GRADE 3

Mathematics

Teacher Toolkit:
CAPS Aligned Lesson Plans

TERM 3

A MESSAGE FROM THE NECT

NATIONAL EDUCATION COLLABORATION TRUST (NECT)

Dear Teachers

This learning programme and training is provided by the National Education Collaboration Trust (NECT) on behalf of the Department of Basic Education (DBE)! We hope that this programme provides you with additional skills, methodologies and content knowledge that you can use to teach your learners more effectively.

What is NECT?
In 2012 our government launched the National Development Plan (NDP) as a way to eliminate poverty and reduce inequality by the year 2030. Improving education is an important goal in the NDP which states that 90% of learners will pass Maths, Science and languages with at least 50% by 2030. This is a very ambitious goal for the DBE to achieve on its own, so the NECT was established in 2015 to assist in improving education.

The NECT has successfully brought together groups of people interested in education so that we can work collaboratively to improve education. These groups include the teacher unions, businesses, religious groups, trusts, foundations and NGOs.

What are the learning programmes?

One of the programmes that the NECT implements on behalf of the DBE is the 'District Development Programme'. This programme works directly with district officials, principals, teachers, parents and learners; you are all part of this programme! The programme began in 2015 with a small group of schools called the Fresh Start Schools (FSS). Curriculum learning programmes were developed for Maths, Science and Language teachers in FSS who received training and support on their implementation. The FSS teachers remain part of the programme, and we encourage them to mentor and share their experience with other teachers.

The FSS helped the DBE trial the NECT learning programmes so that they could be improved and used by many more teachers. NECT has already begun this scale-up process in its Universalisation Programme and in its Provincialisation Programme.

Everyone using the learning programmes comes from one of these groups; but you are now brought together in the spirit of collaboration that defines the manner in which the NECT works. Teachers with more experience using the learning programmes will deepen their knowledge and understanding, while some teachers will be experiencing the learning programmes for the first time.

Let's work together constructively in the spirit of collaboration so that we can help South Africa eliminate poverty and improve education!

CONTENTS

ABOUT THE LESSON PLANS AND RESOURCES

The lesson plans in this book are part of the Teacher Toolkit for Mathematics Grade 3 Term 3. The other documents in the toolkit are:

- a CAPS Aligned Planner, Tracker and Assessment Resources
- a Resource Pack

A variety of Printable Resources that you can copy for yourself and/or your learners are included in a separate Resource Pack. They include:

a) **Resource sheets**: These comprise a variety of teaching and learning aids that are needed in certain lessons. The specific resource sheet, and the number of copies needed, is noted in the relevant lesson plan and in the tracker so that you can prepare them in advance.
b) **Mental mathematics challenge cards:** A pack of eight mental mathematics challenge cards (solutions are provided) is included to allow for routine weekly mental mathematics activities that you can record.
c) **Enrichment activity cards:** A pack of 32 enrichment activity cards (solutions are provided) are included for learners who complete the day's classwork activities ahead of the class.

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 the topics in the CAPS and weighted according to requirements given there, and the programme of assessment is accommodated. Every lesson shows the CAPS content and skill being focussed on in the lesson.

2. Links to the DBE workbooks

Links are given in the lessons to all appropriate DBE worksheets. Note that the pages referred to are all from the 2017 edition of the DBE workbook. This changes very little from year to year, but if you use a different edition of the workbook, you should check that the worksheet on the same page in this different edition is still appropriate for your purpose.

Bilingual learner material is provided in 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. These include the required daily mental mathematics activity, whole class oral activities led by the teacher, classwork and homework activities, as well as answers for these. All the classwork and homework activities are given in the lesson plans, learners must either copy these into their books or teachers can photocopy the activity.

4. Assessment

The programme of assessment suggested in the lesson plans and tracker is adaptable and can be adjusted to comply with the CAPS as amended by Circular S1 of 2017 and provincial responses to this. The lesson plans and tracker provide a number of resources to support both formal and informal assessment in this programme, as noted below:

- Oral and practical activities which you can use to assess learners as you observe and interact with them in class are provided in the tracker. Rubrics and checklists with criteria for this assessment are provided in the tracker, at the end of the table for the week in which the assessment is suggested.
- There is an item bank of written assessment

questions, with marking memos in the tracker. Items that are relevant to a specific lesson are noted in the resources column for the lesson in the tracker.

- A complete overview of the programme of assessment for the term is given in the tracker. This shows you when it is suggested you carry out both formal (and informal) assessment tasks which are oral, practical and written. This will assist you in planning and monitoring your assessment programme.
- There is also recommended mark record sheet in the tracker. This has been drawn up to assist you as you record your marks on SA-SAMS.

5. Managing the lesson programme

A set of orientation activities on eight different topics aligned with the CAPS baseline assessment requirements is provided for the start of the 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 40 numbered, fully developed lesson plans, paced to cover a 50-day teaching term. There are four such lesson plans each week for ten weeks of the term. There is no formal numbered lesson plan for the fifth lesson each week; instead, it is assigned for you to use for a variety of purposes. You can use this time to catch up, remediate or consolidate the content covered in the week's formal lessons. Learners could complete the worksheets from the DBE workbook related to topics taught in the week if they did not manage to do them in the course of the week.

Each lesson 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, and 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 lesson and its contents have been carefully sequenced. It is therefore important that lessons are not skipped. Should you miss a Mathematics lesson for any reason, you should continue the next day from where you last left off. Do not leave a lesson out. You may need 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. You need to prepare very well as this will help you to manage the full set of lessons at the appropriate pace.

7. Lesson preparation

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**. The information below outlines some key aspects of preparation.

a) **Term focus:** Start by looking at the CAPS document and **orientating** yourself to the CAPS content focus for the term. It is important that you are clear about the content focus, as this will frame everything you do in your Mathematics lessons during the term.

b) **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. counters, number boards, paper cut-outs, examples of shapes, etc.).
   - **Your lessons will not succeed if you have not prepared properly for them.**
   - 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 boards 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.

c) **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.

d) **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.

e) **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.

f) **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.

g) **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

Lesson Plan Outline	
Each lesson plan has several components. Information about each 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 need to read this outline as you prepare each lesson until you are fully familiar with the general lesson plan components, pace and structure.	
Lesson topic	Each lesson has a topic with specific detail about the day's lesson.
CAPS topics	The CAPS content related to the day's lesson is given here, together with the reference number for this content in the expansion of content section in the CAPS document for this term. You are encouraged to look at the CAPS to read about the selected curricular topics for the day.
Lesson vocabulary	A list of all mathematical terms used in the lesson is given here. 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 to practise using them with your learners during the lesson.
Prior knowledge and lesson concept	The prior knowledge and lesson concept section gives information about content that learners should have learnt in earlier grades that will be built on in this lesson. • You need to read through this section when you do your lesson preparation. • No time is allocated to this part of the plan because it does not form part of the teaching of the day's lesson. • The information about prior knowledge may help you to assist learners who struggle to understand the content of the lesson because there are gaps in the prior knowledge on which the lesson is based. You can use the information about prior knowledge to help you identify such gaps and to diagnose learners' needs in relation to content they do not yet know that may be preventing them from understanding the day's lesson. • Remediation may be needed on prior knowledge that you notice is not properly in place.
Assessment	A reminder to refer to the tracker for the formal oral, practical or written assessment activity for the day is given here. • On-going informal and formal oral and practical assessment should be done virtually every day in your class. This means you will record a mark for a few learners for a certain criterion from the curriculum each day. Decide how many learners to assess every day, so that you assess your whole class in the time allocated to each assessment activity. • Rubrics and checklists to guide you in giving ratings for the oral and practical assessments are given in the tracker at the end of the tracker table for each week. Each day you need to use the appropriate rubric or checklist for the assessment activity of that day. • Written test items and their memos are provided in the tracker. Links to these items are given in the resources column of the tracker to show you in which lesson they should best be used. • A *Suggested Assessment Record Sheet* that you can use to record your term marks is given in the tracker. This sheet aligns with the SA-SAMS.
Remediation	***Optional as required.*** You could use these activities to assist slower learners. You need to decide, based on your observation of the learners while you are teaching the lesson content, whether to use this content and with which learners. It will be done with a smaller group of learners/individual learners while the rest of the class is working through the classwork activity.

Lesson Plan Outline	
Enrichment	***Optional as required.*** You could use these activities as extra work for fast learners or others interested in doing them. Activities that you can use for enrichment opportunities for learners who have completed the lesson activities are provided in a set of enrichment activity cards in the Resouce Pack. Ideally, you should photocopy the enrichment cards, paste them onto cardboard and laminate them, so that they can be used as a resource, not only this year, but in the future as well. Learners should work on these cards independently or with their peers who have also completed the classwork. They may work through the cards in any order. You may need to explain some of the activities to the learners who use them. You should tell them to ask questions it they have any. All learners who show an interest in the enrichment activities should be encouraged to work through the cards.
Mental mathematics **(15 minutes)**	This is the first component of the lesson. We recommend that you take at most 15 minutes to do the mental mathematics activity. There are two parts to the mental mathematics activity, a counting activity and a set of questions to drill number facts and basic mathematical strategies. Mental mathematics is not a concrete activity (as the title suggests). 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 to assist them to reach the required level of competence by offering remediation activities using concrete aids. • The answers to the ten mental mathematics questions are given in the answer column in the lesson plans. • It would be far better to do all ten questions per day, but if you find that your learners struggle to finish these in ten minutes, do a minimum of five questions. There is a set of mental mathematics challenge cards in the Resource Pack. Learners write the answers to the questions given on these cards. We recommend that learners only do written mental mathematics once a week and oral mental mathematics on all the other days. You can use this work to obtain a mental mathematics activity mark each week.
Correction/reflection on homework **(15 minutes)**	This is the second component of the lesson. We recommend that you take 15 minutes to remediate and correct the previous day's homework. Read out answers to all of the homework questions. Let learners/peers mark the work. Also try to check homework yourself as often as you can. Choose one or two activities that you realise were problematic to work through in full with the whole class. In this part of the lesson you may reflect on the previous day's work. Allow learners the opportunity to write corrections as needed.

Lesson Plan Outline	
Lesson content – concept development **(30 minutes)**	This is the third 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 30 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 the 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 **(25 minutes)**	This is the fourth component of the lesson. We recommend that you allocate 25 minutes to 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 do most of the activities in their Mathematics books (an exercise book for learner Mathematics writing activities). Some activities are done in the DBE workbook. • You should allow the learners opportunities to do these activities alone, in pairs and in groups so that they experience working alone as well as with their peers. • Wrap up the lesson each day by giving the learners the answers to the classwork, and allow time for corrections to be written if and when necessary.
Homework activity **(5 minutes)**	This is the fifth and final component of the lesson. We have allocated five minutes to give you time to tell the learners about the homework each day. Here you find a set of activities on the day's content that you can set for your class to do for homework. This is to consolidate the Mathematics that you have taught them that day. Homework also promotes learner writing and development of their mathematical knowledge.
Reflection	Each day there is a reminder to note your thoughts about the day's lesson. You will use these notes as you plan and prepare for your teaching.

WEEK 1

LESSON 1: NUMBERS 500–600

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.3 Number symbols and number names, 1.4 Describe, compare and order numbers, 1.16 Mental mathematics.

Lesson vocabulary: Describe, compare, whole numbers, smaller than, greater than, bigger than, more than, fewer than, equal to, smallest, smaller than, greatest, biggest, number symbol, number line, forwards, backwards, even, odd.

Prior knowledge: Learners should have been taught how to:
- Describe and compare whole numbers up to 500 using smaller than, greater than, more than, fewer than and is equal to, as well as smallest to greatest and greatest to smallest.
- Identify, recognise, write and read number symbols to 1 000 and number names to 250.

Concepts:
- Describe and compare whole numbers up to 600 using smaller than, greater than, more than, fewer than and is equal to, smallest to greatest, greatest to smallest.
- Identify, recognise, write and read number symbols and names 0 to 600.

Resources: Scrap paper/whiteboards, 501–600 number grid (see *Printable Resources*), counters.

DBE workbook activities relevant to this lesson:
- DBE Worksheet 65 (pp. 2 and 3).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Ask the learners to place a counter on number 538 on the number grid. (Remind them not to say *five thirty-eigh*t, but *five hundred and thirty-eight*.) Ask them to show you on the number grid where the numbers are that are bigger than 538 and smaller than 538. Ask them to explain what makes the numbers bigger/smaller (use place value and total value of the numbers to explain).

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 1s from any number between 0 and 500.

1.2 Recall and strategies (10 minutes)

	Order these numbers from biggest to smallest:	Answer
1.	501, 387, 498, 500	501, 500, 498, 387
2.	411, 300, 365, 422	422, 411, 365, 300
3.	324, 321, 252,298	324, 321, 298, 252
4.	378, 315, 398, 387	398, 387, 378, 315
5.	414, 456, 502, 400	502, 456, 414, 400

	Arrange these numbers from biggest to smallest:	Answer
6.	278, 298, 325, 165	325, 298, 278, 165
7.	554, 545, 523, 532	554, 545, 532, 523
8.	212, 154, 189, 221	221, 212, 189, 154
9.	203, 403, 409, 201	409, 403, 203, 201
10.	154, 145, 114, 169	169, 154, 145, 114

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

This is the first of four lessons which focus on place value and further extend the range of numbers that learners work with. In these lessons you will use base ten blocks, flard cards, number lines and number grids while you work with numbers. The displays of numbers are used to help learners realise the relative sizes of numbers and the meaning of place value. Remember always to use good mathematical language as this will model it for learners. You should talk about the hundreds, tens and units in each number to continue to develop learners' fluency in the use of mathematical language.

This series of four lessons also gives learners opportunities to compare numbers and to use the mathematical vocabulary of comparison between numbers (e.g. *more than* and *less than*). Remember to allow all learners to use this vocabulary in discussion and in response to your questions.

Activity 1: Learners work in groups

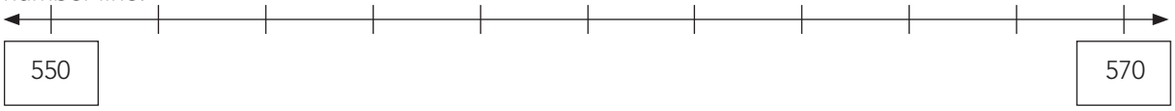
- Give each group of learners a 501–600 number grid and a few counters.
- Ask them to place counters on the following numbers: 512, 520, 502, 501, 521.
  - Find the numbers that are between 515 and 520. (516, 517, 518, 519)
  - Find the numbers that are between 599 and 596. (598, 597)
  - Find the numbers that are 1 more than 534 and 539. (535, 540)
  - Find the number that is equal to 5 hundred + 8 tens + 4. (584)
  - Find the number that is equal to 5 hundreds + 9 tens + 9. (599)
  - Etc. Ask other questions about numbers, using various numbers and comparisons, in the number range.

Activity 2: Learners work in groups

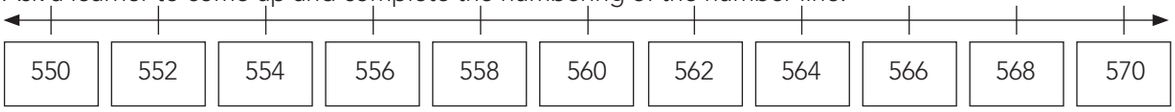
- Ask the learners to:
  - Take five counters and place them on any five numbers on their number grid.
  - Share these numbers with the class.
- Give learners any five numbers. They place their counters on these numbers.
- Learners write these numbers on their scrap paper/whiteboards from the smallest to the biggest.
- Write the same numbers from the biggest to the smallest.

Activity 3: Whole class activity

- Draw a number line on the board – counting in 2s from 550 to 570. Label only the start and end points on the number line.



- Ask a learner to come up and complete the numbering of the number line.



- Ask questions that call on learners to identify and place number on the number line. Ask for both even and odd numbers – the even numbers have labels, the odd numbers learners will have to locate correctly between a pair of even numbers. Talk about how to locate the position of a number on the number line. For example:
- *Show me the position of 567 on the number line.*
- *Show me the position of 556 on the number line.*
- *Show me the number that is 2 more than 558.*
- Problem solving: Ask some general questions that call on learners to think about numbers in the range 500 to 600. For example:
- *I have a number between 520 and 530. The number ends with a 2. What is my number?* (522)
- *I have a number between 570 and 590. The number is a multiple of 10. What is my number?* (580)
- *Etc.*

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 1: Numbers 500–600

Classwork

501	502	503	504	505	506	507	508	509	510
511	512	513	514	515	516	517	518	519	520
521	522	523	524	525	526	527	528	529	530
531	532	533	534	535	536	537	538	539	540
541	542	543	544	545	546	547	548	549	550
551	552	553	554	555	556	557	558	559	560
561	562	563	564	565	566	567	568	569	570
571	572	573	574	575	576	577	578	579	580
581	582	583	584	585	586	587	588	589	590
591	592	593	594	595	596	597	598	599	600

1. Circle any five numbers that are less than 576. (Any numbers between 501 to 575)

2. Put a cross on five numbers that are more than 576. (Any numbers between 577 and 600)

3. Write these numbers from the smallest to the biggest: 515, 555, 505, 551, 550. (505, 515, 550, 551, 555)

4. Write these numbers from the biggest to the smallest: 599, 509, 519, 590, 501. (599, 590, 519, 509, 501)

5. Draw and complete this number line: 530 to 540. (530, 531, 532, 533, 534, 535, 536, 537,538, 539, 540). Circle the number that is 2 more than 532. Circle the number that is equal to 536. (Learners draw the number line and follow the other instructions about which numbers to circle.)

Homework

1. Fill in greater than, less than or equal to:
   a) 540 .... 514 (greater than)
   b) 514 .... 541 (less than)
   c) 504 .... 540 (less than)
   d) 554 .... 554 (equal to)

2. Write these numbers in words:
   a) 509 (five hundred and nine)
   b) 595 (five hundred and ninety-five)
   c) 559 (five hundred and fifty-nine)
   d) 590 (five hundred and ninety)

LESSON 2: NUMBERS 500–600 – PLACE VALUE

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.3 Number symbols and number names, 1.4 Describe, compare and order numbers, 1.5 Place value, 1.16 Mental mathematics.

Lesson vocabulary: Describe, compare, whole numbers, between, before, after, number symbol, number name, place value, more than, less than, order, decompose, hundreds, tens and ones/units, numeral, break up, forwards, backwards, 3-digit, number sentence, number line.

Prior knowledge: Learners should have been taught how to:
- Describe and compare whole numbers up to 499 using smaller than, greater than, more than, fewer than and is equal to, as well as smallest to greatest and greatest to smallest.
- Identify, recognise, write and read number symbols 0 to 499 and number names 0 to 500.

Concepts:
- Describe and compare whole numbers up to 600 using before, after and between.
- Identify, recognise, write and read number symbols 0 to 600.
- Identify, recognise, read and write number names 0 to 600.
- Decompose 3-digit numbers up to 600 into multiples of hundreds, tens and ones/units.

Resources: Scrap paper/whiteboards, base ten blocks and flard cards (see Term 1 *Printable Resources*), number cards (560–570, 519, 583, 594 – make your own).

DBE workbook activities relevant to this lesson:
- DBE Worksheet 66 (pp. 4 and 5).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Counting: give learners base ten blocks to count up to 90 in tens (10, 20, 30, 40, 50 60, 70, 80, 90). Count up to 600 in 100s, using base ten blocks (100, 200, 300, 400, 500, 600). Learners show number 563, using their base ten blocks. Ask them to show you the number that is one smaller (562) and the one that is one more (564), ten smaller (553) and ten more than (573).

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 10s from any number between 0 and 600.

1.2 Recall and strategies (10 minutes)

	Answer the following:	Answer
1.	What is 1 more than 136?	137
2.	What is 5 more than 154?	159
3.	What is 2 more than 130?	132
4.	What is 2 more than 211?	213
5.	What is 3 more than 145?	148

	Answer the following:	Answer
6.	What is 3 less than 45?	42
7.	What is 2 less than 71?	69
8.	What is 4 less than 154?	150
9.	What is 5 less than 180?	175
10.	What is 10 less than 200?	190

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

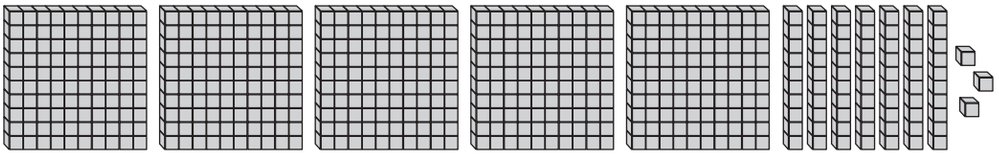
3. Lesson content – concept development (30 minutes)

This is the second lesson in which you focus on numbers and place value of numbers up to 600. If you don't have flard cards and base ten blocks, do drawings on the board like those shown in the lesson plan and explain to the class what the drawings show.

Activity 1: Whole class activity

Write 573 on the board. Ask learners to:

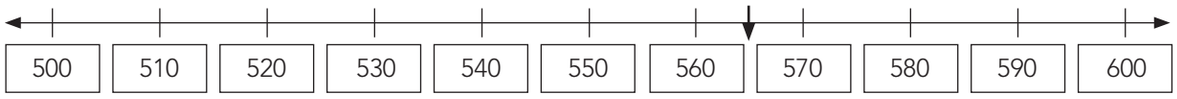
- *Read the number.* (Five hundred and seventy-three)
- *Write the numeral on your scrap paper/whiteboard.* (573)
- *Show the number to the class using your base ten blocks. If you don't have blocks draw the illustration on the board.* (5 hundreds and 7 tens and 3 units)



- *Show the number using your flard cards.* 500 70 3
- Discuss the place values (100s, 10s and units), face values (5, 7 and 3) and total values (500 + 70 + 3 = 573) of the number.
- Explain to the learners that when you write a number using 100s, 10s and units this is known as *breaking down* the number. E.g. Break down the number 567: 500 + 60 + 7.
- Repeat the sequence of tasks using other numbers in the range, e.g. 594 (500 and 90 and 4); 501 (500 and 1); 583 (500 and 80 and 3); 519 (500 and 10 and 9).

Activity 2: Whole class activity

- Draw a 500–600 number line on the board, labelled in 10s, before the lesson.
- Label the number line as below:



- Ask learners to come up to the board and help you to place 565 on the number line. After a learner places the number on the number line ask the learner why she/he placed it there. (It is very important to get children to verbalise their thinking at this stage.)
- Do the same with the following numbers: 565, 594, 501, 564, 583, 519.

Activity 3: Learners work in groups

Write the numbers from 560 to 570 on the board in a jumbled order (or give groups of learners number cards if you have them).

- Ask the learners to write (or place) the numbers in order from smallest to biggest on their scrap paper/white boards.
- Optional – if you have time: Repeat the activity with other numbers in the number range 500 and 600.

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

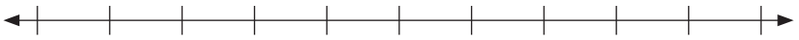
Term 3 Lesson 2: Numbers 500–600 – place value

Classwork

1. Write a number sentence and the answer for five 100 blocks and two 10 blocks and 9 unit blocks. (500 + 20 + 9 = 529)

2. Write a number sentence and the answer for 500 and 80 and 6. (500 + 80 + 6 = 586)

3. Draw and complete a 560–570 number line using this blank number line:



   a) Circle all the numbers that come before 565. (564, 563, 562, 561, 560)
   b) Make a cross over all the numbers that come after 565. (567, 568, 569, 570)

4. Write 328 in words. (three hundred and twenty-eight)

5. Write 472 in words. (four hundred and seventy-two)

Homework

1. Break down these numbers:
   a) 438 (400 + 30 + 8)
   b) 549 (500 + 40 + 9)
   c) 607 (600 + 7)

2. Write the number names:
   a) 414 (four hundred and fourteen)
   b) 404 (four hundred and four)
   c) 440 (four hundred and forty)
   d) 441 (four hundred and forty-one)

LESSON 3: NUMBERS 600–700 – PLACE VALUE

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.3 Number symbols and number names, 1.4 Describe, compare and order numbers, 1.5 Place value, 1.16 Mental mathematics.

Lesson vocabulary: Describe, compare, whole numbers, between, before, after, number symbols, number names, place value, order, decompose, 3-digit numbers, multiple, hundreds, tens and ones/units.

Prior knowledge: Learners should have been taught how to:
- Describe and compare whole numbers up to 500 using smaller than, greater than, more than, fewer than and is equal to, as well as smallest to greatest and greatest to smallest.
- Identify, recognise, write and read number symbols 0 to 1 000 and number names to 250.

Concepts:
- Describe and compare whole numbers up to 700 using before, after, between.
- Identify, recognise, write and read number symbols 0 to 700.
- Identify, recognise read and write number names 0 to 600.
- Decompose 3-digit numbers to 700 in multiples of hundreds, tens and ones/units.

Resources: Scrap paper/whiteboards, base ten blocks, flard cards.

DBE workbook activities relevant to this lesson:
- DBE Worksheet 69 (pp. 10 and 11).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Give learners base ten blocks to use to count up to 100 (10, 20, 30, 40, 50, 60, 70, 80, 90, 100). Count in hundreds up to 700 using base ten blocks (100, 200, 300, 400, 500, 600, 700). Learners use base ten blocks to show you 628. Now they have to show the number that is one smaller than 628 (627) and one bigger than 628 (629).

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 10s from any given multiple between 0 and 600, e.g. 330, 340, 350, …

1.2 Recall and strategies (10 minutes)

	Give a number between:	Answer
1.	458 and 460	459
2.	78 and 80	79
3.	104 and 102	103
4.	498 and 496	497
5.	487 and 489	488

	Give a number between:	Answer
6.	535 and 533	534
7.	398 and 400	399
8.	289 and 291	290
9.	478 and 476	477
10.	189 and 191	190

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

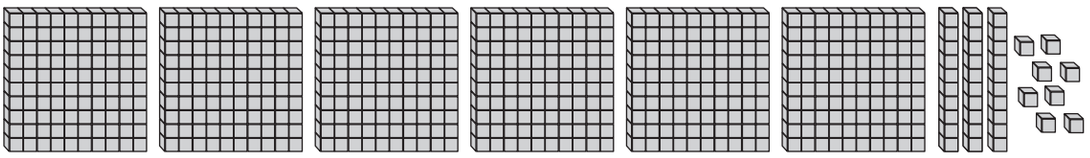
3. Lesson content – concept development (30 minutes)

This is the third lesson in which you focus on numbers and place value (the number range is extended to 700). As before, if you don't have flard cards and base ten blocks, do drawings on the board like those shown in the lesson plan and explain to the class what the drawings show.

Activity 1: Whole class activity

Write number 638 on the board. Ask learners to:

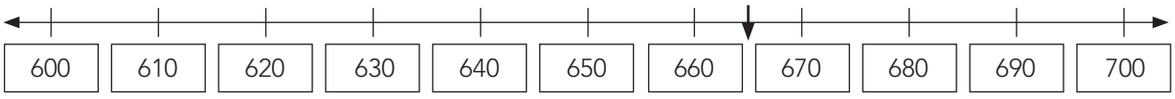
- *Read the number.* (six hundred and thirty-eight)
- *Write the number on your scrap paper/whiteboard.* (638)
- *Show it to the class with your base ten blocks.* (6 hundreds, 3 tens and 8 units) *If you don't have blocks draw the illustration on the board.*



- *Show the number using your flard cards.* 600 30 8
- Discuss the place values (100s, 10s and units), face values (6, 3 and 8) and total values (600 + 60 + 8 = 638) of the number.
- Explain to the learners that when you write a number using 100s, 10s and units this is known as *breaking down* the number. E.g. Break down the number 671: 600 + 70 + 1.
- Repeat the sequence of tasks using other numbers in the range, e.g. 624 (600 and 20 and 4); 681 (600 and 80 and 1).

Activity 2: Whole class activity

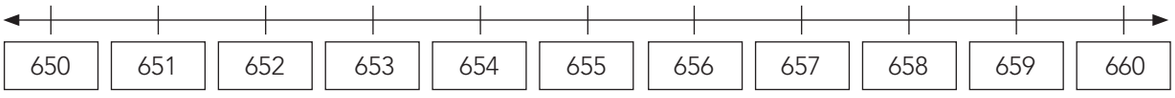
- Draw a 600–700 number line on the board (labelled in 10s) before the lesson starts to save time.
- Label the number line as below.



- Ask the learners to show you where 665 will be on the number line.
- Ask the learners to also find the following numbers on the number line: 688, 622, 699, 601.

Activity 3: Whole class activity

Rub out the numbering on the number line from Activity 2 and re-do the numbering for this activity (650–660) during the lesson.



Ask the following question:

- *Which number comes before 653?* (652)
- *Which number comes after 657?* (658)
- *Which two numbers lie between 651 and 654?* (652, 653)
- *Etc.*
- If there is time, draw other number lines and discuss other questions in relation to those number lines.

4. Classwork activity (25 minutes) (See next page)

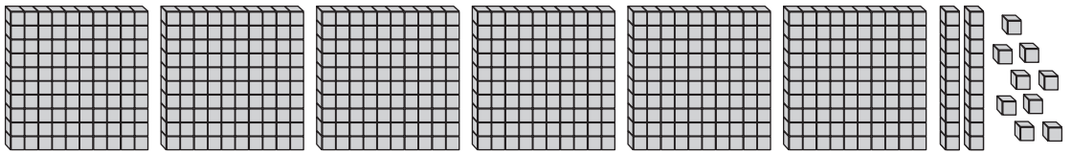
5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 3: Numbers 600–700 – place value

Classwork

1. Show the following numbers using base ten blocks and then write a number sentence for each. The first one has been done for you.
   a) 629



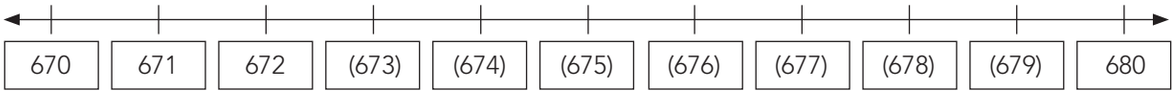
600 + 20 + 9 = 629

   b) 648 (Draw the blocks to show 600 + 40 + 8 = 648)
   c) 662 (Draw the blocks to show 600 + 60 + 2 = 662)

2. Write a number sentence and the answer for the following:
   a) 600 and 80 and 3 (600 + 80 + 3 = 683)
   b) 90 and 600 and 8 (600 + 90 + 8 = 698)

3. Write 493 in words. (four hundred and ninety-three)

4. Complete the number line: (Learners complete the number line labels – counting in 1s)



Homework

1. Write the value for each digit:
   a) 632 (600 + 30 + 2)
   b) 601 (600 + 0 + 1)
   c) 670 (600 + 70 + 0)

2. Write in words:
   a) 618 (six hundred and eighteen)
   b) 680 (six hundred and eighty)
   c) 681 (six hundred and eighty one)
   d) 608 (six hundred and eight)

LESSON 4: ORDINAL NUMBERS

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.3 Number symbols and number names, 1.4 Describe, compare and order numbers, 1.16 Mental mathematics.

Lesson vocabulary: Describe, compare, whole numbers, smaller than, greater than, more than, fewer than, equal to, smallest, greatest, number symbol, number, ordinal numbers, order, place, position, first, second, third … thirtieth, 1st, 2nd, 3rd … 31st.

Prior knowledge: Learners should have been taught how to:
- Describe and compare whole numbers up to 500 using smaller than, greater than, more than, fewer than and is equal to, as well as smallest to greatest and greatest to smallest.
- Identify, recognise, write and read number symbols 1 000 and number names to 250.

Concepts:
- Order a given set of numbers up to 700.
- Use ordinal numbers to show order, place and position, including abbreviated form up to 31st.

Resources: Scrap paper/whiteboards, 601–700 number grids (see *Printable Resources*), counters, 3 sets of flashcards (make your own: first–thirty first, 1st–31st and a–z).

DBE workbook activities relevant to this lesson:
- DBE Worksheet 70 (pp. 12 and 13).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Organise cards with a–z, ordinal number and numeric symbols so that learners can match three sets of cards from Group 1, then Group 2 and finally Group 3 below. Match all three groups.

Group	Letters	Ordinals	Numeric symbols
1	a–j	first–tenth	1st–10th
2	k–t	eleventh–twentieth	11th–20th
3	u–z	twenty first–twenty sixth	21st–26th

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 10s from any given number between 0 and 600, e.g. 255, 265, 275, …

1.2 Recall and strategies (10 minutes)

	Order from smallest to biggest:	Answer
1.	478, 487, 477, 488	477, 478, 487, 488
2.	546, 456, 465, 455	455, 456, 465, 546
3.	383, 387, 378, 373	373, 378, 383, 387
4.	299, 301, 298, 300	298, 299, 300, 301
5.	198, 158, 164, 129	129, 158, 164, 198

	Order from smallest to biggest:	Answer
6.	382, 328, 338, 383	328, 338, 382, 383
7.	384, 283, 483, 538	283, 384, 483, 538
8.	503, 513, 533, 535	503, 513, 533, 535
9.	444, 455, 433, 344	344, 433, 444, 455
10.	233, 235, 212, 221	212, 221, 233, 235

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

In this lesson you focus on ordinal numbers in the context of numbers from 600–700. In Grade 3 ordinal number concept is extended to include the use of ordinal numbers to show order, place and position, including the abbreviated form up to 31st. According to CAPS this is covered in Term 3. You could consolidate this knowledge by using ordinal numbers whenever it is appropriate in other contexts. For example, talk about the order of learners coming in to class: you are the first in class today, you are the fifth, the last, etc.

Activity 1: Whole class activity

Use a 601–700 number grid (there is one in the classwork activity or use the one in the *Printable Resources* section) to answer the following questions:

- *What is the seventh number on the grid?* (607)
- *What is the seventeenth number?* (617)
- *What is the twenty seventh number?* (627)
- *What is the fifteenth number after 610?* (625)
- *What is the twenty first number after 610?* (631)
- *640 is the ___ number after 610*? (thirtieth)
- Do a few more examples reinforcing the concepts of first to thirtieth.

Activity 2: Whole class activity

- Revise ordinal numbers in numeric form 1st–31st.
- Arrange flashcards, as shown below, on the board with Prestik and ask learners to match the ordinal numbers with their numeric symbols.
- **In sequence**

twentieth

twenty first

thirty first

Randomly

21st

20th

31st

Activity 3: Whole class activity

Draw this table on the chalkboard and complete it with the learners using the 601–700 number grid.

For all these questions count from 610: In each case give the position of the number in relation to the number 610		
Number	**Ordinal Number**	**Numeric form**
(632)	twenty second	(22nd)
(641)	(thirty first)	31st
628	(eighteenth)	(18th)
(630)	(twentieth)	20th
(627)	seventeenth	(17th)

- Choose another number as a starting point and discuss the position of other numbers in relation to the new starting point. Remember that Grade 3s must go up to the 31st (in terms of ordinal numbers).
- Work through as many examples as you have time to do, allowing as many as possible learners to respond in the whole class discussion.

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 4: Ordinal numbers

Classwork

601	602	603	604	605	606	607	608	609	610
611	612	613	614	615	616	617	618	619	620
621	622	623	624	625	626	627	628	629	630
631	632	633	634	635	636	637	638	639	640
641	642	643	644	645	646	647	648	649	650
651	652	653	654	655	656	657	658	659	660
661	662	663	664	665	666	667	668	669	670
671	672	673	674	675	676	677	678	679	680
681	682	683	684	685	686	687	688	689	690
691	692	693	694	695	696	697	698	699	700

1. Circle the twelfth number. (612)
2. 631 is the ___ (thirty first) number.
3. 612 is the ___ (twelfth) number.
4. ___(t) is the twentieth letter of the alphabet.
5. The fifteenth letter of the alphabet is ___. (o)

Homework

Draw a 620 – 630 number line and show the following:

1. Circle the number that is two less than 623. (621)
2. Circle the numbers between 621 and 624. (622, 623)
3. Circle this number: 600 and 5 and 20. (625)
4. Circle the answer for this number sentence: 600 + 20 + 9 = ____. (629)
5. Circle this number: 6 hundreds and 2 tens and 8 units. (628)

WEEK 2

LESSON 5: NUMBERS UP TO 700 – PLACE VALUE

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.3 Number symbols and number names, 1.4 Describe, compare and order numbers, 1.5 Place value, 1.16 Mental mathematics.

Lesson vocabulary: Order, describe, compare, whole numbers, smaller than, greater than, more than, fewer than, equal to, smallest, biggest, greatest, number symbol, number name, place value, decompose, 3-digit numbers, hundreds, tens and ones/units, numeral.

Prior knowledge: Learners should have been taught how to:
- Describe and compare whole numbers up to 500 using smaller than, greater than, more than, fewer than and is equal to, as well as smallest to greatest and greatest to smallest.
- Identify, recognise, write and read number symbols to 1 000 and number names to 250.

Concepts:
- Describe and compare whole numbers up to 700 using before, after, between.
- Identify, recognise, write and read number symbols and names to 700.
- Decompose 3-digit numbers to 700 in multiples of hundreds, tens and ones/units

Resources: Scrap paper/whiteboards, base ten blocks, flard cards.

DBE workbook activities relevant to this lesson:
- DBE Worksheet 67 (pp. 6 and 7).
- DBE Worksheet 71 (pp. 14 and 15).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Give learners 101–200 number grids. Ask: *What comes before 122?* (121); *What comes after 128?* (129); *What are the two numbers between 123 and 126?* (124, 125). Give learners a random set of numbers (flashcards) between 101–200. Ask learners to place these in sequence. Do the same with numbers between 501–600.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 100s between 0 and 700 e.g. 200, 300, 400, …

1.2 Recall and strategies (10 minutes)

	Order from biggest to the smallest:	Answer
1.	478, 487, 477, 488	488, 487, 478, 477
2.	546, 456, 465, 455	546, 465, 456, 455
3.	383, 387, 378, 373	387, 383, 378, 373
4.	299, 301, 298, 300	301, 300, 299, 298
5.	198, 158, 164, 129	198, 164, 158, 129

	Order from biggest to the smallest:	Answer
6.	382, 328, 338, 383	383, 382, 338, 328
7.	384, 283, 483, 538	538, 483, 384, 283
8.	503, 513, 533, 535	535, 533, 513, 503
9.	444, 455, 433, 344	455, 444, 433, 344
10.	233, 235, 212, 221	235, 233, 221, 212

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

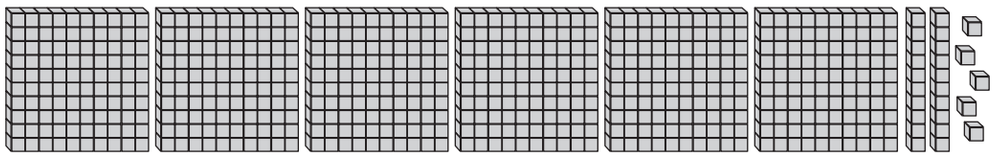
3. Lesson content – concept development (30 minutes)

This is the fourth lesson in which you focus on numbers and place value of numbers, with the number range now up to 700. If you don't have flard cards and base ten blocks, do drawings on the board like those shown in the lesson plan and explain to the class what the drawings show.

Activity 1: Whole class activity

Write the number 625 on the board. Ask learners to:

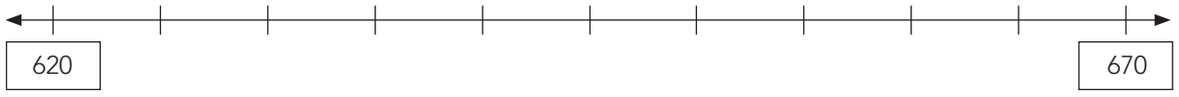
- *Say the number.* (Six hundred and twenty-five.)
- *Write the numeral on your scrap paper/white board.* (625)
- *Show the number to the class with your base ten blocks.* (If you don't have blocks draw the illustration on the board.)



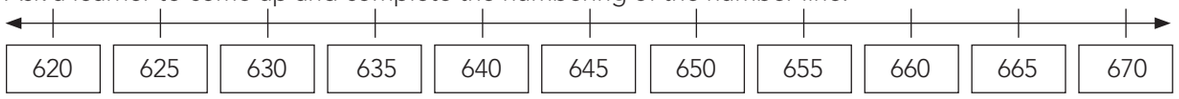
- *Show the number with your flard cards.* **600** **20** **5**
- Discuss the place values (100s, 10s and units), face values (6, 2 and 5) and total values (600 + 20 + 5 = 625) of the number.
- Explain to the learners that when you write a number using 100s, 10s and units this is known as *breaking up* the number. E.g. Break up the number 649: 600 + 40 + 9.
- Repeat the exercise with the number 679 or other 3-digit numbers between 600 and 700.

Activity 2: Whole class activity

- Draw a number line on the board – counting in 5s from 620 to 670. Label only the start and end points on the number line.



- Ask a learner to come up and complete the numbering of the number line.



- Ask questions that call on learners to identify and place numbers on the number line. Ask for both numbers that are multiples of 5 and other numbers – the multiples of 5 have labels, the other numbers do not and learners will have to locate them correctly between a pair of multiples of 5. Talk about how to locate the position of a number on the number line. For example:
- *Show me the position of 640 on the number line.* (Locate it on the number line. It is labelled.)
- *Show me the position of 661 on the number line.* (Locate it on the number line. It lies just after 660. There are 5 numbers between 660 and 665.)
- *Show me the number that is 3 more than 625.* (3 more than 625 is 628, it lies just more than half-way between 625 and 630.)
- Problem solving: Ask some general questions that call on learners to think about numbers in the range 600 to 700. For example:
- *I have a number between 620 and 630. The number ends with a 2. What is my number?* (622)
- *I have a number between 630 and 640. The number is a multiple of 5. What is my number?* (635)
- *Etc.*

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

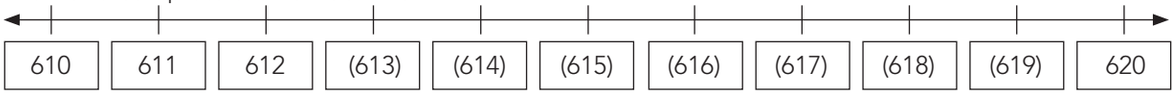
6. Reflection on lesson

Term 3 Lesson 5: Numbers up to 700 – place value

Classwork

1. Write a number sentence and then an answer for these:
   a) 600 and 10 and 4 (600 + 10 + 4 = 614)
   b) 20 and 600 and 9. (600 + 20 + 9 = 629)

2. Draw and complete the number line:



610	611	612	(613)	(614)	(615)	(616)	(617)	(618)	(619)	620

3. Write down all the numbers on the number line that come before 614. (613, 612, 611, 610)

4. Write down all the numbers on the number line that come after 616. (617, 618, 619, 620)

5. Write the number that is between 612 and 614 in words. (six hundred and thirteen).

Homework

1. Write the value for each digit:
   a) 637 (600 + 30 + 7)
   b) 653 (600 + 50 + 3)
   c) 690 (600 + 90 + 0)

2. Write in words:
   a) The number that is two less than 601. (599)
   b) The number that is two more than 499. (501)
   c) The number that is between 608 and 610. (609)

LESSON 6: NUMBERS – ROUNDING OFF TO THE NEAREST 10

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.3 Number symbols and number names, 1.6 Problem-solving techniques: rounding off in tens, 1.16 Mental mathematics.

Lesson vocabulary: Describe, compare, whole numbers, smaller than, greater than, more than, fewer than, equal to, smallest, greatest, number symbol, rounding off.

Prior knowledge: Learners should have been taught how to:

- Describe and compare whole numbers up to 50 using smaller than, greater than, more than, fewer than and is equal to, as well as smallest to greatest and greatest to smallest.
- Identify, recognise, write and read number symbols 0 to 150 and number names 0 to 50.

Concepts:

- Use the following technique when solving problems and explain solutions to problems: rounding off to tens.

Resources: 0–200 number grid (see Term 1 *Printable Resources*), counters.

DBE workbook activities relevant to this lesson:

- DBE Worksheet 77 (pp. 26 and 27).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Use 0–100 and 101–200 number grids to help learners to find between which two tens a number is.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 10s from any number between 0 and 600.

1.2 Recall and strategies (10 minutes)

	Answer the following:	Answer
1.	What is 1 more than 436?	437
2.	What is 1 less than 502?	501
3.	What is 2 more than 336?	338
4.	What is 2 less than 302?	300
5.	What is 3 more than 445?	448

	Answer the following:	Answer
6.	What is 3 less than 545?	542
7.	What is 4more than 471?	475
8.	What is 4 less than 354?	350
9.	What is 10 more than 540?	550
10.	What is 10 less than 400?	390

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

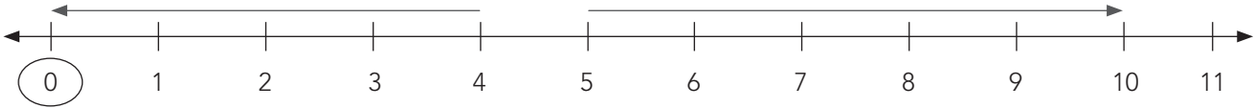
3. Lesson content – concept development (30 minutes)

Rounding off is used in estimation (and other situations) – this term Grade 3s again work on rounding off to the nearest 10.

Activity 1: Whole class activity

Draw the number line (shown below) with demarcations (not the arrows) before the lesson.

- Tell the learners that they are going to learn how to round off numbers so that they can calculate quickly.

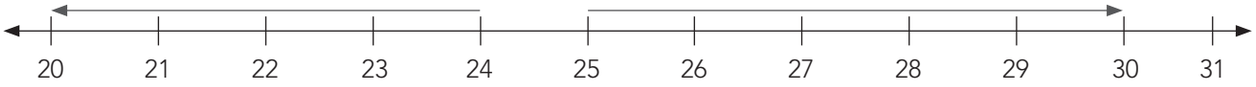


- Explain to learners that when we round off numbers to the nearest ten, the numbers less than 4 will be rounded off down to 0 and the numbers from 5–10 will be rounded off up to the next multiple of ten.
- Draw the arrows on the number line on the board as shown above.
- Ask learners to look at a few numbers on the number line to see if they can round them off.
- *If I round off these numbers to the nearest 10 what will they be?* 4 (0), 8 (10), 3 (0), 7 (10), 5 (10), 2 (0), 0 (0).
- Ask: *What will the number 11 round off to?* (10)

Activity 2: Whole class activity

Rub off the markers and arrows and re-use your number line on the board.

- Tell the learners that when we look at numbers that have more than one digit, we need to first look at between which two multiples of ten the number is.
- Revise a few numbers: 47 is between (40) and (50), 52 is between (50) and (60), 99 is between (90) and (100).
- Tell the learners we then look at the units digit and round off to the nearest ten.
- Draw a 20–30 number line on the board.



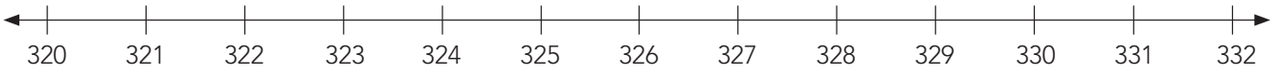
- Ask learners to round off these numbers: 24 (20), 28 (30), 23 (20), 27 (30), 25 (30), 22 (0).
- Discuss which numbers will round off to the number 30. Make sure that you show learners that some numbers round off to 30 from below (25, 26, 27, 28 and 29) and some round off to 30 from above (34, 33, 32, and 31).
- Discuss other examples, for example with numbers between 50 and 60, and 90 and 100.

Activity 3: Whole class activity

- Tell the learners that when we round off three digit numbers to the nearest ten, we still need to look at which two multiples of ten the number is between.
- Revise a few numbers:
  - 247 is between (240) and (250).
  - 452 is between (450) and (460).
  - 199 is between (190) and (200).

Activity 4: Whole class activity

Draw a 320–332 number line on the board.



- Ask learners to look at a few numbers on the number line to see if they can round them off.
- *If I round off these numbers what will they be?*
  324 (320), 328 (330), 321 (320), 326 (330), 325 (330), 322 (320).
  Ask: *What will the number 331 round off to?* (330)
- Do the same with a 450–460 number line if you have time. Remind learners that we need to look at the tens on either side of the number in order to round it off to the nearest 10.

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 6: Numbers – rounding off to the nearest 10

Classwork

1. Write down all the numbers which can be rounded off to 30. (25, 26, 27, 28, 29, 30, 31, 32, 33, 34)

2. Write down all the numbers which can be rounded off to 240. (235, 236, 237, 238, 239. 240, 241, 242, 243, 244)

3. Round off to the nearest 10:

467	504	155	401	698	649
(470)	(500)	(160)	(400)	(700)	(650)

4. Neo has R77. Nearly how many R10 notes could he have? (8)

5. Neo has R778. Nearly how many R10 notes could he have? (78)

Homework

1. Write down all the numbers which can be rounded off to 20. (15, 16, 17, 18, 19, 20, 21, 22, 23, 24)

2. Write down all the numbers which can be rounded off to 250. (245, 246, 247, 248, 249, 250, 251, 252, 253, 254)

3. Neo has R49. Nearly how many R10 notes could he have? (5)

LESSON 7: ADDITION AND SUBTRACTION 0–800 – BUILDING UP AND BREAKING DOWN

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.7, 1.13 Addition and subtraction, 1.16 Mental mathematics 1.6 Problem-solving techniques.

Lesson vocabulary: Addition, subtraction, add, building up, breaking down, solution, calculate, digit.

Prior knowledge: Learners should have been taught how to:

- Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 75, using the appropriate symbols +, –, =, ☐.

Concepts:

- Add to and subtract from 800, using appropriate symbols +, –, =, ☐.
- Solve word problems in context and explain own solutions to problems.
- Use techniques like building up and breaking down numbers when solving problems and explain solutions to problems.

Resources: Base ten blocks, flard cards.

DBE workbook activities relevant to this lesson:

- DBE Worksheet 73 (pp. 18 and 19).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Use base ten blocks to work with two-digit numbers, e.g. 54 + 39 = ____ to show how the ones are swopped for a ten. Repeat using different numbers (e.g. 58 + 47 = ____ , 36 + 48 = ____ , 37 + 37 = ____) until the concept is established. Then progress onto calculations where ten tens are swopped for one hundred, e.g. 56 + 55 = ____ , 48 + 53 = ____ , 64 + 57 = ____ .

Problem solving: *Mrs. Jasmine lent R700 to Mrs. Andre. Mrs. Jasmine now has R100 left. How much money did Mrs. Jasmine have to start off with?* (R800)

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 100s between 0 and 700, e.g. 700, 600, 500 …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	5 + ___ = 19	14
2.	11 + ___ = 16	5
3.	2 + ___ = 16	14
4.	17 + ___ = 17	0
5.	8 + ___ = 19	11

	Calculate the following:	Answer
6.	8 + ___ = 20	12
7.	7 + ___ = 17	10
8.	9 + ___ = 19	10
9.	13 + ___ = 16	3
10.	2 + ___ = 17	15

2. Correction/reflection on homework (15 minutes)

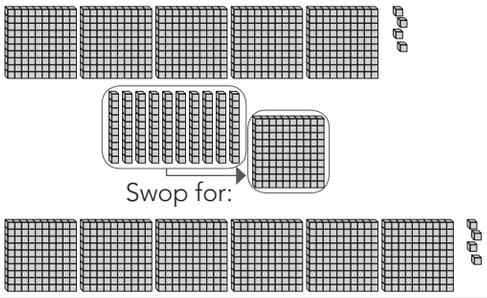
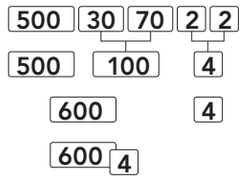
Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

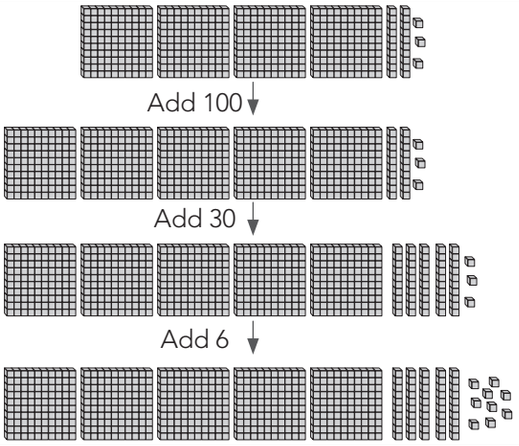
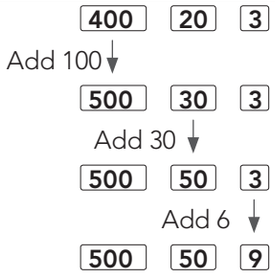
This is the first of four lessons that consolidate learners understanding of addition and subtraction. Learners are shown the use of base ten blocks, flard cards and number lines to illustrate the calculations. You should encourage learners to record accurate working when they add and subtract. They can use any method to record their working which is mathematically correct. Encourage them to speak about their working and the way in which they work with place value in 2- and 3-digit numbers when they add or subtract.

Activity 1: Whole class activity

- Use breaking down of numbers, base ten blocks and flard cards to add 3-digit numbers to 2-digit numbers. (Revise how to represent numbers using base ten blocks if necessary.)
- Work through this example with the class – showing the base ten blocks and flard card demonstration to show how the breaking down and building up of the numbers works based on place value.

Number	Base ten blocks	Place value cards
532 + 72 = 500 + 30 + 2 + 70 + 2 = 500 + (30 + 70) + (2 + 2) = 500 + 100 + 4 = 604		

- Using breaking down of numbers, base ten blocks and flard cards to add 3-digit numbers to 3-digit numbers by keeping the first number whole and breaking down the second number.
- Work through this example with the class – showing the base ten blocks and flard card demonstration to show how the breaking down and building up of the numbers works based on place value.

Number	Base ten blocks	Place value cards
423 + 136 = (423) + (100 + 30 + 6) = (423 + 100) + (30 + 6) = (523 + 30) + 6 = 553 + 6 = 559		

Activity 2: Whole class activity

- Complete the following operations using breaking down and/or building up. Use base ten blocks or flard cards if you think this will help learners follow the working.
- Encourage learners to use working that they understand. They can lay it out differently if they prefer.
- Insist on correct working and steps. Here are four worked examples, do more if necessary. You should do the examples that involve breaking down **and regrouping**. Learners need to have enough practice doing calculations involving regrouping.

128 + 214 = 100 + 200 + 20 + 10 + 8 + 4 = 300 + 30 + 12 = 342 Example with regrouping: 457 + 172 = 400 + 100 + 50 + 70 + 7 + 2 = 500 + 120 + 9 = 500 + 100 + 20 + 9 = 600 + 29 = 629	438 – 323 = 400 – 300 + 30 – 20 + 8 – 3 = 100 + 10 + 5 = 125 Example with regrouping: 371 – 265 = 300 – 200 + 70 – 60 + 1 – 5 = 300 – 200 + 60 – 60 + 10 + 1 – 5 = 100 + 0 + 11 – 5 = 100 + 6 = 106

4. Classwork activity (25 minutes) (See below)
5. Homework activity (5 minutes) (See below)
6. Reflection on lesson

Term 3 Lesson 7: Addition and subtraction 0–800 – building up and breaking down

Classwork

Break down the numbers to add:

1. 213 + 155 = (368)

2. 585 + 107 = (692)

3. 785 – 602 = (183)

4. 567 – 358 = (209)

5. Jabulile read 425 pages. Buhle read 46 pages.
   How many pages did Buhle and Jabulile read altogether? (471)

6. Mrs Zuma needs to buy tiles for her bathroom. She needs 178 black tiles and 283 white tiles.
   How many tiles does she need altogether? (461)

Homework

Break down the numbers to add:

1. Thuli has saved R444. By the end of the month she will earn R109 more.
   How much will she have altogether? (R553)

2. Mary, Neo and Pam each planted 205 bean seeds.
   How many bean seeds did they plant altogether? (615)

LESSON 8: ADDITION – DOUBLES AND NEAR DOUBLES

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.13 Addition and subtraction, 1.16 Mental mathematics, 1.6 Problem-solving techniques.

Lesson vocabulary: Addition, subtraction, doubles, doubling, near double, 3-digits.

Prior knowledge: Learners should have been taught how to:

- Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 75, using the appropriate symbols +, –, =, ☐.

Concepts:

- Add to and subtract from 800, using appropriate symbols +, –, =, ☐.
- Use the following techniques when solving problem and explain solutions to problems adding three digits to three digits: doubling.

Resources: Scrap paper/white boards.

DBE workbook activities relevant to this lesson:

- DBE Worksheet 74 (pp. 20 and 21).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Ask learners to show you the following by using base ten blocks and place value cards:

5 + 6 = double 5 + 1 → 10 + 1 = 11. Do the same for 10 + 11.

Problem solving: *I have 200 marbles and my friend has 225. How many marbles do we have altogether?*

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 2s from any given number between 0 and 600, e.g. 453, 455, 457 …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	__ + 3 = 14	11
2.	__ + 9 = 20	11
3.	__ + 19 = 20	1
4.	__ + 7 = 18	11
5.	__ + 4 = 16	12

	Calculate the following:	Answer
6.	__ + 7 = 13	6
7.	__ + 10 = 11	1
8.	__ + 12 = 15	3
9.	__ + 9 = 18	9
10.	__ + 8 = 13	5

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

This lesson shows learners a way to add and subtract using doubles. This strategy broadens the range of strategies that learners can draw on and it builds their number sense because when they have to think about which double to use, they are thinking conceptually about numbers.

Activity 1: Whole class activity

Adding near doubles with adding 1 (building up). Teach learners how to use near doubles to add by adding 1. Doubles and near doubles is a great strategy for adding or subtracting when:

- the two numbers to be added or subtracted are very close,
- AND it is easy to double one of the numbers.

Working on the board	Your discussion and input
20 + 21 =	*Which number is easier to double, 20 or 21?* (20) *Then let's double 20.*
20 + 20 = 40	*Remember that we don't want 20 + 20, we want 20 + 21.* *So what do you think that means?* (We need to add more.) *How many more?* (1 more to make 21.)
So 20 + 21 = ___?	Double 20 + 1 → 40 + 1 → 41

- Use the same discussion to calculate:

  25 + 26 = ___
51 + 50 = ___
100 + 101 = ___

  } Each time remember to ask the learners which number is easier to double.

Activity 2: Whole class activity

- Adding near doubles with subtracting 1 (breaking down). Teach learners how to use near doubles to add by subtracting 1.

Working on the board	Your discussion and input
20 + 19 =	*Which number is easier to double, 20 or 19?* (20) *Then let's double 20.*
20 + 20 = 40	*Remember that we don't want 20 + 20, we want 20 + 19.* *So what do you think that means?* (We need to take away more.) *How many should we take away?* (Take 1 away from 20 to make 19.)
So 20 + 19 = ___?	Double 20 – 1 → 40 – 1 → 39

- Use the same discussion to calculate

  25 + 24 = ___
50 + 49 = ___
99 + 100 = ___

  } Each time remember to ask the learners which number is easier to double.

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 8: Addition – doubles and near doubles

Classwork

Use doubling to solve the following:

1. 40 + 41 = ... (double 40 plus 1 = 81)
2. 40 + 39 = ... (double 40 minus 1 = 79)
3. 250 + 249 = ... (double 250 minus 1 = 499)
4. 250 + 251 = ... (double 250 plus 1 = 501)
5. 300 + 299 = ... (double 300 minus 1 = 599)
6. 301 + 300 = ... (double 300 plus 1 = 601)
7. There are two boxes with 150 Easter eggs in each box. Tina ate one Easter egg. How many Easter eggs are left? (Double 150 – 1 = 300 – 1 = 299 Easter eggs)

Homework

Use doubling to add the following numbers:

1. I have R200 and Pam has R201. How much do we have altogether?
   (Double 200 + 1 = 400 + 1 = R401)

2. 400 + 399 = ... (double 400 minus 1 = 799)

3. 401 + 400 = ... (double 400 plus 1 = 801)

WEEK 3

LESSON 9: NUMBER LINE – ADDITION OF MULTIPLES OF 10

Teacher's notes
CAPS topics: 1.2 Count forwards and backwards, 1.8, 1.16 Mental mathematics, 1.6 Problem-solving techniques: number lines. **Lesson vocabulary:** Empty number line, jumps, arrowhead, tens, multiples, multiples of 10. **Prior knowledge:** Learners should have been taught how to: • Solve word problems in context and explain own solution to problems involving breaking down of numbers up to 999. **Concepts:** • Recall addition and subtraction facts. • Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 800. • Use number lines for problem solving. **Resources:** Scrap paper/whiteboards. **DBE workbook activities relevant to this lesson:** • DBE Worksheet 76 (p. 25). **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Revise counting in 10s with multiples and non-multiples, first on the number grid and then orally. Revise aspects of Lesson 16 that the learner might be struggling with. **Enrichment:** See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 10s from any given number between 0 and 800, e.g. 712, 711, 701, 691, …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	670 + 10 =	680
2.	670 + 20 =	690
3.	670 + 30 =	700
4.	670 + 50 =	720
5.	670 + 80 =	750

	Calculate the following:	Answer
6.	670 – 10 =	660
7.	670 – 20 =	650
8.	670 – 40 =	630
9.	670 – 70 =	600
10.	670 – 80 =	590

2. Correction/reflection on homework (15 minutes)

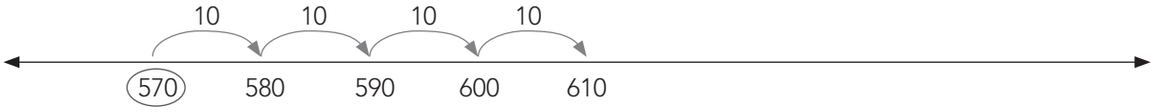
Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

Learners have worked with number lines to add in previous terms. This lesson shows how to use a number line to add by counting on in tens. This is a kind of skip counting that consolidates number knowledge, number patterns and operational skills.

Activity 1: Whole class activity

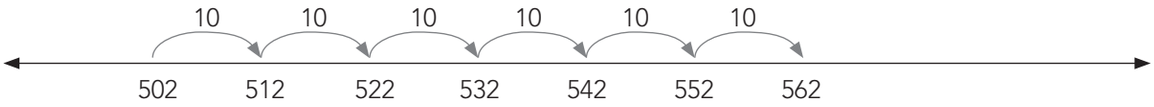
- Learners add on a number line by taking jumps of 10. Write 570 + 40 = ___ on the board.
- Draw an empty number line on the board. Write 570 on the number line.
- Ask: *Why did I start numbering my number line at 570?* (Because it suits the question.)
- *How many 10s are there in 40?* (4)
- *How many jumps of 10 will we take to add 40?* (4)
- Draw jumps and write the 10 above the number line and the multiples of 10 below the number line as you count aloud and take each jump of 10.



- The answer is 610. Write the answer in the correct place on the board: 570 + 40 = (610)
- Now get learners to work a few examples out on their scrap paper/whiteboards, e.g.
  - 740 + 40 = (780: using the number line you can count from 740 to 750, 760, 770 and end on 780)
  - 673 + 50 = (723: using the number line you can count from 673 to 683, 693, 703, 713 and end on 723)

Activity 2: Whole class activity

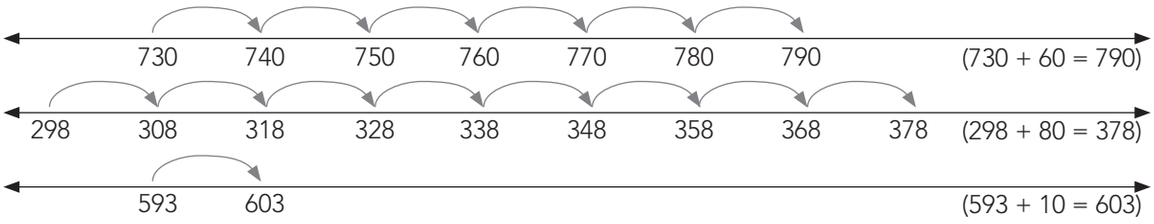
- Draw an empty number line on the board with the jumps as indicated below. Ask learners to look at the number lines and see if they can work out the number sentence shown in the number line diagram.



- Ask questions and write down each symbol as you get the responses from the children.
  - *Where do we begin?* (502).
  - *Are the numbers getting bigger or smaller?* (Bigger)
  - *So will this be addition or subtraction?* (Addition)
  - *Where do we write the addition sign?* (Next to the 502)
  - *How many did we add? Let's count the jumps.* (All count together with you while you point to the 10 above the jumps: 10, 20, 30, 40, 50, 60.)
  - *Let's write that down. What is the answer?* (562) *Where do we write that?* (After the equal sign)

Chalkboard
502 + 60 = 562

- Draw number lines and do the same for:
  - 465 + 50 = 515
  - 702 + 70 = 773
- Now get learners to work a few examples out on their scrap paper/whiteboards. For example:



4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 9: Number line – addition of multiples of 10

Classwork

1. Use number lines to work out the following addition sums in your maths book.
   a) 560 + 50 = ____ (610)
   b) 678 + 40 = ____ (718)
   c) 765 + 60 = ____ (825)

2. Copy these number lines and write the number sentences for each number line.

a)

b)

c)

Homework

1. Use number lines to work out the following addition sums:
   a) 573 + 30 = ____ (603)
   b) 675 + 20 = ____ (695)
   c) 784 + 50 = ____ (834)

2. A school has 438 books in the library. The librarian bought 70 more books. How many books does the library now have? (508)

LESSON 10: NUMBER LINE – ADDITION WITH BREAKING DOWN THE ADDEND

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.8, 1.16 Mental mathematics, 1.6 Problem-solving techniques: number lines.

Lesson vocabulary: Empty number line, jumps, arrowhead, tens, multiples, multiples of 10, ones/units.

Prior knowledge: Learners should have been taught how to:

- Solve word problems in context and explain own solution to problems involving breaking down of numbers up to 999.

Concepts:

- Recall addition and subtraction facts.
- Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 800.
- Use number lines for problem solving.

Resources: Scrap paper/whiteboards, number lines.

DBE workbook activities relevant to this lesson:

- N/A

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Revise counting in 10s with multiples and non-multiples, first on the number grid and then orally. Revise aspects of Lesson 17 that the learner might be struggling with.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 25s from any given multiple between 0 and 700, e.g. 125, 150, 175, …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	750 + 10 =	760
2.	750 + 20 =	770
3.	750 + 30 =	780
4.	750 + 50 =	800
5.	750 + 80 =	830

	Calculate the following:	Answer
6.	750 – 10 =	740
7.	750 – 20 =	730
8.	750 – 40 =	710
9.	750 – 70 =	680
10.	750 – 80 =	670

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

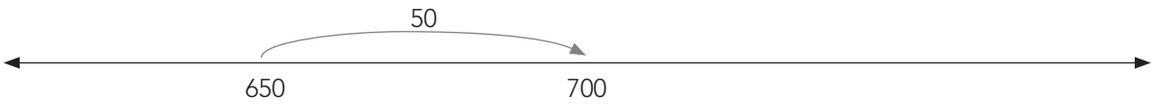
3. Lesson content – concept development (30 minutes)

In this lesson you teach learners how to add on a number line by keeping the first number whole and breaking the second number into tens and ones. Then they jump in tens all in one go and the ones are jumped after that.

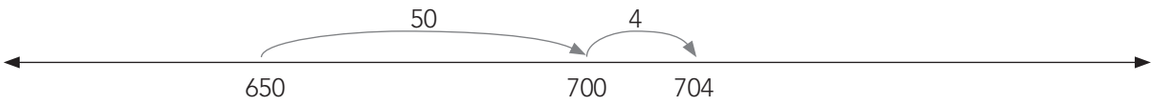
Activity 1: Whole class activity

- Tell the learners that you are going to show them how to use a number line to add numbers where the second number (addend) has both tens and units, e.g. 650 + 54 = ___
  Draw the number line on the board. *What is the starting point?* (650).

- *Now let's break up the second number (addend) into tens and ones/units. What do we get?* (5 tens and 4 units) *Let's jump (to show adding) the whole 5 tens in one go. What will we get?* (650 + 50 gives us 700).



- *Remember that we still need to add the units. How many units?* (4). *So let's jump (add) 4 units from 700.*



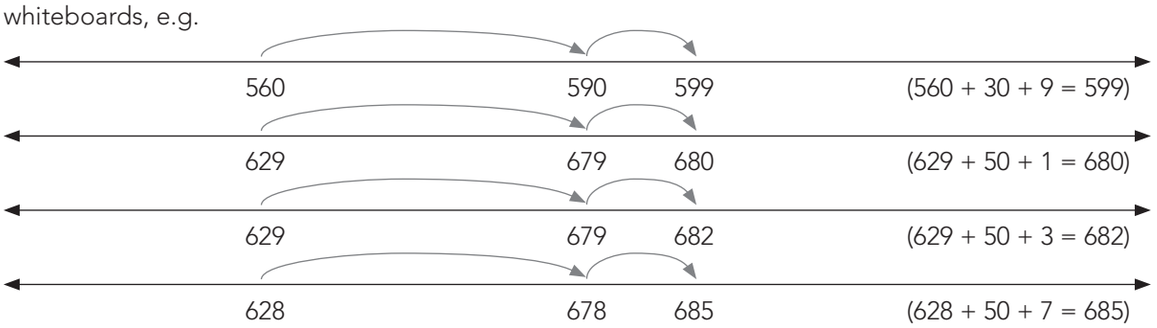
- *What is the answer*? (704)
- Go through the same steps with a few more examples and then ask learners to try them out on their whiteboards, e.g. 567 + 33= _____, 424 + 44 =_____, 333 + 66 =_____, 736 + 42 = _____ .

Activity 2: Whole class activity

- Draw this number line on the board and ask learners to help you to find the number sentence.

- *What is the first number*? (625) Write **625** down on the board.
- *How many tens did we add?* (count – 625, 635, 645, 655, 665, 675, 685 – we added 6 tens which is 60)
- Write down plus 60 next to the **625** on the board.
- *Now, to go from 685 to 689, how many units/ones do we need to add?* (4) Write down plus 4 next to the **625 + 60** on the board.
- *What is our number sentence?* (625 + 60 + 4 = 689)
- Go through the same steps with a few more examples and then ask learners to try them out on their whiteboards, e.g.

You will need to help learners to work through these steps.



4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 10: Number line – addition with breaking down the addend

Classwork

1. Write the number sentences for the sum shown on each number line.

a)

b)

c)

2. Use number lines to work out the following addition sums. First add the tens and then add the units.
   a) 560 + 57 = ___ (617)
   b) 678 + 42 = ___ (720)
   c) 765 + 63 = ___ (828)

Homework

1. Write the number sentences for the sum shown on each number line.

a)

b)

2. Use number lines to work out the following addition sums. First add the tens and then add the units.
   a) 560 + 37 = ___ (697)
   b) 678 + 43 = ___ (721)

LESSON 11: POSITION AND DIRECTION

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 3.1 Position, orientation and views.

Lesson vocabulary: Left, right, up, down, straight, forwards, backwards, grid, front, behind, next to, top.

Prior knowledge: Learners should have been taught how to:

- Describe the position of one objects in relation to another e.g. on top of, in front of, behind, left, right, up, down, next to.
- Follow directions to move around the classroom and to place one object in relation to another.

Concepts:

- Follow directions from one place to another using a grid.

Resources: Blindfolds (optional activity).

DBE workbook activities relevant to this lesson:

- N/A

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Learners work in pairs facing each other. Place one beanbag and one book on their tables between them. Each learner takes turns to tell the other one what to do, e.g. move the beanbag to be on the left of the book, move the book so that it is at the top of the beanbag, etc.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 5s from any given multiple between 0 and 600, e.g. 555, 550, 545, …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	__ + 10 = 19	9
2.	__ + 10 = 20	10
3.	__ + 10 = 10	0
4.	__ + 10 = 15	5
5.	__ + 10 + 13	3

	Calculate the following:	Answer
6.	__ – 10 = 9	19
7.	__ – 10 = 0	10
8.	__ – 10 = 3	13
9.	__ – 10 = 10	20
10.	__ – 10 = 1	11

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

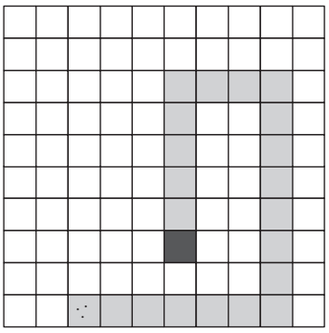
Activity 1: Whole class activity

Take the class outside for this activity.

- Let the learners stand in a line next to one another on the field. Ask them to face you.
- Tell them:
  - *Take 5 steps forward and then stop.*
  - *Remain facing forward; take 3 steps to the left.*
  - *Take 7 steps backwards and stop.*
  - *Sit down where you are.*
  - *All the boys stand up and take 10 steps forwards and 4 steps to the left. Sit down.*
  - *The girls stand up and take 9 steps forwards, 4 steps to the left and 1 step forward. Sit down.*
- Ask them: *What have you noticed?* (We are in a line again)
- Explain to the class that following these instructions is like following instructions to make a path in a grid – this leads into the classwork activity. They need to understand how to move up/down; right/left.
- Go back into class for the remainder of the lesson

Activity 2: Whole class activity

Go back into the classroom for this activity.
Draw a grid on the board before the lesson to save time. Indicate a starting point (dark block) and show how to make the path on the grid: Move 5 blocks up, 3 to the right, 7 blocks down and 6 to the left. *Where are you?* (grey block with spots)



Activity 3: Optional: Whole class activity

Do this as part of Activity 1 if there is time.

- Learners get into pairs. One of the pair has to be blindfolded.
- The other one moves to somewhere within hearing distance on the field.
- Start giving your friend directions to get back to where you are.
- Learners swop blindfolds and repeat the exercise.

4. Classwork activity (25 minutes) (See next page)

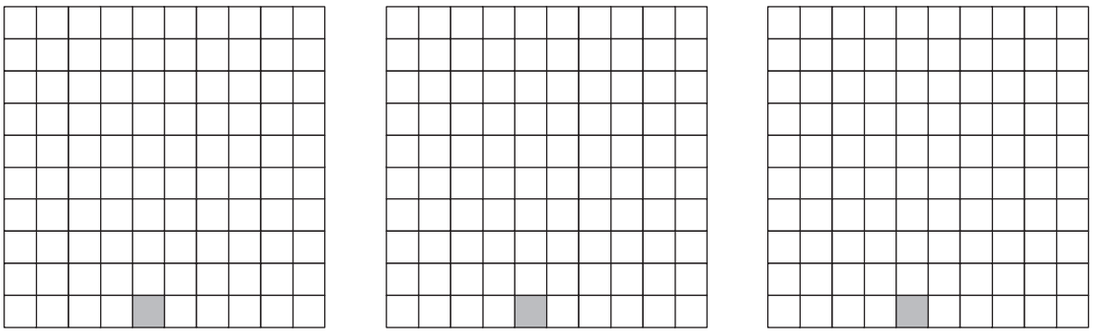
5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 11: Position and direction

Classwork

1. Use the grids to colour the paths. Use a new grid for each question.



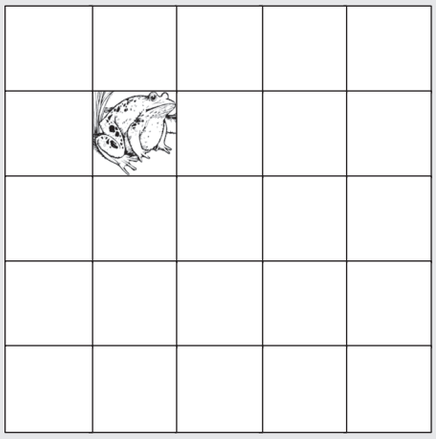
a) Start at the black block. Go 3 blocks up. Go 4 blocks right. Go 2 blocks up. Go 6 blocks left. Go 2 blocks down. Draw a face in the block where you stopped. (Row 7, Column 3)

b) Start at the black block. Go 2 blocks left. Go 9 blocks up. Go 6 blocks right. Go 4 blocks down. Draw a star in the block where you stopped. (Row 5, Column 9)

c) Start at the black block. Go 5 blocks right. Go 5 blocks up. Go 5 blocks left. Go 4 blocks up. Draw a circle in the block where you stopped. (Row 1, Column 5)

Homework

The frog is in Row 2 Column 2. It moves three blocks down, then two blocks to the right, three blocks up and two blocks to the left. Draw the path the frog takes. Where does it end up? (It ends up where it started.)



LESSON 12: POSITION AND DIRECTION – MAPS

Teacher's notes
CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 3.1 Position, orientation and views. **Lesson vocabulary:** Maps, view (aerial/top), directions, left, right, across, opposite, straight. **Prior knowledge:** Learners should have been taught how to: • Follow directions to move around the classroom and to place one object in relation to another. **Concepts:** • Read, interpret and draw informal maps. • Find objects on maps. • Follow directions from one place to another on an informal map. **Resources:** Map of your school (top view), counters. (You need to get the copy of your school map at the office. They will have a map diagram of the school for safety purposes in the office. Make a copy that you can give to learners or draw on the board for them to copy.) **DBE workbook activities relevant to this lesson:** • N/A **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Learners use the map of the school. Ask them to place counters on the *office, classrooms, sports fields* and *Gr 3 classrooms*. Give learners green counters and ask them to place it on all the trees. **Enrichment:** See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 2s from any given multiple between 0 and 600, e .g. 526, 528, 530, …

1.2 Recall and strategies (10 minutes)

	Answer the following:	Answer
1.	What is 1 more than 544?	545
2.	What is 1 less than 552?	551
3.	What is 2 more than 526?	528
4.	What is 2 less than 541?	539
5.	What is 3 more than 439?	442

	Answer the following:	Answer
6.	What is 3 less than 387?	384
7.	What is 4 more than 517?	521
8.	What is 4 less than 539?	535
9.	What is 10 more than 539?	549
10.	What is 10 less than 409?	399

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

For this lesson you need to get the copy of your school map at the office. They will have a map diagram of the school for safety purposes in the office. Make a copy that you can give to learners or draw on the board for them to copy.

Activity 1: Learners work in pairs

Give each pair a map (top view) of the school, discuss it and ask the following questions:

- *Which way should we hold the map?*
- *Where is our classroom? How do we know this?*
- *If we look out of the door, whose class is on our left hand side?*
- *If we look out of the door whose class is on our right hand side?*
- *What is across from our class?*
- *What is behind our class?*
- *Where is the office?*
- *What is opposite the office?*
- *Where are the toilets?*
- *Show me the Gr 3 classrooms.*
- *Show me the sports fields.*
- *Where is the school gate?*
- Discuss: *Why can we call a map a 'top view'?* (A map shows the layout as it would be seen from above.)

Activity 2: Whole class activity

Continue using the map of the school for the next few questions which you will discuss in the class as a whole:

- *If you walk out of your classroom, which way will you turn to go to the toilet and how will you get there?* (Various answers, e.g. turn left then walk ... then turn left again.)
- *If you are playing on the field at break and the bell goes, which way will you turn to come back to class?* (Various answers)

Activity 3: Learners work individually

Learners must mark the following on their maps – discuss it with them while they do it.

- Colour the office brown, the classrooms red, the Grade R/1 classrooms yellow, the sports facilities/field orange and the trees green.
- Draw a green line to show how you would walk from the gate to our class.
- Draw a red line to show how you would walk from our class to the toilet.
- Draw a purple line to show how you would walk from the toilet to the sports fields.

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 12: Position and direction – maps

Classwork

1. Draw a little map of your classroom and show the following:
   a) Where you are sitting.
   b) Label the picture using the words: left-hand side, right-hand side, behind.
   c) Who is sitting behind you.
   d) Who is sitting on your left- and right-hand sides.

2. Explain how you would walk from your seat to the classroom door. Use words like, turn left, turn right, and go straight.

Homework

When you are at home:

1. Which way do you turn from your room to go to the kitchen?

2. Which way do you turn from your room to go to the bathroom?

3. Explain how you would walk from the front door to the bathroom. Use words like, turn left, turn right, and go straight.

WEEK 4

LESSON 13: MAP WORK

Teacher's notes
CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 3.1 Position, orientation and views. **Lesson vocabulary:** Maps, view (top/aerial), orientation, position, direction, left, right, forward, past, turn, above, below. **Prior knowledge:** Learners should have been taught how to: • Follow directions to move around the class. **Concepts:** • Read, interpret and draw informal maps, or aerial (top) views of a collection of objects. • Find objects on maps. • Give and follow directions on an informal map. **Resources:** Map (see classwork activity). **DBE workbook activities relevant to this lesson:** • DBE Worksheet 68 (pp. 8 and 9). **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Take children outside and revise concepts of *left, right, forward,* and *turn*, by instructing learners to walk 10 steps forward, turn left, walk three steps forward, turn to the right, walk four steps forward. Repeat with different instructions until the terminology is established. **Enrichment:** See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 10s between 100 and 500, e.g. 530, 540, 550, …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	15 – __ = 9	6
2.	11 – __ = 1	10
3.	19 – __ = 5	14
4.	13 – __ = 4	9
5.	12 – __ = 0	12

	Calculate the following:	Answer
6.	19 – __ = 13	6
7.	18 – __ = 7	11
8.	20 – __ = 12	8
9.	14 – __ = 3	11
10.	15 – __ = 15	0

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

Show learners the map by referring to the classwork activity. Discuss questions and answers related to the map.

- *What kind of map is this?* (A road map)
- *What will we use this map for?* (To find a shop or a house)
- *Why are there traffic lights in at specific places on the map?* (There are main roads crossing one another)
- Write numbers on the houses.
- Ask the learners to show you a place on the map where they can draw a school. (Check each child's space quickly to ensure that the site chosen is appropriate, e.g. not on a main road.)
- Ask: *Why is this a good place for a school?*
- Ask the learners to draw a school on that selected spot. Remind them to keep the drawing small so that it fits in the space that they have chosen.
- Now ask the learners to find spaces on the map in which to draw the following: a library, a clinic and a post office.

Activity 2: Whole class activity

Learners work in pairs using the same maps used in Activity 1 above.

- Each learner decides which house on the map is his/hers and colours it in yellow.
- Then tell the learners: *Using your own map, take turns to describe the directions to the following places to your partners:*
  - *From your house to the school*
  - *From the library to your house*
  - *From school to the clinic*
  - *From the clinic to the shopping centre.*

Activity 3: Whole class activity

- Revise terminology: left, right, above, below.

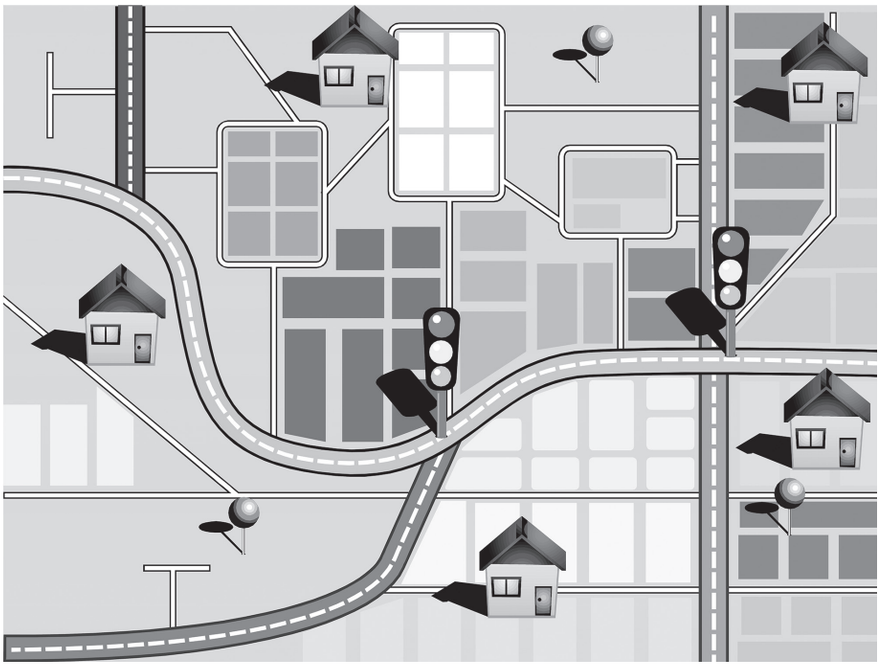
4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 13: Map work

Classwork



1. Draw one more traffic light on your map. Explain why you drew it there.

2. Draw your own road map in your book and show the following on your map:
   a) Traffic lights
   b) School
   c) Hospital
   d) Police station
   e) Anything else you may find on a map (a river, sports fields, etc.).

Homework

	bus stop	
clinic		school
	garage	

Use the table to fill in the blanks.

1. The bus stop is to the _____ _____ the school. (left above)

2. The _____ is to the left below of the shop. (garage)

3. The clinic is to the _____ of the school. (left)

4. The _____ and the _____ are to the right of the clinic. (bus stop, school, garage)

5. If mum drove from the clinic to the school, in which direction would she be driving? _____ (right)

LESSON 14: 2S – MULTIPLICATION AND DIVISION

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.8, 1.14 Repeated addition leading to multiplication, 1.9 Grouping and sharing leading to division, 1.15 Division, 1.16 Mental mathematics.

Lesson vocabulary: Twos, multiplication, multiply, total, divide, division, group, number sentence.

Prior knowledge: Learners should have been taught how to:

- Solve word problems in context and explain own solution to problems involving repeated addition and multiplication with answers up to 50.

Concepts:

- Recall multiplication facts for 10 times tables with answers up to 100.
- Solve number problems in context and explain own solution to problems involving multiplication with answers up to 75, using appropriate symbols x, =, ☐.
- Multiply 2 to a total of 75.
- Divide numbers to 75 by 2, using appropriate symbols ÷, =, ☐.

Resources: Multiplication table grid, counters (optional/remediation).

DBE workbook activities relevant to this lesson:

- DBE Worksheet 81 (pp. 34 and 35).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: A vegetable garden has 13 rows of plants. Each row has 2 plants. How many plants are there in the garden? Pack it out with counters. Number sentence: 13 x 2 = 26. A vegetable garden has 16 rows of plants. Every row has the same number of plants. If there is a total of 32 plants, how many plants are there in each row? Number sentence: 32 ÷ 16 = 2.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 2s from any given number between 0 and 700, e.g. 521, 523, 525, …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	5 x 10 =	50
2.	2 x 10 =	20
3.	7 x 10 =	70
4.	1 x 10 =	10
5.	4 x 10 =	40

	Calculate the following:	Answer
6.	3 x 10 =	30
7.	10 x 10 =	100
8.	0 x 10 =	0
9.	6 x 10 =	60
10.	8 x 10 =	80

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

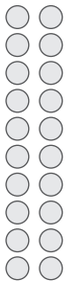
Multiplication and division are inverse operations and so the next four lessons deal with them together. Both of these operations are linked to a basic understanding of grouping. The next four lessons give time for these concepts to be consolidated in the number range for the term.

Multiplication is conceptualised in three ways: rectangular arrays, multiplicative comparisons and equivalent groups. In this lesson the focus is on rectangular arrays (e.g. three rows of four children) which are represented as rows and columns and equivalent groups (e.g. three tables, each with four children) which are represented as repeated sets.

Division is conceptualised in two ways – grouping and sharing. The focus in this lesson is on grouping.

Activity 1: Whole class activity

Revise using arrays.



- Draw an array on the board with 2 columns and 10 rows.
- *How many circles are there in each row?* (2)
- *How many circles are there altogether?* Count: (2, 4, 6, 8, 10, 12, 14, 16, 18 and 20)
- Let us write this as an addition number sentence: (2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 20)
- Let us write this as a multiplication number sentence: (2 x 10 = 20 or 10 x 2 = 20)
- The inverse of multiplication is division.
- *What would a division number sentence using this array look like?* (20 ÷ 2 = 10, 20 ÷ 10 = 2)

Activity 2: Whole class activity

The multiplication table. Grade 3s can start to drill basic number facts – this is the table with all of the basic multiples – highlighting the multiples of 2.

- The focus is on the language, which allows a mental image for grouping. (E.g. one 2 is two, two 2s are four, etc.)

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

Activity 3: Whole class activity

Word problems involving repeated sets.

A vegetable garden has 4 rows of plants. Each row has 2 plants. *How many plants are there in the garden?*

- Let us write it as an addition number sentence: (2 + 2 + 2 + 2 = ☐)
- We can say there are 4 rows with 2 plants in each row. Draw a picture if necessary.
- Let us write it as a multiplication number sentence: (4 x 2 = ☐)
- Ask learners to make up other stories that lead to multiplication – where repeated sets are involved. E.g. A car can take 5 passengers. How many passengers can 2 cars take? (5 x 2 = 10)

Activity 4: Whole class activity

Division – grouping.

- *If I put 62 shoes into pairs, how many pairs of shoes will I have?*
- Let us write this as a number sentence: 62 ÷ 2 = 31
- Do the same by making stories for putting different numbers of items into pairs:
  - 26 (13)
  - 8 (19)
  - 44 (22)
  - 48 (24).

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

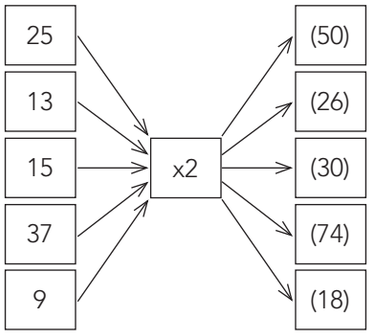
6. Reflection on lesson

Term 3 Lesson 14: 2s – multiplication and division

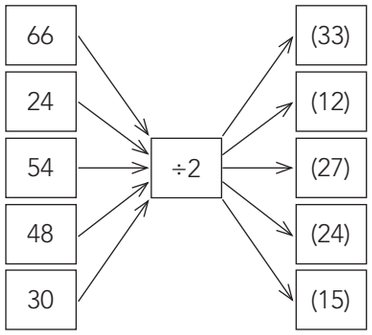
Classwork

1. Complete the spider diagrams.

a)



b)



2. The manager has to order tyres for 35 bicycles.
   If each bicycle needs two tyres, how many tyres must the manager order? (35 x 2 = 70)

3. If two learners fit into a car how many cars will take 24 learners? (24 ÷ 2 = 12)

Homework

1. In the shop there are 23 pairs of shoes. How many single shoes are there?
   _____ (23 x 2 =46)

2. A teacher gives out 2 books to each child in her class. She gives out 68 books.
   How many children are in her class? _____ (68 ÷ 2 = 34)

3. Calculate:
   a) 22 ÷ 2 = __ (11)
   b) 28 ÷ 2 = __ (14)
   c) 20 ÷ 2 = __ (10)
   d) 32 ÷ 2 = __ (16)

LESSON 15: 3S – MULTIPLICATION AND DIVISION

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.8, 1.14 Repeated addition leading to multiplication, 1.9 Grouping and sharing leading to division, 1.15 Division, 1.16 Mental mathematics.

Lesson vocabulary: Threes, multiplication, multiply, total, divide, division, group, number sentence, symbol.

Prior knowledge: Learners should have been taught how to:

- Solve word problems in context and explain own solution to problems involving repeated addition and multiplication with answers up to 50.

Concepts:

- Recall multiplication facts for 10 times tables with answers up to 100.
- Solve number problems in context and explain own solution to problems involving multiplication with answers up to 75, using appropriate symbols x, =, ☐.
- Multiply 3 to a total of 100.
- Divide numbers to 99 by 3, using appropriate symbols ÷, =, ☐.

Resources: Multiplication table grid, counters (optional/remediation).

DBE workbook activities relevant to this lesson:

- DBE Worksheet 84 (pp. 40 and 41).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: A vegetable garden has 10 rows of plants. Each row has 3 plants. How many plants are there in the garden? Pack it out with counters. Number sentence: 3 x 10 = 30.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 3s between 0 and 600, e.g. 532, 535, 538, …

1.2 Recall and strategies (10 minutes)

	What is the answer for	Answer
1.	3 x 10 =	30
2.	9 x 10 =	90
3.	0 x 10 =	0
4.	8 x 10 =	80
5.	4 x 10 =	40

	What is the answer for	Answer
6.	2 x 10 =	20
7.	10 x 10 =	100
8.	5 x 10 =	50
9.	7 x 10 =	70
10.	6 x 10 =	60

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

This is the second lesson on multiplication and division.

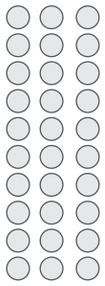
Multiplication is conceptualised in three ways. In this lesson the focus is on multiplication as rectangular arrays (e.g. three rows of four children) which are represented as rows and columns and multiplicative comparison (e.g. three times as many boys as girls) which is represented as many to one correspondence.

Division is conceptualised in two ways – grouping and sharing. The focus in this lesson is on sharing.

Activity 1: Whole class activity

Revise using arrays.

- Draw the array on the board.
- *How many circles are there in each row?* (3)
- *How many circles are there altogether?* Count: (3, 6, 9, 12, 15, 18, 21, 24, 27, 30)
- Ask learners to write this using an addition number sentence: (3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 = 30)
- Ask learners to write this using a multiplication number sentence: (3 x 10 = 30 or 10 x 3 = 30)
- Ask learners to write a division number sentence: (30 ÷ 3 = 10 or 30 ÷ 10 = 3)



Activity 2: Whole class activity

The multiplication table. In this lesson you work with the table with all of the basic multiples – highlighting the multiples of 3.

- The focus is on the language, which allows a mental image for grouping.
  (E.g. one 3 is three, two 3s are six, etc.)

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

Activity 3: Whole class activity

Word problems involving multiplicative comparison.

- *I want to make 4 cakes and for every cake I need 3 cups of flour. How many cups of flour do I need?* (4 x 3 = 12)
- You can draw this as a rectangular array (three by four).
- Let us write it as an addition number sentence: (3 + 3 + 3 + 3 = 12)
- Let us write it as a multiplication number sentence: (4 x 3 = □)
- Ask learners to make up other stories that lead to multiplication – where multiplicative comparison involved. E.g. There are 3 times as many blue counters as there are white counters in the box. If there are 7 white counters in the box, how many blue counters are there? (7 x 3 = 10)

Activity 4: Whole class activity

Division – sharing.

- If I have 42 biscuits and I share them between 3 learners, how many biscuits will each learner get?
- *Let us write this as a number sentence:* (42 ÷ 3 = 14)
- *Tell another story about the division number sentence.* (Mum shares 42 buttons among 3 children. Each child gets 14 buttons.)
- Do the same for 27, 39, 48, 54. If you share each of these numbers of biscuits between three learners, how many biscuits will they get each time? (9, 13, 16, 18)

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

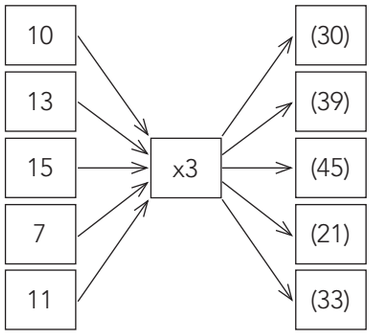
6. Reflection on lesson

Term 3 Lesson 15: 3s – multiplication and division

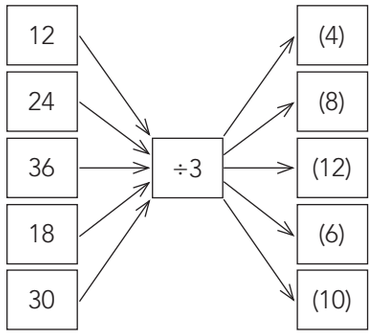
Classwork

1. Complete the spider diagrams.

a)



b)

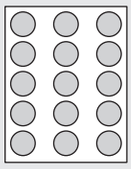


2. The nursery school teacher has to order tyres for 9 tricycles. If each tricycle needs three tyres, how many tyres must the nursery school teacher order? (9 x 3 = 27)

3. Write a story about:
   a) 10 x 3 = 30
   b) 12 ÷ 3 = 4

Homework

Look at the array below.



1. Write an addition number sentence. (3 + 3 + 3 + 3 + 3 = 15)

2. Write a multiplication number sentence. (6 x 3 = 15)

3. Write a story about the multiplication number sentence. (Various)

4. Write a division number sentence. (15 ÷ 3 = 5)

5. Write a story about the division number sentence. (Various)

LESSON 16: 5S – MULTIPLICATION AND DIVISION

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.8, 1.14 Repeated addition leading to multiplication, 1.9 Grouping and sharing leading to division, 1.15 Division, 1.16 Mental mathematics.

Lesson vocabulary: Fives, multiplication, multiply, total, divide, division, group, number sentence, symbol.

Prior knowledge: Learners should have been taught how to:

- Solve word problems in context and explain own solution to problems involving repeated addition and multiplication with answers up to 50.

Concepts:

- Calculation strategies – doubling and halving.
- Solve number problems in context and explain own solution to problems involving multiplication with answers up to 75, using appropriate symbols x, =, ☐.
- Multiply 5 to a total of 100.
- Divide numbers to 99 by 5, using appropriate symbols ÷, =, ☐.

Resources: Multiplication table grid, counters (optional/remediation).

DBE workbook activities relevant to this lesson:

- DBE Worksheet 78 (pp. 28 and 29).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: A vegetable garden has 2 rows of plants. Each row has 5 plants. How many plants are there in the garden? Arrange the counters on your desk and let us count: 5, 10. Number sentences – repeated addition: 5 + 5 = 10. Multiplication: 2 x 5 = 10. A vegetable garden has 2 rows of plants. Every row has the same number of plants. If there are a total of 15 plants, how many plants are there in each row? Arrange the counters on your desk to check (15 – 5 – 5 – 5 = 0 or 15 ÷ 3 = 5).

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 5s between 0 and 700, e.g. 105, 110, 115, …

1.2 Recall and strategies (10 minutes)

	Double the following:	Answer
1.	8	16
2.	6	12
3.	0	0
4.	50	100
5.	40	80

	Halve the following:	Answer
6.	20	10
7.	80	40
8.	100	50
9.	0	0
10.	16	8

2. Correction/reflection on homework (15 minutes)

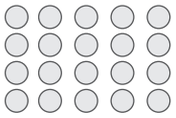
Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

This is the third lesson on multiplication and division. In this lesson the focus is on multiplication as rectangular arrays and equivalent groups and division as grouping. Refer to the Dictionary of Mathematical Terms if necessary for vocabulary definitions and explanations (e.g. array).

Activity 1: Whole class activity

Revise using arrays.



- Draw the 4 x 5 array on the board.
- Let us count in 5s: 5, 10, 15, 20.
- Write this using an addition number sentence: 5 + 5 + 5 + 5 = 20.
- Write this using a multiplication number sentence: 4 x 5 = 20 or 5 x 4 = 20.
- Write this using a division number sentence: 2 ÷ 5 = 4 or 20 ÷ 4 = 5.

Activity 2: Whole class activity

The multiplication table.
Let learners use the multiplication board to build up their 5 times tables, e.g. one 5 is five, two 5s are ten, etc.

x	1	2	3	4	5	6	7	8	9	10
1					5					10
2					10					20
3					15					30
4					20					40
5					25					50

Activity 3: Whole class activity

Word problems – multiplication involving repeated sets.

- My dad planted 5 fruit trees in a row. He planted 6 rows.
- *How many fruit trees did he plant?* (30)
- Let us write it as an addition number sentence: 5 + 5 + 5 + 5 + 5 + 5 = ☐ (30)
- Let us write it as a multiplication number sentence: 6 x 5 = ☐ (30)
- Ask learners to make up other stories that lead to multiplication where repeated sets are involved.
  E.g. A car can take 5 passengers. How many passengers can 3 cars take? (5 x 3 = 10)

Activity 4: Whole class activity

Word problems: division – grouping.

- You have 30 peaches and you put them into groups of 5.
- *How many groups would you make?* (6)
- Let us write it as a division number sentence: 30 ÷ 5 = 6. There are 6 groups.
- Do the same with 40 peaches (8 groups), 50 peaches (10 groups), and 75 peaches (15 groups).

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

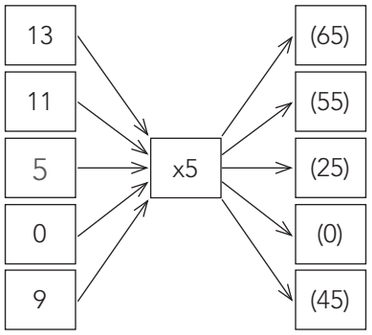
6. Reflection on lesson

Term 3 Lesson 16: 5s – multiplication and division

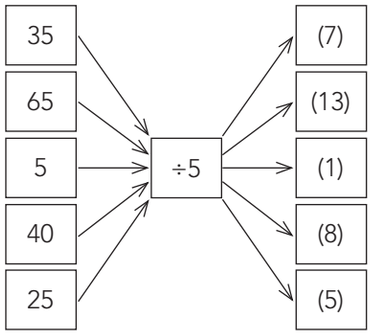
Classwork

1. Complete the spider diagrams.

a)



b)



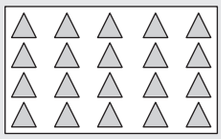
2. If the baker uses 5 eggs each day, how long will 75 eggs last? (75 ÷ 5 = 25 days)

3. If the baker uses 5 eggs each day, how many eggs will he use in 13 days? (13 x 5 = 65 eggs)

Homework

1. Uncle Thomas keeps R5 coins in the ashtray of his car. He has eleven R5 coins.
   How much money does he have in his ashtray? (R55)

2. Look at the array below.



   a) Write an addition number sentence. (5 + 5 + 5 + 5 = 20)
   b) Write a subtraction number sentence. (20 – 5 – 5 – 5 – 5 = 0)
   c) Write a multiplication number sentence. (4 x 5 = 20)
   d) Write a division number sentence. (20 ÷ 5 = 4)

WEEK 5

LESSON 17: 4S – MULTIPLICATION AND DIVISION

Teacher's notes
CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.2 Count forwards and backwards, 1.8, 1.14 Repeated addition leading to multiplication, 1.9 Grouping and sharing leading to division, 1.15 Division, 1.16 Mental mathematics. **Lesson vocabulary:** Fours, multiplication, multiply, divide, division, total, group, number sentence, symbol. **Prior knowledge:** Learners should have been taught how to: • Solve word problems in context and explain own solution to problems involving repeated addition and multiplication with answers up to 50. **Concepts:** • Recall multiplication and division facts for 10 x tables up to divisible by 10. • Solve number problems in context and explain own solution to problems involving multiplication with answers up to 75, using appropriate symbols x, =, ☐. • Multiply 4 to a total of 100. • Divide numbers to 99 by 4, using appropriate symbols ÷, =, ☐. **Resources:** Multiplication table grid, counters (optional/remediation). **DBE workbook activities relevant to this lesson:** • DBE Worksheet 87 (pp. 46 and 47). **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: A vegetable garden has 4 rows of plants. Each row has 15 plants. How many plants are there in the garden? Arrange the counters to check the answer. Multiplication number sentence: 4 x 15 = 60. A vegetable garden has 17 rows of plants. Every row has the same number of plants. If there are a total of 68 plants, how many plants are there in each row? Division number sentence: 64 ÷ 4 = 16. **Enrichment:** See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 4s from any number between 0 and 600, e.g. 442, 446, 450, ...

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	10 x 10 =	100
2.	8 x 10 =	80
3.	4 x 10 =	40
4.	6 x 10 =	60
5.	3 x 10 =	30

	Calculate the following:	Answer
6.	100 ÷ 10 =	10
7.	80 ÷ 10 =	8
8.	40 ÷ 10 =	4
9.	60 ÷ 10 =	6
10.	30 ÷ 10 =	3

2. Correction/reflection on homework (15 minutes)

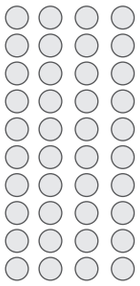
Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

This is the fourth lesson on multiplication and division. In this lesson the focus is on multiplication as rectangular arrays and multiplicative comparison and division as sharing.

Activity 1: Whole class activity

Revise using arrays.



- Draw an array with 4 circles and 10 rows on the board.
- *How many counters are in each row?* (4)
- *Write this using an addition number sentence.* (4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 = 40)
- *What will a multiplication number sentence for this look like?* (4 x 10 = 40 or 10 x 4 = 40)
- *The inverse of multiplication is division.*
  What would a division number sentence look like? (40 ÷ 4 = 10 or 40 ÷ 10 = 4)

Activity 2: Whole class activity

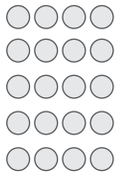
The multiplication table. In this lesson you work with the table with all of the basic multiples – highlighting the multiples of 3.

- Give learners multiplication tables. Learners place fingers on the multiplication table to show one 4 is four, two 4s are eight, etc.

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

Activity 3: Whole class activity

Word problems involving multiplicative comparison.
For every row in a vegetable garden there are 4 plants.
If there are 5 rows in the vegetable garden, how many plants are there?



- You can draw this using a rectangular array.
- Let us write it as an addition number sentence: 4 + 4 + 4 + 4 + 4 = ☐
- We can count: 4, 8, 12, 16, 20 plants
- Let us write it as a multiplication number sentence: 5 x 4 = ☐

Make up another story that leads to a multiplicative comparison of numbers.

Activity 4: Whole class activity

Division – sharing.
If I have 68 cups and share them between four classes, how many cups will each class get?

- Write this as a number sentence: 68 ÷ 4 = 17
- Share items into 4 groups – try to make a story for each one with the learners.
- For example share 60 sweets between 4 classes (15), share 52 counters between 4 learners (13), share 28 books between 4 boys (7).

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

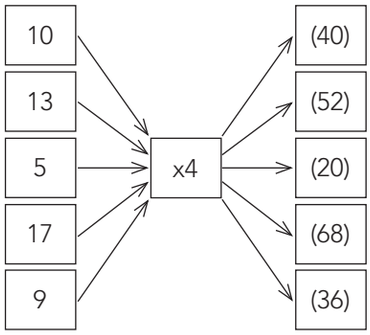
6. Reflection on lesson

Term 3 Lesson 17: 4s – multiplication and division

Classwork

1. Complete the spider diagrams.

a)



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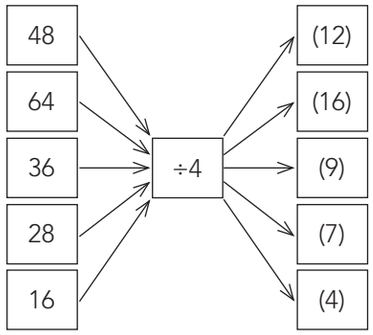


2. Samuel has 68 sweets. He has four times as many sweets as Moeketsi.
   How many sweets does Moeketsi have? (68 ÷ 4 = 17)
3. A vegetable garden has 4 rows of plants. Each row has 15 plants.
   How many plants are there in the garden? (4 x 15 = 60)
4. Write a story for:
   a) 5 x 4 = 20 (Various)
   b) 24 ÷ 4 = 6 (Various)

Homework

Calculate and write a story for:
a) 17 x 4 = __ (68) (Various)
b) 36 ÷ 4= __ (9) (Various)

LESSON 18: NUMBER LINES – GROUPS OF 10

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.8, 1.16 Mental mathematics, 2.2 Number patterns, 1.6 Problem-solving techniques: number lines.

Lesson vocabulary: Empty number line, jumps, arrowhead, tens, multiples, multiples of 10.

Prior knowledge: Learners should have been taught how to:

- Solve word problems in context and explain own solution to problems involving breaking down of numbers up to 999.

Concepts:

- Show counting forwards in 10s from any number between 0 and 800 on a number line and mentally.

Resources: 10–1 000 number grids (see *Printable Resources*), scrap paper/white boards.

DBE workbook activities relevant to this lesson:

- DBE Worksheet 76 (p. 24).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Give learners the bead number line. Ask them to place it on a long strip of paper. Ask them to make interval markings after every ten beads. Remove the beads. Write the intervals on the number line.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 10s between 0 and 800, e.g. 121, 131, 141, 151, …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	73 – 10 =	63
2.	173 – 10 =	163
3.	86 – 10 =	76
4.	286 – 10 =	276
5.	71 – 10 =	61

	Calculate the following:	Answer
6.	571 – 10 =	561
7.	587 – 100 =	487
8.	587 – 300 =	287
9.	587 – 500 =	87
10.	587 – 87 =	500

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

This lesson focuses on multiples of ten. The activities consolidate learners knowledge of multiplication, multiples of 10 and the use of the number line to show skip counting and calculations.

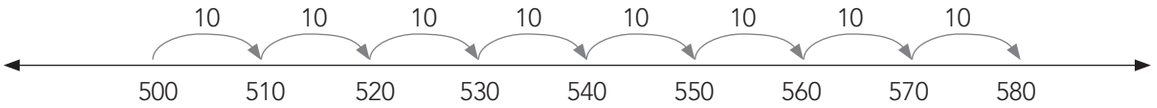
Activity 1: Learners work in groups

Give each group of learners a 10–1 000 number grid.

- Ask learners to look at the 10 to 1 000 number grid and count orally from any given number in 10s, e.g. start at 530. Do the same by starting from 640, 770 and 800.
- Tell the learners that you are going to show them how to use a number line to add in tens. The number line you will use is called an empty number line. It is called an empty number line because it has no numbers and no markings. We write the numbers as we go along.
- Draw an empty number line on the board.
  Demonstrate that if you want to start at 500 you need to write 500 on the number line.

For an empty number line the jumps don't need to be perfect so feel free to draw free hand. It does not matter if all the jumps are not the same size!

- Ask the learners to help you to fill in the numbers on the number line in jumps of 10.
  Draw jumps and write the 10 above the number line and the multiples of 10 below the number line as you take each jump of 10.



- Repeat this demonstration by starting at 450, 720, and 210.

Activity 2: Whole class activity

- Ask learners to draw empty number line on their scrap paper/white boards.
  Remind them to draw the two arrowheads.
- Ask them to write 470 on the number line. Now ask them to jump forward in tens.
  They need to write the 10 above the jump and the multiple of 10 below the number line.
- Repeat this activity by starting at: 320, 680, 580, etc.

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

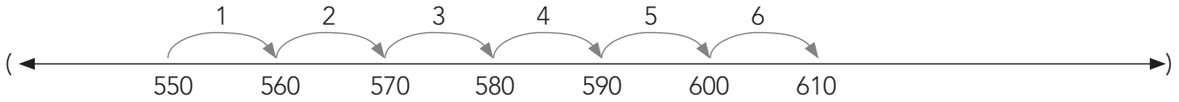
Term 3 Lesson 18: Number lines – groups of 10

Classwork

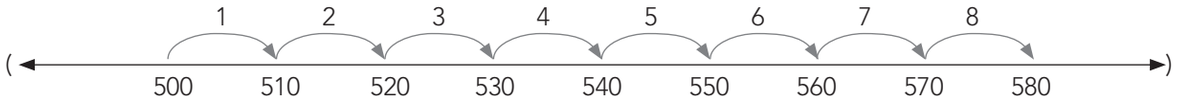
1. Complete these patterns of 10:
   a) 670, 680 ___, ___, ___, ___, 730. (690, 700, 710, 720)
   b) 483, 493, ___, ___, ___, ___, 543. (503, 513, 523, 533)
   c) 670, 680___, ___, ___, ___, ___, 740. (690, 700, 710, 720, 730)
   d) 634, 624, ___, ___, ___, ___, ___, 564. (614, 604, 594, 584, 574)

2. Draw a number line starting at 600 and going to 700. On the number line show how you would count in tens from 600 up to 700.

3. Draw a number line starting at 550 and show 6 jumps of 10. Where do you land? (610)



4. Draw a number line starting at 500. Show how many jumps of 10 you need to get to 580. (8 jumps)



Homework

1. Complete these patterns of 10:
   a) 470, 480, ___, ___, ___, 520 (490, 500, 510)
   b) 583, 593, ___, ___, ___, ___, 643. (603, 613, 623, 633)

2. Draw a number line starting at 460 and going to 560.
   On the number line show how you would count in 10s from 460 to 560.

LESSON 19: GEOMETRIC PATTERNS

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.16 Mental mathematics, 2.1 Geometric patterns.

Lesson vocabulary: Geometric pattern, physical objects, predictable, increasing, regular pattern, copy, extend, describe.

Prior knowledge: Learners should have been taught how to:
- Identify, describe in words and copy geometric patterns in nature, from modern everyday life and from our cultural heritage.

Concepts:
- Copy, extend and describe in words, and create own simple patterns made with physical objects and drawings of lines, shapes or objects.
- Simple patterns where the number or size of shapes in each stage changes in a predictable way, i.e. regular increasing patterns.

Resources: Plastic spoons, cups, etc. (bring objects from home), learner's stationery or books (objects to use to make patterns).

DBE workbook activities relevant to this lesson:
- N/A

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Use the objects that were used during the class activity. Start the patterns for the learners and let them complete it.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 10s between 100 and 600, e.g. 510, 500, 490, …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	__ + 3 = 14	11
2.	__ + 9 = 20	11
3.	__ + 19 = 20	1
4.	__ + 7 = 18	11
5.	__ + 4 = 16	12

	Calculate the following:	Answer
6.	__ + 7 = 13	6
7.	__ + 10 = 11	1
8.	__ + 12 = 15	3
9.	__ + 9 = 18	9
10.	__ + 8 = 13	5

2. Correction/reflection on homework (15 minutes)

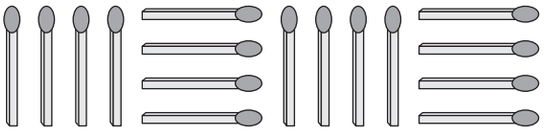
Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

This is a practical lesson and learners will use things like matches, plastic spoons and cups which should be brought from home.

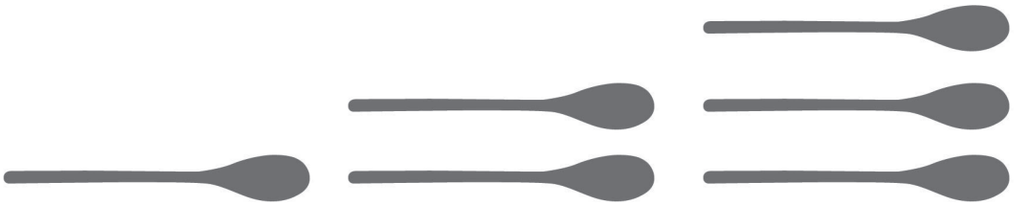
Activity 1: Learners work in groups

- Give each group some or all of the objects.
- Ask them to use the spoons to make a pattern with identical groups, where each group has only one kind of object but the position of the object in a group changes. Identical groups are repeated. E.g.



- Use the cups to make a pattern by using one shape or object, but having the position of the shape or object change in a regular way. E.g.

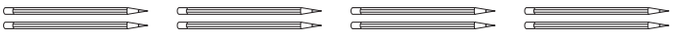
- Use spoons to make a pattern by making groups which grow in size. E.g.



Activity 2: Learners work in groups

In this activity learners should use their stationery to create patterns.

- Ask them to duplicate the patterns that they did in Activity 1 using their stationery. For example they can use pens/pencils to create patterns:
- Identical groups are repeated. E.g.



- Mixed groups are repeated. E.g.

- The positions of the items changes. E.g.

- The number of items changes. E.g.

- Allow them to discuss the pattern in their groups.
- Each group gets a chance to show and describe their patterns in words to the rest of the class.
- Ask the learners to be **judges**. They are now going to choose the best pattern from all the groups. They also have to explain why they chose that specific pattern.

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 19: Geometric patterns

Classwork

1. Draw the pattern that your group made with the cups.
   Describe the pattern.

2. Draw the pattern that your group made with the spoons.
   Describe your pattern.

3. Draw the pattern that was the one voted the best.
   Describe the pattern.

4. Design your own pattern, using triangles.
   Describe the pattern.

Homework

1. Design a colourful and beautiful carpet for our classroom.
   a) You may use any shapes and colours.
   b) Remember to extend the pattern you started with.
   c) You may use more than one pattern in your design.

LESSON 20: NUMBER PATTERNS

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.16 Mental mathematics, 2.2 Number patterns.

Lesson vocabulary: Number pattern, family, predictable, increasing, decreasing, multiple, regular pattern, copy, extend, describe, before, after, left, right, sequence.

Prior knowledge: Learners should have been taught how to:

- Build up the 2, 3, 4, 5, 10 times tables.
- Recognise multiples 0, 2, 3, 4, 5, 10.

Concepts:

- Copy, extend and describe simple number sequences to at least 180.
- Create and describe own number patterns.
- Multiples of 2, 3, 4, 5, 10, 25, 50, 100.

Resources: Scrap paper/whiteboards, multiplication table grid.

DBE workbook activities relevant to this lesson:

- DBE Worksheet 86 (pp. 44 and 45).
- DBE Worksheet 88 (pp. 48 and 49).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Revise counting forwards and backwards with multiples in 2s, 3s 4s and 5s and in 10s with multiples and non-multiples, first on the number grid and then orally. Discuss with learners how multiples can help them to complete and describe number patterns. For example: *What is the missing number in this sequence?* 10, 20, 30, 40, __, 60? (50). Use many different examples. Ask learners to make up their own patterns. Ask them to describe how their patterns grow.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 10s, 5s, 2s, and 3s between 100 and 600.

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	__ + 3 = 14	11
2.	__ + 9 = 20	11
3.	__ + 19 = 20	1
4.	__ + 7 = 18	11
5.	__ + 4 = 16	12

	Calculate the following:	Answer
6.	__ + 7 = 13	6
7.	__ + 10 = 11	1
8.	__ + 12 = 15	3
9.	__ + 9 = 18	9
10.	__ + 8 = 13	5

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

- Write down these numbers on the board.
  Ask: *Who can see which pattern these numbers belong to?*
  - 210, 220, 230, 240, 250, 260 (10s pattern)
  - 45, 50, 55, 60, 65, 70 (5s pattern)
  - 400, 402, 404, 406, 408, 410 (2s pattern)
- Ask some learners to make up their own patterns. Ask them to describe how their patterns grow. They can make patterns that involve multiples of 2, 3, 4, 5, 10, 25, 50 or 100. (Allow about five learners to do this.)
- Now look at these numbers. *They may not be in order and all the numbers in the sequence might not be there. Which one does not belong to the pattern? Why do you say that?*
  - 210, 220, 203, 240, 250, 260 (203 does not belong to the 10s pattern)
  - 365, 375, 385, 397, 405 (397 does not belong to the 5s pattern)
  - 540, 250, 580, 130, 755 (755 does not belong to the 10s pattern)
  - 65, 44, 70, 55, 60, 50 (44 does not belong to the 5s pattern)
  - 400, 401, 420, 438, 428, 310 (401 does not belong to the 2s pattern)

Activity 2: Whole class activity

Write the following numbers on the board:

- 221, 219, 217, _____, _____, _____ .
  Which pattern do the numbers belong to? (2s pattern)
  Are the numbers that are missing on the left or right? (Right) *So are the missing numbers going to be bigger or smaller than 217?* (Smaller, because the counting in the given pattern is going down – it is a decreasing pattern.)
  Remember that these numbers are in the 2s pattern. So use your 2s pattern to work out what the next three numbers will be. Remember that your numbers need to get smaller because the pattern is decreasing. (215, 213, 211)
- Go through the same steps with more examples and then ask learners to try them out on their whiteboards, e.g.
  854, 864, 874, 884, _____, _____, _____ . (increases in 10s – 894, 904, 914)
  95, 90, 85, 80, _____, _____, _____ . (decreases in 5s – 75, 70, 65)
  52, 54, 56, 58, _____, _____, _____ . (increases in 2s – 60, 62, 64)
  2, 4, 8, 16, _____, _____, _____ . (increases by doubling – 32, 64, 128)

Write the following numbers on the board:

- _____ , _____, 145, 150, 155
  Which pattern do the numbers belong to? (5s pattern)
  Are the numbers getting bigger or smaller as we move from left to right? (Bigger)
  Are the numbers that are missing on the left or right? (Left) *So are the missing numbers going to be bigger or smaller than 145?* (Smaller, because they are on the left of 145 and the pattern is an increasing pattern.)
  Remember that these numbers are in the 5s pattern. So use the 5s pattern to work out what the first number before 145 will be. (145 – 5 = 140) Write 140 down on the left of 145.
  _____ ,(140), 145, 150, 155
  Now for the number before 140, what do we need to do? (Take away 5 again.) *From which number?* (140) *What is the answer?* (135) Write that down.
  (135), 140, 145, 150, 155
- Go through the same steps with a more examples and then ask learners to try them out on their whiteboards, e.g.
  _____, _____, 56, 66, 76 (increasing pattern – increases in 10s: 36, 46)
  _____, _____, 76, 66, 56 (decreasing pattern – decreases in 10s: 96, 86)
  _____, _____, 74, 76, 78 (increasing pattern – increases in 2s: 70, 72)
  _____, _____, 74, 72, 70 (decreasing pattern: 78, 76)

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 20: Number patterns

Classwork

1. Work in pairs to find which number does not belong. Give reasons for your answers.
   a) 57, 27, 87, 67, 72 ____ (72, it does not end in a 7)
   b) 29, 67, 28, 25, 24 ____ (67, the tens digit is not 2)
   c) 416, 614, 164, 616 ____ (616, it is the only number that does not have 4 as a digit)
   d) 15, 52, 20, 30, 45 ____ (52, it does not belong to the 5s pattern)
   e) 12, 24, 30, 19, 27 ____ (19, it does not belong to the 3s pattern)

2. Copy these numbers and write down the next three numbers in the pattern.
   a) 104, 109, 114, ____, ____,____ (Increasing pattern, increases by adding 5 each time – 119, 204, 209)
   b) 121, 119, 117, ____, ____,____ (Decreasing pattern, decreases by subtracting 2 each time – 115, 113, 111)
   c) 1, 2, 4, 8, ____, ____,____ (Increasing pattern increases by doubling each time – 16, 32, 64)
   d) 25, 50, 75, 100, ____, ____,____ (Increasing pattern increases by adding 25 each time – 125, 150, 175)

3. What are the first two numbers in this pattern?
   a) ____, ____, 45, 50, 55. (Increasing pattern increases by adding 5 each time – 30, 35, 40)
   b) ____, ____, 55, 50, 45. (Decreasing pattern, decreases by subtracting 5 each time – 65, 60)
   c) ____, ____, 68, 58, 48. (Decreasing pattern, decreases by subtracting 10 each time – 88, 78)
   d) ____, ____ 48, 58, 68. (Increasing pattern increases by adding 10 each time – 28, 38)

Homework

Note: When you discuss the way the patterns increase/decrease you should describe the rule for the change each time.

Find the missing numbers to complete these patterns:

1. 172, 182, 192, ____, ____ (Increasing pattern – 202, 212)

2. 621, 619, 617, ____, ____ (Decreasing pattern – 615, 613)

3. ____, ____, 238,248, 258 (Increasing pattern – 218, 228)

4. ____, ____, 258, 248, 238 (Decreasing pattern – 278, 268)

5. 225, 250, 275, ____, 325 (Increasing pattern – 300)

6. 850, ____ 750, 700, 650 (Decreasing pattern – 800)

WEEK 6

LESSON 21: NUMBER PATTERNS USING MONEY

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.16 Mental mathematics, 2.2 Number patterns.

Lesson vocabulary: Number pattern, family, predictable, increasing, regular pattern, copy, extend, describe, before, after, left, right, money, rands, cents, sequence.

Prior knowledge: Learners should have been taught how to:

- Count in multiples of 2, 3, 4, 5, 10, 25, 50, 100.
- Work with money in denominations of rands, cents, rands and cents.
- Complete numeric pattern sequences.

Concepts:

- Multiples of 2, 3, 4, 5, 10, 25, 50, 100.
- Money in denominations of rands, cents, rands and cents.
- Copy, extend and describe simple number sequences to at least 180.
- Create and describe own patterns.

Resources: Scrap paper/whiteboards, paper money (coins and notes – see Term 1 *Printable Resources*).

DBE workbook activities relevant to this lesson:

- DBE Worksheet 95a (pp. 62 and 63).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Revise counting with multiples in 2s, 3s, 4s and 5s with multiples and in 10s and non-multiples, first on the number grid and then orally. Revise aspects of Lesson 19 that the learner might be struggling with.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 10s between 100 and 600, e.g. 510, 500, 490, …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	__ + 3 = 114	111
2.	__ + 9 = 120	111
3.	__ + 19 = 120	101
4.	__ + 7 = 118	111
5.	__ + 4 = 116	112

	Calculate the following:	Answer
6.	__ + 7 = 113	106
7.	__ + 10 = 111	101
8.	__ + 12 = 115	103
9.	__ + 9 = 118	109
10.	__ + 8 = 113	105

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

The lesson before this one focused on number patterns. When you look at number patterns, they don't only come in pure numbers (such as 10, 20, 30). In this lesson you will look at patterns involving amounts of money (such as R10, R20, R30). You need to be able to identify when a number *does not fit* with the rest of the pattern. In the first activity of this lesson learners have to look out for numbers that *do not fit* into a given set of numbers. Looking for numbers that *do not fit* helps learners to consolidate the idea of the rule that makes the numbers *fit*.

Activity 1: Whole class activity

- Say to the class: *In the examples that we will look at now, the numbers are not always in order so you need to look carefully.*
- Write **one set** of numbers on the board at a time. Help learners to discover which number/monetary value does not belong and to give reasons for their answers. *Which one does not belong? Why?*

100c, 75c, 125c, 45c, 150c, 200c, 175c	(45c does not belong to the 25c pattern)
R47,00; R638,00; R56,96; R572,00; R87,00	(R56,96 because it is the only amount that has both rands and cents)
R8,25; R4,22; R8,45; R80,00; R21,93	(R80,00 because it is the only amount that does not have cents)
200c, 175c, 25c, 35c, 50c, 100c, 125c	(35c because it is the only amount that does not belong to the 25c family/pattern)
R50,00; R250,00; R200,00; R100,00; R150,00; R258,00	(R258,00 because it is the only amount that does not belong to the R50 family)
Ask some learners to make up their own patterns that involve increases or decreases in money amounts using multiples that are appropriate. (Allow about five learners to do this.)	(Various. Learners should explain the rule for their patterns.)

Activity 2: Whole class activity

- *Write* the following numbers on the board: R20, R25, R30,_____, _____, _____ .
  Which pattern do the numbers belong to? (R5 pattern)
  Are the missing numbers on the right or on the left? (Right) *Are the missing numbers going to be bigger or smaller than R30?* (Bigger, because they are on the right of R30 and the numbers on the right are bigger than the number on the left – the pattern is increasing.)
  Remember that these numbers are in the R5s pattern. So use your R5 pattern to work out what the next three numbers will be. Remember that your numbers need to get bigger as you move from left to right. (R35, R40, R45)
- Go through the same steps with more examples and then ask learners to try them out on their whiteboards, e.g. R5,00, R5,20, R5,40, ___, ____, ___ . (increasing pattern, 20c intervals)
  50c, R1,00, R1,50, ___, ___, ____ . (increasing pattern – 50c intervals)
  R2,00, R1,75, R1,50, ___, ___, ____ . (decreasing pattern – 25c intervals)
- Write the following numbers on the board: _____, ____, R200, R180, R160.
  Which pattern do the numbers belong to? (R20s pattern)
  Are the numbers are getting bigger or smaller as we move from left to right? (Smaller)
  Are the numbers that are missing on the left or right? (Left) *So are the missing numbers going to be bigger or smaller than 145?* (Bigger, because they are on the left of R200 and the pattern is decreasing.)
  Remember that these numbers are in the R20s pattern. So use the R20s pattern to work out what the first number before R200 will be. (R200 + R20 = R220)
  *Write R220 down on the left of R200.*_____, R220, R200, R180, R160.
  Now for the number before R220, what do we need to do? (Add R20 again)
  To which number? (R220). *What is the answer?* (R240)
  Write that down. R240, R220, R200, R180, R160.
- Go through the same steps with more examples and then ask learners to try them out on their whiteboards, e.g. ____ , ____ , R100, R125, R150, R175 (increasing pattern, R25 intervals)
  ____ , ____ , R575, R550, R500 (decreasing pattern, R25 intervals)
  ____ , ____ , 374c, 384c, 394c (increasing pattern, 100c intervals)
  ____ , ____ , R7,50, R5,50, R 3,50 (decreasing pattern, R2 intervals)

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 21: Number patterns using money

Classwork

1. Work in pairs to find which number does not belong. Give reasons for your answers.
   a) 16, 22, 20, 24, 28, 32 ____ (22, it does not belong to the 4s pattern)
   b) R25,00; R56,00; R38,15; R217,00; R387,00 ____ (R38,15, it is the only amount with cents)
   c) 100c, 75c, 125c, 45c, 150c, 200c, 175c ____ (45c, it does not belong to the 25c pattern)
   d) R5,00; R5,50; R6,00; R6,50; R7,00; R7,50 ____ (all the numbers belong)
   e) R3,25; R4,59; R8,02; R6,00; R1,53 ____ (R6,00 is the only amount with rands only)

2. What are the next three numbers in this pattern?
   a) R6,40; R6,60; R6,80; _____; _____;_____
   (R7,00; R7,20; R7,40)
   b) R12,50; R12,00; R11,50; _____; _____; _____
   (R11,00; R10,50; R10,00)
   c) R2; R4; R6; _____; _____; _____
   (R8; R10; R12)

3. What are the first two numbers in this pattern?
   a) _____, _____, R125, R155, R185 (R65, R95)
   b) _____, _____, 374c, 384c, 394c (354c, 364c)
   c) _____, _____, R12, R15, R18 (R6, R9)
   d) _____, _____, R120, R150, R180 (R60, R90)
   e) _____, _____, R180, R150, R120 (R240, R210)
   f) _____, _____, R125, R155, R185 (R65, R95)
   g) _____, _____, R575, R550, R500 (R625, R600)

Homework

(NOTE: The activity learners will do at home counting cutlery is preparation for the lesson tomorrow on Data handling.)

1. Find the missing numbers to complete these patterns:
   a) 659c, 669c, 679c, _____, _____ (689c, 699c)
   b) R63, R61, R59, _____, _____ (R57, R55)
   c) _____; _____; R2,38; R2,48; R2,58 (R2,18; R2,28)
   d) _____; _____; R2,58; R2,48; R2,38 (R2,78; R2,68)
   e) 850, _____, 750, 700, 650 (800)
   f) _____, 40c, 50c, 60c, _____ (30c, 70c)

2. Collect all of the cutlery in your kitchen and sort it into spoons, knives and forks. Count how many of each you have. Remember to bring the data you collected of the cutlery in your kitchen for the lesson tomorrow.

LESSON 22: DATA

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 5.4 Collect and organise data, 5.5 Represent data, 5.6 Analyse and interpret data.

Lesson vocabulary: Data, organise, table, bar graph, axes, label, graph title, list, tally table, analyse, popular (most popular/least popular).

Prior knowledge: Learners should have been taught how to:

- Analyse data from representations provided.
- Draw at least one pictograph with one-to-one correspondence.

Concepts:

- Re-organise data provided in a list or tally or table in a bar graph.
- Represent data in a bar graph and analyse data on bar graph.

Resources: Empty boxes, old books, newspapers, magazines, scrap paper/whiteboards.

DBE workbook activities relevant to this lesson:

- DBE Worksheet 96 (pp. 66 and 67).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Give the learners a container with colour counters. First tell them to sort it according to the colours. Tell them to draw a pictograph by giving them a template and key. Ask them how many counters are there of each colour: blue, green, yellow and red.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count backwards in 20s from any multiple between 0 and 1 000, e.g. 940, 920, 900, ...

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	20 – 11 =	9
2.	15 – 11 =	4
3.	18 – 11 =	7
4.	12 – 11 =	1
5.	16 – 11 =	5

	Calculate the following:	Answer
6.	19 – 11 =	8
7.	17 – 11 =	6
8.	13 – 11 =	2
9.	11 – 11 =	0
10.	14 – 11 =	3

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

Activity 1: Learners work in groups

Draw the table below on the board before the lesson to save time.

- Give each group some empty boxes, old books, newspapers, magazines.
- Discuss all the different objects, what they are all made of and the use of the different objects.
- Explain to the learners, that although all the objects are made from paper, they have different uses (boxes for packing; books, newspapers, magazines for different kinds of reading).
- Each group must sort their objects.
- Ask each group to copy the table from the board and to record their tallies and totals in a table on their scrap paper/whiteboards.

Types of paper products	**Number of products (tally)**	**Total number**
Empty boxes		
Old books		
Newspaper		
Magazines		

Activity 2: Learners work in groups

Ask pairs to draw bar graphs to represent their data and answer the questions that follow (graphs to be done using group data. Each group might have a different graph).

Empty boxes	**Old books**	**Newspaper**	**Magazines**

- Ask learners questions about the data represented in their graphs such as:
  - *Which item did you have most of?*
  - *Which item did you have least of?*
  - *What is the difference between the number of books and the number of magazines that you had?*
  - *What is the difference between the number of newspapers and the number of magazines that you had?*
  - *Did you have more boxes or more books?*
  - *Etc.*
- Write a sentence about what you can see in the graph about the:
  - *Magazines* and the old books (e.g. I have more books than magazines).
  - *Newspaper* and the empty boxes (e.g. I have 5 newspapers and 6 boxes. I have fewer newspapers than boxes).

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 22: Data

The cutlery count used in this lesson should have been done at home. If it has not been done you can talk about the activity and make up a set of appropriate data.

Classwork

Use the data you collected on the cutlery in your home for homework.

1. Draw a table for your data.

Tablespoons	
Knives	
Forks	
Teaspoons	

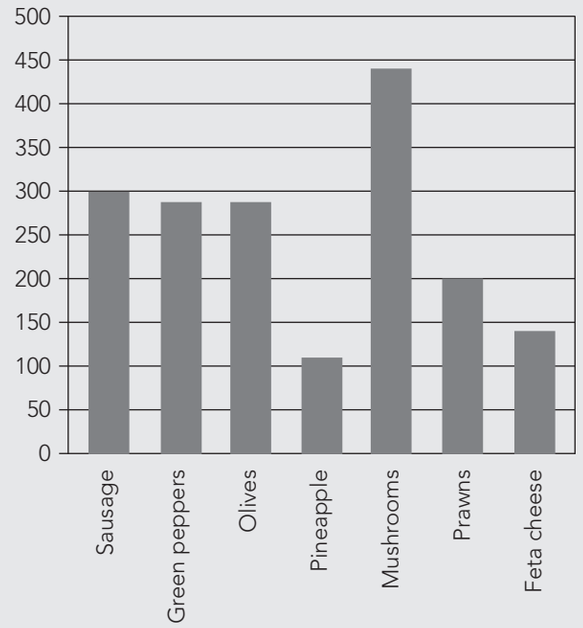
2. Draw a bar graph to represent your data. Use the scale on the axis to get the correct length of the bar. (answers will vary)

3. Write a sentence that tells us something about the number of:
   a) forks and knives
   b) tablespoons and teaspoons
   c) forks and tablespoons
   d) anything else that is interesting about the data.

Homework

At Papa Paulo's Pizzeria, all the pizzas come with tomato sauce and cheese. Look at the chart to see some popular extras, and answer the questions below.

Papa Paulo's Pizzeria – most popular toppings this month



1. Which topping was most popular? (Mushrooms)
2. Which was least popular? (Pineapple)
3. Which two toppings were equally popular? (Olives and green peppers)

LESSON 23: DATA

Teacher's notes
CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.16 Mental mathematics, 5.6 Analyse and interpret data. **Lesson vocabulary:** Data, table, frequency table, tally table, bar graph, pictograph, analyse, represent, one-to-one correspondence. **Prior knowledge:** Learners should have been taught how to: • Analyse data from representations. • Represent data in a pictograph with one-to-one correspondence. **Concepts:** • Analyse data from representations. • Represent data in a tally marks using one to one correspondence. • Represent data in frequency table and in a bar graph. **Resources:** Scrap paper/white boards. **DBE workbook activities relevant to this lesson:** • N/A **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Draw a pictograph and bar graph with the information collected. Ask the learners the following questions: *Which sea creature did you see the most of? Which sea creature did you see the least of?* **Enrichment:** See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count 10/12/13 steps forwards in 20s steps from 500. *How far did you count?*

1.2 Recall and strategies (10 minutes)

	Calculate	Answer
1.	6 ÷ 2 =	3
2.	2 ÷ 2 =	1
3.	14 ÷ 2 =	7
4.	20 ÷ 2 =	10
5.	8 ÷ 2 =	4

	Calculate	Answer
6.	4 ÷ 2 =	2
7.	16 ÷ 2 =	8
8.	18 ÷ 2 =	9
9.	10 ÷ 2 =	5
10.	12 ÷ 2 =	6

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

Draw the following on the board (30 sticks):

- Ask the learners to count how many lines there are. (30) Discuss how they counted these sticks and if there was any confusion while they did it. Did they make a system to help them not get confused?
- Then draw this on the board:
  𝍸 𝍸 𝍸 𝍸 𝍸 𝍸
- Ask them to count how many lines there are. (30)
- *Which group of sticks was easier to count?* (Second group)
- *Why?* (They have been grouped.)
- Explain the tallying system to them: when you tally you record items using little line marks. You make four line marks and then 'cross out' the four using a diagonal line. This means that 4 lines with the line through it, is 5. (This is a system using a tally to count.)
- Explain the tally system so that learners know how to use it. Show examples on the board.

Activity 2: Whole class activity

Give the learners scrap paper/white boards.

- Draw the following tally table on your scrap paper/white boards.
- The learners that visited the aquarium counted this:

Sea creature	**Tally count**
Sharks	𝍸 𝍸 𝍸
Fish	𝍸 𝍸 𝍸 𝍸 |||
Jelly fish	𝍸 |
Sea stars	𝍸
Stingrays	𝍸 ||

- Make sure that the learners know how to count the number of each type of sea creature using the tally marks.
- This is what you should get (to be used in the classwork activity):

Sea creature	**Tally count (frequency)**
Sharks	15
Fish	23
Jelly fish	6
Sea stars	5
Stingrays	7

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 23: Data

Classwork

1. Copy this frequency table into your maths book and then answer the questions:

Sea creature	Tally count (frequency)
Sharks	15
Fish	23
Jelly fish	6
Sea stars	5
Stingrays	7

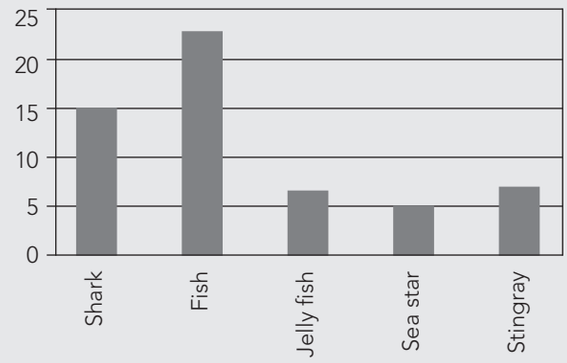
a) How many sharks did they see? ___ (15)
b) How many fish did they see? ___ (23)
c) How many jelly-fish did they see? ___ (6)
d) How many sea stars did they see? ___ (5)
e) How many stingrays did they see? ___ (7)
f) What type of sea creature did they see the most of? ___ (fish)

Homework

1. Draw a bar graph using this information:

Sea creature	Tally count
Sharks	𝍸 𝍸 𝍸
Fish	𝍸 𝍸 𝍸 𝍸 |||
Jelly fish	𝍸 |
Sea stars	𝍸
Stingrays	𝍸 ||

(Homework solution)



LESSON 24: DATA

Teacher's notes
CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.16 Mental mathematics, 5.6 Analyse and interpret data. **Lesson vocabulary:** Data, pictograph, bar graph, represent, analyse, information. **Prior knowledge:** Learners should have been taught how to: • Analyse data from representations. • Represent data in a pictograph with one-to-one correspondence. **Concepts:** • Analyse data from representations. • Represent data in a pictograph with one-to-one correspondence. • Represent data in a bar graph. **Resources:** Scrap paper/white boards. **DBE workbook activities relevant to this lesson:** • N/A **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Draw a pictograph and bar graph with the information collected. Ask the learners the following questions: *What was the most popular meal? What was the meal that was the least popular?* **Enrichment:** See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 20s from any multiple between 0 and 1 000, e.g. 400, 420, 440, …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	__ x 10 = 50	5
2.	__ x 10 = 30	3
3.	__ x 2 = 12	6
4.	__ x 2 = 20	10
5.	__ x 10 = 60	6

	Calculate the following:	Answer
6.	__ x 10 = 90	9
7.	__ x 2 = 18	9
8.	__ x 2 = 14	7
9.	__ x 10 = 70	7
10.	__ x 2 = 0	0

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

Note that in the lesson plan, the graph has been completed. When you work through this example with the class you will complete the graph with them.

Activity 1: Whole class activity

Write the following information on the board:

- This is what the people ordered at a restaurant on Friday night.
  8 hamburgers, 6 hot dogs, 10 pap and meat, 15 rice and chicken, and 11 curry pies.
- Draw a table on your scrap paper/white boards to show this data.
- Now look at your table and answer these questions:
  - *How many people chose rice and chicken?* ____ (15)
  - *How many people chose curry pies?* _____ (11)
  - *What is the most popular meal?* _____ (Rice and chicken)
  - *What is the least popular meal?* _____ (Hotdogs)
  - *What else do you notice?* (Allow various responses and discuss)

Activity 2: Whole class activity

- Draw the pictograph with the learners on the board, using the information above.
- Discuss the choice of the title and key for the graph.

Title: Meals ordered at the restaurant

16					
15				O	
14				O	
13				O	
12				O	
11				O	O
10			O	O	O
9			O	O	O
8	O		O	O	O
7	O		O	O	O
6	O	O	O	O	O
5	O	O	O	O	O
4	O	O	O	O	O
3	O	O	O	O	O
2	O	O	O	O	O
1	O	O	O	O	O
	Hamburger	Hotdog	Pap and meat	Rice and chicken	Curry pie

Key: One circle equals one meal

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

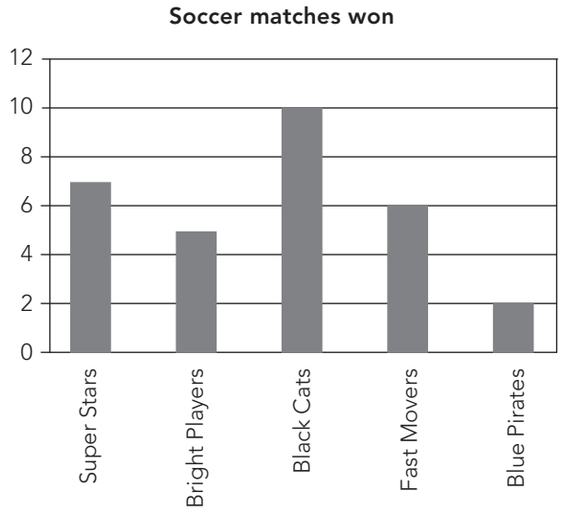
6. Reflection on lesson

Term 3 Lesson 24: Data

You could give learners some background information about a soccer tournament to lead into this classwork activity. Tell them about the teams that played and so on.

Classwork

1. Answer the questions using the bar graph below:



2. How many matches did each of these teams win?
   a) Super Stars (7) ____
   b) Bright Players (5) ____
   c) Black Cats (10) ____
   d) Fast Movers (6) ____
   e) Blue Pirates (2) ____

3. Who won the most matches? _____ (Black Cats)

4. Who won the least matches? _____ (Blue Pirates)

5. Who came second? _____ (Super Stars)

6. Who came second last? _____ (Bright Players)

7. What is the difference in wins between Super Stars and Black Cats? _____ (3)

Homework

1. Write down the names of ten friends and family members.

2. Draw a tally table to show how many are males and how many are females.

3. Write two sentences to describe the data.

WEEK 7

LESSON 25: TIME – ANALOGUE CLOCK

Teacher's notes
CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 4.1 Time. **Lesson vocabulary:** Time, 12-hour time, hours, half hours, quarters, minutes, analogue clock. **Prior knowledge:** Learners should have been taught how to: • Tell 12-hour time in: hours, half hours, quarters and minutes on analogue clocks. • Calculate length of time and passing of time. **Concepts:** • Tell 12-hour time in: hours, half hours, quarters and minutes on analogue clocks. **Resources:** Actual or paper-plate clocks or pictures of clocks (see Term 1 *Printable Resources*). **DBE workbook activities relevant to this lesson:** • N/A **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Revise *past* and *to* with your learners. Draw a clock on the board. If the long hand is in this half, we say *to*. If the long hand is in this half, we say *past*. Ask them to show you where *five past* will be on the clock. **Enrichment:** See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 3s between 0 and 700, e.g. 458, 461, 464, ...

1.2 Recall and strategies (10 minutes)

	Calculate	Answer
1.	656 + 10 + 10 =	676
2.	123 + 10 + 10 =	143
3.	634 + 10 + 10 =	654
4.	223 + 10 + 10 =	243
5.	178 + 10 + 10 =	198

	Calculate	Answer
6.	659 + 20 =	676
7.	555 + 20 =	143
8.	369 + 20 =	654
9.	546 + 20 =	243
10.	699 + 20 =	198

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

There are three lessons on time this term. Learners will consolidate their knowledge of telling the time and calculating time passed. In this lesson the focus is on analogue clocks. In preparation for Activity 2 of this lesson you should draw the analogue clocks (see below) on the board before the lesson.

Activity 1: Whole class activity

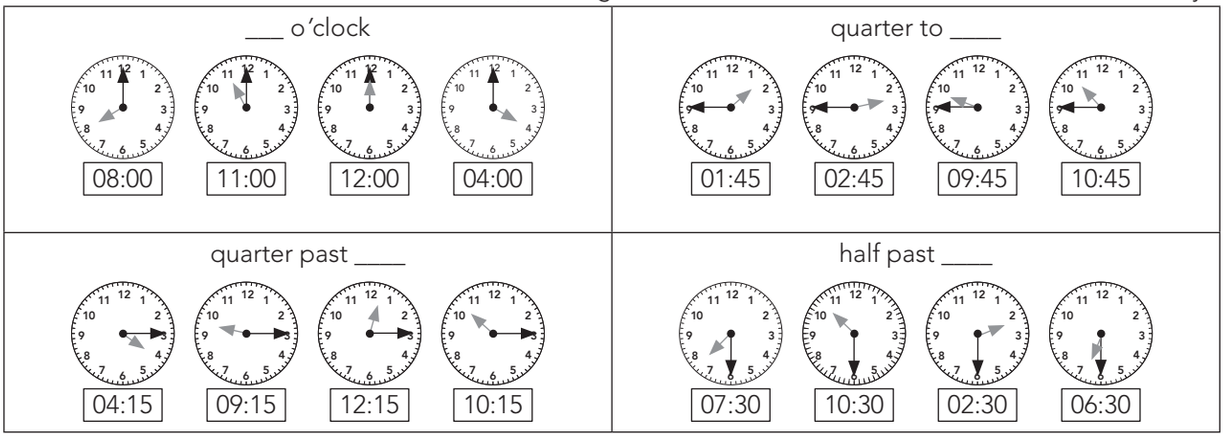
Revise reading time from an analogue clock by counting on in 5s:

- Ask: *How many minutes are there in an hour?* (60 minutes.)
- *Let us count*: (Start counting from 12 to 1 and point to the numbers on the clock face as you count.) *5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60.*
- Ask: *How many minutes are there in half an hour?* (30 minutes.)
- *Let us count:* (Start counting from 12 to 1 and point to the numbers on the clock face as you count.) *5, 10, 15, 20, 25, 30.*
- Ask: *Can I count 30 minutes starting from another place on the clock?* (Yes – discuss possibilities and try them out.)
- Ask: *How many minutes are there in a quarter of an hour?* (15 minutes.)
- *Let us count:* (Start counting from 12 to 1 and point to the numbers on the clock face as you count.) *5, 10, 15.*
- Ask: *Can I count 15 minutes starting from another place on the clock?* (Yes – discuss possibilities and try them out.)

Activity 2: Whole class activity

Refer to the clocks you have drawn on the board for this activity. Revise the following with the learners.

- Read the times.
- Only refer to the analogue clocks. The block below gives the time in digital form which will be covered in the next lesson.
- Discuss each time that is shown with the class, making sure that learners are able to read the time correctly.



4. Classwork activity (25 minutes) (See next page)

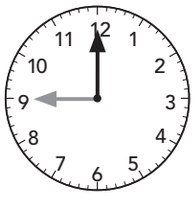
5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 25: Time – analogue clock

Classwork

1. What is the time? Write the time in words.

a) 

(nine o'clock)

b) 

(quarter to ten)

c) 

(half past six)

2. Draw clocks to show the time: (Learners should draw clock faces with the arms in the correct positions for the times given below.)
   a) Ten o'clock
   b) Quarter to twelve
   c) Nine minutes to one
   d) 17:35

Homework

1. What is the time? Write the time in words.

a) 

(quarter to five)

b) 

(half past six)

2. Draw clock faces to show the time: (Learners should draw clock faces with the arms in the correct positions for the times given below.)
   a) Nine minutes past one
   b) Quarter to three
   c) Seventeen minutes past five
   d) Seventeen minutes to five.

LESSON 26: TIME – ANALOGUE AND DIGITAL CLOCKS

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 4.1 Time.

Lesson vocabulary: Time, 12-hour time, hour (half hour, quarter hour), minutes, analogue clock, digital clock, calendar, am/pm.

Prior knowledge: Learners should have been taught how to:

- Tell 12-hour time in: hours, half hours, quarters and minutes on analogue clocks and digital clocks.
- Calculate length of time and passing of time.

Concepts:

- Tell 12-hour time in: hours, half hours, quarters and minutes on analogue clocks, digital clocks and other instruments that show time, e.g. cell phones.
- Use clocks to calculate length of time in hours or half hours.

Resources: Scrap paper/whiteboards, analogue and digital clocks.

DBE workbook activities relevant to this lesson:

- DBE Worksheet 106a (p. 88).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Ask learners to count in fives on an analogue clock, up to 30 minutes (5, 10, 15, 20, 25, 30). Then give them digital clocks to count on (e.g. 02:05, 02:10 …02:30). Ask learners to count in fives from 30 to 60 minutes on an analogue clock. Then give them digital clocks to count on (e.g. 02:30 is half past 2, 02:35 is 25 to 3, … 03:00 is 3 o'clock).

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Ask the learners to start at 387, count on in 2s to 601.

1.2 Recall and strategies (10 minutes)

	Calculate	Answer
1.	525 + 20 =	545
2.	701 + 20 =	741
3.	336 + 20 =	356
4.	550 + 20 =	570
5.	633 + 20 =	653

	Calculate	Answer
6.	645 + 30 =	675
7.	745 + 30 =	775
8.	321 + 30 =	351
9.	189 + 30 =	219
10.	100 + 30 =	130

2. Correction/reflection on homework (15 minutes)

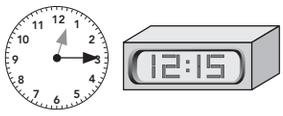
Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

In this lesson the focus is on digital clocks (but there is reference to analogue clocks as well) and the calculation of time passed.

Activity 1: Whole class activity

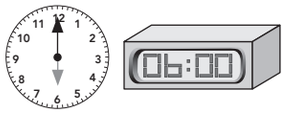
- Show learners an analogue clock.
- Ask them: *What do we call this clock?* (An analogue clock.)
- Show them a digital clock.
- Ask: *What do we call this clock?* (A digital clock.)
- Ask: *Where else do you see time shown in digital format?* (On a cell phone.)



Activity 2: Whole class activity

Draw 6 o'clock on the board or show it with clocks.

- Ask: *Read the time on each clock.*
- Ask: *How do we write it in analogue* (6 o'clock) *and digital time* (06:00)?
- Do the same for:
  - half past seven
  - quarter past seven
  - quarter to six
  - six minutes past eight
  - twenty five to nine
  - etc.



Activity 3: Learners work in pairs

Ask the learners to solve these problems in pairs.

- *It is 8 o'clock. At half past 9 it will be is break time. How long is it until break time?*
- Ask learners to draw analogue clocks to show the two times and then calculate the answer. (One and a half hours.)
- *It is 1 o'clock. At quarter to 3 it is home time. How long is it until the end of the school day?*
- Ask learners to draw digital clocks to show the two times and then calculate the answer. (One hour and forty-five minutes.)
- What was the time a quarter of an hour before 10? (9:45 or a quarter to ten.)

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

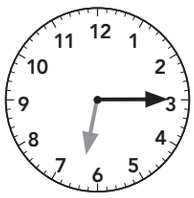
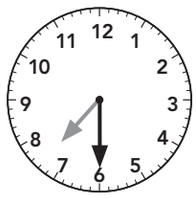
6. Reflection on lesson

Term 3 Lesson 26: Time – analogue and digital clocks

Remind learners that a 12-hour digital clock (which is the kind of clock they are working with in this lesson) counts up to 12 twice a day. The time *half past 6* will be written as 06:30 whether it is in the morning or the night. It is only when you use a 24-hour digital clock that the morning and afternoon digital times are shown differently.

Classwork

1. What is the time?

a)	b)	c)	d)
			
(seven o'clock)	(quarter past six)	(half past seven)	(quarter to ten)

2. Write these times on a digital clock:
   a) Quarter past two (02:15)
   b) Quarter to nine (08:45)
   c) Half past nine (09:30)
   d) Seven o'clock. (07:00)

3. I left my home at seven this morning and arrived back from school at three o'clock.
   For how many hours was I away from my home? (Eight hours)

4. I wake up at six o'clock in the morning. We leave for school at quarter past seven.
   How long does it take me to get ready for school in the mornings? (One hour and fifteen minutes)

5. Mom starts with the washing at nine o'clock in the morning.
   She finishes with the washing and ironing at half past eleven.
   How long does it take her to do the washing and ironing every day? (Two and a half hours)

Homework

1. Write in digital time:
   a) Half past six (06:30)
   b) Quarter past four (04:15)
   c) Quarter to seven (06:45)
   d) Eleven minutes to three. (02:57)

2. We had a picnic on Sunday from ten o'clock to half past three in the afternoon.
   How many hours was the picnic? (Five and a half hours)

LESSON 27: TIME – PASSING OF TIME

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 4.1 Time.

Lesson vocabulary: Time, 12-hour time, hour (half hour, quarter hour), minutes, calendar, am/pm, analogue clock, digital clock, days, weeks, months.

Prior knowledge: Learners should have been taught how to:

- Tell 12-hour time in: hours, half hours, quarters and minutes on analogue clocks and digital clocks.
- Calculate length of time and passing of time.

Concepts:

- Use calendars to calculate and describe lengths of time in days or week or months.

Resources: 12 month calendar (see Term 2 *Printable Resources*).

DBE workbook activities relevant to this lesson:

- DBE Worksheet 80 (pp. 32 and 33).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Give the learners a calendar that is complete as well as some counters. Let them count out the counters on the days which you use in your questions. Help them to count on or back, moving their counters to the specific day.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Ask the learners to start at 456, count on in 5s to 601, e.g. 456, 461, 466, ...

1.2 Recall and strategies (10 minutes)

	Calculate	Answer
1.	424 – 10 =	414
2.	747 – 10 =	737
3.	555 – 10 =	545
4.	688 – 10 =	678
5.	444 – 10 =	434

	Calculate	Answer
6.	185 – 10 – 10 =	165
7.	785 – 10 – 10 =	765
8.	432 – 10 – 10 =	412
9.	531 – 10 – 10 =	511
10.	721 – 10 – 10 =	701

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

The last lesson on time focuses on calendars: days, weeks and months.

Activity 1: Whole class activity

- Revise the calendar by discussing what it presents.
- Ask questions about the months of the year, how many days are in each month, how many weeks are in each month, and so on.
- There are seven days in a week and either 30 or 31 days in a month.
- Ask learners which month is the exception.
  (February – it has 28 days and every fourth year it has 29 days. We call that a leap year.)

Activity 2: Whole class activity

Use the calendar provided for the classwork activity. Draw the calendar month of June (as in the classwork activity) on the board before the lesson starts.
Ask learners the following questions about the calendar:

- *What year is it?* (2015)
- *What month is it?* (June.)
- *How many days are there in this month?* (30 days.)
- *On what day does the first day of this month fall?* (Sunday.)
- *On what day does the last day of this month fall?* (Monday.)
- *How many public holidays are there in June? (1)*
- *School will be closed on 16th June. For how many days will there be school in June? (10)*

Activity 3: Whole class activity

Refer to the calendar provided for the classwork activity.
Ask learners the following questions about describing the length of time.

- *How many days is it from the 12th to the 20th of June?* (8 days.)
- *Today is the 14th of June and my birthday is on the 21st of June. How many weeks do I have to wait for my birthday?* (1 week.)
- *Today is the 20th of June. My friend went on holiday on the 3rd of June. For how many days have I not seen her?* (17 days.)
- *How many full weeks are there in this month?* (4)

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 27: Time – passing of time

Classwork

June 2018						
Sunday	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	**16***
17	18	19	20	21	22	23
24	25	26	27	28	29	30

*** Youth Day**

Use this calendar to answer the questions:

1. From the 12th to the 21st are _____ (nine) days.

2. From the 9th to the 16th is _____ (one) week.

3. Today is the 30th of June. My birthday was on the 9th. It was _____ (twenty-one) days ago.

4. Today is the 30th of June. Mary's birthday was 11 days ago. It was on the _____ (19th).

5. Today is the 30th of June.
   What day was it exactly two weeks ago? (16th June, which is Youth day)

6. There are forty school days until my birthday. How many weeks are there before my birthday?
   (40 ÷ 5 = 8 weeks)

Homework

Look at the calendar for this month.

1. What month is this?

2. How many Thursdays are there in this month?

3. What is the date one week before the sixteenth of this month?

4. On what day is the last day of this month?

5. What will the date be one week after the twenty eighth of this month?

(Various answers to each question based on the month in which the exercise is done)

LESSON 28: 2-D SHAPES – STRAIGHT OR ROUND SIDES

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.16 Mental mathematics, 3.3 2-D shapes.

Lesson vocabulary: Shapes, rectangles, circles, triangles, squares, straight sides, round sides.

Prior knowledge: Learners should have been taught how to:

- Recognise and name 2-D shapes: circles, triangles, squares, rectangles.
- Describe, sort and compare 2-D shapes in terms of: size, colour, shape, straight sides, round sides.

Concepts:

- Recognise and name 2-D shapes: circles, triangles, squares, rectangles.
- Describe, sort and compare 2-D shapes in terms of: shape, straight sides, round sides.

Resources: 3-D shapes, Prestik/Bostik to stick shapes on the board, scrap paper.

DBE workbook activities relevant to this lesson:

- N/A

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Give each learner a circle, square, rectangle and triangle. Ask them to take each one on its own and to feel the sides. *What is the difference between feeling a circle and a rectangle?* (When tracing your finger around the sides of a circle you don't have to stop at a corner, like you have to do with a square.)

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 50s from any number between 0 and 900, e.g. 550, 500, 450, ...

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	40 ÷ 10 = ___	4
2.	20 ÷ 10 = ___	2
3.	60 ÷ 10 = ___	6
4.	90 ÷ 10 = ___	9
5.	30 ÷ 10 = ___	3

	Calculate the following:	Answer
6.	10 ÷ 10 = ___	1
7.	50 ÷ 10 = ___	5
8.	80 ÷ 10 = ___	8
9.	100 ÷ 10 = ___	10
10.	70 ÷ 10 = ___	7

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

If you have sufficient 2-D shapes you could allow learners to work in pairs in Activity 1.
If not, learners will have to work in groups. It is important that learners are given the time to work with models of the shapes and get the opportunity to talk about the shapes, their names and their properties.

Activity 2 should be done with learners working individually and discussing their work with a partner.

Activity 1: Learners work in groups

- Give each group plastic/paper shapes – triangles, rectangles, circles and squares.
- Ask them to name each shape.
- Ask them to say if the shape has round or straight sides.
- Ask them to group them into two groups – straight sides and round sides.

Activity 2: Learners work individually

- Draw a triangle. Draw three more, but all should look different. Discuss with your partner what is different about each one. (The differences could be in the size and/or orientation of the shapes.)
- Draw a rectangle. Draw three more, but all should look different. Discuss with your partner what is different about each one. (The differences could be in the size and/or orientation of the shapes.)
- Draw a square. Draw three more, but all should look different. Discuss with your partner what is different about each one. (The differences could be in the size and/or orientation of the shapes.)
- Draw a circle. Draw three more, but all should look different. Discuss with your partner what is different about each one. (The differences could be in the size of the shapes. Circles do not look different if their 'orientation' is changed. Discuss this with learners.)
- When all learners have finished this activity you could call the whole class together to have a general discussion about the findings in relation to different shapes that learners drew.

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

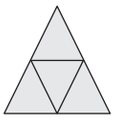
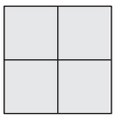
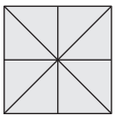
Term 3 Lesson 28: 2-D shapes – straight or round sides

Learners need to use scrap paper for Question 1 of this activity. They need to find old newspapers/magazines/ advertisement flyers for the homework activity.

Classwork

1. Use 3 square pieces of paper. Fold each one twice to make a different shape (rectangle, triangle, square).

2. Stick them in your maths book and label them.

3. Work in pairs. How many shapes do you see? Count very carefully.
   a)  There are ____ triangles
   (5)
   b)  There are____ squares
   (5)
   c)  There are ____ squares, ____ triangles and ____ rectangles.
   (5, 16, 4 or 9 if the squares are counted as rectangles)

Homework

(Answers will vary.)

1. Find 3 pictures of shapes with straight sides:
   a) Stick them into your book.
   b) Name the shapes.

2. Find 3 pictures of shapes with round sides:
   a) Stick them into your book.
   b) Name the shapes.

WEEK 8

LESSON 29: 2-D SHAPES – STRAIGHT OR ROUND SIDES

Teacher's notes
CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 3.3 2-D shapes. **Lesson vocabulary:** Estimate, check, 2-D shapes, straight sides, round/curved sides, describe, compare, rotate. **Prior knowledge:** Learners should have been taught how to: • Recognise and name 2-D shapes: circles, triangles, squares, rectangles. • Describe, sort and compare 2-D shapes in terms of: size, colour, shape, straight sides, round sides. **Concepts:** • Describe, sort and compare 2-D shapes in terms of: shape, straight sides and round sides. **Resources:** 2-D shapes, Prestik/Bostik to stick shapes on the board, old newspapers/magazines. **DBE workbook activities relevant to this lesson:** • DBE Worksheet 72 (pp. 17). **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Give learners plastic or cardboard shapes. Let them sort the shapes into shapes with round sides and those with straight sides. Use all the same kind of shapes and put them in a line, but with all of them in a different orientation (the way it faces). **Enrichment:** See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 50s between 0 and 1 000, e.g. 600, 650, 700, …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	10 ÷ 10 =	1
2.	9 x 10 =	90
3.	7 x 10 =	70
4.	100 ÷ 10 =	10
5.	3 x 10 =	30

	Calculate the following:	Answer
6.	30 ÷ 10 =	3
7.	70 ÷ 10 =	7
8.	5 x 10 =	50
9.	1 x 10 =	10
10.	40 ÷ 10 =	4

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

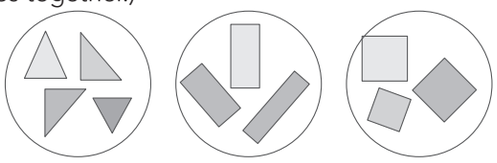
Activity 1: Whole class activity

- Revise curved and straight sides by showing the learners different 2-D shapes.

Activity 2: Whole class activity

Stick cardboard cut-out shapes (rectangles, squares and triangles) randomly on the board.

- *What can you tell me about the sides of all these shapes?* (They are all straight.)
- *What shapes are they?* (Triangles, rectangles, squares.) *Can someone sort the shapes on the board?*
- *How did you sort the shapes?* (We put all the rectangles together, all the triangles together and all the, squares together.)

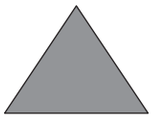
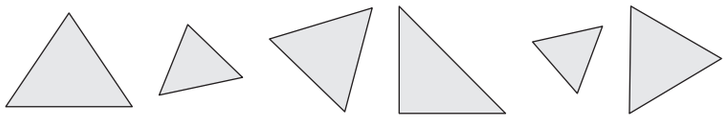
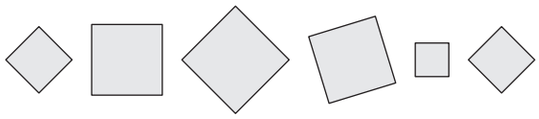
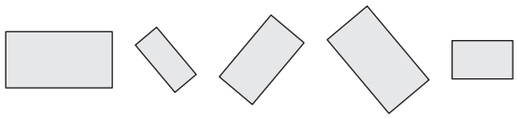
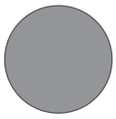
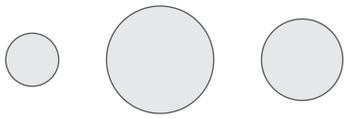


Rotate the triangles so that they all face different directions.

- Ask: *Are the shapes in the circle still triangles?* (Yes.) *How do you know?* (Triangles have three straight sides and three corners. If you rotate a shape it changes position but the shape itself does not change.) Do the same with the rectangles and squares.

Activity 3: Whole class activity

Draw the following on the board. Ask learners to come to the board and draw other shapes, e.g. triangles that look different from yours/are facing in a different direction. Ask them to explain what the difference is.

 **triangle**	**Example:** 
 **square**	**Example:** 
 **rectangle**	**Example:** 
 **circle**	**Example:** 

Note: Help children to become familiar with the shape terminology by asking questions and allowing children to use the words they have learnt.

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 29: 2-D shapes – straight or round sides

Learners need to use old newspapers/magazines/advertisement flyers for Question 7 of the classwork activity.

Classwork

(Answers will vary)

1. Draw a triangle. Draw three more triangles, but in different positions.

2. Are the sides of the triangle round or straight? (Straight)

3. Draw a rectangle. Draw three more rectangles, but in different positions.

4. Are the sides of the rectangle round or straight? (Straight)

5. Draw three circles of different size.

6. Are the sides of the circle round or straight? (Round)

7. Find and cut out triangles of different sizes from a magazine.
   Stick them in your book, all in different positions.
   a) How many sides does each one have? (3)
   b) Are they straight or round? (Straight)

Homework

(Answers will vary)

1. Draw a picture of a tree. You may use one shape with straight sides and one shape with round sides. (Various)

2. Draw a picture of a car. You may use two shapes with straight sides and four shapes with round sides. (Various)

LESSON 30: FRACTIONS – NAME THE FRACTION PARTS

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 1.17 Fractions.

Lesson vocabulary: Fractions, unitary fraction, non-unitary fractions, half, quarter, eighth, third, sixths, fifths, diagrammatic form.

Prior knowledge: Learners should have been taught how to:

- Use and name fractions in familiar contexts including halves, quarters, thirds and fifths.
- Recognise fractions in diagrammatic form and write fractions as 1 half, 2 thirds.

Concepts:

- Use and name unitary and non-unitary fractions including halves, quarters, eighths, thirds, sixths and fifths.
- Recognise fractions in diagrammatic form.

Resources: Fraction strips and circles (see *Printable Resources*).

DBE workbook activities relevant to this lesson:

- DBE Worksheet 91 (pp. 54 and 55).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Show the learners the following with fraction strips and circles. Ask how many equal parts there are. If there are five equal parts then these are fifths. Now count the number of fifths. Follow this with three, four, and six equal parts.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards in 50s 7 steps from 250. *How far did you count?* Ask other similar questions.

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	4 + 3 + 9 =	16
2.	5 + 5 + 6 =	16
3.	12 + 2 + 3 =	17
4.	3 + 9 + 2 =	14
5.	5 + 11 + 3 =	19

	Calculate the following:	Answer
6.	2 + 9 + 8 =	19
7.	9 + 3 + 6 =	18
8.	2 + 0 + 18 =	20
9.	8 + 4 + 7 =	19
10.	6 + 2 + 8 =	16

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

This is the first of three lessons on fractions this term. Note that a *quarter* can also be called a *fourth* (as it is one of four equal parts of a whole). Refer to the Dictionary of Mathematical Terms if necessary for terminology definitions and explanations relevant to this lesson (e.g. half, quarter, third, fifth, sixth, eighth, etc.).

Activity 1: Whole class activity

This activity revise halves.

- Give learners fraction strips with halves.
- Show them one whole. *What fraction is this?* (One whole.)
- Show them two halves. *What fraction is this?* (Two halves.)
- Ask *What can you tell me about the two halves?* (Two halves make one whole.)
- Repeat with thirds, quarters and fifths always referring back to the whole to see the relationship.

Activity 2: Whole class activity

Draw a fraction strip that is divided into thirds on the board. Ask learners to come up to the board to:

- Label the fractions.
- Colour one, two three thirds.

Colour one third.

Colour two thirds.

Colour three thirds.

- Repeat the exercise with quarters, fifths, sixths and eighths.

Optional or for consolidation: If learners struggle to understand, repeat the whole exercise, using fraction circles.

4. Classwork activity (25 minutes) (See next page)

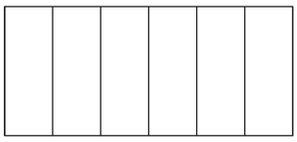
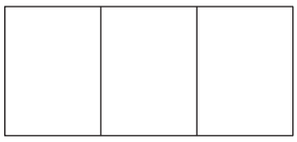
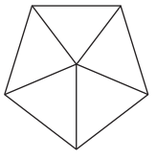
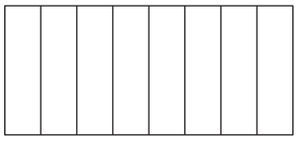
5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 30: Fractions – name the fraction parts

Classwork

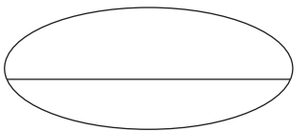
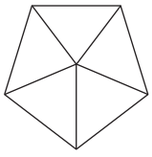
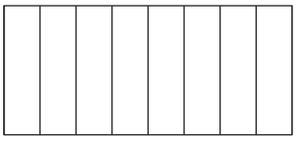
1. Colour the following: (There are various solutions for each item. In each case the correct number of fraction parts must be shaded.)

a) Three sixths 	b) Two thirds 
c) Four fifths 	d) Five eighths 

2. Draw the following:
   a) Three quarters using a square. (Learners draw a square, divided into quarters and shade 3 quarters.)
   b) Two thirds, using a rectangle. (Learners draw a rectangle, divided into thirds and shade 2 thirds.)
   c) Four fifths, using a circle. (Learners draw a circle, divided into fifths and shade 4 fifths.)

Homework

Colour the following: (There are various solutions for each item. In each case the correct number of fraction parts must be shaded.)

a) One half 	b) Two sixths 
c) Three fifths 	d) Seven eighths 

LESSON 31: FRACTIONS – SHARE AND GROUP THINGS EQUALLY

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics 1.10 Sharing leading to fractions, 1.17 Fractions.

Lesson vocabulary: Fractions, unitary fractions, non-unitary fractions, halves, quarters, eighths, thirds, sixths, fifths, diagrammatic form, share, group.

Prior knowledge: Learners should have been taught how to:

- Use and name fractions in familiar contexts including halves, quarters, thirds and fifths.
- Recognise fractions in diagrammatic form and write fractions as 1 half, 2 thirds.

Concepts:

- Use and name unitary and non-unitary fractions including halves, quarters, eighths, thirds, sixths and fifths.
- Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{2}{5}$, etc.

Resources: Counters, Scrap paper/whiteboards.

DBE workbook activities relevant to this lesson:

- DBE Worksheet 92 (pp. 56 and 57).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Give learners the fraction strips or ask them to draw it in their books. Ask them to name the shaded part: one half, two thirds, three quarters, four fifths, three sixths and five eights. Take 12 counters and share into: halves, thirds, quarters, sixths.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 5s between 0 and 700, e.g. 525, 530, 535, …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	___ ÷ 2 = 2	4
2.	___ ÷ 2 = 4	8
3.	___ ÷ 3 = 2	6
4.	___ ÷ 3 = 4	12
5.	___ ÷ 4 = 2	8

	Calculate the following:	Answer
6.	___ ÷ 4 = 4	16
7.	___ ÷ 5 = 2	10
8.	___ ÷ 5 = 4	20
9.	___ ÷ 10 = 2	20
10.	___ ÷ 10 = 4	40

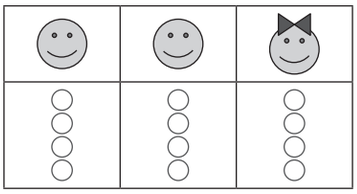
2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

Activity 1: Learners work individually

- Give learners 12 counters or stones.
- Tell them to draw faces of three children (2 boys and 1 girl) and to share the counters **one at a time** equally amongst the three children.
- They use their scrap paper/white boards to write on, e.g.



- *How many counters will each child get?* (4)
- *What fraction will the girl get?* (One third since the counters have been shared into 3 groups of equal size.)
- *How many will the girl get? (4)*
- *What fraction did the boys get?* (Two thirds.)
- *How many will the boys get?* (4 + 4 = 8)
- *What is one third of 12?* (4)
- *What is two thirds of 12?* (8)

Repeat the above steps, asking the same questions, with the following examples:

- Share 12 counters equally among three boys and one girl (i.e. into quarters – 4 groups of equal size).
- Share 12 counters equally among one boy and one girl (i.e. into halves – 2 groups of equal size.).

Activity 2: Learners work individually

Ask learners to draw pictures to calculate.
We are five friends; two boys and three girls. We share 20 counters equally. How many counters will each friend get?

- *What fraction will each friend get?* (1 fifth.)
- *What is one fifth of 20*? (4)
- *What fraction will the boys get?* (2 fifths.)
- *How many counters will the boys get?* (4 + 4 = 8 counters.)
- *What fraction will the girls get?* (3 fifths.)
- *How many counters will the girls get?* (4 + 4 + 4 = 12 counters.)
- *What is three fifths of 20*? (12)
- *What is four fifths of 20*? (16)
- *What is five fifths of 20*? (20)

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 31: Fractions – share and group things equally

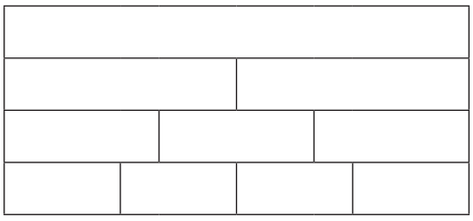
Classwork

1. We are five friends. We share 25 counters equally.
   a) What fraction will each friend get? (One fifth)
   b) How many counters will each friend get? (5 counters)

2. I divide 12 marbles equally among John, Neo and Sipho.
   a) What fraction will Neo get? (One third)
   b) How many marbles will each boy get? (4)

3. I divide 16 marbles equally among John, Mary, Sipho and Cindy.
   a) What fraction will the girls, Mary and Cindy get? (Two quarters/one half)
   b) How many marbles will Mary get? (4)

4. Use the given fraction wall to decide which is more than/less than, equal to:



   a) Two thirds ___ one half. (are more than)
   b) Three quarters ___ two thirds. (are more than)
   c) Two quarters ___ one half. (are equal to)
   d) One whole ___ five quarters. (are less than)

Homework

1. I have 24 marbles. I divide them equally among 6 children.
   a) What will one sixths of 24 be? (4)
   b) What will two sixths of 24 be? (8)
   c) What will five sixths of 24 be? (20)

2. Which is more than, less than or equal to:
   a) One quarter ___ one half (is less than)
   b) Two thirds ___ one half (are more than)
   c) Two quarters ___ one half. (are equal to)

LESSON 32: FRACTIONS – SHARE AND GROUP THINGS EQUALLY

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 1.10 Sharing leading to fractions, 1.17 Fractions.

Lesson vocabulary: Fractions, unitary fractions, non-unitary fractions, halves, quarters, eighths, thirds, sixths, fifths, diagrammatic form, share, group, exact, exactly.

Prior knowledge: Learners should have been taught how to:

- Use and name fractions in familiar contexts including halves, quarters, thirds and fifths.
- Recognise fractions in diagrammatic form and write fractions as 1 half, 2 thirds.

Concepts:

- Use and name unitary and non-unitary fractions including halves, quarters, eighths, thirds, sixths and fifths.
- Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{2}{5}$, etc.

Resources: Counters, Scrap paper/whiteboards.

DBE workbook activities relevant to this lesson:

- DBE Worksheet 93 (pp. 58 and 59).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Give learners the fraction strips or ask them to draw these in their books. Ask them to name the shaded part and say what portion is not shaded. For example, one half is shaded and one half is not shaded, two thirds are shaded and one third is not shaded.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 5s between 0 and 700, e.g. 525, 530, 535, …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	10 ÷ 10 =	1
2.	8 x 10 =	80
3.	40 ÷ 10 =	4
4.	9 x 10 =	90
5.	30 ÷ 10 =	3

	Calculate the following:	Answer
6.	5 x 10 =	50
7.	20 ÷ 10 =	2
8.	7 x 10 =	70
9.	100 ÷ 10 =	10
10.	6 x 10 =	60

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

Revise fraction concepts.

- Ask: *How many:*
  - *Halves in a whole?* (2)
  - *Quarters in a whole?* (4)
  - *Quarters in a half?* (2)
  - *Thirds in a whole?* (3)
  - *Fifths in a whole?* (5)
- *Give me any two fractions that are the same size.* (Various, e.g. two halves and a whole; two quarters and one half; three thirds and four quarters.)

Activity 2: Whole class activity

- Give learners counters to help them to work these calculations out practically and cups/containers to hold each person's share.
- Divide the 9 counters equally between two boys and one girl. Ask:
  - *How many parts will you divide the whole into?* (Three groups – thirds.)
  - *How many counters will each child get?* (3 counters in each group – they will each get 3.)
  - *What fraction will the girl get?* (One third.)
  - *How many counters will the girl get?* (3)
  - *What fraction will the boys get?* (Two thirds.)
  - *How many counters will the boys get altogether?* (6)
- We are six friends – one is a boy and the others are girls. We share 18 counters equally.
  - *How many parts will you divide the whole into?* (Six groups – sixths.)
  - *How many counters in one sixth?* (3)
  - *What fraction will the girls get?* (Five sixths.)
  - *How many counters will the girls get altogether?* (15)
  - *What fraction will the boy get?* (One sixth.)
  - *How many counters will the boy get?* (3)
- We are four friends – two girls and the others are boys. We share 20 counters equally.
  - *How many parts will you divide the whole into?* (Four groups – quarters.)
  - *How many counters in one quarter?* (5)
  - *What fraction will the girls get?* (Two quarters which is the same as one half.)
  - *How many counters will the girls get altogether?* (5 + 5 = 10)
  - *What fraction will the boys get?* (Two quarters which is the same as one half.)
  - *How many counters will the boy get altogether?* (5 + 5 = 10)

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 32: Fractions – share and group things equally

Classwork

1. Share twenty five balls among five friends. Two are boys and three are girls.
   a) What fraction will the girls get? ($\frac{3}{5}$)
   b) What fraction will the boys get? ($\frac{2}{5}$)
   c) How many balls will the girls get? (15)
   d) How many balls will the boys get? (10)

2. Share twelve balls among four friends. Three of the friends are boys.
   a) What fraction will the girl get? ($\frac{1}{4}$)
   b) What fraction will the boys get? ($\frac{3}{4}$)
   c) How many balls will the girl get? (3)
   d) How many balls will the boys get? (9)

3. I have 24 marbles. I divide them equally among 6 children.
   a) What will one sixth of 24 be? (4)
   b) What will two sixths of 24 be? (8)
   c) What will three sixths of 24 be? (12)
   d) What will five sixths of 24 be? (20)

Homework

Taken from classwork on the same day.

1. I share 15 marbles equally among John, Mary and Sipho.
   a) What fraction will Mary get? (one third).
   b) How many marbles will they each get? (5)

2. I divide 15 marbles equally among John, Mary, Sipho, Neo and Cindy.
   a) What fraction will the girls, Mary and Cindy get? (two fifths).
   b) How many marbles will John get? (3)

WEEK 9

LESSON 33: MONEY

Teacher's notes
CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.11 Money, 1.16 Mental mathematics. **Lesson vocabulary:** Money, coins, bank notes, rands and cents, total, value, change. **Prior knowledge:** Learners should have been taught how to: • Recognise and identify the South African coins 10c, 20c, 50c, R1, R2, R5 and bank notes R10, R20 and R50. • Solve money problems involving totals and change in cents up to 90c and rand to R99. **Concepts:** • Recognise and identify the South African coins and bank notes. • Convert between rands and cents. **Resources:** Paper money cut-outs (see Term 2 *Printable Resources*). **DBE workbook activities relevant to this lesson:** • DBE Worksheet 95b (pp. 64 and 65). **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Give learners different amounts and kinds of coins, and ask them what the totals are, e.g. 50c, 50c, 20c, 20c, 20c (160c). **Enrichment:** See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 25s between 0 and 700, e.g. 750, 725, 700, …

1.2 Recall and strategies (10 minutes)

	Calculate	
1.	2 ÷ 2 =	1
2.	10 ÷ 10 =	1
3.	12 ÷ 2 =	6
4.	60 ÷ 10 =	6
5.	14 ÷ 2 =	7

	Calculate	
6.	70 ÷ 10 =	7
7.	50 ÷ 10 =	5
8.	10 ÷ 2 =	5
9.	18 ÷ 2 =	9
10.	50 ÷ 10 =	5

2. Correction/reflection on homework (15 minutes)

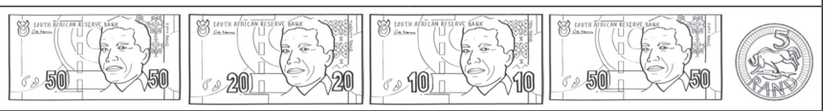
Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

This is a practical activity in which learners must work with money cut-outs. You should also make sure that you have found an example of a menu or have drawn one up yourself for Activity 2 of this lesson.

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

- Find a menu or list of prices from a local restaurant.
- If you cannot make copies of the menu, write it up on the board. Make up your own menu if necessary, with drinks, main courses and deserts.
- Ask the learners to choose a meal each from the menu with the following items:
  - Something to drink
  - Something to eat
  - Something for dessert.
- Learners each find the total cost of their meals.
- Learners can do other activities using the menu such as:
  - *What is the most expensive item on the menu?*
  - *What is the least expensive item on the menu?*
  - Work out the cost of the most expensive meal option from the menu (with a drink, main and desert).
  - Work out the cost of the least expensive meal option from the menu (with a drink, main and desert).

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 33: Money

Classwork

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, 20c)

2. Colour the notes 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)

Homework

1. Convert the following amounts into cents:
   a) R9,00 = ___c (900c)
   b) R0,40 = ___c (40c)
   c) R0,10 = ___c (10c)
   d) R32,10 = ___c (3210c)

2. Convert the following amounts into rands:
   a) 770c = R____ (R7,70)
   b) 80c = R____ (R0,80)
   c) 20c = R____ (R0,20)
   d) 2390c = R____ (R23,90)

LESSON 34: MONEY PROBLEMS

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.11 Money, 1.16 Mental mathematics.

Lesson vocabulary: Money, coins and notes, rands and cents, total, value, change, convert.

Prior knowledge: Learners should have been taught how to:

- Recognise and identify the South African coins 5c, 10c, 20c, 50c, R1, R2, R5 and bank notes R10, R20 and R50.
- Solve money problems involving totals and change in cents up to 90c and rand to R99.

Concepts:

- Solve money problems involving totals and change in rands or cents.
- Convert between rands and cents.

Resources: Money cut-outs (see Term 2 *Printable Resources*).

DBE workbook activities relevant to this lesson:

- DBE Worksheet 107b (p. 91).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Revise notes. Work with notes up to R100. Once this is established, progress to R300, then R300–R500. Do the same with coins which make up R1, R2, R10, R20.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 4s from any given number between 0 and 700, e.g. 24, 31, 35, …

1.2 Recall and strategies (10 minutes)

	Calculate	Answer
1.	4 ÷ 2 =	2
2.	20 ÷ 10 =	2
3.	8 ÷ 2 =	4
4.	8 ÷ 2 =	4
5.	30 ÷ 10 =	3

	Calculate	Answer
6.	6 ÷ 2 =	3
7.	60 ÷ 10 =	6
8.	10 ÷ 2 =	5
9.	100 ÷ 10 =	10
10.	20 ÷ 2 =	10

2. Correction/reflection on homework (15 minutes)

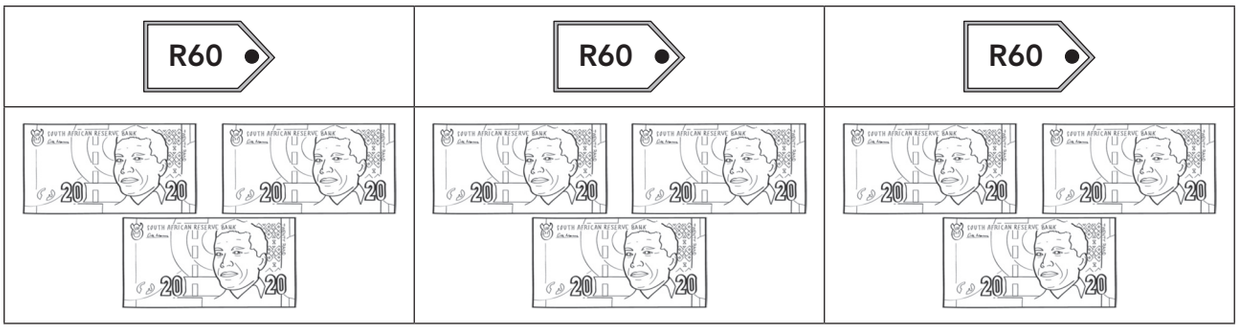
Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

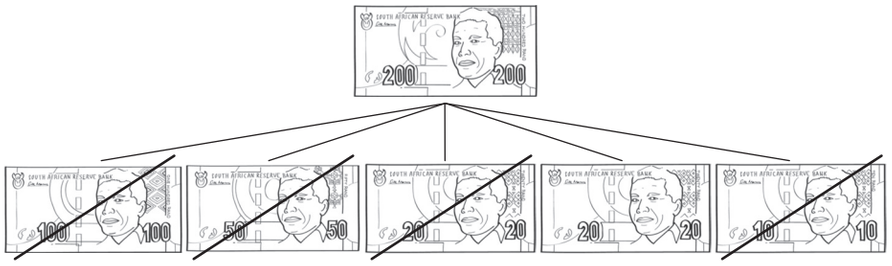
Activity 1: Whole class activity

Solve this problem with your learners.

- Linda bought 3 books for R60 each. How much change will she get if she has R200?
- Ask the learners the following questions:
  - *What is the key word?*
  - *What is the question?*
  - *What are the numbers?*
- Make use of banknotes to show your answers.



- Let us count:
  20, 40, 60, 80, 100, 120, 140, 160, 180
- Linda pays with a R200 note.



Her change is R20.

Is there another way to show this? Here is another way:

3 books cost R60 + R60 + R60 = 180

Change = R200 – R180 = R20

Activity 2: Whole class activity

- Ask learners to think about all the ways in which they can make up R500 using only bank notes and to write them down. (E.g. R200 + R200 + R100; R200 + R100 + R100 + R100. There are many ways to make up R500.)
- If learners struggle to do these abstractly allow them to use cut-out notes.
- Do the same with R75, R280, R390, R840, R1 000.
- Show 3 different ways in which you can get the following amounts: R1,50; R6,00; R3,75.

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 34: Money problems

Classwork

1. Here are the prices of chocolates:

Aero	Tex	Lunch Bar	Flake
R5,40	R6,10	R6,00	R5,10

   a) Which chocolate is the most expensive? (Tex)
   b) Which chocolate is the cheapest? (Flake)
   c) What is the difference between the prices of the Lunch Bar and the Tex? (10c)

2. Travis has a 50c coin and four 20c coins. Toffees cost R1,20.
   How much change will he get if he pays with all his money? (10c)

Homework

1. Draw coins to show how many different ways you can make up 100c using only coins. (various answers possible)

2. Draw notes to show how many different ways you can make up R150 using only bank notes. (various answers possible)

3. One pair of shoes cost R250. How much will two pairs of shoes cost? (R500)

LESSON 35: LENGTH

Teacher's notes
CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 4.2 Length. **Lesson vocabulary:** Length, measure, height, width, metres, centimetres, units record. **Prior knowledge:** Learners should have been taught how to: • Estimate, measure, compare, order and record length using centimetres (either metre sticks or metre lengths of string) as the standard unit of length. **Concepts:** • Estimate, measure and record lengths in centimetres using a ruler. **Resources:** Ruler, worksheets, cardboard strips cut out in exact measurements of 1 cm–10 cm (make this for the lesson). **DBE workbook activities relevant to this lesson:** • N/A **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Help learners to understand exactly where we read centimeters on a ruler. Ask them to show you where it says 2 cm, 3 cm, 5 cm, etc. on the ruler. Revise where we place something against a ruler when we want to measure it. Give them cardboard strips cut outs in exact measurements of 1 cm up to 10 cm randomly and let them measure these. **Enrichment:** See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 3s from any given number between 0 and 700, e.g. 624, 627, 630, ...

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	114 – 9 =	105
2.	119 – 9 =	110
3.	113 – 9 =	104
4.	118 – 9 =	109
5.	112 – 9 =	103

	Calculate the following:	Answer
6.	120 – 9 =	111
7.	116 – 9 =	107
8.	111 – 9 =	102
9.	115 – 9 =	106
10.	117 – 9 =	108

2. Correction/reflection on homework (15 minutes)

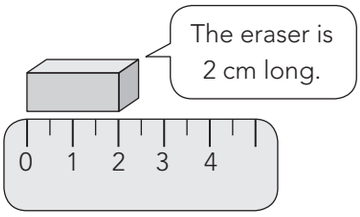
Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

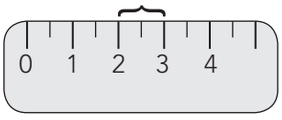
This is the first of three lessons on length in Term 3. Formal measurement of lengths using the standard unit of a centimetre is consolidated in this lesson. This is a practical lesson – learners must use a ruler to do actual measurements in this lesson.

Activity 1: Whole class activity

- Ask learners to:
  - show you an estimate of one centimetre with their fingers.
  - show you where 1 cm is on their rulers.
- 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 them to show you 1 cm on other parts of their ruler, e.g. between 2 cm and 3 cm.



- Remind them that cm is short for centimetre.

Activity 2: Learners work individually

Give each group of learners at least three cardboard strips of different lengths.

- Learners must measure the lengths of each of the strips of paper.
- Offer assistance as required, checking that children are placing the zero on the ruler against the beginning of the line and reading the measurement correctly.
- Learners could draw the length of the strips they measure and write the measured length next to each one.

1. ———	(5 cm)
2. ———	(8 cm)
3. ———	(10 cm)

Activity 3: Optional (time permitting)

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

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 35: Length

Classwork

First estimate, then measure the length of these lines. Copy and complete this table in your maths book.

Line	Estimate	Measure	Difference
1.	(various)	(6½ cm)	(various)
2.		(4 cm)	
3. 		(4½ cm)	
4. The length of my DBE Maths Workbook		(27½ cm)	
5. The width of my DBE Maths Workbook		(21 cm)	
6. My handspan		(various)	
7. My friend's handspan		(various)	

Homework

Ask everybody in your family to line up.

1. _____ is the tallest.

2. _____ is the shortest.

3. Use a tape meaure/ruler to find out:
   a) I am _____ cm tall.
   b) Dad/Mum/Granny is _____ cm tall.
   c) The kitchen chair is _____ cm high.

LESSON 36: LENGTH

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 4.2 Length.

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

Prior knowledge: Learners should have been taught how to:

- Estimate, measure, compare, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length.

Concepts:

- Measure, record and compare lengths in centimetres using a ruler.
- Estimate, measure, compare, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length.

Resources: Rulers, labelled pieces of string cut to various lengths, work card, scrap paper/white boards.

DBE workbook activities relevant to this lesson:

- N/A

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Give learners a variety of items of stationery, e.g. pencil purse, pen, crayon, scissors.

Show the learners an object that is 10 cm long. Ask them to sort the objects into those more than10 cm and those less than 10 cm. They then estimate and record their measurements using a table like the one in Activity 1 in the lesson.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 3s from any number between 0 and 700, e.g. 652, 649, 646, ...

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	__ – 10 = 18	28
2.	__ – 9 = 18	27
3.	__ – 10 = 13	23
4.	__ – 9 = 13	22
5.	__ – 10 = 15	25

	Calculate the following:	Answer
6.	__ – 9 = 15	24
7.	__ – 10 = 17	27
8.	__ – 9 = 17	26
9.	__ – 10 = 14	24
10.	__ – 9 = 14	23

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

This is the second lesson on length for this term. In this lesson, learners work with centimetres and metres, two of the standard units for the measurement of length to which they have been introduced.

Activity 1: Learners work in groups

Draw an estimation recording sheet (like the one shown below) on the chalkboard before the lesson.

Demonstrate the steps to take to complete the table using the door as an example. Measurements must all be done in metres.

Object	I estimate	I measure	Difference
Door (height)	2 m	1.8 m	.2 m
Door (width)			
Teacher's desk (height)			
Teacher's desk (length)			
Teacher's desk (breadth)			
Blackboard (length)			
Blackboard (height)			
Width of the class			

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

Activity 2: Learners work in groups

- Ask learners to each draw their own recording sheets on their scrap paper/whiteboards for the next activity.
- Give each group of learners 4 pieces string (each of a different length).
- Ask learners to go through the same steps (1–3) as above to find measurements of their pieces of string.
- 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.
- Learners should all measure each of the 4 pieces of string.
- Once everybody has measured all four pieces of string, the group needs to discuss the following:
  - ____ was the longest.
  - ____ was the shortest.
  - ____ and ____ are the same length.
  - A and C measure ____ cm altogether.
  - Etc.

4. Classwork activity (25 minutes) (See next page)

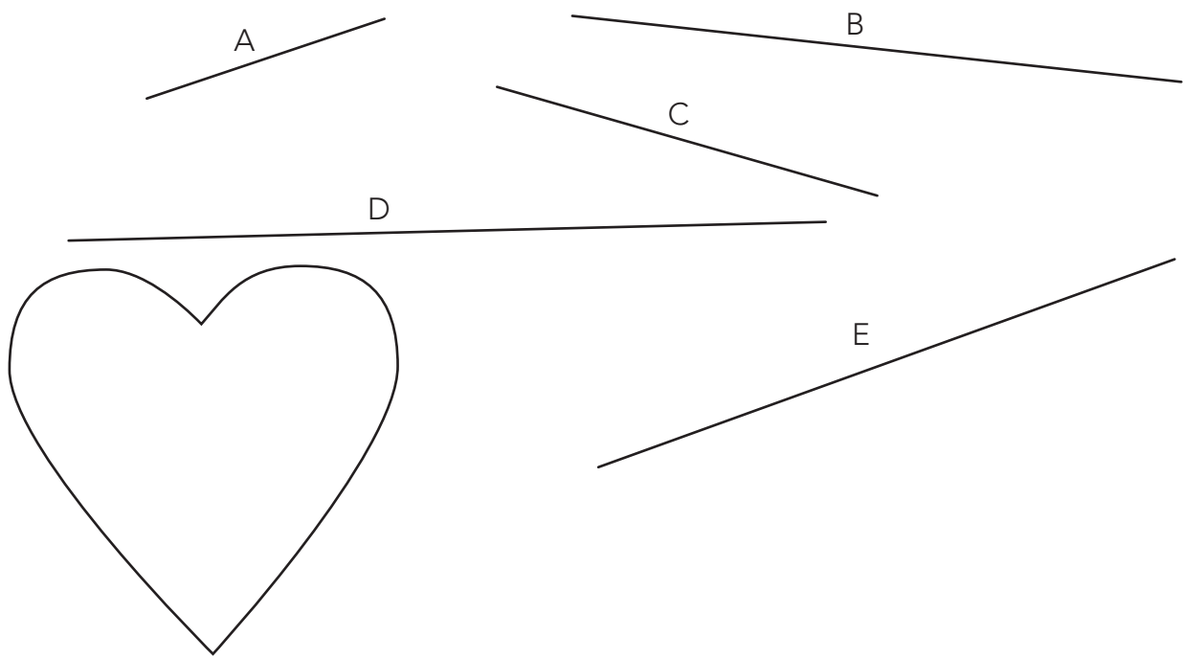
5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 36: Length

Classwork

Measuring length



1. A is _____ cm. (3 ½)
2. B is _____ cm. (8 ½)
3. C is _____ cm. (5 ½)
4. D is _____ cm. (10 ½)
5. E is _____ cm. (8 ½)
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. (8½ cm)

Homework

1. Calculate
   a) 64 cm – 23 cm = ___ (21 cm)
   b) 43 cm x 2 = (86 cm)

2. Fill in more than, less than or equal to:
   a) 48 cm + 32 cm ___ (<) 100 cm – 15 cm
   b) 100 cm ÷ 5 ___ (=) 4 x 5 cm

WEEK 10

LESSON 37: LENGTH – PERIMETER

Teacher's notes
CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 4.5 Perimeter. **Lesson vocabulary:** Perimeter, distance, 2-D shapes, measure, estimate, compare, order, record, length. **Prior knowledge:** Learners should have been taught how to: • Estimate, measure, compare, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length. • Use informal units of measurement. **Concepts:** • Investigate the distance around 2-D shapes and 3-D objects using direct comparison or informal units. • Investigate and measure the distance around 2-D shapes and 3-D objects using centimeters. **Resources:** Cut-outs of rectangles, squares and circles (one set per group), string, circle/plate (make these before the lesson). **DBE workbook activities relevant to this lesson:** • DBE Worksheet 94 (pp. 60 and 61). **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Give the learners a plate and a piece of string. Help them to put the string around the plate and to get to the starting point again. Let the learners now do it in pairs. **Enrichment:** See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 10s between 0 and 1 000, e.g. 376, 386, 396, …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	376 + 20 =	396
2.	376 – 20 =	356
3.	765 + 20 =	785
4.	765 – 20 =	745
5.	268 + 20 =	288

	Calculate the following:	Answer
6.	268 – 20 =	248
7.	578 + 20 =	598
8.	578 – 20 =	558
9.	749 + 20 =	769
10.	749 – 20 =	729

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

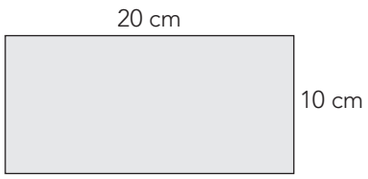
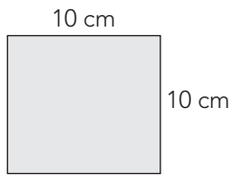
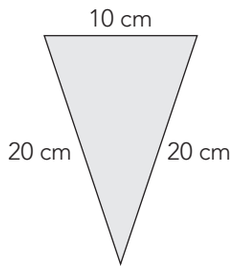
This is the third lesson on length for this term. In this lesson learners are introduced to the concept of perimeter – the total length around a shape. Refer to the Dictionary of Mathematical Terms if necessary for terminology definitions and explanations.

You need to prepare cut out rectangles, squares and triangles for Activity 1 of this lesson.

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 would add the measurements of all of the sides of the rectangle 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 calculation for finding the perimeter. Do the same for a square and a triangle. (Illustrated below.)

		
20 cm + 10 cm + 20 cm + 10 cm = 60 cm	10 + 10 + 10 + 10 = 40 cm	20 + 20 + 10 = 50 cm

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

Activity 2: Whole class activity

- As a class discuss how we can measure the perimeter (distance around an object) of a circle. This is also called the circumference of a circle.
- We can use a piece of string.
- Use a circle/plate/cylinder to demonstrate to the learners how one of them can hold the string and 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.

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 37: Length – perimeter

Classwork

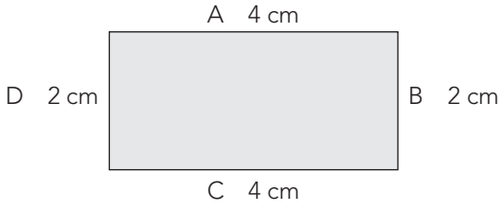
(Answers will vary.)

1. Trace a matchbox in your book. Measure the sides and label them.
   Add all the sides and write down the perimeter of the rectangle.

2. Cut out three strips of paper. All need to be the same length. Stick them in your books to make a triangle.
   Measure the sides and label them. Add all the sides and write down the perimeter of the triangle.

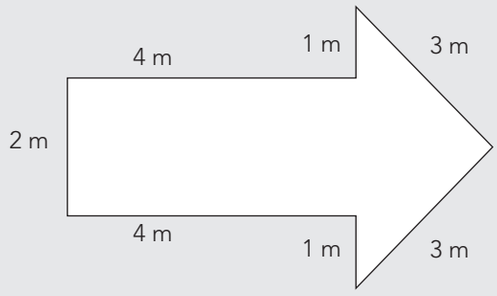
3. Draw a rectangle in your book. Follow the steps in Question 1.

4. The perimeter of a rectangle is 12 cm. The short sides measure 2 cm.
   Draw the rectangle and write down the measurements of all of the sides. (Number 4: Solution)

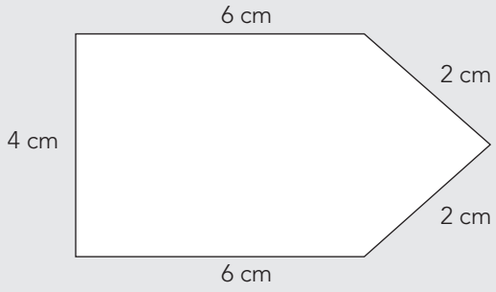


Homework

1. Calculate the perimeter of the following shapes.



Perimeter = ___ (18 m)



Perimeter = ___ (20 cm)

LESSON 38: 3-D OBJECTS

Teacher's notes
CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.16 Mental mathematics, 3.2 3-D objects. **Lesson vocabulary:** 3-D objects, boxes, balls, spheres, prisms, cylinders, pyramids, cones, roll slide, square, rectangle, triangle, circle, surface, curved, flat. **Prior knowledge:** Learners should have been taught how to: • Recognise and name 3-D objects in the classroom and in pictures: ball shapes (spheres), box shapes (prisms), cylinders. • Describe, sort and compare 3-D objects in terms of size, objects that can roll and objects that can slide. **Concepts:** • Recognise and name 3-D objects in the classroom and in pictures: ball shapes (spheres), box shapes (prisms), cylinders, pyramids, cones. **Resources:** Boxes/box-shape objects, balls/ball-shape objects, toothpicks, straws, old newspapers/magazines (your collection). **DBE workbook activities relevant to this lesson:** • DBE Worksheet 90 (pp. 52 and 53). **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Give learners a mixture of boxes/box-shape objects, balls/ball-shape objects, and pyramids. Ask them to sort them into three groups. Let them name the groups, also using their mathematical names. **Enrichment:** See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 4s between 0 and 900, e.g. 704, 708, 712, …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	2 x 10 =	20
2.	20 x 2 =	40
3.	32 x 2 =	64
4.	48 x 2 =	96
5.	15 x 3 =	45

	Calculate the following:	Answer
6.	25 x 4 =	100
7.	3 x 30 =	90
8.	10 x 5 =	50
9.	32 x 1 =	32
10.	12 x 0 =	0

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

This is the first of three lessons on 3-D objects. Remember that it is very important for you to bring models and examples of the objects to class so that learners can hold them and see the properties of the objects that they are discussing. This will help them to begin to create visual images that can lead to correct abstract ideas about 3-D objects.

This lesson includes revision of the names of 2-D shapes since they are named as the faces of the 3-D objects being studied.

Activity 1: Whole class activity

Place a variety of objects on your table. As you discuss each object draw it on the board. (Point out the connection between the drawing of the object and the real examples of the object to the class. The drawing is an abstract representation of the object. The drawing is flat but is drawn to show the 3-D nature of the object.)

- Ask the learners to show you objects in the class or on your table that look like a ball or have a ball shape.
  - Revise with them that a ball in mathematics is called a sphere.
  - Ask: *Is a tennis ball a sphere?* (Yes, it is perfectly round.)
  - *What about a rugby ball*? (No, it is not a sphere, it is shaped more like an egg.)
- Ask the learners to show you objects in the class or on your table that look like a box or have a box shape.
  - Revise with them that a box shape in mathematics is called a prism.
  - Ask: *What are the things we know about prisms?* (The opposite faces are the same. The sides are rectangles. All the surfaces are flat.)
  - *Name some prisms you know.* (Triangular prism, rectangular prism, cube.)
- Ask the learners to show you objects in the class or on your table that look like a pyramid or have a pyramid shape.
  - Ask: *What are the things we know about pyramids?* (The bases can be any shape with straight sides. The sides/faces are triangles. All the surfaces are flat. They join at a point at the top.)
- Ask the learners to show you objects in the class or on your table that look like cylinders.
  - Ask: *What are the things we know about cylinders?* (They have circles as the base and the top. The side is curved.)
- Ask the learners to show you objects in the class or on your table that look like cones.
  - Ask: *What are the things we know about cones?* (They have a circle as the base. The side joins at a point at the top.)

Activity 2: Optional: Whole class activity

Learners work in groups of four. Give learners toothpicks/straws, cut out 2-D shapes, clay. Ask learners to build the shapes discussed in Activity 1 above.

As they do this go from group to group asking questions such as:

- *Show me the triangles on the sides of the pyramid.*
- *Do the opposite sides of this prism have to be the same size? Why?* (No, cubes have all the same size square faces but other rectangular prisms can have different rectangular faces.)
- *Can a pyramid have a square face?* (Yes – a square pyramid has a square base.)

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 38: 3-D objects

You need to give learners old newspapers and magazines to find pictures to cut out for this activity.

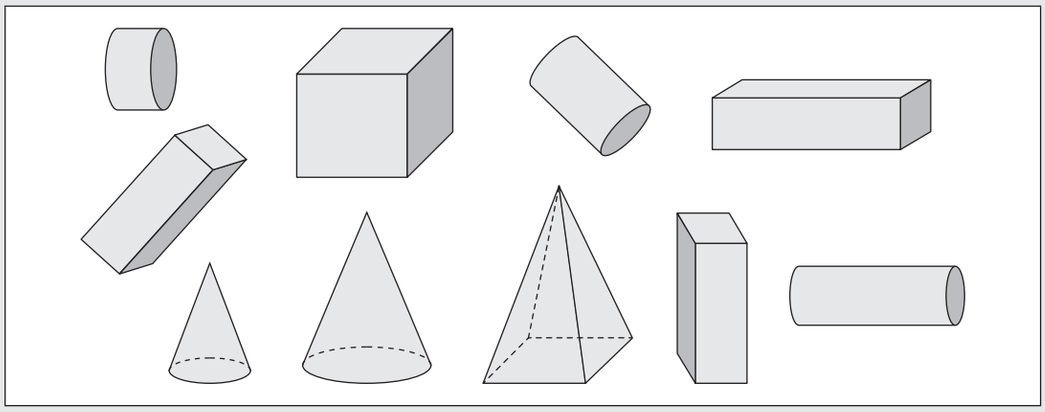
Classwork

1. Find/draw pictures of objects that look like balls, boxes, cones cylinders and pyramids.
   Label the shapes.

Homework

1. Draw each of these shapes in three different positions.
   a) Rectangle
   b) Triangle
   c) Square.

2. Write down the number of 3-D objects that you can see in the block.



   a) Prisms (4)
   b) Pyramids (1)
   c) Cylinders (3)
   d) Cones (3)

LESSON 39: 3-D OBJECTS

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 3.2 3-D objects.

Lesson vocabulary: 2-D shapes, 3-D objects, ball shapes/spheres, box shapes/prisms, cylinders, pyramids, cones, surface, face, circles, triangles, squares, rectangles, roll/slide.

Prior knowledge: Learners should have been taught how to:

- Recognise and name 3-D objects in the classroom and pictures – ball shapes (spheres), box shapes (prisms), cylinders.
- Describe, sort and compare 3-D objects in terms of: size, objects that roll and objects that slide.

Concepts:

- Describe, sort and compare 3-D objects in terms of 2-D shapes that make up the faces of the 3-D objects.
- Observe and build given 3-D objects using concrete materials such as 2-D shapes.

Resources: An assortment of 3-D shapes collected from home (e.g. boxes, cones, cylinders, etc.), 2-D geometrical shapes for building, 3-D objects (see DBE Workbook).

DBE workbook activities relevant to this lesson:

- DBE Worksheet 72 (pp. 16, 17).

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Use the models you have made and answer the questions. Take the box and point to a face. *What shape is this?* (A square.) Do the same with all the faces. Take the pyramids. Point to the faces and ask learners to identify the shapes. *What is the difference between the two pyramids?* Take the cylinder. Point to the faces and ask learners to identify the shapes.

Get learners to construct 3-D representations of 2-D shapes (squares, triangles and rectangles).

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 50s from any number between 0 and 900, e.g. 250, 300, 350, …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	90 ÷ 10 =	9
2.	40 ÷ 10 =	4
3.	30 ÷ 10 =	3
4.	20 ÷ 10 =	2
5.	50 ÷ 10 =	5

	Calculate the following:	Answer
6.	10 ÷ 10 =	1
7.	80 ÷ 10 =	8
8.	60 ÷ 10 =	6
9.	70 ÷ 10 =	7
10.	100 ÷ 10 =	10

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

In Activity 3 of this lesson learners use 2-D shapes to build up 3-D shapes. You need to prepare the shape cut-outs for this activity – refer to the DBE workbook for these shapes.

Activity 1: Whole class activity

Revise names and properties of the following shapes (hold up a model of each one as you talk about it, pointing to the faces, edges and vertices as you speak about them):

- Pyramid: All the surfaces are flat, has a pointed top.
- Cylinder: Two flat round surfaces of the same size, one curved face.
- Prism: Base and top are the same size and shape, all faces are flat.
- Cone: One flat round surfaces, one curved face, and pointed top.
- Sphere: Curved all around, one surface.

Activity 2: Whole class activity

Hold up each 3-D object and discuss the shapes that make the surfaces of the object. Discuss what kind of shapes the surfaces are and whether the surfaces are curved or flat.

- *Which shapes make up the surfaces of a box/cube?* (Squares; flat)
- *Which shapes make up the surfaces of a cylinder?* (Circles and rectangles; circles are flat, rectangles are rounded/curved)
- *Which shapes make up the surfaces of a pyramid?* (Triangles, square/rectangle/triangles; all flat)
- *Which shapes make up the surfaces of a cone?* (Circles, semicircles; semicircles are curved and one circle is flat)
- *Which shapes make up the surfaces of a prism?* (Rectangles, triangles, rectangles, squares; all flat)

Activity 3: Learners work in groups

Give each group of learners the following 2-D shapes to use to build their 3-D shapes. If you do not have enough shapes each group can build just 1 or 2 objects – they can then compare their built objects when they have completed the activity:

- Six identical squares – build a cube.
- Four equilateral (identical) triangles – build a triangular pyramid.
- One square and four identical triangles that can be joined to the sides of the square – build a square pyramid.
- One rectangle and two identical circles – build a cylinder.
- Two identical triangles and three identical rectangles – build a triangular prism.

4. Classwork activity (25 minutes) (See next page)

5. Homework activity (5 minutes) (See next page)

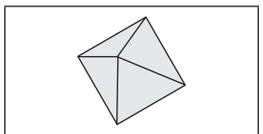
6. Reflection on lesson

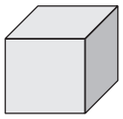
Term 3 Lesson 39: 3-D objects

Classwork

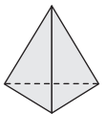
1. Draw and name the following shapes: a cube, a sphere, a cylinder, a cone, a pyramid.

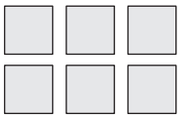
2. Match 3-D object with its surfaces.(a-c, b-a, c-d, d-b)

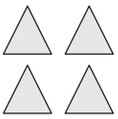
a) 

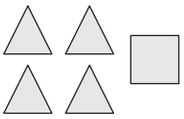
b) 

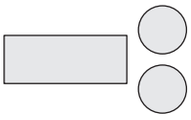
c) 

d) 

a) 

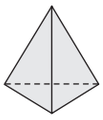
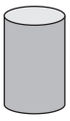
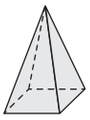
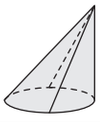
b) 

c) 

d) 

Homework

Write down the number and shapes of the faces for each 3-D object.
The first one has been done for you.

Shape	Number and shapes of the faces
	4 triangles
	(2 circles and 1 rectangle)
	(2 squares and 4 rectangles)
	(4 triangles and 1 square)
	(1 circle and 1 semi-circular shape – not exactly a semi-circle)

LESSON 40: 3-D OBJECTS

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 3.2 3-D objects.

Lesson vocabulary: 2-D objects, 3-D objects, ball shapes/spheres, box shapes/prisms, cylinders, pyramids, cones, curved, flat, surface, roll/slide, describe, sort, compare.

Prior knowledge: Learners should have been taught how to:

- Recognise and name 3-D objects in the classroom and pictures – ball shapes (spheres), box shapes (prisms), cylinders.
- Describe, sort and compare 3-D objects in terms of: size, objects that roll and objects that slide.

Concepts:

- Recognise and name 3-D objects in the classroom and in pictures – ball shapes (spheres), box shapes (prisms), cylinders, pyramids, cones.
- Describe, sort and compare 3-D objects in terms of: flat or curved surfaces.
- Describe, sort and compare 3-D objects in terms of: can roll or slide.

Resources: An assortment of 3-D shapes collected from home (e.g. boxes, cones, cylinders, etc.), Roll or slide worksheet (see *Printable Resources*).

DBE workbook activities relevant to this lesson:

- DBE Worksheet 124 (pp. 124, 125). (Revision of fractions – if there is time.)

Assessment: Refer to the tracker for today's formal/informal oral, practical or written assessment activity.

Remediation: Begin with shapes that roll. Once this concept has been established proceed to shapes that slide. When *slide* is understood then only introduce a variety of objects that can slide and or roll.

Enrichment: See enrichment activity cards.

1. Mental maths

1.1 Counting (5 minutes)

Count forwards and backwards in 25s from any number between 0 and 1 000, e.g. 0, 25, 50, 75, …

1.2 Recall and strategies (10 minutes)

	Calculate the following:	Answer
1.	2 x 6 =	12
2.	3 x 6 =	18
3.	4 x 6 =	24
4.	5 x 6 =	30
5.	10 x 6 =	60

	Calculate the following:	Answer
6.	2 x 7 =	14
7.	3 x 7 =	21
8.	4 x 7 =	28
9.	5 x 7 =	35
10.	10 x 7 =	70

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

This final lesson for term 3 on 3-D objects gives learners another opportunity to consolidate their knowledge and understanding about 3-D objects: their names and properties.

Activity 1: Whole class activity

- Revise the naming of the following objects: pyramid, cylinder, prism, cone, sphere (see Lesson 38 and 39 Activity 1).

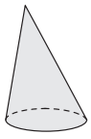
Activity 2: Whole class activity

- Show learners a variety of 3-D objects.

- Revise *curved* and *flat* surfaces with the learners. Ask
  1. *Does this ball have a flat or curved surface?* (Curved)
  2. *Does this box have a flat or curved surface?* (Flat)
  3. *Does this cylinder have a flat or curved surface?* (Curved and flat)
  4. *Show me 2 objects with flat surfaces.* (Prism/box shape)
  5. *Show me 2 objects with curved surfaces.* (Cylinder, sphere/ball)
  6. *Show me 1 object with flat **and** curved surfaces.* (Cylinder/cone)

Activity 3: Whole class activity

- Show learners two types of **pyramids** (triangular and rectangular bases).
- Ask: *Where will we find pyramids in real life?* (Toys, pyramids in Egypt, etc.)
- Let learners examine and discuss:
  - Number of faces. (4 or 5)
  - Shapes of faces. (Triangles/rectangles/squares.)
  - Discuss whether the surfaces of a pyramid are flat or curved. (Flat)
- Show learners a **cone**:
  - *Where will we find cones in real life?* (Ice-cream cones, party hats, etc.)
  - Show them that a cone has one flat and one curved surface.



Activity 4: Learners work in groups

- Give each group of learners a copy of the *Roll or slide worksheet* and the following objects:
  - a variety of objects with curved and flat surfaces, e.g. cube, cone, prism, cylinder, pyramids.
- Ask learners to experiment with rolling and sliding each object to fill the table.

	Draw the object	Can it roll?	Can it slide?
Cube		(No)	(Yes)
Cone		(Yes)	(Yes)
Prism		(No)	(Yes)
Cylinder		(Yes)	(Yes)
Pyramids		(No)	(Yes)
Sphere		(Yes)	(No)

4. Classwork activity (25 minutes) (See next page)

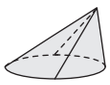
5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 3 Lesson 40: 3-D objects

Classwork

Complete this table in your books.

Object	Name the object e.g. box	Surface
	(Cylinder)	(2) flat and (1) curved surfaces
	(Box/prism)	(6) flat and (0) curved surfaces
	(Ball/sphere)	(0) flat and (1) curved surfaces
	(Pyramid)	(5) flat and (0) curved surfaces
	(Cone)	(1) flat and (1) curved surfaces

Homework

(Answers will vary.)

Draw and write a paragraph about any 3-D object. Write about the following:

1. Name of object.
2. Flat or curved sides.
3. Shapes of sides.
4. Roll or slide.
5. Number of sides.
6. Drawing of object.