GRADE 3

Mathematics

Teacher Toolkit:
CAPS Aligned Lesson Plans and Resources

English / isiXhosa

TERM 2

A MESSAGE FROM THE NECT

NATIONAL EDUCATION COLLABORATION TRUST (NECT)

Dear Teachers

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

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

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

What are the learning programmes?

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

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

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

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

CONTENTS

ABOUT THE LESSON PLANS AND RESOURCES

The lesson plans and resources in this book are part of the Teacher Toolkit for Mathematics Grade 3 Term 2. The other documents in the toolkit are:

- a CAPS Aligned Planner, Tracker and Assessment Resources
- a bilingual CAPS Learner Activity Book
- a bilingual Dictionary of Mathematical Terms

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) is included to allow for routine weekly mental mathematics activities that you can record.
c) **Enrichment activity cards:** A pack of 32 enrichment activity cards (solutions are provided) are included for learners who complete the day's classwork activities ahead of the class.

A. About the lesson plans

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

1. Curriculum alignment

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

2. Links to the DBE workbooks

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

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

3. Broad overview of the content of the lesson plans

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

4. Assessment

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

- Oral and practical activities which you can use to assess learners as you observe and interact with

them in class are provided in the tracker. Rubrics and checklists with criteria for this assessment are provided in the tracker, at the end of the table for the week in which the assessment is suggested.
- There is an item bank of written assessment questions, with marking memos in the tracker. Items that are relevant to a specific lesson are noted in the resources column for the lesson in the tracker.
- A complete overview of the programme of assessment for the term is given in the tracker. This shows you when it is suggested you carry out both formal (and informal) assessment tasks which are oral, practical and written. This will assist you in planning and monitoring your assessment programme.
- There is also recommended mark record sheet in the tracker. This has been drawn up to assist you as you record your marks on SA-SAMS.

5. Managing the lesson programme

A set of orientation activities on eight different topics aligned with the CAPS baseline assessment requirements is provided for the start of the term. You should use all or a selection of these activities in the first week of term before the formal teaching of the numbered lesson plans begins.

The formal curriculum for Term 2 of Grade 3 is covered in a set of 40 numbered, fully developed lesson plans, paced to cover a 50-day teaching term. There are four such lesson plans each week for ten weeks of the term. There is no formal numbered lesson plan for the fifth lesson each week; instead, it is assigned for you to use for a variety of purposes. You can use this time to catch up, remediate or consolidate the content covered in the week's formal lessons. Learners could complete the worksheets from the DBE Workbook related to topics taught in the week if they did not manage to do them in the course of the week.

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

6. Sequence adherence and pacing

Each lesson and its contents have been carefully sequenced. It is therefore important that lessons are not skipped. Should you miss a Mathematics lesson for any reason, you should continue the next day from where you last left off. Do not leave a lesson out. You may need to speed up the pace of delivery to catch up a missed lesson by covering the lesson concept content of two consecutive days in one day. To do this you could cut out or cut back on some of the routine activities like mental mathematics or homework reflection to save time until you are back on track with the expected delivery of the plans. You need to prepare very well as this will help you to manage the full set of lessons at the appropriate pace.

7. Lesson preparation

The lesson plans provide a detailed lesson design for you to follow. However, to deliver the lessons successfully **you must do the necessary preparation yourself**. The information below outlines some key aspects of preparation.

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

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

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

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

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

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

g) **Inclusive education:** Consider the needs of any learners with barriers to learning in your class, and how best you can support them. The DBE has published some excellent materials to support you in working with learners with learning barriers. Two such publications are:
   - Directorate Inclusive Education, Department of Basic Education (2011) *Guidelines for Responding to Learner Diversity in the Classroom Through Curriculum and Assessment Policy Statements.* Pretoria. www.education.gov.za, www.thutong.doe.gov.za/InclusiveEducation.
   - Directorate Inclusive Education, Department of Basic Education (2010) *Guidelines for Inclusive Teaching and Learning. Education White Paper 6. Special needs education: Building an inclusive education and training system.* Pretoria. www.education.gov.za, www.thutong.doe.gov.za/InclusiveEducation.

LESSON PLAN OUTLINE

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

Lesson Plan Outline	
Enrichment	***Optional as required.*** You could use these activities as extra work for fast learners or others interested in doing them. Activities that you can use for enrichment opportunities for learners who have completed the lesson activities are provided in a set of enrichment activity cards 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 set of mental mathematics challenge cards at the end of the lesson plans. Learners write the answers to the questions given on these cards. We recommend that learners only do written mental mathematics once a week and oral mental mathematics on all the other days. You can use this work to obtain a mental mathematics activity mark each week.
Homework/corrections **(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

LESSON 1: PLACE VALUE: NUMBERS 100–300

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.5 Place value, 1.16 Mental mathematics.

Lesson vocabulary: Place values, digits, decompose, multiples, hundreds, tens, ones, estimate, check, more than, less than, between, before, after, number line, forwards, backwards, compare, comparing.

Prior knowledge:
Learners should have been taught how to:

- Recognise place value of numbers to 99.
- Identify and state the value of each digit in a three-digit number.

Concepts:

- Recognise the place value of numbers to 300 and know what each digit represents.
- Decompose 3-digit numbers up to 300 into multiples of hundreds, tens and ones.
- Identify and state the value of each digit.

Resources: Base 10 blocks (see *Printable Resources*), flard cards (see *Printable Resources*), number cards (160–177 and 260–277) (see *Printable Resources*).

DBE workbook activities relevant to this lesson:

- DBE worksheet 41 (pp. 96 and 97).

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

Remediation: Counting: Give learners base 10 blocks to use to count up to 100 in tens: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100. Count up to 200 using base 10 blocks: 100, 200. Learners use base 10 blocks to show you 172. Ask them to show the number that is: one smaller than 172 (171) and 170 (169). Ask them to show the number that is: one bigger than172 (173) and 179 (180).

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 1s from any number between 0 and 300.

1.2 Mental mathematics activity (10 minutes)

	What number is 10 less than:	Answer
1.	116	106
2.	200	190
3.	179	169
4.	89	79
5.	15	5

	What number is 10 more than:	Answer
6.	200	210
7.	54	64
8.	98	108
9.	89	99
10.	166	176

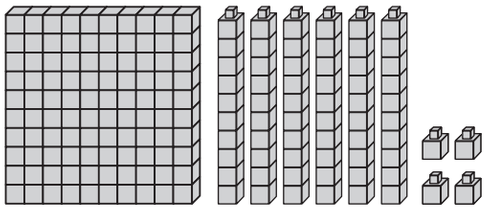
2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

- Give each group of learners a set of base ten blocks and flard cards that you will use to discuss numbers between 100 and 200. Discuss the different displays of the numbers with the learners to help them develop number concept of hundreds, tens and units.
- Write 164 on the board. Ask learners to:
  - *Read the number.*
  - *Write the number on their whiteboards/scrap paper.*
  - *Show the number with base 10 blocks.* (164 has 1 hundred, 6 tens and 4 units)



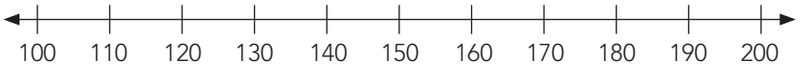
  - *Show the number with flard cards.*

1	0	0		6	0		4		1	6	4

- Repeat with other numbers, e.g. 168, 163 and 165.

Activity 2: Whole class activity

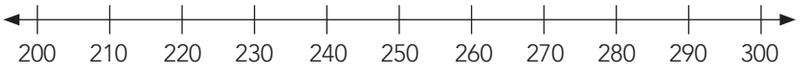
- Draw a 100–200 number line on the board, numbered in 10s.



- Ask the learners to show you the position of 164 on the number line.
- Discuss where on the number line you will find numbers that are more than 164 and where on the number line you will find numbers that are less than 164.
  - *Which number comes before 164?* (163)
  - *Which number comes after 164?* (165)
- Repeat with the numbers 168, 163 and 165.

Activity 3: Whole class activity

- This activity follows the same sequence as Activities 1 and 2 of this lesson, but extends the number range to 300. You should work with base ten blocks and flard cards in the same way as before.
- Write 266 on the board. Ask learners to:
  - *Read the number.*
  - *Write the number on their whiteboards/scrap paper.*
  - *Show the number with base 10 blocks.*
  - *Show the number with flard cards.*
- Repeat the sequence of questions for other numbers in the range, e.g. 294, 201, 283, 219.
- Draw a 200–300 number line on the board, numbered in 10s.



- Ask learners to come to the board and place these numbers on the number line: 294, 201, 264, 283, 219.

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

Term 2 Lesson 1: Place value: numbers 100–300

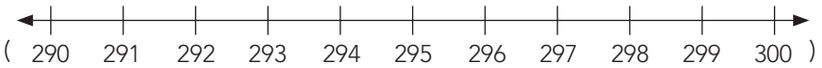
Classwork

1. How many tens are in 260? (26)

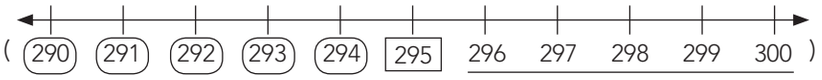
2. How many hundreds are in 99? (0)

3. How many ones are there in 45? (45)

4. Draw a number line starting at 290 and ending at 300.



   a) Draw a square around 295.
   b) Circle all the numbers smaller than 295. (290, 291, 292, 293, 294)
   c) Underline all the numbers bigger than 295. (296, 297, 298, 299, 300)



5. Write 128 in words. (one hundred and twenty eight)

6. Write 105 in words. (one hundred and five)

7. Write 233 in words. (two hundred and thirty three)

8. Write 204 in words. (two hundred and four)

Homework

1. Draw a number line starting at 180 and ending at 190. (Drawing of number line not shown here.)
   a) Draw a square around 186.
   b) Circle all the numbers smaller than 186. (180, 181, 182, 183, 184, 185)
   c) Underline all the numbers bigger than 186. (187, 188, 189, 190)

2. Write 176 in words. (one hundred and seventy six)

3. Write 226 in words. (two hundred and twenty six)

LESSON 2: PLACE VALUE: NUMBERS 301–400

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:** Describe, compare, whole numbers, smaller than, greater than, more than, fewer than, equal to, smallest, greatest, ordinal numbers, place, position, number symbols, number name, between, forwards, backwards, hundreds, tens, units, number sentence, digit. **Prior knowledge:** Learners should have been taught how to: • Describe and compare whole numbers up to 50 using smaller than, greater than, more than, fewer than and is equal to, as well as smallest to greatest and greatest to smallest. • Identify, recognise, write and read number symbols 0 to 150 and number names 0 to 50. **Concepts:** • Describe and compare and order whole numbers up to 400 using smaller than, greater than, more than, fewer than and is equal to, as well as smallest to greatest and greatest to smallest. • Identify, recognise, write and read number symbols 0 to 400 and number names 0 to 250. • Order whole numbers up to 400 from smallest to biggest. **Resources:** Base 10 blocks (see *Printable Resources*), flard cards (see *Printable Resources*), number cards (370–387) (see *Printable Resources*). **DBE workbook activities relevant to this lesson:** • DBE worksheet 43 (pp. 100 and 101). **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Counting: Give learners base 10 blocks to use to count up to 100 in tens: 10, 20, 30, 40, 50, 60, 70, 80, 90. Count up to 400 using the base 10 blocks: 100, 200, 300, 400.Learners also use the base 10 blocks to show you 372. Ask them to show you the number that is: One smaller than 372 (371) one bigger than372 (373). **Enrichment:** See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 100s between 0 and 500. E.g. 100, 200, 300, 400, 500.

1.2 Mental mathematics activity (10 minutes)

	Give me the number/s between:	Answer
1.	457 and 460	458 and 459
2.	300 and 298?	299
3.	51 and 54?	52 and 53
4.	207 and 204?	206 and 205
5.	45 and 48?	46 and 47

	Give me the number/s between:	Answer
6.	51 and 54?	52 and 53
7.	500 and 497?	498 and 499
8.	487 and 490	488 and 489
9.	124 and 126?	125
10.	101 and 98?	100 and 99

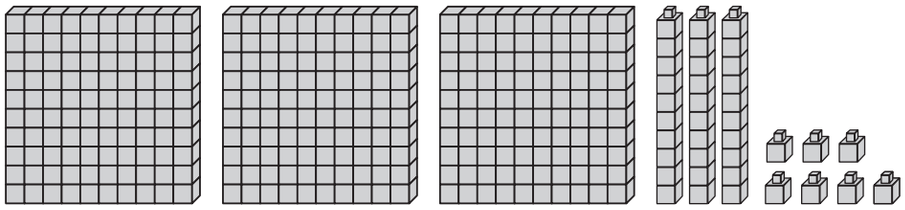
2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

- Give each group of learners a set of base ten blocks and flard cards that you will use to discuss numbers between 100 and 200. Discuss the different displays of the numbers with the learners to help them develop number concept of hundreds, tens and units.
- Write 337 on the board. Ask learners to:
  - *Read the number.*
  - *Write the number on their whiteboards/scrap paper.*
  - *Show the number with base 10 blocks.* (337 has 3 hundreds, 3 tens and 7 units)



  - *Show the number with flard cards.*

- Repeat with other numbers, e.g. 368, 313 and 365.

Activity 2: Whole class activity

- Use the flard card displays from Activity 1 to show learners how to write number sentences to write the expanded form of a number in hundreds, tens and units.
- Show the number 342 using flard cards.

- Ask: *How many hundreds, tens and units in 342?* (3 hundreds, 4 tens and 2 units)
- *How can we write this as a number sentence?* (300 + 40 + 2 = 342)
- Do this for many examples of digit numbers – allowing as many learners as possible to participate in the activity.

Activity 3: Learners work in groups

- Revise with the class how to compare two 3-digit numbers using place value – for example 358 and 329.
- First look at the hundreds digits in the two numbers – they are the same – both numbers have 3 hundreds.
- So now we look at the tens digits. One is 5 and one is 2. The number with 5 in the tens place is bigger than the number with 2 in the tens place because 50 is bigger than 20.
- So we can put the numbers in order – 329 is smaller than 358. (The units do not influence the comparison because tens are bigger than units – or you could say that 29 is smaller than 58.)
- Compare some more pairs of 3-digit numbers to practice the comparison activity. E.g. 399 and 301; 357 and 289; 337 and 335.
- Allow different learners to participate in the discussion about the comparison. They must use the language of place value (shown above) to make the comparisons.
- Give each group of learners five of the number cards (well mixed) (from the set 370–387).
- Learners must sort their number cards and place them in the correct order on their desks.
- Discuss the sorting – check for errors and assist learners to understand how to use place value to help them sort (sort in order looking at hundreds, tens and units and comparing them).

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

Term 2 Lesson 2: Place value: numbers 301–400

Classwork

1. Write 329 showing the breakdown into hundreds, tens and units. (300 + 20 + 9 = 329)

2. Write a number sentence and the answer for 300 and 80 and 1. (300 + 80 + 1 = 381)

3. Draw and complete a number line. Start at 390 and end at 400. (Drawing of number line not shown here.)
   a) Underline all the numbers smaller than 395. (391, 392, 393, 394)
   b) Circle all the numbers bigger than 395. (396, 397, 398, 399, 400)

4. Write 233 in words. (two hundred and thirty-three)

5. Write 244 in words. (two hundred and forty-four)

Homework

1. Write 362 showing the breakdown into hundreds, tens and units. (300 + 60 + 2 = 362)

2. Write a number sentence and answer for 90 and 300 and 2. (300 + 90 + 2 = 392)

3. Draw and complete a number line. Start at 380 and end at 390. (Drawing of number line not shown here.)
   a) Underline all the numbers bigger than 386. (387, 388, 389, 390)
   b) Circle all the numbers smaller than 384. (383, 382, 381, 380)

4. Write 226 in words. (two hundred and twenty-six)

LESSON 3: PLACE VALUE: NUMBERS 401–500

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: Describe, compare, whole numbers, smaller than, greater than, more than, fewer than, equal to, smallest, greatest, ordinal numbers, place value, position (on a number line), number symbol, number name, biggest, digit.

Prior knowledge:
Learners should have been taught how to:

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

Concepts:

- Describe and compare and order whole numbers up to 500 using smaller than, greater than, more than, fewer than and is equal to, as well as smallest to greatest and greatest to smallest.
- Identify, recognise, write and read number symbols 0 to 100 and number names 0 to 250.
- Order whole numbers up to 500 from smallest to biggest and biggest to smallest.

Resources: Base 10 blocks (see *Printable Resources*), flard cards (see *Printable Resources*), number cards (420-437) (see *Printable Resources*).

DBE workbook activities relevant to this lesson:

- DBE worksheet 45 (pp. 104 and 105).
- DBE worksheet 49 (pp. 112 and 113).

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

Remediation: Counting: Give learners base 10 blocks to use to count up to 100 in tens: 10, 20, 30, 40, 50, 60, 70, 80, 90. Count up to 500 using the base 10 blocks: 100, 200, 300, 400, 500. Learners also use the base 10 blocks to show you 472. Ask them to show you the number that is: one smaller than 472 (471), one bigger than 472 (473).

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 5s from any number between 0 and 500. E.g. 105, 110, 115.

1.2 Mental mathematics activity (10 minutes)

	Arrange these numbers from the biggest to the smallest	Answer
1.	78, 105, 98, 305, 2	305, 105, 98, 78, 2
2.	89, 54, 102, 305	305, 102, 89, 54
3.	368, 500, 487, 120	500, 487, 368, 120
4.	78, 54, 105, 307	307, 105, 78, 54

	Arrange these numbers from the biggest to the smallest	Answer
5.	154, 210, 87, 95	210, 154, 95, 87
6.	45, 78, 102, 421	421, 102, 78, 45
7.	87, 35, 201, 50, 62	201, 87, 62, 50, 35
8.	78, 105, 48, 352	352, 105, 78, 48

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

- Give each group of learners a set of base ten blocks and flard cards.
- Write 406 on the board. Ask learners to:
  - *Read the number.*
  - *Write the number on their whiteboards/scrap paper.*
  - *Show the number with base 10 blocks.*
  - *Show the number with flard cards.*
- Repeat with other numbers, e.g. 468, 483 and 422.

Activity 2: Whole class activity

- Draw a 400–500 number line on the board, numbered in 10s.

- Ask learners to come up to the board and help you to place the following numbers on the number line: 494, 483, 464, 403, 422.
- Discuss the way they look at the labels on the number line to find the correct position for the numbers they have to place on the number line.
- For example: *To place 494, I go to 490 on the number line and then just less than half way between 490 and 500.*
- Etc.

Activity 3: Learners work in groups

- Revise with the class how to compare two 3-digit numbers using place value – for example 458 and 479.
- First look at the hundreds digits in the two numbers – they are the same – both numbers have 4 hundreds.
- So now we look at the tens digits. One is 5 and one is 7. The number with 5 in the tens place is bigger than the number with 2 in the tens place because 50 is bigger than 20.
- So we can put the numbers in order – 479 is greater than 458. (The units do not influence the comparison because tens are bigger than units – or you could say that 79 is greater than 58.)
- Compare some more pairs of 3-digit numbers to practice the comparison activity. E.g. 409 and 490, 451 and 457, 447 and 477.
- Allow different learners to participate in the discussion about the comparison. They must use the language of place value (shown above) to make the comparisons.
- Give each group of learners five of the number cards (well mixed) (from the set 420–437).
- Learners must sort their number cards and place them in the correct order on their desks.
- Discuss the sorting – check for errors and assist learners to understand how to use place value to help them sort (sort in order looking at hundreds, tens and units and comparing them).

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

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

6. Reflection on lesson

Term 2 Lesson 3: Place value: numbers 401–500

Classwork

1. Write a number sentence and the answer for 400 blocks and 20 blocks and 9 blocks. (400 + 20 + 9 = 429)

2. Write a number sentence and the answer for 400 and 80 and 1. (400 + 80 + 1 = 481)

3. Draw and complete a number line. Start at 490 and end at 500. (Drawing of number line not shown here.)
   a) Circle all the numbers smaller than 495. (490, 491, 492, 493, 494)
   b) Underline all the numbers bigger than 495. (496, 497, 498, 499)

4. Write 238 in words. (two hundred and thirty-eight)

5. Write 212 in words. (two hundred and twelve)

Homework

1. Write a number sentence and answer for 400 blocks and 60 blocks and 2 blocks. (400 + 60 + 2 = 462)

2. Write a number sentence and answer for 90 and 400 and 2. (400 + 90 + 2 = 492)

3. Draw and complete a number line. Start at 480 and end at 490. (Drawing of number line not shown here.)
   a) Circle all the numbers bigger than 486. (487, 488, 489, 490)
   b) Underline all the numbers smaller than 484. (483, 482, 481, 480)

4. Write 207 in words. (two hundred and seven)

LESSON 4: ORDINAL NUMBERS 200–300

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: Estimate, check, describe, compare, whole numbers, smaller than, greater than, more than, fewer than, equal to, smallest, greatest, ordinal numbers (first, second, etc.), place value, position (on a number line), number symbols, number name.

Prior knowledge:
Learners should have been taught how to:

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

Concepts:

- Describe and compare whole numbers up to 500 using smaller than, greater than, more than, fewer than and is equal to, as well as smallest to greatest and greatest to smallest.
- Use ordinal numbers to show order, place and position (up to 31st).

Resources: 201–300 number board (see *Printable Resources*), counters.

DBE workbook activities relevant to this lesson:

- DBE worksheet 35a (pp. 80 and 81).

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

Remediation: Get learners to stand in a line. Revise ordinal numbers. Ask: *Who is first, 5th, 3rd, etc.* Show them how to count from the front. Work sequentially on half the number board, i.e. from 200–250. Pointing at 200, ask: *If we start here, which number is this?* (first), and the next number, (second), and then (third), … (twentieth). Then work sequentially with the tens pointing at the 10th, 20th, 30th numbers, first in sequence and then randomly.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 10s from any number between 0 and 400. E.g. 389, 379, 369, 359, … .

1.2 Mental mathematics activity (10 minutes)

	Arrange from biggest to smallest	Answer
1.	201, 300, 298, 187	300, 298, 201, 187
2.	211, 300, 165, 122	300, 211, 165, 122
3.	124, 201, 152, 98	201, 152, 124, 98
4.	78, 15, 98, 87, 221	221, 98, 87, 78, 15
5.	14, 56, 102, 300	300, 102, 56, 14

	Arrange from biggest to smallest	Answer
6.	78, 98, 125, 65	125, 98, 78, 65
7.	154, 145, 123, 132	154, 145, 132, 123
8.	12, 54, 89, 0, 45	89, 54, 45, 12, 0
9.	3, 4, 9, 201, 2	201, 9, 4, 3, 2
10.	154, 145, 114, 169	169, 154, 145, 114

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

The main concept to be taught in this lesson is that of ordinal numbers. The first activity is a brief starter activity to get learners going using the 201–300 number board. The number board is then used as a resource for the finding of numbers using ordinal number instructions.

Activity 1: Learners work in groups

Give each learner a 201–300 number board. Ask them to place counters on following numbers:

- 212, 220, 202, 201, 221.
- The numbers that are between 215 and 220 (216, 217, 218, 219).
- The numbers that are between 299 and 296 (298, 297).
- The numbers that are between 234 and 239 (235, 236, 237, 238).

Activity 2: Learners work in groups

- Still using the 201–300 number board, ask the learners the following questions.
- Remember to each time ask them how they came to their answer.
  - *What is the first number?* (201)
  - *What is the second number?* (202)
  - *What is the tenth number?* (210)
- Discuss the numbers that you have just worked with – you have found the position of numbers in the grid according to their position in the sequence on the board.
- Learners need to be able to identify (and locate) numbers according to their position in a sequence. These are given by *ordinal* numbers. Learners do not have to know the term *ordinal* but they must be able to identify the numbers according to position.
- Write the ordinal numbers on the board (using the abbreviations) as you ask the following questions:
  - *What is the 10th number?* (210)
  - *What is the 20th number?* (220)
  - *What is the 30th number?* (230)
  - *What is the 15th number?* (215)
  - Ask randomly for numbers in other positions (up to the 31st).

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

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

6. Reflection on lesson

Term 2 Lesson 4: Ordinal numbers 200–300

This activity has some number concept/place value revision questions and some ordinal number questions. This will help learners to consolidate their understanding and knowledge of place value in 3-digit numbers.

Classwork

1. Name any five numbers that are smaller than 276. (Answers will vary.)
2. Name any five numbers that are bigger than 276. (Answers will vary.)
3. Write these numbers from the smallest to the biggest: 215, 255, 205, 251, 250. (205, 215, 250, 251, 255)
4. Write these numbers from the biggest to the smallest: 299, 209, 219, 290, 201. (299, 290, 219, 209, 201)
5. Write 237 in words. (two hundred and thirty-seven)
6. What is the fifth number after 245? (250)
7. What is the 20th number after 250? (270)
8. What is the 25th number after 210? (235)

Homework

1. Write down a number that is bigger than 224, but smaller than 229. (225/226/227/228)
2. Write these numbers from the biggest to the smallest: 223, 203, 213, 233. (233, 223, 213, 203)
3. Write the same numbers from the smallest to the biggest. (203, 213, 223, 233)
4. Write 215 in words. (two hundred and fifteen)
5. What is the 16th number after 200? (216)
6. What is the 14th number after 230? (244)

WEEK 2

LESSON 5: ORDINAL NUMBERS 300–500

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: Describe, compare, whole numbers, smaller than, greater than, more than, fewer than, equal to, smallest, greatest, ordinal numbers (first, second, third, etc.), place value, position, number symbol, number name, biggest, pair.

Prior knowledge:
Learners should have been taught how to:
- Describe and compare whole numbers up to 50 using smaller than, greater than, more than, fewer than and is equal to, as well as smallest to greatest and greatest to smallest.
- Identify, recognise, write and read number symbols 0 to 150 and number names 0 to 50.

Concepts:
- Describe and compare whole numbers up to 500 using smaller than, greater than, more than, fewer than and is equal to
- Order numbers from smallest to greatest and greatest to smallest.
- Use ordinal numbers to show order, place and position.

Resources: Number board (401–500) (see *Printable Resources*), counters.

DBE workbook activities relevant to this lesson:
- DBE worksheet 35b (pp. 82 and 83).

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

Remediation: Ask the learners to place a counter on 483 on the number board and to read out the number. Remind them not to say *four eighty-three* but *four hundred and eighty three*. Ask the learners to show you a number that is bigger than 483, and one that is smaller than 483. Ask them to show you 483 with the base 10 blocks.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 10s from any given multiple between 0 and 500. E.g. 458, 468, 478, … .

1.2 Mental mathematics activity (10 minutes)

	Arrange these numbers from smallest to biggest	Answer
1.	458, 421, 312, 497	312, 421, 458, 497
2.	78, 54, 65, 102, 0	0, 54, 65, 78, 102
3.	104, 56, 201, 354	56, 104, 201, 354
4.	498, 365, 105, 32	32, 105, 365, 498
5.	487, 500, 124, 305	124, 305, 487, 500

	Arrange these numbers from smallest to biggest	Answer
6.	35, 10 , 98, 105	10, 35, 98, 105
7.	98, 57, 123, 451	57, 98, 123, 451
8.	89, 54, 105, 60	54, 60, 89, 105
9.	78, 105, 64, 201	64, 78, 105, 201
10.	89, 52, 500, 487	52, 89, 487, 500

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

This is another lesson to consolidate the concept of ordinal numbers. The first two activities are starter activities. The first one gives a brief opportunity to revise sorting 3-digit numbers according to place value. This is important revision to keep the ideas of place value that were the focus of the first few lessons in the minds of the learners. The second one is a brief one to get learners going using the 401–500 number board. The number board is then used as a resource for the finding of numbers using ordinal number instructions.

Activity 1: Learners work in groups

- Write this list of numbers on the board.
- Ask the learners to write the numbers in order from:
  - smallest to biggest: 401, 421, 410, 420, 402 (401, 402, 410, 420, 421).
  - biggest to smallest: 401, 421, 410, 420, 402 (421, 420, 412, 402, 401).

Activity 2: Learners work in groups

Give each learner a 401–500 number board. Ask them to place counters on following numbers:

- 412, 420, 402, 401, 421.
- The numbers that are in between 415 and 420 (416, 417, 418, 419).
- The numbers that are in between 499 and 496 (498, 497).
- The numbers that are in between 434 and 439 (435, 436, 437, 438).

Activity 3: Learners work in groups

Using the 401–500 number board:

- Recap the concept of ordinal numbers. They indicate the position of numbers according to their position in a sequence.
- Write the ordinal numbers on the board (using the abbreviations) as you ask the following questions about numbers on the 401–500 grid:
  - *What is the 10th number?* (410)
  - *20th number?* (420)
  - *30th number?* (430)
  - *12th number?* (412)
  - *23rd number?* (423)
- Each time ask them how they came to the answer.
- Ask randomly for numbers in other positions (up to the 31st). You could also allow learners to ask the questions.

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

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

6. Reflection on lesson

Term 2 Lesson 5: Ordinal numbers 300–500

This activity has some place value revision questions and some ordinal number questions. This will help learners to consolidate their understanding and knowledge of place value in 3-digit numbers.

Classwork

1. Name any five numbers that have 6 tens. (Answers will vary.)
2. Name any five numbers that have 7 ones. (Answers will vary.)
3. Write these numbers from the smallest to the biggest: 415, 455, 405, 451, 450. (405, 415, 450, 451, 455)
4. Write these numbers from the biggest to the smallest: 499, 409, 419, 490, 401. (499, 490, 419, 409, 401)
5. Write 237 in words. (two hundred and thirty-seven)
6. What is the fifth number after 300? (305)
7. What is the 31st number after 340? (371)
8. What is the 13th number after 355? (368)

Homework

1. Write down a number that is bigger than 424, but smaller than 429. (425/426/427/428)
2. Write these numbers from the biggest to the smallest: 423, 403, 413, 433. (433, 423, 413, 403)
3. Write the same numbers from the smallest to the biggest. (403, 413, 423, 433)
4. Write 245 in words. (two hundred and forty-five)
5. What is the 26th number after 300? (326)
6. What is the 23rd number after 350? (373)

LESSON 6: PROBLEM SOLVING STRATEGIES: BUILDING UP AND BREAKING DOWN

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.7, 1.13 Addition and subtraction, 1.16 Mental mathematics, 1.6 Problem solving techniques.

Lesson vocabulary: Addition, subtraction, add, subtract, tens, units, increase, decrease, pattern, calculate, forwards, backwards, digit, round off.

Prior knowledge:
Learners should have been taught how to:

- Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 99, using the appropriate symbols +, –, =, □ .

Concepts:

- Recall addition and subtraction facts to 10 (mental mathematics).
- Use the following techniques when solving problem and explain solutions to problems: building up and breaking down numbers.

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

DBE workbook activities relevant to this lesson:

- DBE worksheet 37a (pp. 86 and 87).

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

Remediation: Using 100–400 number boards children count in 10s beginning on the non-multiple, e.g. 122, 132, 142, 152, … . Now do the same with hundreds, e.g. 105, 205, 305, …

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 2s from any given number between 0 and 500. E.g. 103, 105, 107, … .

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	5 + 4 – 3 =	6
2.	4 + 5 – 2 =	7
3.	2 + 4 – 5 =	1
4.	7 + 0 – 7 =	0
5.	8 + 1 – 0 =	9

	Calculate the following:	Answer
6.	8 + 2 – 4 =	6
7.	7 + 3 – 3 =	7
8.	9 + 1 – 9 =	1
9.	3 + 3 – 0 =	6
10.	2 + 5 – 6 =	1

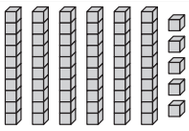
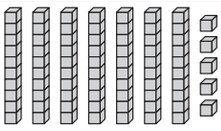
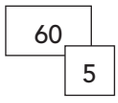
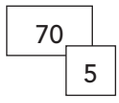
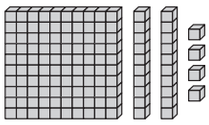
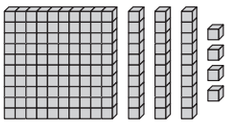
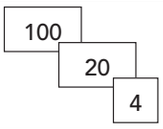
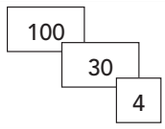
2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

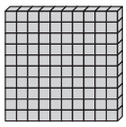
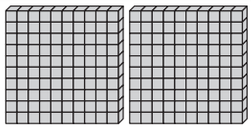
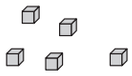
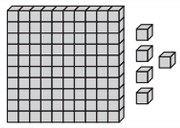
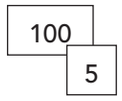
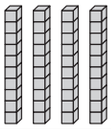
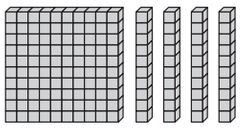
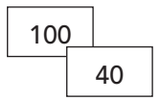
Activity 1: Whole class activity

- This activity is designed to teach learners about the pattern that is formed when you add 10.
- Ask the learners to show you the first number with their base 10 blocks. Then ask them to add 10.
- Ask the learners: *What is 65 + 10?* (75) *What happened to the tens?* (The tens went up by one ten – so the tens digit increased by 1.)
- Learners do the same with their flard cards. Repeat this with 134 + 10 = .
- Repeat with other examples – show many different examples so that learners can generalise the pattern for themselves.
- Here is an illustration of the displays the learners should make when following your instructions:

Number	Show it with base 10 blocks	Add 10	Show it with flard cards	Add 10	Answer
65					75
124					134

Activity 2: Whole class activity

- This activity is designed to teach learners about the pattern that is formed when you add 100.
- Ask the learners to show you the first number with their base 10 blocks. Then ask them to add 100.
- Ask the learners: *What is 100 + 100?* (200*) What happened to the hundreds?* (The hundreds went up by one hundred – so the hundreds digit increased by 1.)
- Learners do the same with their flard cards.
- Repeat this with 5 + 100 = and 40 + 100 = .
- Repeat with other examples – show many different examples so that learners can generalise the pattern for themselves.

Number	Show it with base 10 blocks	Add 100	Show it with flard cards	Add 100	Answer
100					200
5					105
40					140

Activity 3: Whole class activity

- Write 126 on the board. Point to the number and ask the learners to:
- *Add ten to the number. What do you get?* (136)
- *What would happen if you subtracted 10 from 126?* (The number would decrease by ten.)
- *What would you get?* (116).
- Point to the number 126 and ask the learners to add hundred to the number.
- Ask: *What do you get?* (226)
- *What do you notice when you add hundred to a number?* (The hundreds digit increases by one.)
- Do the same with other numbers, e.g. 275 and 439.

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

Term 2 Lesson 6: Problem solving strategies: building up and breaking down

Classwork

1. Copy this table and complete it in your mathematics book.

		Add 10	**Subtract 10**	**Add 100**	**Subtract 100**
a)	271	(281)	(261)	(371)	(171)
b)	542	(552)	(532)	(642)	(452)
c)	326	(336)	(316)	(426)	(226)
d)	188	(198)	(178)	(288)	(88)

Homework

1. 11 + 10 = (21)
2. 31 + 10 = (41)
3. 24 + 10 = (34)
4. 120 + 10 = (130)
5. 103 + 10 = (113)
6. 230 + 100 = (330)
7. 175 + 100 = (275)
8. 224 + 100 = (324)
9. 290 + 100 = (390)

LESSON 7: PROBLEM SOLVING STRATEGIES: BUILDING UP AND BREAKING DOWN

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.7, 1.13 Addition and subtraction, 1.16 Mental mathematics , 1.6 Problem solving techniques.

Lesson vocabulary: Addition, subtraction, build up, break down, building up, breaking down, hundreds, tens, units, altogether.

Prior knowledge:
Learners should have been taught how to:

- Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 99, using the appropriate symbols +, –, =, ☐ .

Concepts:

- Use the following techniques when solving problem and explain solutions to problems: building up and breaking down numbers.

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

DBE workbook activities relevant to this lesson:

- DBE worksheet 37b (p. 89).

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

Remediation: Use base 10 blocks and flard cards to work with one- and two-digit numbers doing addition, then move on to addition of two-digit and three-digit numbers.
E.g. 20 + 3 = __ , 20 + 12 = __ , 45 + 13 = __ , 42 + 51 = __

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 5s from any given number between 0 and 500. E.g. 404, 409, 414, … .

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	7 – 3 + 6 =	10
2.	9 – 1 + 0 =	8
3.	3 – 0 + 3 =	6
4.	10 – 9 + 5 =	6
5.	9 – 5 + 4 =	8

	Calculate the following:	Answer
6.	5 – 3 + 8 =	10
7.	10 – 3 + 0 =	7
8.	8 – 5 + 2 =	5
9.	6 – 3 + 1 =	4
10.	7 – 7 + 9 =	9

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

- Revise breaking up numbers in to hundreds, tens and units.
  E.g. 324 = 300 + 20 + 4
- Do the same with 218, 345 and 399.
- Explain that we have revised breaking numbers up into 100s, 10s and units because we are now going to use this breaking up when we add.

Activity 2: Whole class activity

- This activity involves addition using breaking down/building up. Work on the board while you explain the working in the algorithm to the class.
- While you work through each step of the working, question the learners to make sure that they understand the method.
- First example: *We are going to break down both of the numbers.*
  (Use base 10 blocks or flard cards to demonstrate this as well, if you would like to.)
- 324 + 82
  = 300 + 20 + 4 + 80 + 2
  = 300 + (20 + 80) + (4 + 2)
  = 300 + 100 + 6
  = 406
  (Notice how we grouped the tens together and units together to help us to add.)
- Second example:
  (Use base 10 blocks or flard cards to demonstrate this as well if you would like to.)
  223 + 136
  = 200 + 20 + 3 + 100 + 30 + 6
  = (200 + 100) + (20 + 30) + (3 + 6)
  = 300 + 50 + 9
  = 359
  (Notice how we grouped the hundreds together, tens together and units together to help us to add.)
- Now do the following example: 209 + 222 = __(431)
- Notice that there are no tens in the first number – we write a zero in the tens place as a place holder.
- Note also that the units total goes over ten – learners need to regroup or deal with this in the way they feel most comfortable with.
  209 + 222
  = 200 + 0 + 9 + 200 + 20 + 2
  = (200 + 200) + (0 + 20) + (9 + 2)
  = 400 + 20 + 11
  = 400 + 31 = 431

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

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

6. Reflection on lesson

Term 2 Lesson 7: Problem solving strategies: building up and breaking down

When learners do addition using breaking down they might not write the working in exactly the same way. You need to check all of the steps in their working to decide whether or not it is correct as there is not only one correct method. All correct working should be accepted. Learners should be encouraged to work efficiently and correctly.

The solutions given below to the classwork activity are shown using numeric calculations (like in the lesson). Remember that variations on this working can also be correct.

Classwork

Solve the following:

1. 225 + 53 = ___ (278)
   = 200 + 20 +5 + 50 + 3
   = (200 + 0) + (20 + 50) + (5 + 3)
   = 200 + 70 + 8
   = 278

2. 264 + 132 = ___ (396)
   = 200 + 60 + 4 + 100 + 30 + 2
   = (200 + 100) + (60 + 30) + (4 + 2)
   = 300 + 90 + 6
   = 396

3. 164 + 85 = ___ (249)
   = 100 + 60 +4 + 80 + 5
   = (100 + 0) + (60 + 80) + (4 + 5)
   = 100 + 140 + 9
   = 240 + 9
   = 249

4. 175 + 116 = ___ (291)
   = 100 + 70 +5 +100 + 10 + 6
   = (100 + 100) + (70 + 10) + (5 + 6)
   = 200 + 80 + 11
   = 200 + 91
   = 291

Homework

Solve the following:

1. 221 + 42 = ___ (263)

2. 253 + 123 = ___ (376)

3. 166 + 83 = ___ (249)

4. 171 + 65 = ___ (236)

LESSON 8: PROBLEM SOLVING STRATEGIES: ADDING 3-DIGIT NUMBERS BY BREAKING DOWN THE SECOND NUMBER

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.7, 1.13 Addition and subtraction, 1.16 Mental mathematics, 1.6 Problem solving techniques breaking down the second number.

Lesson vocabulary: Addition, subtraction, counting on, grouping, hundreds, tens, units, algorithm.

Prior knowledge:
Learners should have been taught how to:

- Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 99, using the appropriate symbols +, –, =, ☐ .
- Practice number bonds to 30.

Concepts:

- Use the following techniques when solving problem and explain solutions to problems: adding three digits to three digits, breaking down the second numbers.

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

DBE workbook activities relevant to this lesson:

- DBE worksheet 38 (p. 90).

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

Remediation: Work with two-digit numbers, e.g. 25 + 13 = (25 + 10 + 3) = (35 + 3 = 38). Do repeated examples using different pairs of numbers to help the learners understand the strategy of breaking down numbers. This will also reinforce their understanding of place value.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 2s from any given number between 0 and 500. E.g. 388, 390, 392 ... .

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	54 + 10 =	64
2.	77 + 10 =	87
3.	121 + 10 =	131
4.	128 + 10 =	138
5.	166 + 10 =	176

	Calculate the following:	Answer
6.	254 + 100 =	354
7.	177 + 100 =	277
8.	121 + 100 =	221
9.	128 + 100 =	228
10.	166 + 100 =	266

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

The strategy demonstrated in this lesson is that of adding by breaking down the second number only.

- This strategy involves adding 3-digit numbers to 3-digit numbers: keeping the first number whole and breaking down the second number and then adding in stages.
- (You can also show this with base 10 blocks and flard cards.)
- First example:

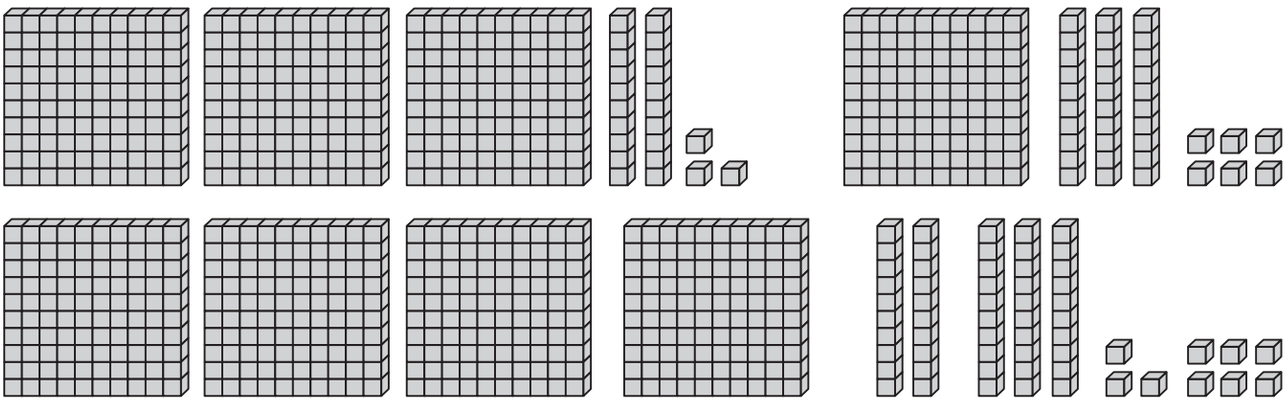
323 + 136 = ...

= 323 + (100 + 30 + 6) (break down the second number into hundreds, tens and units)
= (323 + 100) + 30 + 6 (first add the hundreds)
= (423 + 30) + 6 (then add the tens to what you have)
= 453 + 6 (now add the ones)
= 459

Note to teacher: The brackets around the numbers are used in the calculation strategy while the brackets around the strategy points are for you information.

This is an illustration of a demonstration of the algorithm using base ten blocks:

- First lay out the base ten representations of the two numbers to be added.
- Regroup so that you show the addition of the numbers in the different places.



- More examples (see below).
- While you work through them, you should question the learners about why they are grouping numbers in the way they suggest.

141 + 345 = __ = 141 + (300 + 40 + 5) = (141 + 300) + 40 + 5 = (441 + 40) + 5 = 481 + 5 = 486	324 + 125 = __ = 324 + (100 + 20 + 5) = (324 + 100) + 20 + 5 = (424 + 20) + 5 = 444 + 5 = 449	177 + 122 = __ = 177 + (100 + 20 + 2) = (177 + 100) + 20 + 2 = (277 + 20) + 2 = 297 + 2 = 299

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

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

6. Reflection on lesson

Term 2 Lesson 8: Problem solving strategies: adding 3-digit numbers by breaking down the second number

The strategy demonstrated in this lesson if that of adding by breaking down the second number only. Learners could be encouraged to use this strategy for the classwork and homework today. But remember that learners should be allowed to add using any correct strategy. Mark their work carefully, looking for correct working.

There are also some basic place value and number naming questions to allow learners to keep these ideas in mind.

Classwork

Remember to keep the first number whole and break down the second number.

1. 205 + 222 = (427)

2. 374 + 108 = (482)

3. Portia had 241 stickers and her friends gave her 252 stickers for her birthday. How many stickers does she have? (493)

4. Write the number symbol for three hundred and fourteen. (314)

5. Write 418 in words. (four hundred and eighteen)

Homework

Remember to keep the first number whole and break down the second number.

1. 325 + 172 = (497)

2. 177 + 32 = (209)

3. 204 + 203 = (407)

4. Write the number symbol for three hundred and eight. (308)

5. Write 209 in words. (two hundred and nine)

WEEK 3

LESSON 9: PROBLEM SOLVING STRATEGIES: NUMBER LINES

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.7 1.13 Addition and subtraction, 1.16 Mental mathematics, 1.6 Problem solving techniques.

Lesson vocabulary: Addition, subtraction, number line, forwards, backwards.

Prior knowledge:
Learners should have been taught how to:

- Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 99, using the appropriate symbols +, –, =, □ .
- Practice number bonds to 30.

Concepts:

- Use the following techniques when solving problem and explain solutions to problems: number lines.

Resources: Number lines 100–200 and 200–300 (see *Printable Resources*).

DBE workbook activities relevant to this lesson:

- DBE worksheet 39 (pp. 92 and 93). (NOTE: Basic revision not number line activities.)

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

Remediation: Work with number lines from 0–100 to add smaller number using the same method. Make sure that the learners know how to place numbers/find the position of numbers on a number line. They also need to know how to move forwards and backwards on a number line.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 100s between 0 and 500. E.g. 100, 200, 300, 400, 500.

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	34 + 10 =	44
2.	79 + 10 =	89
3.	131 + 10 =	141
4.	146 + 10 =	156
5.	122 + 10 =	132

	Calculate the following:	Answer
6.	34 + 100 =	134
7.	79 + 100 =	179
8.	131 + 100 =	231
9.	146 + 100 =	246
10.	122 + 100 =	222

2. Correction/reflection on homework (15 minutes)

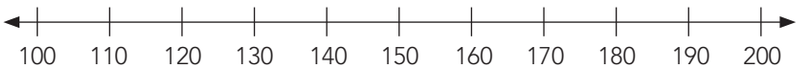
Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

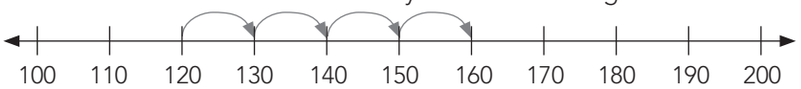
Activity 1: Whole class activity

Addition using a number line.

- We use number lines to represent numbers and we can also use them to show number sentences.
- Draw a 100–200 number line (marked in 10s) on the board.



- Show the addition of 120 and 40 to your learners using the illustrations below to guide your explanation:

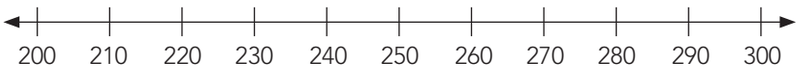


- Find 120 on the number line and put a dot there. Count 40 up from 120 (in 10s) and put a dot where you land. The answer to 120 + 40 is 160, as seen on the number line.
- Discuss the use of the number line to show addition.
- Try another example: 115 + 35 = __ .
- Point out that if the number line is labelled in 10s, we locate the 5s half way between each marker.
- Work through a few similar examples of addition, using the same number line.

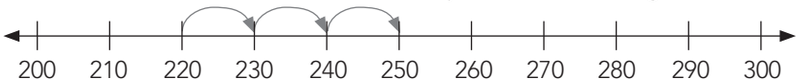
Activity 2: Whole class activity

Subtraction using a number line.

- Draw a 200–300 number line (marked in 10s) on the board.



- Show the subtraction of 30 from 250 to your learners using the illustrations below to guide your explanation:



- Find 250 on the number line. Put a dot there. Count down 30 (in 10s) from 250 using the number line. Put a dot where you land. The answer to 250 – 30 is 220, as can be seen on the number line.
- Discuss the use of the number line to show subtraction.
- Discuss the direction of movement on the number line when you subtract – you move backwards towards zero.
- Try another example: 245 – 35 = __ .
- Discuss again where to locate the 5s if the number line is labelled in 10s. (Half way between each marker.)
- Work through a few similar examples of subtraction, using the same number line.

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

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

6. Reflection on lesson

Term 2 Lesson 9: Problem solving strategies: number lines

The classwork and homework activities give learners further opportunities to do addition and subtraction of numbers that are multiples of 5 or 10, using number lines. Encourage learners to use number lines but allow them to use other strategies as well if they would like to.

If you would like to you could give learners printed copies of number lines (see Printable Resources) to use when they do this activity.

Classwork

1. Use a 100–200 number line to calculate the following:
   a) 120 + 20 = (140)
   b) 125 + 35 = (160)

2. Use a 200–300 number line to calculate:
   a) 205 + 35 = (240)
   b) 230 + 60 = (290)

3. Use a 100–200 number line to calculate the following:
   a) 160 – 30 = (130)
   b) 175 – 35 = (140)

4. Use a 200–300 number line to calculate:
   a) 275 – 65 = (215)
   b) 240 – 20 = (240)

Homework

1. Use a 100–200 number line to calculate:
   a) 135 + 15 = (140)
   b) 145 – 20 = (125)

2. Use a 200–300 number line to calculate:
   a) 250 + 30 = (280)
   b) 265 – 40 = (225)

LESSON 10: PROBLEM SOLVING STRATEGIES: NUMBER LINES

Teacher's notes
CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.7, 1.13 Addition and subtraction, 1.16 Mental mathematics , 1.6 Problem solving techniques. **Lesson vocabulary:** Addition, subtraction, number line, forwards, backwards, multiple. **Prior knowledge:** Learners should have been taught how to: • Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 99, using the appropriate symbols +, –, =, □ . • Practice number bonds to 30. **Concepts:** • Use the following techniques when solving problem and explain solutions to problems: number lines. **Resources:** Number lines (see *Printable Resources*). **DBE workbook activities relevant to this lesson:** • DBE worksheet 46 (pp. 106 and 107). (NOTE: Revision of addition and subtraction using breaking down.) **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Work again with number lines from 0–100 to add smaller number using the same method. **Enrichment:** See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 100s between 0 and 500. E.g. 100, 200, 300, 400, 500.

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	5 – __ = 3	2
2.	3 + __ = 10	7
3.	10 – __ = 10	0
4.	2 + __ = 10	8
5.	9 – __ = 3	6

	Calculate the following:	Answer
6.	1 + __ = 7	6
7.	10 – __ = 5	5
8.	10 – __ = 3	7
9.	4 + __ = 10	6
10.	9 – __ = 5	4

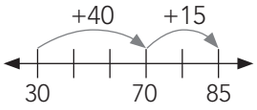
2. Correction/reflection on homework (15 minutes)

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

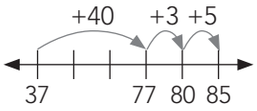
3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

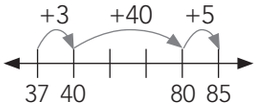
- We can use number lines to represent numbers and we can also use them to show number sentences. Recap that this was what you did in yesterday's lesson, working on addition and subtraction of numbers that are multiples of 5 and 10.
- Today we will use open number lines in different ways to represent calculations with numbers which are not necessarily multiples of 5 or 10.
- Draw an open number line on the board and then show the addition of 37 and 48 to your learners using the illustrations below to guide your explanation.
- There are many different ways you could count on using the open number line. Here are 3 ways: (Remember there may be other ways – you should show other methods too and allow learners to show you their own methods.)
- Method 1: 37 + 48 =
  Add the tens by counting on 40 from 30. Add the units by counting on 7 + 8 = 15 from there to get the total of 85.



- Method 2: 37 + 48 =
  Add 40 onto 37 first. Add 3 from the remaining 8 units to take you to 80. Add the last 5 units.



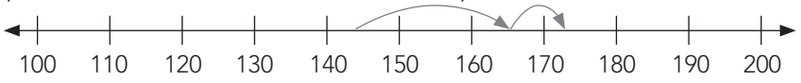
- Method 3: 37 + 48 =
  Add 3 to 37 to take you to 40. You still need to add 45. Add 40 to take you to 80. Add the final 5 units, to get the total of 85.



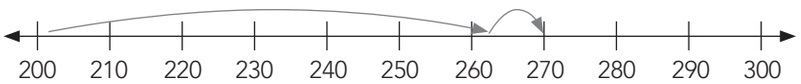
Activity 2: Whole class activity

Choose other pairs of numbers to add using the number line.

- Show different ways that this can be done, following the examples done above – this time on a number line with gradations marked. (This is just to show a different way of using a number line. You could also use open number lines for these questions.)
- 145 + 28 = (Use a 100–200 number line.)
  (145 + 28 = 145 + 20 + 8 = 165 + 8 = 173)



- 203 + 67 = (Use a 200–300 number line.)
  (203 + 67 = 203 + 60 + 7 = 263 + 7 = 270)



- Work through some other examples if the class needs more practice using this strategy. (Make sure you have some 2-digit and some 3-digit numbers when you add.)

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

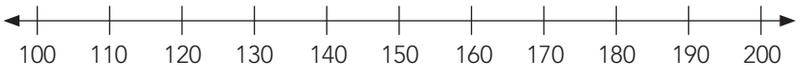
Term 2 Lesson 10: Problem solving strategies: number lines

If you would like to you could give learners printed copies of number lines to use when they do this activity.

Classwork

(Number line solutions not drawn here.)

1. Use a 100–200 number line to calculate: 124 + 25 = (149)



2. Use a 200–300 number line to calculate: 216 + 59 = (275)

Homework

1. Use a 100–200 number line to calculate: 131 + 66 = (197)

2. Use a 200–300 number line to calculate: 269 + 19 = (288)

LESSON 11: WORKING WITH TENS – ROUNDING OFF

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.8, 1.14 Repeated addition leading to multiplication, 1.16 Mental mathematics.

Lesson vocabulary: Multiplication, multiply, total, tens, rounding off, round off, rounded off, digit.

Prior knowledge:
Learners should have been taught how to:

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

Concepts:

- Solve number problems in context and explain own solution to problems involving multiplication with answers up to 75, using appropriate symbols x, =, ☐
- Working with tens (arrays, rounding off to the nearest ten, multiplication, repeated subtraction).

Resources: Counters.

DBE workbook activities relevant to this lesson:

- DBE worksheet 34 (pp. 78 and 79). (NOTE: Revision of multiples of 10.)

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

Remediation: Practical problem solving activity: the teacher has to order books for 6 children. If each child needs 10 books, how many books must the teacher order? Pack it out with counters/draw the pictures. Count the books: (10, 20, 30, …60).

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 10s between 100 and 500.

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	10 + 3 =	13
2.	10 + 2 =	12
3.	10 + 6 =	16
4.	10 + 10 =	20
5.	10 + 5 =	15

	Calculate the following:	Answer
6.	10 + 0 =	10
7.	10 + 1 =	11
8.	10 + 4 =	14
9.	10 + 7 =	17
10.	10 + 9 =	19

2. Correction/reflection on homework (15 minutes)

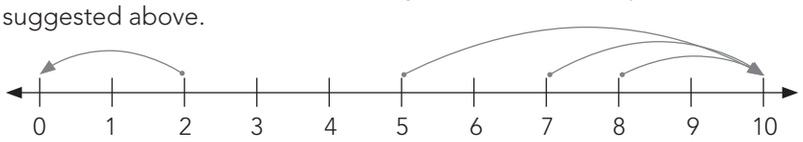
Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

Rounding off is used in estimation and other situations. This term Grade 3s are introduced to rounding off. In this lesson you will teach learners how to round off numbers to the nearest 10.

Activity 1: Whole class activity

- Draw a number line from 0 to 10 on the board. This will be used to round off numbers from 1 to 9.
- Work though the following rounding activities with the class interactively, referring to the number line while you do so.
- Round off 2, 7 and 8 to the nearest 10. Each time you round a number, you should:
  - Plot the points that must be rounded off clearly on the number line.
  - Use the plotted points to assist you (and the learners) to decide which ten is nearer.
  - Now round off the number 5. What should we do? 5 is exactly in the middle? Explain to the learners that there is a RULE for rounding off the number 5. You round it up.
  - This is what the number line drawing will look like once you have worked through all of the examples suggested above.



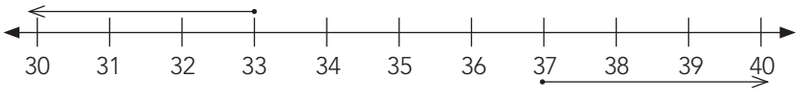
  - The rule says if the digit is less than 5, rounding off is done to the previous (lower) 10. If the digit is 5 or more, it is rounded off to the next (higher) 10. Thus 2 is rounded off to zero while 5, 7 and 8 are rounded off to 10. This can be seen on the number line.

Activity 2: Whole class activity

- Draw the following table on your chalkboard. Make up a story. For example: *Imagine that it is raining heavily. The boy is at house number 16 and has to run to the nearest friend's house for shelter. He has friends living at Number 10 and Number 20. Which house is nearer, No. 10 or No. 20? Where will the boy run to?* (Number 20 because it is closer.)

10						?				20
10	11	12	13	14	15	16	17	18	19	20

- *If the boy is at house number 12, where should he run? If he is at house number 14, where should he run?* (He should run to house number 10 – this relates to rounding down.)
- *Where will he run if he is at house number 15?* Discuss the rule that from 15, you round up to 20 (round up) as explained in the first activity.
- Once you know how to round off numbers, you can use this skill to estimate answers.
- *Is 33 closer to 30 or 40?* (30)
- *Is 37 closer to 30 or 40?* (40)
- Draw a number line on the board to illustrate the positions of the numbers.



- If we round off 33 to the nearest 10, we round it down to 30, since it is nearer to 30.
- We say *33 to the nearest 10 is 30.*
- If we round off 37 to the nearest 10, we round it up to 40, since it is nearer to 40.
- We say *37 to the nearest 10 is 40.*
- Learners need to understand that 35 is halfway between 30 and 40. We say that the nearest 10 to 35 is 40, because we round up when the number is halfway between two 10s.
- Do some more rounding examples with the class, discuss each time how to check whether to round up or down. *Round off to the nearest 10:*
  56 (60); 72 (70); 95 (100); 101 (100); 145 (150); 138 (140); 205 (210); etc.

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

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

6. Reflection on lesson

Term 2 Lesson 11: Working with tens – rounding off

You have worked with addition and subtraction so far in the lessons this term. But some learners might remember how to work with groups of ten. They should use this knowledge to solve problems if it is appropriate and if they would like to.

The past few lessons have shown learners different strategies for doing calculations (using base ten blocks, flard cards and number lines). There are activities in this classwork and homework to give learners a chance to practise solving problems. The main concept in this lesson is rounding off. You need to be sure that learners learn how to round off and practice doing it.

If there is time, allow learners to solve a few word problems, to keep them actively thinking about using numeric calculations to solve problems.

Classwork

1. A vegetable garden has 10 rows of plants. Every row has the same number of plants. If there is a total of 30 plants, how many plants are in each row? (3)

2. Tony has 30 sweets. He eats 3 sweets every day. For how many days can he eat sweets? (10)

3. Round off to the nearest ten.
   a) 36 (40)
   b) 62 (60)
   c) 79 (80)
   d) 115 (120)
   e) 209 (210)

Homework

1. David sells bags with ten oranges in each bag. He has 40 oranges. How many bags can he fill? (4)

2. A school pool is 10 metres long. Luvuyo swims 6 laps. How far did he swim? (60 metres)

3. Round off to the nearest ten.
   a) 26 (30)
   b) 74 (70)
   c) 58 (60)
   d) 165 (170)
   e) 317 (320)

LESSON 12: FIVES – NUMBER PATTERNS

Teacher's notes
CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.6 Problem solving techniques, 1.13 Addition and subtraction, 1.16 Mental mathematics. **Lesson vocabulary:** Fives (5s), multiples, number patterns, counting, extend, difference, increasing, number line, forwards, backwards, calculate. **Prior knowledge:** Learners should have been taught how to: • Copy, extend and describe simple number sequences to at least 200. Sequences should show counting forwards and backwards in 5s to at least 200. **Concepts:** • Copy, extend and describe simple number sequences to at least 500. • Sequences should show counting forwards and backwards in 5s to at least 500. **Resources:** Counters, number boards 1–100 (see *Printable Resources*), number line blanks (see *Printable Resources*). **DBE workbook activities relevant to this lesson:** • DBE worksheet 53 (pp. 120 and 121). **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Give the learners number lines and ask them to complete the intervals: 120–130, 260–270, 340–350 and 490–500. Ask them to show counting in 5s, by drawing hoops. **Enrichment:** See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 5s from any given number between 0 and 500. E.g. 402, 407, 412, … .

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	14 – __ = 10	4
2.	__ – 1 = 9	10
3.	16 – __ = 10	6
4.	__ – 5 = 5	10
5.	10 – __ = 6	4

	Calculate the following:	Answer
6.	__ – 6 = 1	7
7.	15 – __ = 10	5
8.	__ – 2 = 7	9
9.	11 – __ = 4	7
10.	13 – __ = 7	6

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Learners work in groups

- Give learners a 1–100 number board.
- Ask learners to count in 5s up to 100 and place counters on the multiples of 5 as they go along.
- Ask: *What do you notice?* (A pattern of two vertical columns of counters, with numbers ending in 5 and 0.)
- Now, take off the counters from the number board so that you can make another pattern.
- Ask the learners to place a counter on 1 and then count 5 blocks forwards and place the next counter on the grid. Ask: *What number will it land on?* (6) Continue with this pattern. *What do you notice?* (The same pattern [two columns of counters] with numbers ending in 1 and 6.)
- Do the same starting with 2, 3 and 4.
- *Does the pattern remain the same if you count in 5s no matter where you start?* (Yes – two vertical columns of counters.)
- *Does it matter which number you start on?* (No, we still get two columns each time, they just are in different columns.)

Here are illustrations of what the learners patterns with counters on the 1–100 board will look like.

Counting in five from 5

1	2	3	4	●	6	7	8	9	●
11	12	13	14	●	16	17	18	19	●
21	22	23	24	●	26	27	28	29	●
31	32	33	34	●	36	37	38	39	●
41	42	43	44	●	46	47	48	49	●
51	52	53	54	●	56	57	58	59	●
61	62	63	64	●	66	67	68	69	●
71	72	73	74	●	76	77	78	79	●
81	82	83	84	●	86	87	88	89	●
91	92	93	94	●	96	97	98	99	●

Counting in fives from 1

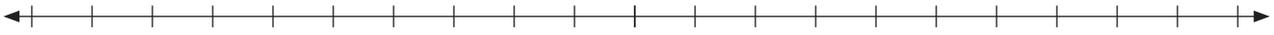
●	2	3	4	5	●	7	8	9	10
●	12	13	14	15	●	17	18	19	20
●	22	23	24	25	●	27	28	29	30
●	32	33	34	35	●	37	38	39	40
●	42	43	44	45	●	47	48	49	50
●	52	53	54	55	●	57	58	59	60
●	62	63	64	65	●	67	68	69	70
●	72	73	74	75	●	77	78	79	80
●	82	83	84	85	●	87	88	89	90
●	92	93	94	95	●	97	98	99	100

Counting in fives from 2

1	●	3	4	5	6	●	8	9	10
11	●	13	14	15	16	●	18	19	20
21	●	23	24	25	26	●	28	29	30
31	●	33	34	35	36	●	38	39	40
41	●	43	44	45	46	●	48	49	50
51	●	53	54	55	56	●	58	59	60
61	●	63	64	65	66	●	68	69	70
71	●	73	74	75	76	●	78	79	80
81	●	83	84	85	86	●	88	89	90
91	●	93	94	95	96	●	98	99	100

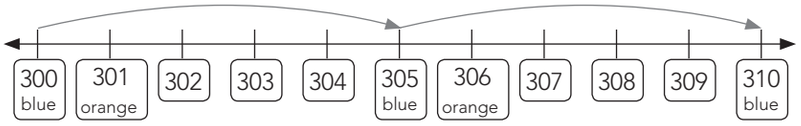
Activity 2: Learners work in groups

Give learners hand-outs with blank number lines.



Ask them to label in 1s from 300–320 on the first blank number line.

- Colour the first number, 300, blue. Count on in 5s and colour all the numbers that you land on in blue as well.
- Colour the second number, 301, orange. Count on in 5s and colour all the numbers that you land on in orange. *What do you notice?* (That we can start anywhere and count in fives.)



- Do the same with number lines labelled from 420–430 and 490–500. *What do you notice?* (That we can start anywhere and count on in fives.)
- ***Paste the sheet of number lines into your book.***
- *Keep this sheet for lesson 14 where you will use more of the blank number lines.*

Activity 3: Whole class activity

- Write the following patterns on the board and then ask the learners to complete them with you.
- Extend: Ask: *What pattern do you see? How do the numbers change as the pattern grows?*
  - 5, 10, 15, __, __, __ (20, 25, 30)
  - 220, 225, 230, __, __, __ (235, 240, 245)
  - 331, 336, 341, __, __, __ (346, 351, 356)
  - 407, 412, 417, __, __, __ (422, 427, 432)
- Discuss how you work out what number comes next in order to extend the given sequence. (You look what is being added each time and then continue adding in the same way. In this case the difference between all of the numbers is 5 and the patterns are all increasing or getting bigger.)

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

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

6. Reflection on lesson

Term 2 Lesson 12: Fives – number patterns

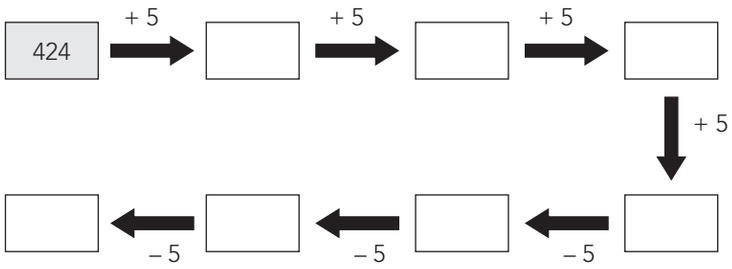
Classwork

1. Write the sequence of numbers made by adding 5, starting with 452.

451	452	453	454	455	456	457	458	459	460
461	462	463	464	465	466	467	468	469	470
471	472	473	474	475	476	477	478	479	480

(452, 457, 462, 467, 472, 477)

2. Complete the following:



(429, 434, 439, 444, 439, 434, 429)

3. Extend:
   a) 125, 130, 135, __, __, __. (140, 145, 150)
   b) 363, 368, 373, __, __, __ . (378, 383, 388)

Homework

1. Extend:
   a) 5, 10, 15, 20, __, __, __ . (25, 30, 35)
   b) 16, 21, 26, 31, __, __, __ . (36, 41, 46)
   c) 105, 110, 115, __, __, __. (120, 125, 130)
   d) 347, 352, 357, __, __, __ . (362, 367, 372)

WEEK 4

LESSON 13: FIVES – MULTIPLICATION AND DIVISION

Teacher's notes

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

Lesson vocabulary: Multiplication, multiply, total, divide, group, number sentence, addition, division, forwards, backwards, calculate, array, row, column.

Prior knowledge:
Learners should have been taught how to:

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

Concepts:

- Solve number problems in context and explain own solution to problems involving multiplication with answers up to 75, using appropriate symbols ×, =, □ .
- Multiply by 2, 4, 5, 10, and 3 to a total of 50.
- Divide numbers to 50 by 2, 4, 5, 10, 4.

Resources: Counters, multiplication table grid (see *Printable Resources*).

DBE workbook activities relevant to this lesson:

- DBE worksheet 61 (pp. 136 and 137). (NOTE: Revision of doubling and halving.)

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

Remediation: Ask learners to make groups of 5 with their counters. This can be written using the following number sentences. Discuss what each of these sentences say. 5 + 5 + 5 + 5 + 5 + 5 = 30 (addition), 6 x 5 = 30 (multiplication), 30 ÷ 5 = 6 (division).Make displays and discuss groupings for other numbers of counters, e.g. 12 counters, 16 counters, 32 counters.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 5s from any number between 0 and 500. E.g. 105, 110, 115, 120, ...

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	13 – 10 =	3
2.	15 – 10 =	5
3.	16 – 10 =	6
4.	20 – 10 =	10
5.	11 – 10 =	1

	Calculate the following:	Answer
6.	14 – 10 =	4
7.	17 – 10 =	7
8.	12 – 10 =	2
9.	10 – 10 =	0
10.	18 – 10 =	8

2. Correction/reflection on homework (15 minutes)

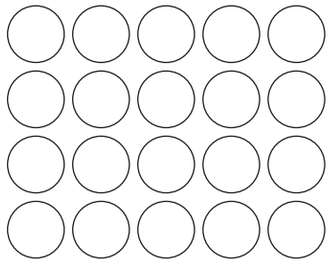
Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

Draw the array on the right on the board.
Ask the learners:

- *How many counters are in each row*? (5)
- *Let us count all of the counters*: 5, 10, 15, 20.
- *Let us write this using an addition number sentence*: 5 + 5 + 5 + 5 = 20
- *A multiplication number sentence*: 5 × 4 = 20 or 4 × 5 = 20
- *A division number sentence*: 20 ÷ 5 = 4 or 20 ÷ 4 = 5



Activity 2: Whole class activity

Problem solving.

- My dad planted 5 fruit trees in a row. He planted 6 rows. How many fruit trees did he plant?
- *Let us write it as an addition number sentence*: 5 + 5 + 5 + 5 + 5 + 5 = ☐
- We can say there are 6 rows with 5 trees each. (Draw a picture if necessary.)
- Previously we said that 6 groups of 5 is the same as 6 × 5. So we can say 6 rows of 5 is the same as 6 × 5 = (30)
- Let us write it as a multiplication number sentence: 6 × 5 = ☐
- So he planted 30 trees. (5 + 5 + 5 + 5 + 5 + 5 = 30 OR 6 × 5 = 30)
- Make up other word problems that involve multiplication by five (depending on how much time you have).

Activity 3: Learners work in pairs

Use this activity for consolidation of the 5× tables.

- Give each group of learners a copy of the multiplication table grid.
- Reciting tables can be done.
- Learners do not *have to* know the tables off by heart in Grade 3 but they can start to spend time learning some of the multiples. It is very good for learners to know their tables well as they can use them when they do other calculations. The sooner they know them by heart, the better.
- Let learners show the following on the multiplication board: one 5 is five, two 5s are 10, etc.

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

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

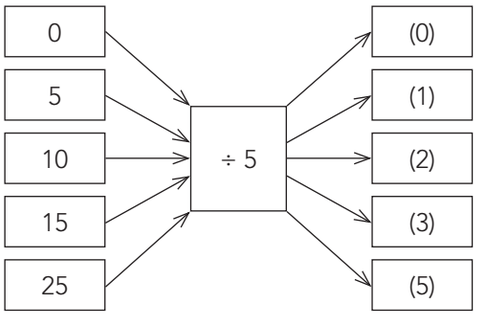
6. Reflection on lesson

Term 2 Lesson 13: Fives – multiplication and division

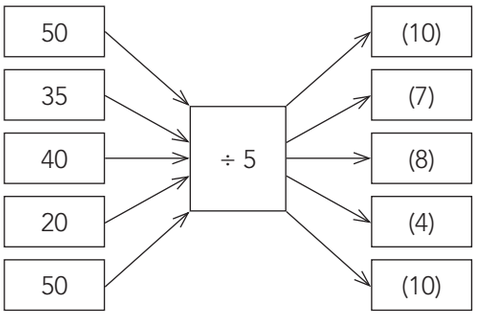
Classwork

1. Complete the following spider diagrams.

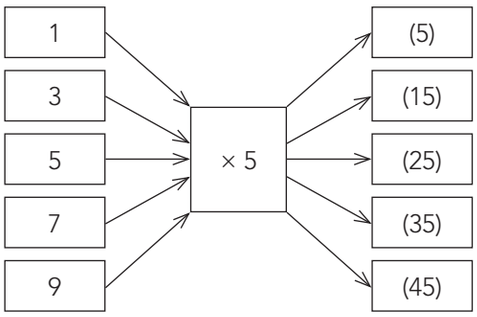
a)



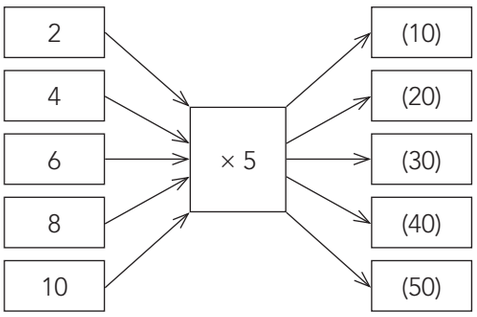
b)



c)

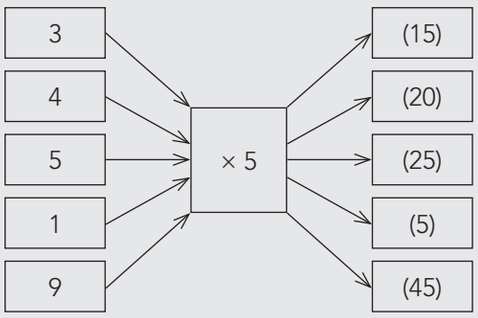


d)



Homework

Complete the following spider diagram.



LESSON 14: TWOS – NUMBER PATTERNS

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.8, 1.14 Repeated addition leading to multiplication, 1.16 Mental mathematics.

Lesson vocabulary: Twos (2s), multiples, counting, number pattern, extend, difference, increasing, number line, forwards, backwards, calculate.

Prior knowledge:
Learners should have been taught how to:

- Copy, extend and describe simple number sequences to at least 200. Sequences should show counting forwards and backwards in 2s to at least 200.

Concepts:

- Copy, extend and describe simple number sequences to at least 500.
- Sequences should show counting forwards and backwards in 2s to at least 500.

Resources: Counters, number boards 1–100 (see *Printable Resources*), number line blanks (see *Printable Resources*).

DBE workbook activities relevant to this lesson:

- DBE worksheet 51 (pp. 116 and 117).

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

Remediation: Give the learners number lines and ask them to complete the intervals: 120–130, 260–270, 340–350 and 490–500. Ask them to show counting in 2s, by using hoops. W*hat will happen if I start on 121, 261, 341 and 491counting in 2s?* (We will count on a different set of numbers/on odd numbers).

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 2s from any given multiple between 0 and 500. E.g. 400, 402, 406, … .

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	__ – 2 = 10	12
2.	__ – 2 = 18	20
3.	__ – 2 = 13	15
4.	__ – 2 = 16	18
5.	__ – 2 = 15	17

	Calculate the following:	Answer
6.	__ – 2 = 10	12
7.	__ – 2 = 18	20
8.	__ – 2 = 13	15
9.	__ – 2 = 16	18
10.	__ – 2 = 15	17

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 learners a 1–100 number board.
- Ask learners to count in 2s from 2 up to 100 and place counters on the multiples of 2 as they go along.
- *What do you notice*? (A pattern of vertical columns, one apart from each other, with counters on every second column. All the even numbers are covered.)
- Ask them to remove the counters from the number board, so that you can count starting from a different number.
- Ask the learners to place a counter on 1 and then count 2 blocks forwards from there and place the next counters on every second number, starting from 1.
- *What do you notice*? (A pattern of vertical columns, one apart from each other, starting with the first column. All the odd numbers have counters on them.)

(Here are illustrations of what the learners patterns with counters on the 1–100 board will look like.)

Count in twos from 2

1		3		5		7		9	
11		13		15		17		19	
21		23		25		27		29	
31		33		35		37		39	
41		43		45		47		49	
51		53		55		57		59	
61		63		65		67		69	
71		73		75		77		79	
81		83		85		87		89	
91		93		95		97		99	

Count in twos from 1

	2		4		6		8		10
	12		14		16		18		20
	22		24		26		28		30
	32		34		36		38		40
	42		44		46		48		50
	52		54		56		58		60
	62		64		66		68		70
	72		74		76		78		80
	82		84		86		88		90
	92		94		96		98		100

Activity 2: Learners work in groups

Ask learners to refer again to the hand-out with blank number lines (some were used in Lesson 12).

Ask them to label in 1s from 480–500 on the next blank number line.

- Ask them to colour in the first number, 480, blue. Count in 2s and colour these numbers blue as well.
- Now start again, using another colour. Colour 481 in orange. Count on from 481 in 2s and colour these numbers orange.
- *What do you notice*? (They follow the same sequence of numbers as the patterns on the number boards. We can also count on in 2s on a number line.)
- *Do the same counting in 2s, using the next two number lines for different number intervals*. Use the intervals 210–230 and 350–370.

Activity 3: Learners work individually

- Write the following patterns on the board and then ask the learners to complete them with you.
- Extend: Ask: *What pattern do you see? How do the numbers change as the pattern grows?*
  - 2, 4, 6, __, __, __ (8, 10, 12)
  - 220, 222, 224, __, __, __ (226, 228, 230)
  - 331, 333, 335, __, __, __ (337, 339, 341)
  - 407, 409, 411, __, __, __ (413, 415, 417)
- Discuss how you work out what number comes next in order to extend the given sequence. (You look what is being added each time and then continue adding in the same way.) In this case the difference between all of the numbers is 2 and the patterns are all increasing or getting bigger.)

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

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

6. Reflection on lesson

Term 2 Lesson 14: Twos – number patterns

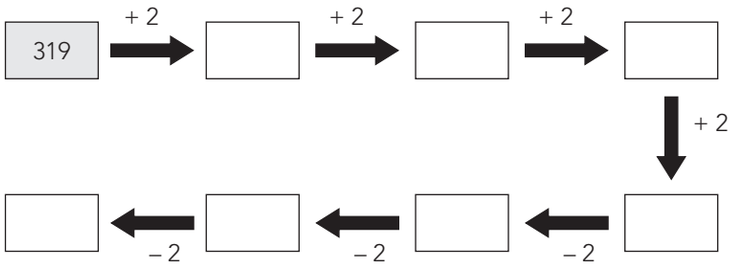
Classwork

1. Write the sequence of numbers made by adding 2, starting with 401.

401	402	403	404	405	406	407	408	409	410
411	412	413	414	415	416	417	418	419	420
421	422	423	424	425	426	427	428	429	430
431	432	433	434	435	436	437	438	439	440
441	442	443	444	445	446	447	448	449	450

(401, 403, 405, 407, 409, 411, 413, 415, 417, 419, 421, 423, 425, 427, 429, 431, 433, 435, 437, 439)

2. Complete the following by adding or subtracting two.



(321, 323, 325, 327, 325, 321, 319)

3. Extend:
   a) 122, 124, 126, __, __, __. (128, 130, 132)
   b) 353, 355, 357, __, __, __. (359, 361, 363)

Homework

1. Extend:
   a) 6, 8, 10, __, __, __ . (12, 14, 16)
   b) 16, 18, 20, __, __, __ . (22, 24, 25)
   c) 105, 107, 109, __, __, __. (111, 113, 115)
   d) 448, 450, 452, __, __, __ . (454. 456, 458)

LESSON 15: TWOS – MULTIPLICATION AND DIVISION

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.14 Repeated addition leading to multiplication, 1.16 Mental mathematics.

Lesson vocabulary: Twos (2s), multiples, counting, addition, number sentence, multiplication, repeated addition, division, forwards, backwards, calculate, array, row, column.

Prior knowledge:
Learners should have been taught how to:

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

Concepts:

- Solve number problems in context and explain own solution to problems involving multiplication with answers up to 75, using appropriate symbols ×, =, □ .
- Multiply by 2, 4, 5, 10, and 3 to a total of 50.
- Divide numbers to 50 by 2, 4, 5, 10, 4.

Resources: Counters, multiplication table grid (see *Printable Resources*).

DBE workbook activities relevant to this lesson:

- DBE worksheet 62 (pp. 138 and 139). (NOTE: More revision of doubling and halving.)

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

Remediation: Ask learners to make 6 groups of 2 with their counters. Then write this as an addition number sentence: (2 + 2 + 2 + 2 + 2 + 2 = 12) and as a multiplication number sentence: (6 x 2 = 12). Do this for other numbers of counters, grouped in 2s.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 2s from any number between 0 and 500. E.g. 102, 104, 106, … .

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	__ + 12 = 20	8
2.	__ + 1 = 20	19
3.	__ + 12 = 20	8
4.	__ + 3 = 20	17
5.	__ + 20 = 20	0

	Calculate the following:	Answer
6.	__ + 10 = 20	10
7.	__ + 17 = 20	3
8.	__ + 13 = 20	7
9.	__ + 16 = 20	4
10.	__ + 8 = 20	12

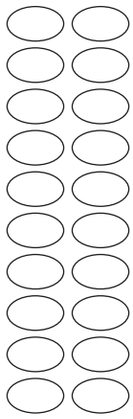
2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

Draw the array on the right on the board.



- Learners can pack the counters out on a desk in the same way.
- *How many counters are in each row*? (2)
- Let us count all of the counters in 2s: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20
- *Let us write an addition number sentence*:
  2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 20
- *A multiplication number sentence*:
  2 × 10 = 20 or 10 × 2 = 20
- *Can you also write this relationship between the numbers using division?*
  (Yes. The inverse of multiplication is division. Learners do not have to know the term *inverse* but they need to see the way in which multiplication and division are related. You need to guide them to see the relationship – they have *opposite actions*.)
- *What would a division number sentence look like*? (20 ÷ 2 = 10)

Activity 2: Whole class activity

Problem solving.

- A vegetable garden has 4 rows of plants. Each row has 2 plants. How many plants are there in the garden?
- *Let us write it as an addition number sentence*: (2 + 2 + 2 + 2 = ☐)
- We can count: 2, 4, 6, 8 …plants.
- We can say there are 4 rows with 2 plants in each row. Draw a picture if necessary.
- Previously we said that 4 groups of 2 is the same as 4 × 2. So we can say 4 rows of 2 is the same as 4 × 2 = (8)
- *Let us write it as a multiplication number sentence*: 4 × 2 = ☐ (8)
- So he planted 8 plants. (2 + 2 + 2 + 2 = 8 or 4 × 2 = 8)
- Make up other word problems that involve multiplication by two (depending on how much time you have).

Activity 3: Learners work in pairs

Use this activity for consolidation of the 2× tables.

- Give each group of learners a copy of the multiplication table grid.
- Chanting of the tables can be done.
- Learners do not have to know the tables off by heart in Grade 3 but they can start to spend time learning some of the multiples. It is very good for learners to know their tables well as they can use them when they do other calculations. The sooner they know them by heart, the better.
- The focus is on the language, which allows a mental image for grouping. (E.g. One 2 is two, two 2s are 4, etc.)

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

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

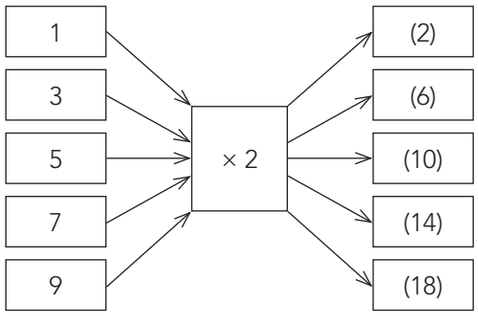
6. Reflection on lesson

Term 2 Lesson 15: Twos – multiplication and division

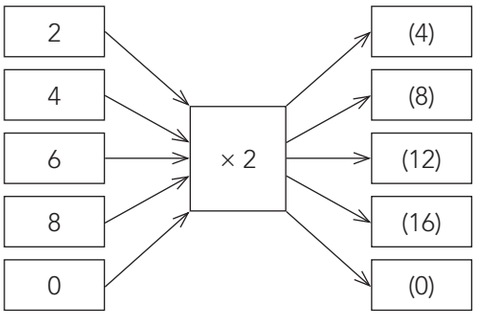
Classwork

1. Complete the spider diagrams.

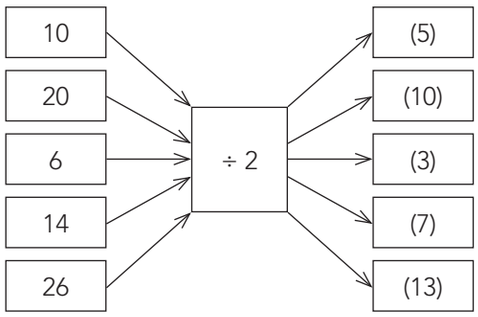
a)



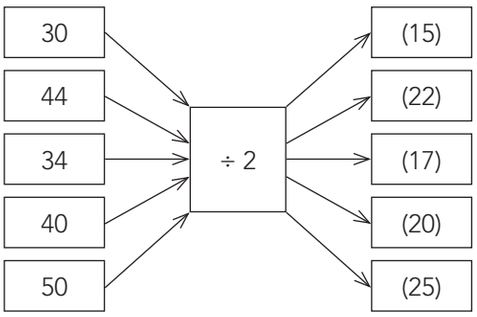
b)



c)



d)

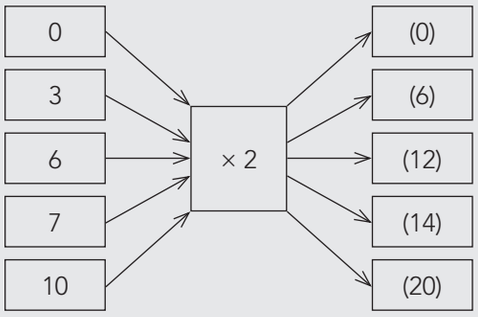


2. The Grade R teacher has to order tyres for 12 bicycles. If each bicycle needs two tyres, how many tyres must the Grade R teacher order? (12 × 2 = 24)

3. If two learners fit into a car how many cars are needed to transport 24 learners? (Write as division or repeated subtraction: 24 ÷ 2 = 12 OR 24 – 2 – 2 – 2 – 2 – 2 – 2 – 2 – 2 – 2 – 2 – 2 – 2 = 0, 12 cars.)

Homework

Complete the spider diagram:



LESSON 16: THREES – NUMBER PATTERNS

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.6 Problem solving techniques, 1.13 Addition and subtraction, 1.16 Mental mathematics.

Lesson vocabulary: Threes (3s), multiples, number pattern, extend, difference, increasing, number line, forwards, backwards, calculate.

Prior knowledge:
Learners should have been taught how to:

- Copy, extend and describe simple number sequences to at least 200. Sequences should show counting forwards and backwards in 3s to at least 200.

Concepts:

- Copy, extend and describe simple number sequences to at least 500.
- Sequences should show counting forwards and backwards in 3s to at least 500.

Resources: Counters, number boards 1–100 (see *Printable Resources*), number line blanks (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: Give learners sets of about 30 counters and allow them to group the counters into groups of three. Ask the learners to count in threes all of the counters that they have grouped. Give the learners number lines and ask them to complete the intervals: 120–130, 260–270, 340–350 and 490–500. Ask them to show counting in 3s, by using hoops.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 3s from any given number between 0 and 500. E.g. 303, 306, 309, ...

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	10 + __ =12	2
2.	19 + __ = 20	1
3.	11 + __ = 14	3
4.	15 + __ = 17	2
5.	10 + __ = 20	10

	Calculate the following:	Answer
6.	20 + __ = 20	0
7.	17 + __ = 20	3
8.	5 + __ = 12	7
9.	3 + __ = 15	12
10.	13 + __ = 16	3

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Learners work in groups

Give learners a 1–100 number board.

- Ask learners to count in 3s up to 100 and place counters on the multiples of 3 as they go along.
- *What pattern do you notice*? (Diagonals of counters run across the number board.)
- Ask them to remove the counters from the number board, so that you can count starting from a different number.
- Ask the learners to place a counter on 1 and then count 3 blocks forwards and place the next counter on the grid. *What number will it land on*? (4) Continue with this pattern.
- *What do you notice*? (The same pattern diagonals of counters.)
- Do the same Activity starting on 2. *What is the difference in the patterns on the number boards when you count in 2s and when you count in 3s*? (When we count in twos the numbers are on a straight (vertical) line but when we count in threes the numbers are on the diagonals.)

(Here are illustrations of what the learners patterns with counters on the 1–100 board will look like.)

Start from 3 and count in threes

1	2	●	4	5	●	7	8	●	10
11	●	13	14	●	16	17	●	19	20
●	22	23	●	25	26	●	28	29	●
31	32	●	34	35	●	37	38	●	40
41	●	43	44	●	46	47	●	49	50
●	52	53	●	55	56	●	58	59	●
61	62	●	64	65	●	67	68	●	70
71	●	73	74	●	76	77	●	79	80
●	82	83	●	85	86	●	88	89	●
91	92	●	94	95	●	97	98	●	100

Start from 1 and count in threes

●	2	3	●	5	6	●	8	9	●
11	12	●	14	15	●	17	18	●	20
21	●	23	24	●	26	27	●	29	30
●	32	33	●	35	36	●	38	39	●
41	42	●	44	45	●	47	48	●	50
51	●	53	54	●	56	57	●	59	60
●	62	63	●	65	66	●	68	69	●
71	72	●	74	75	●	77	78	●	80
81	●	83	84	●	86	87	●	89	90
●	92	93	●	95	96	●	98	99	●

Start from 2 and count in threes

1	●	3	4	●	6	7	●	9	10
●	12	13	●	15	16	●	18	19	●
21	22	●	24	25	●	27	28	●	30
31	●	33	34	●	36	37	●	39	40
●	42	43	●	45	46	●	48	49	●
51	52	●	54	55	●	57	58	●	60
61	●	63	64	●	66	67	●	69	70
●	72	73	●	75	76	●	78	79	●
81	82	●	84	85	●	87	88	●	90
91	●	93	94	●	96	97	●	99	100

Activity 2: Learners work in groups

Ask learners to refer again to the hand-out with blank number lines (some were used in Lesson 12 and 14).

- Ask them to label in 1s from 360–380 on the next blank number line.
- Colour the first number, 360, blue. Count on in 3s and colour these numbers blue as well.
- Colour the second numbers, 361, orange. Count on in 3s and colour these numbers orange. What do you notice? (They follow the same sequence of numbers as the patterns on the number boards. We can count on in 3s on a number line.) Do the same with number lines from 300 to 320.

Activity 3: Learners work individually

- Write the following patterns on the board and then ask the learners to complete them with you.
- Extend: Ask: *What pattern do you see? How do the numbers change as the pattern grows?*
  - 3, 6, 9, __, __, __ (12, 15, 18)
  - 220, 223, 226, __, __, __ (229, 232, 235)
  - 333, 336, 339, __, __, __ (342, 345, 348)
  - 408, 411, 414, __, __, __ (417, 420, 423)
- Discuss how you work out what number comes next in order to extend the given sequence. (You look what is being added each time and then continue adding in the same way. In this case the difference between all of the numbers is 3 and the patterns are all increasing or getting bigger.)

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

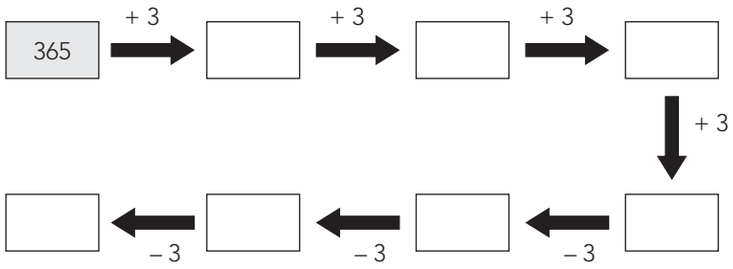
5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 2 Lesson 16: Threes – number patterns

Classwork

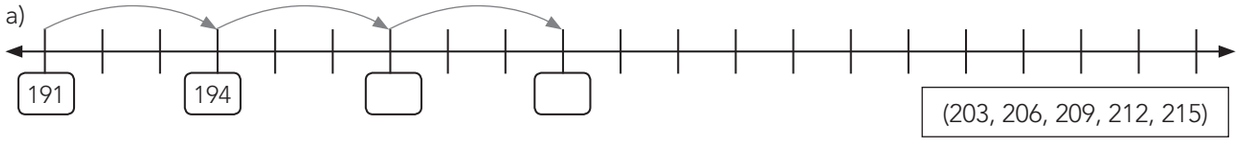
1. Write the sequence of numbers made by adding or subtracting 3, starting with 365.



(368, 371, 374, 377,374, 371, 368)

2. Copy these number lines. Count in threes and write down the remaining numbers.

a)



(203, 206, 209, 212, 215)

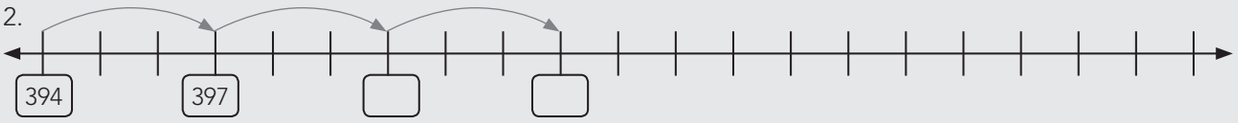
3. Extend:
   a) 423, 426, 429, __, __, __. (432, 435, 438)
   b) 211, 214, 217, __, __, __. (220, 223, 226)

Homework

1. Complete the following:
   454 (+3) __ (+3) __ (+3) __ (+3) __ (–3) __ (–3) __ (–3) __.

(457, 460, 463, 466, 463, 460, 457)

2.



(406, 409, 412, 415,418)

3. Extend: 312, 315, 318, __, __, __. (321, 324, 327)

WEEK 5

LESSON 17: THREES – MULTIPLICATION AND DIVISION

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.6 Problem solving techniques, 1.13 Addition and subtraction, 1.16 Mental mathematics.

Lesson vocabulary: Threes (3s), multiples, addition, number sentence, multiplication, division, divide, addition, forwards, backwards, calculate, array, row, column.

Prior knowledge:
Learners should have been taught how to:

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

Concepts:

- Solve number problems in context and explain own solution to problems involving multiplication with answers up to 75, using appropriate symbols ×, =, □ .
- Multiply by 2, 4, 5, 10, and 3 to a total of 50.
- Divide numbers to 50 by 2, 4, 5, 10, 3.

Resources: Counters, multiplication table grid (see *Printable Resources*).

DBE workbook activities relevant to this lesson:

- DBE worksheet 55a (p. 124).

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

Remediation: Ask learners to make six groups of 3 with their counters. Write an addition number sentence: (3 + 3 + 3 + 3 + 3 + 3 = 18.) Write a multiplication number sentence: (6 x 3 = 18).

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 3s from any number between 0 and 500. E.g. 103, 106, 109, …

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	12 + 3 =	15
2.	19 – 6 =	13
3.	15 + __ = 20	5
4.	18 – __ = 10	8
5.	__ + 2 = 20	18

	Calculate the following:	Answer
6.	__ – 1 = 10	11
7.	20 + __ = 20	0
8.	10 – __ = 7	3
9.	__ + 1 = 12	11
10.	__ – 5 = 0	5

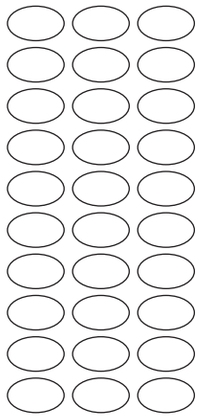
2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

Draw the array on the right on the board.



- Learners pack out counters on their desks to make the same array.
- *How many counters are there in each row*? (3)
- *How many rows are there*? (10)
- *Let us count how many counters there are altogether in 3s*: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30 (30)
- *Write this as an addition number sentence*: (3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 = 30)
- *Write this using multiplication number sentences*: (3 × 10 = 30/10 × 3 = 30)
- *Write a division number sentence that fits with this array*: (30 ÷ 3 = 10)

Activity 2: Whole class activity

Problem solving.

- A vegetable garden has 4 rows of plants. Each row has 3 plants. How many plants are there in the garden?
- Let us write it as an addition number sentence: (3 + 3 + 3 + 3 = ☐)
- We can work out how many plants there are by counting in threes, this will give us the total count of the plants in all of the rows. (3, 6, 9, 12) Draw a picture if necessary.
- We can count in threes by counting the plants in all of the rows. (3, 6, 9, 12)
- We can say there are 4 rows with 3 plants in each row. Draw a picture if necessary.
- Previously we said that 4 groups of 3 is the same as 4 × 3. We can also say this as 4 rows of 3 is the same as 4 × 3 = 12.
- Let us write it as a multiplication number sentence: 4 × 3 = ☐
- So there are 12 plants in the garden. (3 + 3 + 3 + 3 = 12 or 4 × 3 = 12)
- Make up other word problems that involve multiplication by 3 (depending on how much time you have).

Activity 3: Learners work in pairs

Use this activity for consolidation of the 3× tables.

- Give each group of learners a copy of the multiplication table grid.
- Chanting of the tables can be done.
- Learners do not have to know the tables off by heart in Grade 3 but they can start to spend time learning some of the multiples. It is very good for learners to know their tables well as they can use them when they do other calculations. The sooner they know them by heart, the better.
- The focus is on the language, which allows a mental image for grouping. (For example, one 3 is three, two 3s are six, etc.)

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

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

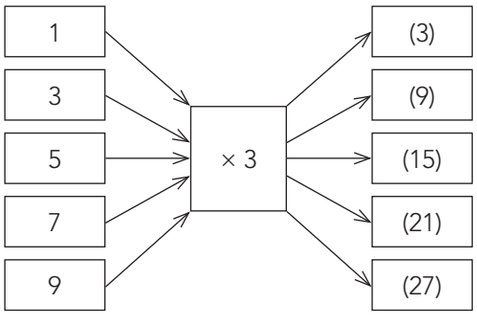
6. Reflection on lesson

Term 2 Lesson 17: Threes – multiplication and division

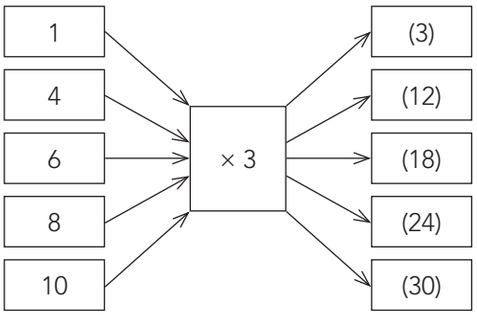
Classwork

1. Complete the spider diagrams.

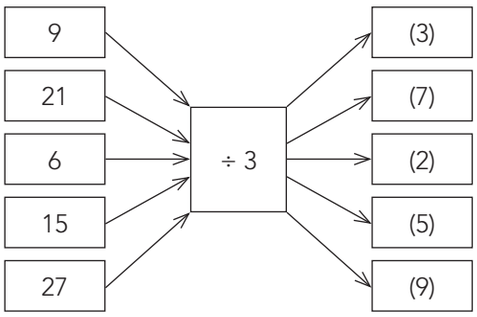
a)



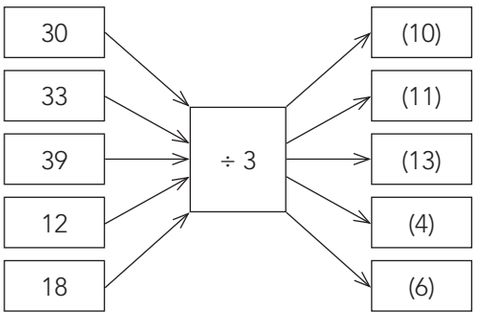
b)



c)



d)

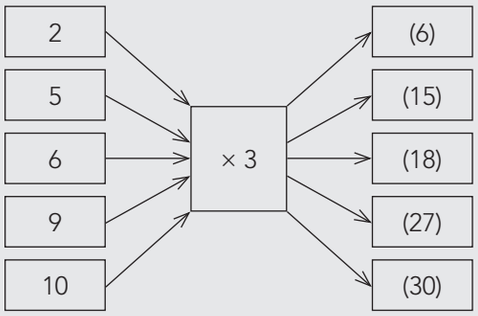


2. The nursery school teacher has to order tyres for 9 tricycles. If each tricycle needs three tyres, how many tyres must the nursery school teacher order? (9 × 3 = 27)

3. Marlene has 30 sweets. This is twice as many as Jacob has. How many sweets does Jacob have? (30 ÷ 2 = 15)

Homework

Complete the spider diagram.



LESSON 18: FOURS – NUMBER PATTERNS

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.6 Problem solving techniques, 1.13 Addition and subtraction, 1.16 Mental mathematics.

Lesson vocabulary: Fours (4s), multiples, number pattern, extend, difference, increasing, number line, forwards, backwards, calculate.

Prior knowledge:
Learners should have been taught how to:

- Copy, extend and describe simple number sequences to at least 200. Sequences should show counting forwards and backwards in 4s to at least 200.

Concepts:

- Copy, extend and describe simple number sequences to at least 500.
- Sequences should show counting forwards and backwards in 4s to at least 500.

Resources: Counters, number boards 1–100 (see *Printable Resources*), number line blanks (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: Give the learners number lines and ask them to complete the intervals: 120–130, 260–270, 340–350 and 490–500. Ask them to show counting in 4s, by using hoops. *What will happen if I start on 121, 261, 341, and 491counting in 4s?*

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 4s from any given number between 0 and 500. E.g. 401, 405, 409, … .

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	14 – __ = 9	5
2.	16 + __ = 18	2
3.	12 – __ = 5	7
4.	11 + __ = 15	4
5.	10 – __ = 6	4

	Calculate the following:	Answer
6.	13 + __ = 14	1
7.	9 – __ = 7	2
8.	14 – __ = 6	8
9.	15 – __ = 8	7
10.	7 + __ = 14	7

2. Correction/reflection on homework (15 minutes)

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

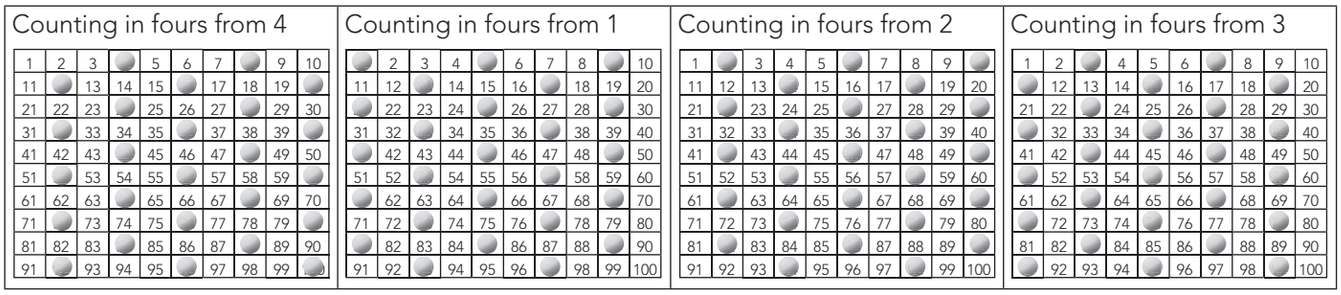
3. Lesson content – concept development (30 minutes)

Activity 1: Learners work in groups

Give learners a 1–100 number board.

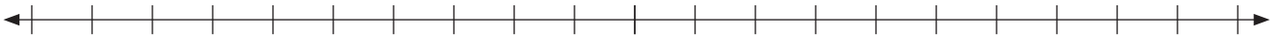
- Ask them to place counters on the 4s. Let them count forwards and backwards in 4s up to 100.
- Ask them to remove the counters from the number board, so that you can count starting from a different number.
- Ask the learners to place a counter on 1 and then count from 1 in 4s up to 100.
- Ask: *What do you notice about the pattern?* (Vertical columns)
- Do the same activity starting on 2 and on 3.
- Ask: *What do you notice about the pattern?* (The same vertical columns, just in different columns.)
- Ask: *Does the pattern on the board stay the same when you count in 2s? And in 3s? Talk about what you notice.*

Here are illustrations of what the learners patterns with counters on the 1–100 board will look like.



Activity 2: Learners work in pairs

Ask learners to refer again to the hand-out with blank number lines (some were used in Lesson 12, 14 and 16).



- Colour the first number, 120, blue. Count in 4s and colour these numbers blue as well.
- Colour the second number, 121, orange. Count in 4s and colour these numbers orange. What do you notice? (They follow the same sequence of numbers as the patterns on the number boards. We can count in 4s on a number line.)
- Do the same with number lines from 410 to 430.

Activity 3: Learners work individually

- Write the following patterns on the board and then ask the learners to complete them with you.
- Extend: Ask: *What pattern do you see? How do the numbers change as the pattern grows?*
  - 4, 8, 12, __, __, __ (16, 20 24)
  - 320, 324, 328, __, __, __ (332, 336, 340)
  - 331, 335, 339, __, __, __ (343, 347, 351)
  - 402, 406, 410, __, __, __ (414, 418, 422)
- Discuss how you work out what number comes next in order to extend the given sequence. (You look what is being added each time and then continue adding in the same way. In this case the difference between all of the numbers is 4 and the patterns are all increasing or getting bigger.)

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

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

6. Reflection on lesson

Term 2 Lesson 18: Fours – number patterns

This classroom activity includes patterns of twos, threes, fours, fives and tens. This is to provide some consolidation of the number patterns done in class over the previous few lessons.

Question 2 involves higher level thinking. This kind of question is important to start to develop the cognitive thinking skills of learners.

Classwork

1. What is the next number in this pattern?
   a) 314, 318, 322, … (326 – pattern of 4s)
   b) 151, 156, 161, … (166 – pattern of 5s)
   c) 133, 136, 139, … (142 – pattern of 3s)
   d) 228, 230, 232, … (234 – pattern of 2s)
   e) 373, 383, 393, … (403 – pattern of 10s)
   f) 243, 241, 239, … (237 – pattern of 2s)
   g) 161, 156, 151, … (146 – pattern of 5s)
   h) 218, 208, 198, … (188 – pattern of 10s)
   i) 152, 148, 144, … (140 – pattern of 4s)
   j) 325, 322, 319, … (316 – pattern of 3s)

2. What is the difference between the patterns in the column on the left and the patterns in the column on the right on the right?

144	253
148	249
152	245
156	241
160	237

   (We are counting forwards by 4 on the left and backwards by 4 on the right.)

Homework

1. Draw and complete a number line. Fill in the numbers then use jumps to show counting in multiples of 4: 394, 398, 402, 406, ___, ___, ___, ___ (410, 414, 418, 422)

2. Complete the following: 454 (+4) _____ (+4) _____ (+4) _____ (+4) _____(–4) _____ (–4) _____(–4) _____ . (458, 462, 466, 470, 466, 462, 458)

LESSON 19: FOURS – MULTIPLICATION AND DIVISION

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.5 Division, 1.14 Repeated addition leading to multiplication, 1.16 Mental mathematics.

Lesson vocabulary: Fours (4s), multiples, addition, number sentence, multiplication, division, divide, forwards, backwards, calculate, array, row, column.

Prior knowledge:
Learners should have been taught how to:

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

Concepts:

- Solve number problems in context and explain own solution to problems involving multiplication with answers up to 75, using appropriate symbols ×, =, □ .
- Multiply 2, 4, 5, 10, and 3 to a total of 50.
- Divide numbers to 50 by 2, 4, 5, 10, 3.

Resources: Counters, multiplication table grid (see *Printable Resources*).

DBE workbook activities relevant to this lesson:

- DBE worksheet 55b (p. 125).
- DBE worksheet 50 (pp. 114 and 115).

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

Remediation: Ask learners to make 6 groups of 4 with their counters. Then write this as an addition number sentence (4 + 4 + 4 + 4 + 4 + 4 = 24) and a multiplication number sentence (6 x 4 = 24).

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 4s from any number between 0 and 500. E.g. 104, 108, … .

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	Half of 12	6
2.	Double 12	24
3.	Half of 6	3
4.	Double 6	12
5.	Half of 9	4 ½

	Calculate the following:	Answer
6.	Double 9	18
7.	3 + 3 + 3 =	9
8.	3 + 3 + 3 + 3 + 3 =	12
9.	Three more than fifteen	18
10.	Three less than twelve	9

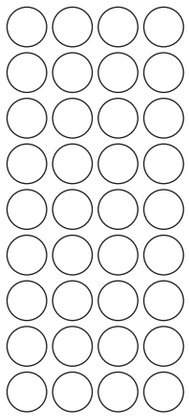
2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

Draw the array on the right on the board.



- Learners pack the counters to make this array on their desks.
- *How many counters are in each row?* (4)
- Let us count the total number of counters in the array: (4, 8, 12, 16, 20, 24, 28, 32, 36, 40).
- *Let us write an addition number sentence:* (4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 = 40)
- *What is a shorter way to write this?* (As a multiplication number sentence.)
- *What will a multiplication number sentence look like?* (4 × 10 = 40 or 10 × 4 = 40)
- The inverse of multiplication is division. *What would a division number sentence for this look like?* (40 ÷ 4 = 10)

Activity 2: Whole class activity

Problem solving.

- A vegetable garden has 5 rows of plants. Each row has 4 plants. How many plants are there in the garden?
- Let us write it as an addition number sentence: 4 + 4 + 4 + 4 + 4 = □
- We can count: 4, 8, 12, 16, 20 plants.
- We can say there are 5 rows with 4 plants each. (Draw a picture if necessary.)
- Previously we said that 5 groups of 4 is the same as 5 × 4. So we can say 5 rows of 4 is the same as 5 × 4 = (20). Let us write it as a multiplication number sentence: 5 × 4 = □
- So there are 20 plants in the garden. (4 + 4 + 4 + 4 + 4 = 20 or 5 × 4 = 20)
- Make up other word problems that involve multiplication by 4 (depending on how much time you have).

Activity 3: Learners work in pairs

Use this activity for consolidation of the 4× tables.

- Give each group of learners a copy of the multiplication table grid.
- Chanting of the tables can be done.
- Learners do not have to know the tables off by heart in Grade 3 but they can start to spend time learning some of the multiples. It is very good for learners to know their tables well as they can use them when they do other calculations. The sooner they know them by heart, the better.
- The focus is on the language, which allows a mental image for grouping.

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

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

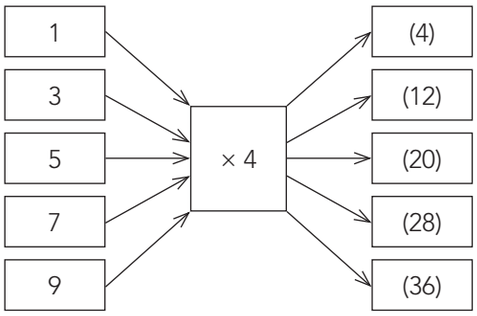
6. Reflection on lesson

Term 2 Lesson 19: Fours – multiplication and division

Classwork

1. Complete the spider diagrams.

a)



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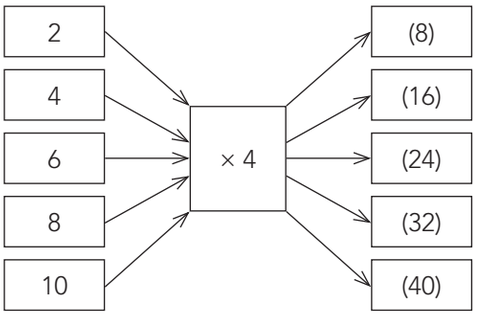

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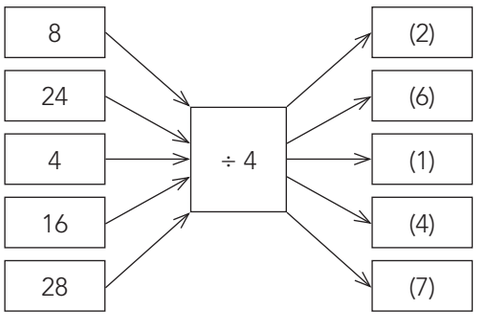
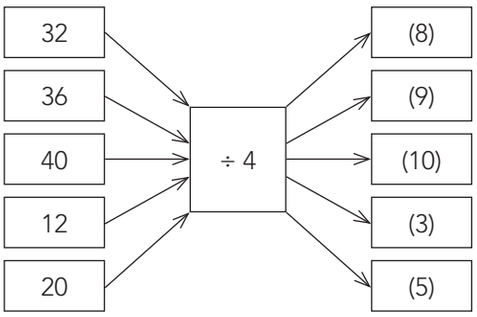


d)



2. The taxi owner has to order tyres for 7 taxis. If each taxi needs four tyres, how many tyres must the taxi owner order? (7 × 4 = 28)

3. How many cars are needed to transport 24 learners, if four learners fit into a car? (6 cars)

Homework

1. Tony has 40 sweets. He eats four sweets every day. For how many days can he eat sweets? (40 divided by 4 = 10)

LESSON 20: GEOMETRIC PATTERNS

Teacher's notes

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

Lesson vocabulary: Geometric patterns, physical objects, increasing, decreasing, bigger, smaller, regular, extend, triangle, square, cube, forwards, backwards, calculate.

Prior knowledge:
Learners should have been taught how to:

- Identify, describe in words and copy geometric patterns in nature, from modern everyday life and from our cultural heritage.

Concepts:

- Copy, extend and describe in words, and create own simple patterns made with physical objects and drawings of lines, shapes or objects.
- The range of patterns are simple patterns in which shapes or groups of shapes are repeated in exactly the same way and patterns where the number or size of shapes in each stage changes in a predictable way, i.e. regular increasing patterns.

Resources: Shape cut-outs (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: Use shape cut-outs to make patterns. Show the first steps of the pattern. Ask the learners to copy this pattern using their cards. Then learners should extend the pattern. Learners now copy it using their shape cut-outs. Do this with several different patterns of shapes. Use geometric pattern cards and strips like the ones used in the lesson. Show learners one card/pattern at a time. Ask learners to describe the pattern, extend the pattern and draw their own patterns.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 5s from any given number between 0 and 500. E.g. 301, 306, 311, … .

1.2 Mental mathematics activity (10 minutes)

	Answer the following:	Answer
1.	What is 2 more than 444?	446
2.	What is 5 less than 65?	60
3.	What is 6 more than 98?	104
4.	What is 10 less than 154?	144
5.	What is 3 more than 111?	114

	Answer the following:	Answer
6.	What is 1 less than 154?	153
7.	What is 5 more than 487?	492
8.	What is 3 less than 458?	455
9.	What is 1 more than 78?	79
10.	What is 2 less than 186?	184

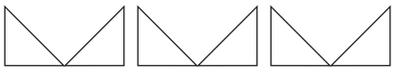
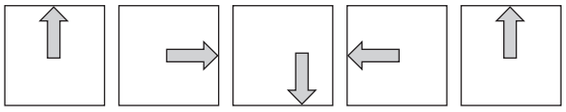
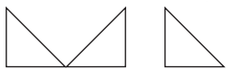
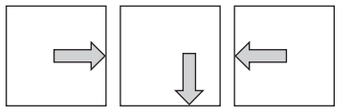
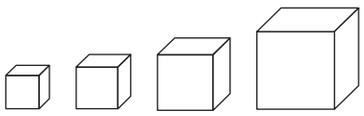
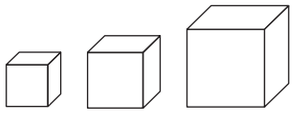
2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

Draw the patterns on the board in preparation for this lesson.

Type of pattern and example	Questions or instructions to learners
Patterns with one shape/object, but the colours of the shape/object change in a regular way. 	Describe the pattern. (They are all triangles – black, grey, white, black, grey, white....) What will the next three shapes look like? (Black, grey, white triangles.) Draw them.  Make your own pattern with a different shape and your own colours.
Patterns where the position of the shape/object changes. Example 1:  Example 2: 	Describe the pattern. Example 1: (Triangles in pairs where the one is the symmetrical image of the other). The next three shapes will look like this:  Example 2: (A square with an arrow inside. The arrow points top, right, down, left, top). What will the next three shapes look like? Draw them.  Make your own pattern with a different shape and your own colours.
Patterns with a single kind of shape, that increases or decreases in size. 	Describe the pattern. (The pattern is made of cube blocks that get bigger and bigger.) What will the next three shapes look like? Draw them.  Make your own pattern with a different shape and your own colours.

Activity 2: Learners work in groups

Use the shape cut-outs.

- Learners should each make a pattern using some of the cut-out shapes on their desks.
- Groups discuss each of the patterns together – explain how the pattern grows.
- Some group members can present their pattern to the whole class (depending on how much time is available).

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

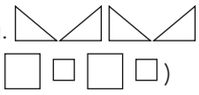
5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 2 Lesson 20: Geometric patterns

In this activity learners must also be able to explain the way in which their patterns grow. This is an important part of the activity as it gives learners the opportunity to develop their use of mathematical language.

Classwork

1. Draw a geometric pattern and describe your pattern:
   a) Use triangles. (Answers will vary, e.g. )
   b) Use squares. (Answers will vary, e.g. )
   c) Use circles. (Answers will vary using circles of different sizes.)

2. Draw a geometric pattern using triangles, squares and circles. Describe your pattern. (Answers will vary.)

Homework

1. Draw a geometric pattern and describe your pattern:
   a) Use rectangles. (Answers will vary.)
   b) Use triangles and circles. (Answers will vary.)

2. Cut and paste pictures of shapes that make a pattern. Describe the pattern. (Answers will vary.)

WEEK 6

LESSON 21: SHARING LEADING TO FRACTIONS

Teacher's notes
CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.10 Sharing leading to division, 1.16 Mental mathematics. **Lesson vocabulary:** Equal sharing, grouping, fraction, half, third, quarter, fifth, forwards, backwards, calculate, halves. **Prior knowledge:** Learners should have been taught how to: • Use and name fractions in familiar contexts including halves, quarters, thirds and fifths. • Recognise fractions in diagrammatic form and write fractions as 1 half, 2 thirds. **Concepts:** • Solve and explain solutions to practical problems that involve equal sharing and grouping up to 75 with answers that include unitary and non-unitary fractions, e.g. half, quarter, three quarters, two fifths. **Resources:** Unifix cubes, counters, scrap paper. **DBE workbook activities relevant to this lesson:** • DBE worksheet 57 (pp. 128 and 129). **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Do the same with: 5 chocolates shared equally amongst 4 children (one and one quarter each), and 6 chocolates shared equally amongst 5 children (one and one fifth each). Do this using drawings and Unifix cubes each time. **Enrichment:** See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 100s between 0 and 1000. E.g. 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000.

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	3 + 17 =	20
2.	5 + 12 =	17
3.	6 + 11 =	17
4.	1 + 19 =	20
5.	2 + 12 =	14

	Calculate the following:	Answer
6.	0 + 20 =	20
7.	4 + 10 =	14
8.	7 + 11 =	18
9.	9 + 10 =	19
10.	10 + 1 =	11

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

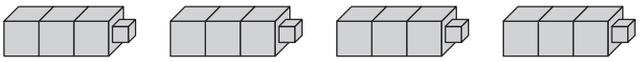
Activity 1: Learners work in groups of four

Do these activities practically using scrap paper:

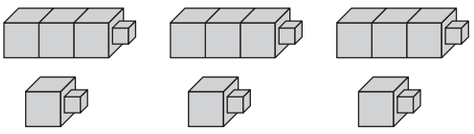
- Ask the learners how we can share two chocolate bars equally between four friends.
- Give each group of learners two pieces of scrap paper to represent the chocolates.
- Draw shapes on the board to represent the chocolates.
- What fraction of the chocolate bars did each learner get? (One half)

Activity 2: Learners work in groups

- Give each group of learners some Unifix cubes. If you do not have Unifix cubes you should make strips of paper to represent the chocolate bars.
- Ask them to make four chocolates bars using the Unifix cubes. (Each chocolate should be made using 3 blocks.)



- Ask the learners to share the chocolates amongst three children.
- What fraction of the chocolate will each child get? (One and one third)



- Discuss the answer: *Are there different ways of breaking up the chocolates to share it out?* (Yes; you could break up all of the chocolates and share the pieces; each child will get four small pieces, each small piece is a third, so four small pieces is equal to one and 1 third as well.)

Activity 3: Learners work in groups

- Give each group of learners some counters.
- Recap how to find fraction parts of a set of things. For example, to find thirds, divide the number of things you have into three groups of equal size. Each one of the groups is 1 third of the whole. Etc.
- In their groups, learners should find:
  - Two fifths of 15 counters. (1 fifth is 3 counters and so 2 fifths is 6 counters.)
  - Three quarters of 8 counters. (1 quarter is 2 and so 3 quarters is 6 counters.)
  - Three fifths of 35 counters. (1 fifth is 7 counters and so 3 fifths is 21 counters.)
- Discuss the methods learners used to find the fraction parts.

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

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

6. Reflection on lesson

Term 2 Lesson 21: Sharing leading to fractions

Note that in the CAPS it is suggested that learners can write fractions using numbers and words. For example, one fifth can be written as 1 fifth. You should allow learners to write fractions using word names and number symbols. Learners who are familiar with the fraction number symbols (e.g.$\frac{1}{5}$) should be allowed to write them as well.

In this activity word names have been used.

Classwork

Draw pictures to show your answers. (Drawings not shown here.)

1. Show one quarter of 20. (5)

2. Show three quarters of 20. (15)

3. Find one quarter of 20 sweets. (5)

4. Grandmother gives Kiki R12. Kiki wants to save a third of the money. How much money should she save? (R4)

5. Share 8 chocolate bars amongst 3 friends so that they all get the same amount of chocolate and there is nothing left over. (2 and two thirds)

6. I have 20 balloons at my party. Three quarters of them popped. How many balloons do I have left over? (5)

Homework

Draw pictures to show your answers.

1. Show one fifth of 25. (5)

2. Show two fifths of 25. (10)

3. Six sweets will make up what fraction of 24 sweets? (One quarter)

4. Share 50 Smarties equally between 10 children. What fraction will each child get? (One fifth)

LESSON 22: FRACTIONS

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.10 Sharing leading to division, 1.16 Mental mathematics.

Lesson vocabulary: Equal sharing, grouping, fractions, forwards, backwards, calculate, bigger, half, third, quarter, fifth, fraction wall, unitary, non-unitary, numerator, denominator, divide.

Prior knowledge:
Learners should have been taught how to:

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

Concepts:

- Solve and explain solutions to practical problems that involve equal sharing and grouping up to 75 with answers that include unitary and non-unitary fractions, e.g. half, quarter, three quarters, two fifths.

Resources: Counters, Cuisenaire rods (if you have them).

DBE workbook activities relevant to this lesson:

- DBE worksheet 59 (pp. 132 and 133).

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

Remediation: Give the learners fraction strips or Cuisenaire rods. Ask them to put down the large strips. (This is a whole). Ask the learners to place two equal strips below the whole that are the same length. (1 whole is the same as two halves). Do the same with: 3 strips – one whole is the same as three thirds; 4 strips – one whole is the same as four quarters; 5 strips – one whole is the same as five fifths. Use groups of counters to find fraction parts as well. (E.g. one quarter of four counters = 1 counter; one quarter of 12 counters = 3 counters etc. *How do I find quarters? I take my whole and divide it up into four parts of equal size.*)

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 50s between 0 and 500. E.g. 50, 100, 150, 200, 250, 300, 350, 400, 450, 500.

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	12 – 5 =	7
2.	14 – 6 =	8
3.	15 – 8 =	7
4.	11 – 3 =	8
5.	10 – 5 =	5

	Calculate the following:	Answer
6.	13 – 8 =	5
7.	16 – 7 =	9
8.	18 – 10 =	8
9.	19 – 9 =	10
10.	10 – 0 =	10

2. Correction/reflection on homework (15 minutes)

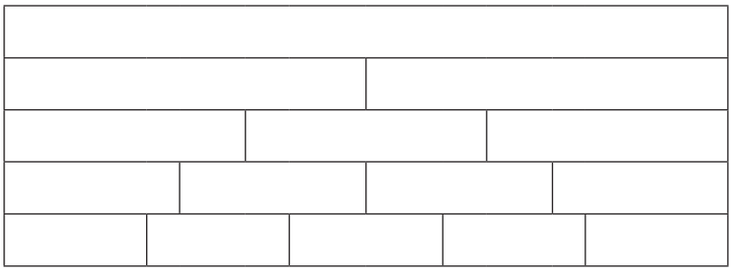
Reflection/remediation based on previous day's work/homework.

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

Draw this fraction wall on the board (showing halves, thirds, quarters and fifths).

- *(If you have Cuisenaire rods, lay out a mat of rods to show this fraction wall, using the blocks.)*
- Write the word names of the fraction parts into the fraction wall with the help of your learners.



- *How many halves/thirds/quarters/fifths equal a whole?* (Discuss each one separately – 2, 3, 4, 5.)
- *How many quarters in 1 half?* (2)
- *Which is bigger – 1 half or 2 fifths?* (One half.)
- *Which is bigger – 1 half or 2 thirds?* (Two thirds.)
- *Which is bigger – 2 thirds or 3 quarters?* (Three quarters.)
- Ask the learners to compare other pairs of fractions – they make up a sentence such as: *1 half is equal to 2 quarters.*

Activity 2: Learners work in groups

- Recap how to find fraction parts of a set of things. For example, to find fifths, divide the number of things you have into 5 groups of equal size. Each one of the groups is 1 fifth of the whole. Etc.
- Give each group 30 counters. Ask them to find the following fraction parts using the counters:
- *What is 1 fifth of 30?* (6)
- *What is 2 fifths of 30?* (12)
- *What is 1 quarter of 28?* (7)
- *What is 3 quarters of 28?* (21)
- *What is 1 third of 30?* (10)
- *What is 2 thirds of 30?* (20)

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

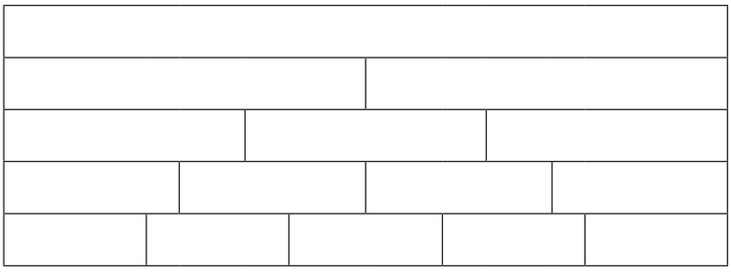
5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 2 Lesson 22: Fractions

In this activity word names have been used for fractions. As discussed previously, allow learners to write fraction using word names or symbols. Ultimately learners should write fractions using number symbols – this is the way in which numbers are written for calculations and going forward learners need to know how to write these number symbols.

Classwork



1. How many quarters in one half? (Two)
2. Which is bigger – two thirds or one half? (Two thirds)
3. Which is bigger – one half or three fifths? (Three fifths)
4. What is one quarter of 40? (10)
5. What is three quarters of 40? (30)
6. What is one third of 75? (25)
7. What is two thirds of 75? (50)

Homework

1. How many quarters in one? (Four)
2. Which is bigger – one third or one half? (One half)
3. What is one quarter of 20? (5)
4. What is two thirds of 30? (20)

LESSON 23: DATA

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.16 Mental mathematics, 5.4 Collect and organise data, 5.5 Represent data, 5.6 Analyse and interpret data.

Lesson vocabulary: Data, organise, table, bar graph, axis/axes, label, graph title, vertical axis, horizontal axis, represent, more, less, fewer, forwards, backwards, calculate, pictograph.

Prior knowledge:
Learners should have been taught how to:

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

Concepts:

- Collect data about the class or school to answer questions posed by the teacher.
- Organise data supplied by teacher or book in lists, tallies and tables.
- Represent data in a pictograph or bar graph and analyse data from representations.

Resources: Pictures of T-shirts cut from old magazines/advert flyers (6 green, 10 yellow, 8 blue, 12 pink).

DBE workbook activities relevant to this lesson:

- DBE worksheet 36 (pp. 84 and 85).

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

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

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 50s between 0 and 1000. E.g. 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 1000.

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	7 + __ = 12	5
2.	1 + __ = 20	19
3.	9 + __ = 15	6
4.	2 + __ = 16	14
5.	3 + __ = 13	10

	Calculate the following:	Answer
6.	4 + __ = 14	10
7.	9 + __ = 18	9
8.	6 + __ = 14	8
9.	8 + __ = 16	8
10.	0 + __ = 10	10

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

Sorting data.

- Place cut-outs of the following items randomly on the board: 6 green t-shirts, 10 yellow t-shirts, 8 blue t-shirts and 12 pink t-shirts.
- Get some children to draw washing baskets on the board in the same colours as the t-shirts.
- Ask learners to sort and place the t-shirts into the matching coloured basket.
- Count how many t-shirts there are of each colour and write the number on the washing basket.

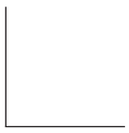
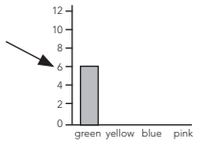
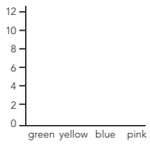
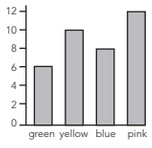
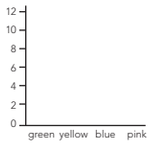
Activity 2: Whole class activity

- Transfer data into a table format.
- Learners draw tables in their mathematics books. Show them how to transfer the data from the baskets to the tables.

Colour of the t-shirts	Number of t-shirts
green	6
yellow	10
blue	8
pink	12

Activity 3: Whole class activity

- Represent the data in a bar graph. Take the learners through each of the following steps to do so.

<table>
<tr>
<td>1</td>
<td>Draw the axes of the graph.</td>
<td>  </td>
<td>4</td>
<td>Represent data on the bar graph by drawing the bars.
The height of the bars needs to match the number of t-shirts. We have 6 green t-shirts, so how will we represent this on the bar graph? (Look at the numbers on the axis with the numbers and match this.)</td>
<td>Our class's favourite t-shirt colours
  </td>
</tr>
<tr>
<td>2</td>
<td>Label the axes.
Vertical – number counts. Point out that the spaces between the numbers should be the same.
Horizontal – colours. The spaces between the colours should also be the same.</td>
<td>  </td>
<td>5</td>
<td>Do the same for all the other t-shirts.</td>
<td>Our class's favourite t-shirt colours
  </td>
</tr>
<tr>
<td>3</td>
<td>Remind learners that a story has a title. So what do you think the title of a bar graph should be? (Our class's favourite t-shirt colours.)
Where will you write the title of the graph? Above or below the graph? (Above)</td>
<td>Our class's favourite t-shirt colours
  </td>
<td>6</td>
<td colspan="2">Learners analyse the data by answering questions such as:
a) What is the most popular colour for t-shirts in our class? (Pink.)
b) Which colour do the fewest children like? (Green.)
c) Do more learners like yellow or blue? (Yellow.)
d) By how many more? (Two.)
e) How many children are there in our class? (36)
f) Is there anything else that you can tell me about the graph? (E.g. Nobody likes black t-shirts.)</td>
</tr>
</table>

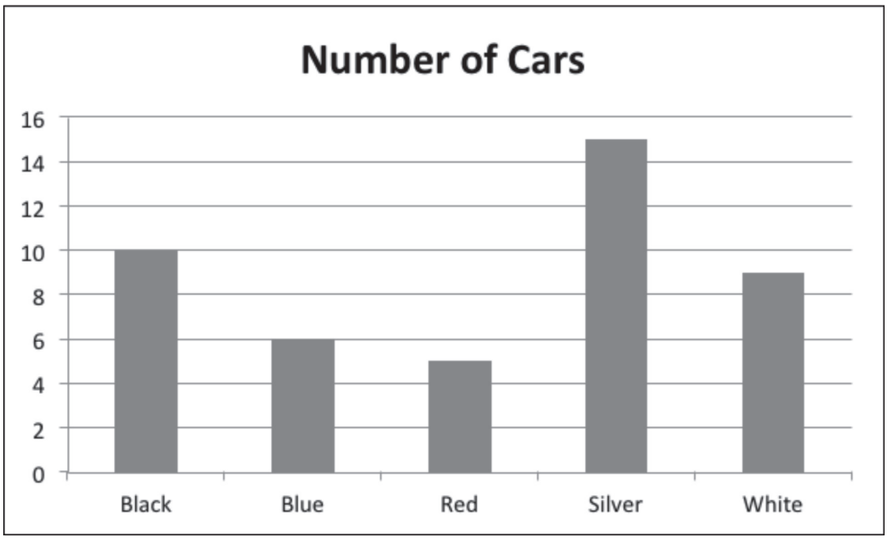
4. Classwork activity (25 minutes) (See next page)

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

6. Reflection on lesson

Classwork

Use this bar graph to answer the questions that follow.



1. How many cars of each colour were counted? (black = 10, blue = 6, red = 5, silver = 15, white = 9)

2. What was the most popular colour? (silver)

3. What was the least popular colour? (red)

4. How many more black cars were there than white cars? (one)

5. How many fewer blue cars were there than silver cars? (nine)

Homework

Draw a bar graph to represent the following data:

(Graph not shown here.)

Favourite sports	
Soccer	10
Swimming	3
Athletics	8
Cricket	2

Remember to name the graph and to label the axes.

LESSON 24: MONEY – VALUE OF MONEY

Teacher's notes

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

Lesson vocabulary: Money, coins, bank notes, rands, cents, totals, value, change, expanded notation, equal, number sentence, forwards, backwards, calculate.

Prior knowledge:
Learners should have been taught how to:

- Recognise and identify the South African coins 10c, 20c, 50c, R1, R2, R5 and bank notes R10, R20 and R50.
- Solve money problems involving totals and change in cents up to 90c and rand to R99.

Concepts:

- Recognise and identify the South African coins and bank notes.
- Solve money problems involving totals and change in rands or cents.

Resources: Money cut-outs (coins and notes) (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: Set up a simple shop in the class with items priced at amounts within the children's number range, e.g. R5,50, R2,20, R3,50. Learners take turns to be the shopkeeper. Each time a sale is made both the shopkeeper and the customer need to calculate the total and the change.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 5s from any given number between 0 and 500. E.g. 402, 407, 412, … .

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	12 – __ = 4	8
2.	15 – __ = 10	5
3.	18 – __ = 9	9
4.	13 – __ = 6	7
5.	10 – __ = 6	4

	Calculate the following:	Answer
6.	14 – __ = 6	8
7.	11 – __ = 10	1
8.	16 – __ = 13	3
9.	19 – __ = 12	7
10.	20 – __ = 11	9

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

- Ask learners to think about all the ways in which they can make up R300 using only bank notes and to write them down? *How do you know whether you have all the solutions?* (Discuss alternative ways of doing this.)
- If learners struggle to do this activity abstractly allow them to use cut-out notes.

Activity 2: Learners work in pairs

- Ask the learners to write 670c as rands and cents. (R6,70)
- Let learners write it in expanded notation (hundreds, tens and units):
- 670 c = 600c + 70c
  600c is equal to R6.
  So we can write 670c as R6 and 70c or R6,70.

Activity 3: Whole class activity

Problem solving.
Explain to the learners that you want them to solve this problem: Travis has a 50c coin and four 20c coins. Toffees cost R1,20. How much change will he get if he pays with all his money?

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

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

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

6. Reflection on lesson

Term 2 Lesson 24: Money – value of money

Classwork

1. R2,20 + R4 = ___ (R6,20)

2. R3,50 + R2,50 = ___ (R6)

3. Write 520c as rands and cents. (R5,20)

4. Draw notes to show in how many different ways you can make up R400 using only bank notes. (Answers will vary, eg. R200 + R100 + R50 + R20 + R20 + R10)

5. Mandla pays R2,50 to take a taxi to school. What does it cost him to get to and from school each day? (R2,50 x 2 = R5,00 or R2,50 + R2,50 = R5,00)

6. One pair of shoes costs R250. How much will two pairs of shoes cost? (R500)

Homework

1. R5,70 + R3,20 = ____ (R8,90)

2. R3,20 + R2,70 = ____ (R5,90)

3. Mandla pays R2,50 to take a taxi to school. The train costs R6 for a return ticket. Which is cheaper, the train or the taxi? (The taxi costs R5 for a return ticket while a train costs R6 for a return ticket. Therefore the taxi is cheaper.)

WEEK 7

LESSON 25: MONEY – BUYING AND SELLING PROBLEMS

Teacher's notes
CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.11 Money, 1.16 Mental mathematics. **Lesson vocabulary:** Money, coins, bank notes, rands, cents, total, value, change, equal, number sentence, forwards, backwards, calculate. **Prior knowledge:** Learners should have been taught how to: • Recognise and identify the South African coins 10c, 20c, 50c, R1, R2, R5 and bank notes R10, R20 and R50. • Solve money problems involving totals and change in cents up to 90c and rand to R99. **Concepts:** • Recognise and identify the South African coins and bank notes. • Solve money problems involving totals and change in rands or cents. **Resources:** Money cut-outs (coins and notes) (see *Printable Resources*). **DBE workbook activities relevant to this lesson:** • DBE worksheet 56 (pp. 126 and 127). **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Set up a simple shop in the class with items priced at amounts within the children's number range, e.g. R5,50, R2, 20, R3,50. Learners take turns to be the shopkeeper. Each time a sale is made both the shopkeeper and the customer need to calculate the total and the change. **Enrichment:** See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 2s from any number between 0 and 500. E.g. 102, 104, 106, ...

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	15 – __ = 10	5
2.	9 + __ = 14	5
3.	19 – __ = 12	7
4.	2 + __ = 14	12
5.	14 – __ = 6	8

	Calculate the following:	Answer
6.	6 + __ = 13	7
7.	17 – __ = 8	9
8.	5 + __ = 18	13
9.	15 – __ = 9	6
10.	6 + __ = 15	9

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 costs of the sweets on the board before the lesson.

- Pedro's granny gave him R5. Which 3 sweets can he buy? The sweets cost:
  - Choc chuckle R2,70;
  - Gums R1,80;
  - Sour worms R2,60;
  - Magic mints R2,20;
  - Toffee R1,20.
- *What is the question?* (Which 3 sweets can he buy?)
- *How much does he have?* (R5)
- *Which are the other important numbers?* (R2,70, R1,80, R1,40, R2,20, R1,20)

Choc chuckle R1,70	Gums R1,80	Sour worms R2,60	Magic mints R2,20	Toffee R1,20

- Let learners colour/circle a possible combination, e.g. Sour worms, magic mints and toffee.
- Let them write a number sentence to work out the total cost:
  R2,60 + R2,20 + R1,20
  = R2 + R2 + R1 + 60c + 20c + 20c
  = R5 + 100c (R1)
  = R6,00 Too much!
- Try other combinations using the method described above until the total is R5 or less, (Choc chuckle + Gums + Toffee: R1,70 + R1,80 + R1,20 = R4,70.)

Activity 2: Learners work in groups

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

R80,00	R80,00	R80,00

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

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

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

6. Reflection on lesson

Term 2 Lesson 25: Money – buying and selling problems

Classwork

1. There are 5 chocolates in a packet. One packet of chocolates costs R1,00. Mr King needs 50 chocolates.
   a) How many packets should he buy? (10)
   b) What will he pay? (R10,00)

2. I have R20,00. I need to buy 5 balls. Which balls can I buy?
   Soccer balls – R5,80 each,
   Cricket balls – R3,80 each,
   Netball balls – R6,20 each,
   Rugby balls – R5,00 each,
   Tennis balls – R2,70 each.
   (Answers will vary – one possibility is 2 cricket balls, 1 rugby ball and 2 tennis balls.)

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

Homework

1. Peter bought 3 pairs of shoes for R90 each. How much change will he get for R300? (R30)

2. Three buses drive on a toll road and are charged R35 each. How much do they pay in total? (R105).

LESSON 26: 3-D OBJECTS

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.16 Mental mathematics, 3.2 3-D objects.

Lesson vocabulary: Estimate, check, 2-D shapes, 3-D objects, ball shapes, spheres, box shapes, prisms, cylinders, pyramids, cones, curved surface, roll, slide, side, flat surface, forwards, backwards, calculate.

Prior knowledge:
Learners should have been taught how to:

- Recognise and name 3-D objects in the classroom and pictures – ball shapes (spheres), box shapes (prisms), cylinders.
- Describe, sort and compare 3-D objects in terms of: size, objects that roll and objects that slide.

Concepts:

- Recognise and name 3-D objects in the classroom and in pictures – ball shapes (spheres), box shapes (prisms), cylinders, pyramids, cones.
- Describe, sort and compare 3-D objects in terms of: 2-D shapes that make up the faces of 3-D objects and flat or curved surfaces.

Resources: An assortment of 3-D shapes collected from home (e.g. boxes, cones, cylinders, etc.).

DBE workbook activities relevant to this lesson:

- DBE worksheet 10 (pp. 22 and 23).

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

Remediation: Give learners building blocks. Ask them to build anything of their choice. Ask them to name the objects they used and which of these objects can roll and which can slide?

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 10s from any number between 0 and 500. e.g. 210, 220, 230, ...

1.2 Mental mathematics activity (10 minutes)

	Answer the following:	Answer
1.	What is 1 more than 354?	355
2.	What is 1 less than 398?	397
3.	What is 2 more than 102?	104
4.	What is 2 less than 305?	303
5.	What is 3 more than 389?	392

	Answer the following:	Answer
6.	What is 3 less than 285?	282
7.	What is 4 more than 54?	58
8.	What is 4 less than 78?	74
9.	What is 10 more than 158?	168
10.	What is 10 less than 48?	38

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 takes learners back to geometry (for the first time this term). There are lots of vocabulary words that are special in this section. You should make sure that you use all of the shape names and allow learners to practise using them too.

It is vitally important that learners work with real shapes when they are talking about the characteristics of those shapes, so that they can see these things for themselves. If you do not have enough shapes to give all groups of learners a set, you should demonstrate using shapes and allow learners to come to the front of the class and experiment with the real objects when they need to, in order find answers to the activity questions.

Activity 1: Whole class activity

Take the children outside.

- Ask one child to demonstrate rolling on the ground. Give others a turn to roll.
- Ask one child to demonstrate sliding. Give others a turn to slide.
- Do this many times until the concepts of *roll* and *slide* are established.

Activity 2: Learners work in groups

Return to the class

- **Note:** Help children to become familiar with the shape terminology by asking questions and allowing children to use the words they have learnt.
- Give each group of learners a variety of 3-D shapes.
- Discuss the names of the shapes with the class. Ask learners to show each of the different shapes to the class, so that you can check that they know these names. Learners from each group should respond at the same time, holding up the shapes you call for:
- *Show me the prisms.* (Check that all learners are holding up prisms. Remind learners we also call these box shapes but the mathematical name for them is prisms.)
- *Show me the pyramids.* (Check that all learners are holding up pyramids.)
- *Show me the spheres.* (Check that all learners are holding up spheres. Remind learners we also call these ball shapes but the mathematical name for them is spheres.)
- *Show me the cones.* (Check that all learners are holding up cones.)
- *Show me the cylinders.* (Check that all learners are holding up cylinders.)
- Ask them to sort the objects into those that can roll (e.g. sphere, cone) and those that can slide (e.g. prism, pyramid).
- *Which shapes can slide?* (Prism, pyramid.)
- *What can you tell me about them?* (They have flat surfaces/faces/sides.)
- *Which shapes can roll?* (Sphere, cone.)
- *What can you tell me about them?* (They have round surfaces/faces/sides.)
- *Are there any shapes that can roll and slide?* Allow learners to experiment (cylinder and cone).
- *Why do they roll and slide?* (Because they have flat and curved surfaces.)
- Ask learners to show which surfaces are flat and which surfaces are curved.

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

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

6. Reflection on lesson

Term 2 Lesson 26: 3-D objects

You need to have a collection of old newspapers/magazines/advertisements for this lesson activity.

Classwork

(Answers will vary. Not shown here.)

1. Look in the magazines, pamphlets and newspapers for pictures of two objects that look like each of the following:
   a) balls,
   b) boxes,
   c) cylinders.

2. Paste them in your mathematics book and write down why you have chosen that picture.

3. Name the objects that you have that can roll.

4. Name the objects that you have that can slide.

5. Draw a cylinder balancing on a box.

Homework

(Answers will vary. Not shown here.)

1. Draw a picture using only box-shaped objects.

2. Draw a picture using box-shaped and cylinder-shaped objects.

3. Draw a picture using ball-shaped and cylinder-shaped objects.

LESSON 27: 3-D OBJECTS

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.16 Mental mathematics, 3.2 3-D objects.

Lesson vocabulary: 2-D shapes, 3-D objects, ball shapes, spheres, box shapes, prisms, cylinders, pyramids, cones, curved surfaces, flat surfaces, sides, cube, rectangular prism, forwards, backwards, calculate.

Prior knowledge:
Learners should have been taught how to:

- Recognise and name 3-D objects in the classroom and pictures – ball shapes (spheres), box shapes (prisms), cylinders.
- Describe, sort and compare 3-D objects in terms of: size, objects that roll and objects that slide.

Concepts:

- Recognise and name 3-D objects in the classroom and pictures – ball shapes (spheres), box shapes (prisms), cylinders, pyramids, cones.
- Describe, sort and compare 3-D objects in terms of: 2-D shapes that make up the faces of 3-D objects and flat or curved surfaces.

Resources: An assortment of 3-D shapes collected from home, e.g. boxes, cones, cylinders, etc.

DBE workbook activities relevant to this lesson:

- DBE worksheet 11 (pp. 24 and 25).

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

Remediation: Get learners to sort a variety of examples of each 2-D shape (different kind of triangles, rectangles etc.) and explain why they sorted them the way they did.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 2s from any number between 0 and 500. E.g. 102, 104, 106, ...

1.2 Mental mathematics activity (10 minutes)

	Answer the following:	Answer
1.	What is 1 more than 450?	451
2.	What is 3 more than 500?	503
3.	What is 4 more than 322?	326
4.	What is 5 more than 487?	492
5.	What is 10 more than 78?	88

	Answer the following:	Answer
6.	What is 1 less than 400?	399
7.	What is 2 less than 65?	63
8.	What is 6 less than 78?	72
9.	What is 3 less than 491?	488
10.	What is 10 less than 450?	440

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

This is another geometry lesson. Remember to make sure that you use all of the shape names and other vocabulary used to talk about shapes and allow learners to practise using them too.

As always, it is vitally important that learners work with real shapes when they are talking about the characteristics of those shapes, so that they can see these things for themselves. If you do not have enough shapes to give all groups of learners a set, you should demonstrate using shapes and allow learners to come to the front of the class and experiment with the real objects when they need to, in order find answers to the activity questions.

Activity 1: Whole class activity

Shape characteristics.

- Give learners a variety of 3-D objects, e.g. cylinders (closed on both ends), pyramids, cubes, rectangular prisms, cones.
- Discuss the properties (characteristics) of the 3-D objects with the learners.
- Demonstrate and ask learners to hold up the cylinder. Ask the following questions:
  - *How many sides does the shape have?*
  - *Tell me about the shape of each side.* (Square, circle, flat, curved, etc.)
  - Do this with each 3-D object – pyramids, cubes, rectangular prisms, cones.

Activity 2: Whole class activity

Comparison of 3-D objects.

- Hold up a cylinder and a cone and ask:
  - *What can you tell me about them?* (Both have flat and curved surfaces.)
  - *What is the same?* (Both have flat and curved surfaces.)
  - *What is different?* (The cylinder has two flat surfaces but the cone has one flat surface. The cone has one pointy end. Both ends of the cylinder are flat.)
- Do the same with other 3-D objects, comparing them according to their characteristics:
  - Cone and the pyramid;
  - Cone and sphere;
  - Prism/cube and pyramid;
  - Sphere and rectangular prism (cube).

Activity 3: Learners work in groups

- The learners should sort 3-D objects on their desks into those that can roll and those that can slide.
- Name each of the shapes.
- Explain why they can roll.
- Explain why they can slide.

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

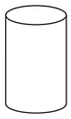
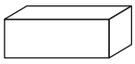
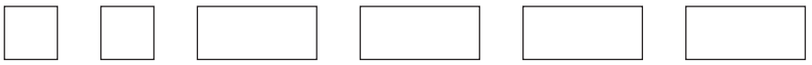
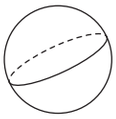
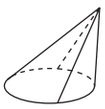
5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 2 Lesson 27: 3-D objects

Classwork

Complete this table in your mathematics books:

Object	Draw all the shapes that make up this object
	
	
	
	
	

Homework

1. Draw a picture using only shapes that can roll. (Answers will vary.)
2. Draw a picture using only shapes that can slide. (Answers will vary.)
3. Draw a picture using shapes that can roll and slide. Name the different shapes that you have used. (Answers will vary, e.g.  Made of 2 circles, 1 rectangle)
4. Draw a picture of an object in your house that can slide. (Answers will vary.)

LESSON 28: 3-D OBJECTS: CONSTRUCTION

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.16 Mental mathematics, 3.2 3-D objects.

Lesson vocabulary: 2-D shapes, 3-D objects, ball shapes, spheres, box shapes, prisms, cylinders, pyramids, cones, curved surfaces, flat surfaces, sides, square, circle, rectangle, triangle, forwards, backwards, calculate.

Prior knowledge:
Learners should have been taught how to:

- Recognise and name 3-D objects in the classroom and pictures – ball shapes (spheres), box shapes (prisms), cylinders.
- Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, building blocks, recycling, construction kits, and other 3-D geometric objects.

Concepts:

- Recognise and name 3-D objects in the classroom and pictures – ball shapes (spheres), box shapes (prisms), cylinders, pyramids, cones.
- Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, clay, toothpicks, straws, other 3-D geometric objects

Resources: An assortment of 3-D shapes collected from home (e.g. boxes, cones, cylinders, etc.), glue/Prestik/clay.

DBE workbook activities relevant to this lesson:

- DBE worksheet 60 (pp. 134 and 135).

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

Remediation: Allow learners more time to work with the 3-D shapes and discuss their names and properties with you.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 2s from any number between 0 and 500. E.g. 102, 104, 106, ...

1.2 Mental mathematics activity (10 minutes)

	Answer the following:	Answer
1.	What is 1 more than 350?	351
2.	What is 3 more than 400?	403
3.	What is 4 more than 352?	356
4.	What is 5 more than 387?	392
5.	What is 10 more than 178?	188

	Answer the following:	Answer
6.	What is 1 less than 500?	499
7.	What is 2 less than 465?	463
8.	What is 6 less than 278?	272
9.	What is 3 less than 391?	388
10.	What is 10 less than 456?	446

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Once again it is vitally important that learners work with real shapes when they are talking about the characteristics of those shapes, so that they can see these things for themselves. If you do not have enough shapes to give all groups of learners a set, you should demonstrate using shapes and allow learners to come to the front of the class and experiment with the real objects when they need to, in order find answers to the activity questions.

Try to collect shapes each year, so that you build up a set of shapes to use in lessons like this one.

Activity 1: Whole class activity

Give learners a variety of 2-D and 3-D shapes e.g. squares, circles, rectangles, triangles and cylinders (closed on both ends if possible), pyramids, cubes, rectangular prisms.

- Discuss the difference between the 2-D and 3-D shapes that you have given the learners to work with.
- Ask: *Hold up all of the 2-D shapes.* (Learners hold up the squares, circles, rectangles, triangles.)
- Ask: *What can you tell me about these shapes?* (They are flat, etc. Discuss all observations.)
- Ask: *Hold up all of the 3-D shapes.* (Learners hold up the cylinders, pyramids, cubes, rectangular prisms.)
- Ask: *What can you tell me about these shapes?* (They are NOT flat, etc. Discuss all observations.)
- Hold up some of the shapes to discuss their features – with a view to using them for constructions.
  - *How many sides does the shape have?*
  - *Which sides would fit with which shapes if I had to join two shapes?*
  - Discuss until you think the class is ready to build their own shapes.

Activity 2: Learners work in groups

- Learners use the shapes that you gave them and glue/Prestik to join them together to make a creative object.
- Each group should produce one object.
- The group needs to be able to explain:
  - The shapes that they used.
  - How they joined the shapes.
  - Etc.
- Let each group present their shape to the class and discuss something about their shape with the class.

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

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

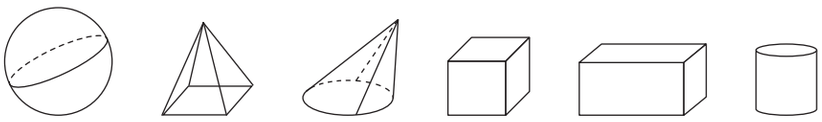
6. Reflection on lesson

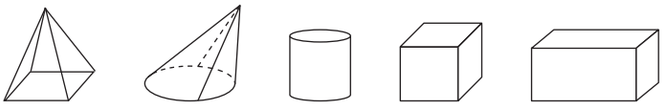
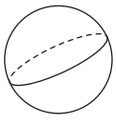
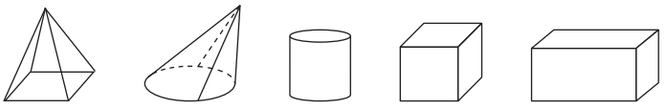
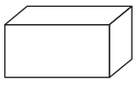
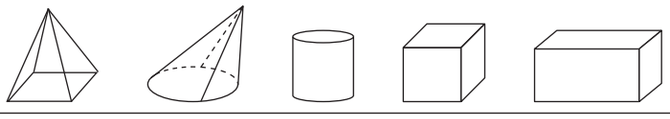
Term 2 Lesson 28: 3-D objects: construction

Classwork

Copy and complete the table: The first one is done for you.

Use these objects for this activity



Object	Draw three objects that can balance on the object
	
	(None)
	
	
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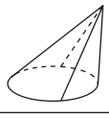
	(None)

Homework

1. Can a cylinder balance on top of a prism? When? (Yes, when the flat side of the cylinder is placed on the prism.)

2. Can a cube balance on top of a prism? When? (Yes, when the cube is placed on a rectangular prism or on the triangular face of a triangular prism.)

3. Can anything balance on top of a sphere? (No.)

4. Can a sphere balance on top of anything? When? (Yes, when it is carefully placed on a flat surface, it could. But it might roll – especially if bumped.)

WEEK 8

LESSON 29: DIRECTIONS

Teacher's notes
CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.16 Mental mathematics, 3.1 Position, orientation and views. **Lesson vocabulary:** Directions, turn, left, right, forwards, backwards, reverse, calculate. **Prior knowledge:** Learners should have been taught how to: • Follow directions to move around the classroom and to place one object in relation to another. **Concepts:** • Follow directions and give directions to move around the classroom and school. **Resources:** Objects which you can use as markers, e.g. beacons. **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 some directions: • *Stand next to the beacon.* • *Walk two steps forwards.* • *Turn right.* • *Walk three steps forwards.* • *Turn right.* • *Walk two steps forward.* • *Turn right.* Once the concepts of ***steps forward*** and turn right are established, introduce ***turn left***. Only when this is understood, introduce the combination of ***turn right*** and ***turn left*** together. **Enrichment:** See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 5s from any given multiple between 0 and 200. E.g. 83, 88, 93, 98, 103, ...

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	205 + 3 =	208
2.	432 + 2 =	434
3.	410 + 0 =	410
4.	476 + 1 =	477
5.	308 + 1 =	309

	Calculate the following:	Answer
6.	205 + 3 =	208
7.	432 + 2 =	434
8.	410 + 0 =	410
9.	476 + 1 =	477
10.	308 + 1 =	309

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 calls on you to use beacons as place markers. If you don't have beacons, you could use empty coke bottles or other markers.

Activity 1: Learners work in groups

Take the learners outside and give them basic instructions. Divide the learners into groups and give each group some beacons. After each instruction the groups will place a beacon.

- Walk 5 steps forward and place a beacon.
- Turn right and walk 3 steps. Place a beacon.
- Turn left and walk 4 steps. Place a beacon.
- Turn right and walk 3 steps. Place a beacon.
- Turn right and walk 10 steps. Place a beacon.
- Give various instructions until you think that learners have grasped the idea of following instructions according to direction and number of steps.
- The number of beacons that you have could limit you. If you do not have a lot of beacons, reuse them, until everyone has had enough practise.

Activity 2: Learners work in groups

- Ask the groups to go back on their route, using the beacons to guide them.
- Learners give the instructions to each other to follow the route backwards.
- *What changes when you reverse the route?* (Discuss – Left becomes right, etc.)

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

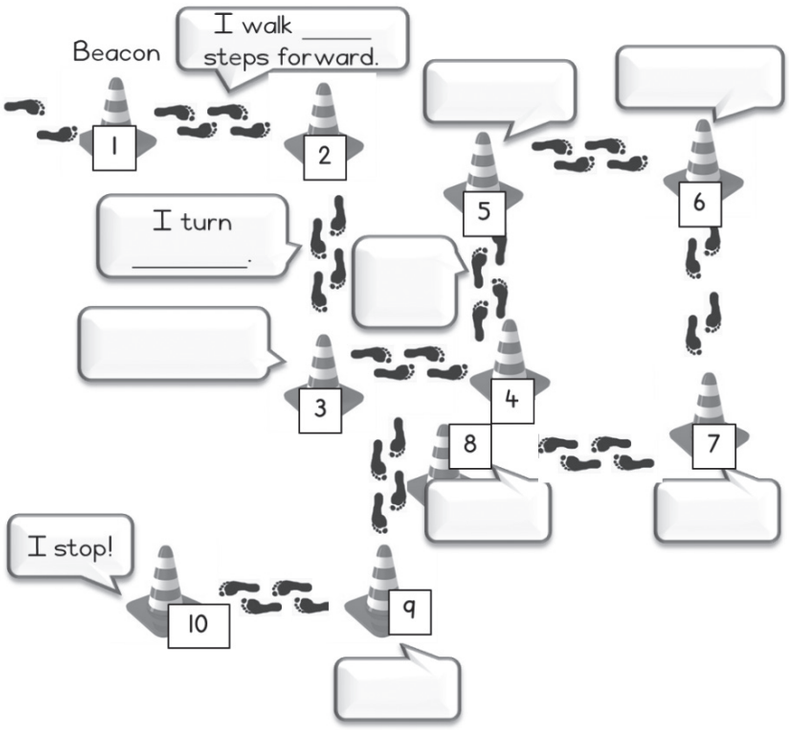
5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 2 Lesson 29: Directions

Classwork

Look at the map of the path that you have walked



In your mathematics book complete the table showing the path that you walked. The first steps have been done for you.

Steps from Beacon 1 to Beacon 2	In each case the sentence will begin with 'I walked four steps forward and then I turned .....' (the direction is indicated in the column on the right)	(Right)
Steps from Beacon 2 to Beacon 3		(Left)
Steps from Beacon 3 to Beacon 4		(Left)
Steps from Beacon 4 to Beacon 5		(Right)
Steps from Beacon 5 to Beacon 6		(Right)
Steps from Beacon 6 to Beacon 7		(Right)
Steps from Beacon 7 to Beacon 8		(Left)
Steps from Beacon 8 to Beacon 9		(Right)
Steps from Beacon 9 to Beacon 10		(stopped)

Homework

(Answers will vary.)

Draw a path from one place to another. Explain the path using steps and directions.

LESSON 30: POSITION AND VIEWS

Teacher's notes
CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.16 Mental mathematics, 3.1 Position, orientation and views. **Lesson vocabulary:** Top view, front view, side view, back view, position, view, forwards, backwards, calculate. **Prior knowledge:** Learners should have been taught how to: • Describe the position of one objects in relation to another, e.g. on top of, in front of, behind, left, right, up, down, next to. • Follow directions to move around the classroom and to place one object in relation to another. **Concepts:** • Identify and name different views of the same object. **Resources:** Objects (e.g. caps, cups and cans). **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 a variety of objects and ask them to show you the: front view, side view and top view. Give learners three to four blocks to build an object. Ask them to show you the front view, side view and top view. **Enrichment:** See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 2s from any given multiple between 0 and 500. E.g. 499, 497, 495, 493, ...

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	Double 10	20
2.	Double 12	24
3.	Double 5	10
4.	Double 20	40
5.	Double 100	200

	Calculate the following:	Answer
6.	What is half of 20	10
7.	What is half of 18	9
8.	What is half of 80	40
9.	What is half of 50	25
10.	What is half of 400	200

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

Show the learners a cap.

- Show the cap in different positions and ask them which side is the front, back and sides of the cap.
- Draw sketches of the views on the board and label them, to help learners remember the vocabulary.
- *Which view did we not look at?* (The top view.) Show learners the top view and draw it onto the board. (The drawings on the board should look like this when you have drawn them all.)

Front view	Back view	Side view	Top view
			

Activity 2: Learners work in groups

Learners place their bags on their tables.

- Ask them to show you the front view. (The view they can see from where they are standing.)
- Ask them to show you the top view. (The view they can see if they looked over the top.)
- *What about the side view.... how many side views are there?* (Usually four sides for a rectangular prism-shaped bag.) One is the front, one is the back, and the other two are called the sides.)
- *Is it the same as the front view?* (Front and side views are not the same.) *Why?* (The front has the part that can be opened.)
- *What is the back view?* (Learners show you the back view of their school bags.) *Is it different from the font view?* (Yes) *Why?* (The back usually has the carry-straps on it.)

Activity 3: Learners work in pairs

- Place one bag and one book on the table between the two learners.
- Each learner takes turns to describe what they see. (The views should be the opposite for each person in the pair, e.g. if the book is on the right of the bag for one child, it will be on the left of the bag for the other.)
- Learners could other objects between them and describe the views they get from opposite sides to each other.

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

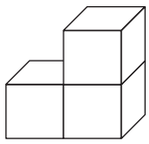
5. Homework activity (5 minutes) (See next page)

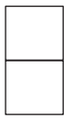
6. Reflection on lesson

Term 2 Lesson 30: Position and views

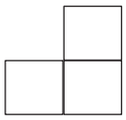
Classwork

1. Look at the picture and make a drawing of the different views in your mathematics book.
   a) Top view,
   b) Front view,
   c) Side view.





a) (Top view)



b) (Front view)

c) (Side view)

2. What view of the object do you see? Write front, back, side or top view for each picture.

a) (Front view)

b) (Back view)

c) (Side view)

d) (Front/side view)

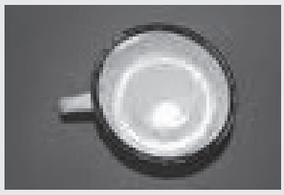
e) (Side/front view)

f. (Top view)

Homework

Draw the top and side views of a coffee mug.

(side)



(top view)

LESSON 31: SYMMETRY

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 3.4 Symmetry.

Lesson vocabulary: Symmetry, reflection, symmetrical, line of symmetry, axis of symmetry, triangle, rectangle, square, forwards, backwards, calculate, horizontal, vertical.

Prior knowledge:
Learners should have been taught how to:

- Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes.

Concepts:

- Determine line of symmetry through paper folding and reflection.

Resources: Symmetrical shapes (see *Printable Resources*), scrap paper (cut into triangles, squares, hearts, for learners per group).

DBE workbook activities relevant to this lesson:

- DBE worksheet 48a (p. 110)

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

Remediation: Give the learners the symmetrical shape patterns to cut out. Ask them to match the symmetrical sides of the shapes. Ask learners to show you the line of symmetry in the shape.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 3s from any number between 0 and 500. E.g. 103, 106, 109, ...

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	10 – __ = 10	0
2.	15 – __ = 10	5
3.	19 – __ = 10	9
4.	16 – __ = 10	6
5.	18 – __ = 10	8

	Calculate the following:	Answer
6.	11 – __ = 10	1
7.	12 – __ = 10	2
8.	13 – __ = 10	3
9.	17 – __ = 10	7
10.	14 – __ = 10	4

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Learners work in pairs

- Ask the learners to explain to their partners, in their own words, what the line of symmetry is.
- Ask a few learners to explain it to the whole class. Make sure that learners know that the line of symmetry is the line which divides a shape into two halves that are mirror images of each other. Learners could tell you what a line of symmetry is, or show you by doing a drawing and explaining the drawing.

Activity 2: Whole class activity

Give each group a copy of the symmetrical butterfly on the symmetrical shapes handout (*Printable Resource*).

- Ask learners where the line (or axis) of symmetry will be drawn in the picture of the butterfly.
- Make basic drawings on the board of a few insects such as those below. Learners should not think that the line of symmetry is always from the top to the bottom (vertical), so you should do the drawings at different angles.
- Ask the learners to show you where the line of symmetry will be. Ask them to come and draw in the lines of symmetry on the board.

Activity 3: Learners work in pairs

Use the shape cut-outs prepared by you for this lesson.

- Give the learners shapes cut from scrap paper.
- Learners fold the shapes to find lines of symmetry.
- Draw a line on the folds that are lines of symmetry.
- Learners paste the folded shapes with lines of symmetry drawn into their books.
- Discuss the ways the fold lines (lines of symmetry) divide the single shape into two other shapes – *What are they and how do they make up the original shape?* (Ideas for discussion in the table below – lines of symmetry can be horizontal, vertical or at an angle. See illustrations below.)

Shape	Fold the shape	What two shapes do you think it will form?	Illustration
Triangle 		• 2 triangles	 Three possible fold lines
Square 		• 2 rectangles	 Four possible fold lines
Heart 		• 2 half hearts	 One possible fold line

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

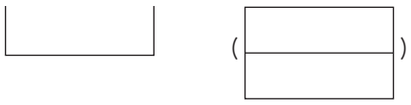
5. Homework activity (5 minutes) (See next page)

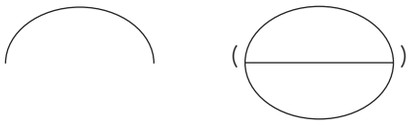
6. Reflection on lesson

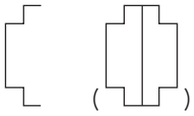
Term 2 Lesson 31: Symmetry

Classwork

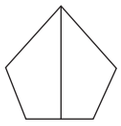
1. Draw the other half of the shape and show the line of symmetry.

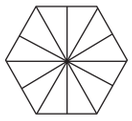
a) 

b) 

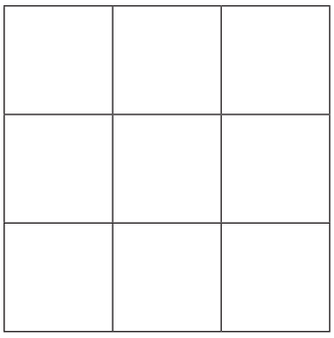
c) 

2. Draw the line of symmetry.

a) 

b) 

3. Make a symmetrical design in a grid like this in your mathematics book.



(Answers will vary.)

Homework

(Answers will vary.)

1. Draw a person and show the lines of symmetry on the drawing.
2. Draw a square with one line of symmetry.
3. Draw a triangle with one line of symmetry.

LESSON 32: SYMMETRY

Teacher's notes
CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 3.4 Symmetry. **Lesson vocabulary:** Symmetry, line of symmetry, colour, symmetrical, axis of symmetry, rectangle, square, forwards, backwards, calculate, vertical, horizontal, diagonal. **Prior knowledge:** Learners should have been taught how to: • Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes. **Concepts:** • Determine line of symmetry through paper folding and reflection. **Resources:** Symmetrical shapes (see *Printable Resources*), shape cut-outs made from scrap paper (rectangle, square). **DBE workbook activities relevant to this lesson:** • DBE worksheet 48b (p. 111). **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Show learners how to use a mirror to test for a line of symmetry. (The image in the mirror should be the other half of the image otherwise the line is not a line of symmetry.) **Enrichment:** See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 3s from any given multiple between 0 and 500. E.g. 401, 404, 407, 410, … .

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	__ + 7 = 17	10
2.	10 + __ = 12	2
3.	__ + 9 = 17	8
4.	__ + 5 = 15	10
5.	10 + __ = 14	4

	Calculate the following:	Answer
6.	__ + 0 = 10	10
7.	10 + __ = 18	8
8.	__ + 12 = 14	2
9.	8 + __ = 16	8
10.	__ + 10 = 15	5

2. Homework/corrections (15 minutes)

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

3. Lesson content – concept development (30 minutes)

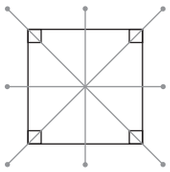
Activity 1: Whole class activity

- Give each group of learners the symmetrical shapes hand-out.

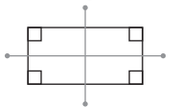
- Ask learners to look at the pattern squares on the symmetrical shapes handout (*Printable Resource*). They should discuss in their groups what they notice about the patterns.
- Have a general class discussion about the shapes in the hand-out. Discuss things such as:
  - Repeated shapes;
  - Types of shapes;
  - Symmetry (recap the meaning of symmetry if necessary);
  - Lines of symmetry (recap the meaning of a line of symmetry);
  - Patterns with one/many lines of symmetry, etc.

Activity 2: Learners work in groups

- Give each group cut-outs of the shapes (rectangles and squares) that you prepared for the lesson.
- Learners should experiment with folding their shapes in as many ways as they can find and count all the possible lines of symmetry for each shape.
- Encourage learners to explore folding of paper vertically, horizontally or diagonally to find different lines of symmetry.
- Allow time for them to find all of the lines of symmetry and draw them onto their shapes.
- Discuss the findings:
  - Square has four lines of symmetry.



  - Rectangle has two lines of symmetry.



- Learners paste their folded shapes with lines of symmetry drawn into their books.

Shapes	Drawings of shapes and lines of symmetry
	
	

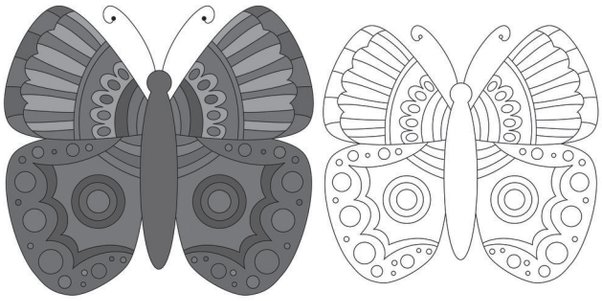
4. Classwork activity (25 minutes) (See next page)
5. Homework activity (5 minutes) (See next page)
6. Reflection on lesson

Term 2 Lesson 32: Symmetry

Classwork

(Answers will vary.)

1. The first butterfly is coloured symmetrically. Do the same with the second butterfly, but use different colours.



2. Draw two of your own bugs and also show the lines of symmetry on them.

3. Draw a necklace (a circle) made out of different coloured beads. Show the symmetry.

Homework

1. Draw a square with 4 lines of symmetry. ()
2. Draw a rectangle with 2 lines of symmetry. ()
3. Draw a square mat with a symmetrical pattern on it. (Answers will vary.)

WEEK 9

LESSON 33: LENGTH

Teacher's notes
CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.16 Mental mathematics, 4.2 Length. **Lesson vocabulary:** Hand span, paces, foot lengths, finger width, measure, measurement, length, height, width, forwards, backwards, calculate, estimate, estimation, non-standard unit. **Prior knowledge:** Learners should have been taught how to: • Estimate, measure, compare, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length **Concepts:** • Describe the length of objects by counting and stating how many informal units long they are and use language to talk about the comparison, e.g. longer, shorter, taller, wider. **Resources:** Shape cut-outs (see *Printable Resources*), objects to measure (e.g. desk, book, chair set, etc.). **DBE workbook activities relevant to this lesson:** • DBE worksheet 13 (pp. 28 and 29). **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Work with learners individually, physically helping them to understand what is meant by no gaps between objects. **Enrichment:** See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 2s from any given number between 0 and 500. E.g. 401, 403, 405, ...

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	15 + __ = 20	5
2.	20 + __ = 20	0
3.	17 + __ = 20	3
4.	16 + __ = 20	4
5.	12 + __ = 20	8

	Calculate the following:	Answer
6.	15 + __ = 20	5
7.	20 + __ = 20	0
8.	17 + __ = 20	3
9.	16 + __ = 20	4
10.	12 + __ = 20	8

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

In this activity you will use non-standard units. The non-standard units suggested in the lesson activities are hand-spans and foot lengths.

Learners should have measured using non-standard units before. While you do this activity with the class you are revising the process of measuring by counting a certain number of units. Estimation is an important part of this activity. Learners need to develop the ability to make a good estimation (near answer) of a measurement.

Activity 1: Whole class activity

Ask the learners why it is important to use the same object so that we have the same size or length when we measure, and that there should be no gaps between these objects. (We need to be able to count the number of units measured and they must be the same size. If we leave gaps we are not measuring the size correctly.)

- Ask the learners what they think people used to use for measuring length before there were rulers. (Hand spans, foot lengths or paces.)
- Ask if anyone knows how we use our hand spans to measure. Show the learners how to place one object (hand span) next to the other, and then move the first one to the other side of the second one. Emphasise where we start and how to avoid gaps. Ask the learners to estimate before they measure.
- Ask learners to measure the length of their desks using hand spans.
- Compare the estimation with the measurement. *(They should be close. If they are not – try to think more carefully about the estimate next time.)*
- *Discuss the variations in the measurements. Why are there variations (differences)? (Because different people have hands of different lengths.)*
- Now ask learners to: *Measure the length of the classroom using foot lengths.*
- Discuss the variations in the measurements. *Why are there variations (differences)?* (Because different people have feet of different lengths.).

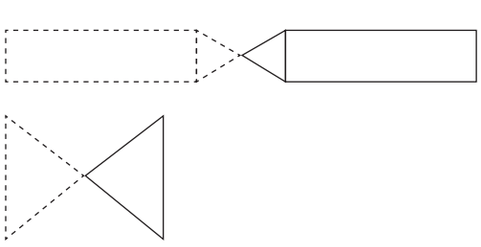
a hand span

Activity 2: Learners work in pairs

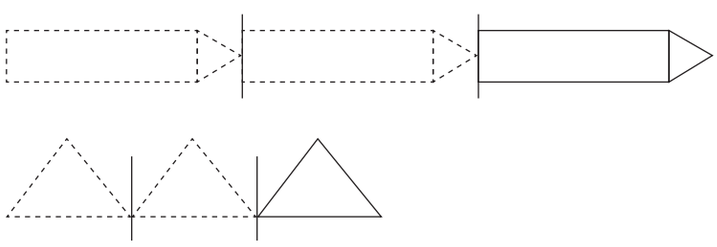
Use the shape cut-outs as non-standard units of measure.

- Learners measure the length and width of their mathematics book.
- Use one object, e.g. a pencil or a triangular building block as a non-standard measuring unit.
- Learners measure by flipping the unit over or sliding it along and marking each end point.
- Ask: *What should we do if there is a bit left over at the end?* (We estimate to get ¼ or ½ or ¾ of a unit, which we add to the total.)
- Ask the learners for their measurements and to say whether they flipped or slid their pencils/triangular building blocks.
- They must state the answer using the name of the unit used in measuring length.
- Learners could say: *The length of the book is 2 and a half pencils long.*
- Then they may use another unit to measure the length of the book, e.g. paper clips. They then say: *The length of the book is 12 paper clips long.*
- In this way, learners realise the inconsistencies in using non-standard units of measurement.
- Discuss the variations in measurements. *There should be fewer variations if everyone uses the same non-standard unit.*

Pencil or triangle flipped over



sliding pencil or triangle



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

Term 2 Lesson 33: Length

This activity gives learners a lot more opportunities to do informal measuring. Remember to discuss the measurements that they find and to lead them to the realisation that there is a need for standard units.

Classwork

(Answers will vary.)

1. Use hand spans to measure the height of your desk.
2. Use hand spans to measure the width of your desk.
3. Use a pencil to measure the height of the classroom door.
4. Use a pencil to measure the width of the classroom door.
5. Use finger widths to measure the length of your mathematics book.
6. Use finger widths to measure the width of your mathematics book.
7. Use hand spans to measure the length of your mathematics book.
8. Use hand spans to measure the width of your mathematics book.
9. Why do you get different measurements for the length and width of your mathematics book when you measure these using your finger width and then your hand span? (The width of my finger is not the same as the width of my hand span.)

Homework

(Answers will vary.)

1. Use hand spans to measure the length of your bed.
2. Use hand spans to measure the width of your bed.
3. Use a pencil to measure the height of your bed.
4. Use a pencil to measure the width of your bed.
5. Why do you get different measurements for the length and width of your bed when you measure them using hand spans and then a pencil? (The hand span is not the same as the width of my pencil.)

LESSON 34: LENGTH

Teacher's notes

CAPS topics: 1.2 Count forwards and backwards, 1.16 Mental mathematics, 4.2 Length.

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

Prior knowledge:
Learners should have been taught how to:

- Estimate, measure, compare, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length.

Concepts:

- Estimate, measure, compare, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length. (Formal measuring.)

Resources: Metre stick, string cut into length of one metre.

DBE workbook activities relevant to this lesson:

- DBE worksheet 40 (pp. 94 and 95).

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

Remediation: Learners estimate, and measure the items in the table below. Remember that they should measure and record after each estimation in order to improve their skills.

	I estimate	I measure	Difference between estimation and measurement
Width of classroom			
Width of the window			
Length of teacher's table			

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 50s between 0 and 750. E.g. 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750.

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	9 + 2 =	11
2.	15 – 7 =	8
3.	8 + 7 =	15
4.	16 – 9 =	7
5.	5 + 9 =	14

	Calculate the following:	Answer
6.	12 – 9 =	3
7.	8 + 3 =	11
8.	19 – 10 =	9
9.	3 + 9 =	12
10.	18 – 12 =	6

2. Homework/corrections (15 minutes)

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

3. Lesson content – concept development (30 minutes)

In this lesson introduce one of the standard units of measurement – the metre. Discuss the value of the standard unit – showing how this will allow everyone to get the same measurement, instead of different measurements, like we get when measuring using non-standard units.

Discuss this idea by referring back to the measuring activities learners did in yesterday's lesson.

Activity 1: Learners work in groups

- Give each group of learners a one metre length of string.
- Tell learners that the string is one metre long. Place it on the floor.
- Discuss the metre as a standard unit. It is used to measure things that are "long". (For example, we can't use a metre to measure the length of your schoolbook.)
- Ask the learners: *Who can take a step as long as a metre?* (Discuss.)
- Estimate if you can take a step which is the length of a meter. Take a step that you think is a metre in length. Other members of the group measure the length of the step. Discuss whether or not you were right. (Allow all members of the group to try and take a step that is a metre in length. This will give the group a lot of practice estimating.)
- Ask: *Can anyone take a step longer than a metre?* (Discuss. Take pleasure in the differences between learners!)

Activity 2: Learners work in groups

In groups, ask learners to measure objects using their strings. Each group must find (inside the classroom, or outside if necessary) and make a list of:

- Five things that are shorter than a metre in length.
- Five things that are longer than a metre in length.
- Five things that are exactly a metre long. (This might not be possible! But learners can try.).

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

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

6. Reflection on lesson

Term 2 Lesson 34: Length

Classwork

(Answers will vary.)

You will need a string or a metre stick when you do Questions 1 to 3. Estimate first then measure to see if these objects are longer or shorter than a metre.

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

Homework

(Answers will vary.)

1. Draw a picture of something in your room/house that is longer than one metre.

2. Draw a picture of something in your room/house that is shorter than one metre.

LESSON 35: TIME

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backwards, 1.16 Mental mathematics, 4.1 Time.

Lesson vocabulary: Time, 12-hour time, hours, half hours, quarters, minutes, analogue, digital, calendars, am, pm, analogue clock, digital clock, forwards, backwards, calculate.

Prior knowledge:
Learners should have been taught how to:

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

Concepts:

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

Resources: Clocks (analogue and digital), pictures of clocks (cut out from magazines/etc.).

DBE workbook activities relevant to this lesson:

- N/A

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

Remediation: Draw/give learners an analogue/digital clock when you work through the following activities.
Count the minutes: 5, 10, 15 …60. (Hour); Count the minutes: 5, 10, 15, 20, 25, 30. (Half an hour); Count the minutes: 5, 10, 15. (Quarter of an hour); Count the minutes: 5, 10, 15 …45. (Three quarters of an hour).

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 5s from any number between 0 and 500. E.g. 101, 106, … .

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	__ + 4 = 14	10
2.	5 + __ = 15	10
3.	10 + __ = 16	6
4.	9 + __ = 12	3
5.	1 + __ = 12	11

	Calculate the following:	Answer
6.	__ + 3 = 13	10
7.	__ + 7 = 13	6
8.	__ + 8 = 18	10
9.	__ + 10 = 17	7
10.	9 + __ = 14	5

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

Draw the clocks on the board or make use of real-life ones. Ask learners to look at the clocks and describe the difference. *Which clock do you prefer to use? Why?* (Discuss.)

Activity 2: Whole class activity

Revise the following with the learners.

- Draw/give learners an analogue/digital clock when you work through the following activities.
- Draw the clock faces in the table below on the board in order to discuss the specific times shown.
- Discuss the different categories – full hours, half hours and quarter hours. Call up different learners to read the times and to explain how they do this.

Hours: 08:00, 11:00, 12:00, 04:00 • *Where are the long hand and the short hand when you read hours?*	
Half hours: 07:30, 10:30, 02:30, 06:30 • *Where are the long hand and the short hand when you read half an hours?*	
Quarter past: 04:15, 09:15, 12:15, 10:15 • *What does quarter past mean?* • Link this with counting in fives. • *Let us count: 5, 10, 15.*	
Quarter to: 01:45, 02:45, 09:45, 10:45 • *What does quarter to mean?* • *Let us count: 5, 10, 15, 20, 25, 30, 35,…*	

Activity 3: Learners work in pairs

- Ask the learners to solve these problems in pairs.
- Learners should draw analogue clocks to show the two times and then calculate the answer.
- It is 8 o'clock. At half past 9 it will be break time. How long is it before break time? (1½ hours)
- It is 1 o'clock. At quarter to 3 it will be the end of school time. How long is it before the end of the school day? (1¾ hours)

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

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

6. Reflection on lesson

Term 2 Lesson 35: Time

Classwork

1. What is the time?




a. (7 o'clock) b. (quarter past six) c. (half past seven) d. (quarter to 10)

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

3. I left my home at seven this morning and arrived back from school at three o' clock. For how many hours did I leave my home? (8 hours)

Homework

(Learners must draw clock faces – check that the short and long arms are in the correct place for each one.)

1. Draw a clock showing:
   a) quarter to three
   b) half past six
   c) quarter past 7.

2. Draw a digital clock showing:
   a) quarter past 11
   b) 9 o'clock
   c) quarter to 5.

3. We had a picnic from ten o'clock in the morning to half past three in the afternoon on Sunday. How many hours was the picnic? ($5\frac{1}{2}$ hours)

LESSON 36: TIME AND CALENDARS

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backward, 1.16 Mental mathematics, 4.1 Time.

Lesson vocabulary: Time, calendars, religious festivals, public holidays, historical events, weeks, months, forwards, backwards, calculate, timelines.

Prior knowledge:
Learners should have been taught how to:

- Calculate length of time and passing of time using clocks.

Concepts:

- Read dates on calendars.
- Place birthdays, religious festivals, public holidays, historical events, school events on a calendar.
- Use calendars to calculate and describe lengths of time in days or weeks or months.

Resources: 2014 calendars (1 per learner) (see *Printable Resources*), this year's calendar (find your own).

DBE workbook activities relevant to this lesson:

- DBE worksheet 54 (pp. 122 and 123).

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

Remediation: Give the learners a 1-month calendar. Ask them to show you: the month of the calendar, the year of the calendar, and the days of the week. Ask them: *How many days are in this month? Is there anybody that has his or her birthday in this month? When and on what day will it fall? How many days is it from today? How many days ago was it?* Work with the learners to help them understand how to give answers both as a number of days and a number of weeks and days.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Ask the learners to start at 387, count on in twos to 401.

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	12 + __ = 17	5
2.	15 + __ = 19	4
3.	13 + __ = 16	3
4.	10 + __ = 15	5
5.	11 + __ = 18	7

	Calculate the following:	Answer
6.	9 + __ = 18	9
7.	8 + __ = 15	7
8.	6 + __ = 15	9
9.	12 + __ = 14	2
10.	16 + __ = 20	4

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

- Give the learners a copy of **this year's** calendar and ask them to paste it in their mathematics books.
- Let them name and write the following on the calendar:
  - Their own birthday;
  - A friend's birthday;
  - School events (e.g. mathematics test days, school sports day).

Activity 2: Whole class activity

- Give the learners a copy of the **2014** calendar and ask them to paste it in their mathematics books.
- Let them name and write the following on the calendar (as above):
  - Their own birthday;
  - A friend's birthday;
  - School events (e.g. mathematics test days, school sports day).
- Ask the learners to compare the days on which the events they have written onto their calendars are (this year's and 2014). *What do they notice?* (The days change – they are not the same each year.)

Activity 3: Learners work in pairs

- Learner will use their calendars to calculate and describe lengths of time in days or weeks or months.
- Write these questions on the board and read them to the class.
- Each time the learners should give the answers both as a number of days and a number of weeks and days:
  - *How long is it between your birthday and your partner's birthday?*
  - *How long is it between the first mathematics test and the second mathematics test this term?*
  - *How long is it between the first day of school and the school sports day?*
  - *How long is it between the school sports day and the last day of term?*
  - Other questions about school events that your class entered on the calendar.

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

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

6. Reflection on lesson

Term 2 Lesson 36: Time and calendars

This activity refers to the 2014 calendar. You could adapt it to the current year's calendar if possible (change the days as necessary).

Classwork

1. Colour the South African public and religious holidays on a 2014 calendar.

South African public holidays calendar	
New Year's Day	Sunday 1 January
Public Holiday	Monday 2 January
Human Rights Day	Wednesday 21 March
Good Friday	Friday 6 April
Family Day	Monday 9 April
Freedom Day	Friday 27 April
Workers' Day	Tuesday 1 May
Youth Day	Saturday 16 June
Women's Day	Thursday 9 August
Public Holiday	Friday 10 August
Heritage Day	Monday 24 September
Day of Reconciliation	Sunday 16 December
Christmas Day	Tuesday 25 December
Day of Goodwill	Wednesday 26 December

2. Colour the block of your favourite month in yellow. (Answers will vary.)

3. How long is it between New Year's Day and Freedom Day? (Answer both as a number of days and a number of weeks and days.)

4. How long is it between Youth Day and Heritage Day? (Answer both as a number of days and a number of weeks and days.)

Homework

1. Colour your family members' birthdays on the calendar you used for your Classwork.

2. How many months of the year have no public/religious holidays or birthdays? Name them. (This answer will differ from learner to learner.)

3. How long is it between your birthday and another person in your family's birthday? (Answer both as a number of days and a number of weeks and days.)

WEEK 10

LESSON 37: MASS

Teacher's notes
CAPS topics: 1.1 Count objects, 1.2 Count forwards and backward, 1.16 Mental mathematics, 4.3 Mass. **Lesson vocabulary:** Mass, kilograms, grams, light, heavy, lighter, heavier, measure, compare, balancing scale, record, order, estimate, estimation, measurement, difference, standard unit, non-standard unit, forwards, backwards, calculate. **Prior knowledge:** Learners should have been taught how to: • Estimate, measure, compare, order and record mass using a balancing scale and non-standard measures, e.g. blocks, bricks, etc. • Use language to talk about the comparison, e.g. light, heavy, lighter, heavier. **Concepts:** • Estimate, measure, compare, order and record mass using a balancing scale and non-standard measures, e.g. blocks, bricks, etc. • Use language to talk about the comparison, e.g. light, heavy, lighter, heavier. **Resources:** Balancing scale (make one using a hanger and two packets if you need to), objects to measure mass, e.g. book, cup, ruler, match box, watch, etc. **DBE workbook activities relevant to this lesson:** • DBE worksheet 15 (pp. 32 and 33). **Assessment:** Refer to the tracker for today's formal/informal oral, practical or written assessment activity.
Remediation: Let learners practice measuring more objects using their balancing scales. *Estimation improves with practice.* **Enrichment:** See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 100s between 0 and 1000. E.g. 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000.

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	14 – 7 =	7
2.	7 + 6 =	13
3.	15 – 10 =	5
4.	20 – 11 =	9
5.	9 + 7 =	16

	Calculate the following:	Answer
6.	11 – 5 =	6
7.	10 + 9 =	19
8.	12 – 8 =	4
9.	13 + 6 =	19
10.	17 – 7 =	10

2. Correction/reflection on homework (15 minutes)

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

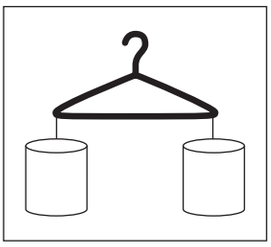
3. Lesson content – concept development (30 minutes)

In this activity you will use non-standard units again, but this time in the context of measurement of mass. The activity suggests that you use building blocks or marbles. If you do not have enough building blocks or marbles to do this, you should use some other item, of which you have a lot, for example bottle tops that you have collected. The bottle tops should all be of the same type (e.g. all plastic or all metal). First you demonstrate to the whole class how to use the scale and then they work in groups to experience the measuring themselves.

Learners will have measured using non-standard units before. While you do this activity with the class you are again revising the process of measuring by counting a certain number of units. Estimation is an important part of this activity. Learners need to develop the ability to make a good approximation (near answer) of a measurement.

Activity 1: Learners work in groups

Use a balancing scale, a large number (20) of building blocks of the same mass, and a variety of objects such as a book, cup, ruler, match box, watch, for this practical activity. If you don't have a commercial scale, use a hanger.



Learners need to be taught that in order to compare masses of different objects, the same unit needs to be used. For example, if a ruler has a mass of 20 blocks and a pair of scissors has a mass of 20 marbles, you cannot say whether they have the same mass or not, or which one is heavier. Explain to the learners that the blocks which are all the same size and mass will be used to measure.

1. Allow each child to hold a block and get a sense of the mass of the object.
2. Now ask them to estimate the number of blocks that will balance the mass of the book.
3. Record in the appropriate column.
4. Place the book into one of the containers in the scale.
5. Add a sufficient number of blocks into the second container of the scale until both sides balance.
6. Record in the appropriate column.
7. Work out the difference.
8. Do the same with all the other objects in the same sequence, that is:
   i) Estimate ⟶ record;
   ii) Measure ⟶ record;
   iii) Calculate the difference with each item ⟶ record.

	Mass in blocks		
	I estimate	**I measure**	**Difference**
Book			
Cup			
Ruler			
Match box			
Watch			
?			

- Discuss the findings as a whole class.
- Discuss the importance of good estimates.

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

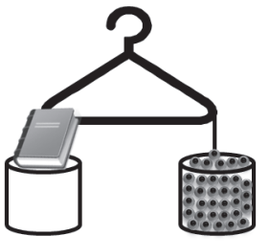
5. Homework activity (5 minutes) (See next page)

6. Reflection on lesson

Term 2 Lesson 37: Mass

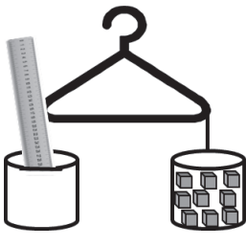
Classwork

1. What is the mass of the book?



(The book has a mass of 40 marbles.)

2. What is the mass of the ruler?



(The ruler has a mass of 9 building blocks.)

3. Can we compare the answers we got to 1 and 2 above? (No)

4. Why not? (In order to compare masses of different objects, the same unit needs to be used.)

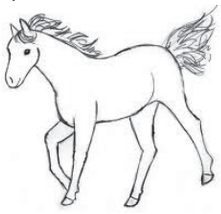
5. Order from lightest to heaviest:

a) feather

b) stone

c) truck

d) horse



(feather, stone, horse, truck)

Homework

(Answers that are drawings are not shown here.)

1. Draw a picture of a feather and a bird.
2. Which is lighter? The feather or the bird? (The feather)
3. Draw a picture of a horse and a man.
4. Which is heavier? The horse or the man?(The horse)

LESSON 38: MASS

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backward, 1.16 Mental mathematics, 4.3 Mass.

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

Prior knowledge:
Learners should have been taught how to:
- Estimate, measure, compare, order and record mass using a balancing scale and non-standard measures, e.g. blocks, bricks, etc.
- Use language to talk about the comparison, e.g. light, heavy, lighter, heavier.
- Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms, e.g. 2 kilograms of rice and 1 kilogram of flour.
- Measure own mass in kilograms using a bathroom scale.

Concepts:
- Estimate, measure, compare, order and record mass using an analogue scale.
- Measure own mass in kilograms using a bathroom scale.
- Use language to talk about the comparison, e.g. light, heavy, lighter, heavier.
- Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms, e.g. 2 kilograms of rice and 1 kilogram of flour.

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

DBE workbook activities relevant to this lesson:
- DBE worksheet 44 (pp. 102 and 103).

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

Remediation: Practice more measuring activities. Point out that when they measure mass in kilograms they should try to round off the reading to the closest whole number. Go through the calibrations once again and help them with reading the mass of objects.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 50s between 0 and 1000.

1.2 Mental mathematics activity (10 minutes)

	Calculate the following:	Answer
1.	14 + 10 =	24
2.	227 – 10 =	217
3.	183 + 100 =	283
4.	262 – 100 =	162
5.	500 + 10 =	510

	Calculate the following:	Answer
6.	127 – 10 =	117
7.	308 + 100 =	408
8.	421 – 10 =	411
9.	157 + 10 =	167
10.	382 + 100 =	482

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

In this lesson introduce one of the standard units of measurement – the kilogram. Discuss the value of the standard unit – showing how this will allow everyone to get the same measurement, instead of different measurements, like we get when measuring using non-standard units.

Discuss this idea by referring back to the measuring activities learners did in yesterday's lesson using arbitrary units of mass.

Activity 1: Whole class activity

- Show the learners an analogue scale.
- *Ask the learners what we use scales for?* (We use a scale to measure the mass of an object.)

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

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

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

6. Reflection on lesson

Term 2 Lesson 38: Mass

Classwork

1. Hold up an object that has a mass of 1 kg to get a sense of its mass.

2. Copy the table. Estimate and then measure the mass of the following objects using a bathroom scale and complete the table. Remember to complete one row at a time.

	Mass in kilograms		
	I estimate	**I measure**	**Difference**
School bag			
10 books			
Cushion			
3 bricks			
2 litre bottle of water			
Other			

(Answers will vary.)

3. Calculate the difference between your estimation and your measurement.

4. Record your answers in the table.

Homework

Find objects at home that have the following mass: Copy and complete the table.

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

(Answers will vary. Discuss.)

LESSON 39: 50S – PATTERNS AND PROBLEMS

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backward, 1.4 Describe, compare and order numbers, 1.6 Problem solving techniques, 1.16 Mental mathematics.

Lesson vocabulary: Whole numbers, smaller than, greater than, equal to, smallest, greatest, counting, fifties (50s), number line, forwards, backwards, calculate.

Prior knowledge:
Learners should have been taught how to:

- Use techniques like number lines to solve problems.
- Extend number patterns. Sequences should show counting forwards and backwards in 5s, 10s to at least 200.

Concepts:

- Use techniques like number lines to solve problems.
- Extend number patterns.
- Sequences should show counting forwards and backwards in 50s, 100s to at least 1000.

Resources: Money cut outs (coins) (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: Give the learners 0–500 (labeled in 50s) number line. Ask them to count forwards and backwards in 50s. Ask questions like: If I count in 50s, which number will: come after 100, come before 100, come after 400, come before 400, come after 150, come before 450.

Let them calculate this problem. I have seven 50c coins. *How much money do I have?* Learners use the cut-out coins to solve this.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 4s from any number between 0 and 500. E.g. 104, 108, 112, … .

1.2 Mental mathematics activity (10 minutes)

	If I count in 50s, give me the number before:	Answer
1.	400	350
2.	50	0
3.	150	100
4.	250	200
5.	550	500

	If I count in 50s, give me the number before:	Answer
6.	250	200
7.	100	50
8.	450	400
9.	500	450
10.	200	150

2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

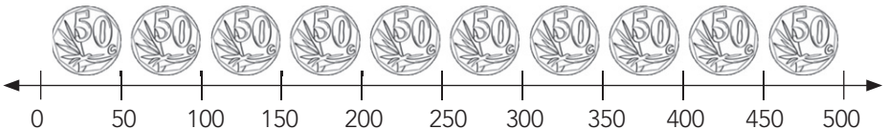
Activity 1: Whole class activity

Draw this number line on the board:

- *Let us count forwards in 50s – 100, 150, 200, 250, 300, 350, 400, 450, 500.* Point to the numbers as the class is counting.
- *Let us count backwards in 50s – 500, 450, 400, 350, 300, 250, 200, 150, 50.* Point to the numbers as the class is counting.
- *What numbers do we get between 50 and 150?* (100 is between 50 and 150, but lots of other numbers are too, e.g. 51, 52, 53, etc.)

Activity 2: Whole class activity

Place or draw 50c play coins between the intervals.



- *Show me where 150c or R1,50 will be on the line.*
- *Show me where is 450c or R4,50 will be on the line.*
- What is the total of: four 50c coins (R2), seven 50c coins (R3,50), nine 50c coins (R4,50)? Give your answers in rands and cents.

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

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

6. Reflection on lesson

Term 2 Lesson 39: 50s – patterns and problems

Classwork

1. Draw and complete the 50s pattern:
   0, 50, 100, ___ , ___ , ___ , ____, ____ , ____ ,___ , 500
   (150, 200, 250, 300, 350, 400, 450)

2. Write the next numbers: 200, 250, ____ , ____, ____ (300, 350, 400)

3. Write these numbers from the biggest to the smallest:

100	50	200	450	500

250	400	350	300	150

   (500, 450, 400, 350, 300, 250, 200, 150, 100, 50)

4. I have nine 50c coins in my purse.
   a) How many cents do I have in total? (450c)
   b) How many rands do I have in total? (R4, 50)

Homework

1. Draw and label a 50s number line from 0 to 500.

2. Write the next three numbers: 400, 450, ___ , ___ , ___. (500, 550, 600)

3. When counting in 50s which number comes before 300? (250) After 300? (350)

4. When counting in 50s which number comes before 900? (850) After 900? (950)

LESSON 40: 100s – PATTERNS AND PROBLEMS

Teacher's notes

CAPS topics: 1.1 Count objects, 1.2 Count forwards and backward, 1.4 Describe, compare and order numbers, 1.6 Problem solving techniques, 1.16 Mental mathematics.

Lesson vocabulary: Whole numbers, smaller than, greater than, equal to, smallest, greatest, counting, hundreds (100s), number line, forwards, backwards, calculate.

Prior knowledge:
Learners should have been taught how to:

- Use techniques like number lines to solve problems.
- Extend number patterns. Sequences should show counting forwards and backwards in 5s, 10s to at least 200.

Concepts:

- Use techniques like number lines to solve problems.
- Extend number patterns.
- Sequences should show counting forwards and backwards in 50s, 100s to at least 1000.

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

DBE workbook activities relevant to this lesson:

- DBE worksheet 64 (pp. 142 and 143). (For extension – finding rules for number patterns.)

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

Remediation: Give the learners 0–1000 (labeled in 100s) number line. Ask them to count forwards and backwards in 100s. Ask questions like: If I count in 100s, which number will: come after 100, come before 200, come after 400, come before 400, come after 700, come before 1000.

Enrichment: See enrichment activity cards.

1. Mental mathematics

1.1 Counting (5 minutes)

- Count forwards and backwards in 4s from any given number between 0 and 500. E.g. 401, 405, 409, 413, … .

1.2 Mental mathematics activity (10 minutes)

	If I count in 100s, give me the number before:	Answer
1.	400	300
2.	500	400
3.	150	50
4.	250	150
5.	550	450

	If I count in 100s, give me the number before:	Answer
6.	250	150
7.	100	0
8.	450	350
9.	800	700
10.	200	100

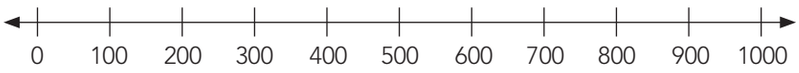
2. Correction/reflection on homework (15 minutes)

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

3. Lesson content – concept development (30 minutes)

Activity 1: Whole class activity

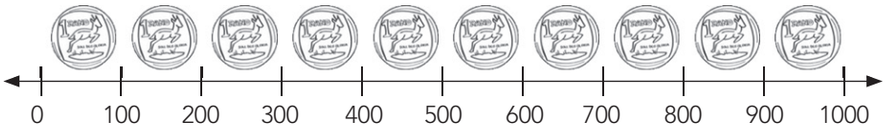
- Do this as a whole class Activity with each child having their own apparatus (a 100–1000 number line marked in 100s). Ask the learners to count in 100s.



- Forwards: 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000.
- Backwards: 900, 800, 700, 600, 500, 400, 300, 200, 100.
- *What numbers will be between 800 and 900? (801, 802....899.)*
- *What numbers will be between 200 and 300? (201, 202, 203....299.)*

Activity 2: Whole class activity

Place R1 coins (cut-outs) between the intervals:



- *Show me where 300c or R3 will be on the line.*
- *Show me where 700c or R7 will be on the line.*
- What is the total of: four R1 coins (R4), seven R1 coins (R7), ten R1 coins (R10)? Give your answers in rands.

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

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

6. Reflection on lesson

Term 2 Lesson 40: 100s – patterns and problems

Classwork

1. Draw and complete the 100s number line.
   0, 100, ___ , ___ , ___ , ____, ____ , ____ ,___ , ___ 1 000.
   (200, 300, 400, 500, 600, 700, 800, 900)

2. Write the next numbers: 200, 300, ____ , ____, ____ . (400, 500, 600)

3. Write these numbers from the biggest to the smallest: 500, 300, 100, 800, 0, 600, 900, 1000, 200, 400, 700.
   (1000, 900, 800, 700, 600, 500, 400, 300, 200, 100, 0)

4. Write these numbers from the smallest to the biggest): 500, 300, 100, 800, 600, 900, 1000, 200, 400, 700.
   (100, 200, 300, 400, 500, 600, 700, 800, 900, 1000)

5. I have nine R1 coins in my purse.
   a) How many cents do I have in total? (900)
   b) How many rands do I have in total? (R9,00)

Homework

1. Draw and label a 100s number line from 0 to 500.

2. Write the next three numbers: 400, 500, ___ , ___ , ___ . (600, 700, 800)

3. When counting in 100s which number comes before 300? (200) After 300? (400)

4. When counting in 100s which number comes before 900? (800) After 900? (1000)

PRINTABLE RESOURCES

Resource Sheets

This is a list of the mathematical resources that you will need this term. You need to make sure that you have them for the lessons for which they are recommended.

1. Number cards (160–177) (Lesson 1)
2. Number cards (240–277) (Lesson 1)
3. Number cards (370–387) (Lesson 2)
4. Number cards (420–437) (Lesson 3)
5. Number board (201–300) (Lesson 4)
6. Number board (401–500) (Lesson 5)
7. Number lines (Lesson 9 and 10)
8. Number lines (Lesson 12, 14, 16 and 18)
9. Multiplication table grid (Lesson 13, 15, 17 and 19)
10. Shape cut-outs (Lesson 20 and 31)
11. Money cut-outs – coins (Lesson 24, 25, 39 and 40)
12. Money cut-outs – notes (Lesson 24 and 25)
13. Money cut-outs – notes (Lesson 24 and 25)
14. Symmetrical shapes (Lesson 33 and 34)
15. 2014 calendar (Lesson 36)

Resources for each day of teaching

There are also other resources such as informal resources (old magazines, pieces of string, scrap paper, etc.) that you may need in certain lessons. You should have a careful look at the list of resources needed for each lesson; this list is given in the lesson plans each day. Prepare yourself, so that you have the necessary resources for the lessons on a daily basis.

1. Number cards 160–177 (Lesson 1)

160	161	162
163	164	165
166	167	168
169	170	171
172	173	174
175	176	177

2. Number cards 260–277 (Lesson 1)

260	261	262
263	264	265
266	267	268
269	270	271
272	273	274
275	276	277

1. Amakhadi amanani 160-177 (Isifundo 1)

160	161	162
163	164	165
166	167	168
169	170	171
172	173	174
175	176	177

2. Amakhadi amanani 260-277 (Isifundo 1)

260	261	262
263	264	265
266	267	268
269	270	271
272	273	274
275	276	277

3. Number cards 370–387 (Lesson 2)

370	371	372
373	374	375
376	377	378
379	380	381
382	383	384
385	386	387

4. Number cards 420–437 (Lesson 3)

420	421	422
423	424	425
426	427	428
429	430	431
432	433	434
435	436	437

3. Amakhadi amanani 370-387 (Isifundo 2)

370	371	372
373	374	375
376	377	378
379	380	381
382	383	384
385	386	387

4. Amakhadi amanani 420-437 (Isifundo 3)

420	421	422
423	424	425
426	427	428
429	430	431
432	433	434
435	436	437

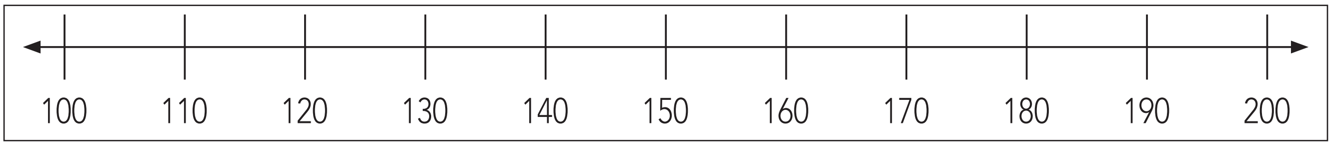
5. Ibhodi yamananani (201-300) (Isifundo 4)

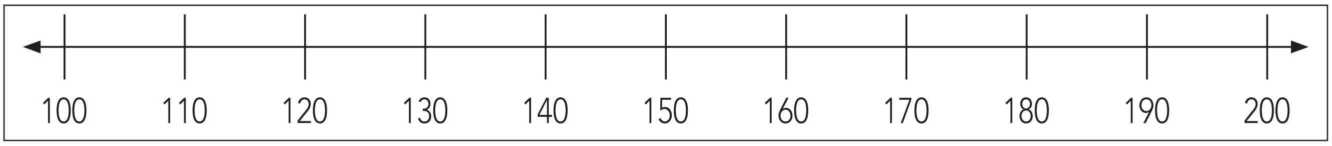
201	202	203	204	205	206	207	208	209	210
211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230
231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250
251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270
271	272	273	274	275	276	277	278	279	280
281	282	283	284	285	286	287	288	289	290
291	292	293	294	295	296	297	298	299	300

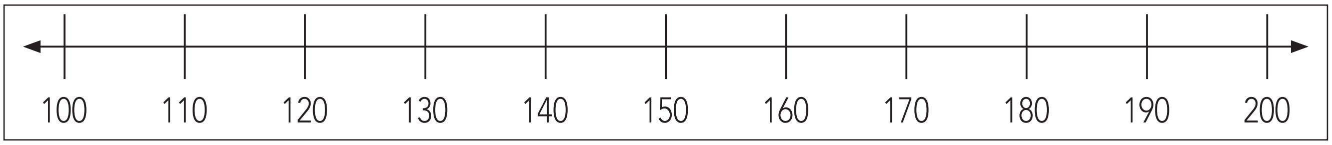
6. Ibhodi yamanani 401-500 (Isifundo 5)

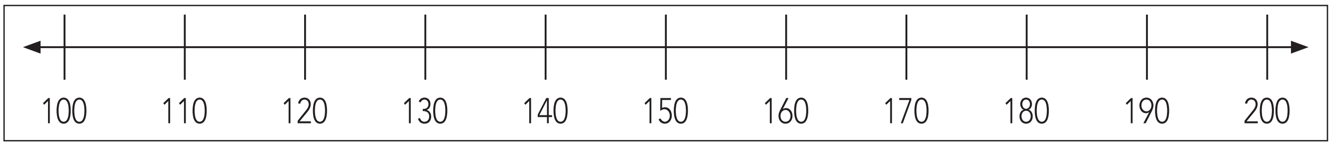
401	402	403	404	405	406	407	408	409	410
411	412	413	414	415	416	417	418	419	420
421	422	423	424	425	426	427	428	429	430
431	432	433	434	435	436	437	438	439	440
441	442	443	444	445	446	447	448	449	450
451	452	453	454	455	456	457	458	459	460
461	462	463	464	465	466	467	468	469	470
471	472	473	474	475	476	477	478	479	480
481	482	483	484	485	486	487	488	489	490
491	492	493	494	495	496	497	498	499	500

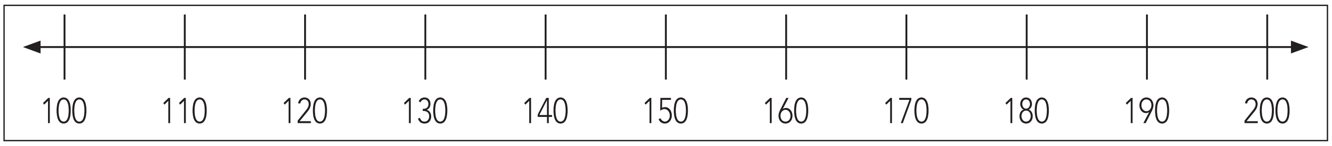
7. Imigca manani (Isifundo 9 nese-10)

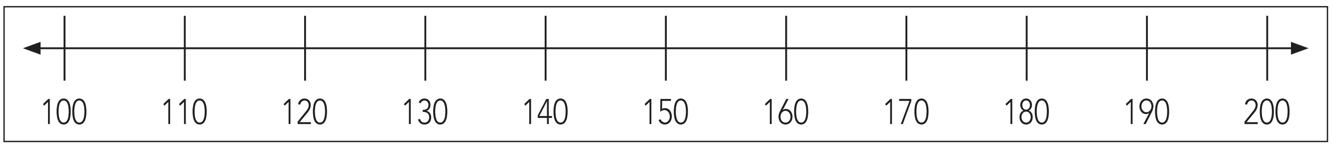


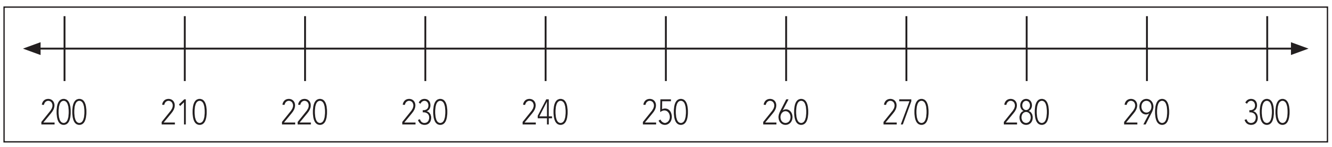


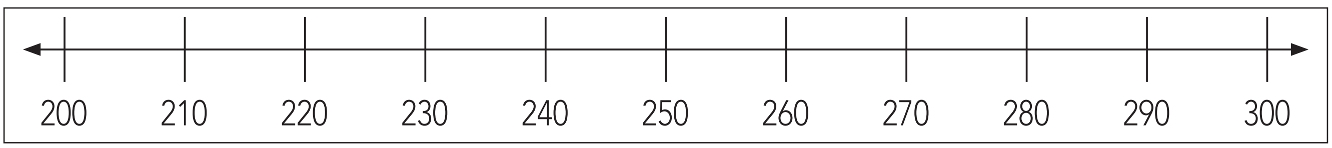


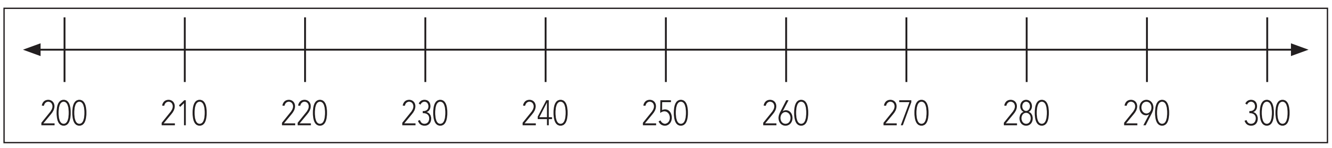


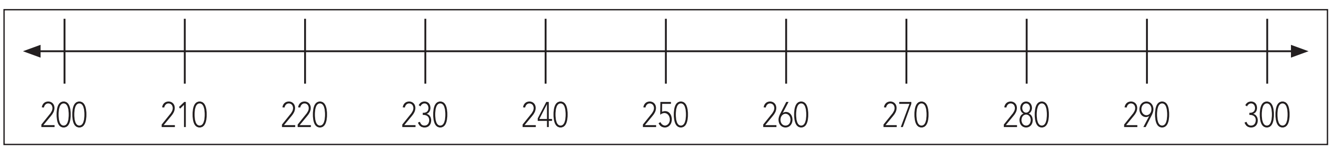


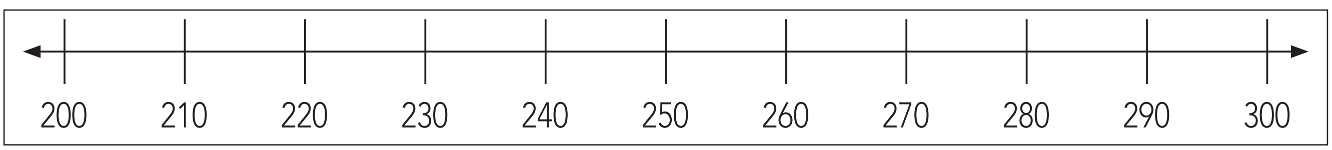


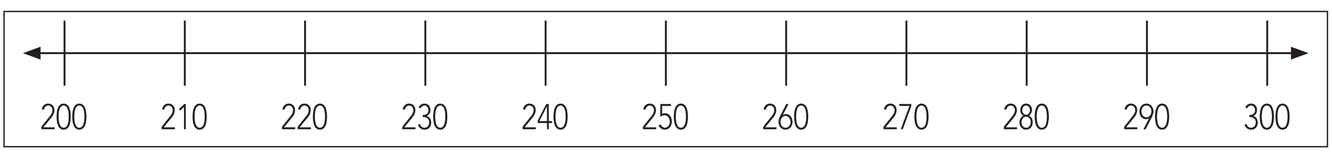






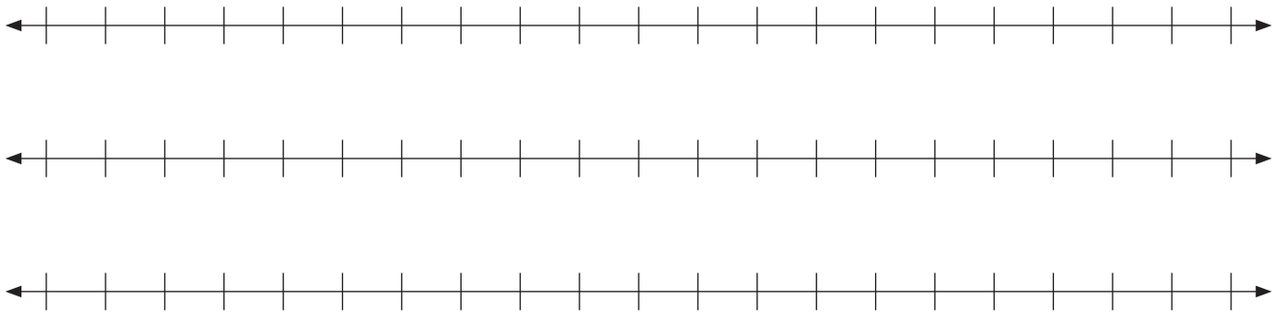




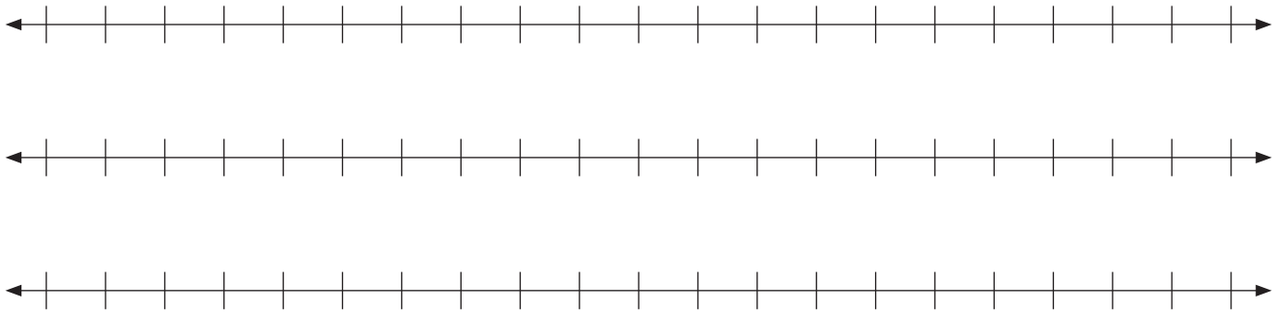


8. Imigca manani (Isifundo 12, 14, 16 nese 18)

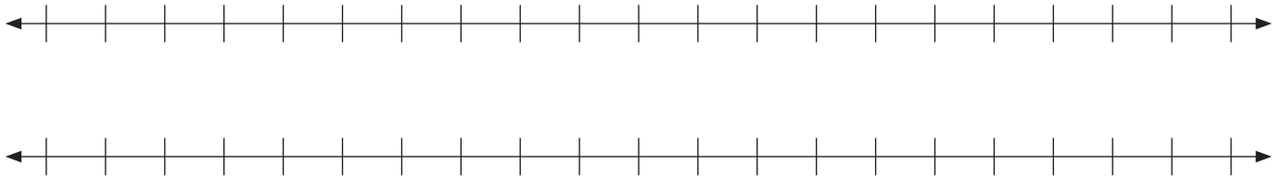
Isifundo 12



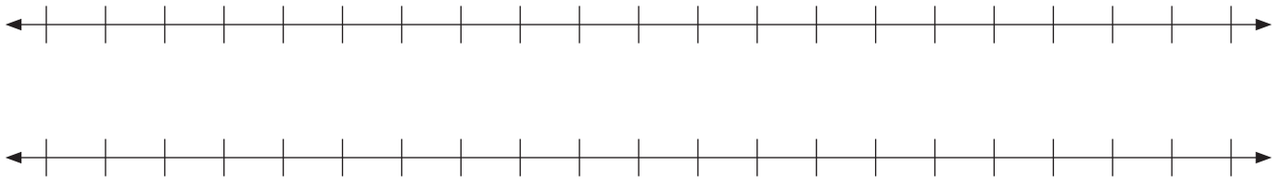
Isifundo 14



Isifundo 16



Isifundo 18



9. Igridi yetheyibhile yophindaphindo (Isifundo 13, 15, 17 nese -19)

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

10. Imisiko yeemilo (Isifundo 20 nesama-31)

11. Imisiko yemali - iingqekembe (Isifundo 24, 25, 39 nesama 40)

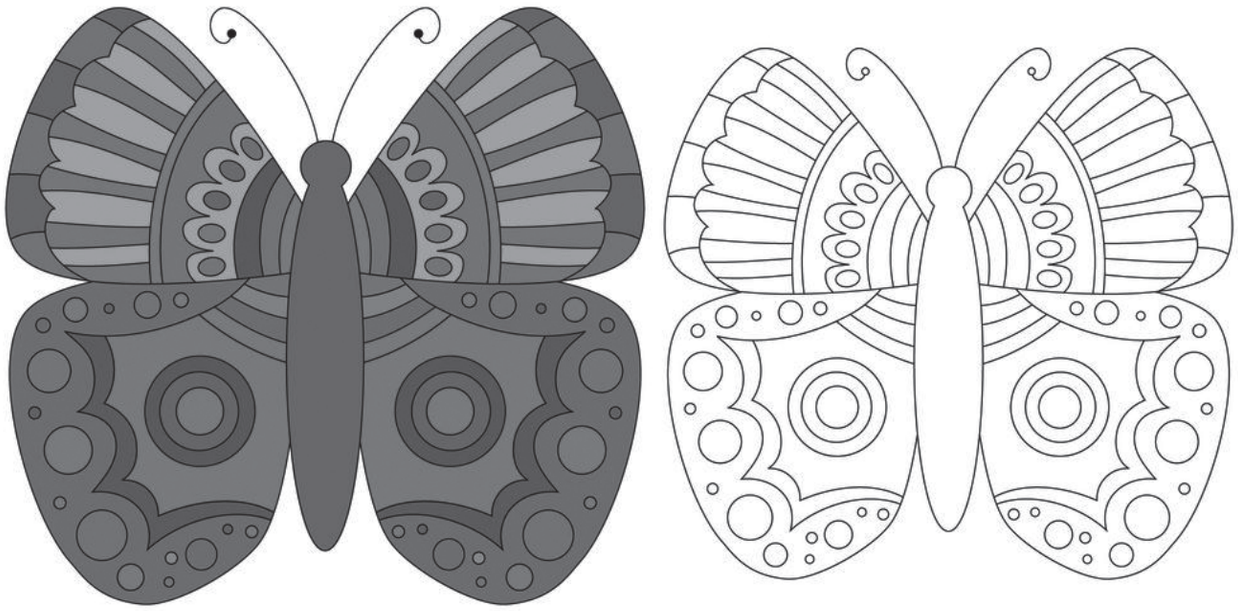
12. Imisiko yemali - engamaphepha (Isifundo 24 nesama -25)

13. Imisiko yemali - engamaphepha (Isifundo 24 nesama -25)

14. Iimilo zolingano macala (Isifundo 33 nesama 34)

Isifundo 30:

Isifundo 31:



2014

EyoMqungu

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

EyoMdumba

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

EyoKwindla

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

UTshazimpunzi

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

UCanzibe

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

EyeSilimela

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

EyeKhala

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

EyeThupha

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

EyoMsintsi

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

EyeDwarha

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

EyeNkanga

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

EyoMnga

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Mental Mathematics Challenge Cards: Bilingual Version

Each term there will be a set of eight mental mathematics challenge cards. If you make them into cards and collect them over the course of the year, you will have a set of one card per teaching week for a year.

Use of the mental mathematics challenge cards

Once a week learners should do mental mathematics in written form, so that there is some record of your daily mental mathematics activities. You can use the **mental mathematics challenge cards** for this purpose.

Learners should not use concrete material to work out the answers in mental mathematics. If learners need to, let them use their fingers as a concrete aid during mental mathematics, but make a note of who they are and then spend time with them during remediation to help them with the basic number and operation skills. Mental mathematics skills improve hugely from Grade 1 to Grade 3. In Grade 1 learners might only manage five questions, especially when they have to write the answers, but by Grade 3 learners should manage ten questions with written answers easily.

Maths Challenge Card 1

What is 4 more than? Number range 0–500

Ikhadi Lezibalo ezingumceli-mngeni 1

Uludwe lwamanani 0-500.

1. 233 + 4 =
2. 243 + 4 =
3. 273 + 4 =
4. 293 + 4 =
5. 353 + 4 =
6. 373 + 4 =
7. 303 + 4 =
8. 413 + 4 =
9. 483 + 4 =
10. 463 + 4 =

Maths Challenge Card 2

Addition and subtraction of multiples of 10 to 100

Ikhadi Lezibalo ezingumceli-mngeni 2

Ukudibanisa nokuthabatha iziphindwa ze-10 ukuya kwi-100.

1. □ – 70 = 30
2. 100 – 50 = □
3. 20 + □ = 100
4. □ + 40 = 100
5. 100 – □ = 40
6. 90 – □ = 70
7. □ + 30 =100
8. □ + 80 = 90
9. 60 = 20 + □
10. 30 = □ – 40

Maths Challenge Card 3

Doubling and halving

Ikhadi Lezibalo ezingumceli-mngeni 3

Ukuphinda kabini nokwahlula kabini.

1. 20 + 20 =
2. 200 + 200 =
3. 50 + 50 =
4. 25 + 25 =
5. 25 + 26 =
6. 25 + 24 =
7. 100 ÷ 2 =
8. 50 + 49 =
9. 50 + 51 =
10. 100 - 49 =

Maths Challenge Card 4

Add 10 minus 1 (breaking down 101)

Ikhadi Lezibalo ezingumceli-mngeni 4

Dibanisa i-10 uthabathe isi-1 (ukucalula i-101).

1. 54 + 9 =
2. 47 + 9 =
3. 27 + 9 =
4. 44 + 9 =
5. 28 + 9 =
6. 57 + 9 =
7. 75 + 9 =
8. 22 + 9 =
9. 88 + 9 =
10. 14 + 9 =

Maths Challenge Card 1: Answers

What is 4 more than? Number range 0–500

Ikhadi Lezibalo ezingumceli-mngeni 1: Iimpendulo

Leliphi inani elikhulu ngesine kuna-: Amanani ukusuka ku- 0–500

1. 237
2. 247
3. 277
4. 297
5. 357
6. 377
7. 307
8. 417
9. 487
10. 467

Maths Challenge Card 2: Answers

Addition and subtraction of multiples of 10 to 100

Ikhadi Lezibalo ezingumceli-mngeni 2: Iimpendulo

Ukudibanisa nokuthabatha iziphindwa ze-10 ukuya kwi-100.

1. 100
2. 50
3. 80
4. 60
5. 60
6. 20
7. 70
8. 10
9. 40
10. 70

Maths Challenge Card 3: Answers

Doubling and halving

Ikhadi Lezibalo ezingumceli-mngeni 3: Iimpendulo

Ukuphinda kabini nokwahlula kabini.

1. 40
2. 400
3. 100
4. 50
5. 51
6. 49
7. 50
8. 99
9. 101
10. 51

Maths Challenge Card 4: Answers

Add 10 minus 1 (breaking down 101)

Ikhadi Lezibalo ezingumceli-mngeni 4: Iimpendulo

Dibanisa i-10 uthabathe isi-1 (ukucalula i-101).

1. 63
2. 56
3. 36
4. 53
5. 37
6. 66
7. 84
8. 31
9. 97
10. 23

Maths Challenge Card 5

Subtract 10 and add 1 (breaking down 10)

Ikhadi Lezibalo ezingumceli-mngeni 5

Thabatha i-10 uze udibanise isi-1 (ukucalula i-10)

1. 54 – 9 =
2. 47 – 9 =
3. 27 – 9 =
4. 44 – 9 =
5. 28 – 9 =
6. 57 – 9 =
7. 75 – 9 =
8. 22 – 9 =
9. 88 – 9 =
10. 14 – 9 =

Maths Challenge Card 6

Subtract multiples of 10 and add or subtract 1

Ikhadi Lezibalo ezingumceli-mngeni 6

Thabatha iziphindwa ze-10 uze udibanise okanye uthabathe isi-1

1. 100 – 10 = □
2. 100 – 10 + 1 = □
3. 100 – 10 – 1 = □
4. 100 – 20 = □
5. 100 – 20 – 1 = □
6. 100 – 20 + 1 = □
7. 100 – 30 = □
8. 100 – 30 – 1 = □
9. 100 – 30 + 1 = □
10. 100 – 40 – 1 = □

Maths Challenge Card 7

Subtract multiples of 10 (then add or subtract 1)

Ikhadi Lezibalo ezingumceli-mngeni 7

Thabatha iziphindwa ze-10 uze udibanise okanye uthabathe isi-1

1. 100 – 10 = □
2. 100 – 11 = □
3. 100 – 9 = □
4. 100 – 20 = □
5. 100 – 21 = □
6. 100 – 19 = □
7. 100 – 30 = □
8. 100 – 31 = □
9. 100 – 29 = □
10. 100 – 40 = □

Maths Challenge Card 8

Use the relationship between Addition and Subtraction

Ikhadi Lezibalo ezingumceli-mngeni 8

Sebenzisa ubuhlobo obuphakathi kokudibanisa nokuthabatha.

1. 97 + 5 = □
2. 97 – 5 = □
3. 102 – □ = 97
4. □ – 92 = 5
5. 178 – 4 = □
6. 178 + 4 = □
7. □ – 178 = 4
8. □ + 3 = 181
9. 181 – 3 = □
10. □ + 178 = 181

Maths Challenge Card 5: Answers

Subtract 10 and add 1 (breaking down 10)

Ikhadi Lezibalo ezingumceli-mngeni 5: Iimpendulo

Thabatha i-10 uze udibanise isi-1 (ukucalula i-10)

1. 45
2. 38
3. 18
4. 35
5. 19
6. 48
7. 66
8. 13
9. 79
10. 5

Maths Challenge Card 6: Answers

Subtract multiples of 10 and add or subtract 1

Ikhadi Lezibalo ezingumceli-mngeni 6: Iimpendulo

Thabatha iziphindwa ze-10 uze udibanise okanye uthabathe isi-1

1. 90
2. 91
3. 89
4. 80
5. 79
6. 81
7. 70
8. 69
9. 71
10. 59

Maths Challenge Card 7: Answers

Subtract multiples of 10 (then add or subtract 1)

Ikhadi Lezibalo ezingumceli-mngeni 7: Iimpendulo

Thabatha iziphindwa ze-10 uze udibanise okanye uthabathe isi-1

1. 90
2. 89
3. 91
4. 80
5. 79
6. 81
7. 70
8. 69
9. 71
10. 60

Maths Challenge Card 8: Answers

Use the relationship between Addition and Subtraction

Ikhadi Lezibalo ezingumceli-mngeni 8: Iimpendulo

Sebenzisa ubuhlobo obuphakathi kokudibanisa nokuthabatha.

1. 102
2. 92
3. 5
4. 97
5. 174
6. 182
7. 182
8. 178
9. 178
10. 3

Enrichment Activity Cards: English Version

Each term a set of new enrichment cards will be provided. You should retain this set, as they will not be reproduced each term.

Use of the enrichment activity cards

Optional as required.

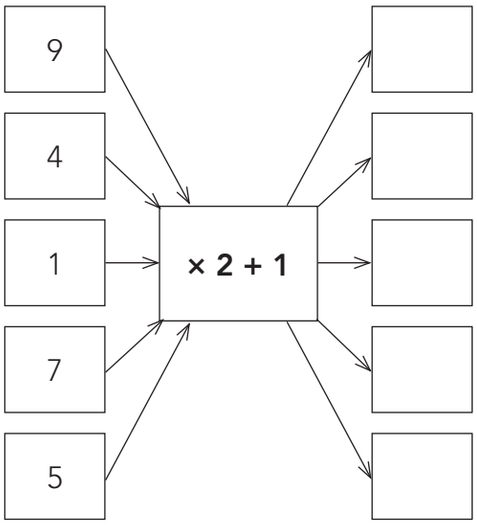
These cards include activities that you can use for enrichment opportunities for learners who have completed the lesson activities ahead of the rest of the class. Learners should work on these cards independently or with their peers who have also completed the classwork. You may need to explain some of the activities to the learners who use them. You should remind them to ask you questions about any of the enrichment activities that they are doing, so that you can guide them as necessary.

You should photocopy the enrichment cards, paste them onto cardboard and laminate them (if possible), so that they can be used as a resource, not only this year but in the future as well.

Put the cardboard laminated cards into a box in a set place in your classroom, so that learners know where to find them. These cards are for all learners and do not have to be used in a particular order. Learners should keep a record of the cards that they have done, so that they continue to choose a new card each time they go to the box. Learners must be taught to replace the cards in numeric order in the box, so that everyone who looks for cards can easily find the one they want to use.

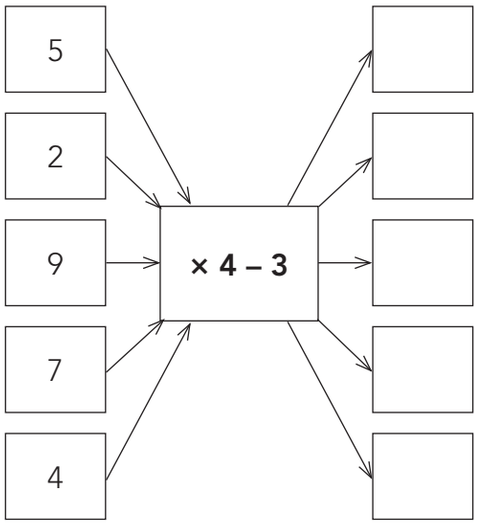
Enrichment Activity 2.1

Fill in the output numbers.



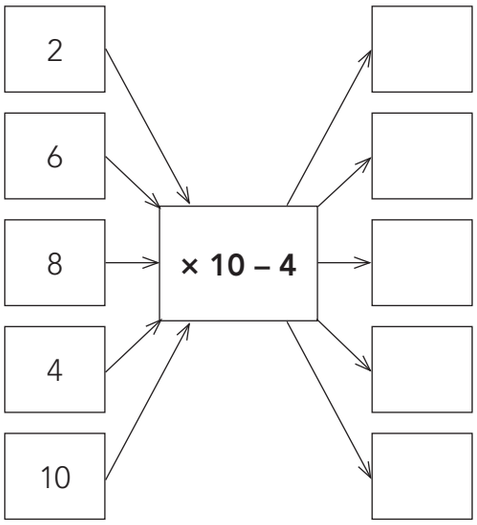
Enrichment Activity 2.2

Fill in the output numbers.



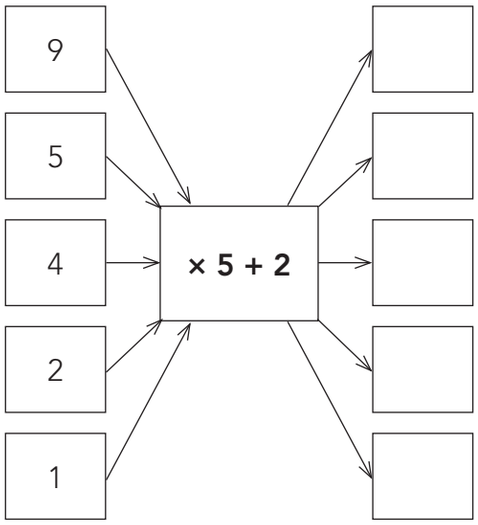
Enrichment Activity 2.3

Fill in the output numbers.

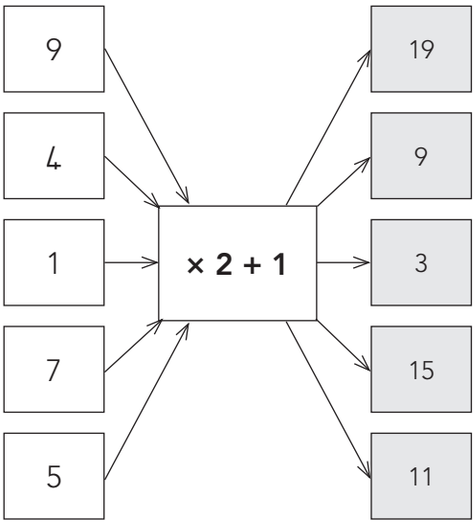


Enrichment Activity 2.4

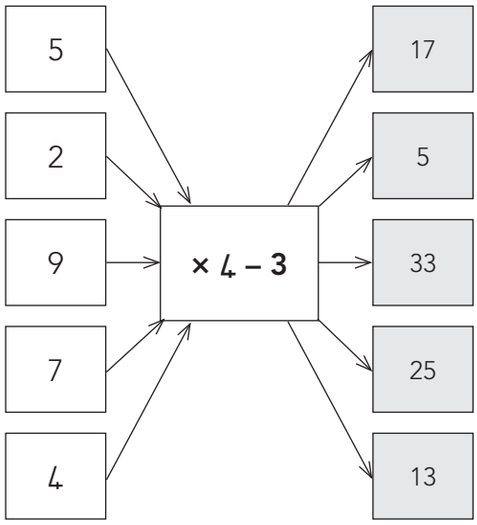
Fill in the output numbers.



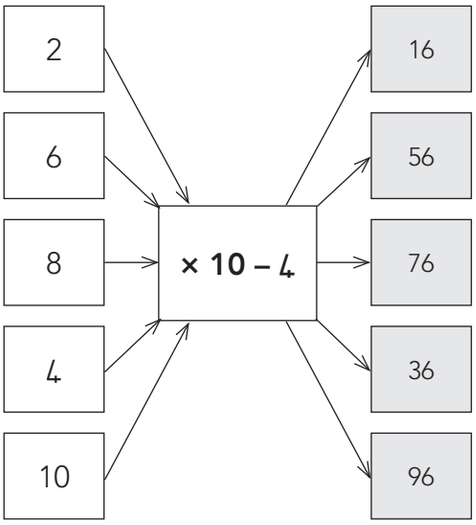
Enrichment Activity 2.1: Answers



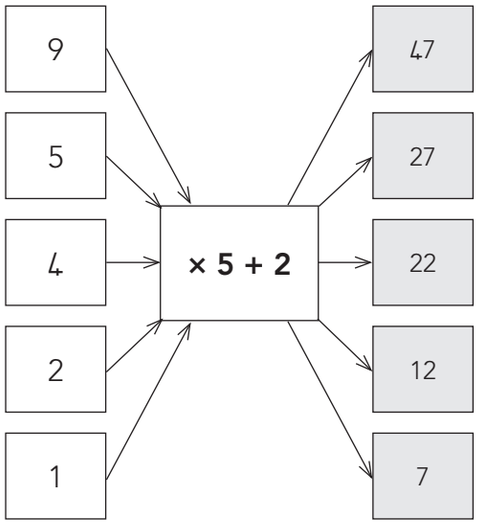
Enrichment Activity 2.2: Answers



Enrichment Activity 2.3: Answers



Enrichment Activity 2.4: Answers



Enrichment Activity 2.5

What should I do to change the following?

- 124 to 104
- 176 to 170
- 135 to 100
- 192 to 92
- 141 to 1

Enrichment Activity 2.6

Using a small stone, find the path from the start to the end by moving along the blocks in which the value of the hundreds is 2.

start	two hundred and four	208	400	321
103	one hundred and thirty	214	223	406
four hundred	327	104	two hundred and forty	151
412	48	thirty seven	253	end

Enrichment Activity 2.7

Using a small stone, find the path from the start to the end by moving along the blocks in which the value of the tens is 2.

start	two hundred and four	319	470	392
129	one hundred and thirty	214	253	336
two hundred and twenty	307	104	two hundred and forty	257
325	328	421	429	end

Enrichment Activity 2.8

Using a small stone, find the path from the start to the end by moving along the blocks in which the value of the hundreds is 3.

start	three hundred and four	319	351	282
129	one hundred and thirty	214	353	148
two hundred and twenty	273	134	three hundred and sixty	370
401	148	431	439	end

Enrichment Activity 2.5: Answers

- 124 – 20 = 104
  I must subtract 20
- 176 – 6 = 170
  I must subtract 6
- 135 – 35 = 100
  I must subtract 35
- 192 – 100 = 92
  I must subtract 100
- 141 – 140 = 1
  I must subtract 140

Enrichment Activity 2.6: Answers

start	two hundred and four	208	400	321
103	one hundred and thirty	214	223	406
four hundred	327	104	two hundred and forty	151
412	48	thirty seven	253	end

Enrichment Activity 2.7: Answers

start	two hundred and four	319	470	392
129	one hundred and thirty	214	253	336
two hundred and twenty	307	104	two hundred and forty	257
325	328	421	429	end

Enrichment Activity 2.8: Answers

start	three hundred and four	319	351	282
129	one hundred and thirty	214	353	148
two hundred and twenty	273	134	three hundred and sixty	370
401	148	431	439	end

Enrichment Activity 2.9

Using a small stone, find the path from the start to the end by moving along the blocks in which the value of the tens is 3.

three hundred and twenty	three hundred and four	319	232	start
113	two hundred and fifteen	214	237	339
three hundred and twenty	273	134	four hundred and thirty	433
321	148	three hundred and four	439	end

Enrichment Activity 2.10

Using a small stone, find the path from the start to the end by moving along the blocks in which the value of the hundreds is 4.

start	four hundred and four	412	434	451
140	two hundred and four	214	374	477
two hundred and seven	298	134	one hundred and seven	490
145	259	351	439	end

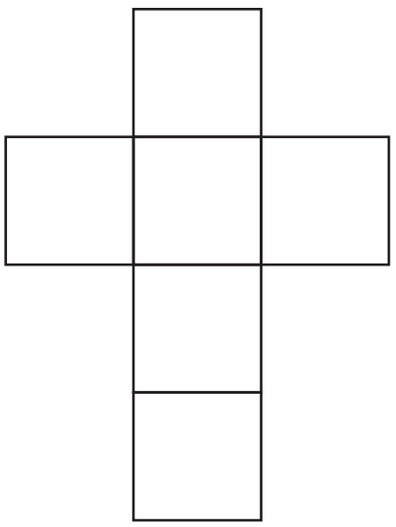
Enrichment Activity 2.11

Using a small stone, find the path from the start to the end by moving along the blocks in which the value of the tens is 4.

start	146	312	424	401
135	244	221	157	289
287	248	134	207	490
124	341	345	449	end

Enrichment Activity 2.12

Copy this template, and make your own small box.



What shape does this template make?

Enrichment Activity 2.9: Answers

three hundred and twenty	three hundred and four	319	232	start
113	two hundred and fifteen	214	237	339
three hundred and twenty	273	134	four hundred and thirty	433
321	148	three hundred and four	439	end

Enrichment Activity 2.10: Answers

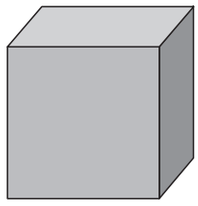
start	four hundred and four	412	434	451
140	two hundred and four	214	374	477
two hundred and seven	298	134	one hundred and seven	490
145	259	351	439	end

Enrichment Activity 2.11: Answers

start	146	312	424	401
135	244	221	157	289
287	248	134	207	490
124	341	345	449	end

Enrichment Activity 2.12: Answers

It makes a cube.



Enrichment Activity 2.13

Fill in the missing Sudoku numbers.

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

Enrichment Activity 2.14

Fill in the missing Sudoku numbers.

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

Enrichment Activity 2.15

Fill in the missing Sudoku numbers.

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

Enrichment Activity 2.16

Fill in the missing Sudoku numbers.

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

Enrichment Activity 2.13: Answers

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

Enrichment Activity 2.14: Answers

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

Enrichment Activity 2.15: Answers

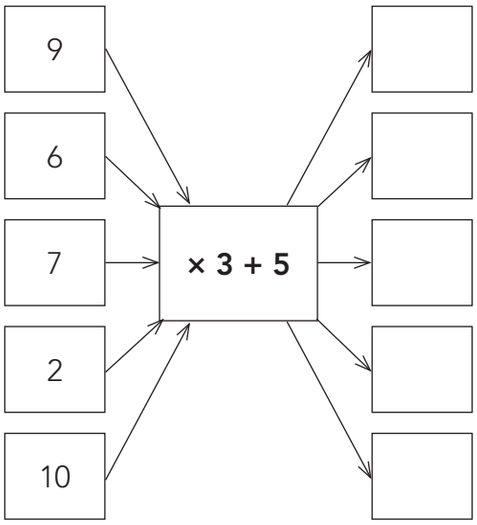
3	1	5	6	2	4
	2	6	5	1	3
2	6	4	3	5	1
1	5	3	4	6	2
5	4	1	2	3	6
6	3	2	1	4	5

Enrichment Activity 2.16: Answers

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

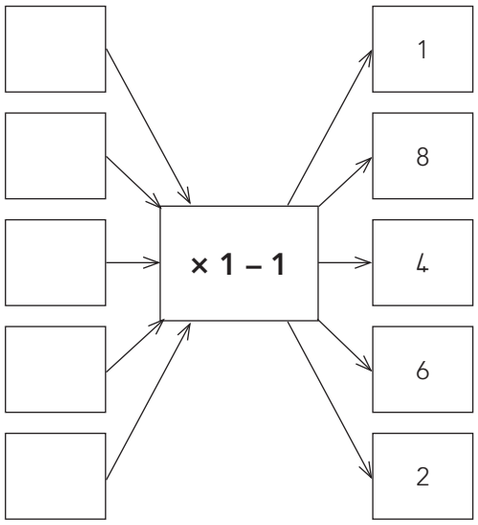
Enrichment Activity 2.17

Fill in the output numbers.



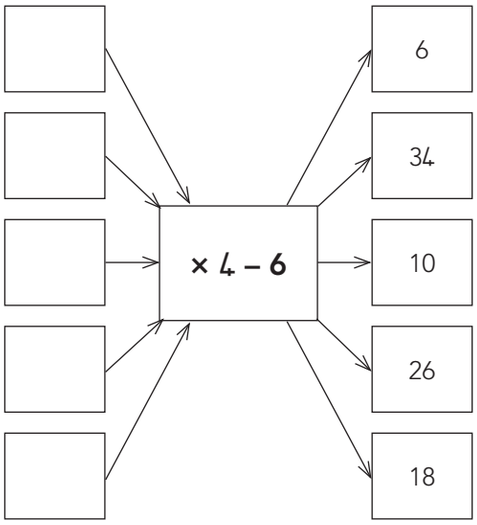
Enrichment Activity 2.18

Fill in the input numbers.



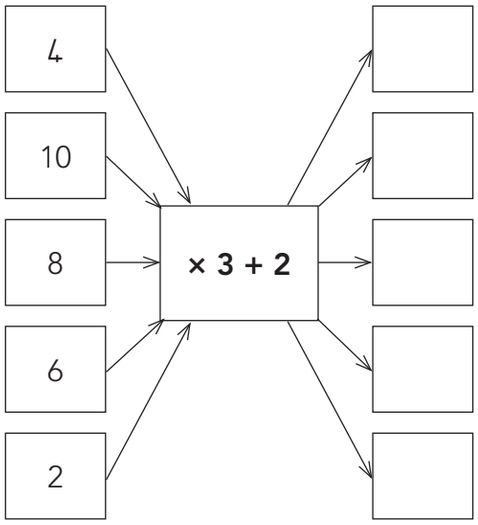
Enrichment Activity 2.19

Fill in the input numbers.

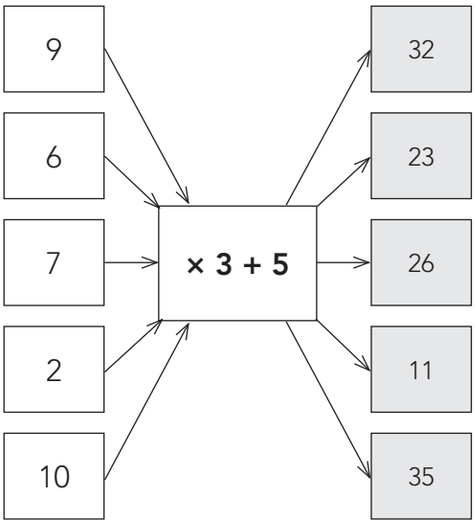


Enrichment Activity 2.20

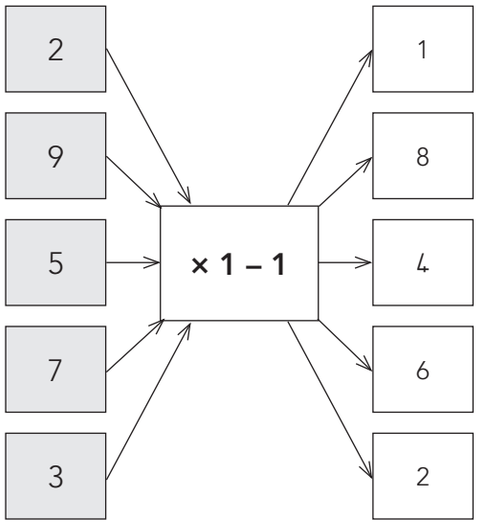
Fill in the output numbers.



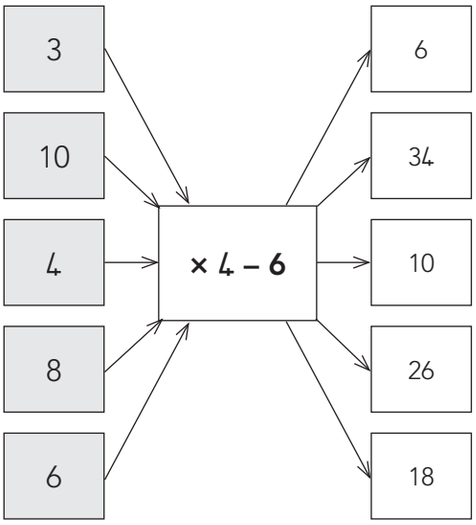
Enrichment Activity 2.17: Answers



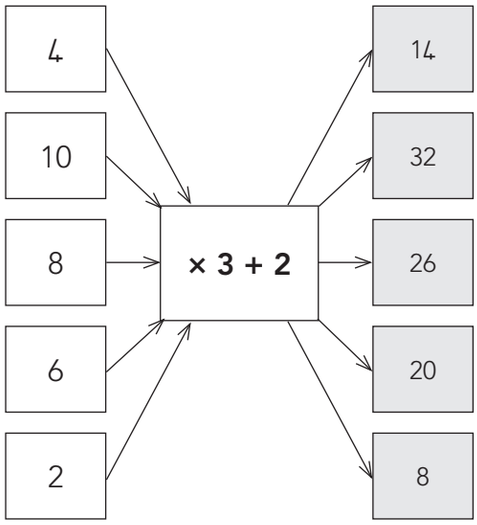
Enrichment Activity 2.18: Answers



Enrichment Activity 2.19: Answers



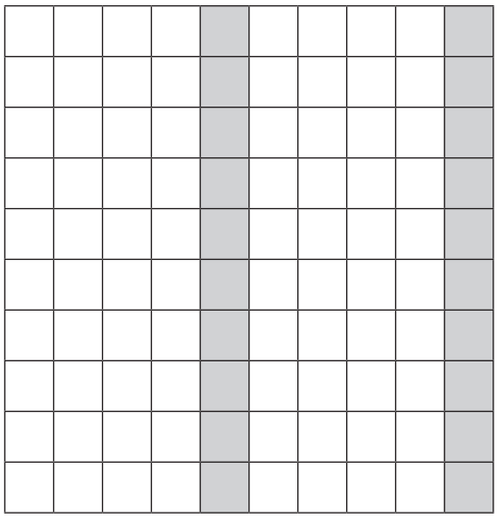
Enrichment Activity 2.20: Answers



Enrichment Activity 2.21

Write the numbers from 1–100 into the number board.

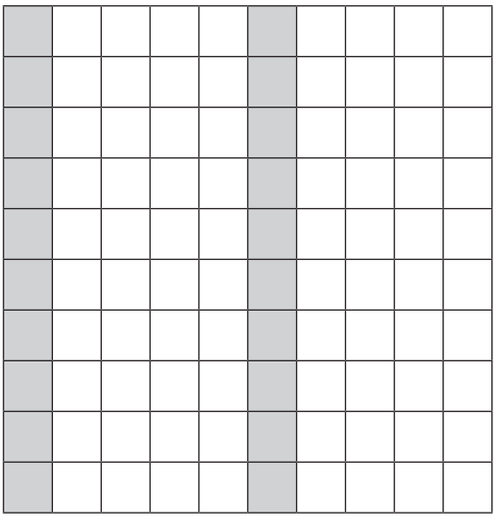
What pattern has been shaded?



Enrichment Activity 2.22

Write the numbers from 1–100 into the number board.

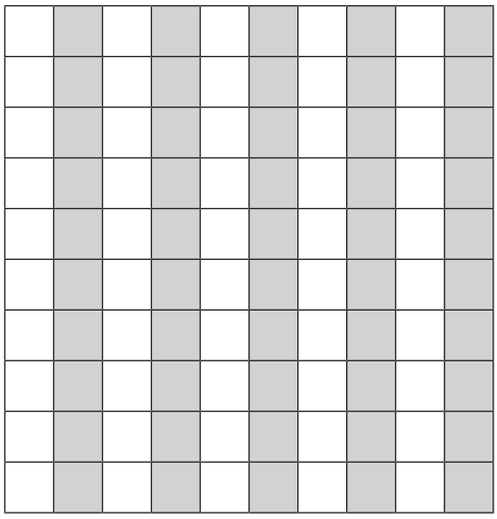
What pattern has been shaded?



Enrichment Activity 2.23

Write the numbers from 1–100 into the number board.

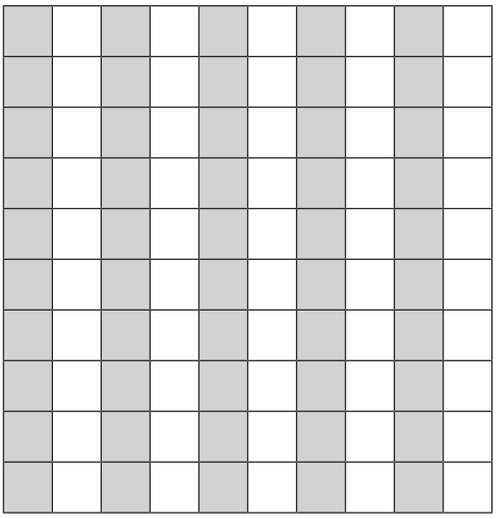
What pattern has been shaded?



Enrichment Activity 2.24

Write the numbers from 1–100 into the number board.

What pattern has been shaded?



Enrichment Activity 2.21: Answers

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The pattern shows the multiples of 5 starting with 5.

Enrichment Activity 2.22: Answers

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The pattern shows the multiples of 5 starting with 1.

Enrichment Activity 2.23: Answers

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The pattern shows the multiples of 2 starting with 2.

Enrichment Activity 2.24: Answers

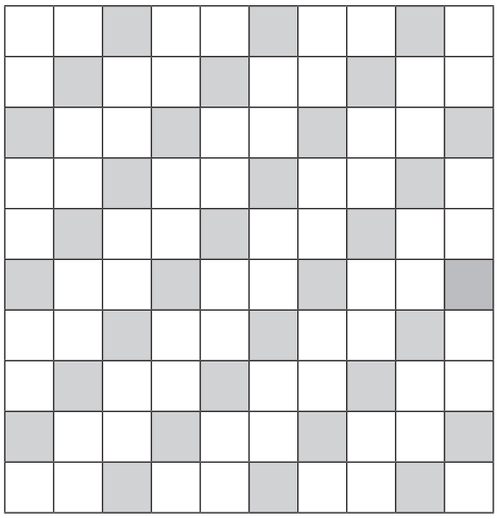
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The pattern shows the multiples of 2 starting with 1.

Enrichment Activity 2.25

Write the numbers from 1–100 into the number board.

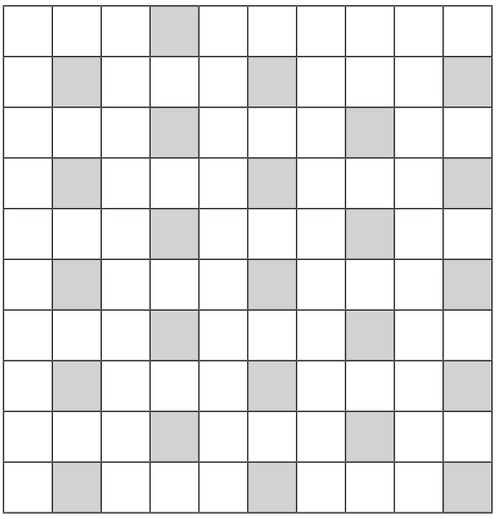
What pattern has been shaded?



Enrichment Activity 2.26

Write the numbers from 1–100 into the number board.

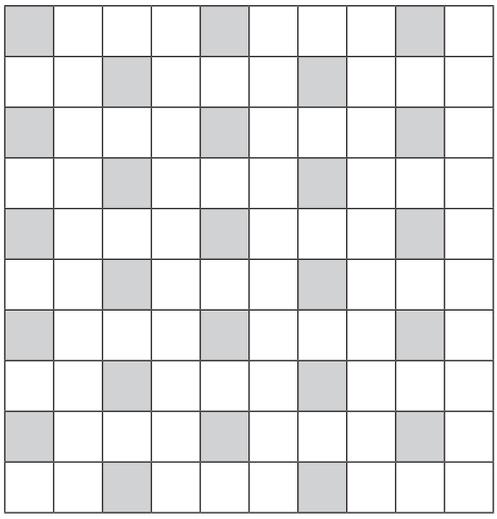
What pattern has been shaded?



Enrichment Activity 2.27

Write the numbers from 1–100 into the number board.

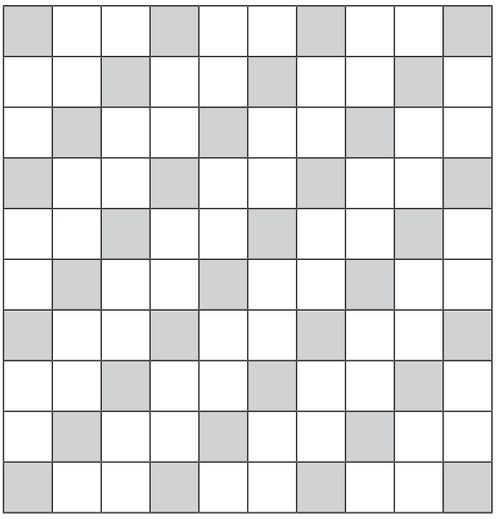
What pattern has been shaded?



Enrichment Activity 2.28

Write the numbers from 1–100 into the number board.

What pattern has been shaded?



Enrichment Activity 2.25: Answers

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The pattern shows the multiples of 3 starting with 3.

Enrichment Activity 2.26: Answers

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The pattern shows the multiples of 4 starting with 4.

Enrichment Activity 2.27: Answers

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The pattern shows the multiples of 4 starting with 1.

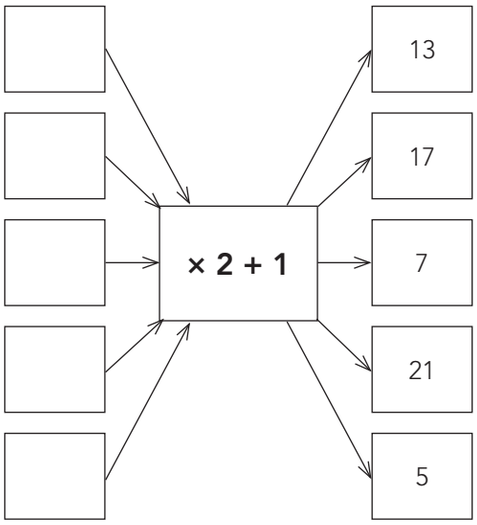
Enrichment Activity 2.28: Answers

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The pattern shows the multiples of 3 starting with 1.

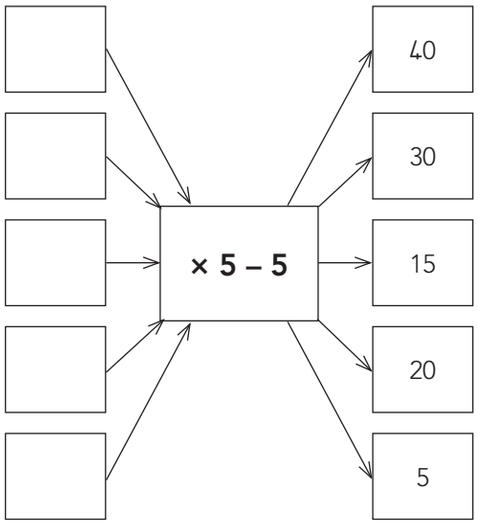
Enrichment Activity 2.29

Fill in the input numbers.



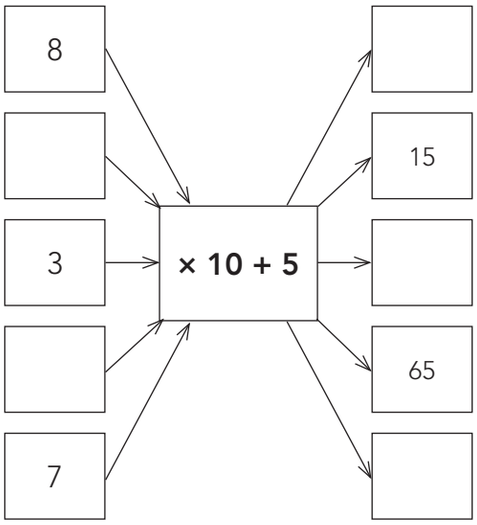
Enrichment Activity 2.30

Fill in the input numbers.



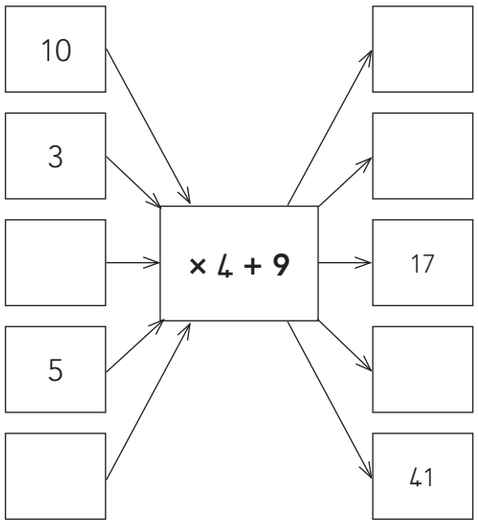
Enrichment Activity 2.31

Fill in the missing numbers.

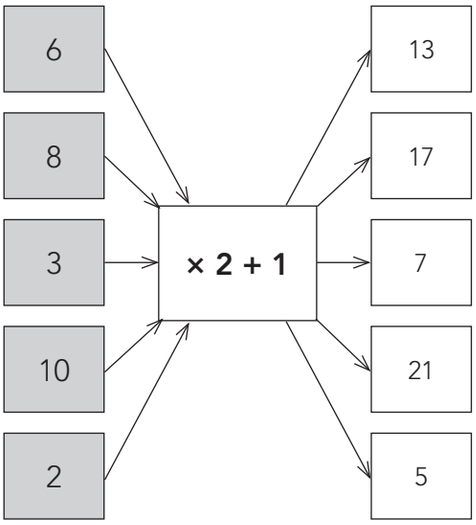


Enrichment Activity 2.32

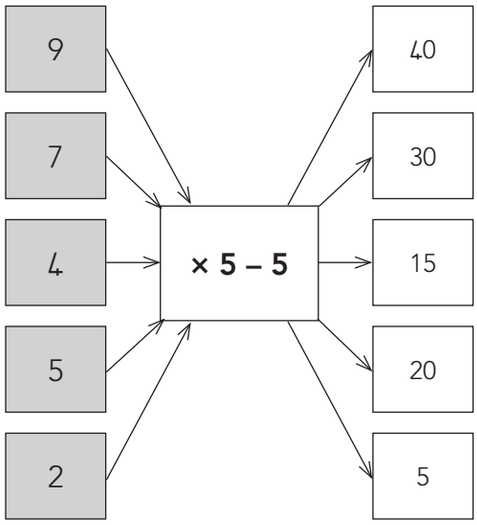
Fill in the missing numbers.



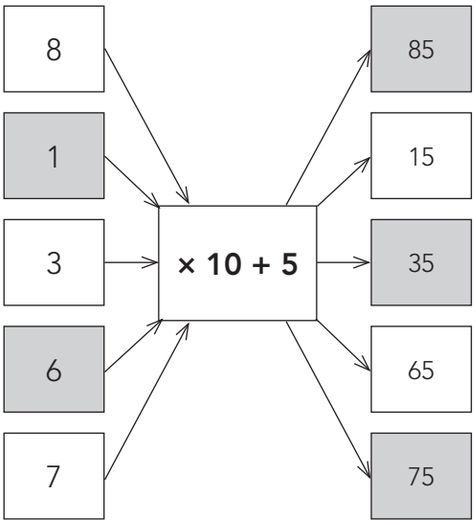
Enrichment Activity 2.29: Answers



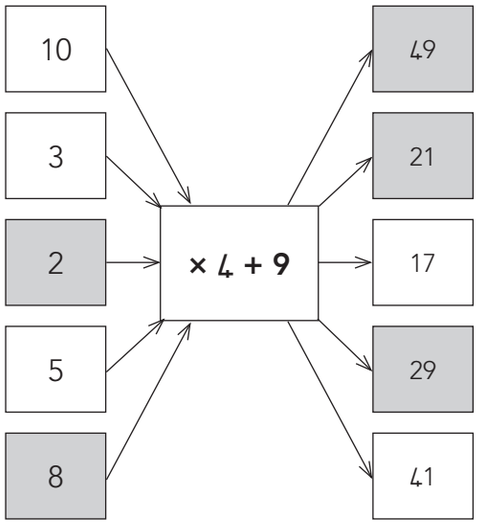
Enrichment Activity 2.30: Answers



Enrichment Activity 2.31: Answers

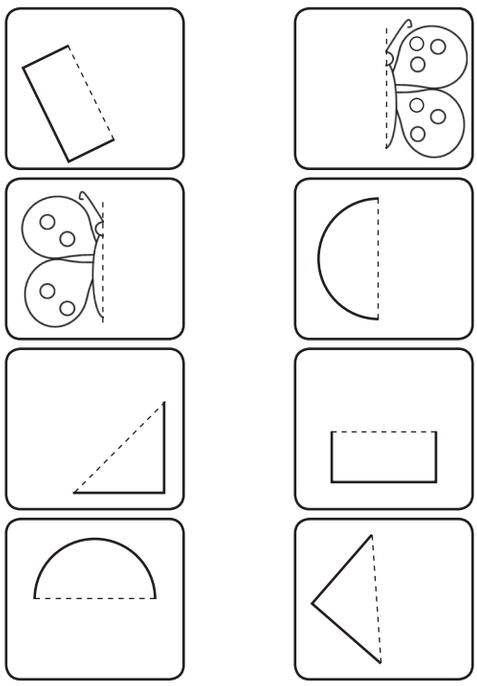


Enrichment Activity 2.32: Answers



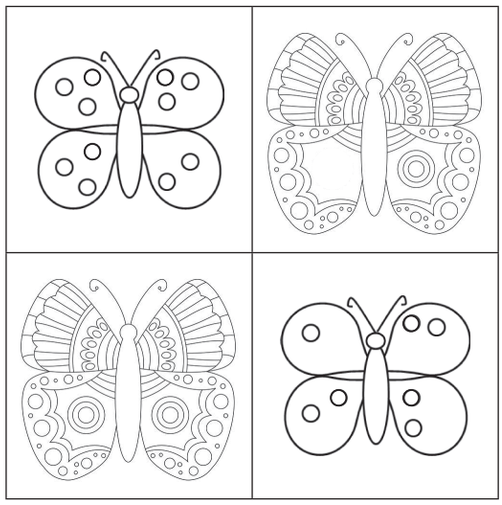
Enrichment Activity 2.33

Find the other part.



Enrichment Activity 2.34

Which picture is symmetrical?



Enrichment Activity 2.35

Find the path by counting in fifties.

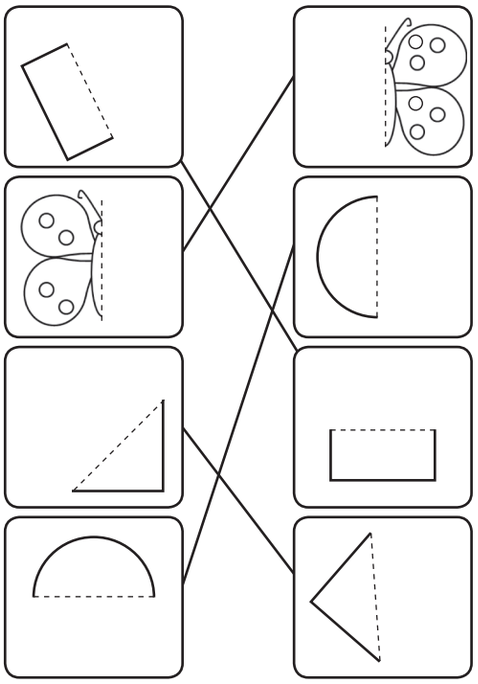
start	50	100	150	157
510	150	200	250	170
185	359	350	300	210
405	219	400	252	5
305	354	450	500	end

Enrichment Activity 2.36

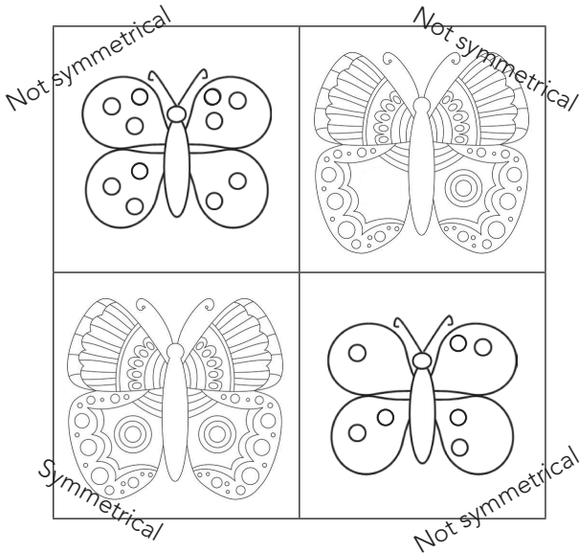
Find the path by counting in 100s.

50	120	60	20	start
70	600	500	90	100
30	700	400	300	200
40	800	140	10	110
50	900	150	80	40
end	1000	130	170	160

Enrichment Activity 2.33: Answers



Enrichment Activity 2.34: Answers



Enrichment Activity 2.35: Answers

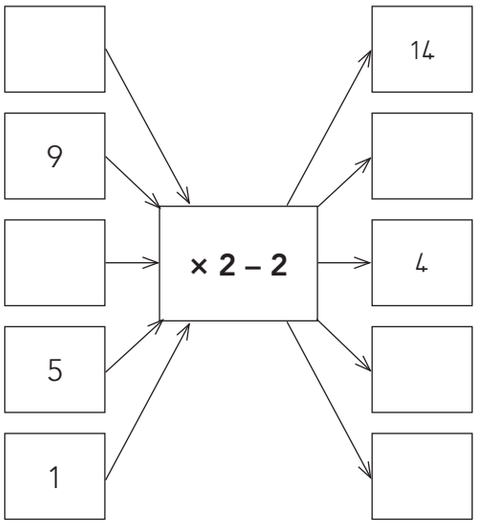
start	50	100	150	157
510	150	200	250	170
185	359	350	300	210
405	219	400	252	5
305	354	450	500	end

Enrichment Activity 2.36: Answers

50	120	60	20	start
70	600	500	90	100
30	700	400	300	200
40	800	140	10	110
50	900	150	80	40
end	1000	130	170	160

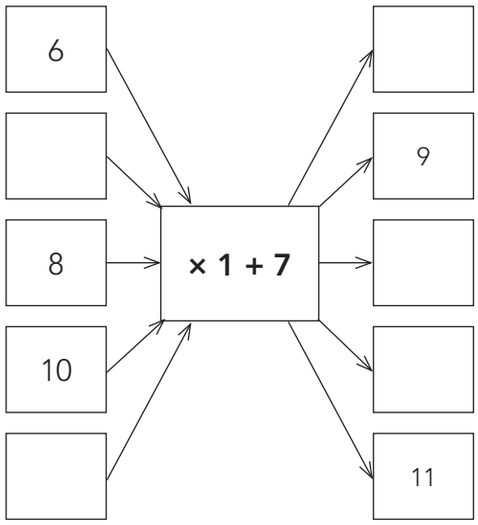
Enrichment Activity 2.37

Fill in the missing numbers.



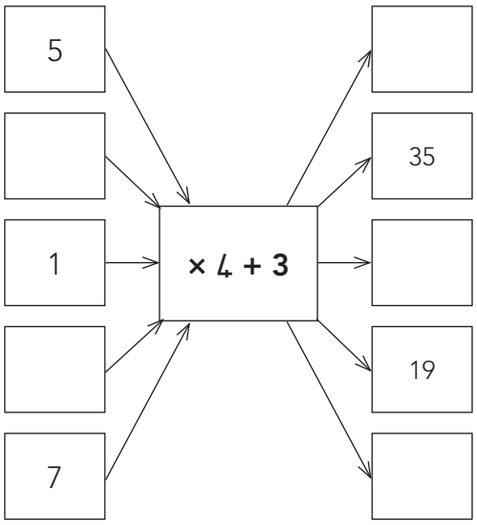
Enrichment Activity 2.38

Fill in the missing numbers.



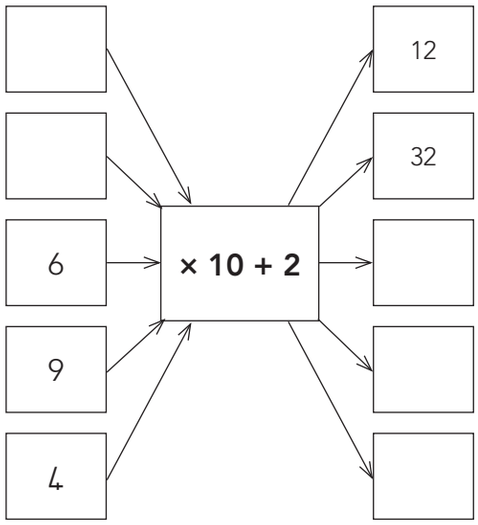
Enrichment Activity 2.39

Fill in the missing numbers.

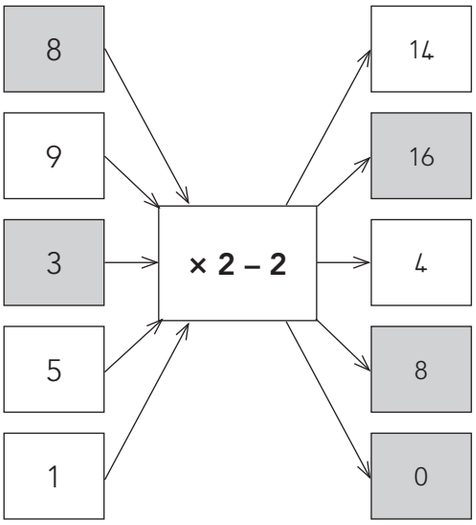


Enrichment Activity 2.40

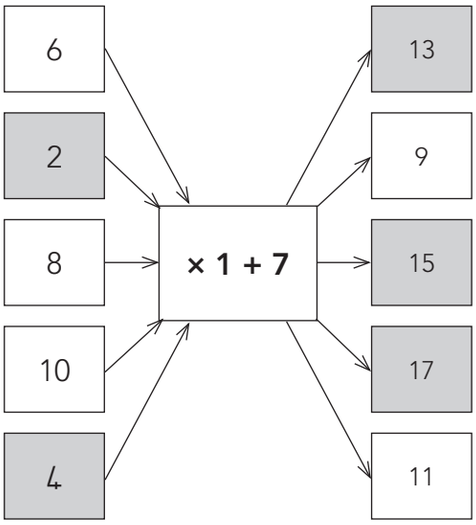
Fill in the missing numbers.



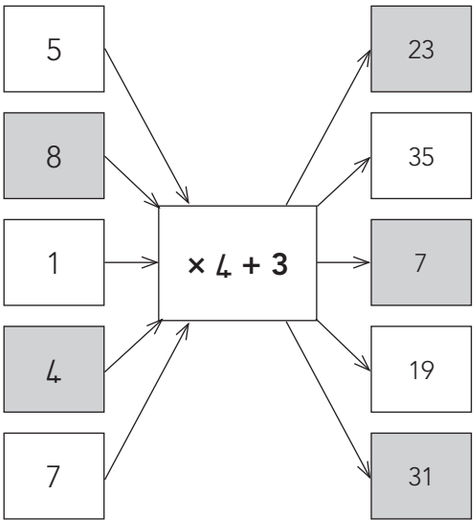
Enrichment Activity 2.37: Answers



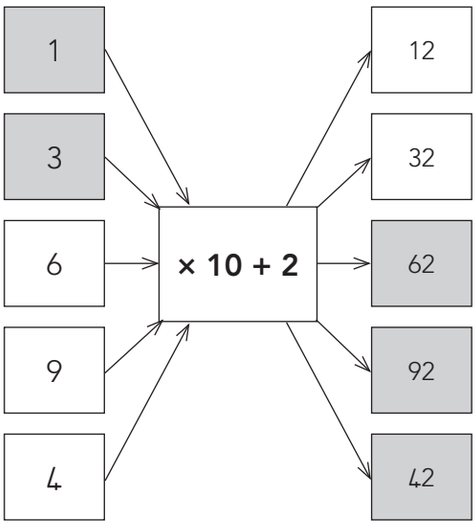
Enrichment Activity 2.38: Answers



Enrichment Activity 2.39: Answers



Enrichment Activity 2.40: Answers



Enrichment Activity Cards: isiXhosa Version

Each term a set of new enrichment cards will be provided. You should retain this set, as they will not be reproduced each term.

Use of the enrichment activity cards

Optional as required.

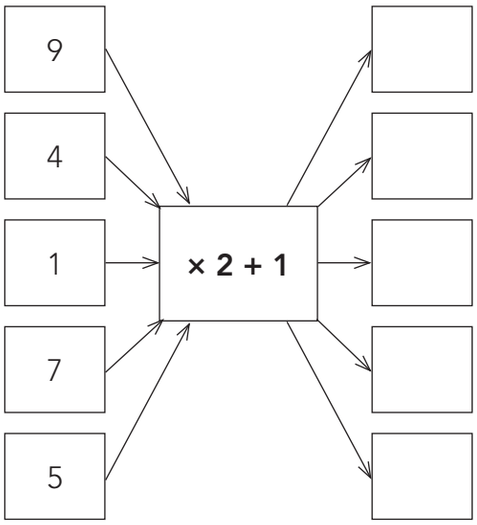
These cards include activities that you can use for enrichment opportunities for learners who have completed the lesson activities ahead of the rest of the class. Learners should work on these cards independently or with their peers who have also completed the classwork. You may need to explain some of the activities to the learners who use them. You should remind them to ask you questions about any of the enrichment activities that they are doing, so that you can guide them as necessary.

You should photocopy the enrichment cards, paste them onto cardboard and laminate them (if possible), so that they can be used as a resource, not only this year but in the future as well.

Put the cardboard laminated cards into a box in a set place in your classroom, so that learners know where to find them. These cards are for all learners and do not have to be used in a particular order. Learners should keep a record of the cards that they have done, so that they continue to choose a new card each time they go to the box. Learners must be taught to replace the cards in numeric order in the box, so that everyone who looks for cards can easily find the one they want to use.

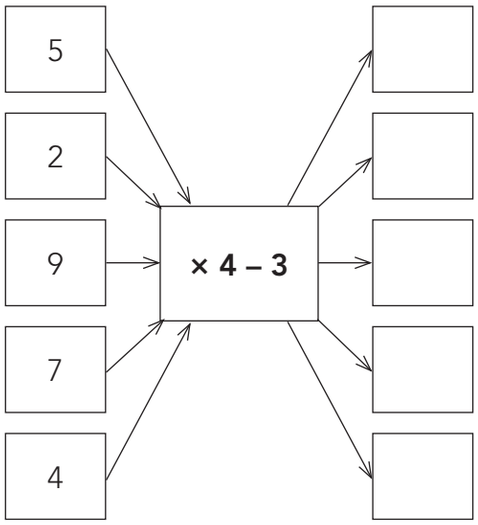
Umsebenzi Wophuculo 2.1

Fakela amanani ashiyiweyo.



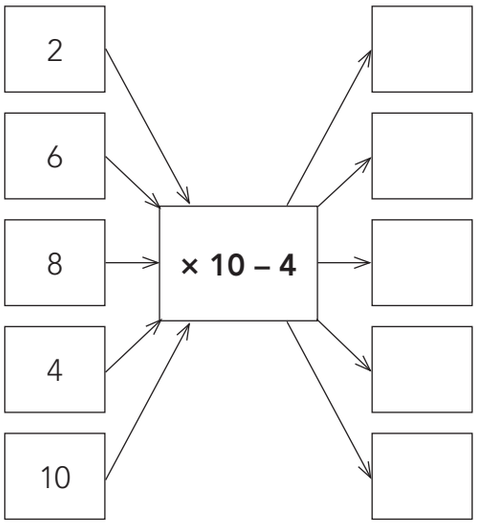
Umsebenzi Wophuculo 2.2

Fakela amanani ashiyiweyo.



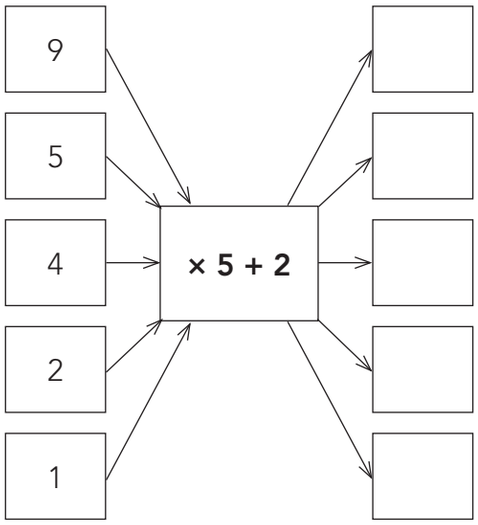
Umsebenzi Wophuculo 2.3

Fakela amanani ashiyiweyo.

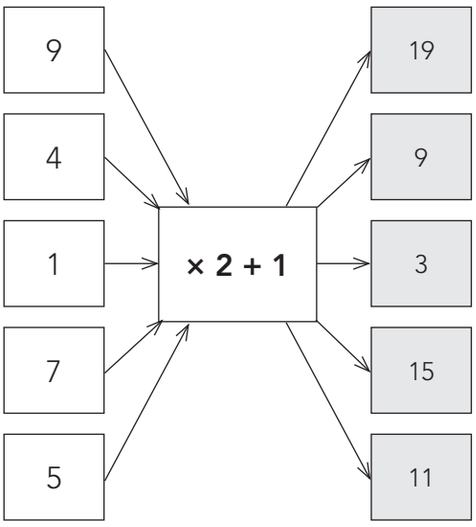


Umsebenzi Wophuculo 2.4

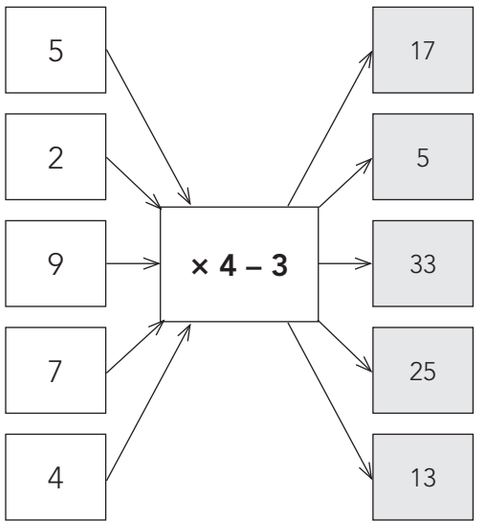
Fakela amanani ashiyiweyo.



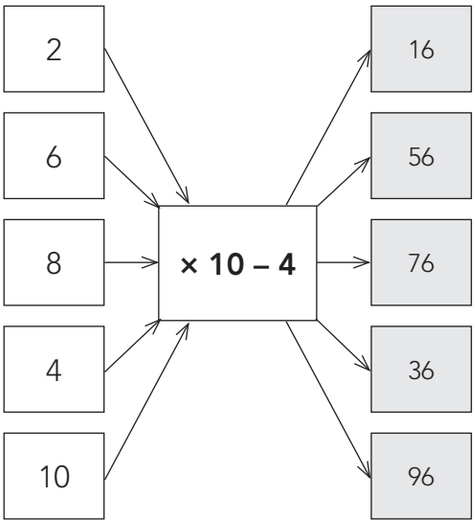
Umsebenzi Wophuculo 2.1: Iimpendulo



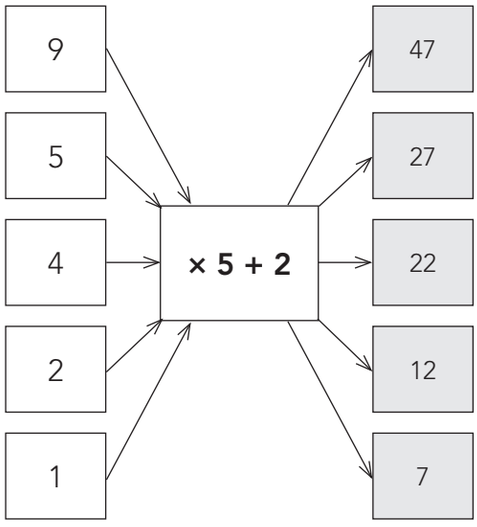
Umsebenzi Wophuculo 2.2: Iimpendulo



Umsebenzi Wophuculo 2.3: Iimpendulo



Umsebenzi Wophuculo 2.4: Iimpendulo



Umsebenzi Wophuculo 2.5

Kufuneka ndenze ntoni ukutshintsha oku kulandelayo?

- i-124 libe li-104
- i-176 libe li-170
- i-135 libe li-100
- i-192 libe ngama-92
- i-141 libe sisi-1

Umsebenzi Wophuculo 2.6

Sebenzisa ilitye elincinane, khangela indlela esuka ekuqaleni ukuya esiphelweni ngokuhambisa ilitye elincinci kwiibhloko apho ixabiso lamakhulu isisi-2.

qala	amakhulu amabini anesine	208	400	321
103	ikhulu elinamashumi amathathu	214	223	406
amakhulu amane	327	104	amakhulu amabini anamashumi amane	151
412	48	amashumi amathathu anesixhenxe	253	isiphelo

Umsebenzi Wophuculo 2.7

Sebenzisa ilitye elincinane, khangela indlela esuka ekuqaleni ukuya esiphelweni ngokuhambisa ilitye elincinci kwiibhloko apho ixabiso lamashumi isisi-2.

qala	amakhulu amabini anesine	319	470	392
129	ikhulu elinamashumi amathathu	214	253	336
amakhulu amabini anamashumi amabini	307	104	amakhulu amabini anamashumi amane	257
325	328	421	429	isiphelo

Umsebenzi Wophuculo 2.8

Sebenzisa ilitye elincinane, khangela indlela esuka ekuqaleni ukuya esiphelweni ngokuhambisa ilitye elincinci kwiibhloko apho ixabiso lamakhulu isisi-3

qala	amakhulu amathathu anesine	319	351	282
129	ikhulu elinamashumi amathathu	214	353	148
amakhulu amabini anamashumi amabini	273	134	amakhulu amathathu anamashumi amathandathu	370
401	148	431	439	isiphelo

Umsebenzi Wophuculo 2.5: Iimpendulo

- 124 – 20 = 104
  Kufuneka ndithabathe ama-20
- 176 – 6 = 170
  Kufuneka ndithabathe ama-6
- 135 – 35 = 100
  Kufuneka ndithabathe ama-35
- 192 – 100 = 92
  Kufuneka ndithabathe i-100
- 141 – 140 = 1
  Kufuneka ndithabathe i-140

Umsebenzi Wophuculo 2.6: Iimpendulo

qala	amakhulu amabini anesine	208	400	321
103	ikhulu elinamashumi amathathu	214	223	406
amakhulu amane	327	104	amakhulu amabini anamashumi amane	151
412	48	amashumi amathathu anesixhenxe	253	isiphelo

Umsebenzi Wophuculo 2.7: Iimpendulo

qala	amakhulu amabini anesine	319	470	392
129	ikhulu elinamashu-mi amatha-thu	214	253	336
amakhulu amabini anamashumi amabini	307	104	amakhulu amabini anamashumi amane	257
325	328	421	429	isiphelo

Umsebenzi Wophuculo 2.8: Iimpendulo

qala	amakhulu amathathu anesine	319	351	282
129	ikhulu elinamashu-mi amatha-thu	214	353	148
amakhulu amabini anamashumi amabini	273	134	amakhulu amathathu anamashumi amathandathu	370
401	148	431	439	isiphelo

Umsebenzi Wophuculo 2.9

Sebenzisa ilitye elincinane, khangela indlela esuka ekuqaleni ukuya esiphelweni ngokuhambisa ilitye elincinci kwiibhloko apho ixabiso lamashumi isisi-3.

amakhulu amathathu anamashumi amabini	amakhulu amathathu anesine	319	232	qala
113	amakhulu amabini aneshumi elinesihlanu	214	237	339
amakhulu amathathu anamashumi amabini	273	134	amakhulu amane anamashumi amathathu	433
321	148	amakhulu amathathu anesine	439	isiphelo

Umsebenzi Wophuculo 2.10

Sebenzisa ilitye elincinane, khangela indlela esuka ekuqaleni ukuya esiphelweni ngokuhambisa ilitye elincinci kwiibhloko apho ixabiso lamakhulu isisi-4 .

qala	amakhulu amane anesine	412	434	451
140	amakhulu amabini anesine	214	374	477
amakhulu amabini anesine	298	134	ikhulu elinesixhenxe	490
145	259	351	439	isiphelo

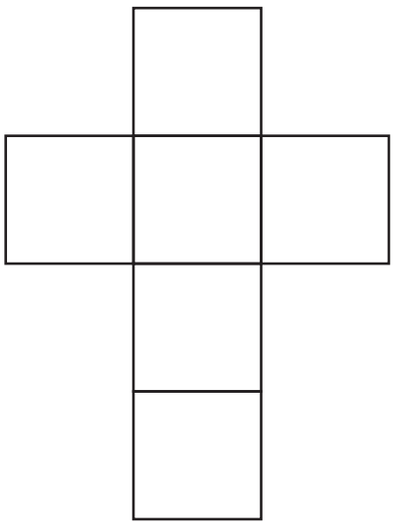
Umsebenzi Wophuculo 2.11

Sebenzisa ilitye elincinane, khangela indlela esuka ekuqaleni ukuya esiphelweni ngokuhambisa ilitye elincinci kwiibhloko apho ixabiso lamashumi isisi-4.

qala	146	312	424	401
135	244	221	157	289
287	248	134	207	490
124	341	345	449	isiphelo

Umsebenzi Wophuculo 2.12

Khuphela lo mfanekiso, uze wenze eyakho ibhokisi encinci.



Wenza eyiphi imilo lo mfanekiso

Umsebenzi Wophuculo 2.9: Iimpendulo

amakhulu amathathu anamashumi amabini	amakhulu amathathu anesine	319	232	qala
113	amakhulu amabini aneshumi elinesihlanu	214	237	339
amakhulu amathathu anamashumi amabini	273	134	amakhulu amane anamashumi amathathu	433
321	148	amakhulu amathathu anesine	439	isiphelo

Umsebenzi Wophuculo 2.10: Iimpendulo

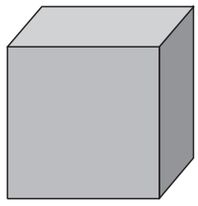
qala	amakhulu amane anesine	412	434	451
140	amakhulu amabini anesine	214	374	477
amakhulu amabini anesine	298	134	ikhulu eline-sixhenxe	490
145	259	351	439	isiphelo

Umsebenzi Wophuculo 2.11: Iimpendulo

qala	146	312	424	401
135	244	221	157	289
287	248	134	207	490
124	341	345	449	isiphelo

Umsebenzi Wophuculo 2.12: Iimpendulo

Yenza ityhubhu.



Umsebenzi Wophuculo 2.13

Fakela amanani ashiyiweyo eSudoku.

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

Umsebenzi Wophuculo 2.14

Fakela amanani ashiyiweyo eSudoku.

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

Umsebenzi Wophuculo 2.15

Fakela amanani ashiyiweyo eSudoku.

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

Umsebenzi Wophuculo 2.16

Fakela amanani ashiyiweyo eSudoku.

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

Umsebenzi Wophuculo 2.13: Iimpendulo

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

Umsebenzi Wophuculo 2.14: Iimpendulo

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

Umsebenzi Wophuculo 2.15: Iimpendulo

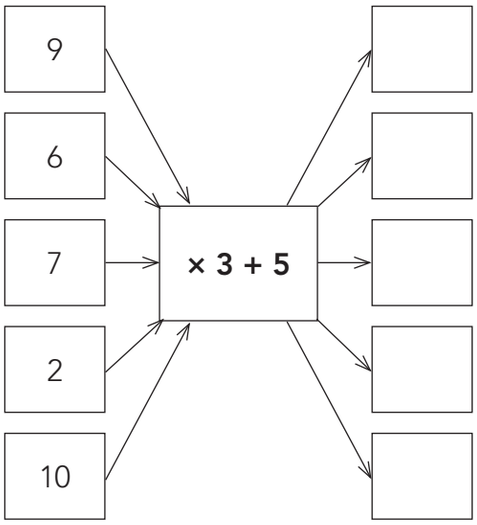
3	1	5	6	2	4
	2	6	5	1	3
2	6	4	3	5	1
1	5	3	4	6	2
5	4	1	2	3	6
6	3	2	1	4	5

Umsebenzi Wophuculo 2.16: Iimpendulo

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

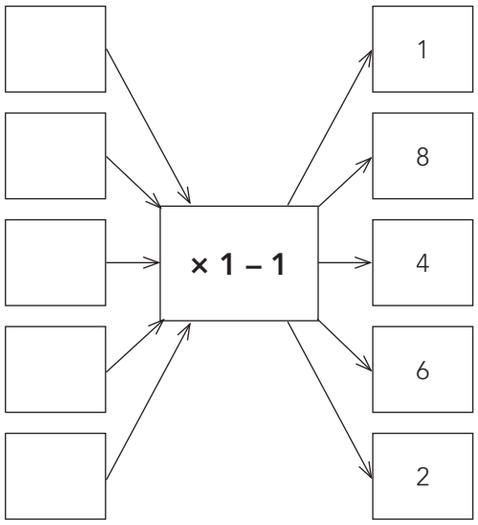
Umsebenzi Wophuculo 2.17

Fakela amanani ashiyiweyo.



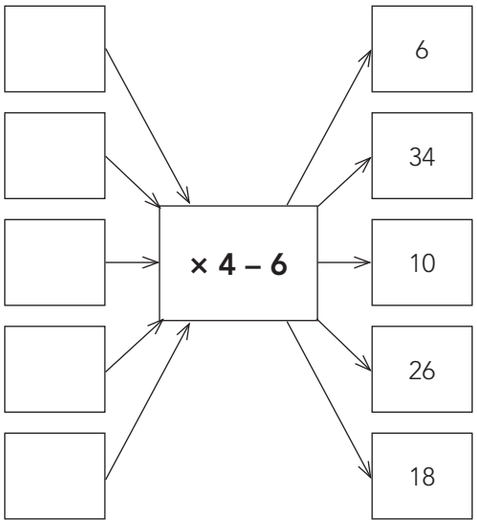
Umsebenzi Wophuculo 2.18

Fakela amanani ashiyiweyo.



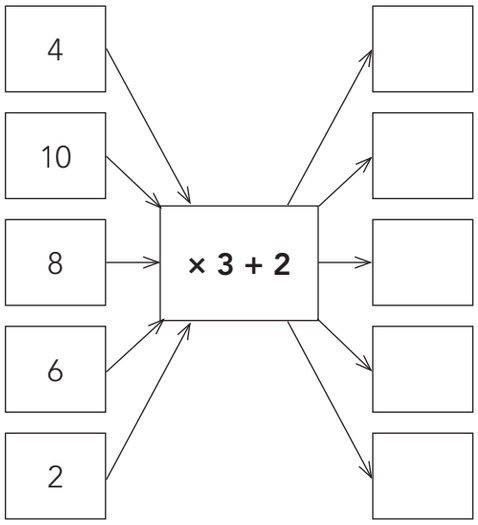
Umsebenzi Wophuculo 2.19

Fakela amanani ashiyiweyo.

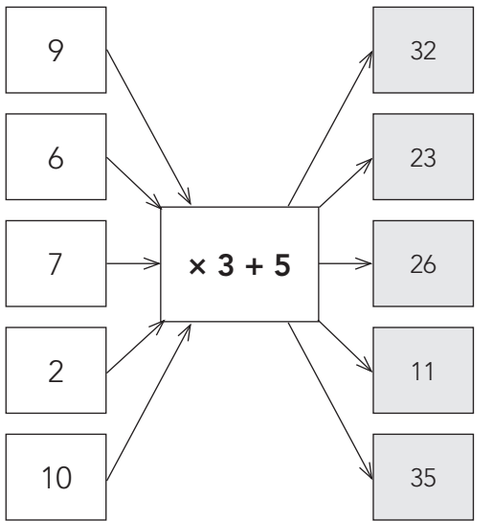


Umsebenzi Wophuculo 2.20

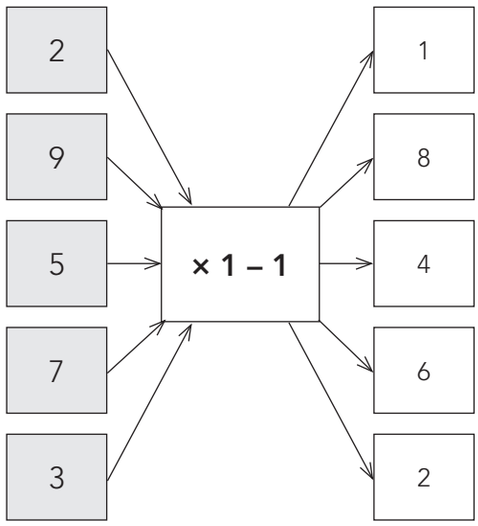
Fakela amanani ashiyiweyo.



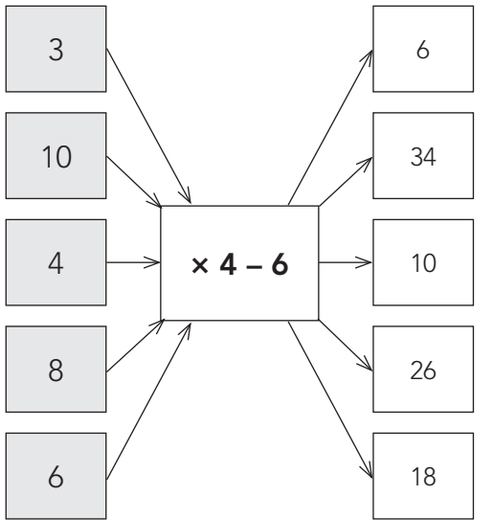
Umsebenzi Wophuculo 2.17: Iimpendulo



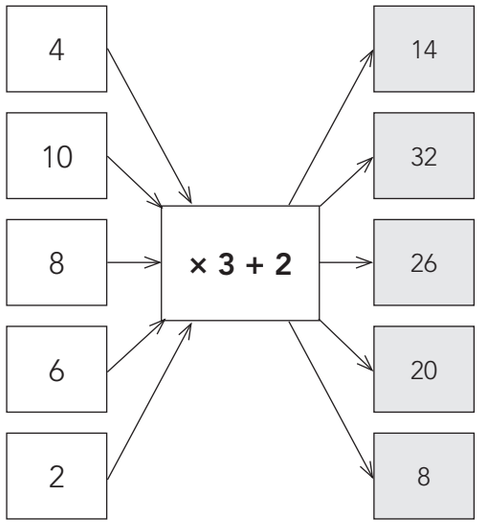
Umsebenzi Wophuculo 2.18: Iimpendulo



Umsebenzi Wophuculo 2.19: Iimpendulo



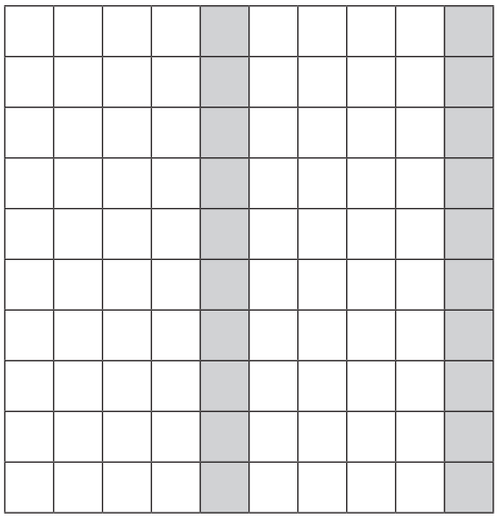
Umsebenzi Wophuculo 2.20: Iimpendulo



Umsebenzi Wophuculo 2.21

Bhala amanani ukusuka kwisi-1-100 kwibhodi yamanani.

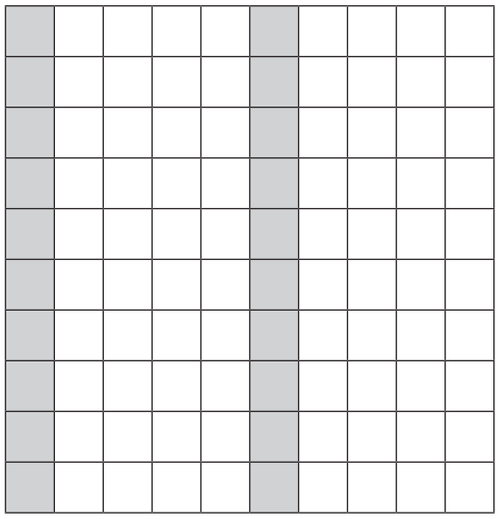
Yeyiphi ipatheni enombala ohlikihliweyo?



Umsebenzi Wophuculo 2.22

Bhala amanani ukusuka kwisi-1-100 kwibhodi yamanani.

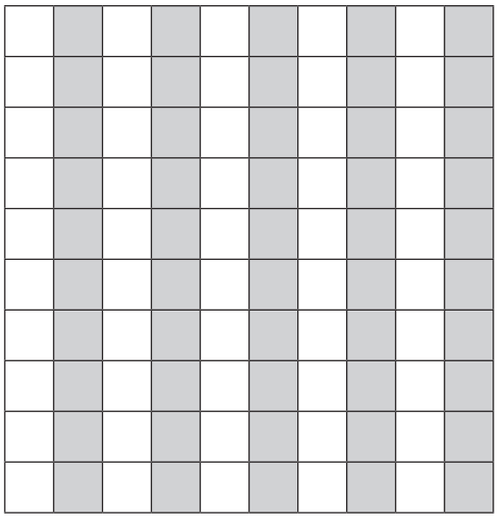
Yeyiphi ipatheni enombala ohlikihliweyo?



Umsebenzi Wophuculo 2.23

Bhala amanani ukusuka kwisi-1-100 kwibhodi yamanani.

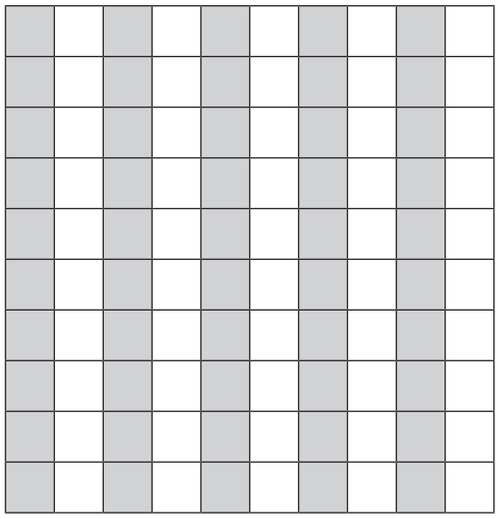
Yeyiphi ipatheni enombala ohlikihliweyo?



Umsebenzi Wophuculo 2.24

Bhala amanani ukusuka kwisi-1-100 kwibhodi yamanani.

Yeyiphi ipatheni enombala ohlikihliweyo?



Umsebenzi Wophuculo 2.21: Iimpendulo

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Ipatheni ibonisa iziphindwa zesi-5 eziqala ngesi-5.

Umsebenzi Wophuculo 2.22: Iimpendulo

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Ipatheni ibonisa iziphindwa zesi-5 eziqala ngesi-1.

Umsebenzi Wophuculo 2.23: Iimpendulo

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Ipatheni ibonisa iziphindwa zesi-2 eziqala ngesi-2.

Umsebenzi Wophuculo 2.24: Iimpendulo

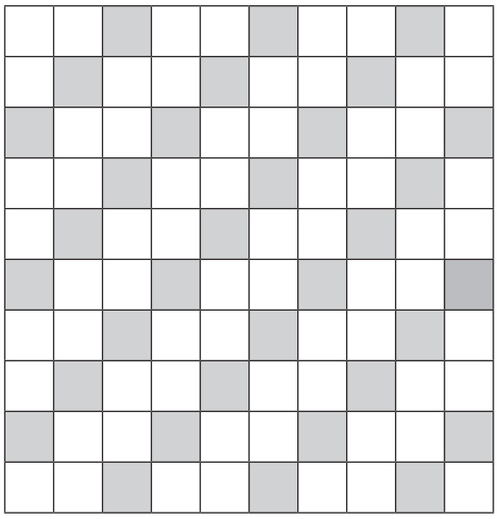
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Ipatheni ibonisa iziphindwa zesi-2 eziqala ngesi-1.

Umsebenzi Wophuculo 2.25

Bhala amanani ukusuka kwisi-1-100 kwibhodi yamanani.

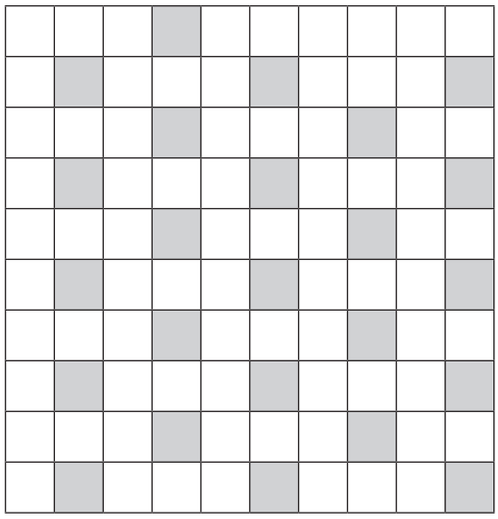
Yeyiphi ipatheni enombala ohlikihliweyo?



Umsebenzi Wophuculo 2.26

Bhala amanani ukusuka kwisi-1-100 kwibhodi yamanani.

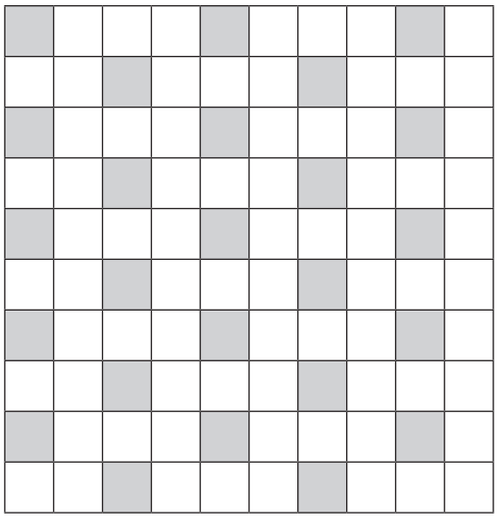
Yeyiphi ipatheni enombala ohlikihliweyo?



Umsebenzi Wophuculo 2.27

Bhala amanani ukusuka kwisi-1-100 kwibhodi yamanani.

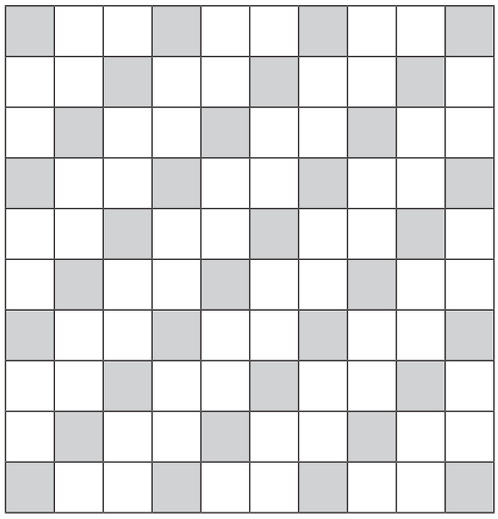
Yeyiphi ipatheni enombala ohlikihliweyo?



Umsebenzi Wophuculo 2.28

Bhala amanani ukusuka kwisi-1-100 kwibhodi yamanani.

Yeyiphi ipatheni enombala ohlikihliweyo?



Umsebenzi Wophuculo 2.25: Iimpendulo

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Ipatheni ibonisa iziphindwa zesi-3 eziqala ngesi-3.

Umsebenzi Wophuculo 2.26: Iimpendulo

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Ipatheni ibonisa iziphindwa zesi-4 eziqala ngesi-4.

Umsebenzi Wophuculo 2.27: Iimpendulo

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Ipatheni ibonisa iziphindwa zesi-4 eziqala ngesi-1.

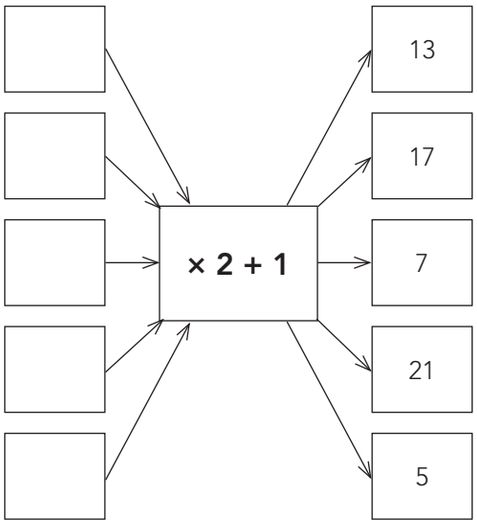
Umsebenzi Wophuculo 2.28: Iimpendulo

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Ipatheni ibonisa iziphindwa zesi-3 eziqala ngesi-1.

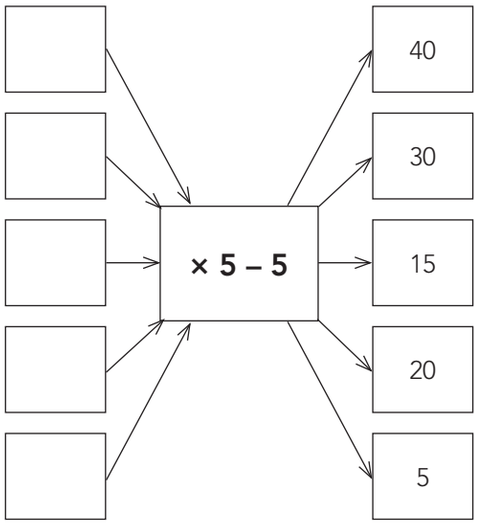
Umsebenzi Wophuculo 2.29

Fakela amanani ashiyiweyo.



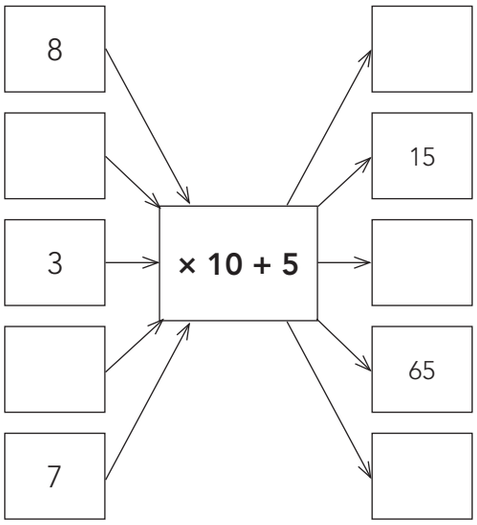
Umsebenzi Wophuculo 2.30

Fakela amanani ashiyiweyo.



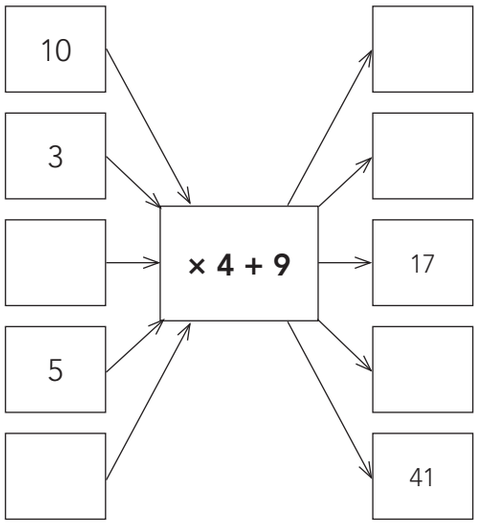
Umsebenzi Wophuculo 2.31

Fakela amanani ashiyiweyo.

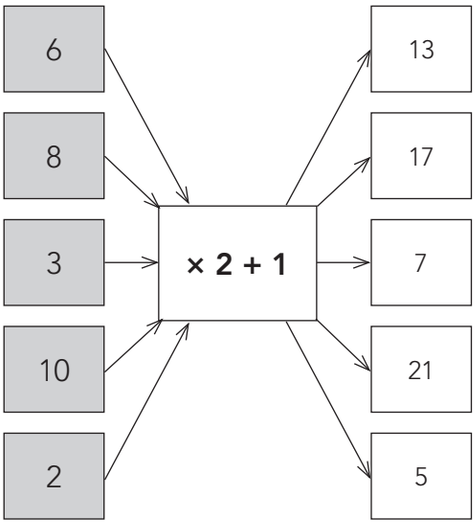


Umsebenzi Wophuculo 2.32

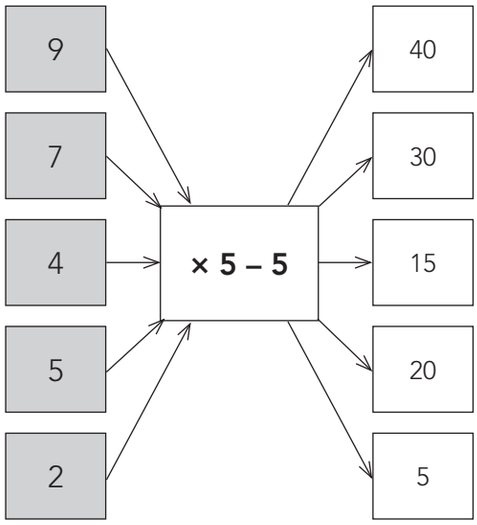
Fakela amanani ashiyiweyo.



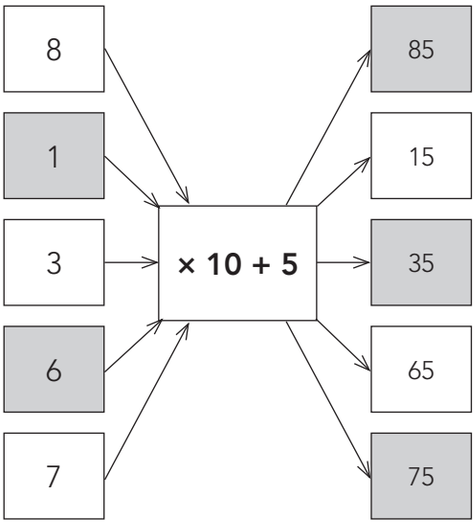
Umsebenzi Wophuculo 2.29: Iimpendulo



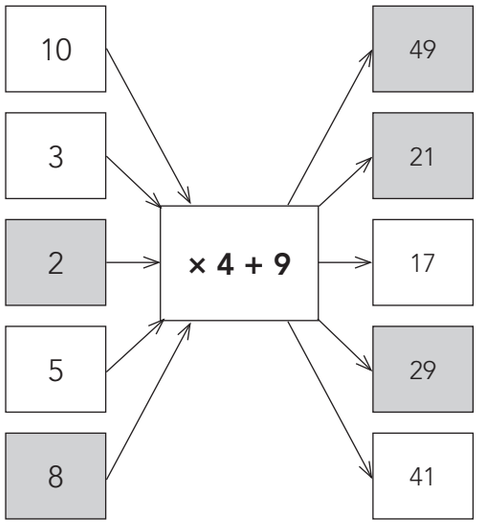
Umsebenzi Wophuculo 2.30: Iimpendulo



Umsebenzi Wophuculo 2.31: Iimpendulo

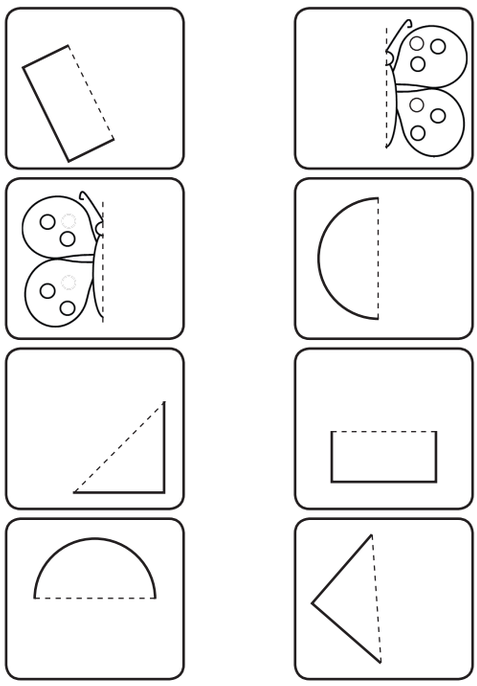


Umsebenzi Wophuculo 2.32: Iimpendulo



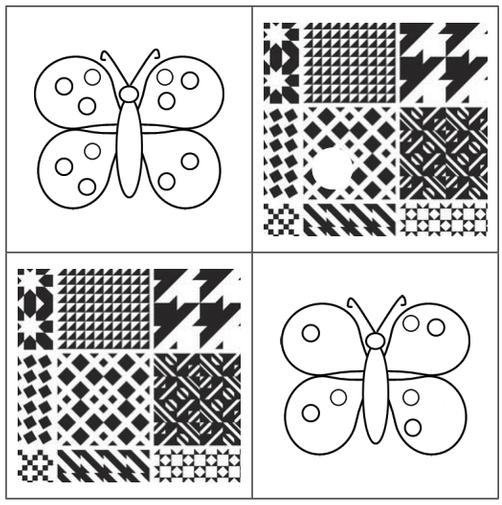
Umsebenzi Wophuculo 2.33

Khangela elinye icala elifana nelingasekhohlo.



Umsebenzi Wophuculo 2.34

Ngowuphi umfanekiso onomgca obonisa ulingano macala.



Umsebenzi Wophuculo 2.35

Khangela ufumane indlela ngokubala ngama-50.

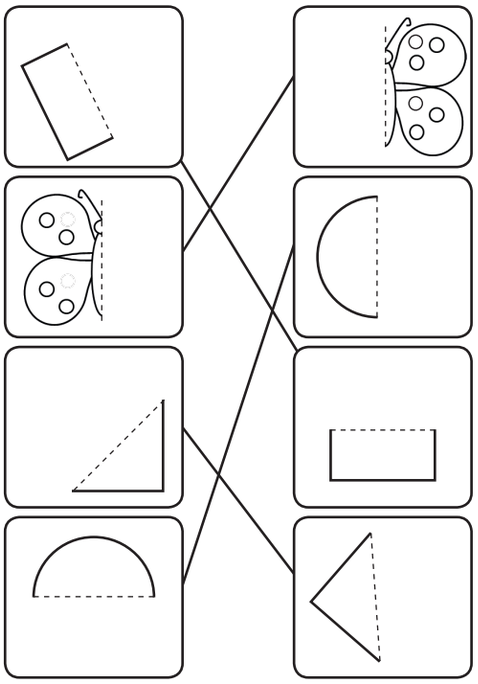
qala	50	100	150	157
510	150	200	250	170
185	359	350	300	210
405	219	400	252	5
305	354	450	500	isiphelo

Umsebenzi Wophuculo 2.36

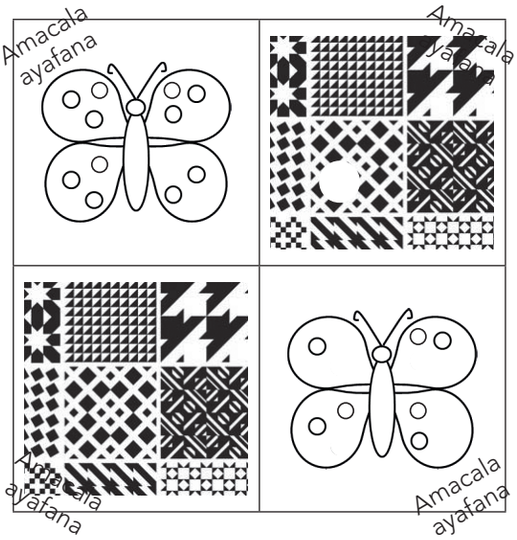
Khangela ufumane indlela ngokubala ngama-100.

50	120	60	20	qala
70	600	500	90	100
30	700	400	300	200
40	800	140	10	110
50	900	150	80	40
isiphelo	1000	130	170	160

Umsebenzi Wophuculo 2.33: Iimpendulo



Umsebenzi Wophuculo 2.34: Iimpendulo



Umsebenzi Wophuculo 2.35: Iimpendulo

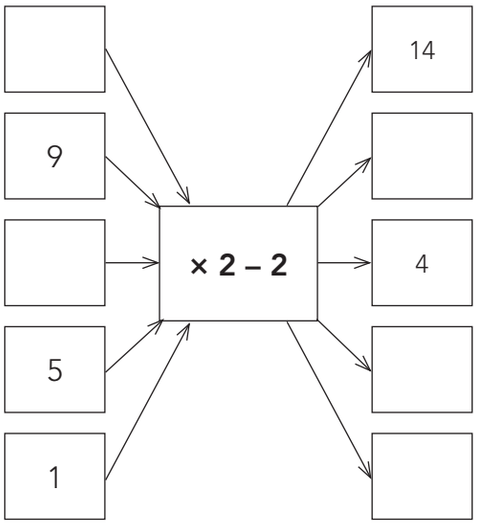
qala	50	100	150	157
510	150	200	250	170
185	359	350	300	210
405	219	400	252	5
305	354	450	500	isiphelo

Umsebenzi Wophuculo 2.36: Iimpendulo

50	120	60	20	qala
70	600	500	90	100
30	700	400	300	200
40	800	140	10	110
50	900	150	80	40
isiphelo	1000	130	170	160

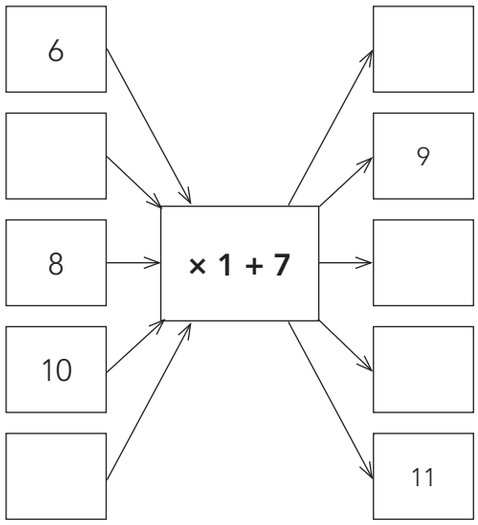
Umsebenzi Wophuculo 2.37

Fakela amanani ashiyiweyo.



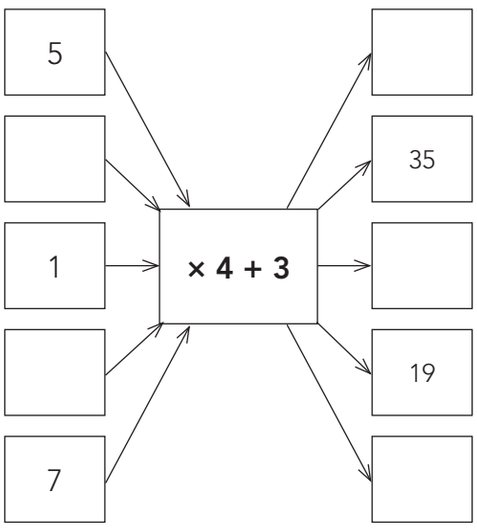
Umsebenzi Wophuculo 2.38

Fakela amanani ashiyiweyo.



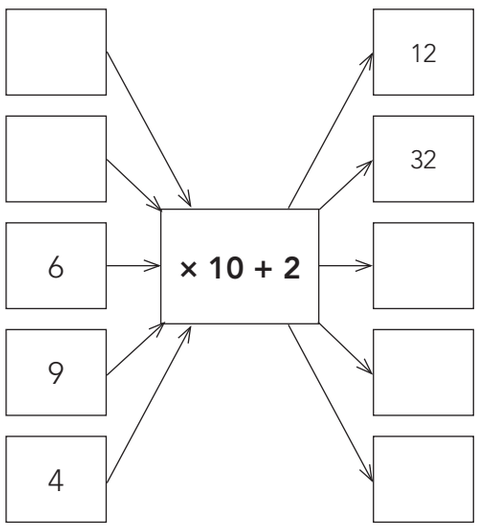
Umsebenzi Wophuculo 2.39

Fakela amanani ashiyiweyo.

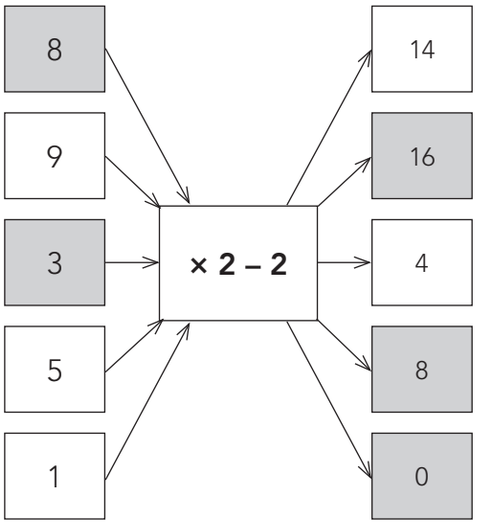


Umsebenzi Wophuculo 2.40

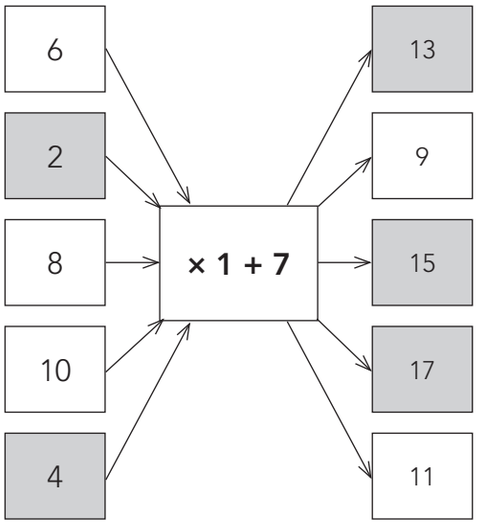
Fakela amanani ashiyiweyo.



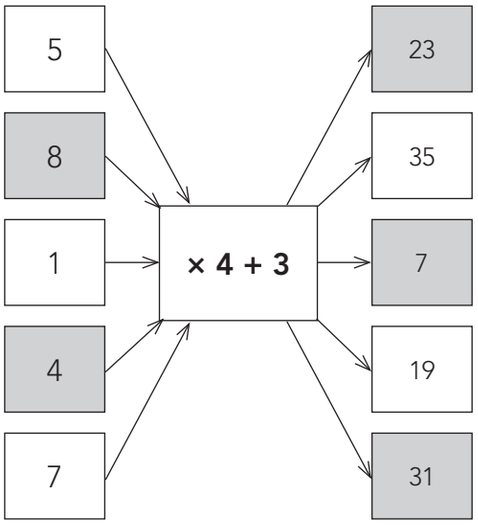
Umsebenzi Wophuculo 2.37: Iimpendulo



Umsebenzi Wophuculo 2.38: Iimpendulo



Umsebenzi Wophuculo 2.39: Iimpendulo



Umsebenzi Wophuculo 2.40: Iimpendulo