GRADE 2

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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ABOUT THE LESSON PLANS AND RESOURCES

The lesson plans and resources in this book are part of the Teacher Toolkit for Mathematics Grade 2 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:

a) **Resource sheets:** These comprise a variety of teaching and learning aids that are needed in certain lessons. The specific resource sheet, and the number of copies needed, is noted in the relevant lesson plan and in the tracker so that you can prepare them in advance.

b) **Mental mathematics challenge cards:** A pack of eight mental mathematics challenge cards (solutions are provided) are included to allow for routine weekly mental mathematics activities that you can record.

c) **Enrichment activity cards:** A pack of 32 enrichment activity cards (solutions are provided) are included for learners who complete the day's classwork activities ahead of the class.

A. About the lesson plans

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

1. Curriculum alignment

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

2. Links to the DBE workbooks

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

Bilingual learner material is provided in the LoLT of the school in accordance with the Foundation Phase language policy.

3. Broad overview of the content of the lesson plans

Each lesson plan provides a set of steps to guide you in delivering the lesson. In addition, it contains learner activities that will help learners develop the concepts and skills set for the lesson. These include the required daily mental mathematics activity, whole class oral activities led by the teacher, classwork and homework activities, as well as answers for these. All the classwork and homework activities are given in the lesson plans, learners must either copy these into their books or teachers can photocopy the activity.

4. Assessment

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

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

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

- A complete overview of the programme of assessment for the term is given in the tracker. This shows you when it is suggested you carry out both formal (and informal) assessment tasks which are oral, practical and written. This will assist you in planning and monitoring your assessment programme.
- There is also 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 2 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.

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

b) **Prepare resources:** The resources needed for each lesson are listed in each lesson plan and in the tracker. It is very important that you check what is required for each lesson ahead of time, so that you have all your resources ready for use every day (e.g. counters, number boards, paper cut-outs, examples of shapes, etc.).
   - **Your lessons will not succeed if you have not prepared properly for them.**
   - If you do not have all the necessary resources readily available, see how best you can improvise, e.g. get learners to collect bottle tops or small stones to be used for counting, or make your own flard cards/number boards using pieces of cardboard and a marker pen.
   - Collect empty cool drink cans, cereal boxes, washing powder boxes, plastic bottles, etc. for the **shop activity** in the week long in advance, so that you have all the necessary goods to stock your shop.

- Use newspapers and magazines to cut out pictures that could be used in your teaching. If you have access to the internet, search for and print out pictures that you may need to use as illustrations in your lessons.

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

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

e) **Lesson pace:** Think about how much time you will spend on each activity. It is important to plan how you will manage the pace of the lesson carefully; otherwise, you will not manage to cover all the lesson content. Not all learner's 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.
   - Directorate Inclusive Education, Department of Basic Education (2010) *Guidelines for Inclusive Teaching and Learning. Education White Paper 6. Special needs education: Building an inclusive education and training system*. Pretoria. www.education.gov.za, www.thutong.doe.gov.za/InclusiveEducation.

LESSON PLAN OUTLINE

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

Lesson Plan Outline	
Enrichment	***Optional as required.*** You could use these activities as extra work for fast learners or others interested in doing them. Activities that you can use for enrichment opportunities for learners who have completed the lesson activities are provided in a set of enrichment activity cards 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. Learners should work on these cards independently or with their peers who have also completed the classwork. They may work through the cards in any order. You may need to explain some of the activities to the learners who use them. You should tell them to ask questions it they have any. All learners who show an interest in the enrichment activities should be encouraged to work through the cards.
Mental mathematics **(15 minutes)**	This is the first component of the lesson. We recommend that you take at most 15 minutes to do the mental mathematics activity. There are two parts to the mental mathematics activity, a counting activity and a set of questions to drill recall and basic mathematical strategies. Mental mathematics is not a concrete activity (as the title suggests). However, if there are learners who need concrete aids to complete the mental mathematics activities, we suggest that you allow them to use their fingers to count on. • Observe which learners struggle with mental activities, and make sure you spend time to assist them to reach the required level of competence by offering remediation activities using concrete aids. • The answers to the ten mental mathematics questions are given in the answer column in the lesson plans. • It would be far better to do all ten questions per day, but if you find that your learners struggle to finish these in ten minutes, do a minimum of five questions. There is a mental mathematics challenge cards set 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.
Correction/reflection on homework **(15 minutes)**	This is the second component of the lesson. We recommend that you take 15 minutes to remediate and correct the previous day's homework. Read out answers to all of the homework questions. Let learners/peers mark the work. Also try to check homework yourself as often as you can. Choose one or two activities that you realise were problematic to work through in full with the whole class. In this part of the lesson you may reflect on the previous day's work. Allow learners the opportunity to write corrections as needed.
Lesson content – concept development **(30 minutes)**	This is the third component of the lesson. It is the body of the lesson, in which learners are introduced to the new work planned for the day. We recommend that you actively teach your class for 30 minutes – going through the activities interactively with your learners. • Activities on the content that you will teach with worked examples and suggested explanations are given. These activities have been carefully sequenced and scaffolded so that they support the teaching of the concepts for the day. You should work through each of these with your class. • It is important to manage the pace of the lesson carefully, otherwise you will not manage to cover all the lesson content. Once you have introduced the new concept, work through Activity 1 of the lesson with the whole class (or with learners in groups). Then immediately move on to the next activity, and provide a reasonable time for the learners to complete Activity 2, but do not wait for the last learner to finish before moving on. If there are further activities, continue pacing yourself in this way, so that you work through all of the activities in each lesson. A few activities are marked as *optional* – these need only be done if you have sufficient time.

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

WEEK 1: 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.

CAPS BASELINE FRAMEWORK

Criteria: Can the learner	Yes	No
Count objects up to 50 using groups of tens and units		
Read number symbols 1 to 100		
Compare a collection of objects up to 20		
Build and break numbers up to 20 into tens and units		
Solve word problems in context involving addition and subtraction up to 20 and use symbols +, − and =		
Add money to the total of 20c or R20		
Count in twos, fives and tens up to 100		
Identify odd and even numbers		
Solve problems using repeated addition up to 20 and use symbols +, − and =		
Solve practical problems involving equal sharing and grouping with whole numbers up to 20		
Identify, describe and name 3-D objects (balls and boxes)		
Sequence events		
Apply language of position		
Name the months of the year and place birthdays on a calendar		
Use measurement vocabulary		
Collect, sort, make a drawing of sorted object and answer questions on data		

Topic 1: Number concept

Concepts and skills for today

- Count out **50** objects reliably, saying the names in sequence.
- Complete number sequences of counting in ones back from 100.
- Read number symbol 1 to 100.
- Write number names 1 to 10.

Warm-up activity

Give the learners the opportunity to familiarise themselves with the Mathematics teaching and learning resources in your classroom by letting them play with some of them for about 10 minutes in their groups. These may include:

- Counting manipulatives such as base ten blocks, counters, stones, etc.
- Space and shape manipulatives such as shapes, blocks, cubes, etc.

Prepare some base ten blocks (see *Printable Resources)* for your learners to use when they count. These blocks will help them to structure their counting activities rather than count big numbers of unit counters in ones. While they work with the blocks, they could use the blocks to structure the unit counting of other objects. This will help consolidate the concept of place value.

- Ask 11 learners to come to the front of the class. Give them a number as they come up, from 0 to 10. They each write their number on the board, from 0 to 10. The numbers should be written in order.
- Write some random numbers between 0 and 100 on the board (e.g. 23, 45, 66, 70, 81, 95, etc.).
- Ask learners to read the number names.
- Ask learners to suggest other numbers between 0 and 100 for you to write on the board. Call on a different learner to suggest a number and another one to read the number each time.

Spend five minutes with your learners packing the learning resources away. Ask the learners why they think we should pack the learning resources away neatly and look after them well.

Activities

Give learners the DBE workbooks. Briefly share with them how we should take care of a book.

Activity	Can the learners	Observation
1. Give learners a variety of objects to count. They should each count several different sets of counters. Note if learners count in ones or tens.	• Count objects up to **50** using groups of tens and units?	
2. Ask learners to count the balloons in DBE worksheet 3 (p. 7) question 2 (the first four blocks only). Note that the last two examples go beyond the number range		
3. Ask learners to read the number symbols in question 1 (p. 6).	• Read the number symbols 1 to 100?	

Topic 2: Sorting shapes and patterns

Concepts and skills for today

- Count out **50** objects reliably, saying the names in sequence.
- Count forwards and backwards in ones up to 100.
- Using numbers in context.
- Compare collections of objects up to 20.
- Building and breaking numbers up to 20.
- Decompose numbers 11 to 20 into tens and units.

Warm-up activity

Allow learners to compare numbers and practice the vocabulary of comparison (greater than/smaller than; more than/less than; equal to/the same as):

- Ask five learners to stand up on the one side of the class and eight learners to stand up on the other side of the class.
- Ask questions such as:
  - **Are there more learners standing on the left-hand side of the class than on the right-hand side?** (left-hand side)
  - **How many learners are standing on the left-hand side?** (8)
  - **How many learners are standing on the right-hand side?** (5)
  - **Is 8 more or less than 5?** (more than)
- Try to actively involve all of the learners in the lesson in this way – ask various groups of learners to stand up and others to make comparisons between the groups that are standing.

Tell learners that yesterday they worked with numbers, and today they are going to look at numbers in their daily life. Do DBE worksheet 1 (p. 2) question 1 orally with your class. Ask the learners if they would like to use different ways to describe their friends. Discuss ways of describing friends that involve numbers (**My friend has 10 fingers, My friend has 2 legs**, etc.) and also talk about ways of describing friends that do not involve numbers. Talk about the difference between these descriptions.

Activities

Give learners the DBE workbooks. Briefly remind the learners how we should take care of a book.

Activity	Can the learners	Observation
1. Ask the learners to count the beads on the left in DBE worksheet 4 (p. 9) question 3. Note if learners count in ones or if they notice groups of ten and units and then count on from there: e.g. 10, 11, 12.	• Count objects to **50**?	
2. Ask the learners to point to 15 beads in question 3 (p. 9). Ask: **Show me a group of beads less than/more than 15**.	• Compare a collection of objects?	
3. Match the beads with the number cards in question 3 (p. 9). Ask what numbers are represented, $10 + 2 = 12$. Ask the learners how they would write 12 using tens and units.	• Build and break numbers up to 20 into tens and units?	

Topic 3: Addition and subtraction

Concepts and skills for today

- Know the days of the week.
- Add and subtract numbers up to 20.
- Use symbols +, – and =.
- Recognise South African coins and notes (R10 and R20).
- Identify coins that will add up to a given total.

Warm-up activity

Write the days of the week on the board. Have a class discussion in which you talk about activities the learners do on different days of the week.

- Ask questions such as:
  - **What day is it today? What did you do this morning? What will you do this afternoon?**
  - **What day is the first day of the school week?** (Monday) **What did you do on Monday?**
  - **What day is the last day of the school week?** (Friday) **What did you do on Friday?**
  - **Etc.**

Ask the learners to go to DBE worksheet 5 (p. 10) in the DBE workbook. Ask learners to look at the apples and make a story sum, e.g. **Mom bought a bag with 6 apples. Dad bought a bag with 7 apples. How many apples do we have?** Ask the learners to look at the second picture of apples and make a story sum, e.g. **Mom bought a bag with 13 apples and we ate 6. How many apples are left?** Tell learners that we use mathematics in everyday life. Let the learners give you a few examples of where they use mathematics every day.

Activities

Activity	Can the learners	Observation
1. Ask learners to make and solve story sums using each in question 1 in DBE worksheet 5 (p. 10).	• Solve word problems in context involving addition and subtraction up to 20?	
2. Work through question 2 orally and then in their writing books. Discuss learners' answer, asking them how they did the calculations, e.g. counting on, building and breaking, using counters, fingers, number lines etc.	• Add and subtract numbers up to 20? • Use symbols +, – and =?	
3. Have learners complete question 2 part 1 in DBE worksheet 6 (p. 13).	• Recognise South African coins and notes?	
4. Have learners complete question 2 part 2 in DBE worksheet 6 (p. 13) (colouring-in activity).	• Add money to the total of 20c or R20?	

Topic 4: Repeated addition and patterns

Concepts and skills for today

- Know the months of the year.
- Counting in twos, fives and tens up to 100.
- Identify odd and even numbers.
- Extend geometric and number patterns.
- Solve problems in context involving repeated addition up to 20.
- Use + and = in number sentences.

Warm-up activity

Draw a table with 12 columns on the board, one for each month, labelled according to the 12 months of the year. Have a class discussion in which you talk about activities the learners do in the different months of the year. Find out about the birthday months of the learners.

- Ask learners when their birthdays are.
- Tally up the number of birthdays per month in the table on the board.
- Ask: **What do you notice about the birthdays in our class?** (We have lots of birthdays in April/There are no birthdays in January, etc.)
- Use the birthday chart to guide you and ask questions like:
  - **How many more birthdays are there in (November) compared to (June)?**
  - **How many less birthdays are there in (February) than in (May)?**
  - **Which month has the least birthdays?**
  - **Which month has the most birthdays? etc.**

Ask learners to count the eyes, dots and patches in question 1 in DBE worksheet 2 (p. 4). Allow the learners who are struggling to count objects in a picture to use things such as counters/stones to help them count. Encourage them to count in groups rather than counting items one by one. Discuss the different types of groups they could use for counting. Counting in groups develops skills of mental arithmetic and it helps learners find progressive terms in a pattern.

Activities

Activity	Can the learners	Observation
1. Ask learners to colour the beads as they go in question 3, 4 and 5 in DBE worksheet 7 (p. 14).	• Count in twos, fives and tens up to 100?	
2. Ask the learners to count in twos. Have the learners complete question 1 in DBE worksheet 4 (p. 8) on odd and even numbers.	• Identify odd and even numbers?	
3. Ask the learners to make story sums with question 3 in DBE worksheet 5 (p. 10). E.g. I have 4 packets with 2 apples each. How many apples do I have?	• Solve problems using repeated addition up to 20? • Use symbols + and =?	

Topic 5: Grouping, sharing and shapes

Concepts and skills for today

- Count in twos, fives and tens up to 100.
- Sort and name 2-D shapes (triangles, squares, rectangles, circles).
- Solve practical problems involving equal sharing and grouping with whole numbers.
- Use + and = in number sentences.

Warm-up activity

Find some old cardboard and make your own packs with shapes. (Each pack should have **8** triangles, **16** squares, **10** rectangles and **4** circles.) Put the learners into groups and give each group a pack of shapes. (If you are not able to prepare the pack with so many shapes, make sure each group gets at least two of each shape and use counters for the sharing activity.) Before starting the activity, talk to the learners about how to behave when they work in groups. Share the basic rules of group work with your learners.

- Ask learners to sort and then name the shapes. (triangles, squares, rectangles, circles)
- Ask learners to share the shapes/counters in different ways, such as:
  - **Share 8 triangles between two friends.** (Each person will get 4 triangles.)
  - **Share 8 triangles among four friends.** (Each person will get 2 triangles.)
  - **Share 4 circles among 4 friends.** (Each person will get 1 triangle.)
  - **Share 10 rectangles between 2 friends**. (Each person will get 5 triangles.) Etc.
- Make up more sharing questions for the groups.
- Discuss the solutions that the groups find – allow different individual learners to stand up and describe their sharing activity.

Activities

Activity	Can the learners	Observation
1. Ask learners to share the fruit equally in question 1, DBE worksheet 6 (p. 12). Ask them to make a story sum such as: Phindile and Simon bought **8** apples. They shared it equally between them. How many apples did each get?	• Solve practical problems involving equal sharing with whole numbers up to 20?	
2. Ask the learners take their 16 squares and pack them into packets of twos (as if for a toy shop). Ask: **How many packets of 2 can you make?**	• Solve practical problems involving grouping with whole numbers up to 20?	
3. Ask learners to make story sums with question 3 in DBE worksheet 5 (p. 11). E.g. I have 4 packets with 2 apples each. How many apples do I have?	• Solve problems using repeated addition up to 20? • Use symbols + and =?	

Topic 6: Balls, boxes and position

Concepts and skills for today

- Sequence events.
- Identify, describe and name 3-D objects (balls and boxes).
- Apply language of position.

Warm-up activity

Have a discussion with your learners to find out how they would sequence some events. For example:

- Ask them what they do in the morning before they leave for school. Allow different individual learners to respond. Ask them to name at least four different things that they do. Discuss the order in which they do those things.
- Ask them what they do on a Sunday morning. Again ask them to name at least for different things. Discuss the order in which they do those things.
- Etc.

You need to prepare some balls and boxes for this activity. See DBE worksheet 9 (p. 18). You will allow the learners some time to run around and play with balls. They could kick or throw them to each other, into and around the boxes. Explain to the learners that there are rules that must be followed when they go outside to play games. Explain the rules and make sure that learners understand what is expected of them.

Activities

Activity	Can the learners:	Observation
1. Ask learners to circle the boxes in blue and the balls in red in DBE worksheet 9 (p. 18) question 1.	• Identify balls and boxes?	
2. Ask the learners to describe boxes and balls in question 2 and 3 (p. 18 and 19) using words such as slide, roll, curved and straight edges.	• Describe balls and boxes?	
3. Ask learners to look at the pictures in question 4 (p. 19) and use the given words to describe the position of the ball or box orally.	• Apply language of position?	

Topic 7: Measurement

Concepts and skills for today

Use measurement vocabulary of length, mass and capacity:

- Length: *shorter*, *longer*, *higher*, *lower*, *shorter* and *taller*.
- Mass: *heavier* and *lighter*.
- Capacity: *full*, *empty*, *half*, *same* and *less.*

Warm-up activity

Prepare a collection of some objects for this lesson that you can use to talk about length, mass and capacity. For example, a large empty bottle and a small empty bottle; a large full bottle and a small full bottle; some books of different thickness and size; etc.

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.**
- **Show me two books – one should be heavier and one lighter than the other.**
- **Please can two learners in your group stand up – one shorter and one taller than the other.**
- Etc.

Talk to learners, and ask them how they have used the DBE workbook so far. Ask how they have cared for their workbooks. Ask if they have shared some of their Mathematics activities with a family member.

Activities

Activity	Can the learners	Observation
1. Look at the pictures in questions 1 to 3 in DBE worksheet 10 (p. 20). Ask learners to use the words *shorter*, *longer*, *higher*, *lower*, *shorter* and *taller* to describe the pictures.	• Use vocabulary related to length?	
2. Look at the pictures in questions 1 to 3 in DBE worksheet 11 (p. 22). Ask learners to use the words *heavier* and *lighter* to describe the pictures.	• Use vocabulary related to mass?	
3. Look at the pictures in questions 1 and 4 in DBE worksheet 12 (p. 24). Ask learners to use the words *full*, *empty*, *half*, *same* and *less* to describe the pictures.	• Use vocabulary related to capacity?	

Topic 8: Data handling

Concepts and skills for today

- Place birthdays on a calendar.
- Collect and sort objects.
- Make a drawing of sorted objects.
- Answer questions on sorted objects.

Warm-up activities

Refer to your class calendar (or draw a rough calendar for one month on the board – laid out as it would be in a calendar). Ask which learners have their birthdays in the month you have chosen. Ask each one who does to come to the front and put an X on the date of their birthday.

Draw a chart on the board to show the 12 months of the year. The chart should have 12 columns, one for each month.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

- Ask all the learners who have a birthday in January to raise their hands.
- Point to the class wall calendar to show the position of the birthday dates of each child (or at least some of them).
- Count the number of learners and write it above January.
- Do the same for each month of the year.
- Discuss the birthday data that you have recorded on the board. Ask questions such as:
- **In which month are there the most birthdays?**
- **In which month are there the least birthdays?**
- **How many birthdays are there in March?** etc.

Let learners work in pairs. Before you do this activity, give learners rules on how to work together as partners. Ask the learners to look at the picture in DBE worksheet 15 (p. 30) and describe it to their partners. Encourage learners to use words such as *number*, *balls*, *colours* (green, red, blue and yellow), *the same*, *flowers*, etc.

Activities

Activity	Can the learners	Observation
1. Ask the learners to look at question 1 in DBE worksheet 15 (p. 30). Ask them how they think they could sort the balls shown in the picture. Discuss the different suggestions they give.	• Collect and sort objects where the sorting criteria are given?	
2. Ask the learners to look at questions 1 to 3 in DBE worksheet 16 (p. 32). Ask the learners to sort the objects and to draw them. Discuss the ways the learners chose to sort the objects.	• Collect and sort objects where the sorting criteria are not given? • Make a drawing of sorted objects?	
3. Do question 4 orally with your learners.	• Answer data questions?	

WEEK 2

LESSON 1: NUMBERS UP TO 20

Teacher's notes

CAPS topics: 1.1 Count objects 1.3 Number symbols and number names

Lesson vocabulary: Number names, number symbols, whole numbers, forwards, backwards, greatest, smallest, smaller than and greater than

Prior knowledge:
In Grade 1, the learners should have learnt how to:

- Count forwards and backwards from 0 to 100.
- Recognise and read number symbols 1 to 100.
- Write number symbols 1 to 20.

Concepts:

- Recognise, identify, read and write number symbols 0 to 20.
- Recognise, identify, read and write number names 0 to 25.
- Order and compare whole numbers up to 25, from greatest to smallest and smallest to greatest.

Resources: Counters, 1–100 number board (see *Printable Resources*)

DBE workbook activities relevant to this lesson:

- n/a

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

Remediation: Ask learners who need additional support to come and sit on the carpet. Ask them to count themselves. Then ask them to form the number symbol using their own bodies, e.g. three learners can make the symbol three as a group. If the group is big, subdivide them into a number of groups, and repeat the activity.

Enrichment: See enrichment activity cards – learners can use any cards from the back of this book.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards in ones from 1 to 25; count backwards from 25 to 1.
- Count onwards from a given number 0 to 25, e.g. 12, 18, 2.

1.2 Recall and strategies (10 minutes)

What are next two numbers after…?

		Answer				Answer
1.	7, 8, 9…	10, 11		6.	3, 4…	5, 6
2.	11, 12, 13…	14, 15		7.	25, 24, 23…	22, 21
3.	20, 19, 18…	17, 16		8.	14, 15…	16, 17
4.	8, 7, 6…	5, 4		9.	12, 11, 10…	9, 8
5.	21, 22, 23…	24, 25		10.	19…	20, 21

2. Correction/reflection on homework (15 minutes)

Use a few minutes to explain to learners what is expected when they get homework.

3. Lesson content – concept development (30 minutes)

Activity 1: Learners work in pairs

- Give each pair of learners 20 counters.
- Ask learners to make a group of **five** counters. Then ask one learner to make a group of *more than* **five** counters.
- Ask another learner to make a group of *less than* **five** counters.
- Write the number symbol and the number name on the board as learners are making these groups.
- Repeat the activity using **fourteen** objects, and only write the number symbol on the board.

Activity 2: Whole class activity

- Write number symbols 0 to 20 and number names one to ten on the board.
- Ask learners to show the number 1.
- Ask the learners to find the number name for 1 on the board.
- Do the same with numbers 2 to 20.
- Ask the learners to show any number between 0 and 10 on the number board. Ask these numbers randomly.
- Ask the learners to show any number between 11 and 20 on the number board. Ask these numbers randomly.
- Ask the learners to identify which number is smaller and which is greater.
- For example: **Which of these numbers is smaller than 14 – 6/12/20/1/15?**
- Probe learners' answers when they make a mistake.
- Ask questions such as: **Why do you think it is smaller than…?**
- **Is the number made of tens and units? How many tens and how many units?**
- **Think again about your answer … which is the smaller number…?**
- **Which of these numbers is greater than 14 – 12/2/19/3/9?**
- Probe learners' answers when they make a mistake.
- Ask questions such as: **Why do you think it is greater than…?**
- **Is the number made of tens and units? How many tens and how many units?**
- **Think again about your answer … which is the bigger number…?**
- Do this activity using different pairs of numbers.

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

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

6. Reflection on lesson

Term 1 Lesson 1: Numbers up to 20

Classwork

1. Write the following as numbers:
   a) five (5)
   b) ten (10)
   c) six (6)
   d) two (2)

2. Write 17 as a number name. (seventeen)

3. Which number is smaller? 18 or 13 (13)

4. Which number is greater? 11 or 17 (17)

5. Write the numbers in the correct order starting with the smallest number. 15, 12, 14, 11, 13
   (11, 12, 13, 14, 15)

Homework

1. Write eight as a number symbol. (8)

2. Write 14 as a number name. (fourteen)

3. Which number is smaller? 20 or 12 (12)

4. Write the numbers in the correct order starting with the greatest number. 15, 12, 14, 11, 13
   (15, 14, 13, 12, 11)

LESSON 2: NUMBERS 11 TO 20

Teacher's notes

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

Lesson vocabulary: Forwards, backwards, more than, greater than, greatest, less than, equal to, smaller than, smallest

Prior knowledge:
In Grade 1, the learners should have learnt how to:
- Recognise and read number symbols 1 to 100.
- Write number symbols 1 to 20.
- Describe, compare and order up to 20 objects and numbers to 20.

Concepts:
- Recognise, identify, read and write number symbols 0 to 20 and number names zero to twenty-five.
- Order and compare whole numbers to 99, from greatest to smallest, smallest to greatest, smaller than, greater than, more than, less than and is equal to.

Resources: Counters, 1–100 number board (see *Printable Resources*)

DBE workbook activities relevant to this lesson:
- DBE worksheet 17 (pp. 34 and 35)

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

Remediation: Give learners the counters and ask them how they will count 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 and 20 (starting from 10). Ask learners to lay out each number using the counters. Ask questions, e.g. **Which number is bigger, 11 or 13?**

Enrichment: See enrichment activity cards – learners can use any cards from the back of this book.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards in ones from 1 to 31.
- Count backwards in ones from 31 to 1.

1.2 Recall and strategies (10 minutes)

Which number is smaller: … or…?

		Answer
1.	9 or 12	9
2.	12 or 13	12
3.	20 or 21	20
4.	25 or 28	25
5.	16 or 17	16

		Answer
6.	33 or 31	31
7.	35 or 33	33
8.	29 or 25	25
9.	27 or 30	27
10.	29 or 19	19

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work/homework – identifying, reading and writing number symbols from 0 to 20.

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

- Write number symbols and number names 11 to 20 on the board.
- Write the numbers 11 to 20 in the air.
- Ask learners to show the number 11 using counters.
- Show the number by putting 10 counters in one row and one counter next to it.
- Explain that the number 11 is made of 10 plus 1.
- Ask the learners to find the number name for 11 on the board.
- Do the same with numbers 12 to 20.
- Each time display the number with the counters grouped into tens and units and explain the importance of knowing the place value breakdown of the number into tens and units.
- For example: 16 is made of 1 ten and 6 units. Ask learners to tell you how the numbers are made up.
- Point to the digits in their places so that learners start to learn about place value right from the beginning.

Activity 2: Whole class activity

- Extension – counting beyond 20.
- Ask learners to show the numbers 21, 22, 23, 24, 25, 26, 27, 28, 29 and 30 on the number board by pointing. Ask these numbers randomly.
- Ask learners to show a number less/greater than another number. For example: **Show me a number that is less/greater than 27 …** (any correct answers should be accepted).
- If learners give incorrect answers probe to check why an incorrect number was chosen by asking, **Why did you say so? How do you know it was less/greater than …?**
- Ask the learners to show the numbers 31, 32, 33, 34, 35, 36, 37, 38, 39 and 40 on the number board. Ask these numbers randomly.
- Discuss correct/incorrect answers given by learners in the same way that you did above.

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

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

6. Reflection on lesson

Term 1 Lesson 2: Numbers 11 to 20

Classwork

1. Write the following as number symbols:
   a) seventeen (17)
   b) eleven (11)
   c) nineteen (19)
   d) sixteen (16)

2. Write 12 as a number name. (twelve)

3. Which number is one more than 15? (16)

4. Which number is one less than 19? (18)

5. Which number is equal to 13? (13)

6. What number is between:
   a) 3 and 5 (4)
   b) 18 and 20 (19)

7. What number comes after 10? (11)

8. What number comes before 15? (14)

Homework

1. Write the following as number symbols:
   a) fifteen (15)
   b) thirteen (13)

2. Write the number names for the following numbers:
   a) 18 (eighteen)
   b) 14 (fourteen)

3. Write down the number that is:
   a) 1 more than 18 (19)
   b) 1 less than 14 (13)

4. Write down the number that is equal to 17. (17)

LESSON 3: NUMBERS 1 TO 20 (PLACE VALUE)

Teacher's notes

CAPS topics: 1.1 Count objects 1.16 Mental mathematics 1.5 Place value 1.4 Describe, compare and order numbers.

Lesson vocabulary: Number, more, less, estimate, before, after, digit, units, tens, between, place value

Prior knowledge:
In Grade 1, the learners should have learnt how to:

- Recognise the place value of numbers 11 to 19.
- Describe, compare and order up to 20 objects and numbers to 20 and say which is more or less.

Concepts:

- Recognise place value of two-digit numbers to 20 and know what each digit represents.
- Decompose two-digit numbers into multiples of tens and ones/units and state the value of each digit.

Resources: Base 10 blocks, flard cards (see *Printable Resources*)

DBE workbook activities relevant to this lesson:

- DBE worksheet 18 (p. 36) Questions 1 to 3

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

Remediation: Use Unifix cubes to build up to a group of 13. Demonstrate how you take out a group of ten to make a base 10 block. Use this block to make up the numbers 11 to 19. Now ask the learners to show you the following numbers using or Unifix cubes: 11, 12, 13, 14, 15, 16, 17, 18 and 19. Ask the learners what they will do with their Unifix cubes to make them one more or one less. Ask the learners what number comes before 12 and what number comes after 12.

Enrichment: See enrichment activity cards – learners can use any cards from the back of this book.

1. Mental mathematics

1.1 Counting (5 minutes)

Count forwards and backwards in ones between 31 and 51.

1.2 Recall and strategies (10 minutes)

Which number is 1 more than number…?

		Answer
1.	9	10
2.	12	13
3.	30	31
4.	44	45
5.	35	36

		Answer
6.	30	31
7.	34	35
8.	49	50
9.	37	38
10.	39	40

2. Correction/reflection on homework (15 minutes)

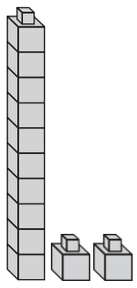
Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

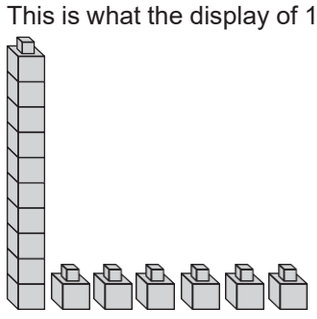
Write the numbers 10 to 20 on the board.

- Ask the learners to show **10**, then **11** using a base 10 block and using ones/units. For example, 12 is one ten and 2 ones/units.
- This is what the display of 12 looks like using base ten blocks:

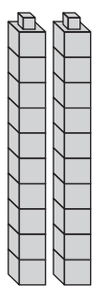


(1 ten and 2 units – so we write this as 12)

- Ask the learners to show you each number up to 20 using a base 10 block and ones/units.
- This is what the display of 16 looks like using base ten blocks:



(1 ten and 6 units – we write this as 16)

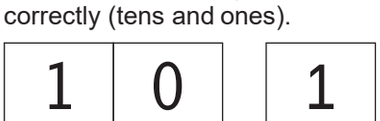


(2 tens – we write this as 20)

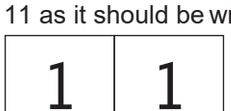
- Now revise number concept by comparing numbers – using the words *between, more than* and *less than*. This will also consolidate the concept and terminology of comparison.
- Ask the learners to show you which number is *between* **14** and **16** using a base 10 block and ones/units. Repeat using different numbers.
- Ask the learners to show you which number is one/two *less than* **17**. Repeat using different numbers.
- Ask learners to show you which number is one/two *more than* **13**. Repeat using different numbers.

Activity 2: Learners work in pairs

- Write the following numbers on the board: 11, 18, 20, 15, 13 (etc. numbers up to 20).
- Ask learners in their pairs to show you these numbers using flard cards. Ensure that the cards are being used correctly (tens and ones).



- The 10 card and the 1 card can be used to show the number 11. If you overlap the units you see the number 11 as it should be written.



- Ask the learners to tell you what number they are showing (e.g. 11) and then to tell you the value of the number in tens and units. (e.g. 11 is 1 ten and 1 unit).
- Do this with all of the numbers from 11 to 20 using flard cards and calling on different learners to show you their number displays and tell you (using place value language of tens and units) what they are showing you each time.

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

Term 1 Lesson 3: Numbers 1 to 20 (place value)

In this activity learners are asked to draw objects to show a number, use flard cards to show numbers and also to write numbers using number symbols. All of these activities are aimed at consolidating number concept (of 2-digit numbers) and how to write these numbers correctly. This is the goal – to understand place value up to 2-digit numbers and to be able to write these numbers using symbols correctly.

Classwork

1. Draw objects for the number 12, showing tens and units.
   ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
   ○ ○ (1 ten and 2 units)

2. Show the number 12 with flard cards. (10 + 2)

3. Show the number 13 with flard cards. (10 + 3)

4. What is one more than 11? (12)

5. What is one less than 17? (16)

6. Fill in the missing number: 17 = 10 + _ (7)

7. Look at the following: 18 = 1 ten and 8 units OR 10 + 8 = 18

8. Now complete:
   a) 15 = _(1) ten + _ (5) units OR _ (10) + _ (5) = 15
   b) 21 = _(2) tens + _ (1) unit OR _ (20) + _ (1) = 21

Homework

1. Draw a picture of the number 15, showing tens and units.
   ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
   ○ ○ ○ ○ ○ (1 ten and 5 units)

2. What is: 2 more than 17? (19)

3. What is: 2 less than 16? (14)

4. Complete the following:
   a) 10 + 3 = _ (13)
   b) _ (10) + 6 = 16

LESSON 4: NUMBERS 1 TO 25 (PLACE VALUE)

Teacher's notes

CAPS topics: 1.1 Count objects 1.16 Mental mathematics 1.4 Describe, compare and order numbers 1.5 Place value

Lesson vocabulary: Tens, units, digits, biggest, smallest, more, less, after, estimate, add, subtract, equal to, place value

Prior knowledge:
In Grade 1, the learners should have learnt how to:

- Recognise the place value of numbers 11 to 19.
- Describe, compare and order up to 20 objects and numbers to 20 and say which is more or less.

Concepts:

- Order and compare whole numbers from smallest to greatest/greatest to smallest and using *smaller than/ greater than/more than/less than* and *is equal to*.
- Recognise the place value of at least two-digit numbers to 25 and know what each digit represents.
- Decompose two-digit numbers into multiples of tens and ones/units and state the value of each digit.

Resources: Unifix cubes, flard cards (see *Printable Resources*)

DBE workbook activities relevant to this lesson:

- DBE worksheet 19 (pp. 38 and 39)

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

Remediation: Ask the learners to show you the following numbers using Unifix cubes, 20, 21, 22, 23, 24 and 25. Ask the learners to break these into base 10 blocks and cubes, e.g. 22 = 10 + 10 + 2. Do this for each of the numbers.

Enrichment: See enrichment activity cards – learners can use any cards from the back of this book.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards in ones from 43 to 73.
- Count backwards in ones from 73 to 43.

1.2 Recall and strategies (10 minutes)

What are the next two numbers after…?

		Answer
1.	35	36, 37
2.	22	23, 24
3.	15	16, 17
4.	44	45, 46
5.	50	51, 52

		Answer
6.	3	4, 5
7.	66	67, 68
8.	71	72, 73
9.	60	61, 62
10.	19	20, 21

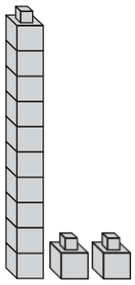
2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

- Have the Unifix cubes and flard cards ready to give to the class. This activity should be brief – it allows a recap of the previous lessons on place value.
- Start the lesson by recapping how to recognise the place value of two-digit numbers to 20 and knowing what each digit represents. Recap the following:
  - Single-digit numbers represent different numbers if units.
  - Two-digit numbers represent numbers that have tens and units.
  - The digit on the right is in the units place and shows the number of units.
  - The digit on the left is in the tens place and shows the number of tens.
- Using the Unifix cubes, demonstrate 12, 15 and 19.



(1 ten and 2 units – so we write this as 12)

- Using the flard cards, show 13, 17 and 20, e.g. 13 = 10 + 3 = 13

Activity 2: Whole class activity

- Write the numbers 16 to 25 on the board. This activity extends the numbers to 22 and it is the main activity of the lesson.
- Discuss with learners what makes one number bigger than another. (Check the tens and the units digits – the number with the highest number of tens and units is the biggest number.)
- For example, compare the numbers 15 and 25. Ask: **Which is bigger and why?** (25 is bigger by 10 – it has 2 tens and 5 units while 15 has 1 ten and 5 units.)
- Discuss with learners what makes one number smaller than another. (Check the tens and the units digits – the number with the lowest number of tens and units is the smallest number.)
- For example, compare the numbers 12 and 22. Ask: **Which is smaller and why?** (12 is smaller by 10 – it has 1 ten and 2 units while 22 has 2 tens and 2 units.)
- Ask the learners to show 19, 23 and 25 first with their base ten blocks and then their flard cards.
- Ask the learners which is the biggest number. (25)
- Repeat using other numbers from 0–25.
- Ask the learners which is the smallest number. (19)
- Repeat using other numbers from 0–25.
- Ask the learners to show you which number is one less than 23. Repeat using different numbers.
- Ask the learners to show you which number is one more than 21. Repeat using different numbers.

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 1 to 25 (place value)

This activity gives further consolidation. The number line in Question 6 is an opportunity for learners to show you whether or not they are able to show numbers on a number line. You will revise number lines with the whole class in coming lessons.

Classwork

1. Draw objects for the number 23, showing tens and units.
   ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
   ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
   ○ ○ ○ (2 tens and 3 units)

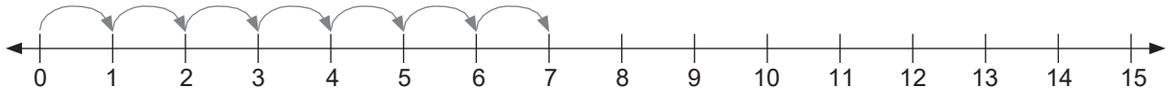
2. Show the number 21 with flard cards. (20 + 1)

3. What is one more than 19? (20)

4. What is one less than 24? (23)

5. Fill in the missing number:
   a) 22 = 20 + _ (2)
   b) 20 = 20 + _ (0)
   c) 24 = 20 + _ (4)
   d) 26 = 20 + _ (6)

6. Draw a number line like this from 0 to 15. Start at 0 and do 7 jumps along the line. Where do you land? (7)



Homework

1. Draw a picture of the number 25, showing tens and units.
   ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
   ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
   ○ ○ ○ ○ ○ (2 tens and 5 units)

2. What is: 2 more than 21? (23)

3. What is: 2 less than 21? (19)

4. Complete the following:
   a) 20 + 3 = _ (23)
   b) _ (23) + 2 = 25

WEEK 3

LESSON 5: NUMBERS 20 TO 25 (PLACE VALUE)

Teacher's notes

CAPS topics: 1.1 Count objects 1.16 Mental mathematics 1.4 Describe, compare and order numbers 1.5 Place value

Lesson vocabulary: Decompose, two-digit numbers, multiples, more, less, between, value, place value, units, tens, ones

Prior knowledge:
In Grade 1, the learners should have learnt how to:

- Recognise the place value of numbers 11 to 19.
- Describe, compare and order objects and numbers from 0 to 20 and say which is more or less.

Concepts:

- Order and compare whole numbers using *smaller than/greater than, more than/less than* and *is equal to*.
- Decompose two-digit numbers into multiples of tens and ones/units and state the value of each digit.

Resources: Flard cards, number lines (see *Printable Resources*)

DBE workbook activities relevant to this lesson:

- DBE worksheet 18 (p. 37)

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

Remediation: Ask the learners to show you the following numbers using Unifix cubes, 17, 18, 19, 20, 21, 22, 23, 24 and 25. Ensure that each learner can break the numbers down into the correct base 10 and ones/units.

Enrichment: See enrichment activity cards – learners can use any cards from the back of this book.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards in ones from 9 to 39.
- Count backwards in ones from 39 to 9.

1.2 Recall and strategies (10 minutes)

Give the number between…and…

		Answer
1.	12 and 14	13
2.	2 and 4	3
3.	23 and 25	24
4.	15 and 17	16
5.	14 and 12	13

		Answer
6.	9 and 11	10
7.	20 and 22	21
8.	21 and 19	20
9.	13 and 11	12
10.	19 and 17	18

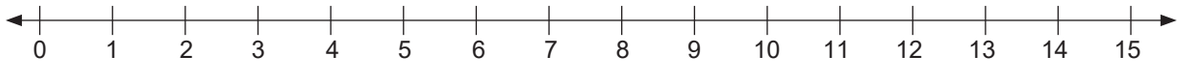
2. Correction/reflection on homework (15 minutes)

Learners had no homework, but reflection/remediation based on previous day's work must be done.

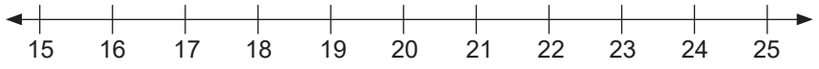
3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

- Draw a 0–15 number line on the board.



- Discuss the spaces between numbers (they must be equal), the labels on the number line (they are consecutive units from 0 to 15).
- Ask different learners to come to the board to show you different pairs of numbers and talk about how their position on the number line shows which number is bigger and which number is smaller.
- For example: **Show me the numbers 6 and 13 on the number line. Which number is bigger? How do you know?** (13 is bigger, it has 1 ten and 3 units, it is to the right of 6 on the number line.)
- Draw a blank number line on the board that you can label from 15 to 25 together with the learners.



- Ask the learners to show you the number *between* 21 and 23. Repeat using different numbers.
- Ask the learners to show you which number is one/two *less than* 22. Repeat using different numbers.
- Ask learners to show you which number is one/two *more than* 20. Repeat using different numbers.

Activity 2: Learners work in pairs

- Write the following numbers on the board: 20, 17, 15, 25 and 22.
- Ask the learners in pairs to show you the numbers on the board using flard cards. It is important that they use the flard cards correctly (tens and then units/ones).
- Allow the learners (in their pairs) to use flard cards to show each other any of the numbers between 20 and 25. Each time they display a number they must talk about how it is made up of tens and units to each other.

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 20 to 25 (place value)

Classwork

1. Draw objects for the number 24, showing tens and units.
   ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
   ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
   ○ ○ ○ ○ (2 tens and 4 units)

2. Show the number 21 with flard cards. (20 + 1)

3. What is one more than 24? (25)

4. What is one less than 25? (24)

5. Fill in the missing number.
   a) 22 = 20 + _ (2)
   b) 24 = 20 + _ (4)
   c) 16 = 10 + _ (6)
   d) 18 = 21 – _ (3)

6. Write as number names:
   a) 10 (ten)
   b) 18 (eighteen)
   c) 15 (fifteen)
   d) 21 (twenty one)
   e) 23 (twenty three)

Homework

1. Draw objects for the number 21, showing tens and units
   ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
   ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
   ○ (2 tens and 1 unit)

2. What is: 2 more than 20? (22)

3. What is: 2 less than 24? (22)

4. Complete the following:
   a) 20 + 1 = _ (21)
   b) _ (20) + 5 = 25

LESSON 6: LENGTH

Teacher's notes

CAPS topics: 1.1 Count objects 1.16 Mental mathematics 4.2 Length

Lesson vocabulary: Length, width, measure, metres, compare, estimate, order, record, forwards, backwards, metres, standard unit, non-standard unit, shortest, longest, rectangle, index finger

Prior knowledge:
In Grade 1, the learners should have learnt how to:

- Estimate, measure, compare, order and record length using non-standardised measures, e.g. hand spans, steps, pencil lengths, counters, etc.

Concepts:

- Estimate, measure, compare, order and record length using non-standardised measures, e.g. hand spans, paces, pencil length, counters, etc. as part of informal measuring.
- Introduce how to estimate, measure, compare, order and record length using metres as the standardised unit of length as a part of formal measuring.

Resources: Paper, scissors, pencils, sticks, counters, a metre stick

DBE workbook activities relevant to this lesson:

- DBE worksheet 10 (p. 20)

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

Remediation: Learners use their cut-out hands to measure the length of the following objects in the class: the length of your desk, the length of the carpet/floor and the width of the door. It is important that the learners use the same hand when measuring the objects.

Enrichment: See enrichment activity cards – learners can use any cards from the back of this book.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards in ones from 21 to 61.
- Count backwards in ones from 61 to 21.

1.2 Recall and strategies (10 minutes)

Which number is between…and…?

		Answer
1.	21 and 23	22
2.	34 and 36	35
3.	38 and 40	39
4.	55 and 57	56
5.	59 and 61	60

		Answer
6.	44 and 46	45
7.	19 and 21	20
8.	56 and 54	55
9.	31 and 29	30
10.	53 and 55	54

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

This lesson recaps some of the terminology of length that was introduced in Grade 1 and it gives learners another opportunity to work with non-standard units in order to realise the value of using standard units for length. This is done by opening up a discussion about the problem of everyone using a different unit to measure length. (The standard unit it not yet introduced. This will be done in the next lesson.)

Activity 1: Whole class activity

- Introduce your learners to today's topic – how to estimate, measure and compare objects by measuring their length using hands, pencils and counters.
- Ask your learners to do each of these activities:
  - Trace their hand on a piece of paper and then to cut out their drawing. Each learner must then compare their hand with their friend's hand. **Is it the same?**
  - Measure the length of their desk with their cut-out hand and then talk to a partner about how many hands long their desks were.
- Call up two learners. Ask each learner to take one step. Each learner should take one step and then measure the length of their steps using sticks – use a different stick for each step. Break the sticks to show the correct length of each of the two learners' steps. Compare the length of the sticks. **Are they the same? If not, why not?**
- Call up two different learners to measure the length of the classroom using the two sticks you have made as step lengths. (Remember that there should be no gaps between the sticks when you measure.)
- Compare the lengths of the classroom that have been measured using the sticks. The class can help count the stick lengths while the learners who have been called up do the activity. The class can also check that the learners are not leaving any gaps when they mark off one stick at a time, back-to-back. (One learner will find that the classroom is, possibly, 16 sticks long while another may say 14 sticks long; this is because of the different stick lengths.)
- Now ask the learners what could be done to solve the problem of having lots of different results? **How can we avoid the confusion caused by having all these different measurements?**
- Explain that when we measure things in life, e.g. when Mom buys material for curtains or pieces of wood for building, we use metres.
- Show the learners a metre stick, and explain that we need a standardised unit to measure with, because people's hands/feet, etc. are not the same size.
- Therefore we use standardised measuring units.

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

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

6. Reflection on lesson

Term 1 Lesson 6: Length

Classwork

1. Which line is shorter?
   a) _____ or b)_____(a)

2. Which line is longer?
   a) _____ or b)_____(b)

3. Draw a rectangle, and measure the sides using your index finger. (Learner answers will vary.)

4. Use a pencil to measure the width of the window frame in the classroom. (various)

5. Use your hand span to measure the length of your desk. (various)

6. Use your step (one foot in front of the other, with no spaces in between) to measure how many steps it takes to walk around the classroom. (various)

Homework

(Learner answers will vary for this activity.)

1. Draw a picture of you and your friend.

2. Say whether she or he is taller or shorter than you.

LESSON 7: LENGTH

Teacher's notes

CAPS topics: 1.1 Count objects, 1.16 Mental mathematics, 4.2 Length

Lesson vocabulary: Length, informal measurement, informal units, compare, order, record, metres, standardised unit, value, longer, shorter, taller, wider

Prior knowledge:
In Grade 1, the learners should have learnt how to:

- Estimate, measure, compare, order and record length using non-standardised measures e.g. hand spans, paces, pencil lengths, counters, etc.

Concepts:

- Estimate, measure, compare, order and record length using non-standardised measures.
- Describe the length of objects by counting and stating how many informal units long they are, using language to talk about the comparison e.g. *shorter, longer, taller* and *wider*.
- Introduce how to estimate, measure, compare, order and record length using metres as the standardised unit of length as a part of formal measuring.

Resources: Collect empty matchboxes before the lesson, a broom, a metre stick

DBE workbook activities relevant to this lesson:

- DBE worksheet 10 3 to 5 (p. 21)

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

Remediation: Measure the width, length and height of objects with a matchbox versus a broom. Ask the learners what they would use to measure the following and why: the **length** of their Mathematics books, the **length** of your desk, the **height** of the door, the **length** of their pencil cases and the **height** of their friends.

Enrichment: See enrichment activity cards – learners can use any cards from the back of this book.

1. Mental mathematics

1.1 Counting (5 minutes)

Count forwards in ones from 33 to 71. Count backwards in ones from 71 to 33.

1.2 Recall and strategies (10 minutes)

Break down into smaller numbers, but with the same total value:

		Answer
1.	10	5, 5
2.	20	10, 10
3.	35	10, 10, 10, 5
4.	12	3, 3, 3, 3
5.	50	10, 10, 10, 10, 10

		Answer
6.	24	10, 10, 4
7.	28	10, 10, 8
8.	44	20, 20, 4
9.	15	5, 5, 5
10.	6	2, 2, 2

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

- Explain the concepts of width and height to the learners using a desk as a concrete aid.
- The *width* of the desk is the measurement across the shorter length across the desk.
- The *height* of the desk is the measurement from the ground up to the top of the desk.
- Give each group of learners some empty matchboxes.
- Ask the learners to measure the *height* of their desks with a matchbox.
- Ask the learners to measure the *width* of their desks with a matchbox.
- Discuss the measurements found by a few different groups.
- Ask: **Are the measurements the same/different? Why?** (The measurements should be roughly the same because learners are all using the same unit – a matchbox.)
- Ask: **Do you think we could use matchboxes all the time to measure lengths?** (No, because they are clumsy to work with and even if we all used the same matchboxes, not all matchboxes are the same and if everyone used matchboxes to measure, there would be different measurements for the same length which is no good.)
- Ask the learners what they would rather use to measure the *width* of the classroom: a matchbox or a broom? Why? (A matchbox is too small, it would not be a good unit to measure a thing as long as the width of the classroom. A broom would be better. But a broom is still not a standard unit and could lead to the same problems of inconsistency in measurement as the matchbox did for the shorter lengths.)
- Discuss the value of standard units such as the centimetre and metre.
- Discuss the differences between the centimetre and metre – the one is a smaller unit and the other is a bigger unit. They can be efficiently used to measure different lengths. For example: The centimetre would be used to measure the width of the desk and the metre would be used to measure the width of the classroom.
- The next activity introduces the metre.

Activity 2: Whole class activity

- Discuss with learners the standard measurement of a metre.
- Illustrate with a metre stick.
- Ask learners to choose the objects they think should be measured in *metres*, e.g. the *height* of the door.
- Measure these objects, but before you do this, ask learners to estimate how many *metres* the object or distance will be, e.g. the *height* of the door or the *length* of the classroom.
- Discuss with the class the differences between the estimates and the actual measurements.

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

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

6. Reflection on lesson

Term 1 Lesson 7: Length

This activity gives learners the opportunity to estimate and measure lengths in metres. It is very important that they do both – estimate and measure. This will help them get to know what the basic length of a metre is. Explain to learners that ideally they should be able to make fairly accurate estimates – this will show that they know what the basic length of a metre is. They need to know the basic length of a metre well and be able to make good estimates of lengths in metres.

If you do not have old newspapers or magazines to use in Questions 7 and 8 of this activity, learners could draw these things instead.

Classwork

1. When you measure the length of the classroom, will it be *more than 1 metre* or *less than 1 metre* in length? (more)

2. When you measure the width of the teacher's table, will it be *more than 1 metre* or *less than 1 metre* in length? (This will depend on the type of table, normally less.)

3. When you measure the height of your table from the floor, will it be *more than 1 metre* or *less than 1 metre* in length? (less)

4. When you measure the height of the door, will it be *more than 1 metre* or *less than 1 metre* in length? (more)

5. Make a drawing of something in the classroom that is 1 metre long.

6. Write down the names of five objects in the classroom that are shorter than a metre. (e.g. a pencil, ruler)

7. Select and cut out two pictures from old magazines or newspapers of things that you estimate to be more than a metre in length. Stick the pictures in your Mathematics book. (various – check that pictures chosen are appropriate.)

8. Select and cut out two pictures from old magazines or newspapers of things that you estimate to be less than a metre in length. Stick the pictures in your Mathematics book. (various – check that pictures chosen are appropriate.)

Homework

1. When you measure the length of your bed will it be: 1 metre/less than 1 metre/more than 1 metre? (Learner answers will vary.)

2. Make a drawing of an object in your kitchen that is 1 metre long.

3. Write down the names of 2 objects in your bathroom that are shorter than 1 metre. (various, e.g. a face cloth)

4. Write down the names of 2 objects in your yard that are longer than 1 metre. (various)

LESSON 8: COUNTING ON AND BACK: ADDITION AND SUBTRACTION

Teacher's notes

CAPS topics: 1.1 Count objects, 1.16 Mental mathematics, 1.6 Problem-solving techniques, 1.12 Techniques – methods or strategies, 1.13 Addition and subtraction

Lesson vocabulary: Addition, subtraction, solve, word problems, symbols

Prior knowledge:
In Grade 1, the learners should have learnt how to:

- Use concrete apparatus, pictures and number lines when solving and explaining problems and performing calculations.
- Add and subtract up to 20 as well as use the appropriate symbols (+, –, =, □).

Concepts:

- Solve word problems in context and explain own solutions to problems involving addition and subtraction with answers up to 20 and using appropriate symbols (+, –, =, □)
- When solving problems, the learners may use drawings, concrete apparatus and number lines.

Resources: Counters

DBE workbook activities relevant to this lesson:

- DBE worksheet 20 (pp. 40 and 41)
- DBE worksheet 23b (pp. 48 and 49)

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

Remediation: Ask the learners to use counters to answer the question: **What is 5 + 2?** Learners will start at one and count to five and then continue counting to seven. Do the same with 7 + 5 and 11 + 4. Ask the learners: **What is 8–2?** Learners can also start at the bigger number, which is eight, and count back two steps to six. Repeat using 10–5 and 12–3.

Enrichment: See enrichment activity cards – learners can use any cards from the back of this book.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards in ones from 0 to 40.
- Count backwards in ones from 40 to 0.

1.2 Recall and strategies (10 minutes)

Which is more: …or…?

		Answer
1.	12 or 21	21
2.	31 or 13	31
3.	25 or 24	25
4.	35 or 37	37
5.	40 or 30	40

		Answer
6.	9 or 11	11
7.	23 or 34	34
8.	31 or 13	31
9.	39 or 29	39
10.	17 or 19	19

2. Correction/reflection on homework (15 minutes)

Reflection/remediation based on previous day's work.

3. Lesson content – concept development (30 minutes)

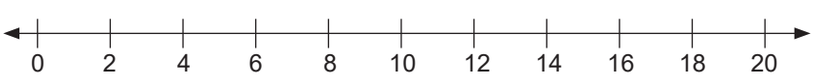
This activity consolidates and extends the concepts of addition and subtraction using counters and number lines. The first activity using counters (concrete) leads into the next activity in which number lines (semi-concrete) are used.

Activity 1: Learners work in groups of four

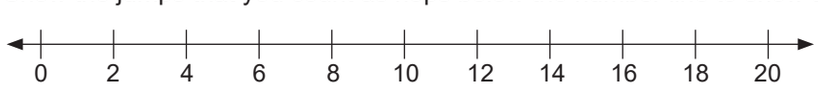
- Give each group of learners 20 counters.
- Ask the learners to count out **seven** counters and to add 3 more counters by counting on from seven. They should count eight, nine, ten.
- This shows that 7 + 3 = 10. Write the number sentence on the board.
- Ask the learners to count out **6** counters and to add 8 more counters by counting on from six. Add them together as a class. If they add by counting on from six, they will count 7, 8, 9, 10, 11 , 12, 13, 14.
- This shows that 6 + 8 = 14. Write the number sentence on the board.
- Ask the learners to demonstrate: 18 – 11 by counting out 18 counters and then counting back, by taking away one counter at a time, 11 counters. How many counters are left? (7)
- Ask the learners to use counters to demonstrate 19 – 9 by counting out 19 counters and then counting back by taking away one counter at a time, 9 counters. How many counters are left? (10)
- Do a few more examples of addition and subtraction to give learners more practice but leave time in the lesson to move onto the next activity.

Activity 2: Whole class activity

- Draw a 0 to 20 number line on the board.



- Ask the learners to point to **12** on the number line. Then count forwards 6. **Where do you land on the number line?** (18) **Can you jump in 1s or 2s?** (You can jump in both. The 2s are marked on the number line so that might be easier.)
- Show the jumps that you count as hops above the number line to show the addition.
- Repeat with 8 + 8 = _, 14 + 6 = _, 8 + 10 = _. Each time do this by pointing to the starting number on the number line and counting on to find the answer.
- Ask the learners to point to 10 on the number line. Then count back 4. Where do you land on the number line? (6)
- Show the jumps that you count as hops below the number line to show the subtraction.



- Repeat with 12 – 6 = _, 14 – 7 = _, 20 – 8 = _. Each time do this by pointing to the starting number on the number line and counting back to find the answer.

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

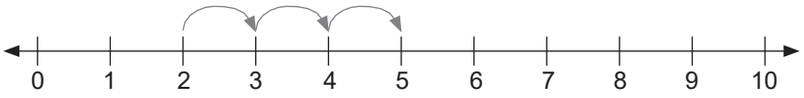
5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 1 Lesson 8: Counting on and back – addition and subtraction

Classwork

Look at the following example:



Start at 2 and jump 3 places. 2 + 3 = 5

1. Draw a number line from 0 to 20. Start at 3, and jump 6 places. Now write what you have done as a sum. (3 + 6 = 9)

2. Draw a number line from 0 to 20. Start at 2, and jump 12 places. Now write this as a sum. (2 + 12 = 14)

3. You have 14 sweets and you give your friend 2. Write this as a subtraction number sentence. (14 – 2 = 22)

Homework

1. 12 + 3 = □ (15)

2. 19 – 6 = □ (13)

3. 15 + 3 = □ (18)

4. 20 – 9 = □ (11)

WEEK 4

LESSON 9: NUMBER BONDS AND FAMILY FACTS TO 20

Teacher's notes

CAPS topics: 1.1 Count objects, 1.16 Mental mathematics, 1.6 Problem-solving techniques, 1.7 Addition and subtraction, 1.12 Techniques – methods and strategies, 1.13 Addition and subtraction

Lesson vocabulary: Number bonds, family facts, addition, subtraction, number line

Prior knowledge:
In Grade 1, the learners should have learnt how to:

- Use concrete apparatus, pictures, number lines, breaking down and building up of numbers when solving and explaining problems and performing calculations.
- Addition and subtraction up to 20 as well as using the appropriate symbols (+, –, =, □).
- Number bonds up to 10.

Concepts:

- Solve word problems in context and explain own solutions to problems involving addition and subtraction with answers up to 20 and using appropriate symbols (+, –, =, □)
- When solving problems, the learners may use drawings, concrete apparatus and number lines as well as building up and breaking down of numbers.

Resources: Counters

DBE workbook activities relevant to this lesson:

- DBE worksheet 23a (pp. 46 and 47)

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

Remediation: Give learners 20 red counters and 20 blue counters (or any other two colours that you have available). Say: **We will show 1 + 9 like this** (1 red counter and 9 blue counters). Ask them to show: 2 + 8 = 8 + 2, 7 + 3 = 3 + 7, 4 + 6 = 6 + 4, 5 + 5.

Enrichment: See enrichment activity cards – learners can use any cards from the back of this book.

1. Mental mathematics

1.1 Counting (5 minutes)

Count forwards in ones from 41 to 80. Count backwards in ones from 80 to 41.

1.2 Recall and strategies (10 minutes)

Add these numbers:

		Answer
1.	2 + 3 =	5
2.	3 + 3 =	6
3.	4 + 2 =	6
4.	5 + 4 =	9
5.	3 + 6 =	9

		Answer
6.	4 + 2 =	6
7.	1 + 6 =	7
8.	2 + 8 =	10
9.	5 + 2 =	7
10.	4 + 4 =	8

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

- Give each learner 20 counters.
- Do the following practically with your learners using the counters as an aid:
  - 1 + 9 = 9 + 1
  - 2 + 8 = 8 + 2
  - 7 + 3 = 3 + 7
  - 6 + 4 = 4 + 6
- Now ask the learners the following questions:
  - 1 + _ = 10 (9)
  - 2 + _ = 10 (8)
  - 3 + _ = 10 (7)
  - 4 + _ = 10 (6)
  - 5 + _ = 10 (5)
- Discuss if they can see a pattern. (Each sum has a total of 10. These are the bonds of 10.)

Activity 2: Learners work in groups

- Groups of learners should now work with the full set of 20 counters to find the bonds of 20.
- Ask learners to experiment by putting the 20 counters into two groups, changing the group size each time. (For example: 10 + 10 = 20; 17 + 3 = 20, etc.)
- Learners should speak to each other about the sums they have made, check the total each time and write the sum in their mathematics book each time.
- Ask: **How many different sums do you find?** (They could find up to 20 different sums. Did they find them all? Which did they not find – compare groups.)
- These are the sums they should find. Write all of the sums on the board, in pairs, as learners report them to you. (They might not be in the same order as shown here – this does not matter.)
  - 1 + 19 = 19 + 1 = 20
  - 2 + 18 = 18 + 2 = 20
  - 3 + 17 = 17 + 3 = 20
  - 4 + 16 = 16 + 4 = 20
  - 5 + 15 = 15 + 5 = 20
  - 6 + 14 = 14 + 6 = 20
  - 7 + 13 = 13 + 7 = 20
  - Etc.
- Discuss if they can see a pattern. (Each sum has a total of 20. These are the bonds of 20.)
- Discuss the difference between the pairs of sums. For example, ask: **What is the difference between 4 + 16 and 16 + 4?** (There is no difference to the total. They both add up to 20. They numbers are just written in a different order. This is the same for all of the pairs of sums. Both of them are correct. It does not matter which order you write the two numbers that you add.)
- Learners should start to look out for this and realise that when they add they can swop the pair of numbers being added around and still get the same answer.

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

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

6. Reflection on lesson

Term 1 Lesson 9: Number bonds and family facts to 20

Classwork

1. Draw circles to show 4 + 6 = □. Use two different colours to show what you have done.
   (4 + 6 = 10. Learners can draw these using circles and colours.)

2. Draw squares to show 7 + 4 = □. Use two different colours to show what you have done.
   (7 + 4 = 11 Learners can draw these using squares and colours.)

3. Fill in the missing numbers:
   a) 16 + □ (4) = 20
   b) 11 + □ (9) = 20

4. Show the following on a number line:
   a) 13 + 7 = 20
   b) 7 + 13 = 20

5. Write an equal sum, e.g. 4 + 2 = 3 + 3. (Various e.g. 5 + 3 = 4 + 4)

Homework

1. 6 + □ (4) = 10

2. 15 + □ (5) = 20

3. 17 – □ (7) = 10

4. 20 – □ (10) = 10

LESSON 10: BUILDING UP AND BREAKING DOWN NUMBERS

Teacher's notes

CAPS topics: 1.1 Count objects, 1.16 Mental mathematics, 1.6 Problem-solving techniques, 1.7 Addition and subtraction, 1.12 Techniques – methods or strategies, 1.13 Addition and subtraction

Lesson vocabulary: Building up, breaking down, addition, subtraction, number bonds'

Prior knowledge:
In Grade 1, the learners should have learnt how to:

- Use concrete apparatus, pictures, number lines, breaking down and building up of numbers when solving and explaining problems and performing calculations.
- Solve word problems in context and explain own solution to problems involving addition and subtraction.
- Add and subtract up to 20 as well as use the appropriate symbols (+, –, =, □).
- Number bonds up to 10.

Concepts:

- Solve word problems in context and explain own solutions to problems involving addition and subtraction with answers up to 20 and using appropriate symbols (+, –, =, □)
- When solving problems, the learners may use drawings, concrete apparatus and number lines as well as building up and breaking down of numbers.

Resources: Base 10 blocks (see *Printable Resources*)

DBE workbook activities relevant to this lesson:

- DBE worksheet 24 (pp. 50 and 51)

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

Remediation: Give learners base ten blocks – 10 units and 1 ten. Ask them to show 14 using the blocks. Write a number sentence 10 + 4 = 14. Remove the units, and write a number sentence 14 – 4 = 10. Do the same using base ten blocks with numbers 11 to 19, e.g. 10 + 1 = 11 and 11 – 1 = 10.

Enrichment: See enrichment activity cards – learners can use any cards from the back of this book.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards in ones from 45 to 85.
- Count backwards in tens from 85 to 45.

1.2 Recall and strategies (10 minutes)

	Double the following numbers:	**Answer**
1.	2	4
2.	4	8
3.	3	6
4.	5	10
5.	1	2

	What is **half** of the following numbers?	**Answer**
6.	10	5
7.	8	4
8.	6	3
9.	4	2
10.	2	1

2. Correction/reflection on homework (15 minutes)

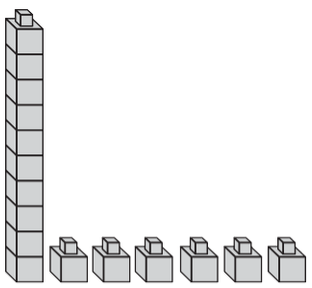
Reflection/remediation based on previous day's work/homework.

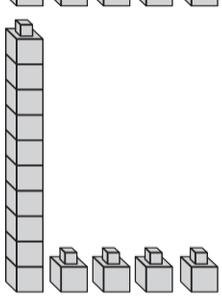
3. Lesson content – concept development (30 minutes)

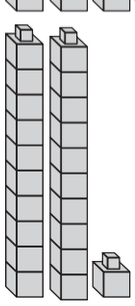
This activity consolidates the language of place value. This builds on the lesson activities in the previous lesson where the focus was bonds of 20 (finding pairs of numbers that add up to 20). The focus in this lesson is to revise and consolidate understanding of place value, in numbers up to 25.

Activity 1: Learners work in groups

- Give each group base ten blocks (units and tens blocks only).
- Write the following numbers on the board: **16**, **14**, **21**.
- Ask the learners to show the numbers using base ten blocks – to show the tens and units.
- Learners should have the following displays on their desks:


(1 ten and 6 units = 10 + 6 = 16)


(1 ten and 4 units = 10 + 4 = 14)


(2 tens and 1 units = 20 + 1 = 21)

- Ask learners to tell you about the number displays on their desks, using the language of place value.
- Repeat with number 11. (1 ten and 1 unit = 10 + 1= 11)
- Make up a story sum to go with this number sentence. Ask different learners to give their ideas for the story. Allow as many different learners as possible to make up their own stories.
- For example, **I have ten slices of bread and I cut one more slice. I now have 11 slices of bread.**
- Repeat with number 13. (1 ten and 3 units = 10 + 3 = 13) Make up a story using this number sentence.
- Repeat with number 19. (1 ten and 9 units = 10 + 9 = 19) Make up a story using this number sentence.

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

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

6. Reflection on lesson

Term 1 Lesson 10: Building up and breaking down numbers

Classwork

1. Example: Draw 14 with tens and ones/units. Write a number sentence to express breaking down 14 into tens and units.
   ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
   ○ ○ ○ ○ (14 = 10 + 4)

2. Draw 18 with tens and ones/units. Write a number sentence to express breaking down 18 into tens and units. (18 = 10 + 8)

3. Draw 16 with tens and ones/units. Write a number sentence to express breaking down 16 into tens and units. (16 = 10 + 6)

4. 1 ten + 3 units = □ (13)

5. 1 ten + 8 units = □ (18)

6. 12 = 10 + □ (2)

7. 15 = □ (10) + □ (5)

8. 10 + □ (3) = 13

9. □ (10) + 6 = 16

10. □ (10) + 9 = 19

Homework

1. 1 ten + 5 units = □ (15)

2. 1 ten + 0 units = □ (10)

3. 17 = □ (1) ten + □ (7) units

4. 19 = □ (1) ten + □ (9) units

LESSON 11: ADDITION DOUBLES: 1 TO 20

Teacher's notes

CAPS topics: 1.1 Count objects, 1.16 Mental mathematics, 1.6 Problem-solving, 1.7 Addition and subtraction, 1.12 Techniques – methods or strategies, 1.13 Addition and subtraction

Lesson vocabulary: Doubles, addition doubles, doubling, halving

Prior knowledge:
In Grade 1, the learners should have learnt how to:

- Use concrete apparatus, pictures, building up and breaking down numbers, doubling and halving and number lines when solving and explaining problems and performing calculations.
- Solve word problems in context and explain own solutions to problems involving addition and subtraction with answers up to 20.
- Addition and subtraction up to 20 as well as using the appropriate symbols (+, –, =, □).

Concepts:

- Solve word problems in context and explain own solutions to problems involving addition and subtraction with answers up to 20 and using appropriate symbols (+, –, =, □).
- When solving problems the learners may use doubling and halving using drawings, concrete apparatus and number lines.

Resources: Counters

DBE workbook activities relevant to this lesson:

- n/a

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

Remediation: Give the learners **20** counters each. Ask them to show you **7** counters. Ask them to double it. Ask: **How many counters do you have now?** (14) Do the same with 4, 5, 8 and 9.

Enrichment: See enrichment activity cards – learners can use any cards from the back of this book.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards in tens from 0 to 40, 0 to 80.
- Count backwards in tens from 40 to 0, 60 to 10.

1.2 Recall and strategies (10 minutes)

Which number is greater: … or…?

		Answer
1.	10 or 20	20
2.	15 or 21	21
3.	13 or 31	31
4.	20 or 40	40
5.	12 or 21	21

		Answer
6.	29 or 31	31
7.	4 or 3	4
8.	14 or 13	14
9.	39 or 29	39
10.	37 or 40	40

2. Correction/reflection on homework (15 minutes)

Learners had no homework but reflection/remediation based on previous day's work must be done.

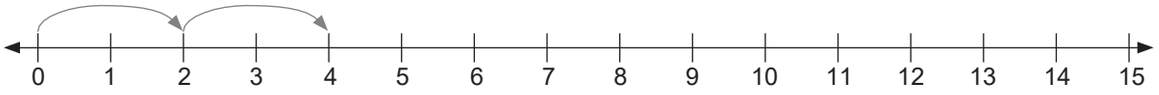
3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

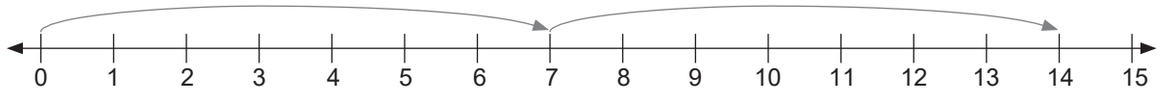
- Draw a picture of a butterfly on the board.
- Draw 2 dots on each wing.
- Ask the learners to double the dots on the wings by drawing them.
- Count the number of dots on each side of the butterfly, and add them together.
- Discuss what you have drawn and the number operation that you have performed:
  Double 2 is …. (4).
- Repeat, drawing different numbers of dots on the one side, allowing learners to draw in the same number of dots on the other side of the butterfly.
- Count the number of dots on each side of the butterfly, and add them together.
- Discuss what you have drawn and the number operation that you have performed:
  Double … is ….

Activity 2: Learners work in pairs

- Give each pair **20** counters.
- Ask them to show double 2 using counters.
- Record the number sentence on the board. (2 + 2 = 4)
- Draw the doubling on a number line on the board.



- Ask them to show double 3 using counters.
- Record the number sentence on the board. (3 + 3 = 6)
- Repeat, doubling 6, 4, 10, 8, 7.
- Draw each of them on a number line, showing the equal hops each time. e.g. double 7 is 14. (7 + 7 = 14)



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

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

6. Reflection on lesson

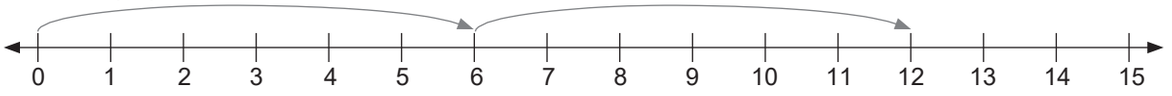
Term 1 Lesson 11: Addition doubles – 1 to 20

Classwork

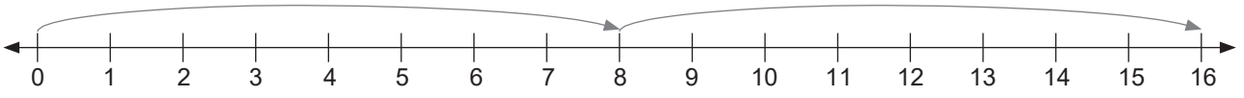
1. Complete the following:
   a) 1 + 1 = _ (2)
   b) 2 + 2 = _ (4)
   c) 3 + 3 = _ (6)

2. Make a drawing using counters to show the following
   a) Double 6 (12 ○ ○ ○ ○ ○ ○ + ○ ○ ○ ○ ○ ○)
   b) Double 8 (16 ○ ○ ○ ○ ○ ○ ○ ○ + ○ ○ ○ ○ ○ ○ ○ ○)

3. Make a drawing using a number line to show the following.
   a) Double 6 (12)



   b) Double 8 (16)



4. Write a number sentence and calculate:
   a) Double 7 (7 + 7 = 14)
   b) Double 10 (10 + 10 = 20)
   c) Double 5 (5 + 5 = 10)

Homework

1. 4 + 4 = (8)

2. 8 + 8 = (16)

3. Make a drawing using counters to show the following
   a) Double 5 (10 ○ ○ ○ ○ ○ + ○ ○ ○ ○ ○)
   b) Double 7 (14 ○ ○ ○ ○ ○ ○ ○ + ○ ○ ○ ○ ○ ○ ○)

4. Write a number sentence and calculate:
   a) Double 3 (3 + 3 = 6)
   b) Double 9 (9 + 9 = 18)

LESSON 12: NEAR DOUBLES

Teacher's notes

CAPS topics: 1.1 Count objects, 1.16 Mental mathematics, 1.6 Problem-solving techniques, 1.7 Addition and subtraction, 1.12 Techniques – methods or strategies, 1.13 Addition and subtraction

Lesson vocabulary: Near doubles, addition, problem solving, double, doubles, doubling

Prior knowledge:
In Grade 1, the learners should have learnt how to:

- Use concrete apparatus, pictures, building up and breaking down numbers, doubling and halving and number lines when solving and explaining problems and performing calculations.
- Solve word problems in context and explain own solutions to problems involving addition and subtraction with answers up to 20.
- Addition and subtraction up to 20 as well as using the appropriate symbols (+, –, =, □).

Concepts:

- Solve word problems in context and explain own solutions to problems involving addition and subtraction with answers up to 20 and using appropriate symbols (+, –, =, □).
- When solving problems, the learners may use drawings, concrete apparatus and number lines as well as doubling and halving.

Resources: Counters

DBE workbook activities relevant to this lesson:

- n/a

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

Remediation: Use counters to allow the learners to experiment with near doubles. Give learners 20 counters each. Ask them to make one group of 4 counters and one group of 5 counters. Can they make two groups which are equal in number using the same counters? Are there counters left over? Record 4 + 4 + 1 = 9. Ask: **How can we say double 4 plus 1 equals 9?** Repeat with other groups, e.g. 3, 5 and 6.

Enrichment: See enrichment activity cards – learners can use any cards from the back of this book.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards in tens from 20 to 70.
- Count backwards in tens from 70 to 20.

1.2 Recall and strategies (10 minutes)

What is…more than…?

		Answer
1.	2 more than 2	4
2.	1 more than 2	3
3.	5 more than 3	8
4.	10 more than 4	14
5.	10 more than 2	12

		Answer
6.	2 more than 11	13
7.	1 more than 2	3
8.	10 more than 1	11
9.	5 more than 4	9
10.	1 more than 7	8

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

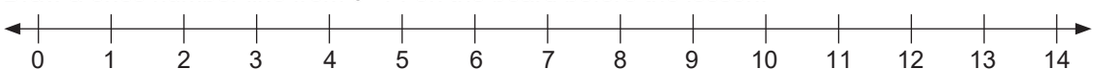
This lesson introduces the idea that learners can use doubles to calculate sums that are 'near' to doubles. For example, double 5 is 5 + 5 which is 10. But 5 + 6 is very close to 5 + 5, it is just one more. So we call it a near double. We can work out 5 + 6 by using our knowledge of 5 + 5, just add the extra 1. This idea might be difficult for some learners to grasp but if you work through the activities with the counters and number lines this will give them opportunities to visualise the 'double plus 1' more easily.

Activity 1: Learners work in pairs

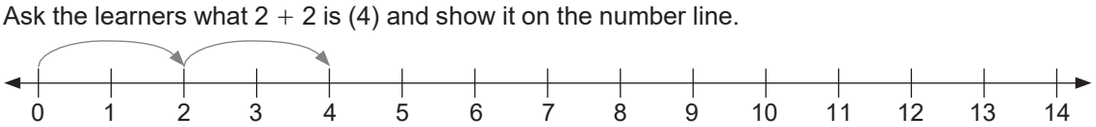
- Give groups of learners **20** counters.
- Ask them to make one group of **6** counters.
- Ask them to make another group, this time with **7** counters.
- Discuss what they need to do to make the groups equal in number. Ask: **Are there counters left over?** (One counter is set aside.)
- Ask them to write a number sentence to express what they have done with the counters.
- Discuss how we can say, **Double 6 plus 1 equals 13**.
- Repeat with fours: **Double 4 plus 1 equals 9**.

Activity 2: Whole class activity

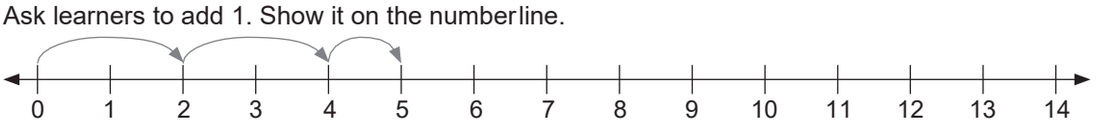
- Draw a ones number line from 0–14 on the board before the lesson.



- Ask the learners what 2 + 2 is (4) and show it on the number line.



- Ask learners to add 1. Show it on the number line.



- How would you write it? (2 + 2 + 1 = 5)
- Discuss that you can also write it as 2 + 3 = 5.
- Now repeat with other sums using number lines and recording the number sentences: e.g. 8 + 8 = 16, 8 + 9 = 17.

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

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

6. Reflection on lesson

Term 1 Lesson 12: Near doubles

Classwork

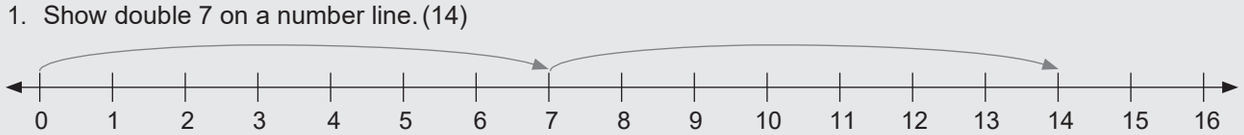
1. Write a number sentence for
   a) five plus six (5 + 6 = 11)
   b) five plus five plus one (5 + 5 + 1 = 11)

2. Write a number sentence for:
   a) double 2 (2 + 2 = 4)
   b) double 5 (5+ 5 = 10)

3. Write a number sentence for:
   a) double 8 plus 1 (8 + 8 + 1 = 17)
   b) double 5 plus 1 (5 + 5 + 1 = 11)

Homework

1. Show double 7 on a number line. (14)



2. Show double 9 on a number line. (18)
   (Draw a number line as above but to 18.)

3. Write a number sentence for double 4. (4 + 4 = 8)

4. Write a number sentence for double 7 plus 1. (7 + 7 + 1 = 15)