

GRADE 3

Mathematics

Teacher Toolkit:
CAPS Aligned Lesson Plans

2021 TERM 1

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). The FSS helped the DBE trial the NECT Maths, Science and language learning programmes so that they could be improved and used by many more teachers. NECT has already begun this scale-up process in its Provincialisation Programme. The FSS teachers remain part of the programme, and we encourage them to mentor and share their experience with other teachers.

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!

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CONTENTS

About the Lesson Plans and Resources	3
Lesson Plan Outline	6
Week 1: Revision Lesson Activities	9
Week 2	18
Lesson 1: Numbers 0 to 99	18
Lesson 2: Place value up to 99	21
Lesson 3: Compare and order numbers up to 99	24
Lesson 4: Numbers between 100 and 200	27
Week 3	30
Lesson 5: Numbers 200 to 300	30
Lesson 6: Numbers 300 to 400	33
Lesson 7: Numbers 400 to 500	36
Lesson 8: Addition on a number line	39
Week 4	42
Lesson 9: Subtraction on a number line	42
Lesson 10: Addition and subtraction	45
Lesson 11: Money	48
Lesson 12: Fives and repeated addition	51
Week 5	54
Lesson 13: Fives arrays	54
Lesson 14: Fives – sharing and grouping	57
Lesson 15: Twos and repeated addition	60
Lesson 16: Twos arrays	63
Week 6	66
Lesson 17: Twos – sharing and grouping	66
Lesson 18: 2-D shapes	69
Lesson 19: 2-D shapes: straight or round edges	72
Lesson 20: Data – tally tables	75
Week 7	78
Lesson 21: Data – bar graphs and tables	78
Lesson 22: Data – tallies and tables	81
Lesson 23: Threes and repeated addition	84
Lesson 24: Threes arrays	87

Week 8	90
Lesson 25: Threes – sharing and grouping	90
Lesson 26: Fours and repeated addition	93
Lesson 27: Fours arrays	96
Lesson 28: Fours – sharing and grouping	99
Week 9	102
Lesson 29: Sharing leading to fractions	102
Lesson 30: Fractions as parts of a group	105
Lesson 31: Fraction shapes	108
Lesson 32: Capacity/volume	111
Week 10	114
Lesson 33: Capacity/volume	114
Lesson 34: Time – calendars	117
Lesson 35: Analogue time	120
Lesson 36: Time passed	123
Week 11	126
Lesson 37: Geometric patterns	126
Lesson 38: Number patterns in fives	129
Lesson 39: Number patterns in threes	132
Lesson 40: Number patterns in fours	135

ABOUT THE LESSON PLANS AND RESOURCES

The lesson plans and resources in this book are part of the Teacher Toolkit for Mathematics Grade 3 Term 1. The other documents in the toolkit are:

- a CAPS aligned Planner, Tracker and Assessment Resources

A variety of printable resources that you can copy for yourself and/or your learners are included at the end of the lesson plans in this book. They include:

- 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.
- Mental mathematics challenge cards:** A pack of eight mental mathematics challenge cards (solutions are provided) are included to allow for routine weekly mental mathematics activities that you can record.
- 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.
- Written tests and memos:** These are provided for each of the assessment tasks for the term.

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 a 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 1 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 can 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.

- 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.
- 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 weeklong 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/inclusive Education](http://www.thutong.doe.gov.za/inclusive%20Education).
- 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	
<p>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.</p>	
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	<p>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.</p> <ul style="list-style-type: none"> 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	<p>A reminder to refer to the tracker for the formal oral, practical or written assessment activity for the day is given here.</p> <ul style="list-style-type: none"> On-going 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 <i>Suggested Assessment Record Sheet</i> that you can use to record your term marks is given in the tracker. This sheet aligns with the SA-SAMS.
Remediation	<p>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.</p>

Lesson Plan Outline

Enrichment	<p>Optional as required. You could use these activities as extra work for fast learners or others interested in doing them.</p> <p>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 at the end of the lesson plan set. 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.</p> <p>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 if they have any.</p> <p>All learners who show an interest in the enrichment activities should be encouraged to work through the cards.</p>
Mental mathematics (15 minutes)	<p>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 recall and basic mathematical strategies.</p> <p>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.</p> <ul style="list-style-type: none"> • 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. <p>There is a set of mental mathematics challenge cards at the end of the lesson plans. 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.</p>
Homework/corrections (15 minutes)	<p>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.</p> <p>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.</p>
Lesson content – concept development (30 minutes)	<p>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.</p> <ul style="list-style-type: none"> • 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 <i>optional</i> – these need only be done if you have sufficient time.

Lesson Plan Outline

Classwork activity (25 minutes)	<p>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).</p> <ul style="list-style-type: none">• 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)	<p>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.</p>
Reflection	<p>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.</p>

WEEK 1: REVISION LESSON

ACTIVITIES

The lesson activities given below are for you to use on the first few days of school when the learners are still settling down and you are not quite ready to start the formal CAPS lesson plans that follow. These revision lesson activities will help you to keep learners occupied in a meaningful way at the beginning of the term and to make observation notes on their mathematical knowledge development. The observation notes that you make will inform your intervention strategies. It will also help you get to know the learners.

Activities are provided relating to eight CAPS topics. You do not need to use all of these activities.

- Choose the ones that you think would be best for your learners to work on in order to revise/recap on work done in the previous year.
- You can do it in the order of your choice.
- For some of the activities you need to work with your learners interactively while learners can do the others independently or in groups.

Keep a notebook where you write your observations on learners' knowledge.

The CAPS baseline framework

Criteria: Can the learner	Yes	No
Write numbers symbols up to 100		
Write number names up to 100		
Count in 2s, 10s and 5s from any given number		
Build numbers up to 99 using 10s and units		
Decompose numbers up to 99 using tens and units		
Add and subtract numbers to 20 mentally		
Add and subtract numbers to 20		
Start to notice that subtraction is the inverse of addition		
Solve addition and subtraction problems in context (money) up to 99		
Count in groups of 10 up to 100		
Read the number symbols 1 to 100		
Recognise halves and quarters		
Describe if a 3-D object can roll or slide		
Describe the edges of a 3-D object		
Describe the position of a 3-D object		
Estimate and measure length using non-standard measures		
Estimate and measure capacity using non-standard measures		
Estimate and measure mass using non-standard measures		
Organise data using a table		
Complete a pictograph		

Topic 1: Number concept

Concepts and skills for today

- Count in **2s**, **5s** and **10s** up to **100**.
- Complete number sequences for counting forwards and backwards in **2**, **5s** and **10s** up to **100**.
- Extend **2s**, **3s**, **4s**, **5s** and **10s** number sequences up to **100**.
- Write numbers in symbols and words up to **100**.

Warm-up activity

Give learners their DBE workbooks. Revise how we should look after a book, how we page through it and where to find the DBE worksheet number and page number. Spend some time discussing why we should look after our books well. Ask learners to complete the number grid on DBE worksheet 3a, Question 1 (p. 6). Remind the learners to work neatly and in the blocks.

Draw a large 100 square on the board (or point to it if you have one hanging on the wall). Call on different learners to come to the front and show you some different numbers.

- Choose pairs of numbers that you can discuss in terms of similarities and differences.
- Show 24. Ask: **How many tens?** (2) **How many units?** (7)
- Show 42. Ask: **How many tens?** (4) **How many units?** (2) **How are 24 and 42 the same?** (They are written using the same two digits.) **How are they different?** (The tens and the units digits are different to each other.)
- Show 16. Ask: **How many tens?** (1) **How many units?** (6)
- Show 61. Ask: **How many tens?** (6) **How many units?** (1) **Which is bigger? 16 or 61?** (61) **Why?** (Because it has 6 tens while 16 only has 1 ten.)
- Show 70. Ask: **How many tens?** (7) **How many units?** (0)
- Show 17. Ask: **How many tens?** (1) **How many units?** (7) **How are 70 and 17 different?** (They sound the same but they are different numbers.)
- Etc.

Activities

Activity	Can the learners	Observation
1. Ask the learners to say all the numbers in the yellow squares on DBE worksheet 3a, Question 1 (p. 6) (counting in 4s).	<ul style="list-style-type: none"> • Write number symbols up to 100? • Write number names up to 100? (See classwork activity.) 	
2. Ask learners to cut out sheet 1 (counters) and sheet 2 (number grid) from the back of the DBE workbook.	<ul style="list-style-type: none"> • Count in 2s, 10s and 5s from any given number? 	
3. On your 100 square worksheet, starting from 1, count 10 squares and place the counter on the 10th square. Count on 10 squares again and place another counter. Do the same until you reach the end. Now let's say the numbers aloud where the counters are. Ask: What do you notice? (We are counting in 10s.) (DBE worksheet 3b, p. 8.)		
4. Ask learner to start from a given number, e.g. 9, and count on 10, then place the counter. Each time count on 10 and place the counter. They continue this pattern till the end of the worksheet. Ask: When we count in this way are we counting on in 10s? (Yes, we can count in 10s from any number.)		
5. Do the same counting on 2s and 5s.		

Topic 2: Place value

Concepts and skills for today

- Decompose 2-digit numbers up to **99** into multiples of 10 and units/ones.
- Ordering numbers up to **99**.

Warm-up activity

Ask learners to cut out the number cards (flard cards) from cut-out sheet 3 at the back of the DBE workbook in the cut-out section. Tell learners that they will use these cards often during this term and should look after them and place them in a container or bag to keep them safe. Ask the learners to sort the cards by placing the units in one group and the tens in another group.

Use your own set of flard cards to revise place value in 2-digit numbers with the class. Make your set large enough so that learners at the back of the class can also read them easily.

- Hold up a number, such as **79**, using flard cards. Ask different learners questions to revise place value.
- **What is the value of this number?** (79)
- **What is the value of the 7 in the number?** (70)
- **What is the value of the 9 in the number?** (9)
- **What is the tens digit in the number?** (7)
- **What is the units digit in the number?** (9)
- **Give me another 2-digit number.** (Ask different learners to volunteer. One might say 54. You then discuss the place value and values of the digits in the number 54 with the class.)
- **Arrange from smallest to biggest: 62, 26, 43, 34.** (Use tens and units to help you decide on the order. 26, 34, 43, 62.)
- Etc.

Activities

Activity	Can the learners	Observation
1. Ask the learners to build the numbers in DBE worksheet 4, question 2 (p. 10) using their number cards. Example. $25 \rightarrow \begin{array}{ c c } \hline 2 & 0 \\ \hline \end{array} \quad \begin{array}{ c c } \hline 5 & \\ \hline \end{array} \rightarrow \begin{array}{ c c } \hline 2 & 5 \\ \hline \end{array}$	<ul style="list-style-type: none"> • Build numbers up to 99 using tens and units? 	
2. Ask the learners to break down the numbers in DBE worksheet 4, question 2 (p. 10), into tens and units using base ten blocks and number cards to support their answers. Example: $25 = 20 + 5 = 25$ (Learners might make a drawing to support their answers.)	<ul style="list-style-type: none"> • Decompose numbers up to 99 using tens and units? 	

Topic 3: Addition and subtraction

Concepts and skills for today

- Solve word problems in context (money) involving addition and subtraction up to **99**.
- Addition and subtraction up to **99**.
- Write addition and subtraction number sentences using +, −, = and □.
- Double and halve numbers up to **99**.

Warm-up activity

Write the two operation symbols (+ and −) on the board and a few 2-digit numbers. Ask two groups of learners to come to the front – a few learners in each group.

- Ask the class: **When we count altogether, then we add.** (Tell them to stand together and work out how many of them there are altogether.) **When we count altogether, then we add.**
- **So, adding means putting everything together to find the total.**
- **What is the symbol for addition? (+) Show me the symbol addition by writing it in the air.**
- **Let's add 49 and 34.** Ask one learner from the front to show the working on the board. The others in front can help. ($49 + 34 = 83$)
- Learners from the front go and sit at their desks.
- Ask: **What do we do when we subtract?** (We take away from a given number.)
- **What is the symbol for subtraction? (−) Show me the symbol subtraction by writing it in the air.**
- **Let's subtract 51 from 87.** Ask a learner to show the working on the board. ($87 - 51 = 36$)
- Talk about the way in which learners have shown their working and the way in which place value comes into play when you add and subtract. You have to start adding/subtracting from the units position in the number. The units work together and the tens work together, but sometimes we have to 'carry' or 'borrow' depending on the numbers in the question.

Learners work in pairs to solve the word sum from DBE worksheet 5, question 1 (p. 12). Remind learners how to behave when working in pairs. Discuss the ways in which learners will solve the word sum. You could use the following questions: **What is the question?** (How many packets does Lebo sell?). **What are the numbers?** (19 packets and 13 packets) **What is the key word?** (*left, how many*) **What operation must I use?** (*subtraction/ minus*). After the discussion the learners should write a number sentence to express the solution of the problem: $19 - 13 = \square$. They should use the number sentence to find the solution to the problem.

Activities

Activity	Can the learners	Observation
1. Do the number drill from DBE worksheet 5, question 2 (p. 12) orally with your learners, and then write the answers on the board. Ask learners: How did you get the answer? Encourage them to explain how they worked out the answer mentally.	<ul style="list-style-type: none"> • Add and subtract numbers to 20 mentally? 	
2. Work through DBE worksheet 5, question 3 (p. 12) orally with your learners. Ask learners to give you other family facts (in pairs).	<ul style="list-style-type: none"> • Add and subtract number to 20? • Start to notice that subtraction is the inverse of addition? 	
3. Learners solve DBE worksheet 8, questions 1, 2 and 4 (pp. 18 and 19) in pairs. Allow a few pairs to explain how they got their answers.	<ul style="list-style-type: none"> • Solve addition and subtraction problems in context (money) up to 99? 	

Topic 4: Repeated addition leading to multiplication

Concepts and skills for today

- Estimate and count out **200** objects reliably in groups.
- Count in **1s, 2s, 5s and 10s**.
- Complete number sequences of counting in **1s, 2s, 5s and 10s** up to **200**.
- Solve word problems in context involving repeated addition.
- Write repeated addition number sentences using +, = and □
- Write multiplication number sentences using ×, = and □.

Warm-up activity

Write the two operation symbols (+ and x) on the board.

- Ask the class: **What do these symbols mean?** (+ means add and x means multiply.)
- **What is the difference between + and x?** (Discuss the meaning of the signs and what we do when we do each of the operations. Use examples to demonstrate what you are saying.)
- For example: + means add. When we add we combine two numbers at a time and we find the sum of those two numbers. We find how much we have altogether. We can also add more than 2 numbers together, but to do this we add them in pairs.
- If we just had a few items, this would mean we count how many we have altogether. But if we are working with bigger numbers, we work with the numbers and place value to find out how much we have altogether. $4 + 5 = 9$; $34 + 61 = 95$; $17 + 27 = 44$; etc.
- x means multiply. When we multiply, we also find out how much we have altogether. But this involves multiplication of two numbers which can also be written as repeated addition. $4 \times 5 = 5 + 5 + 5 + 5 = 20$. We don't have to write the repeated addition – it's better and quicker, once we know it, just to be able to say $4 \times 5 = 20$.
- Motivate your learners. Explain to them: **In Grade 3 you are going to learn how to add 3-digit numbers and multiply 2-digit numbers. You need to know your basic bonds and multiples really well to do this – start learning them now!**

Learners work in groups of **4**. Learners write their names in the table from DBE worksheet 1, question 2 (p. 2). They then estimate and count the stars shown in DBE worksheet 1, question 1 (p. 2). Learners should complete the table. Have a class discussion in which learners share their estimations, counts and the differences between these numbers. In the same groups of four, learners choose a character from question 3 on p. 2. They should discuss the different ways the stars have been counted.

Activities

Activity	Can the learners	Observation
1. Learners answer the questions in DBE worksheet 2, questions 1 and 2 (p. 4). Ask the learners: What is an easy way to count the pumpkins? Did you all count it in this way? How many bags could you fill with pumpkins? How did you work this out?	<ul style="list-style-type: none"> • Count in groups of 10 up to 100? 	
2. Ask the learners to go to DBE worksheet 2, question 3. Ask: How many bags with pumpkins do you see in question 3? There are 3 bags with 10 pumpkins in each bag. We can also say there are 3 groups of 10 pumpkins. We can write it as an addition number sentence: $10 + 10 + 10 = \square$. Explain that since we also say that this is 3 groups of 10, we can write it in a number sentence as: $3 \times 10 = \square$.	<ul style="list-style-type: none"> • Read the number symbols 1-100? 	

Topic 5: Shapes and fractions

Concepts and skills for today

- Name 2-D shapes (triangle, circle, square and rectangle).
- Describe 2 shapes using size and sides.
- Recognise and use fractions as part of a whole.
- Recognise and use fractions a part of a set.
- Recognise fractions in diagrammatic form.
- Name fractions as one half and one quarter (unitary fractions).

Warm-up activity

Draw a triangle, circle, square and rectangle on the board, and ask learners to name each shape.

- Call on several individual learners to name the shape. While you do this, try to see if all of the learners are able to identify the shapes.
- Rub off the shapes that you have drawn and call up several learners to come and draw shapes – there can be more than one of each shape drawn. Each learner must be able to name the shape they have drawn.
- Ask some of the other learners to tell you what they notice about the different shapes that have been drawn: **How are they the same and how are they different?** (The triangle, square and rectangle all have straight sides. The circle has a curved side. The triangle, square and rectangle have different numbers of sides – count them. Etc.)
- Give the learners some time to do the activity on 2-D shapes in DBE worksheet 11, Question 2 (p. 24). Make this a fun activity where groups compete against each other counting the shapes. Learners then go to Question 4 (p. 25) and describe each shape in terms of straight or curved sides.

Activities

Activity	Can the learners	Observation
1. Ask learners to identify the shapes that are divided into halves in DBE worksheet 7, question 1 (p. 16). Ask: What does it mean to divide a shape into halves? Look at question 2. Ask: What does it mean to divide a shape into quarters?	<ul style="list-style-type: none">• Recognise halves and quarters?	
2. Ask learners to identify the shapes in DBE worksheet 7, questions 3 and 4. Ask: How many squares are there? What is a half of 6 squares? Do the same with the circles and rectangles.	<ul style="list-style-type: none">• Read the number symbols 1-100?	

Topic 6: 3-D objects

Concepts and skills for today

- Recognise 3-D objects: balls (spheres), boxes (prisms) and cylinders.
- Describe 3-D objects.
- Describe the position of the 3-D object.

Warm-up activity

Collect as many different 3-D objects as you can to use in this lesson. You will be able to use them many times in your lessons so it is worth the effort taken in collecting the shapes. Learners will understand and remember the names and properties of the shapes much better if they have seen real examples of these shapes.

- Give each group of learners at least one ball shape (sphere), one cylinder and one box (prism) shape.
- Ask the learners in their groups to hold and feel the edges and vertices of the shapes so that they can tell you about the properties of the shapes. Practice the vocabulary with the learners and try to see who already knows it and who is struggling.
- **Which shapes have straight edges?** (prisms)
- **Which shapes have round edges?** (sphere and cylinder)
- **Which shapes have pointed corners (vertices)?** (prism) **How many?** (Depends on the prism you gave them.)
- **What is the name of each of your shapes?** (Name them one by one.)
- Etc.

Ask the learners to go to DBE worksheet 10 (p. 22), and ask them to describe the pictures. As the learner says the words **ball** and **box** write them on the board. Ask the learners to look at question 1 and identify all the balls and boxes. Ask: Do you see any other objects? (cylinders) **Do you see any cylinders in the classroom?** (Identify other shapes in your classroom.)

Activities

Activity	Can the learners:	Observation
1. For this activity you need a ball, a box and a cylinder (cool drink can). Revise characteristics of shapes with learners by showing them how a box can slide, a cylinder can roll and slide and a ball can roll.	<ul style="list-style-type: none"> • Say if a 3-D object can <i>roll</i> or <i>slide</i>? 	
2. Hold up a box. Ask: What is an edge of a shape? Write <i>curved</i> and <i>straight edge</i> on the board. Ask: Which words can be used to describe a ball/box/cylinder? Discuss.	<ul style="list-style-type: none"> • Describe the <i>edges</i> of a 3-D object? 	
3. Ask learners to describe the <i>position</i> of the balls in relation to the boxes in DBE worksheet 10, question 4 (p. 23). Discuss.	<ul style="list-style-type: none"> • Describe the <i>position</i> of a 3-D object? 	

Topic 7: Measurement

Concepts and skills for today

- Estimate, measure, compare, order and record length using non-standard measures.
- Estimate, measure, compare, order and record mass using non-standard measures.
- Estimate, measure, compare, order and record capacity using non-standard measures.

Warm-up activity

Prepare a collection of some objects for this lesson that you can use to talk about length, mass and capacity to revise the vocabulary. (For example, a large empty bottle; a large full bottle and cup; some books of different thickness and size; etc.) You will first do a quick revision of some of the vocabulary and then allow your learners to do the group work, using the objects that you have used while revising the vocabulary.

Place a few different objects on the tables of each group of learners. Ask the learners to show you some of the objects according to different criteria that you name. For example:

- **Show me a full bottle. Show me an empty bottle.** (This is the vocabulary of capacity.)
- **Show me two books – one should be heavier and one lighter than the other.** (This is the vocabulary of mass.)
- **Please can two learners in your group stand up – one shorter and one taller than the other.** (This is the vocabulary of length.)
- Etc.

Tell learners that for this lesson you are going to divide them into three groups. The groups will each work on a different measuring concept and then rotate. The topics are length, capacity and mass. While they are working in different groups, you need to move between the groups to support them.

Activities

Tell the learners that they are going to do hands-on activities. You need to recap with learners what to do when they do hands-on activities: The table describes the three group stations. (Learners rotate in groups so that each group has a chance to do all of the activities.)

Activity	Can the learners	Observation
1. Group 1: Give the group an A4 page and ask them to use a pencil to measure the lengths of the sides of the page. Learners first estimate and then measure. They should record their findings.	<ul style="list-style-type: none">• Estimate and measure length using non-standard measures?	
2. Group 2: Give the group an empty 2-litre bottle of water and a cup (250 ml). Ask: How many cups do you think will fill the bottle? (Do not use words such as <i>litres</i> and <i>millilitres</i> .) Learners first estimate and then measure. They should record their findings.	<ul style="list-style-type: none">• Estimate and measure capacity using non-standard measures?	
3. Group 3: Give the group a ruler and a book and ask them to make a balance scale. (You might have to help.) Give them two objects with a similar mass. Ask them to estimate which object is heavier. Learners place the two objects on the balance scale to check their estimation. They record their findings.	<ul style="list-style-type: none">• Estimate and measure mass using non-standard measures?	

Topic 8: Data handling

Concepts and skills for today

- Collect and organise data.
- Complete a table.
- Draw a pictograph.
- **Answer** questions about data.

Warm-up activities

Ask the learners to go to DBE worksheet 16, question 1 (p. 34). Ask them to read the story and then read it through together with the class.

- Ask the learners to call out their shoe sizes one by one and write these on the board.
- Ask: **Now that we have collected the shoe sizes, how should we sort them?**
- Give learners enough time to think how they will organise the data, and then discuss their ideas.

Activities

Activity	Can the learners	Observation
1. Following on from the warm-up activity, learners should now organise the data by filling in the table on DBE worksheet 16, question 1 (p. 34). After the learners have filled the table, ask them, How did the table help you to organise the data? Discuss their ideas as a class.	<ul style="list-style-type: none">• Organise data using a table?	
2. Tell the learners that Mrs Khoza's class started the pictograph for them on DBE worksheet 16, question 2 (p. 35). Ask: Do you know what a pictograph is? Explain that a pictograph is a way of representing data (drawing a graph to show what data you have collected). Ask: What does the picture of the shoe = to one learner mean? It is the key of the pictograph. Explain the meaning and use of a key in a pictograph.	<ul style="list-style-type: none">• Complete a pictograph?	

WEEK 2

LESSON 2: PLACE VALUE UP TO 99

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.3 Number symbols and number names, 1.5 Place value

Lesson vocabulary: Place value, digit, number, tens, units, greatest

Prior knowledge:

In Grade 2 the learners should have learnt how to:

- Build up and break numbers up to 99.

Concepts:

- Recognise the place value of numbers to 99.

Resources: Flard cards (see *Printable Resources*), base ten blocks (see *Printable Resources*)

DBE workbook activities relevant to this lesson:

- DBE worksheet 18 (pp. 38 and 39)

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

Remediation: For learners who struggle with this area of work, do more revision with concrete apparatus. Ask learners to show the following numbers with their base ten blocks (see *Printable Resources*): 14, 26, 60, 7 and 99.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards in 1s from any number between **0** and **200**.
- Count backwards in 1s from any number between **200** and **0**.

1.2 Recall and strategies (10 minutes)

Write down the numbers from the smallest to the greatest.

		Answer			Answer
1.	8, 5, 9	5, 8, 9	6.	39, 9, 29	9, 29, 39
2.	14, 11, 15	11, 14, 15	7.	34, 43, 33	33, 34, 43
3.	21, 19, 23	19, 21, 23	8.	29, 11, 37	11, 29, 37
4.	40, 14, 41	14, 40, 41	9.	50, 38, 47	38, 47, 50
5.	24, 42, 41	24, 41, 42	10.	24, 31, 9	9, 24, 31

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

- Place flard cards up to **99** on the learners' desks.
- Ask the learners to show you **43**. Ask the learners to show you **53**.
- Ask the learners what they did to change the **43** into **53** and why. (Possible answer: **I swopped the 40 card for a 50 card because I wanted to change the tens digit from a 5 to a 4. I know that 40 is ten less than 50.**)
- Do the same with **75** and **55/63** and **66/40** and **30**.

Activity 2: Whole class activity

- Revise breaking down of numbers into tens and units – writing out the tens and units.
- **53 = 5 tens and 3 units.**
- **70 = 7 tens and 3 units.**
- Etc.

Activity 3: Whole class activity

- Write 72 on the board and ask:
 - **What is the value of the 7 in 70? (7 tens or 70)**
 - **What is the value of the 2? (2 units or 2)**
- Do the same with **60, 46, 78**.

Activity 4: Learners work in groups

- Ask the learners to show the following numbers using flard cards and to give you the total value of the number they have shown:
 - **8 tens and 3 units (83)**
 - **6 tens and 1 unit (61)**
 - **9 tens and 3 units (93)**
 - Etc.

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

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

6. Reflection on lesson

Term 1 Lesson 2: Place value up to 99

Classwork

- Copy and complete the following.
 - $45 = (40) + (5)$
 - $45 = (4) \text{ tens} + (5) \text{ units}$
 - $5 \text{ units} + 3 \text{ tens} = (35)$
 - $3 \text{ tens} + 0 \text{ units} = (30)$
 - $0 \text{ tens} + 8 \text{ units} = (8)$
 - $(2) \text{ tens} + (4) \text{ units} = 24$
 - $(7) \text{ tens} + (0) \text{ units} = 70$
 - $(0) \text{ tens} + (8) \text{ units} = 8$
- What is the value of the underlined digit?
 - $\underline{7}5$ (7) tens = (70)
 - $3\underline{4}$ (4) units = (4)
 - $9\underline{9}$ (9) units = (9)

Homework

- Copy and complete the following.
 - $38 = (30) + (8)$
 - $64 = (6) \text{ tens} + (4) \text{ units}$
 - $3 \text{ units} + 9 \text{ tens} = (39)$
 - $4 \text{ tens} + 0 \text{ units} = (40)$
 - $(1) \text{ ten} + (7) \text{ units} = 17$
 - $(7) \text{ tens} + (0) \text{ units} = 70$
- What is the value of the underlined digit?
 - $\underline{6}4$ (6) tens = (60)
 - $\underline{5}$ (5) units = (5)

LESSON 3: COMPARE AND ORDER NUMBERS UP TO 99

Teacher's notes

CAPS topics: 1.1 Count objects 1.2 Count forwards and backwards 1.4 Describe, compare and order numbers.

Lesson vocabulary: Smaller than, greater than, more than, less than, equal, comparing, ordering, biggest, largest, smallest, least, bigger, greatest, number line, forwards, backwards.

Prior knowledge:

In Grade 2 the learners should have learnt how to:

- Compare whole numbers up to 99 using smaller than, greater than, more than, less than and is equal to.
- Order whole numbers from 0 to 99 from smallest to greatest, and greatest to smallest.

Concepts:

- Describe and compare whole numbers up to 99 using smaller than, greater than, more than, less than and is equal to.
- Describe and order whole numbers up to 99 from smallest to greatest, and greatest to smallest.

Resources: Base ten blocks (see *Printable Resources*) (remediation only), blank 100 square (see *Printable Resources*)

DBE workbook activities relevant to this lesson:

- DBE worksheet 17 (pp. 36 and 37).

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

Remediation: Give learners base ten blocks (see *Printable Resources*). Ask them to show you **39** and then **36**. Ask them which group is *smaller*. (Possible answer: **Thirty-six blocks, because this group has less ones/units than that group.**) Do the same with the numbers that follow by asking which numbers are *bigger* or which numbers are *smaller* (39 and 59, 34 and 43, 19 and 91).

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards in 1s from any number between **110** and **300**.
- Count backwards in 1s from any number between **300** and **110**.

1.2 Recall and strategies (10 minutes)

What is one more than...?

		Answer			Answer
1.	16	17	6.	33	34
2.	25	26	7.	78	79
3.	45	46	8.	91	92
4.	66	67	9.	89	90
5.	49	50	10.	100	101

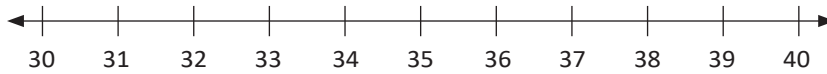
2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

Draw a number line from 30, 31, 32...40 on the board.



Circle number **34**. Ask the learners to read the number. Ask them to give you a number that is:

- Smaller than **34** (possible answer: **33**) and then a number that is bigger than **34** (possible answer: **35**).
- Ask: **Are those the only two answers?** (No, those are not the only two answers. Thirty, 31 and 32 are smaller than 34, and 36, 37, 38, 39 and 40 are *greater than* 34.)
- Cover the number line. Write **30 to 40** randomly on the board. Ask the learners to give you the numbers from the *smallest* to the *greatest*. (Uncover the number line for learners to check their answers.) Then do the same from the greatest to the smallest.

Activity 2: Learners work in groups

- Give each group of learners a blank 100 grid.
- Write **42** and **24** on the board.
- Ask learners to place these numbers on a blank grid.

			24						
	42								

- Ask learners how they decided on where to put the numbers. (Their explanations must describe the values of the *tens* digits and the *unit's* digits and how this helped them find the position on the grid.)
- Do the same with **71** and **17**, **38** and **83**, **45** and **54**.
- Compare the numbers in terms of their make-up of tens and units.

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

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

6. Reflection on lesson

Term 1 Lesson 3: Compare and order numbers up to 99

Classwork

1. Which number is smaller? 92 or 29? (29)
Why do you say so? (92 has 9 tens, and 29 has 2 tens. 9 tens are more than 2 tens)
2. Which number is greater? 28 or 82? (82)
Why do you say so? (28 has 2 tens and 82 has 8 tens. 2 tens are less than 8 tens)
3. Write these numbers from the smallest to the biggest: 34, 37, 35, 36, 33
(33, 34, 35, 36, 37)
4. Which answer is smaller? $30 + 4 = (34)$ or $4 + 30 = (34)$?
What do you notice? (They are both the same.)
5. Give two numbers that are more than 167 but less than 175. (various e.g. 169, 174)
6. Copy this table into your Mathematics book and complete.

	one more	one less	ten more	ten less
53	(54)	(52)	(63)	(43)
67	(68)	(66)	(77)	(57)
89	(90)	(88)	(99)	(79)
30	(31)	(29)	(40)	(20)

Homework

1. Fill in $>$, $<$ or $=$
 - a) 18 ($<$) 81
 - b) 45 ($=$) 45
 - c) 73 ($>$) 37
2. Write the numbers from the greatest to the smallest: 62, 26, 2, 20, (62, 26, 20, 2)
3. Which number is smaller? 73 or 79? (73)
4. Which number is greater? 59 or 50? (59)
5. Which number is greater? 10 tens or 1 hundred? (1 hundred)

LESSON 4: NUMBERS BETWEEN 100 AND 200

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards 1.3 Number symbols and number names

1.5 Place value

Lesson vocabulary: Number name, number word, number symbols, hundreds, tens, units, place value, build up, break down

Prior knowledge:

In Grade 2 the learners should have learnt how to:

- Identify, recognise, read and write number symbols 0 to 200.

Concepts:

- Recognise, identify, read and write number symbols from 100 to 200.

Resources: Number board (101–200), flard cards (see *Printable Resources*)

DBE workbook activities relevant to this lesson:

- DBE worksheet 33 (pp. 76 and 77).

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

Remediation:

- Prepare a hand-out for each learner with the numbers **113, 114, 115...119 and 130,140, 150...190** written randomly on the page. Call these numbers out in no particular order and ask learners to point to the relevant number. Then point to the numbers on the board and get learners to read the numbers. Ask them to write down what they have read.
- Learners who still need to use their flard cards (see *Printable Resources*) can do so.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards in 1s from any number between **165** and **400**.
- Count backwards in 1s from any number between **400** and **165**.

1.2 Recall and strategies (10 minutes)

What is one less than...?

		Answer			Answer
1.	16	15	6.	33	32
2.	25	24	7.	78	77
3.	45	44	8.	91	90
4.	66	65	9.	89	88
5.	49	48	10.	69	68

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

- Place a 101–200 number board and some counters on each group's table.
- Talk to the class about 3-digit numbers (hundreds). In this lesson you are formally introducing hundreds.
- Ask the learners to count from: **101 to 110, 116 to 124, 129 to 135, 146 to 156 and 189 to 199.**
- Ask learners to put a green counter on number **144**, then a blue counter on **104** and a red counter on **141**. (If you don't have coloured counters don't worry about the colours, just use the counters that you have.)
- Talk about the place values in the three different places – there are tens and units which they should be familiar with from Grade 2, but now there is a third place, the hundreds place. Numbers in that place are hundreds. All of the numbers that you are working with in this lesson have a 1 in the hundreds place and so the value of the digit in the hundreds place is 100.
- Take note if learners recognise the number symbols and their values according to their place.
- Do the same with **171, 117, 170, 107 and 177** using a different colour for each number. (If you have different coloured counters, use them as it helps with checking.)
- Ask learners to tell you the values of the digits in the different places each time.
- Take special care with the number 107. Allow learners the chance to say it out loud: **one hundred and seven** (not 'ten seven'). Make up other similar numbers to give learners more practice.

Activity 2: Whole class activity

- Write the following number symbols and names randomly on the board: **161, 114, 175, 137, 149, 109** and **190 one hundred and sixty-one, one hundred and fourteen, one hundred and seventy-five, one hundred and thirty-seven, one hundred and forty-nine, one hundred and nine and one hundred and ninety**. (Prepare flash cards with these numbers and use them in this activity if you are able to. This will save time in the lesson.)
- Ask the learners to match the number symbols with the number names. Make sure that learners read the numbers correctly – they should read the total values, not just the face values of the digits that they see.

Activity 3: Whole class activity

- Write the following on the board and ask the learners to build up or break down the numbers as required. Here learners are using expanded notation – writing out the number using a sum of hundreds, tens and units.
- Each time ask the learners to show the numbers using their flash cards to help them to write the expanded notation.

$$\begin{array}{ll} 200 + 30 + 4 = \dots & (234) \\ 200 + 40 + 9 = \dots & (249) \\ \dots + \dots + \dots = 276 & (200 + 70 + 6) \\ 100 + \dots + 3 = 173 & (70) \\ 40 + 3 + 200 = \dots & (243) \end{array}$$

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

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

6. Reflection on lesson

Term 1 Lesson 4: Numbers between 100 and 200

Note that number 3 in this activity goes beyond the number range – it anticipates the next lesson in which 200s are introduced. You might allow your learners to skip this question if you think it will confuse them.

Classwork

- Write the following as number symbols:
 - one hundred and eight (108)
 - one hundred and eighteen (118)
 - one hundred and eleven (111)
- Write the following as number names:
 - 106 (one hundred and six)
 - the number between 178 and 180 (one hundred and seventy-nine)
 - the number that is one more than 199 (two hundred)
 - the number that is one less than 100 (ninety-nine)
- Complete:
 - $200 + 50 + 4 = 254$
 - $200 + 60 + 5 = 265$
 - $200 + 70 + 9 = 279$
 - $(200) + (80) + (1) = 281$
 - $(200) + (0) + (2) = 202$

Homework

- Write the following as number names:
 - 145 (one hundred and forty-five)
 - 106 (one hundred and six)
- Write the following as number symbols:
 - One hundred and fifty-four (154)
 - One hundred and twelve (112)
 - One hundred and one (101)

WEEK 3

LESSON 5: NUMBERS 200 TO 300

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.3 Number symbols and number names, 1.5 Place value

Lesson vocabulary: Number symbols, number names, tens, units, digit, backwards, forwards, match, more than, before, less than, even number, most, least

Prior knowledge:

In Grade 2 the learners should have learnt how to:

- Recognise, identify, read and write number symbols up to 300.

Concepts:

- Recognise, identify, read and write number symbols from **200** to **300**.
- Recognise, identify, read and write number names from **200** to **300**.

Resources: Number cards and number name cards 200–300, flard cards (see *Printable Resources*)

DBE workbook activities relevant to this lesson:

- DBE worksheet 23 (pp. 52 and 53).

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

Remediation: For learners who struggle to read three-digit numbers, use flard cards (see *Printable Resources*). Ask the learner to make a number, e.g. **two hundred and sixty-eight**. Expand the cards. Point to the hundreds, tens and units, asking each time what the learner sees. Ask the learner to write the number using symbols. The learner should write **268**. Point to each digit (in each place) asking for the total value of the numbers according to their place values (uncover the flard cards to show the total values if necessary). Ask the learner to read the number name.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards in 10s from any number between **100** and **200**, e.g. **120, 130, 140...** and **121, 131, 141...** etc.
- Count backwards in 10s from any number between **100** and **200**.

1.2 Recall and strategies (10 minutes)

Write down the next numbers in order from the most to the least.

		Answer			Answer
1.	8, 5, 9	9, 8, 5	6.	134, 136, 135	136, 135, 134
2.	14, 11, 15	15, 14, 11	7.	156, 158, 157	158, 157, 156
3.	21, 19, 23	23, 21, 19	8.	134, 143, 123	143, 134, 123
4.	12, 14, 10	14, 12, 10	9.	179, 199, 189	199, 189, 179
5.	67, 50, 82	82, 67, 50	10.	129, 130, 131	131, 130, 129

2. Homework/corrections (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Learners work in groups

- Place a few different 3-digit numbers with values between 200 and 300 written on cards randomly on each group's table.
- Ask the learners questions about their cards, e.g. **Which group has number 245?** (Be careful to say the number correctly and do not say two forty-five or two four five.) Ask the group/learners to lift up the card to show the class. Ask the rest of the class if the card is correct. Ask: **How do you know? Can anybody write the number name on the board? Is this correct?**
- Ask questions until each group has had the chance to respond to a question relating to at least one card on their desks.

Activity 2: Whole class activity

- Ask learners to write the following numbers on their whiteboards/scrap paper.
- For each pair of numbers: Discuss the difference in the values of the two numbers using place value to speak about the difference between the digits in each of the three places and how the position of the digits affects the value of the number being shown.
 - **219** and **290**
 - 219 and 291, etc.
 - the number that is **five** more than **160** (165)
 - the number just before **300** (299)
 - **ten** less than **271** (261)

Activity 3: Whole class activity

- Ask learners to write down any numbers between 200 and 300, guided by the following prompts.
- Each time discuss the answers as there are MANY different options. Learners can use place value to talk about their different choices of examples.
- The number should have:
 - **6** as the *units* digit (various options, e.g. 206, 266, 296)
 - no *tens* (various options, e.g. 200, 201, 202)
 - no *units* (various options, e.g. 200, 210, 220)
 - a *ten* that is an even number (various options, e.g. 220, 240)
 - etc.

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

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

6. Reflection on lesson

Term 1 Lesson 5: Numbers 200 to 300

Classwork

- Write the following as number names:
 - 274 (two hundred and seventy-four)
 - 290 (two hundred and ninety)
 - the number between 241 and 243 (two hundred and forty-two)
 - the number that is one more than 215 (two hundred and sixteen)
 - the number that is one less than 297 (two hundred and ninety-six)
- Write the following as number symbols:
 - two hundred and eighteen (218)
 - two hundred and eighty (280)
 - two hundred and eight (208)
- Complete the following
 - $200 + 30 + 6 =$ (236)
 - $200 + (70) + 4 =$ 274
 - $(200) + (10) + (1) =$ 211

Homework

- Write the following as number names:
 - 208 (two hundred and eight)
 - 219 (two hundred and nineteen)
 - 288 (two hundred and eighty-eight)
- Write the following as number symbols:
 - the number one less than two hundred and forty (239)
 - the number ten less than two hundred and forty (230)
 - the number ten more than two hundred and forty (250)
 - the number twenty more than two hundred and forty (260)
 - the number thirty more than two hundred and forty (270)

LESSON 8: ADDITION ON A NUMBER LINE

Teacher's notes

CAPS topics: 1.1 Count objects ,1.2 Count forwards and backwards, 1.6 Problem-solving techniques

Lesson vocabulary: Number line, add, jumps, next to, middle, left, right, tens (10s), ones (1s), number sentence, multiple, bigger, first, equidistant, between, calculate, forwards.

Prior knowledge:

In Grade 2 the learners should have learnt how to use the following techniques when performing calculations:

- Building up and breaking down numbers.
- Number lines.

Concepts:

- Use a number line to add on in 10s and 1s.

Resources: Number lines (see *Printable Resources*)

DBE workbook activities relevant to this lesson:

- DBE worksheet 19 (pp. 40 and 41).

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

Remediation: For learners who struggle with this concept, work with simpler numbers, e.g. $21 + 10 = \dots$, $21 + 30 = \dots$, $21 + 50 = \dots$, etc. Only after addition with multiples of 10 has been established, introduce addition of numbers with 10s and 1s.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards in 10s from any number between **100** and **400**, e.g. **187, 197, 207**.
- Count backwards in 10s from any number between **400** and **100** e.g. **285, 275, 265...**

1.2 Recall and strategies (10 minutes)

Calculate

		Answer			Answer
1.	$51 + 10 =$	61	6.	$77 + 10 + 1 =$	88
2.	$51 + 10 + 1 =$	62	7.	$63 + 10 =$	73
3.	$43 + 10 =$	53	8.	$63 + 10 + 1 =$	74
4.	$43 + 10 + 1 =$	54	9.	$48 + 10 =$	58
5.	$77 + 10 =$	87	10.	$48 + 10 + 1 =$	59

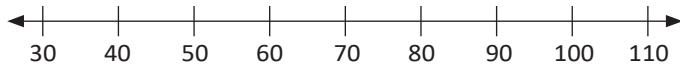
2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

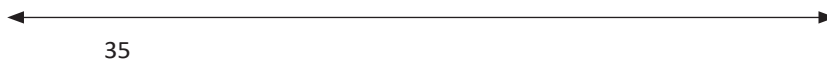
- Draw a number line on the board. Point out the two arrowheads as you draw the number line.
- Mark the number line in equidistant markings, and write the numbers in multiples of ten from **30** to **110**.



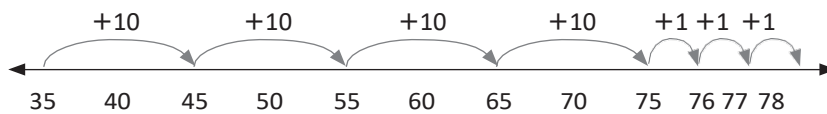
- Ask learners to tell you where you should write the following numbers:
 - **45** (exactly between the **40** and the **50**)
 - **59** (on the left of **60**, right next to it)
 - **67** (between **60** and **70** but more towards the right of where the **65** would go)
 - **32, 86, 101, 105**, etc.

Activity 2: Whole class activity

- **This activity consolidates learners' skills of adding multiples of ten and ones on a number line.**
- Write the following number sentence on the board: **$35 + 43 = \dots$** Draw an open number line on the board.
- Ask: **What is the first number in the number sentence?** (35)
- Ask: **Where should we write 35 on the number line?** (Since the number sentence is addition, and the numbers will get bigger when we add, it should be somewhere on the left hand side.) Find a place for **35**, mark the place and write **35**.



- Say: **So we need to add. How many jumps of 10s and 1s will we take from 35?** (4 tens and 3 ones)
- As you take the jump, say aloud the numbers aloud and point to them.
- Say: **We needed to add 43. First we added 4 tens. We jumped from 35, to 45, to 55, to 65 and then to 75. We still need to add the 3 ones. We take one jump at a time. The first jump gets us to 76, the second jump gets us to 77 and the third jump gets us to 78.**



- Say: **Let's complete the number sentence: $35 + 43 = 78$** (Write the number sentence on the board.)
- Do the same with: $27 + 42 = (69)$, $56 + 24 = (80)$, $27 + 47 = (74)$, $56 + 25 = (81)$

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

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

6. Reflection on lesson

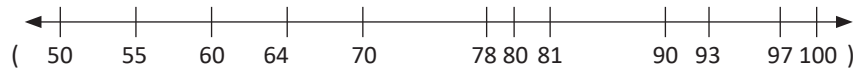
Term 1 Lesson 8: Addition on a number line

Classwork

1. Draw a 10s number line from 50 to 100 in your Mathematics books.
(Learners draw the number line with equal spaces between the numbers marked. The number line is shown below, with the other numbers labelled in their correct places between the tens.)

2. Write the following numbers in their correct places on the number line:

- a) 55
- b) 78
- c) 81
- d) 93
- e) 97
- f) 64



3. Draw and use number lines to calculate.

(Number line solutions are not drawn here – check that learners position the numbers correctly on the number lines and show the jumps on the number line to indicate the addition. Learners must write a correct number sentence to give the solution.)

- a) $56 + 10 = (66)$
- b) $56 + 30 = (86)$
- c) $56 + 35 = (91)$
- d) $47 + 24 = (71)$
- e) $37 + 42 = (79)$

Homework

Solutions not drawn here – as above.

Draw and use number lines to calculate:

- 1. $78 + 10 = (88)$
- 2. $78 + 20 = (98)$
- 3. $78 + 22 = (100)$
- 4. $36 + 12 = (48)$
- 5. $49 + 36 = (85)$

WEEK 4

LESSON 9: SUBTRACTION ON A NUMBER LINE

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.6 Problem-solving techniques

Lesson vocabulary: Number line, subtract, jumps, tens, ones, number sentence, multiple, smaller, first, equidistant, between, calculate, backwards.

Prior knowledge:

In Grade 2 the learners should have learnt how to use the following techniques when performing calculations:

- Building up and breaking down numbers.
- Number lines.

Concepts:

- Use a number line to subtract numbers.

Resources: Number lines (see *Printable Resources*)

DBE workbook activities relevant to this lesson:

- DBE worksheet 20a & 20b (pp. 42 and 45).

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

Remediation: For learners who struggle with this concept, work with simpler numbers, e.g. $24 - 10 = \dots$, $54 + 30 = \dots$, $84 + 50 = \dots$. Only after subtraction with multiples of 10 has been established, introduce subtraction of numbers with tens and ones.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards in 2s from any number between **100** and **400**, e.g. **230, 232, 234...** etc.
- Count backwards in 2s from any number between **100** and **400**, e.g. **184, 182, 180...** and **389, 387, 385...** etc.

1.2 Recall and strategies (10 minutes)

What is eleven more than...?

		Answer			Answer
1.	51	62	6.	37	48
2.	43	54	7.	71	82
3.	77	88	8.	40	51
4.	63	74	9.	23	34
5.	48	59	10.	54	65

2. Correction/reflection on homework (15 minutes)

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

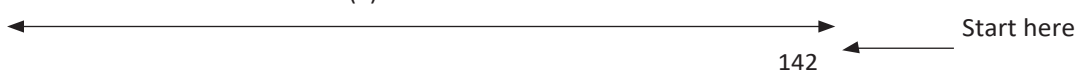
3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

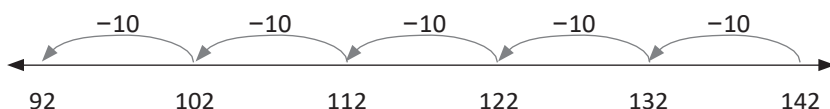
- **Subtraction with multiples of ten on a number line:**
- Write the following number sentence on the board: $142 - 50 = \dots$
- Tell learners that they are going to use a number line to solve this problem. Draw an open number line (a number line with no numbers).



- Ask: **What is the first number in the number sentence?** (142)
- Ask: **Where should we write 142 on the number line?** (Since the number sentence is subtraction, and the numbers will get smaller when we subtract, the number **142** should be somewhere on the right hand side.) Find a place for **142**, mark the place, and write **142**.
- Ask learners to read the rest of the number sentence. ($- 50 = \dots$)
- Say: **We need to subtract. This means that we are jumping backwards. How many jumps of 10 will we take backwards from 142?** (5)



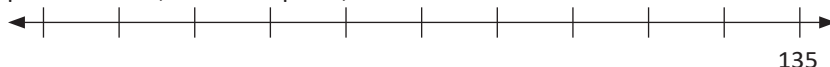
- As you take the jump, say the numbers aloud and point to them, e.g. **That's one jump of 10 backwards from 142. It gets us to... (132), then another jump of ten, and we landed on... (122)** (Write down the next number in the appropriate spaces below the number line as you jump.) **Another jump takes us to... (122).** Continue until you have taken **5 jumps of ten**. Also write the **-10** above the jumps to show that you are subtracting.



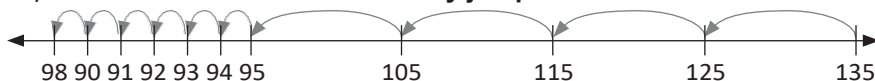
- Write down the answer to $142 - 50$. (92)
- Do the same with $135 - 40$ (95) and $165 - 60$. (105)

Activity 2: Whole class activity

- Write the following number sentence on the board: $135 - 46 = \dots$ Draw an open number line on the board.
- Ask: **What is the first number in the number sentence?** (135)
- Ask: **Where should we write 135 on the number line?** (It should be somewhere on the right hand side since the number sentence is a subtraction one, and the numbers will get smaller when we subtract.) Find a place for **135**, mark the place, and write **35**.



- Ask learners to read the rest of the number sentence. ($- 46 = \dots$)
- Say: **We need to subtract. How many jumps of 10s and 1s will we take from 135?** (4 tens and 6 ones)



- Say: **Let's complete the number sentence $135 - 46$.** (89)
- Do the same with $156 - 24$ (70), $127 - 42$ (69) and $127 - 49$ (74).

4. Classwork activity (25 minutes)

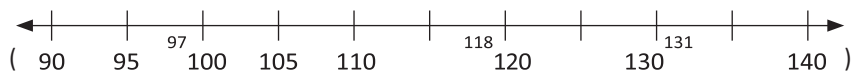
5. Homework activity (5 minutes)

6. Reflection on lesson

Term 1 Lesson 9: Subtraction on a number line

Classwork

1. Draw a 10s number line from 90 to 130 in your Mathematics books.
(Learners draw the number line with equal spaces between the numbers marked. The number line is shown below, with the other numbers labelled in their correct places between the tens.)
2. Write the following numbers in their correct places on the number line:
 - a) 105
 - b) 95
 - c) 97
 - d) 131
 - e) 118



3. Draw and use number lines to calculate:
(Number line solutions are not drawn here – check that learners position the numbers correctly on the number lines and show the jumps on the number line to indicate the addition. Learners must write a correct number sentence to give the solution.)
 - a) $56 - 10 = (46)$
 - b) $56 - 30 = (26)$
 - c) $56 - 35 = (21)$
 - d) $147 - 30 = (117)$
 - e) $147 - 38 = (109)$

Homework

Solutions not drawn here – as above.

Draw and use number lines to calculate:

1. $78 - 10 = (68)$
2. $78 - 20 = (58)$
3. $78 - 22 = (56)$
4. $149 - 30 = (119)$
5. $149 - 36 = (113)$

LESSON 10: ADDITION AND SUBTRACTION

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 1.6 Problem-solving techniques, 1.12 Techniques (methods or strategies), 1.13 Addition and subtraction

Lesson vocabulary: Add, subtract, break down, build up, breaking down, building up, smallest, greatest, hundreds, tens, units, number sentence, minus.

Prior knowledge:

In Grade 2 the learners should have learnt how to:

- Use appropriate symbols (+, −, =, □).
- Use the following techniques when performing calculations: building up and breaking down numbers, number lines and drawings or concrete apparatus.

Concepts:

- Add and subtract from 99, and use appropriate symbols (+, −, =, □).
- Building up and breaking down numbers.

Resources: n/a

DBE workbook activities relevant to this lesson:

- DBE worksheet 21a and 21b (pp. 46–49).

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

Remediation:

- Give the learners base ten blocks (see Printable Resources) – tens and units.
- Tell them that they are going to add 63 and 19. Ask: **Is it easier to add 19 or 20?**

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards in 2s from any number between **100** and **400**, e.g. **230, 232, 234...** and **231, 233, 235...** etc.
- Count backwards in 2s from any number between **100** and **400**, e.g. **184, 182, 180...** and **389, 387, 385** etc.

1.2 Recall and strategies (10 minutes)

Write down the numbers in order from the smallest to the greatest.

		Answer			Answer
1.	103, 105, 104	103, 104, 105	6.	167, 165, 166	165, 166, 167
2.	113, 112, 114	112, 113, 114	7.	176, 178, 177	176, 177, 178
3.	131, 133, 132	131, 132, 133	8.	182, 181, 183	181, 182, 183
4.	145, 147, 146	145, 146, 147	9.	199, 197, 198	197, 198, 199
5.	155, 157, 156	155, 156, 157	10.	139, 138, 140	138, 139, 140

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

- This activity is about addition using breaking down of numbers. It builds on learners' knowledge of place value when adding numbers.
- Write the following on the board, and do it step by step with your learners: $136 + 23 = \dots$
- Ask: **How can we break these numbers into tens and units?** $(100 + 30 + 6) + (20 + 3)$
- Then write $= (100) + (30 + 20) + (6 + 3)$ and say: **First, let's add the tens and then add the units.**
 $= (100) + 50 + 9 = 159.$
- Do some more practice examples on the board, e.g. $123 + 10 = \dots$, $40 + 42 = \dots$ etc.

Activity 2: Whole class activity

- **This activity is about subtraction using breaking down of numbers.** (Once learners understand the addition strategy, you can do the same with subtraction.)
- Write $168 - 20 = \dots$ on the board.
- Then say: **Break up each number into tens and units.** $= (100 + 60 + 8) - (20 + 0)$. Group the tens and the units for subtraction (there is only one hundred, it remains unchanged).
- Write $= (100) + (60 - 20) + (8 - 0)$ on the board. Say: **Now first let's subtract the tens and then subtract the units.** This gives us $100 + 40 + 8 = 148.$
- Do some more practice examples on the board, e.g. $78 - 10 = \dots$, $155 - 140 = \dots$, etc.

Activity 3: Whole class activity

- In this activity you spend time working on addition using the technique of rounding off.
- Say: **Now let's look at another way of breaking down the numbers. WE do this by looking at the numbers and changing them (or one of them) in a way that makes the operation easier.**
- Write the following number sentence on the board: $58 + 19 = \square$.
- Ask: **Is it easier to say $58 + 19$ or $58 + 20$?** (Learners should say $58 + 20$ – why? Because 20 is a round number.)
- Then say: **But the number sentence on the board says $58 + 19$. I have added too much. What should I do? We know that 19 less one is 20, so can I say 78 minus 1 is 77? So my answer is 77.** Write on the board $58 + 19 = 77.$
- Do some other examples, asking learners to identify the change that you should make to make the operation (addition or subtraction) easier.
- E.g. $63 + 19$; $85 - 49$; $27 + 48$; $46 - 28$.

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

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

6. Reflection on lesson

Term 1 Lesson 10: Addition and subtraction

Classwork

Calculate:

- a) $56 + 30 = (86)$
- b) $85 + 70 = (155)$
- c) $187 - 50 = (137)$
- d) $147 + 40 = (187)$
- e) $85 + 72 = (157)$
- f) $147 - 44 = (103)$
- g) $147 + 56 = (203)$
- h) $167 - 35 = (132)$

Homework

Calculate:

- a) $43 + 30 = (73)$
- b) $35 + 60 = (95)$
- c) $172 + 50 = (222)$
- d) $172 - 50 = (122)$
- e) $56 - 30 = (26)$

LESSON 11: MONEY

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.16 Metal mathematics, 1.11 Money

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

Prior knowledge:

In Grade 2 the learners should have learnt how to:

- Recognise and identify the SA coins and bank notes up to 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.
- Solve money problems involving totals and change in rand or cents.

Resources: Goods/products for shop, e.g. empty containers (cereal boxes, cool drink cans, tins, washing powder boxes, plastic milk bottles, etc.); pictures and cut-outs from supermarket fliers; range of play coins and notes to the value of R50.

DBE workbook activities relevant to this lesson:

- DBE worksheet 26 (pp. 60 and 61).

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

Remediation:

- Give learners coins and notes to recognise.
- Ask learners to show you combinations of rand and cents that would make up the following amounts: R70 (Example: Only notes: R50, R10, R10. Notes and coins: R50, R10, R5, R2, R2, R1.) R100 (Example: Only notes: R50, R20, R20 and R10. Notes and coins: R50, R20, R20, R5 and R5.)
- Practise calculating the total cost of the purchase using breaking down of numbers and doubling as strategies. Learners can make purchases to the value of R20.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5minutes)

Count forwards and backwards in 5s: 5, 10, 15...50.

1.2 Recall and strategies (10minutes)

Calculate:

		Answer			Answer
1.	$6 + \square = 20$	14	6.	$5 + \square = 20$	15
2.	$3 + \square = 20$	17	7.	$9 + \square = 20$	11
3.	$2 + \square = 20$	18	8.	$4 + \square = 20$	16
4.	$1 + \square = 20$	19	9.	$0 + \square = 20$	20
5.	$7 + \square = 20$	13	10.	$8 + \square = 20$	12

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

- Set up a shop in your classroom.
- Give each group a range of play coins and notes to the value of R50,00.
- Prepare and mark products as follows: R4; R42,50; R5; R10; R30,50; R20; R1; R7,60; R9; R5 and R25. (Note that the products do not have to represent real life prices, but they should give the learners the chance to shop within the known number range.)
- You will be the shopkeeper.
- Learners will come in groups to shop. Each group should buy products for R50. Each group must make sure that their products do not exceed R50.
- Each group should add up the cost of their items and calculate their change and report back.
- Ask questions such as:
 - **What was the total cost of all your products?**
 - **Do you have enough money to pay for everything?**
 - **If you do not have enough money, what can you do?**
 - **If you can afford everything you want to buy, will you get any change from your R50?**
 - **How much?**
 - **How did you calculate that?**
 - **Etc.**

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

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

6. Reflection on lesson

Term 1 Lesson 11: Money

Classwork

1. Write 325c in rand and cents. (R3,25)
2. What national symbol is on the 20c coin? (protea)
3. Write down all the different ways you can make R400 using only bank notes.
(various e.g. R200 + R100 + R50 + R20 + R20 + R10)
How do you know whether you have all the solutions? (various e.g. make a list)
4. If a school tracksuit costs R150, what will 2 tracksuits cost? (R300)
5. Toffees cost R1,10 each. Neo has one 50c coin and four 20c coins.
 - a) Which coins should Neo use to pay for one toffee? (one 50c coin and three 20c coins)
 - b) How much money will he have left? (10c)
6. These are the prices of sweets in the tuck shop:
 - choc chuckles R2,70;
 - gums R1,80;
 - sour worms R1,40;
 - peach treats R1,60;
 - magic mints R2,20;
 - toffees R1,20.Pedro's granny gave him R5. Which 3 sweets can he buy with his money?
(various, e.g. sour worms, peach treats and toffees)

Homework

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

LESSON 13: FIVES ARRAYS

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.16 Mental mathematics, 1.6 Problem-solving techniques, 1.8 Repeated addition leading to multiplication, 1.12 Techniques (methods or strategies), 1.14 Repeated addition leading to multiplication.

Lesson vocabulary: Repeated addition, arrays, grid, fives (5s), times tables, number sentence, row, number line, multiplication

Prior knowledge:

In Grade 2 the learners should have learnt how to:

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

In the previous lesson, the learners should have learnt how to:

- Use repeated addition, groups and multiplication by 5 up to 50.

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

Concepts:

- Solve repeated addition problems up to **50** using 5s.
- Multiply numbers **1** to **10** by **5** and use appropriate symbols (\times , $=$, \square).

Resources: n/a

DBE workbook activities relevant to this lesson:

- DBE worksheet 24 (p. 55).

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

Remediation:

- Give learners **15** counters. Ask them to take **5** counters and pack them in a row. Ask: **How many counters do you have?**
- Ask the learners to add another row below the first row. Ask: **How many counters do you have now?** Then say: **Let us count: 5, 10...** Carry on until there are **3** rows. Then say: **Let us count: 5, 10, 15. How many rows do we have? (3) We can say we have 3 rows of 5.**
- Write it as an addition number sentence: $5 + 5 + 5 = \square$.
- Repeat and say: **We have 3 rows of 5. Let us write it as a multiplication number sentence: 3 (rows) \times 5 (counters) $= \square$.**

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards in 5s from any number between **0** and **400**, e.g. 305, 310, 315... etc.
- Count backwards in 5s from any number between **400** and **0** e.g. 400, 395, 390... etc.

1.2 Recall and strategies (10 minutes)

Which number is 10 less than...?

		Answer			Answer
1.	34	24	6.	54	44
2.	45	35	7.	99	89
3.	13	3	8.	95	85
4.	22	12	9.	70	60
5.	29	19	10.	50	40

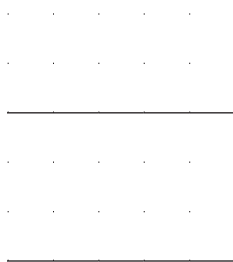
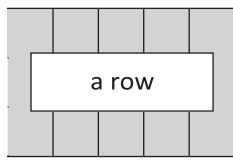
2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

CAPS talks about *arrays*. These are number grids, like the one used in this lesson to show repeated addition of 5.

Activity 1: Whole class activity

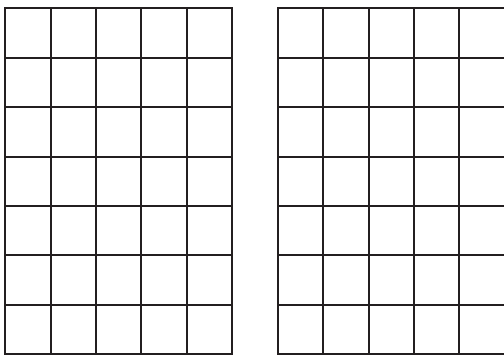


Remind learners about how they worked out their five times tables on the previous day. Explain that we can also use a grid to work out our tables.

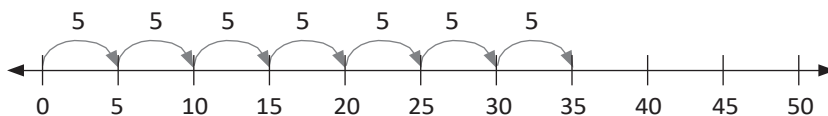
- Draw a grid like this on the board. Shade the top row.
- Show the learners what a row is and ask them to count the rows. (3)
- Ask them to count the squares in each row. (5)
- On the board write an addition number sentence: $5 + 5 + 5 = \square$.
- Ask: **How many squares are there altogether? How did you get the answer?**
- Say: **We can say: 3 rows of 5. How can we write it as a multiplication number sentence? $3 \times 5 = \square$.**
- Ask: **What is the answer?** (15). Learners can check the answer by counting: 5, 10, 15. or by adding $5 + 5 + 5 = 15$.
- Do the same with 6×5 .

Activity 2: Whole class activity

- Write this problem on the board: Mrs Pink plants **7** rows of potatoes. There are **5** plants in a row.
- Draw a grid to show how many potato plants there are altogether.



- Write two number sentences. ($7 \times 5 = 35$ and $5 + 5 + 5 + 5 + 5 + 5 + 5 = 35$)
- Draw a number line to show how many potato plants there are altogether.



- Write the number sentence. ($7 \times 5 = 35$ or $5 + 5 + 5 + 5 + 5 + 5 + 5 = 35$)
- Count the jumps to show the multiplication and the repeated addition.

4. Classwork activity (25 minutes)

5. Homework activity (5 minutes)

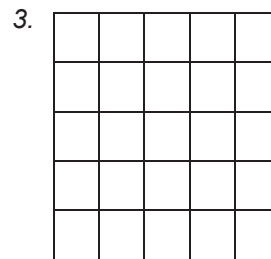
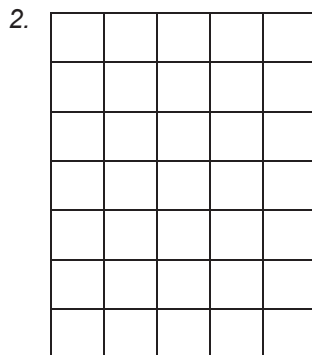
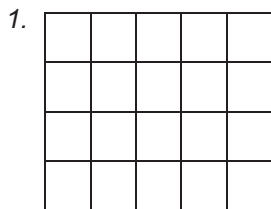
6. Reflection on lesson

Term 1 Lesson 10: Numbers patterns in fours

Classwork

1. Using the tables below, answer the questions for each one:

- a) Number of rows: (1. 4 rows 2. 7 rows 3. 5 rows)
 b) Squares per row: (1. 5 squares 2. 5 squares 3. 5 squares)
 c) Write a multiplication number sentence: (1. $4 \times 5 = 20$ 2. $7 \times 5 = 35$ 3. $5 \times 5 = 25$)



2. Mr Tshabalala plants 10 rows of cabbage plants.

There are 5 plants in a row.

- a) Draw a grid to show how many cabbage plants there are altogether.

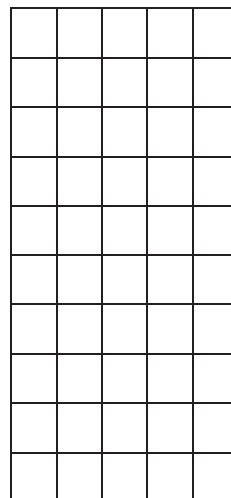
Write the number sentence.

($10 \times 5 = 50$ cabbages)

- b) Draw a number line to show how many cabbage plants there are altogether.

Write the number sentence.

($10 \times 5 = 50$ cabbages)



Homework

1. My grandmother tiles her floor. She has 9 rows with 5 tiles in each row.

How many tiles does she use? (45 tiles)

- a) Draw a grid to show how many tiles she uses altogether.

Write the number sentence.

($9 \times 5 = 45$ tiles)

- b) Draw a number line to show how many tiles she uses altogether.

Write the number sentence.

($9 \times 5 = 45$ tiles)

