strip?** (The learners may suggest $\frac{3}{5}$ from their experience with $\frac{2}{5}$.)
- Explain: **We read the fraction $\frac{3}{5}$ as three fifths.**
- Write $\frac{3}{5}$ on the board.
- Let the learners read $\frac{3}{5}$ several times and write it in their classwork books.
- Ask: **How many $\frac{1}{5}$ s are there in $\frac{3}{5}$?** (There are three $\frac{1}{5}$ s in $\frac{3}{5}$.)
- Say: **Now shade in the last two parts on your strip.**

$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$
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- Ask: **How many parts are shaded in?** (5)
- Ask: **What number is made of five $\frac{1}{5}$ s?** (1 whole, 1.)
- Ask: **How do you know that that $\frac{5}{5}$ is the same as one whole?** (Because with 5 equal parts shaded I reach the same size of the original strip. there are no parts that are not shaded in.)
- Explain: **We write five $\frac{1}{5}$ s as the fraction $\frac{5}{5}$.**
- Write $\frac{5}{5} = 1$ (whole) on the board and read '5 fifths is 1 whole'.
- Let the learners write $\frac{5}{5} = 1$ (whole) in their classwork books.

Activity 3: Whole class activity







- Draw a bar diagram showing tenths under the fifths diagram on the board (*the two bar diagrams must be the same length*).
- Ask the learners to fold a strip into 10 equal parts and open it, tracing the fold lines with a pencil.
- Ask: **How many equal parts can you see on your strip?** (10)
- Explain: **We call one of these parts one tenth and write $\frac{1}{10}$.**
- Let the learners read $\frac{1}{10}$ several times.
- Let the learners write $\frac{1}{10}$ on each part of their strip while you write $\frac{1}{10}$ on the diagram.
- Ask: **How many $\frac{1}{10}$ s would you need to shade in to show 1 whole?** (Ten $\frac{1}{10}$ s.)
- Ask: **Why do you say that?** (Because there are 10 parts on the strip, so if we want to shade in the whole strip we would need to shade in 10 out of 10 equal parts.)
- Ask the learners to shade in $\frac{10}{10}$ of the strip.

$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$
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- Ask: **What do you notice about your bar diagram now?** (All the parts have been shaded in; the whole strip has been shaded in.)
- Write $\frac{10}{10} = 1$ (whole) on the board and read '10 tenths is 1 whole'.
- Let the learners write $\frac{10}{10} = 1$ (whole) in their classwork books and read it several times.





3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

What fraction has been shaded?

		Fraction
a		$\left(\frac{4}{4}\right)$
b		$\left(\frac{5}{5}\right)$
c		$\left(\frac{2}{2}\right)$
d		$\left(\frac{3}{3}\right)$
e		$\left(\frac{10}{10}\right)$
f		$\left(\frac{8}{8}\right)$

4 HOMEWORK ACTIVITY (5 MINUTES)

Complete the table:

		Shade the bar diagram to show the fraction	Fraction
	Three quarters		$\frac{3}{4}$
a	Three sixths		$\left(\frac{3}{6}\right)$
b	Two quarters		$\left(\frac{2}{4}\right)$
c	Two eighths		$\left(\frac{2}{8}\right)$

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 learned about the relationship between unitary fractions and 1 whole.

Lesson 23: Assessment

Teacher's notes

This lesson should be used for assessment of the content covered in this unit to date.

CAPS topics: 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



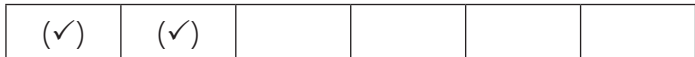
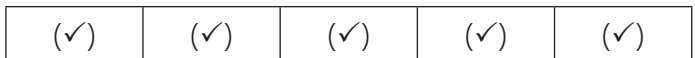
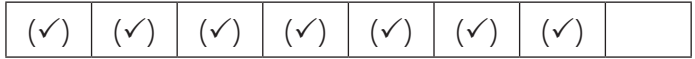
WRITTEN ASSESSMENT (17)

- 1 What is the length of the shaded part? (7)

a		$(\frac{1}{6} \text{ m})$
b		$(\frac{4}{5} \text{ m})$
c		$(\frac{1}{10} \text{ m})$
d		$(\frac{8}{10} \text{ m})$

e	1 m 	$(\frac{2}{4} \text{ m})$
f	1 m 	$(\frac{4}{6} \text{ m})$
g	1 m 	$(\frac{3}{3} \text{ m})$

2 Complete the table: (10)

		Shade the bar diagram to show the fraction	Fraction
a	Four quarters		$(\frac{4}{4})$
b	Three tenths		$(\frac{3}{10})$
c	Two sixths		$(\frac{2}{6})$
d	Five fifths		$(\frac{5}{5})$
e	Seven eighths		$(\frac{7}{8})$

ORAL AND PRACTICAL

CAPS: Number operations and relationships: Fractions		Mark: /7
Activity: Assess the learners' ability to work with fractions – answer questions about parts of the whole and grouping and sharing.		
Mark	Criteria – Checklist: (1 mark for each criterion achieved)	
1	Able to write fraction names and numerals	
1	Able to identify and find halves of given fraction strips	
1	Able to identify and find quarters of given fraction strips	
1	Able to find fifths of given fraction strips	
1	Able to find sixths of given fraction strips	
1	Able to find eighths of given fraction strips	
1	Able to make the connection between fraction parts and the numbers they represent. (for example $\frac{4}{4} = 1$)	

Lesson 24: Fractions on a number line

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.17 Fractions.

Lesson Objective: Represent fractions using a number line.

Lesson Vocabulary: Half, quarter, eighth, third, fifth, sixth, tenth, divide, fraction.

Resources: N/A.

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	$14 \div 2$	7	6	$32 \div 4$	8
2	$18 \div 3$	6	7	$10 \div 2$	5
3	$28 \div 4$	7	8	$21 \div 3$	7
4	$16 \div 2$	8	9	$20 \div 4$	5
5	$27 \div 3$	9	10	$12 \div 2$	6

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

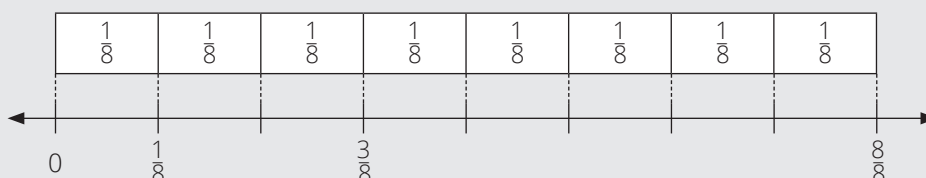
In today's lesson, the learners will learn how to represent fractions using a number line. The learners will be able to order fractions on a number line, as well as compare the fractions.

This lesson will help the learners to consolidate their understanding of the relationship between fractions and 1 as a whole number.

Today we are learning to represent fractions using a number line.

Activity 1: The learners work in pairs

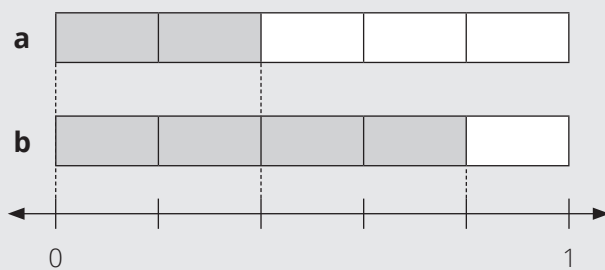
- Draw a bar diagram showing eighths on the board.
- Ask: **How many equal parts can you see on the bar diagram?** (8)
- Ask: **What do we call one of these parts on the bar diagram?** ($\frac{1}{8}$; one eighth.)
- Write $\frac{1}{8}$ on each part of the bar diagram.
- Draw a blank number line under the bar diagram on the board so that they can see the connection between the parts of the bar diagram and the lines of the number line as shown below. (NOTE: this drawing is in the LAB.)



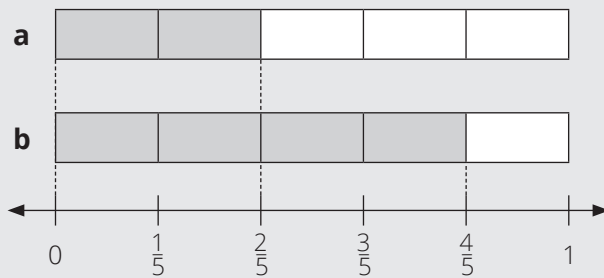
- Write 0 and 1 under the number line.
- Ask: **How many parts do you see between 0 and 1 on the number line?** (8)
- Confirm that the diagram and the number line are connected.
- Ask: **Does anyone know where we would put $\frac{1}{8}$ on the number line?**
- Call a learner to the board to write the fraction on the number line.
- Ask: **Why do you think $\frac{1}{8}$ must go there on the number line?** (Because the number line marker lines up with the end of the first part of the bar diagram.)
- Ask: **Where would we write $\frac{3}{8}$ on the number line?**
- Give the learners time to discuss, then call one learner to the board to demonstrate where the fraction should go.
- Ask: **Why do you think $\frac{3}{8}$ must go there on the number line?** (Because when I shade $\frac{3}{8}$ of the diagram, and go down to the number line, I land on $\frac{3}{8}$ on the number line.)
- Repeat the same activity for $\frac{7}{8}$.
- Give the learners time to discuss, then call one learner to the board to demonstrate where the fraction should go.
- Complete the rest of the number line between $\frac{1}{8}$ and $\frac{7}{8}$.
- Ask: **Where would we write $\frac{8}{8}$ on the number line?**
- Give the learners time to discuss, then call one learner to the board to demonstrate where the fraction should go.
- Explain: **as we learned in Lesson 22, $\frac{8}{8} = 1$.**

Activity 2: The learners work in pairs

- Draw one bar to show the length $\frac{2}{5}$.
- Draw another bar below to show the length $\frac{4}{5}$.
- Draw a blank number line underneath the bars and write 0 and 1 under the number line.



- Ask: **How many parts do you see between 0 and 1 on the number line?** (5)
- Encourage the learners to recognise that they could fill in the fractions on the number line as they did for Activity 1.
- Ask: **What fraction would we use for our number line?** (Fifths, because there are five spaces between 0 and 1.)
- Write the fractions on the number line as shown below:

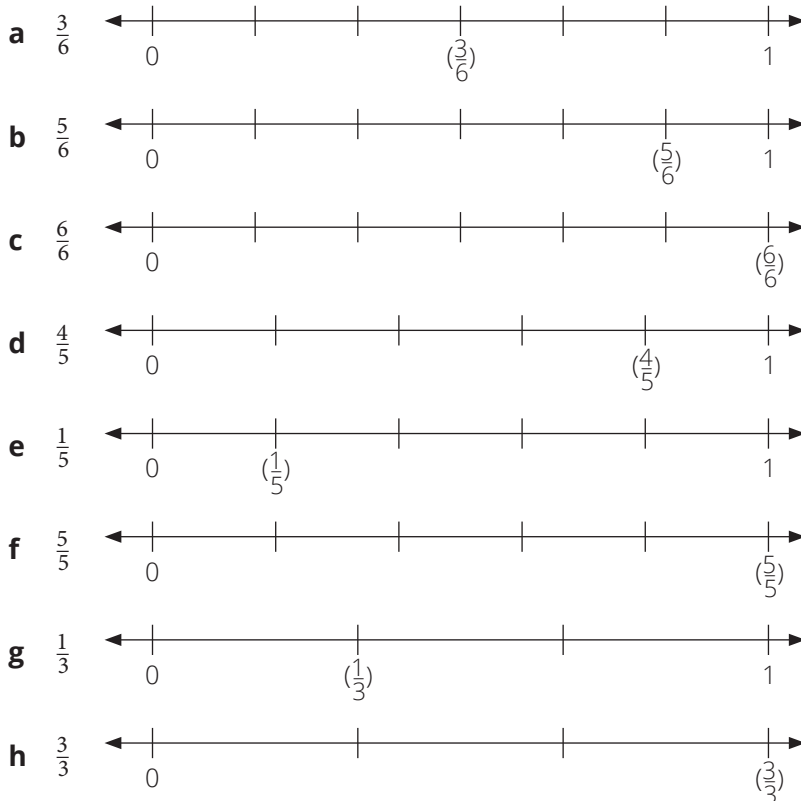


- The shaded part on bar a. is $\frac{2}{5}$ long.
- The shaded part on bar b. is $\frac{4}{5}$ long.
- Ask: **Which shaded part is longer?** (Bar b.)

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

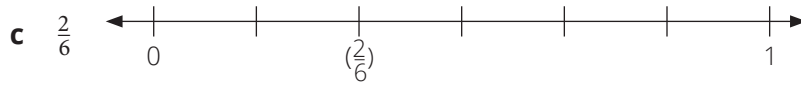
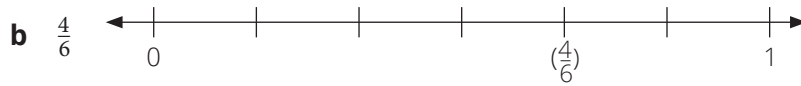
NOTE: Each number line shows 0 and 1. For each line, you should confirm with the learners how many equal spaces there are between 0 and 1, since this will help them to find the correct place for each fraction on the number line.

Show the fraction on the number line.



4 HOMEWORK ACTIVITY (5 MINUTES)

Show the fraction on the number line.



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 learned to represent fractions using a number line.

Lesson 25: Consolidation

Teacher's notes

This lesson allows for consolidation of the previous days' lesson content.

CAPS topics: 1.17 Fractions.

Lesson Objective: Revise non-unitary fractions, and the relationship between unitary fractions and 1 whole.

Lesson Vocabulary: Half, quarter, eighth, third, fifth, sixth, tenth, divide, fraction.

Resources: N/A.

Date: _____ Week _____ Day _____

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

This week, the learners have covered non-unitary fractions and the relationship between fractions and one whole. The learners used paper strips with folded parts and bar diagrams to represent fractions. The learners then progressed from that to developing their understanding of showing fractions on a number line.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

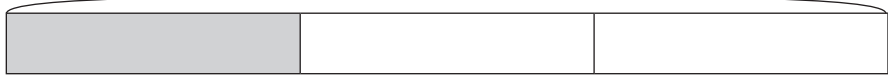
It is important to make sure that the learners see the progression from the equal parts on the paper strip to the bar diagram and then to the number line. The learners can find number lines quite abstract, and so it is necessary to show them the connection between the concrete representations and the symbolic number line. The bar diagram is a pictorial representation that bridges the gap between the concrete and the abstract. Each number line must show 0 and 1 and you should confirm with the learners how many equal spaces there are between 0 and 1 on each number line.



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

Today we are going over what we learned this week. We are revising non-unitary fractions and the relationship between unitary fractions and one whole.

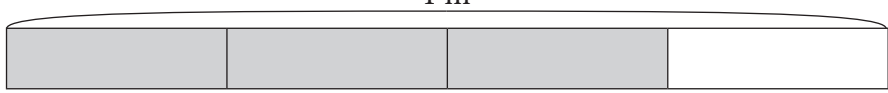
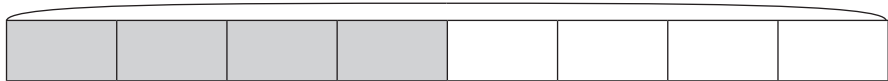
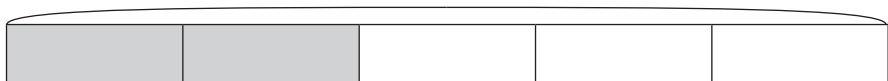
4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

1 What is the length of the shaded part?

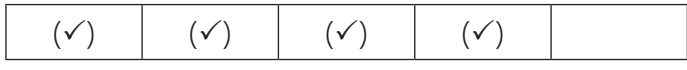
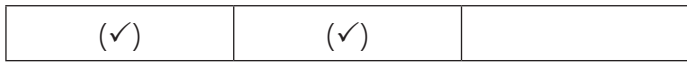

		Length
a	 <p style="text-align: center;">1 m</p>	$\left(\frac{1}{3} \text{ m}\right)$

b	1 m 	$(\frac{1}{6} \text{ m})$
c	1 m 	$(\frac{1}{8} \text{ m})$

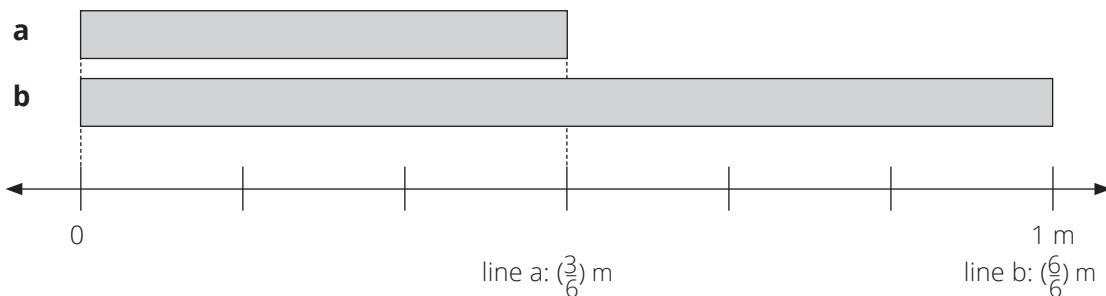
2 What is the length of the shaded parts?

		Length
a	1 m 	$(\frac{3}{4} \text{ m})$
b	1 m 	$(\frac{4}{8} \text{ m})$
c	1 m 	$(\frac{2}{5} \text{ m})$

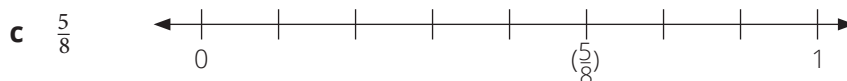
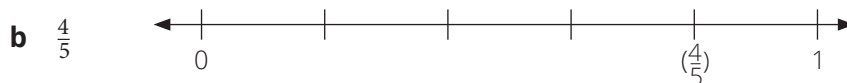
3 What is the number?

		Shade the bar diagram to show the fraction	Fraction
a	Four fifths		$(\frac{4}{5})$
b	Two thirds		$(\frac{2}{3})$
c	Three eighths		$(\frac{3}{8})$

4 How long are the bars? Write the fractions on the number line:



5 Show the fraction on the number line.



5 REFLECTION AND SUMMARY OF LESSON

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

Today we have revised non-unitary fractions and the relationship between unitary fractions and one whole.

Week 6

Lesson 26: Comparing fractions

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.17 Fractions.

Lesson Objective: Compare fractions using a number line.

Lesson Vocabulary: Half, quarter, eighth, third, fifth, sixth, tenth, divide, fraction, add, and, more.

Resources: Paper strips (learners), large paper strip (teacher).

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

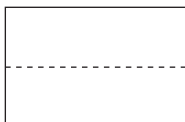
	What is ...	Answer		What is ...	Answer
1	$20 \div 5$	4	6	$14 \div 7$	2
2	$18 \div 6$	3	7	$40 \div 5$	8
3	$21 \div 7$	3	8	$36 \div 6$	6
4	$30 \div 5$	6	9	$56 \div 7$	8
5	$24 \div 6$	4	10	$25 \div 5$	5

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson, learners will compare fractions by folding paper strips. This is an important concrete step before the learners move on to comparing fractions on a number line.

The learners need a visual representation of fractions so that they can develop a clear understanding of the size of each fraction when the whole is the same size. This is an important foundation for the learners to establish in order to learn about equivalent fractions in the future.

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.

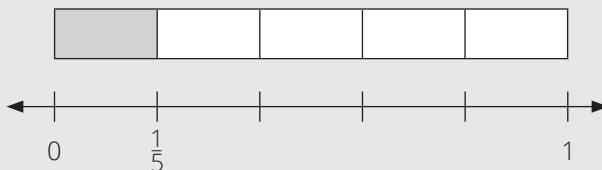
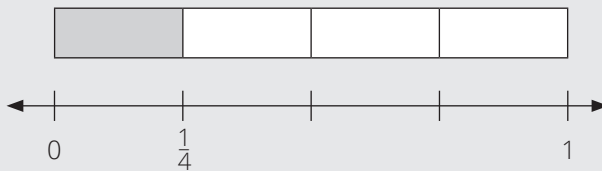
Today we are learning to compare fractions.

Activity 1: Whole class activity

- Make sure that each learner has 2 paper strips so that they can follow each step as you demonstrate using your large paper strips.
- Fold the first paper strip into 4 equal parts (fold the strip in half twice).
- Allow time for the learners to fold their paper strips into 4 equal parts.
- Open your paper strip and use a kokie to trace the fold lines.
- Allow time for the learners to copy this step with a pencil.
- Ask: What fraction is the one part of the strip? ($\frac{1}{4}$)
- Let the learners to shade the first part of their strips to represent $\frac{1}{4}$ and write $\frac{1}{4}$ in it.
- Place the large paper strip with the first $\frac{1}{4}$ part shaded on the board.
- Fold the second paper strip into 5 equal parts.
- Allow time for the learners to fold their paper strips into 5 equal parts and open them, tracing the fold lines with a pencil.
- Open your paper strip and use a kokie to trace the fold lines.
- Ask: What fraction is each part of the strip? ($\frac{1}{5}$)
- Let the learners to shade the first part of the strip to represent $\frac{1}{5}$ and write $\frac{1}{5}$ in it.
- Place the large paper strip with the first $\frac{1}{5}$ part shaded under the $\frac{1}{4}$ strip on the board.



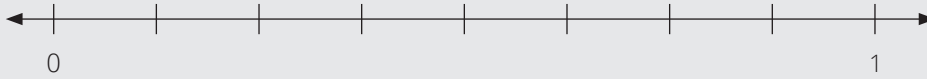
- Let the learners place their $\frac{1}{5}$ strip under the $\frac{1}{4}$ strip.
- NOTE: Make sure that the two strips are placed from the same position.
- Ask: **Which fraction is bigger: $\frac{1}{4}$ or $\frac{1}{5}$?** ($\frac{1}{4}$)
- Ask: **How do you know this?** (When we look at the paper strip, the part for $\frac{1}{4}$ is bigger than the part for $\frac{1}{5}$.)
- Draw a number line that shows the same fraction as the strip underneath each of the paper strips.



- Ask: **is $\frac{1}{4}$ bigger than $\frac{1}{5}$ on the number line?** (Yes, because when we look at the number lines, $\frac{1}{4}$ is further on the right-hand side than $\frac{1}{5}$.)

Activity 2: Whole class activity

- Draw a large number line that divides the space between 0 and 1 into 8 equal parts on the chalkboard.
- Ask learners to open the LAB to Lesson 26. A copy of the blank number line is there for them to use in this lesson.



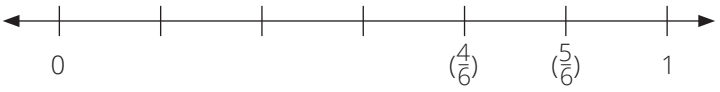
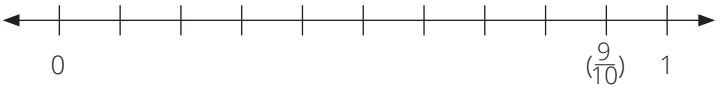
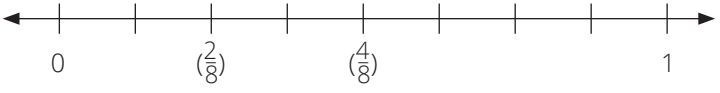
- Let the learners discuss what fraction is shown on the number line. (eighths)
- Ask: **Where are $\frac{3}{8}$ and $\frac{6}{8}$ on the number line?**
- Ask learners to write two fractions on their number lines.
- Let a learner write the fractions $\frac{3}{8}$ and $\frac{6}{8}$ on the number line as shown below:



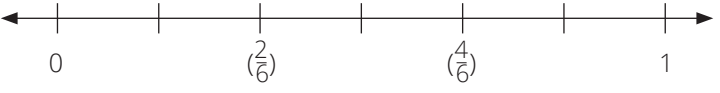

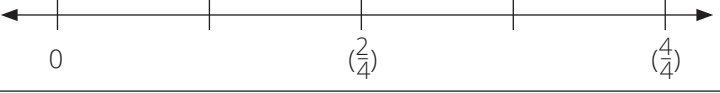
- Ask: **Which fraction is bigger: $\frac{3}{8}$ or $\frac{6}{8}$? ($\frac{6}{8}$)**
- Ask: **How do you know this?** ($\frac{6}{8}$ is further along on the number line than $\frac{3}{8}$.)
- Repeat the steps above, asking: **Which is larger/bigger?** in order to compare the following:
 - $\frac{3}{5}$ and $\frac{4}{5}$
 - 1 and $\frac{3}{4}$
 - $\frac{8}{8}$ and 1

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

	Write the fractions in the correct places on the number line.	Which fraction is larger?
a	$\frac{1}{6}$ and $\frac{3}{6}$	$\frac{3}{6}$
b	$\frac{5}{8}$ and $\frac{3}{8}$	$\frac{5}{8}$
c	$\frac{1}{4}$ and $\frac{3}{4}$	$\frac{3}{4}$
d	$\frac{2}{3}$ and 1	1
e	$\frac{5}{5}$ and $\frac{3}{5}$	$\frac{5}{5}$

	Write the fractions in the correct places on the number line.	Which fraction is larger?
f	$\frac{5}{6}$ and $\frac{4}{6}$ 	$\frac{5}{6}$
g	1 and $\frac{9}{10}$ 	1
h	$\frac{2}{8}$ and $\frac{4}{8}$ 	$\frac{4}{8}$

4 HOMEWORK ACTIVITY (5 MINUTES)

	Write the fractions in the correct place on the number line.	Which fraction is larger?
a	$\frac{4}{6}$ and $\frac{2}{6}$ 	$\frac{4}{6}$
b	$\frac{1}{8}$ and $\frac{7}{8}$ 	$\frac{7}{8}$
c	$\frac{4}{4}$ and $\frac{2}{4}$ 	$\frac{4}{4}$

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 learned to compare fractions.

Lesson 27: Addition of fractions

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.17 Fractions; 4.4 Capacity / Volume.

Lesson Objective: Solve a variety of addition problems using fractions with the same denominator.

Lesson Vocabulary: Half, quarter, eighth, third, fifth, sixth, tenth, fraction, add, and, more.

Resources: Paper strips (learners), large paper strip (teacher).

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	$64 \div 8$	8	6	$36 \div 9$	4
2	$45 \div 9$	5	7	$16 \div 8$	2
3	$24 \div 8$	3	8	$27 \div 9$	3
4	$18 \div 9$	2	9	$48 \div 8$	6
5	$40 \div 8$	5	10	$72 \div 9$	8

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson, learners will begin to add fractions with the same denominator. Learners will solve problems in context, and use paper folding to help them represent the problems. One aspect of solving problems is learning to recognise when an answer is reasonable or possible. The knowledge developed from comparing fractions in Lesson 26 will help the learners to develop this ability to judge the reasonableness of their answers.

Today we are learning to add fractions with the same denominator.

Activity 1: Whole class activity

- Make sure that each learner has a paper strip so that they can follow each step as you demonstrate using your large paper strip.
- Paste one large paper strip on the board.
- Write the following word problem on the board. (*combine*)

There are two ropes.

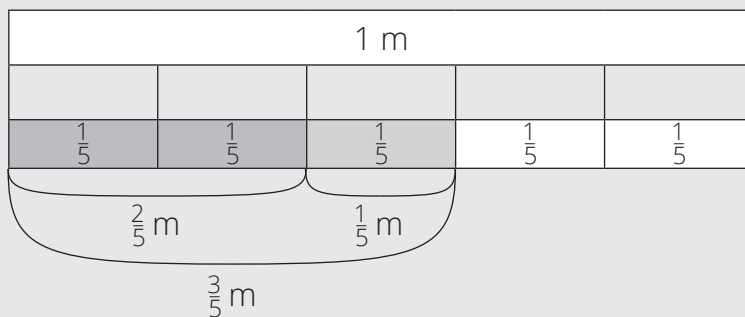
One of them is $\frac{2}{5}$ m long.

The other is $\frac{1}{5}$ m long.

What is the total length of the ropes?

- Read the problem.
- Ask: **What is the story about?** (Ropes.)

- Ask: **What numbers do you see in the story?** ($2, \frac{2}{5}$ and $\frac{1}{5}$.)
- Underline these numbers.
- Ask: **What is the question?** (What is the total length of the ropes?)
- Underline the question with wavy line.
- When the learners understand the story, let them read the word problem, following after you sentence by sentence.
- Say: **We do addition with $\frac{2}{5}$ and $\frac{1}{5}$ to solve this problem.**
- Say: **Let's use our paper strip to solve the problem.**
- Ask: **How many equal parts on the strip do we make for these fractions?** (5)
- Allow time for the learners to fold their paper strips into 5 equal parts and write $\frac{1}{5}$ in each part of the strip.
- Fold another large paper strip into 5 equal parts.
- Open your paper strip and paste it under the unfolded large strip to show the length of both strips is the same.
- Use a kokie to trace the fold lines and write $\frac{1}{5}$ on each part of the strip.
- Allow time for the learners to cut their strips along the fold lines.
- Ask: **How many pieces did you make?** (5 pieces)
- Ask: **How many pieces must we take for $\frac{2}{5}$ m rope?** (2 pieces to show $\frac{2}{5}$ m).
- Let the learners put two pieces of $\frac{1}{5}$ s on the desk to represent $\frac{2}{5}$ m.
- Confirm what the learners have in front of them by pasting $\frac{2}{5}$ on the board.
- Ask: **How many pieces must we add to $\frac{2}{5}$?** (We must add one more piece for $\frac{1}{5}$ m).
- Let the learners put one more piece of $\frac{1}{5}$ next to $\frac{2}{5}$.

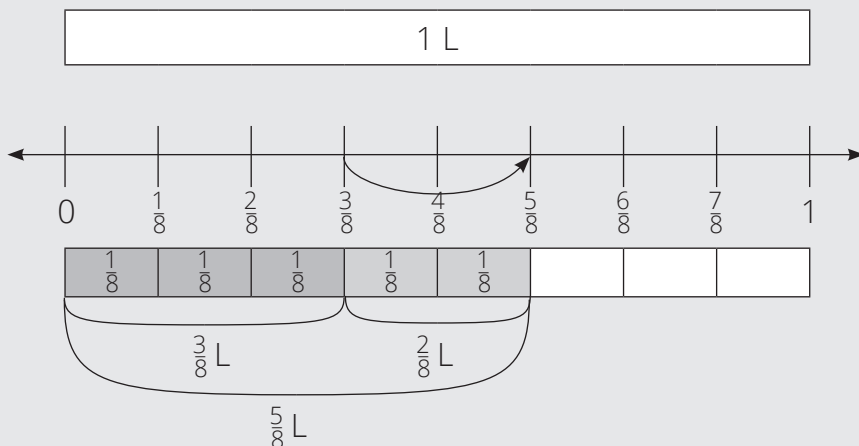


- Confirm what the learners have in front of them by pasting $\frac{1}{5}$ next to $\frac{2}{5}$ on the board.
- Ask: **How many $\frac{1}{5}$ s do you have now?** (Three $\frac{1}{5}$ s.)
- Ask: **How do we write three $\frac{1}{5}$ s?** ($\frac{3}{5}$)
- Write the number sentence. ($\frac{2}{5} + \frac{1}{5} = \frac{3}{5}$)
- Ask: **What is the answer to the word problem?** (The total length of the ropes is $\frac{3}{5}$ m.)
- Let the learners write the number sentence and the answer in their classwork book.
($\frac{2}{5} + \frac{1}{5} = \frac{3}{5}, \frac{3}{5}$ m)
- *The learners must answer with the unit $\frac{3}{5}$ m.*

Activity 2: Whole class activity

- Make sure that each learner has a paper strip.

- Write the following word problem on the board. (*change*)
There is $\frac{3}{8}$ L of water in the bucket.
Nosisi adds $\frac{2}{8}$ L of water to it.
 How much water is in the bucket in total?
- Read the problem.
- Ask: **What is the story about?** (Water)
- Ask: **What numbers do you see in the story?** ($\frac{3}{8}$ and $\frac{2}{8}$)
- Underline these numbers.
- Ask: **What is the question?** (How much water is in the bucket in total?)
- Underline the question with wavy line.
- When the learners understand the story, let them read the word problem, following after you sentence by sentence.
- Ask: **How can you solve this problem?** (We can add $\frac{3}{8}$ and $\frac{2}{8}$ because Nosisi added more water, so the total of water must increase.)
- Say: **Let's fold our paper strips to solve the problem.**
- Ask: **How many equal parts on the strip do we make for these fractions?** (8)
- Allow time for the learners to fold their paper strips into 8 equal parts (fold the strip in half three times) and write $\frac{1}{8}$ on each part of the strip.
- Fold another large paper strip into 8 equal parts.
- Open your paper strip and paste it under the unfolded large strip to show that the length of both strips is the same.
- Draw a $\frac{1}{8}$ number line between the unfolded strip and folded strip.
- Use a kokie to trace the fold lines and write $\frac{1}{8}$ on each part of the strip.
- Allow time for the learners to cut their strips along the fold lines.
- Ask: **How many pieces did you make?** (8 pieces)
- Ask: **How many pieces must we take for $\frac{3}{8}$ L water?** (3 pieces to show $\frac{3}{8}$ L).
- Let the learners put three pieces of $\frac{1}{8}$ s on the desk to represent $\frac{3}{8}$ m.
- Confirm what the learners have in front of them by pasting $\frac{3}{8}$ on the board.
- Ask: **How many pieces must we add to $\frac{3}{8}$?** (We must add two more pieces for $\frac{2}{8}$ L.)
- Let the learners put two more pieces of $\frac{1}{8}$ next to $\frac{3}{8}$.

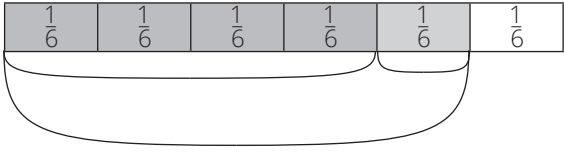
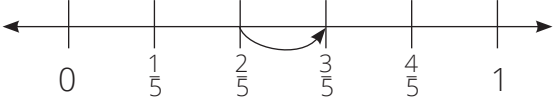


- Confirm what the learners have in front of them by pasting $\frac{2}{8}$ next to $\frac{3}{8}$ on the board.

- Write $\frac{1}{8}$ fractions on the number line and show the addition with a forward arrow.
- Ask: **How many $\frac{1}{8}$ s do you have now?** (five $\frac{1}{8}$ s).
- Ask: **How do we write five $\frac{1}{8}$ s?** ($\frac{5}{8}$)
- Ask: **Where is $\frac{5}{8}$ on the number line?**
- Let the learners discuss each other and ask a learner to write $\frac{5}{8}$ on the number line.
- Ask: **What is the answer to the word problem?** (There is $\frac{5}{8}$ L in the bucket.)
- Let the learners write the number sentence and the answer in their classwork books.
($\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$, $\frac{5}{8}$ L)
- Ask a learner to write the number sentence and the answer on the board for correction.
- *The learners must answer with the unit $\frac{5}{8}$ L.*

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

Solve the problems:

a	There is a $\frac{4}{6}$ m length of red ribbon. There is a $\frac{1}{6}$ m length of blue ribbon. How long is the total amount of ribbon?	
	Draw the bar diagram.	
	Write the number sentence.	$(\frac{4}{6} + \frac{1}{6} = \frac{5}{6})$
	Write the answer.	$(\frac{5}{6}$ m of ribbon)
b	Mulalo throws a ball $\frac{2}{5}$ m. The ball then rolls $\frac{1}{5}$ m further. How far did the ball go?	
	Draw the number line.	
	Write the number sentence.	$(\frac{2}{5} + \frac{1}{5} = \frac{3}{5})$
	Write the answer.	$(\frac{3}{5}$ m)

c	Mpho drinks $\frac{1}{3}$ L of water. She then drinks another $\frac{2}{3}$ L of water. How much water did Mpho drink in total?	
	Draw the number line.	
	Write the number sentence.	$(\frac{1}{3} + \frac{2}{3} = \frac{3}{3})$
	Write the answer.	$(\frac{3}{3}$ L of water) or (1 L of water)

4 HOMEWORK ACTIVITY (5 MINUTES)

Solve the problem:

Bulelwa draws a line that is $\frac{4}{10}$ m long. He then adds on another $\frac{2}{10}$ m to his line. How long is the total length of the line that Bulelwa drew?											
Draw the bar diagram.	<table border="1" style="display: inline-table;"> <tr> <td>$\frac{1}{10}$</td><td>$\frac{1}{10}$</td><td>$\frac{1}{10}$</td><td>$\frac{1}{10}$</td><td>$\frac{1}{10}$</td><td>$\frac{1}{10}$</td><td>$\frac{1}{10}$</td><td>$\frac{1}{10}$</td><td>$\frac{1}{10}$</td><td>$\frac{1}{10}$</td> </tr> </table>	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$
$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$		
Write the number sentence.	$(\frac{4}{10} + \frac{2}{10} = \frac{6}{10})$										
Write the answer.	$(\frac{6}{10}$ m long)										

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 learned to add fractions with the same denominator.

Lesson 28: Subtraction of fractions

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.17 Fractions; 4.4 Capacity / Volume.

Lesson Objective: Solve a variety of subtraction problems using fractions with the same denominator.

Lesson Vocabulary: Half, quarter, eighth, third, fifth, sixth, seventh, tenth, fraction, subtract, take away, less.

Resources: Paper strips (learners), large paper strip (teacher).

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	$18 \div 2$	9	6	$42 \div 7$	6
2	$21 \div 3$	7	7	$40 \div 8$	5
3	$32 \div 4$	8	8	$63 \div 9$	7
4	$30 \div 5$	6	9	$36 \div 6$	6
5	$54 \div 6$	9	10	$28 \div 7$	4

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson, learners will begin to subtract fractions with the same denominator. The learners will solve problems in context, and may use paper folding to help them represent the problems. The learners will be able to solve the problems using number lines as they become more confident in showing fractions on number lines.

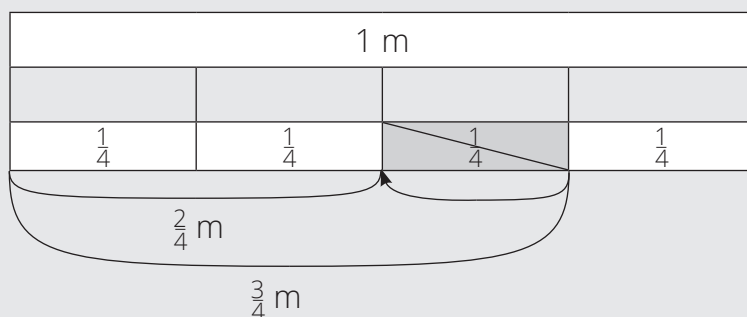
Prepare the paper strips as you did for previous lessons.

Today we are learning to subtract fractions with the same denominator.

Activity 1: Whole class activity

- Make sure that each learner has a paper strip.
- Write the following word problem on the board. (*change*)
There is $\frac{3}{3}$ m of tape.
Thoko used $\frac{1}{4}$ m of it.
 How many metres of tape are left?
- Read the problem.
- Ask: **What is the story about?** (Tape.)
- Ask: **What numbers do you see in the story?** ($\frac{3}{4}$ and $\frac{1}{4}$.)

- Underline these numbers
- Ask: **What is the question?** (How many metres of tape are left?)
- Underline the question with a wavy line.
- When the learners understand the story, let them read the word problem, following after you sentence by sentence.
- Ask: **How can you solve this problem?** (We can subtract $\frac{1}{4}$ m from $\frac{3}{4}$ m because Thoko used $\frac{1}{4}$ m, so the length of the tape must decrease.)
- Say: **Let's fold our paper strip to solve the problem.**
- Ask: **How many equal parts do we need?** (4)
- Let the learners fold their paper strips into 4 equal parts and write $\frac{1}{4}$ on each part of the strip.
- Let the learners cut the strips along the fold lines.
- Fold another large paper strip into 4 equal parts.
- Open your paper strip and paste it under the unfolded large strip to show that the length of both strips is the same.
- Use a kokie to trace the fold lines and write $\frac{1}{4}$ on each part of the strip.
- Ask: **How many pieces do we need for $\frac{3}{4}$ m rope?** (3 pieces to show $\frac{3}{4}$ m.)
- Let the learners put three pieces of $\frac{1}{4}$ s on the desk to represent $\frac{3}{4}$ m.
- Confirm what the learners have in front of them by pasting $\frac{3}{4}$ on the board.
- Ask: **How many pieces must we take away from $\frac{3}{4}$?** (We must take away one piece of $\frac{1}{4}$.)
- Let the learners take away one piece of $\frac{1}{4}$ from $\frac{3}{4}$.



- Confirm what the learners have in front of them by removing $\frac{1}{4}$ from $\frac{3}{4}$ on the board.
- Ask: **How many $\frac{1}{4}$ s do you have now?** (Two $\frac{1}{4}$ s.)
- Ask: **How do we write two $\frac{1}{4}$ s?** ($\frac{2}{4}$)
- Write the number sentence. ($\frac{3}{4} - \frac{1}{4} = \frac{2}{4}$)
- Ask: **What is the answer to the word problem?** (The amount of tape left over is $\frac{2}{4}$ m.)
- Let the learners write the number sentence and the answer in their classwork books.
($\frac{3}{4} - \frac{1}{4} = \frac{2}{4}$, $\frac{2}{4}$ m)
- NOTE: The learners must answer with the unit $\frac{2}{4}$ m.

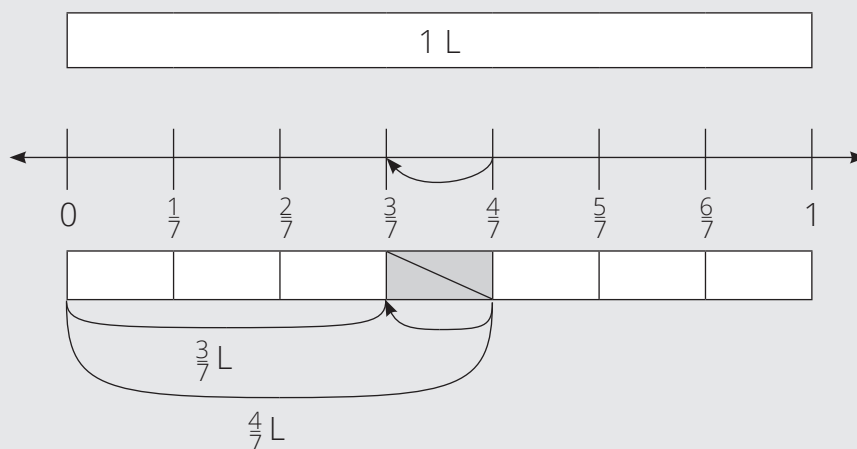
Activity 2: Whole class activity

- Make sure that each learner has a paper strip.
- Write the following word problem on the board. (*change*)
There is $\frac{4}{7}$ L of water.

Themba drank $\frac{1}{7}$ L of it.

How much of the water is left?

- Read the problem.
- Ask: **What is the story about?** (Water.)
- Ask: **What numbers do you see in the story?** ($\frac{4}{7}$ and $\frac{1}{7}$)
- Underline these numbers.
- Ask: **What is the question?** (How much of the water is left?)
- Underline the question with wavy line.
- When the learners understand the story, let them read the word problem, following after you sentence by sentence.
- Ask: **How can you solve this problem?** (We can subtract $\frac{1}{7}$ L of water from $\frac{4}{7}$ L of water, because Themba drank it).
- Say: **Let's use our paper strip to solve the problem.**
- Ask: **How many equal parts do we need?** (7)
- Let the learners fold their paper strips into 7 equal parts and write $\frac{1}{7}$ on each part of the strip.
- Let the learners cut the strips along the fold lines.
- Open your paper strip and paste it under the unfolded large strip to show that the length of both strips is the same.
- Draw a $\frac{1}{7}$ number line between the unfolded strip and folded strip.
- Use a kokie to trace the fold lines and write $\frac{1}{7}$ on each part of the strip.
- Ask: **How many pieces do we need for $\frac{4}{7}$ L of water?** (4 pieces to show $\frac{4}{7}$ L.)
- Let the learners put four pieces of $\frac{1}{7}$ s on the desk to represent $\frac{4}{7}$ L.
- Confirm what the learners have in front of them by pasting $\frac{4}{7}$ on the board.
- Ask: **How many pieces must we take away from $\frac{4}{7}$?** (We must take away one piece of $\frac{1}{7}$.)
- Let the learners take away one piece of $\frac{1}{7}$ from $\frac{4}{7}$.

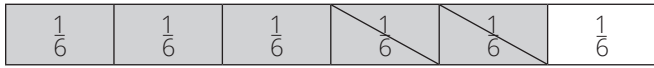
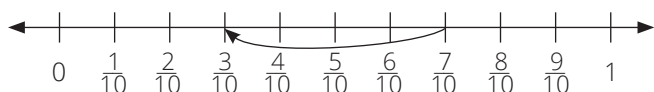
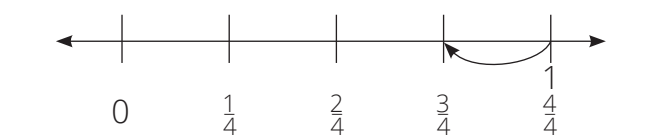


- Confirm what the learners have in front of them by removing $\frac{1}{7}$ from $\frac{4}{7}$ on the board.
- Write $\frac{1}{7}$ fractions on the number line and show the subtraction with a backward arrow.
- Ask: **How many $\frac{1}{7}$ s do you have now?** (Three $\frac{1}{7}$ s.)
- Ask: **How do we write three $\frac{1}{7}$ s?** ($\frac{3}{7}$)
- Say: **You see $\frac{3}{7}$ on the number line as an answer as well.**

- Let the learners write the number sentence and the answer in their classwork books.
($\frac{4}{7} - \frac{1}{7} = \frac{3}{7}$, $\frac{3}{7}$ L)
- Ask a learner to come to the board to write the number sentence and the answer for correction.
- NOTE: The learners must answer with the unit $\frac{3}{7}$ L.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

Solve the problems:

a	Mom has a $\frac{5}{6}$ m length of fabric. She cuts a $\frac{2}{6}$ m length off it. How long is the length of fabric left over?
	Draw the bar diagram. 
	Write the number sentence. ($\frac{5}{6} - \frac{2}{6} = \frac{3}{6}$)
	Write the answer. ($\frac{3}{6}$ m of fabric)
b	Mufunwa draws a line that is $\frac{7}{10}$ m long. She then erases $\frac{4}{10}$ m of the line. How long is the line now?
	Draw the number line. 
	Write the number sentence. ($\frac{7}{10} - \frac{4}{10} = \frac{3}{10}$)
	Write the answer. ($\frac{3}{10}$ m)
c	Tshepo has 1 L of milk. He spills $\frac{1}{4}$ L of the milk. How much milk does Tshepo have left?
	Draw the number line. (NOTE: It is important to check $1 \text{ L} = \frac{4}{4} \text{ L}$.) 
	Write the number sentence. ($\frac{4}{4} - \frac{1}{4} = \frac{3}{4}$)
	Write the answer. ($\frac{3}{4}$ L of milk)

4 HOMEWORK ACTIVITY (5 MINUTES)

Solve the problem:

Khosi buys a ribbon that is $\frac{8}{8}$ m long.
 She cuts off $\frac{4}{8}$ m of the ribbon.
 How long is the length of ribbon left over?

Draw the bar diagram.	
Write the number sentence.	$(\frac{8}{8} - \frac{4}{8} = \frac{4}{8})$
Write the answer.	$(\frac{4}{8} \text{ m long})$

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 learned to subtract fractions with the same denominator.

Lesson 29: Fraction of a collection

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.

Lesson Objective: Solve sharing problems leading to fractions.

Lesson Vocabulary: Half, quarter, eighth, third, fifth, sixth, tenth, divide, fraction, share.

Resources: N/A.

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	What is ...	Answer		What is ...	Answer
1	$54 \div 9$	6	6	$24 \div 3$	8
2	$36 \div 6$	6	7	$40 \div 5$	8
3	$20 \div 4$	5	8	$27 \div 9$	3
4	$32 \div 8$	4	9	$49 \div 7$	7
5	$14 \div 2$	7	10	$72 \div 8$	9

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

In this lesson, learners will continue to develop their understanding of solving fraction problems. However, they will now extend this to working with problems involving fractions of a collection. This means that they will have to find fractional parts of whole numbers, and also divide numbers resulting in answers involving fractions.

Today we are learning to solve sharing problems leading to fractions.

Activity 1: Whole class activity

- Write the following word problem on the board.
Grandmother gives Kiki R12.
Kiki wants to save a third of the money.
How much money does she save?
- Read the problem.
- Ask: **What is the story about?** (Money.)
- Ask: **What numbers do you see in the story?** (12 and $\frac{1}{3}$)
- Underline these numbers.
- Ask: **What is the question?** (How much money does she save?)
- Underline the question with wavy line.

- When the learners understand the story, let them read the word problem, following after you sentence by sentence.
- Ask: **What does $\frac{1}{3}$ mean?**
 - **What does the number 3 at the bottom of the fraction tell you?** (The number 3 at the bottom of the fraction shows that we divide the whole into 3 equal parts.)
 - **What does the number 1 at the top of the fraction tell you?** (The number 1 at the top of the fraction shows that we take one part of 3 equal parts.)
- Ask: **What is a whole in this story?** (R12, that is all of the money Kiki gets from Grandmother.)
- Ask: **What do we do for dividing a whole (R12) into 3 equal parts?** (We do division.)
- Ask: **Is this a sharing problem or a grouping problem?** (Sharing because we know how many groups there are, but we don't know how much should be in each group.)
- Ask: **How do you know how many groups?** (It's 3 groups because Kiki wants to save a third of her money; this means she wants to save one part of three equal parts.)
- Let the learners write the number sentence in their classwork books.
- Ask a learner to write the number sentence on the board ($12 \div 3 = \square$).
- Give the learners time to solve the problem.
- Ask: **Which multiplication table can you use to find the answer?** (3 times table.)
- Ask a learner to come to the front to explain how they can use the 3 times table to find the answer. (We turned $12 \div 3 =$ into $\square \times 3 = 12$. We know that 4×3 is 12.)
- Draw the following on the board to represent what the learners are describing:

R12 (a whole)		
R4	R4	R4

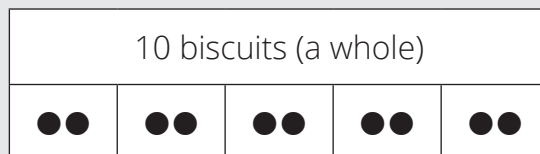
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$
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- Ask: **How much money would be one third of R12?** (R4, so Kiki must save R4.)
- Let the learners complete the number sentence and write the answer: $12 \div 3 = 4$, R4.
- Write the answer to the number sentence on the board for correction.

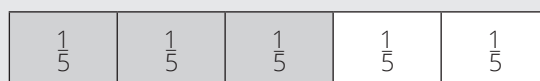
Activity 2: Whole class activity

- Write the following word problem on the board:
There are 10 biscuits on the plate.
Nomonde eats three fifths of the biscuits.
How many biscuits did she eat?
- Read the problem.
- Ask: **What is the story about?** (Biscuits.)
- Ask: **What numbers do you see in the story?** (10 and $\frac{3}{5}$.)
- Underline these numbers.
- Ask: **What is the question?** (How many biscuits did she eat?)

- Underline the question with wavy line.
- When the learners understand the story, let them read the word problem, following after you sentence by sentence.
- Ask: **What does $\frac{3}{5}$ mean?**
 - **What does the number 5 at the bottom of the fraction tell you?** (The number 5 at the bottom of the fraction shows that we divide a whole into 5 equal parts.)
 - **What does the number 3 at the top of the fraction tell you?** (The number 3 at the top of the fraction shows that we look at three part out of 5 equal parts, so Nomonde ate 3 parts out of 5 equal parts.)
- Ask: **What is a whole in this story?** (10, that is the total number of biscuits there are to start.)
- Ask: **What do we do for dividing a whole (10) into 5 equal parts?** (We do division.)
- Let the learners write the number sentence with the answer in their class work books ($10 \div 5 = 2$; they are expected to do this division mentally).
- Let a learner come to the board and write the number sentence ($10 \div 5 = 2$).
- Ask a learner to come to the front to explain how they can use the 5 times table to find the answer. (We turned $10 \div 5 =$ into $\square \times 5 = 10$. We know that 2×5 is 10.)
- Ask: **What is the unit of this 2?** (2 biscuits.)
- Ask: **What does this 2 tell you?** ($\frac{1}{5}$ of 10 biscuits is 2 biscuits; when you divide 10 into 5 equal parts, you get 2 biscuits, there are 2 biscuits in $\frac{1}{5}$ of 10 biscuits.)
- Draw the following on the board to represent what the learners are describing:



- Call a learner to the board to show how many fifths Nomonde ate. (Three fifths.)

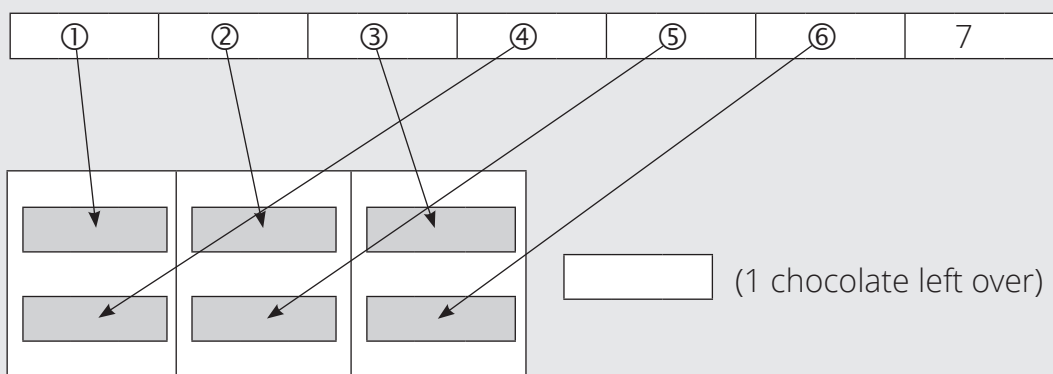


- Ask: **How many biscuits would $\frac{3}{5}$ of 10 be?** ($3 \times 2 = 6$; 6 biscuits.)
- Ask: **How many biscuits did Nomonde eat?** (6 biscuits.)

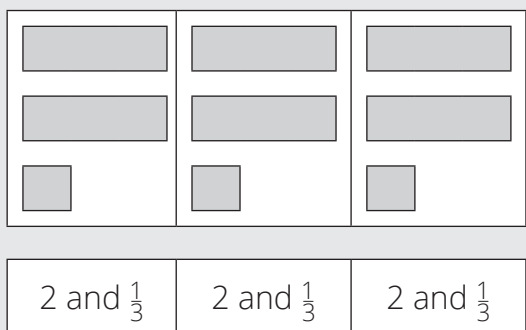
Activity 3: Whole class activity

- Write the following word problem on the board.
**Share 7 chocolate bars between 3 friends
 so that they all get the same amount and there is nothing left over.**
 How many chocolate bars will they each get?

- Read the problem.
- Ask: **What is the story about?** (Chocolate.)
- Ask: **What numbers do you see in the story?** (7 and 3.)
- Underline these numbers.
- Ask: **What is the question?** (How many chocolate bars will they each get?)
- Underline the question with wavy line.
- When the learners understand the story, let them read the word problem, following after you sentence by sentence.
- Ask: **How can you solve this problem?** (We can share the chocolate equally.)
- Draw 7 chocolate bars on the board.
- Let a learner draw the arrows to show sharing chocolate bars into 3 friends.



- Ask: **What must we do with that one chocolate?** (We must share it between the 3 friends.)
- Ask: **How could we do that?** (We could cut it up into 3 equal parts; we can cut it into thirds.)
- Draw the following on the board to represent what the learners are describing:

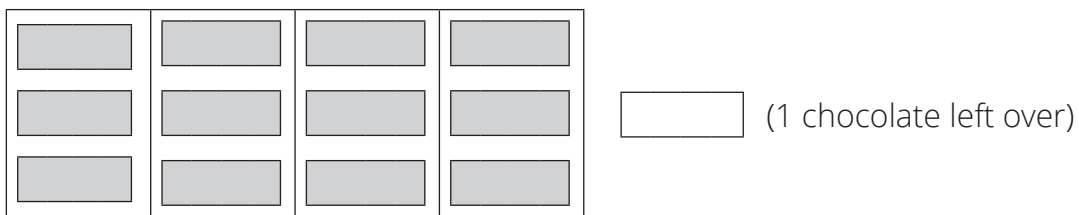


- Ask: **How many chocolate bars would each friend get?** (2 and $\frac{1}{3}$ chocolate bars.)

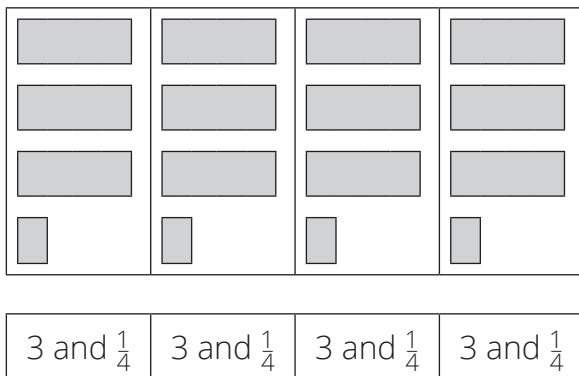
3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

- Refer to this word problem in the LAB (Lesson 29).
Share 13 chocolate bars between 4 friends so that they all get the same amount and there is nothing left over.
 How many chocolate bars will they each get?
- Read the problem.

- Ask: **What is the story about?** (Chocolate.)
- Ask: **What numbers do you see in the story?** (13 and 4.)
- Underline these numbers.
- Ask: **What is the question?** (How many chocolate bars will they each get?)
- Underline the question with wavy line.
- When the learners understand the story, let them read the word problem, following after you sentence by sentence.
- Ask: **How can you solve this problem?** (We can share the chocolate equally.)
- Ask a learner to write the number sentence on the board ($13 \div 4 = \square$).
- Ask: **Which multiplication table could you use to find the answer?** (4 times table.)
- Give the learners time to solve the problem.
- Ask: **Could you multiply anything by 4 to get 13?** (No because $3 \times 4 = 12$, and $4 \times 4 = 16$.)
- Ask: **Could we use 4×4 to help us?** (No because we only have 13 chocolates, not 16.)
- Say: **So if we say $3 \times 4 = 12$, how many chocolates would be left over?** (1 chocolate.)



- Ask: **What must we do with that one chocolate?** (We must share it between 4 friends.)
- Ask: **How could we do that?** (We could cut it up into 4 equal parts; we can cut it into quarters.)
- Draw the following on the board to represent what the learners are describing:



Ask: **How many chocolate bars would each friend get?** ($3 \text{ and } \frac{1}{4}$ chocolate bars.)

4 HOMEWORK ACTIVITY (5 MINUTES)

Solve the problem:

Nomsa has 18 marbles. She takes $\frac{1}{6}$ of her marbles to school. How many marbles does she take?	
Draw the diagram.	
Dots	(●●●●) (●●●●) (●●●●) (●●●●) (●●●●) (●●●●)
Fractions	$(\frac{1}{6})$ $(\frac{1}{6})$ $(\frac{1}{6})$ $(\frac{1}{6})$ $(\frac{1}{6})$ $(\frac{1}{6})$
Write the number sentence to show $\frac{1}{6}$ of 18.	$(18 \div 6 = 3)$
Write the answer.	(Nomusa took 3 marbles to school.)

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 learned to solve sharing problems leading to fractions.

Lesson 30: Consolidation

Teacher's notes

This lesson allows for consolidation of the previous days' lesson content.

CAPS topics: 1.17 Fractions; 4.2 Length; 4.4 Capacity / Volume; 1.10 Sharing leading to fractions.

Lesson Objective: Solve a variety of problems involving fractions.

Lesson Vocabulary: Half, quarter, eighth, third, fifth, sixth, seventh, tenth, fraction, subtract, take away, less, add, and, more, divide, share.

Resources: N/A.

Date:

Week

Day

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

This week, the learners have compared fractions and they have solved problems involving fractions. The learners have added and subtracted fractions with the same denominator, and have also solved problems involving fractions of a collection. There is a clear progression between lessons, so it is important to ensure that learners grasp the concepts covered in each lesson before moving on to the next lesson.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

The learners may find solving problems which involve fractions of a collection quite confusing initially. It is essential that learners are given opportunities to discuss and to think about what they are doing. The essential concept of fractions is that the denominator shows how many equal parts the whole is divided into, so you can use division to find the size of each part and the numerator tells you how many equal parts you look at, so you can use multiplication to find the fraction of the collection. Also it is important that the whole is the total number of the collection. Learners need to be able to construct their own understanding rather than being told how to solve problems by their teacher. In order to achieve this, it is necessary to ask a number of questions throughout the lesson, which will promote thinking and engagement on the part of the learners.

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 a variety of problems involving fractions.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

1 Write the fractions on the number line and compare them.

	Write the fractions in the correct place on the number lines.	Which fraction is smaller?
a	$\frac{5}{7}$ and $\frac{3}{7}$	$(\frac{3}{7})$
b	$\frac{4}{5}$ and $\frac{3}{5}$	$(\frac{3}{5})$
c	$\frac{2}{8}$ and $\frac{4}{8}$	$(\frac{2}{8})$

2 Solve the problems:

a	Tshilidzi had a $\frac{7}{8}$ m length of string. He cut off $\frac{5}{8}$ m. How long is the length of string left over?	
	Draw the number line.	
	Write the number sentence.	$(\frac{7}{8} - \frac{5}{8} = \frac{2}{8})$
	Write the answer.	$(\frac{2}{8} \text{ m of string})$
b	Priya made $\frac{2}{3}$ L of tea. She then made another $\frac{1}{3}$ L of tea. How much tea did she make altogether?	
	Draw the number line.	
	Write the number sentence.	$(\frac{2}{3} + \frac{1}{3} = \frac{3}{3})$
	Write the answer.	$(\frac{3}{3} \text{ L or } 1 \text{ L of tea})$

3 Solve the problem:

Themba has 20 flowers. She gives $\frac{4}{5}$ of her flowers to her teacher. How many flowers does she give to her teacher?											
Draw the diagram.	<table border="1"> <tr> <td>(●●●●)</td> <td>(●●●●)</td> <td>(●●●●)</td> <td>(●●●●)</td> <td>(●●●●)</td> </tr> <tr> <td>$(\frac{1}{5})$</td> <td>$(\frac{1}{5})$</td> <td>$(\frac{1}{5})$</td> <td>$(\frac{1}{5})$</td> <td>$(\frac{1}{5})$</td> </tr> </table>	(●●●●)	(●●●●)	(●●●●)	(●●●●)	(●●●●)	$(\frac{1}{5})$	$(\frac{1}{5})$	$(\frac{1}{5})$	$(\frac{1}{5})$	$(\frac{1}{5})$
(●●●●)	(●●●●)	(●●●●)	(●●●●)	(●●●●)							
$(\frac{1}{5})$	$(\frac{1}{5})$	$(\frac{1}{5})$	$(\frac{1}{5})$	$(\frac{1}{5})$							
Write the number sentences to show $\frac{4}{5}$ of 20.	$20 \div 5 = 4, 4 \times 4 = 16$										
Write the answer.	(Themba gave 16 flowers to her teacher)										

5 REFLECTION AND SUMMARY OF LESSON

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

Today we have learned to solve a variety of problems involving 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: 1.17 Fractions; 4.2 Length; 4.4 Capacity / Volume; 1.10 Sharing leading to 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.

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 the learners' responses.

3 ASSESSMENT


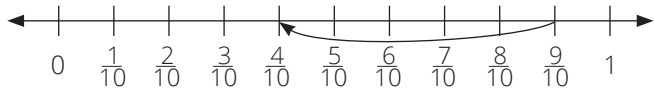
WRITTEN ASSESSMENT (18)

- 1 Write the fractions on the number line and compare the. (9)

	Write the fractions in the correct place on the number lines.	Which fraction is larger?
a		$\left(\frac{3}{4}\right)$
b		$\left(\frac{9}{10}\right)$
c		$\left(\frac{3}{3}\right)$

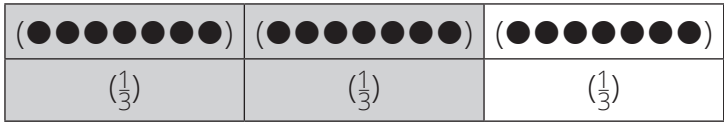
2 Solve the problems:

(2 × 3 = 6)

a	Bongi drew a $\frac{3}{6}$ m line in the sand. She then added another $\frac{1}{6}$ m to the line she drew. How long is the line Bongi drew now?	
	Draw the bar diagram.	
	Write the number sentence.	$(\frac{3}{6} + \frac{1}{6} = \frac{4}{6})$
	Write the answer.	$(\frac{4}{6}$ m long)
b	Dad has $\frac{9}{10}$ L of juice. He drinks $\frac{5}{10}$ L of the juice. How much juice does Dad have left?	
	Draw the number line.	
	Write the number sentence.	$(\frac{9}{10} - \frac{5}{10} = \frac{4}{10})$
	Write the answer.	$(\frac{4}{10}$ L of juice)

3 Solve the problem:

(3)

Sli has 21 apples. She gives $\frac{2}{3}$ of her apples to her friends. How many apples does she give away?	
Draw the diagram.	
Write the number sentences to show $\frac{2}{3}$ of 21.	$(21 \div 3 = 7, 2 \times 7 = 14)$
Write the answer.	(Sli gave away 14 apples)

Unit 3 Introduction

In this unit, learners will learn about length, perimeter and area. These form part of measurement. Measurement is part of our daily lives. In this unit, we revise metres and centimetres as the standard units of length, as well as the fact that 100 cm is 1 m. We move onto estimating varying lengths. Estimation is an informed guess. For example, the length of a new pencil is about 10 cm. Two of the lessons are on perimeter and area. Perimeter is the total length around a shape. Area is the amount of surface covered. Generally, the learners enjoy these concepts as they involve practical activities.

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 length, perimeter and area.
- **Procedural fluency:** Learners will develop procedural fluency in the ability to measure length, perimeter and area accurately through a variety of tasks.
- **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. In this unit, learners will develop their understanding of length, area and perimeter.
- **Reasoning:** Learners will be able to justify and explain how they worked out the length, perimeter and area of a shape/object.

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

- **Problem solving:** Through working with measurement, learners are able to solve problems related to length, perimeter and area.
- **Justifying answers:** Learners justify their answers by using estimation and standard units of measurement.
- **Addressing learners' errors:** The teacher can address learners' errors in this unit, as the unit might expose learners' misconceptions with regard to the measurement of length. Errors in activities may reflect confusion about what is to be measured. Teachers should ask learners probing questions in order to find the source of their errors in order to address them most effectively.

Lesson 32: Metres

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 4.2 Length.

Lesson Objective: Revise metres as the standard unit of measurement for length.

Lesson Vocabulary: Length, standard unit, comparison, longer, shorter, taller, wider, width, metre, record, measurement, height, forwards, backwards, calculate, estimate, estimation.

Resources: Metre stick, 1 m lengths of string (learners).

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	Which number is the biggest?	Answer		Which number is the smallest?	Answer
1	145, 154, 150	154	6	154, 120, 145	120
2	120, 122, 102	122	7	130, 152, 153	130
3	800, 700, 600	800	8	848, 747, 346	346
4	321, 312, 333	333	9	998, 987, 989	987
5	102, 103, 101	103	10	100, 102, 105	100

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

This is the first of five lessons on length, perimeter and area. In this lesson, we revise one of the standard units of measurement – the metre – which is equal to 100 centimetres. We discuss the value of the standard unit – showing how this will allow everyone to get the same measurement instead of different measurements, like we get when measuring using non-standard units.

Today we are learning to measure length using metres and centimetres.

Activity 1: Learners work in groups

- Give each group of learners a one metre length of string.
- The learners use their rulers to measure the piece of string in centimetres.
- Ask: **How many centimetres did you measure?** (100 cm.)
- Say: There are 100 cm in one metre (1 m). (Show the learners a metre stick if you have one.)
- Discuss the metre as a standard unit. It is used to measure things that are ‘long’ (for example, we can’t use a metre to measure the length of your schoolbook).

- Ask: **Who can take a step that is a metre long?** (Discuss – some could, some could not, it depends on the length of their legs.)
- Estimate if you can take a step which is a metre in length. Take a step that you think is a metre in length. Other members of the group should measure the length of the step. Discuss whether or not you were right. (Allow all members of the group to try and take a step that is a metre in length. This will give the group a lot of practice estimating.)
- Ask: **Can anyone take a step longer than a metre?** (Discuss. Take note of the differences between the steps the learners take!)

Activity 2: Learners work in groups

- In groups, ask the learners to measure objects using their metre strings. Each group must find (inside the classroom, or outside if necessary) and make a list of:
 - Five things that are shorter than a metre in length.
 - Five things that are longer than a metre in length.
 - Five things that are exactly a metre long. (This might not be possible, but the learners can try.)

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

Note: Answers will vary in this activity. Learners will need a string or a metre stick when they do Questions 1 to 3.

Estimate first then measure the objects to see if the objects are longer or shorter than a metre.

	Measure	Estimate		Measure
		longer than a metre	shorter than a metre	Was I right?
1	Your height.			
2	The width of the chalkboard.			
3	The length of your desk.			
4	The width of the doorway.			
5	The height of your desk.			

4 HOMEWORK ACTIVITY (5 MINUTES)

NOTE: Learners answers will vary.

- 1 Draw a picture of something at home that is longer than 1 m.
- 2 Draw a picture of something at home that is shorter than 1 m.

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 learned to measure using metres and centimetres as standard units of length.

Lesson 33: Centimetres

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 4.2 Length.

Lesson Objective: Estimate, measure and record lengths in centimetres using a ruler.

Lesson Vocabulary: Length, estimate, measure, height, width, metres, centimetres, units, record.

Resources: Ruler, cardboard strips cut out in exact measurements of 1 cm to 10 cm (make this for the lesson).

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	What is the smallest number?	Answer		What is the smallest number?	Answer
1	120, 125, 110	110	6	105, 155, 515	105
2	130, 135, 145	130	7	231, 312, 132	132
3	248, 284, 482	248	8	252, 245, 265	245
4	122, 102, 110	102	9	110, 100, 101	100
5	211, 102, 112	102	10	365, 635, 536	365

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

This is the second of five lessons on length, perimeter and area. This is a practical lesson – the learners must use a ruler to take actual measurements in this lesson. The learners estimate and measure the lengths of a number of objects in order to consolidate their understanding of length.

Today we are learning to estimate and measure length.

Activity 1: Whole class activity

- Remind the learners that when measuring in centimetres, we do not line up the object being measured with the start of the ruler; we line it up with the zero on the ruler.


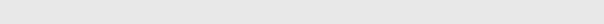
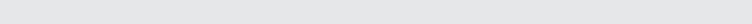


- Ask the learners to show you 1 cm on other parts of their ruler, e.g. between 2 cm and 3 cm, between 3 cm and 4 cm, and so on.

- Remind the learners that cm is short for centimetre.

Activity 2: Learners work in groups

- Give each group of learners at least three cardboard strips of different lengths.
- The learners must measure the lengths of each of the strips of paper.
- Offer assistance as required, checking that the learners are placing the zero on the ruler against the beginning of the line and reading the measurement correctly.
- The learners should draw the length of the strips they measure and write the measured length next to each one. For example:




1  5 cm
 2  8 cm
 3  10 cm

Activity 3: Learners work in pairs

- Give the learners various objects in the class to measure with their rulers, e.g. the length, height and width of their schoolbag, the length of a pencil, etc.
- Remind them continuously about where to place the ruler when measuring with a ruler (line the starting point of the measurement up with the zero on the ruler).

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

First estimate, then measure the lengths. Complete the table.

	Estimate	Measure	Difference
1 	(various)	($6\frac{1}{2}$ cm)	(various)
2 		(4 cm)	
3 		($4\frac{1}{2}$ cm)	
4 The length of my Maths Workbook.		($27\frac{1}{2}$ cm)	
5 The width of my Maths Workbook.		(21 cm)	
6 My handspan.		(various)	
7 My friend's handspan.		(various)	

4 HOMEWORK ACTIVITY (5 MINUTES)

1 Ask 4 people at home to stand in a line.

a _____ is the tallest.

b _____ is the shortest.

2 Use a tape measure to find out:

a I am _____ cm tall.

b _____ is _____ cm tall.

c _____ is _____ cm tall.

d _____ is _____ cm tall.

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 learned to estimate and measure length.

Lesson 34: Working with units of length

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 4.2 Length.

Lesson Objective: Solve addition and subtraction problems involving units of length.

Lesson Vocabulary: Length, measure, estimate, height, width, metres, centimetres, calculate, compare, record.

Resources: Rulers, labelled pieces of string cut to various lengths, scrap paper.

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	What is the smallest number?	Answer		What is the biggest number?	Answer
1	784, 874, 478	478	6	478, 784, 874	874
2	511, 115, 151	115	7	511, 115, 151	511
3	123, 312, 213	123	8	123, 312, 213	312
4	702, 207, 720	207	9	207, 702, 720	720
5	987, 978, 789	789	10	987, 789, 978	987

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

This is the third of five lessons on length, perimeter and area. In this lesson, the learners solve addition and subtraction problems with centimetres and metres. The calculations are based on working out the difference between estimation and the actual measurement of a variety of objects.

Today we are learning to solve addition and subtraction problems with centimetres and metres.

Activity 1: Learners work in groups

- Draw an estimation recording sheet (like the one shown below) on the chalkboard before the lesson. The table is also in the LAB for learners to refer to.
- Demonstrate the steps to take in order to complete the table, using the door as an example. Measurements must all be done in metres.

Object	Estimate	Measure	Difference
Door (height)	2 m	1,8 m	0,2 m
Door (width)			
Teacher's desk (height)			
Teacher's desk (length)			
Teacher's desk (breadth)			
Chalkboard (length)			
Chalkboard (height)			
Width of the class			

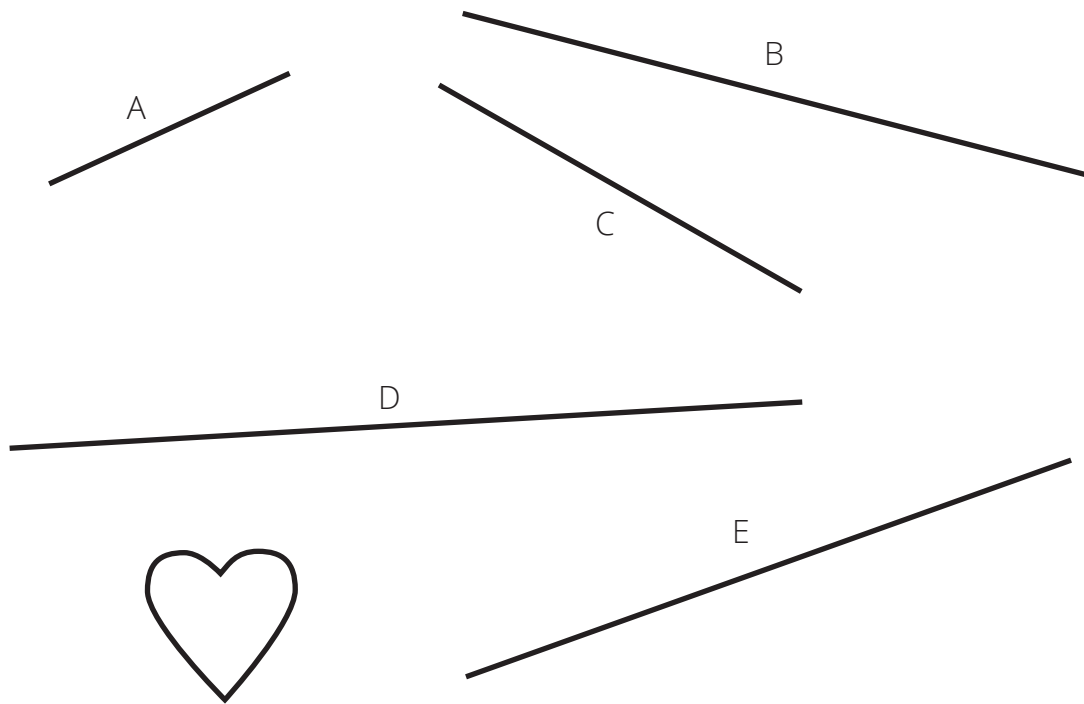
- Step 1: Ask the learners to estimate the height of the door.
Select one response and record this in the **Estimate** column on the board.
- Step 2: Ask a learner to measure the height of the door.
Record this in the **Measure** column on the board.
- Step 3: Calculate the difference between the estimations and measurements and record this in the **Difference** column.
- The learners should complete the table following the steps for each of the objects in the table.

Activity 2: Learners work in groups

- Ask the learners to refer to the recording sheet in the LAB for the next activity.
- Give each group of learners 4 pieces of string (each of a different length) labelled A, B, C and D.
- Ask the learners to go through the same steps (1 to 3) (estimate, measure and calculate the difference) as above to find measurements of their pieces of string.
- These measurements are done in cm.
- After they have completed the three steps for one piece of string, they pass the piece of string to the person on the right and go through the three steps all over again for the next piece of string.
- The learners should all measure each of the 4 pieces of string.
- Once everybody has measured all four pieces of string, the group should discuss the following:
 - ____ was the longest.
 - ____ was the shortest.
 - ____ and ____ are the same length.
 - A and C measure ____ cm altogether.
 - Etc.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

MEASURING LENGTH



- 1 A = _____ cm. ($3\frac{1}{2}$)
- 2 B = _____ cm. ($8\frac{1}{2}$)
- 3 C = _____ cm. ($5\frac{1}{2}$)
- 4 D = _____ cm. ($10\frac{1}{2}$)
- 5 E = _____ cm. ($8\frac{1}{2}$)
- 6 Line ___ is the longest. (D)
- 7 Line ___ is the shortest. (A)
- 8 ___ and ___ have the same length. (B and E)
- 9 A is ___ shorter than D. (7 cm)
- 10 B is ___ longer than A. (5 cm)
- 11 The difference between A and ___ is 2 cm. (C)
- 12 Use a piece of string to measure the length of the sides of the heart. Use your ruler to work out the measurement in cm. ($8\frac{1}{2}$ cm)

4 HOMEWORK ACTIVITY (5 MINUTES)

- 1 Calculate
 - a $64 \text{ cm} - 23 \text{ cm} = \underline{\hspace{2cm}}$ (21 cm)
 - b $43 \text{ cm} + 43 \text{ cm} = \underline{\hspace{2cm}}$ (86 cm)
- 2 Fill in more than, less than, or equal to:
 - a $48 \text{ cm} + 32 \text{ cm} \underline{\hspace{1cm}} (<) 100 \text{ cm} - 15 \text{ cm}$
 - b $100 \text{ cm} - 50 \text{ cm} \underline{\hspace{1cm}} (=) 50 \text{ cm}$

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 learned to solve addition and subtraction problems with centimetres and metres.

Lesson 35: Consolidation

Teacher's notes

This lesson allows for consolidation of the previous days' lesson content.

CAPS topics: 4.2 Length.

Lesson Objective: To revise and consolidate length.

Lesson Vocabulary: Length, measure, estimate, height, width, metres, centimetres, calculate, compare, record.

Resources: Various items of stationery.

Date:

Week

Day

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

This week, the learners learned about length. They learned the standard units of measurement for length, namely the centimetre and metre. They also spent time estimating, measuring and recording different lengths.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

The learners may have experienced difficulty with understanding the difference between estimation and measurement. To estimate is to make an informed guess. It is important that the differences between these concepts are dealt with. You can use practical activities to demonstrate the differences. For example, using a ruler as a guide, ask the learners how long the length of the teacher's table is. Discuss possibilities with the learners and guide them to estimate a suitable answer. You can then ask them to measure the length and compare answers. In this way, the learners are actively constructing 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 length.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

NOTE: The learners estimate and measure the items in the table below. Remember that they should measure and record after each estimation in order to improve their skills.

1 Complete the table:

	Estimate	Measure	Difference between estimation and measurement
Width of classroom.			
Width of the window.			
Length of teacher's table.			

- 2 Find 3 objects in the class that are shorter than 10 cm long. Complete the table.
(Learners will find for example, a pencil, a purse, a pen, a crayon, a pair of scissors, etc.)

	Name of object	Measurement of length
1		
2		
3		

- 3 Find 3 objects in the class that are longer than 10 cm long. Complete the table.
(Learners will find for example, a book, a suit case, a desk, a chair, etc.)

	Name of object	Measurement of length
1		
2		
3		

5 REFLECTION AND SUMMARY OF LESSON

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

Today we have learned about length.

Week 8

Lesson 36: Perimeter

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 4.5 Perimeter.

Lesson Objective: Investigate and measure the distance around 2-D shapes (perimeter).

Lesson Vocabulary: Perimeter, distance, 2-D shapes, measure, estimate, compare, order, record, length.

Resources: Cut-outs of rectangles, squares and circles (one set per group), string, matchboxes (one per group).

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	What is 100 more than...?	Answer		What is 100 more than...?	Answer
1	814	914	6	876	976
2	206	306	7	867	967
3	54	154	8	786	886
4	154	254	9	768	868
5	754	854	10	687	787

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

This is the fourth of five lessons on length, perimeter and area. In this lesson, the learners are introduced to the concept of the perimeter – the total length around a shape. Refer to the dictionary if necessary for terminology definitions and explanations. You need to prepare cut-out rectangles, squares and triangles for Activity 1 of this lesson.

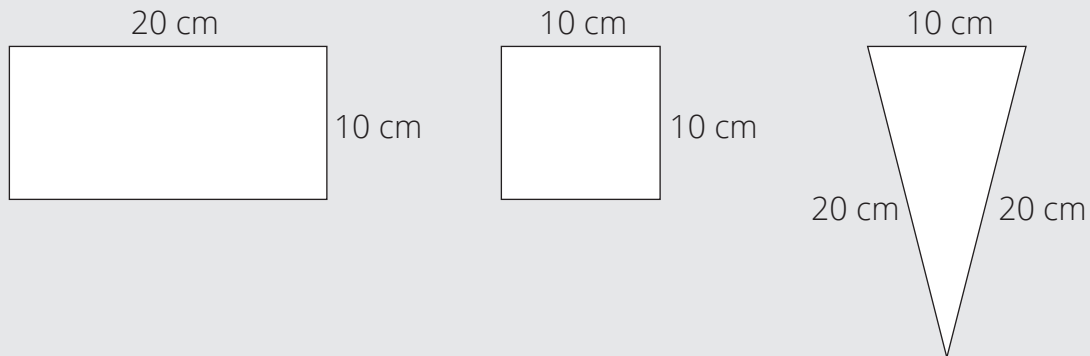
Today we are learning to measure the perimeter of shapes and objects.

Activity 1: Learners work in groups

Explain that the term *perimeter* means the measurement of the distance around a shape.

- Ask the learners how they would go about working out the distance around a rectangle.
- Explain to the learners that we add the measurements of all of the sides of the rectangle together to work out the perimeter of the rectangle.

- Draw a rectangle on the board, measure each side and label the lengths of the sides. Show the learners the calculation for finding the perimeter. Do the same for a square and a triangle (illustrated below).



Rectangle: $20\text{ cm} + 10\text{ cm} + 20\text{ cm} + 10\text{ cm} = 60\text{ cm}$

Square: $10\text{ cm} + 10\text{ cm} + 10\text{ cm} + 10\text{ cm} = 40\text{ cm}$

Triangle: $20\text{ cm} + 20\text{ cm} + 10\text{ cm} = 50\text{ cm}$

- Cut out rectangles, triangles and squares and give one of each to each group. Make sure the sides of the shapes are full centimetres in length (so that learners can find the lengths in cm).
- Let the learners work in their groups to calculate the perimeter of each shape.
- The learners should measure the lengths of each side of each shape and calculate the perimeters.

Activity 2: Whole class activity

- As a class, discuss how we can measure the perimeter (the distance around an object) of a circle.
- We can use a piece of string.



- Use a circle/plate to demonstrate to the learners how one of them can hold the string while the other one places the string around the side of the circle/plate until it meets at the starting point.
- To measure the perimeter, we need to straighten out the string and measure the length of the string using a ruler.
- The perimeter of a circle is also called the circumference of a circle.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: Learners answers will vary in this activity. For question 3 they might draw rectangles with the following sides: 1 cm and 5 cm; 2 cm and 4 cm; all 3cm.

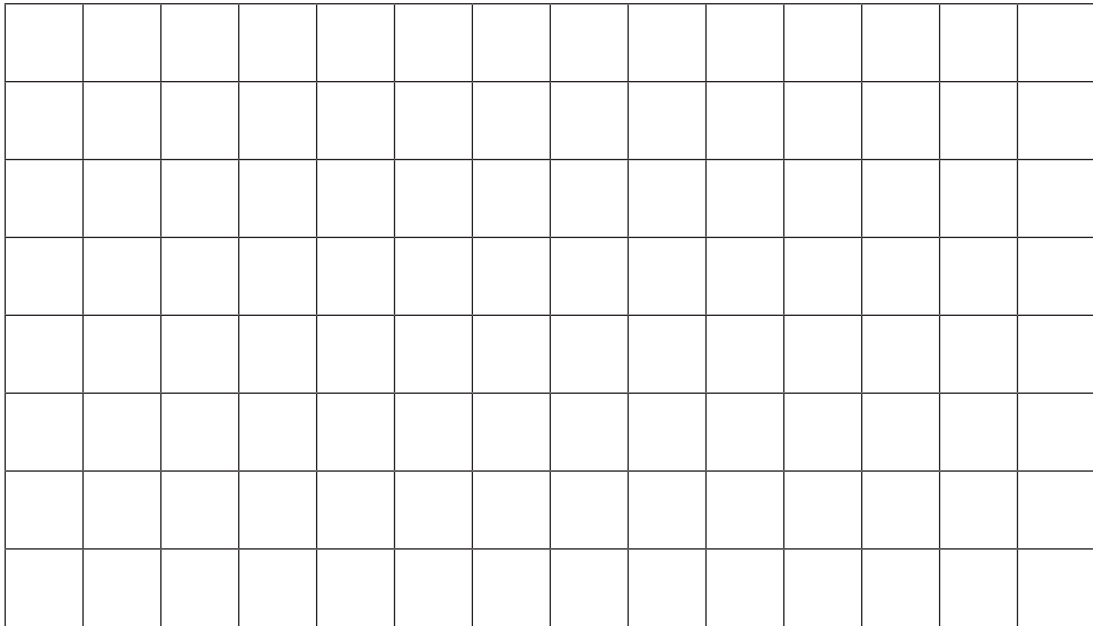
- 1 Trace a matchbox in your book. Measure the lengths of the sides and label them.

What is the perimeter of the rectangle you drew? _____

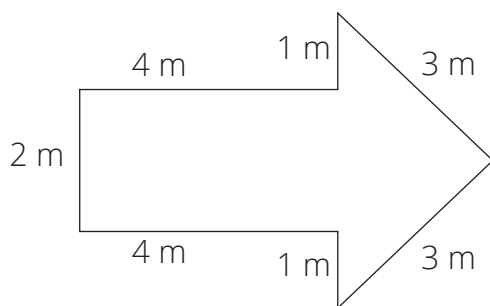
- 2 Cut three strips of paper. All of them need to be the same length. Stick them in your books to make a triangle. Measure the lengths of the sides and label them.

What is the perimeter of the triangle you made? _____

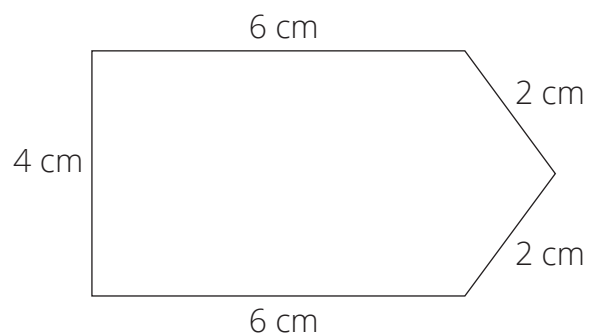
- 3 Draw two different rectangles with a perimeter of 12 cm on the grid.

**4 HOMEWORK ACTIVITY (5 MINUTES)**

Calculate the perimeter of the following shapes.



Perimeter = _____ (18 m)



Perimeter = _____ (20 cm)

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 learned to measure the perimeters of shapes and objects.

Lesson 37: Area

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 4.6 Area.

Lesson Objective: Investigate the area of a surface using tiling.

Lesson Vocabulary: Forwards, backwards, area, estimate, investigate, estimate, tiling, squares, measurement.

Resources: Squares template (see *Printable Resources*).

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	What is 100 less than...?	Answer		What is 100 less than...?	Answer
1	376	276	6	802	702
2	768	668	7	971	871
3	321	221	8	453	353
4	453	353	9	199	99
5	567	467	10	567	467

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

This is the last of five lessons on length, perimeter and area. Learners are introduced to the concept of area in this lesson. This mathematical concept will be used throughout their schooling. In this lesson, you establish the *concept of area: area means the amount of surface covered*. You should not start talking about the formula for area yet; that will be learned in the years to come.

NOTE: To save time, you could give the learners a copy of the squares template and let them cut out all the squares before this lesson.

Today we are learning to measure the area of shapes.

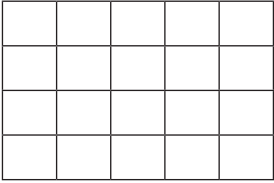
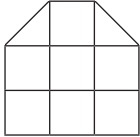
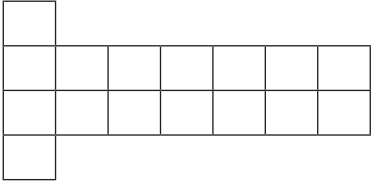
Activity 1: Learners work in groups

- Ask the learners to place the pile of squares that they have cut out in front of them.
- Ask: **Where have you seen tiles before?** (e.g. bathroom floor, kitchen wall, classroom floor, etc.)
- Tell the learners that before someone tiles a wall or floor, they need to estimate the number of tiles they will need so that they can buy enough.

- The learners will now pretend that the squares they have cut out are tiles for a floor. They can pretend that the cover of their LAB is a floor that they must tile.
- Ask each learner to estimate how many squares they would need to tile the LAB cover. Each learner should write down their estimate.
- Ask pairs of learners to lay out the squares on their LAB covers. They must ensure that there are no gaps or overlaps.
- Ask: **How many squares did you need to cover the LAB?** (Answers may vary.)
- Discuss the differences between the estimates and the measurements.
- Ask: **Whose estimation was closer?** (Discuss. Estimates that are close are fine. Estimates that are way out are not good enough – the learners must take care to make good estimates.)
- Explain that when we measure the amount of surface of a space we call the measurement the *area*.
- Write the word on the board and get the learners to say it after you.
- Ask a few learners to explain to you what *area* means. Encourage them to speak about concrete examples as they give their explanations. (*Area is the amount of a flat surface that is covered.*)

Activity 2: Whole class activity

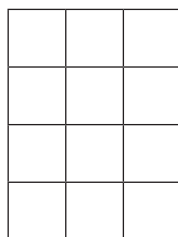
- Before the lesson, draw grids on the board with all the blocks of identical size.
- Ask the learners to help you to find out the number of squares/tiles in each drawing.
- What is the area of each of these shapes, using the given tiles in the shapes?

<p>(20 tiles)</p> 	<p>(8 tiles)</p> 	<p>(16 tiles)</p> 
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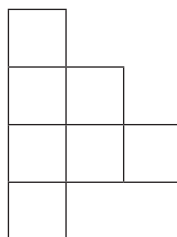
3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

1 What is the area of each of these shapes?

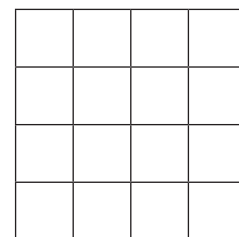
a (12 tiles)



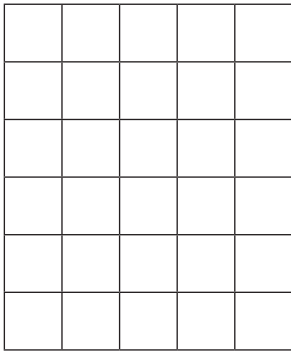
b (7 tiles)



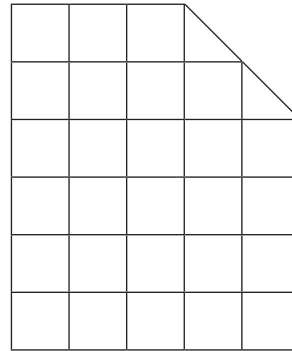
c (16 tiles)





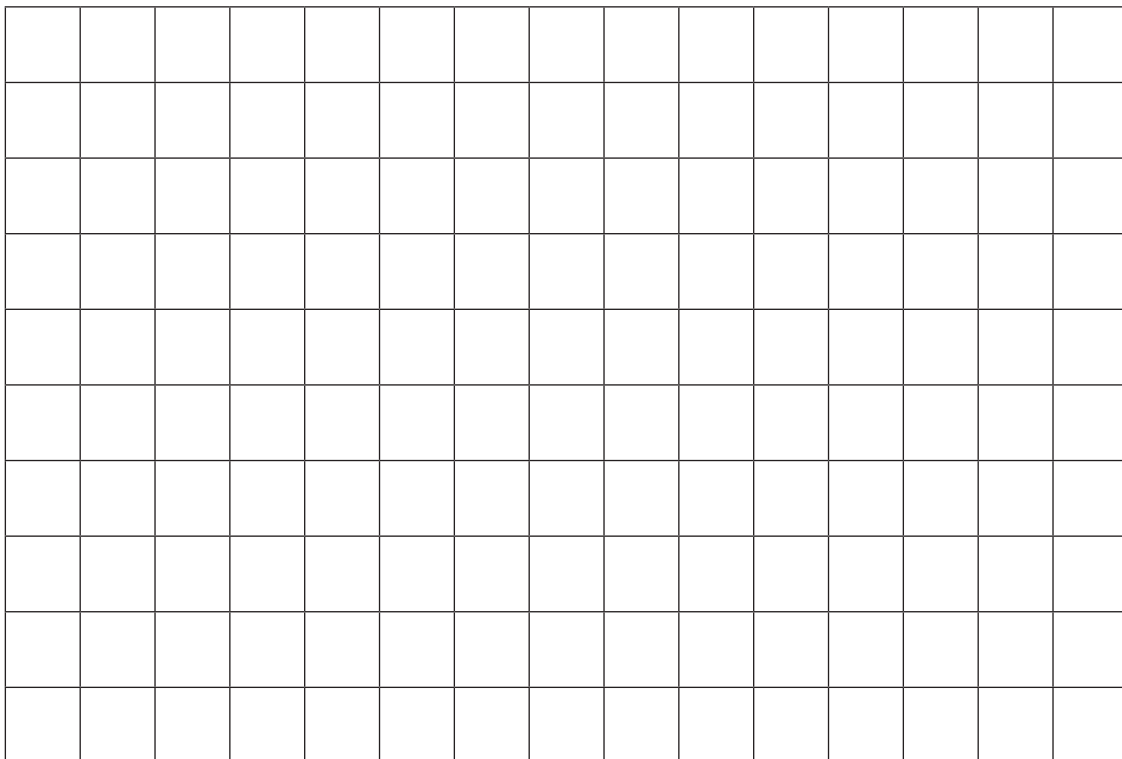
d (30 tiles)



e (28 tiles)



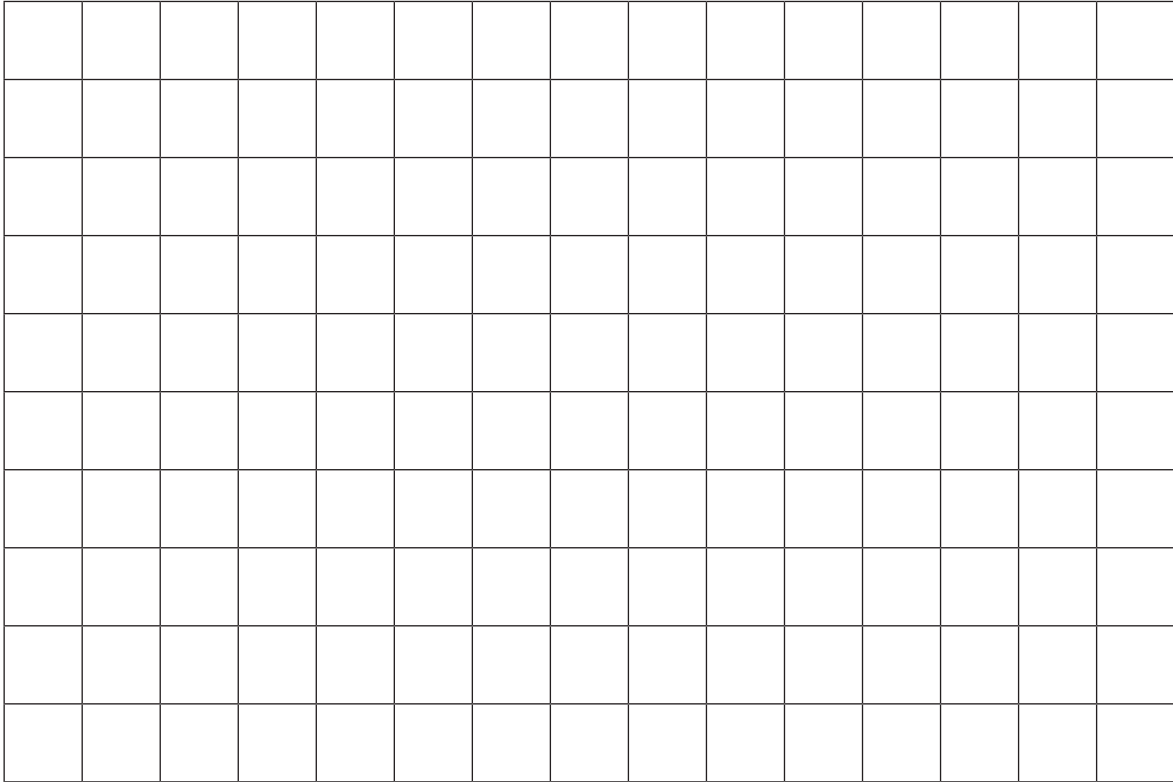
2 Use squares and half squares to draw three shapes on the grid paper below. Each shape should have an area of 12 squares. ( )



4 HOMEWORK ACTIVITY (5 MINUTES)

NOTE: Learners answers will vary for this activity. Check that they are correct.

Draw three shapes, each with an area of 10 blocks on the grid paper.

**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 learned to measure the area of shapes.

Lesson 38: Assessment

Teacher's notes

This lesson should be used for assessment of the content covered in this unit to date.

CAPS topics: 4.2 Length, 4.5 Perimeter, and 4.6 Area.

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.

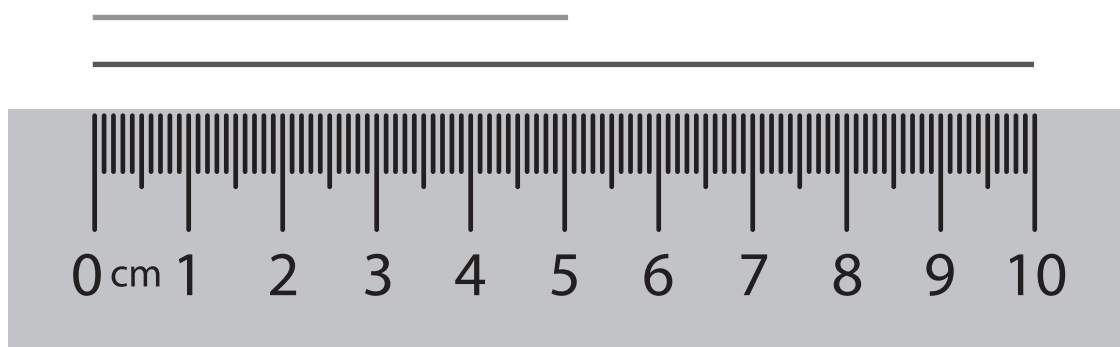
There should be time for you to discuss a few of the items with the class:

- 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 the learners' responses.

3 ASSESSMENT

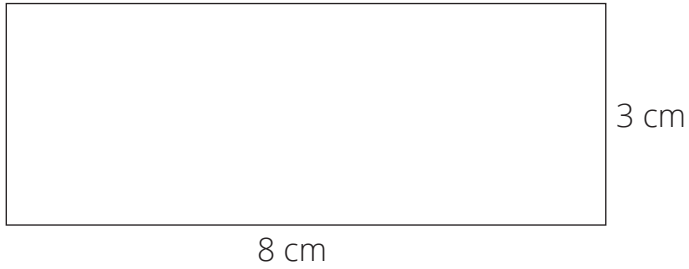
WRITTEN ASSESSMENT (13)

- 1 Use the ruler in the drawing to find the lengths: (3)



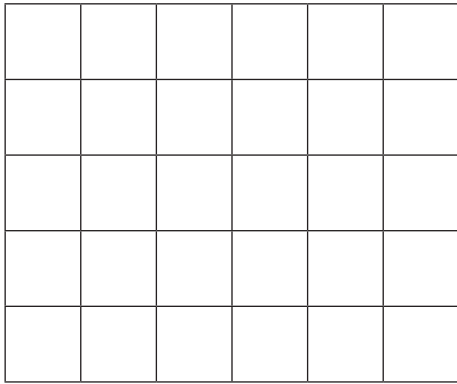
- How long is the shortest line? _____ cm. (5 cm)
- How long is the longest line? _____ cm. (10 cm)
- How long are both lines together? _____ cm. (15 cm)

- 2 Calculate the perimeter of this rectangle. (3)

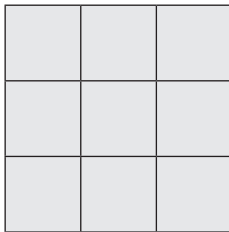


$(8 + 8 + 3 + 3 = 22 \text{ cm})$

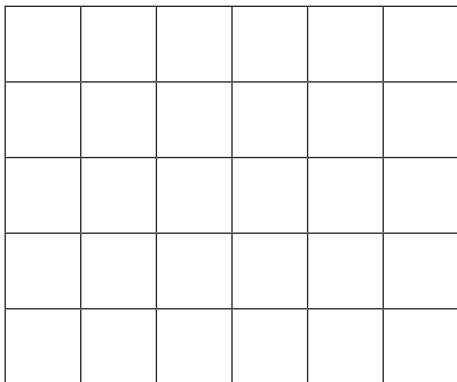
- 3 Draw a shape on the grid with a perimeter of 12 units. (3)



- 4 What is the area of this square? _____ tiles. (9) (2)



- 5 Draw a shape on the grid with an area of 6 tiles. (2)



(Answers will vary – 6 tiles must be shaded.)

ORAL AND PRACTICAL

CAPS: Measurement - Length		Mark: 7
Activity: Assess the learners' ability to estimate, measure and compare lengths using formal units (centimetres and metres) and to use mathematical language to talk about length.		
Mark	Criteria - Checklist: (1 mark for each criterion achieved)	
1	Able to use the language of length. e.g. long, longer, short, shorter, tall, taller, wide, wider	
1	Able to estimate length using formal units (centimetres)	
1	Able to estimate length using formal units (metres)	
1	Able to measure and record measurements of length using centimetres and metres.	
1	Able to compare lengths using measurements in centimetres and metres.	
1	Able to describe the perimeter of a shape.	
1	Able to describe the area of a shape.	

Unit 4 Introduction

In this unit, learners will learn about South African money. Money skills are an important part of our lives and the learners need to understand the properties of money. Often, learners find this section of mathematics to be one of the easier ones as they use money in their daily lives. In this unit, learners will revise the coins and notes and their values. They will also work out money totals and change using real life word problems.

In this unit, you will focus on the four framework dimensions in the following ways:

- **Conceptual understanding:** In this unit, learners develop their conceptual understanding through practicing procedures and verbalising their thoughts, strategies and solutions. As the learners verbalise, they are able to develop their own understanding further.
- **Procedural fluency:** Learners work with money problems that are presented in similar ways so that they can become more confident in using the various solution strategies. This should increase their ability to solve problems more fluently, i.e. quickly and easily.
- **Strategies:** Learners need to understand and develop strategies to solve money problems. Learners should be encouraged to verbalise their solutions to problems so that they can see other ways of finding answers. In this unit, learners will develop their understanding of finding change and totals with South African money.
- **Reasoning:** Learners are encouraged to talk about their understanding of concepts and solutions, and to provide explanations and reasons for the methods they use to find solutions.

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

- **Applying maths in context:** The word problems in this unit enable learners to see the relevance of money in a real-life context. Learners apply maths in context as they select strategies to solve these word problems.
- **Addressing gaps in learners' knowledge:** In this unit there will be opportunities to address gaps in learners' knowledge as the learners will be revising concepts that they have covered previously. As the learners work through money and its properties, it will become clear where there are gaps in their understanding. Opportunities are provided to address these gaps through activities and engagement.

Lesson 39: South African money

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 1.11 Money.

Lesson Objective: Gain familiarity with the South African coins and bank notes (recognise, identify and work with monetary values).

Lesson Vocabulary: Money, rand, cents, change, afford, total (cost).

Resources: Products for shop (e.g. empty containers such as cereal boxes, cool drink cans, tins, washing powder boxes, plastic milk bottles, etc. OR pictures of these from supermarket fliers). Money cut-outs (coins and notes) (see *Printable Resources*).

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	What is 100 more than...?	Answer		What is 100 more than...?	Answer
1	814	914	6	876	976
2	206	306	7	867	967
3	54	154	8	786	886
4	154	254	9	768	868
5	754	854	10	687	787

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the first of three lessons on money. In this lesson, the learners experience working with money by participating in an activity that involves setting up a shop and buying various items. The learners are actively involved in identifying the coins and notes and working out totals.

Today we are learning about South African money.

Activity 1: Learners work in groups

- Set up a shop in your classroom.
- Give each group a range of play coins and notes to the value of R50,00.
- Prepare and mark a range products as follows: R4; R42,50; R5; R10; R30,50; R20; R1; R7,60; R9; R5 and R25 (note that the products do not have to represent real life prices, but they should give the learners the chance to shop within the known number range).
- You will be the shopkeeper.

- The learners will come in groups to shop. Each group should buy products for R50. Each group must make sure that their products do not exceed R50.
- Each group should add up the cost of their items, calculate their change and report back.
- Ask questions such as:
 - **What was the total cost of all your products?**
 - **Do you have enough money to pay for everything?**
 - **If you do not have enough money, what can you do?**
 - **If you can afford everything you want to buy, will you get any change from your R50?**
 - **How much?**
 - **How did you calculate that?**
 - Etc.

Activity 2: Whole class activity

- Explain to the learners that you want them to solve the following problem:
Travis has a 50c coin and four 20c coins.
Toffees cost R1,20.
How much change will he get if he pays with all of his money?
- The learners select Travis's cut-out coins: 50c, 20c, 20c, 20c, 20c.
- **How much do we get when we add the coins together?**
- Write a number sentence: $50c + 20c + 20c + 20c + 20c$.
- Add 50c and all the 20c coins: $50c + 80c$.
- This will give us 130c.
- **How can I write 130c in rands?** (R1,30)
- We know now that Travis has R1,30. The toffees cost R1,20.
- **How much change will Travis get?** (He will get 10c change.)
- **What are the different ways in which he could get his change?** (Discuss the different ways.)
- Ask the learners to make up other problem stories involving money and solve them together.
- Do as many as possible, depending on the time you have.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

- 1 Write 325c in rands and cents. (R3,25)
- 2 What national symbol is on the 20c coin? (The Protea.)
- 3 Write down all the different ways you can make R400 using only bank notes. (Various answers possible. e.g. $R200 + R100 + R50 + R20 + R20 + R10$; $R200 + R200$, etc.)
How do you know whether you have all the solutions? (Various. e.g. make a list.)
- 4 If a school tracksuit costs R150, what will 2 tracksuits cost? (R300)

- 5** Toffees cost R1,10 each. Neo has one 50c coin and four 20c coins.
- a** Which coins should Neo use to pay for one toffee? (One 50c coin and three 20c coins.)
 - b** How much money will he have left? (10c)

- 6** These are the prices of sweets in the tuck shop:

Choc Chuckles R2,70

Gums R1,80

Sour Worms R1,40

Peach Treats R1,60

Magic Mints R2,20

Toffees R1,20

Akani's granny gave her R5. Which 3 sweets can she buy with his money?

(Various. e.g. Sour Worms, Peach Treats and Toffees.)

4 HOMEWORK ACTIVITY (5 MINUTES)

- 1** Koketso bought three books at R80 each. She paid with R300. How much change will she get? (R60)
- 2** One chewing gum costs 44c. Asanda has R8. She wants to buy 20 chewing gums for her party. How much more does she need to save? (80c)
- 3** Which animal is on the R20 note? (The elephant.)

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 learned about South African money.

Lesson 40: Consolidation

Teacher's notes

This lesson allows for consolidation of the previous days' lesson content.

CAPS topics: 1.11 Money.

Lesson Objective: To revise South African notes and coins.

Lesson Vocabulary: Money, rand, cents, change, afford, total (cost).

Resources: Money cut-outs (coins and notes) (see *Printable Resources*).

Date:

Week

Day

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

This week, the learners completed the unit on length, perimeter and area. We then moved onto the next unit, which is South African money. We will be continuing with this topic next week.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

The learners may be confused about the difference between area and perimeter. In order to address this confusion, let the learners physically find the perimeter and area of a shape using concrete aids. In terms of money, the learners may be struggling to understand the relationship between rands and cents. Use the money cut-outs from lesson 39 to teach/revise that $100c = R1$, $10 \times 10c = R1$, $5 \times 20c = R1$ and $2 \times 50c = R1$. Allow the learners to talk and explain how 100 cents make R1. In this way, you are able to address any misunderstandings that they may have.

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 South African money.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION – SEE LEARNER RESOURCES

- 1 $R2,20 + R4 = \underline{\hspace{2cm}}$ (R6,20)
- 2 $R3,50 + R2,50 = \underline{\hspace{2cm}}$ (R6)
- 3 Write 520c as rands and cents. (R5,20)
- 4 Draw notes to show in how many different ways you can make up R400 using only bank notes. (Answers will vary, eg. $R200 + R100 + R50 + R20 + R20 + R10$; $R200 + R200$; $R100 + R100 + R200$, etc.)
- 5 Mandla pays R2,50 to take a taxi to school. What does it cost him to get to and from school each day? ($R2,50 \times 2 = R5,00$ or $R2,50 + R2,50 = R5,00$)
- 6 One pair of shoes costs R250. How much will two pairs of shoes cost? (R500)

5 REFLECTION AND SUMMARY OF LESSON

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

Today, we have learned about South African money.

Week 9

Lesson 41: Money 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: 1.11 Money.

Lesson Objective: Solve word problems involving South African money.

Lesson Vocabulary: Money, coins, bank notes, rands, cents, total, value, change, equal, number sentence, forwards, backwards, calculate.

Resources: Money cut-outs (coins and notes) (see *Printable Resources*).

Date: _____ Week _____ Day _____

1 MENTAL MATHS (10 MINUTES)

	What is 100 less than...?	Answer		What is 100 less than...?	Answer
1	376	276	6	802	702
2	768	668	7	971	871
3	321	221	8	453	353
4	453	353	9	199	99
5	567	467	10	567	467

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

This is the second lesson on money. This lesson involves the learners solving money word problems. The problems use real life examples. In this way, the learners are able to experience maths in the context of everyday living and as an important life skill.

Today, we are learning to solve money word problems.

Activity 1: Whole class activity

Write the costs of the sweets on the board before the lesson.

- John's granny gave him R5. Which 3 sweets can he buy? The sweets cost:
 - Choc Chuckle R2,00
 - Gums R1,00
 - Sour Worms R2,00
 - Magic Mints R2,00
 - Toffees R1,00

- **What is the question?** (Which 3 sweets can he buy?)
- **How much does he have?** (R5)
- **Which are the other important numbers?** (R2,00, R1,00, R5,00)

Choc Chuckle R2,00	Gums R1,00	Sour Worms R2,00	Magic Mints R2,00	Toffees R1,00
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- Let the learners select a possible combinations.
- Discuss the choices they make. Write the calculations on the board as you do this.
- For example: Choc Chuckle, Sour Worms and Magic Mints.
- Let them write a number sentence to work out the total cost:
 $R2,00 + R2,00 + R2,00$
 $= R6,00$ Too much! This combination does not work.
- Try other combinations using the method described above until the total is R5 or less, (For example: Choc chuckle + Gums + Toffees: $R2,00 + R1,00 + R1,00 = R4,00$).

Activity 2: Learners work in groups

- Problem: Damon bought 3 books for R80 each. How much change will he get from R300?
- **What is the question?** (How much change will he get from R300?)
- **Draw it:**

R80,00

R80,00

R80,00

- **Number sentence:** $R80,00 + R80,00 + R80,00 = R240,00$
- Calculate: $R300 - R240 = R60$ (My change will be R60,00).
- Ask the learners to make up other number problem stories involving money for each other in their groups.
- They should discuss the problems and solutions together. Do as many as possible, depending on the time you have.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

- 1 There are 5 chocolates in a packet. One packet of chocolates costs R1,00. Mr King needs 50 chocolates.
 - a How many packets should he buy? (10)
 - b What will he pay? (R10,00)
- 2 I have R200. I need to buy 5 balls. Which balls can I buy?
 Soccer balls – R50 each
 Cricket balls – R40 each
 Netball balls – R45 each
 Rugby balls – R55 each
 Tennis balls – R15 each
 (Answers will vary – one possibility is 2 cricket balls, 1 rugby ball and 2 tennis balls.)

- 3** Three buses drive on a toll road and are charged R40 each. How much do they pay in total? (It is expected that the learners will use repeated addition techniques where the rand value is so large.
 $R40 + R40 + R40 = R120.$)

4 HOMEWORK ACTIVITY (5 MINUTES)

- 1** Peter bought 3 pairs of shoes for R90 each. How much change will he get from R300? (R30)
- 2** Three buses drive on a toll road and are charged R35 each. How much do they pay in total? (R105).

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 learned to solve money word problems.

Lesson 42: Money 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: 1.11 Money.

Lesson Objective: Solve word problems involving South African money.

Lesson Vocabulary: Money, coins, bank notes, rands and cents, total, value, change.

Resources: Money cut-outs (coins and notes) (see *Printable Resources*).

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	Calculate the following:	Answer		Calculate the following:	Answer
1	$10 \times 10 =$	100	6	$10 \times 0 =$	0
2	$10 \times 6 =$	60	7	$10 \times 2 =$	20
3	$10 \times 8 =$	80	8	$10 \times 4 =$	40
4	$10 \times 9 =$	90	9	$10 \times 3 =$	30
5	$10 \times 1 =$	10	10	$10 \times 5 =$	50

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)



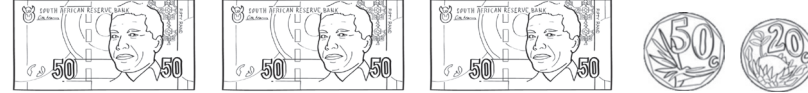

This is the last lesson on money. In this lesson, the learners continue to solve money word problems. This is a practical activity in which the learners must work with money cut-outs.

Today we are learning to solve money word problems.

Activity 1: Learners work in groups

- Ask the groups to show you how to make up the following amounts of money using the notes and coins that they have (learners' responses could be limited by the coins and notes that they have received).
- Here are some examples:

The coins that will make 120c.		
The coins that will make 160c.		




The notes that will make R200.	
The coins and notes that will make R135.	
The coins and notes that will make R150,70.	
The coins and notes that will make R200.	

Activity 2: Learners work in groups




- Refer to this activity in the LAB:
 - Convert the following amounts into cents:
 - $R9,00 = \underline{\quad} c$ (900c)
 - $R0,40 = \underline{\quad} c$ (40c)
 - $R0,10 = \underline{\quad} c$ (10c)
 - $R32,10 = \underline{\quad} c$ (3210c)
 - Convert the following amounts into rands:
 - $770c = R\underline{\quad}$ (R7,70)
 - $80c = R\underline{\quad}$ (R0,80)
 - $20c = R\underline{\quad}$ (R0,20)
 - $2390c = R\underline{\quad}$ (R23,90)
- Work through each of the conversion questions using the cut out rands and cents to help with the conversions if necessary.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

1 Colour the coins that will make: (different answers are possible)

80c	100c	220c
		
(20c, 20c, 20c, 20c or 10c, 10c, 20c, 20c, 20c.)	(20c, 20c, 10c, 10c, 10c, 10c, 10c, 10c or other combinations of 10c and 20c coins to make 100c.)	(20c, 20c, 20c, 20c, 20c, 20c, 20c, 20c, 20c, 20c.)

2 Colour the combination of notes and coins that will make: (different answers are possible)

R52	R98	R85
		
(R20, R20, R10, R2.)	(R20, R20, R20, R10, R10, R10, R5, R2, R1.)	(R20, R20, R20, R20, R5.)

3 Convert the following amounts into cents:

a R5,00 = ___c (500c)

b R0,20 = ___c (20c)

4 Convert the following amounts into rands:

a 100c = R___ (R1,00)

b 1000c = R___ (R10,00)

4 HOMEWORK ACTIVITY (5 MINUTES)

1 Convert the following amounts into cents:

a R0,50 = ___c (50c)

b R7,90 = ___c (790c)

2 Convert the following amounts into rands:

a 80c = R___ (R0,80)

b 200c = R___ (R2,00)

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 learned to solve money word problems.

Lesson 43: Assessment

Teacher's notes

This lesson should be used for assessment of the content covered in this unit to date.

CAPS topics: 1.11 Money.

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 the learners' responses.

3 ASSESSMENT

WRITTEN ASSESSMENT (14)

1 $R5 + R3 = \underline{\hspace{2cm}}$ (R8,00) (1)

2 $20c + 70c = \underline{\hspace{2cm}}$ (90c) (1)

3 Draw notes to show two different ways to make R100 using only bank notes. (Answers will vary, eg. R50 + R50; R20 + R20 + R20 + R20 + R20; R50 + R20 + R20 + R10.) (2)

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- 4 Rialivhuwa has four 50c coins and two 20c coins.
- a How much money does Rialivhuwa have? _____ (R2,40) (2)
 - b Apples cost 90c. How much will two apples cost? _____ (R1,80) (2)
 - c How much money will Rialivhuwa have left if he buys 2 apples?
_____ (60c) (2)
- 5 Lusanda pays R2,50 to take a taxi to school. The train costs R6 for a return ticket.
- a What is the cost of a return taxi trip? _____ (R5) (2)
 - b What is the cost of a return train trip? _____ (R6) (1)
 - c Which is cheaper, the train or the taxi? _____ (Taxi is cheaper.) (1)

Unit 5 Introduction

In this unit, learners will learn about mass. Mass is a part of measurement, but not an attribute that can be seen although one can feel the differences between heavy and light objects. Therefore, we need to allow the learners to find out about mass by holding objects and measuring objects. In Grades 1 and 2, the learners compared objects in terms of light and heavy. In this unit, we move onto the formal measurement of mass. We use kitchen and bathroom scales as instruments of measurement. The learners are also introduced to the standard units of measurement for mass, namely grams and kilograms.

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

- **Conceptual understanding:** This unit addresses the key concept of mass. Learners will develop their conceptual understanding through practicing procedures and verbalising their thoughts, strategies and solutions.
- **Procedural fluency:** Learners will develop procedural fluency in the ability to measure mass and solve word problems through various solution strategies.
- **Strategies:** Learners will discover that measuring mass involves grams and kilograms and that there is a relationship between them. Learners should be encouraged to verbalise their solutions to problems so that they can see other ways of finding answers.
- **Reasoning:** Learners are given opportunities to reason mathematically when they work with mass and its units of measurement. They are encouraged to talk about their understanding of concepts and solutions

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

- **Making sense of mathematics:** In this unit, learners are making sense of mathematics as they deepen their knowledge of mass. This knowledge relates to real-life situations. Being able to measure mass is part of what we do every day, which helps learners to see Mathematics as an important part of life, rather than just a school subject.
- **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.
- **Active learning:** Learners are actively involved in the lessons in this unit as they measure the mass of items using scales. They are also expected to solve mass word problems which relate to real life situations.

Lesson 44: Mass (1)

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 4.3 Mass.

Lesson Objective: Revise grams as a standard unit measurement for mass.

Lesson Vocabulary: Mass, grams, light, heavy, lighter, heavier, measure, compare, record, order, measurement, difference, standard unit, forwards, backwards, calculate.

Resources: Kitchen scale, 100 g baking powder, 250 g biscuits and 500 g flour (or any other products of the same mass).

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	Calculate the following:	Answer		Calculate the following:	Answer
1	$1 \times 1 =$	1	6	$3 \times 4 =$	12
2	$4 \times 5 =$	20	7	$2 \times 1 =$	2
3	$5 \times 2 =$	10	8	$8 \times 0 =$	0
4	$3 \times 1 =$	3	9	$9 \times 10 =$	90
5	$7 \times 3 =$	21	10	$6 \times 5 =$	30

2 LESSON CONTENT – CONCEPT DEVELOPMENT (45 MINUTES)

This is the first of four lessons on mass. In this lesson we work with one of the standard units of mass – the gram (g). Some learners may already have worked with grams, for example if they cook at home. We discuss the value of the standard unit, showing how this will allow everyone to get the same measurement, rather than different measurements, like we get when measuring using non-standard units.

Today we are learning to measure mass using grams.

Activity 1: Whole class activity

- In this activity, you will start to work with standard units of measurement (g).
- Ask: **Can you explain the difference between *light* and *heavy* objects? Use examples.** (E.g. I am heavy but my book is light. The teacher's desk is heavy but her chair is light.)
- Put the following items in front of the learners so that they are clearly visible to the class: 100 g baking powder, 250 g biscuits and 500 g margarine/butter/flour (or any other products of the same mass).
- Ask: **Which of the packages you have shown them is heavy? Which is light?** (Discuss.)

- Suggest: **Use any pair of items in a sentence with the word heavier/lighter.** (Give different learners a chance to give examples.)
- Discuss the gram as a unit of measurement (it is a standard unit). $1000\text{ g} = 1\text{ kg}$.

Activity 2: Learners work in groups

- Do this activity, allowing individuals from each group to find the mass of their objects while the rest of the class starts the classwork activity.
- Call the learners to the front of the class, one group at a time, so that they all get the chance to find the mass of the objects from activity 1 using the kitchen scale.
- Use the kitchen scale. Allow the learners to measure the items.
- Do the same with each group of learners.
- Ask: **What is the mass of the baking powder/biscuits/flour?**
- Ask: **Which one has a bigger mass? The baking powder or flour? Etc.**
- Discuss the answers.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

1 Draw the following products with different masses:

250 g mealie meal	400 g peanut butter	500 g flour

2 Use the products or pictures from Question 1 to complete the following:

- Mom bought mealie meal and flour. What is the total mass of her products?
_____ (750 g)
- I bought peanut butter and flour. What is the total mass of my products?
_____ (900 g)
- Dad bought 2 bags of flour. What is the total mass of his products? _____
(1000 g/1 kg)

4 HOMEWORK ACTIVITY (5 MINUTES)

NOTE: The answer here will vary according to the products the learners find. Take some time to discuss the learners' work and check the addition that follows.

- 1 Find and draw 3 products with different masses in grams in your kitchen at home. Write the product name and mass.

- 2 Complete these sentences, using the products from your kitchen.

- a Mom bought _____ and _____. The total mass is _____ g.
b Dad bought _____ and _____. The total mass is _____ g.
c I bought _____, _____ and _____. The total mass is _____ g.

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 learned to measure mass using grams.

Lesson 45: Consolidation

Teacher's notes

This lesson allows for consolidation of the previous days' lesson content.

CAPS topics: 4.3 Mass.

Lesson Objective: To revise mass.

Lesson Vocabulary: Mass, grams, light, heavy, lighter, heavier, measure, compare, record, order, estimate, estimation, measurement, difference, standard unit, forwards, backwards, calculate.

Resources: N/A.

Date:

Week

Day

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

This week, the learners completed the unit on money. We then moved onto the next unit, which is mass. We will be continuing with this topic next week.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK





The learners may experience difficulties with understanding grams as a unit of measurement. It is important that you let the learners work with the kitchen scale and find the mass of a variety of items. As the learners find the mass of the items, discuss their mass and compare their mass to that of other items.

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 mass.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION - SEE LEARNER RESOURCES

1 Order the following from lightest to heaviest:

<p>a feather</p> 	<p>b stone</p> 	<p>c truck</p> 	<p>d horse</p> 
---	---	--	---

(feather, stone, horse, truck)

2 Estimate the mass of the feather. _____ (10 g)

3 Here are some products:

		
Marie biscuits: 200 g	Baking powder: 50 g	Smarties: 100 g

- Which item has the greatest mass? _____ (Marie biscuits)
- Which item has the lowest mass? _____ (baking powder)
- What is the mass of the Marie biscuits and smarties together? _____ (300 g)

5 REFLECTION AND SUMMARY OF LESSON

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

Today we have learned about mass.

Week 10

Lesson 46: Mass (2)

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 4.3 Mass.

Lesson Objective: Measure, compare, order and record mass using grams and kilograms.

Lesson Vocabulary: Mass, kilograms, grams, light, heavy, lighter, heavier, measure, compare, balancing scale, record, order, calibrated, estimate, analogue scale, measurement, standard unit, non-standard unit, forwards, backwards, calculate.

Resources: Bathroom scale, kitchen scale, objects that can be used to determine mass, e.g. 2×500 g flour, 1 kg flour, brick, 2 L water bottles, etc.

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	Calculate the following:	Answer		Calculate the following:	Answer
1	$30 \div 10 =$	3	6	$10 \div 10 =$	1
2	$70 \div 10 =$	7	7	$50 \div 10 =$	5
3	$20 \div 10 =$	2	8	$100 \div 10 =$	10
4	$80 \div 10 =$	8	9	$60 \div 10 =$	6
5	$40 \div 10 =$	4	10	$0 \div 10 =$	0

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

This is the second of four lessons on mass. In this lesson, we revise grams and introduce/revise kilograms. The learners learn that there are 1000 g in 1 kg. The learners then complete activities which involve measuring the mass of various items using kilograms.

Today we are learning to measure using kilograms.

Activity 1: Whole class activity

- Say: **Last lesson we worked with grams. During class, you added 500 g and 500 g.**
- Ask: **What was the total?** (1000 g)
- Say: **Let's measure 2×500 g on the kitchen scale.**
- Ask: **How many grams is it?**(1000 g)
- Say: **Let's measure 1 kg of flour on the kitchen scale.**
- Ask: **Do you notice anything?** (It is the same as 1000 g.)
- Ask: **Can we say that 1000 g is 1 kg?** (Yes.)

- Write $1000\text{ g} = 1\text{ kg}$ on the board.

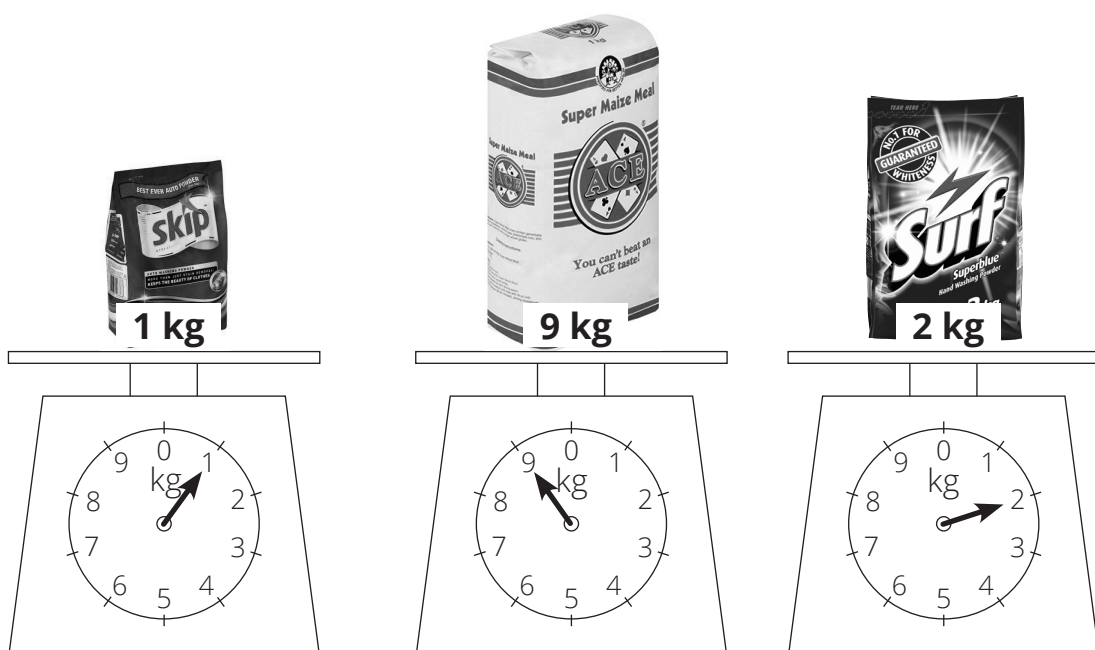
Activity 2: Whole class activity

- Show the learners an analogue scale.
- **Ask the learners what we use scales for?** (We use a scale to measure the mass of an object.)
- Show the learners how to use the scale to measure mass.
- Show them where the zero on the scale is.
- Once you put an object on the scale (e.g. a school bag), the needle moves to a number which is the mass of the object.
- This number shows you the mass of the object in kilograms.
- Write the word *kilogram* on the board, say it aloud, and ask the learners to repeat *kilogram* after you.
- Show them how we write the abbreviation *kg*.
- Give the learners a few objects to measure the objects' mass. You can make use of a kitchen scale to do so.
- Learners could also find out their own mass using the scale, but remember that this may be a sensitive issue for some learners, so handle this matter sensitively.

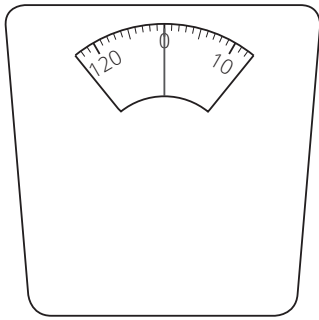


3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

- 1 Draw the pointers on the kitchen scales to show the mass of these products:
(The learners must draw the pointers in the correct place.)



2



- a What mass reading is shown on this scale? _____ (0 kg)
- b Is anyone standing on this bathroom scale? _____ (no)
- c How do you know? _____ (The scale says 0 kg)

4 HOMEWORK ACTIVITY (5 MINUTES)

Find objects at home that have the following mass: Copy and complete the table. (Answers will vary. Discuss.)

Mass in kilograms	Item
1 kg	
1 kg	
2 kg	
5 kg	
10 kg	

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 learned to measure mass using kilograms.

Lesson 47: Estimation of mass

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 4.3 Mass.

Lesson Objective: Estimate, measure and record mass in kilograms.

Lesson Vocabulary: Mass, kilograms, light, heavy, lighter, heavier, measure, compare, balancing scale, record, order, calibrated, estimate, analogue scale, estimation, measurement, standard unit, non-standard unit, forwards, backwards, calculate.

Resources: Bathroom scale, kitchen scale, objects that can be used to determine mass, e.g. 1 kg flour, brick, 2 L water bottles, etc.

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	Calculate the following:	Answer		Calculate the following:	Answer
1	$\dots \div 10 = 9$	90	6	$\dots \div 10 = 5$	50
2	$\dots \div 10 = 2$	20	7	$\dots \div 10 = 7$	70
3	$\dots \div 10 = 1$	10	8	$\dots \div 10 = 3$	30
4	$\dots \div 10 = 6$	60	9	$\dots \div 10 = 8$	80
5	$\dots \div 10 = 0$	0	10	$\dots \div 10 = 10$	100

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

This is the third of four lessons on mass. In this lesson, standard units are used. Learners should know the standard units of mass (kilogram and gram) and be able to read them and understand what they represent. The learners are involved in estimating and measuring the mass of items in this lesson. You should guide and question the learners during these activities in order to monitor their understanding.

Today we are learning to estimate and measure the mass of a number of items.

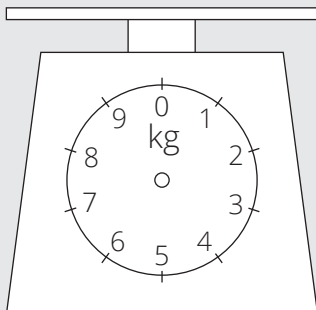
Activity 1: Whole class activity

- Show the learners the bathroom scale.
- Ask: **What types of mass you can measure using a bathroom scale?** (Discuss.)
- Let the learners look around the class and see what items they could find the mass of by using the bathroom scale, e.g. a heavy school suitcase, a pile of maths books. (The items must be able to balance on the scale and not cover the mass meter.)
- Discuss which items one could not find the mass of by using the bathroom scale.

- Ask: **Why not?** (e.g. Light items, such as one book or a chocolate bar, since the bathroom scale measures mass in kilograms. A table or a chair, since they cannot be placed on the scale. Etc.)

Activity 2: Whole class activity

- When you do this activity, make sure that you show the learners how to read the correct mass using the scale markings.
- Draw a simple scale on the board to assist you when you explain how to read from a scale.



- For example, ask: **Where will the pointer be to show the following mass measurements?** (Draw each one on the board, erasing the pointer each time and using the same drawing of a scale.)
- An object with a mass of 1 kg.
- An object with a mass of 3 kg.
- An object with a mass of 5 kg.
- An object with a mass of 6 kg.
- An object with a mass of 8 kg.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)

NOTE: Assist learners to complete the table one row at a time when they do their estimations. Once the estimations are complete, learners should come to the front of the class to measure the masses of each of the object. You need to have prepared for this activity (bring scales and objects as listed, or other – then tell the learners how to adapt their table if necessary).

- 1 Estimate the mass of the following objects and record your estimates in the table. (Answers will vary. Discuss.)

- 2 Measure the mass of the following objects using a bathroom scale and complete the table. (Answers will vary. Discuss.)

	Mass in kilograms		
	Estimate	Measure	Difference
School bag			
10 books			
Learner			
Brick			
2 litre bottle of water			
Other			

- 3 Calculate the difference between your estimation and your measurement. Record it in the table. (Answers will vary. Discuss.)

4 HOMEWORK ACTIVITY (5 MINUTES)

Find 6 items in your house and write them in the correct place in the table. You do not have to measure the mass – you should estimate. (answers will vary)

3 items with a mass less than 5 kg	3 items with a mass more than 5 kg
1	1
2	2
3	3

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 learned to estimate and measure the mass of a variety of items.

Lesson 48: Working with units of mass

Teacher's notes

This lesson is one of the fully planned lessons to be used to cover the Term 3 curriculum.

CAPS topics: 4.3 Mass.

Lesson Objective: Solve addition and subtraction problems involving units of mass.

Lesson Vocabulary: Forwards, backwards, mass, grams, kilograms, heavier, lighter, scale, compare, order, record, add, subtract.

Resources: Products with a variety of different masses. (e.g. 1 kg flour, 250 g sugar, 2 kg Iwisa, etc.).

Date:

Week

Day

1 MENTAL MATHS (10 MINUTES)

	Calculate the following:	Answer		Calculate the following:	Answer
1	$29 + 30 =$	59	6	$1 \times 20 =$	20
2	4 groups of 5	20	7	$20 \div 5 =$	4
3	Half of 30	15	8	$6 \times 0 =$	0
4	$21 + 22 =$	43	9	$10 \div 2 =$	5
5	6 multiplied by 3	18	10	$5 \times 3 =$	15

2 LESSON CONTENT - CONCEPT DEVELOPMENT (45 MINUTES)

This is the last lesson on mass. In this lesson, the learners solve addition and subtraction problems in kilograms. The calculations are based on working out the total mass of some items and the difference in mass of other items.

Today we are learning to add and subtract using kilograms.

Activity 1: Whole class activity

- Show the learners some products with different masses (e.g. 1 kg flour, 250 g sugar, 2 kg Iwisa, etc.).
- Ask the following questions:
 - Which product has a mass of 1 kg?
 - Which product has a mass of less than 1 kg?
 - Which product has a mass of more than 1 kg?
 - Is the remaining product lighter or heavier than 1 kg?
- *The learners should respond using the examples shown to them. Answers will depend on the products you have brought to class.*
- Sort the products as you discuss them and talk about them using the words heavier/lighter/same as.

Activity 2: Whole class activity

- Refer to the picture of products in the LAB. This is the same picture that will be used for the independent classwork activity today.



- Hold up a 1 kg product and a product with a mass of less than 1 kg, e.g. 1 kg of Skip and 500 g of Omo.
- Show and read the mass to the class.
- Ask: **Which is lighter – 500 g Omo or 1 kg Skip?** Invite a few learners to hold the items and feel the mass.
- Ask: **Why is 500 g lighter than 1 kg?** (Even though the number 500 is a bigger number than 1, grams are much smaller than kilograms. 1000 grams make 1 kg. Therefore 500 g is less than 1000 g which is the same as 1 kg.)
- Ask: **How much less Omo than Skip is there?** ($1000\text{ g} - 500\text{ g} = 500\text{ g}$)
- Do the same with various other options and combinations, e.g. Provita and Red Label biscuits.
- Ask the learners to come up with suggestions of items which can provide a combined mass of 1 (or 2 or 3) kg. They may use single or multiple items, e.g. 8 packets of Provitas have the same mass as a 2 kg packet of Skip.
- Give the learners a selection of products, e.g. Red Label, Iwisa, Ace and Provitas. Ask the learners to place these in order from lightest to heaviest.
- Do the same with other products, ordering them from heaviest to lightest.

3 CLASSWORK ACTIVITY AND CORRECTION OF HOMEWORK (25 MINUTES)



- 1 Which is the heaviest product above? _____ (Ace)
- 2 Which is the lightest product above? _____ (Salticrax)
- 3 Name 2 items that have a combined mass of less than 1 kg. _____
(Various answers, e.g. ProNutro and Red Label.)
- 4 Name 2 items that have a combined mass of 500 g. _____
(Various answers, e.g. 2 packets of Provitas, 2 packets of Salticrax and 1 packet of Red Label.)
- 5 How much more Pronutro is there than Provita? _____ (250 g)
- 6 What is the total mass of the Cremora and Iwisa? _____ (2 kg)

4 HOMEWORK ACTIVITY (5 MINUTES)

- 1 Use a bathroom scale to find your mass. (Answers will vary.)
- 2 Write the mass of these products in order from lightest to heaviest.



(250 g, 500 g, 1 kg, 2 kg)

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 learned to add and subtract using kilograms.

Lesson 49: Assessment

Teacher's notes

This lesson should be used for assessment of the content covered in this unit to date.

CAPS topics: 4.3 Mass.

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.

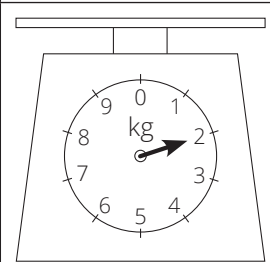
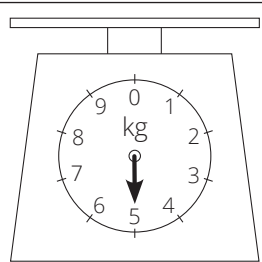
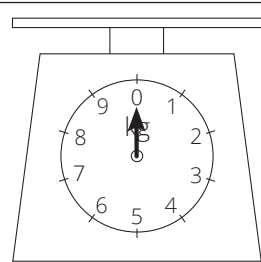
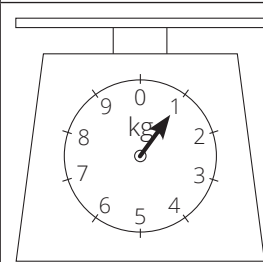
There should be time for you to discuss a few of the items with the class:

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

3 ASSESSMENT

WRITTEN ASSESSMENT (15)

- 1 Draw the pointers on the kitchen scales to show the masses: (4)

2 kg rice	5 kg potatoes	10 kg mealie meal	1 kg sugar
			

- 2 Use the products from Question 1 to complete the following: $(4 \times 2 = 8)$
- Mom bought mealie meal and rice. What is the total mass of her products?
_____ (12 kg)
 - I bought some rice, sugar and potatoes. What is the total mass of my products?
_____ (8 kg)
 - Dad bought sugar and mealie meal. What is the total mass of his products?
_____ (11 kg)
 - My sister bought mealie meal, sugar and rice. What is the total mass of her products? _____ (13 kg)
- 3 How many grams are there in 1kg? _____ (1000 g) (1)
- 4 $800 \text{ g} - 300 \text{ g} = \underline{\hspace{1cm}}$ (500 g) (1)
- 5 $1 \text{ kg} - 500 \text{ g} = \underline{\hspace{1cm}}$ (500 g) (1)

ORAL AND PRACTICAL

CAPS: Measurement: Mass		Mark: 7
Activity: Assess the learners' ability to estimate, measure, compare, order and record mass using standard units (kilograms and grams); and to use language to talk about comparisons of mass (e.g. light, heavy, lighter, heavier).		
Mark	Criteria- rubric	
1	Use vocabulary to describe mass - light and heavy	
2	Use vocabulary to describe mass - light and heavy, lighter and heavier	
3	Use vocabulary to (light and heavy, lighter and heavier) and measure own mass using a scale	
4	Use vocabulary and estimate the mass of objects which have their mass stated in kilograms or grams	
5	Use vocabulary, estimate and measure the mass of objects which have their mass stated in kilograms or grams	
6	Use vocabulary and order the mass of objects which have their mass stated in kilograms or grams	
7	Use vocabulary, order and compare the mass of objects which have their mass stated in kilograms or grams	

Lesson 50: Consolidation

Teacher's notes

This lesson allows for consolidation of the previous days' lesson content.

CAPS topics: 4.3 Mass.

Lesson Objective: To revise mass.

Lesson Vocabulary: Forwards, backwards, mass, grams, kilograms, heavier, lighter, scale, compare, order, record, add, subtract.

Resources: N/A

Date:

Week

Day

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

This week, the learners completed the unit on mass. The activities involved estimation, measurement, addition and subtraction of mass.

2 POSSIBLE MISCONCEPTIONS LINKED TO THE WEEK'S WORK

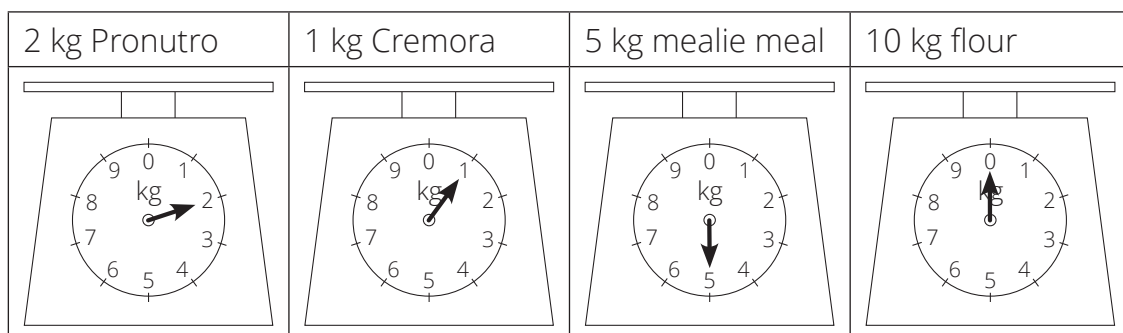
The learners may be confused about the difference between grams and kilograms. You may need to revisit that $1 \text{ kg} = 1000 \text{ g}$. When the learners are solving mass word problems, you may want them to underline *grams* and *kilograms* in different colours so that they add and subtract the correct measurements together.

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 mass.

4 ADDITIONAL ACTIVITIES FOR CONSOLIDATION - SEE LEARNER RESOURCES

- 1 $200 \text{ g} + 800 \text{ g} = \underline{\hspace{2cm}}$ (1000 kg)
- 2 1000 kg is the same as $\underline{\hspace{2cm}}$ (1 kg)
- 3 Draw the pointers on the kitchen scales to show the masses:



- 4 Use the products from Question 3 to complete the following:
 - a Mom bought Pronutro and Cremora. The total mass is $\underline{\hspace{2cm}}$ kg. (3 kg)
 - b Dad bought flour and Cremora. The total mass is $\underline{\hspace{2cm}}$ kg. (11 kg)

- c** I bought mealie meal, Cremora and Pronutro. The total mass is _____ kg. (8 kg)
- d** Name 2 products that add up to 15 kg. _____ (flour and mealie meal)
- e** Name 2 products that add up to 6 kg _____ (mealie meal and Cremora)

5 REFLECTION AND SUMMARY OF LESSON

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

Today we have learned about mass.

