Sepedi/English

Lenaneo la go Kaonafatša Thuto ya Dipalo Mphatong wa R
Grade R Mathematics Improvement Programme

Thutofatlhošo ya 3 ● Workshop 3
Pukutshomo ya Motšeakarolo ● Participant's Workbook

The Grade R Mathematics and Language Improvement Project is an initiative of the **Gauteng Department of Education** and its key partner, the **Gauteng Education Development Trust**.

The development and production of the training and classroom resources for the Grade R Mathematics and Language Improvement Project were made possible by generous project funding from the **United States Agency for International Development** and the **Zenex Foundation**.

The Grade R Mathematics and Language Improvement Project is managed by **JET Education Services** with **UCT's Schools Development Unit** and **Wordworks** as technical partners.

The **Schools Development Unit** (SDU) at the **University of Cape Town** (UCT) is the mathematics technical partner to the Grade R Mathematics and Language Improvement Project. The SDU is a unit within UCT's School of Education that focuses on teachers' professional development in Mathematics, Science, Literacy/Language and Life Skills from Grade R to Grade 12. The SDU offers teacher qualifications and approved UCT short courses, school-based work, materials development and research to support teaching and learning in all South African contexts.

Lenaneokaonafatšo la Thuto ya Dipalo Mphatong wa R ke morero wa Kgoro ya Thuto ya Gauteng (**Gauteng Department of Education**) le badirišanimmogo ba bohlokwa e lego **Gauteng Education Development Trust**. Tšweletšo le kgatišo ya tlhahlo le dithušathuto tša phapoši tša Lenaneokaonafatšo la Thuto ya Dipalo Mphatong wa R e kgontšhitšwe ke thušo ka mašeleng go tšwa go **United States Agency for International Development** le **Zenex Foundation**.

Lenaneokaonafatšo la Thuto ya Dipalo Mphatong wa R le laolwa ke **JET Education Services** gammogo le **Schools Development Unit** ya **UCT** le **Wordworks** bjalo ka badirišani ba sethekniki.

Schools Development Unit (SDU) kua **University of Cape Town** (UCT) ke badirišani ba sethekniki ba dipalo go Lenaneokaonafatšo la Thuto ya Dipalo Mphatong wa R. SDU ke uniti ya UCT ya School of Education yeo e hlokometšego tlhahlo le kgodišo ya dithuto tša Dipalo, Saense, Bokgoni bja go ngwala le go bala/Polelo le Mabokgoni a Bophelo go tloga go Mphato wa R go fihla go wa 12. SDU e aba dithuto tša tlhahlo ya barutiši le mangwalo a UCT a dithuto tše kopana tša tlaleletšo, tlhahlo ya mošomo yeo e ka dirwago sekolong, bongwadi bja dipuku le go dira dinyakišišo tšeo di thekgago go ithuta le go ruta mabakeng a go fapana dikolong tša Afrika Borwa.

DITEBOGO
Di lebišwa go:
- Bašomi ba Kgoro ya Thuto ya Gauteng Lefapha la Lenanethuto, Tlhahlo ya Barutiši le bašomedi ba Lefapha la Thuto ya go Ikgetha, ka maele a bona phetagatšong ya setšweletšwa se sa rena.
- Bašomi ba Western Cape Education Department (WCED) le barutiši ka maele a bona tšweletšong le tsentšhotirišong ya Grade R Mathematics Programme (*R-Maths*) profenseng ya Kapa Bodikela magareng ga mengwaga ya 2016 le 2019.
- Sehlopha sa bangwadi ba *R-Maths*: Bašomi le baeletši ba SDU.

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Overview

Purpose

This is the third of twelve Grade R Mathematics Improvement Programme (Maths Programme) workshops, which form part of the Gauteng Department of Education (GDE) Grade R Mathematics and Language Improvement Project.

The purpose of this workshop is to assist teachers to implement the Maths Programme in their classrooms. Participants will strengthen their understanding of the CAPS Content Areas covered in Weeks 6–9 of Term 1 and practise skills in mediating maths learning.

References to the Grade R Mathematics Content Areas are taken from the *Curriculum and Assessment Policy Statement (CAPS)*: *Grade R Mathematics (Final Draft),* 2011*, Department of Basic Education, South Africa.

Learning outcomes

♦ To reflect on the implementation of Term 1 Weeks 3–5
♦ To apply the Maths Programme principles in weekly planning
♦ To explore strategies to support teaching maths in Grade R
♦ To engage with the Maths Programme content of Term 1 Weeks 6–9 (Patterns, Functions and Algebra; Space and Shape (Geometry); Measurement; Numbers, Operations and Relationships)
♦ To start to understand how learners' different interests and ability levels inform learning and teaching

Workshop content

♦ Opening and reflection	(1 hour)
♦ Session 1: Patterns, Functions and Algebra	(1 hour)
TEA	
♦ Session 2: Space and Shape (Geometry)	(1 hour)
♦ Session 3: Measurement	(1 hour)
LUNCH	
♦ Session 4: Numbers, Operations and Relationships	(1 hour)
♦ Session 5: Planning for teaching	(1 hour)

Kakaretšo

Morero

Ye ke thutofatlhošo ya boraro ya tše lesomepedi tša Lenaneo la go Kaonafatša Thuto ya Dipalo Mphatong wa R (Lenaneo la Dipalo), ye e lego karolo ya Kgoro ya Thuto Profenseng ya Gauteng (GDE) Lenaneokaonafatšo la Thuto ya Dipalo le ya Leleme Mphatong wa R.

Morero wa thutofatlhošo ke go thuša barutiši go phethagatša Lenaneo la Dipalo ka diphapošing tša bona. Batšeakarolo ba tlo tiišetša kwešišo ya bona ya Dikarolo tša Diteng tša SEPHOLEKE tša go akaretšwa Dibekeng tša 6–9 Kotara ya 1 gomme ba ikatiša mabokgoni a go thekga go ithuta dipalo.

Ditšhupetšo go Dikarolo tša Diteng tša Dipalo Mphatong wa R di tšwa ka go *Setatamente sa Pholisi sa Lenaneothuto le Kelo (SEPHOLEKE)*: *Thuto ya Dipalo Mphatong wa R (Kakanywa ya Mafelelo),* 2011, Kgoro ya Thuto ya Motheo, Afrika Borwa.

Dineo tša thuto

♦ Go naganiša ka phethagatšo ya Kotara ya 1 Dibeke tša 3–5
♦ Go kwešiša ditheo tša go ruta tša ka gare ga Lenaneo la Dipalo peakanyong ya beke ka beke
♦ Go hlohlomiša maano a go thekga go ruta dipalo Mphatong wa R
♦ Go swaragana le diteng tša Lenaneo la Dipalo la Kotara ya 1 Dibeke tša 6–9 (Dipatrone, Difankšene le Altšebra; Sekgoba le Sebopego (Tšeometri); Kelo; Dinomoro, Tirišo le Tswalano)
♦ Go thoma go kwešiša ka fao dikgahlego tša go fapana tša barutwana le maemo a bokgoni ao a amago go ithuta le go ruta

Diteng tša thutofatlhošo

♦ Pulo le go naganiša   (Iri e 1)
♦ Thuto ya 1: Dipatrone, Difankšene le Altšebra   (Iri e 1)
TEYE
♦ Thuto ya 2: Sekgoba le Sebopego (Tšeometri)   (Iri e 1)
♦ Thuto ya 3: Kelo   (Iri e 1)
MATENA
♦ Thuto ya 4: Dinomoro, Tirišo le Tswalano   (Iri e 1)
♦ Thuto ya 5: Go beakanyetša go ruta   (Iri e 1)

Opening and reflection

1 hour

Reflect on the implementation of the Maths Programme in your daily programme and complete the following activity in your group.

Activity 1

1. Discuss your progress in implementing Weeks 3–5 and the *Take back to school* task from Workshop 2.
2. Share your photograph of the Space and Shape (Geometry) focus in the maths area.
3. How did you record your observations of each learner during the teacher-guided activity?
4. Which teaching principles are you more aware of in your classroom?

Video 1

Watch the video of how the teacher uses a rhyme to practise counting and solving word problems.

Discuss how you managed this and other lessons that incorporated rhymes into counting activities.

_____

_____

_____

_____

Pulo le go naganiša

Naganiša ka phethagatšo ya Lenaneo la Dipalo ka go lenanephethagatšo la tšatši ka tšatši le go dira mošongwana wo ka sehlopha.

Mošongwana wa 1

1. Bolelang ka tšwelopele ya lena ge le phethagatša Dibeke tša 3–5 le *Mošomo wo o tlo boelago le wona sekolong* go tšwa Thutofatlhošong ya 2.
2. Bontšha senepe sa nepišo ya Sekgoba le Sebopego (Tšeometri) sebakeng sa dipalo.
3. O rekhotile tlhokomelo ya morutwana yo mongwe le yo mongwe bjang ka nako ya mošongwana wa go hlahlwa ke morutiši?
4. Ke ditheo dife tša go ruta tše o di lemogago kudu ka phapošing ya gago?

Bideo ya 1

Bogela bideo ya morutiši a diriša sereto go ikatiša go bala le go rarolla mathata.

Bolela ka fao o šomanego le se le dithuto tše dingwe tša go akaretša direto mešongwaneng ya go bala.

_____
_____
_____
_____

Session 1: Patterns, Functions and Algebra

1 hour

This workshop focuses on teaching the following Maths Programme content: Term 1 Weeks 6–9. This session focuses on Term 1 Week 6: Patterns, Functions and Algebra.

Term 1 Content overview: Patterns, Functions and Algebra

Refer to the Patterns, Functions and Algebra Content Area on page 124 of the *Concept Guide*.

Activity 2

In your group, discuss:

1. What concepts are covered in Term 1?

_____
_____
_____

2. What are the differences between the content and the content from CAPS?

_____
_____
_____

Understanding patterns

Developing an understanding of patterns is an important part of maths. Patterns are all around us and children encounter lots of patterns in their daily lives at home and at school.

Think about your own understanding of the Content Area: Patterns, Functions and Algebra and complete Activity 3 with your group.

Thuto ya 1: Dipatrone, Difankšene le Altšebra

Thutofatlhošo ye e nepiša go ruta diteng tša Lenaneo la Dipalo tše di latelago: Kotara ya 1 Dibeke tša 6–9. Thuto ye e nepiša Kotara ya 1 Beke ya 6: Dipatrone, Difankšene le Altšebra.

Kakaretšo ya Diteng ya Kotara ya 1: Dipatrone, Difankšene le Altšebra

Šupetša Karolo ya Diteng ya Dipatrone, Difankšene le Altšebra letlakaleng la 125 la *Pukutlhahlo ya Mareo*.

Mošongwana wa 2

Sehlopheng sa gago, ahlaahlang:

1. Go akareditšwe mareo afe Kotareng ya 1?

   _____
   _____
   _____

2. Go na le diphapano dife magareng ga diteng le diteng tša ka gare ga SEPHOLEKE?

   _____
   _____
   _____

Go kwešiša dipatrone

Tlhamo le kwešišo ya dipatrone ke karolo ya bohlokwa ya dipalo. Dipatrone di hwetšwa gohle gomme bana ba itemogela dipatrone tše dintši maphelong a bona a tšatši ka tšatši ka gae le sekolong.

Nagana ka kwešišo ya gago ya Karolo ya Diteng: Dipatrone, Difankšene le Altšebra gomme o tlatše Mošongwana wa 3 le sehlopha sa gago.

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Activity 3

In your group, discuss:

1. What kinds of patterns might Grade R learners observe in their daily lives?

_____

_____

2. Look at Poster 7 in the *Poster Book*.

♦ What patterns do you see?

_____

_____

♦ What is the pattern?

_____

_____

♦ Can you repeat the pattern? Explain.

_____

_____

A **pattern** describes the regular sequence of objects, pictures, movements, actions or events that are repeated in a predictable way.

A **sequence** is the particular order in which objects, pictures, movements, actions or events follow each other.

Identifying patterns

In a regular pattern, we can see how the elements in the sequence are repeated. We can also predict the order or sequence of the elements and how they will be repeated to create a pattern. In the pattern below we can see that the circle and square are repeated and we can predict what the next shape in the sequence will be.

🏛 Mošongwana wa 3

Sehlopheng sa gago, ahlaahlang:

1. Barutwana ba Mphato wa R ba ka itemogela dipatrone dife maphelong a bona a tšatši ka tšatši?

_____

_____

2. Lebelela Phoustara ya 7 ka *Pukung ya Diphoustara*.

♦   O bona dipatrone dife?

_____

_____

♦   Patrone ke eng?

_____

_____

♦   O ka boeletša patrone? Hlaloša.

_____

_____

Patrone ke peakanyo goba tsela ya go dira dilo go ya ka tatelano, tshepetšo le ditiragalo ka mokgwa wa go tlwaelega.

Tatelano ke tsela yeo dilo, tshepetšo goba ditiragalo di latelanago ka gona.

Go hlatha dipatrone

Patroneng ya go tlwaelega, re ka bona ka fao dielemente tša tatelano di boeleditšwego ka gona. Gape re ka naganela tatelano ya dielemente le ka fao di tlo boeletšwago go hlama patrone. Patroneng ya ka tlase re ka bona gore sediko le sekwere di a boeletšwa gomme re ka naganela gore go tlo latela sebopego sefe tatelanong.

Activity 4

1. Which shape is first?

_____

2. Which shape is next?

_____

3. What shape do you think will come after the last square?

_____

4. How would you extend the pattern?

_____

Repeating patterns are made up of a repeated sequence of elements, e.g. shapes, colours, sounds, objects, movements.

In the next activity, the facilitator will show you a sequence of shapes. You will use the attribute blocks on your table to copy this sequence and discuss how to extend this to create a pattern.

Activity 5

1. What is the pattern?

_____
_____

2. What is the repeating part of the sequence?

_____
_____

Mošongwana wa 4

1. Sebopego sa mathomo ke sefe?
_____

2. Go latela sebopego sefe?
_____

3. O nagana gore ka morago ga sekwere sa mafelelo go tlo ba sebopego sefe?
_____

4. O ka dira eng go oketša patrone?
_____

Dipatrone tša poeletšo di dirilwe ke tatelano ya dielemente ya go boeletšwa, mohl, dibopego, mebala, medumo, dilo, mesepelo.

Mošongwaneng wa go latela, monolofatši o tlo go bontšha tatelano ya dibopego. O tlo diriša dipoloko tšeo di dirišwago go hlaola tšeo di lego tafoleng ya gago go kopisa tatelano gomme la bolela gore le tla di oketša bjang go hlama patrone.

Mošongwana wa 5

1. Ke patrone efe?
_____
_____

2. Ke karolo efe yeo e ipoeletšago tatelanong?
_____
_____

Introduce learners to patterns that start with only one attribute that differs, e.g. shape, and provide enough items in the sequence so that learners can work out what the pattern is (the repeating part in the sequence).

It is important for teachers to provide a range of opportunities for learners to identify, copy and create different kinds of patterns using sounds, actions, objects and pictures.

📹 **Video 2**

Watch the video of the teacher setting up activities that provide opportunities for learners to create and discuss patterns.

Notice how the teacher guides the learners through questions and prompts to create a pattern. Write down the vocabulary that she and the learners using during these activities.

_____

_____

_____

_____

Refer to pages 160–173 of the *Concept Guide* to read more about teaching Patterns, Functions and Algebra in Grade R. You will also find a list of appropriate questions and vocabulary for this Content Area.

The **level principle** says that learners are at different starting points in Grade R. Each learner's prior knowledge is the starting point for what they will learn. They can use what they know already to learn new maths concepts and skills.

Tsebiša barutwana dipatrone tša go thoma ka lehlaodi le letee la go fapana, mohl, sebopego, gomme o neelane ka dilo tše di lekanego tatelanong gore barutwana ba kgone go hwetša le gore ke patrone efe (karolo ya poeletšo tatelanong).

Go bohlokwa gore barutiši ba fe barutwana menyetla ya go hlatha, go kopolla le go hlama dipatrone tša mehutahuta ba diriša medumo, ditiro, dilo le diswantšho.

 Bideo ya 2

Bogela bideo ya morutiši a beakanya mešongwana ya go fa barutwana menyetla ya go hlama le go ahlaahla dipatrone.

Lebelela ka fao morutiši a hlahlago barutwana ka dipotšišo le hlohloletšo gore ba hlame dipatrone. Ngwala tlotlontšu yeo yena le barutwana ba e dirišago mešongwaneng ye.

_____

_____

_____

_____

Lebelela matlakala a 160–173 ka go *Pukutlhahlo ya Mareo* go bala tše dintši ka ga go ruta Dipatrone, Difankšene le Altšebra ka Mphatong wa R. O tlo hwetša le lenaneo la dipotšišo tša maleba le tlotlontšu ya Karolo ye ya Diteng.

Setheo sa kgato ya maleba se re ge barutwana ba thoma Mphatong wa R ba maemong a go fapana. Ngwana yo mongwe le yo mongwe o thoma ka seo a se tsebago gomme seo ke motheo wa go ithuta ga ngwana yoo. Ba ka diriša seo ba šetšego ba se tseba go ithuta mareo a dipalo a maswa le mabokgoni.

Session 2: Space and Shape (Geometry)   **1 hour**

The focus of Term 1 Week 7 is Space and Shape (Geometry). In Workshop 2, we discussed 3-dimensional objects and 2-dimensional shapes and the content of Weeks 3–5 to be implemented in the classroom.

Term 1 Content overview: Space and Shape (Geometry)

Activity 6

Refer to the Space and Shape (Geometry) Content Area on pages 126–131 of the *Concept Guide*. You will see that circles, squares and triangles are introduced in CAPS in Term 1 and rectangles are introduced in Term 4. The Maths Programme suggests that rectangles are introduced incidentally in Term 1.

1. When you taught squares did you find that learners confused squares and rectangles? Give reasons to support your answer.

_____

_____

_____

_____

2. How were rectangles introduced in Week 3 of the Maths Programme?

_____

_____

_____

_____

Identifying 2-dimensional shapes (triangles)

In Grade R learners recognise, identify and name 2-dimensional shapes: circles, squares, triangles and rectangles. The Maths Programme also suggests that learners are encouraged to describe the properties of these shapes, e.g. straight or curved lines, number of lines and corners.

Learners apply their new knowledge of shapes and reinforce this learning in the independent small group activities.

Thuto ya 2: Sekgoba le Sebopego (Tšeometri)

Nepišo ya Kotara ya 1 Beke ya 7 ke Sekgoba le Sebopego (Tšeometri). Ka go Thutofatlhošo ya 2, re boletše ka dilo tša mahlakoretharo le dibopego tša mahlakorepedi le diteng tša Dibeke tša 3–5 tša go phethagatšwa ka phapošing.

Kotara ya 1 Kakaretšo ya diteng: Sekgoba le Sebopego (Tšeometri)

Mošongwana wa 6

Šupetša Karolo ya Diteng ya Sekgoba le Sebopego (Tšeometri) matlakaleng a 126–131 ka go *Pukutlhahlo ya Mareo*. O tla bona gore didiko, disekwere le dikhutlotharo di tsebišwa ka go SEPHOLEKE ka Kotara ya 1 gomme dikhutlonnethwii di tsebišwa ka go SEPHOLEKE ka Kotara ya 4. Lenaneo la Dipalo le šišinya gore dikhutlonnethwii di tsebišwa bjalo ka tlaleletšo Kotareng ya 1.

1.   Na ge o be o ruta ka disekwere o hweditše e le gore barutwana ba gakantšha disekwere le dikhutlonnethwii? Fahlela karabo ya gago ka mabaka.

   _____

   _____

   _____

   _____

2.   Na dikhutlonnethwii di tsebišitšwe bjang Bekeng ya 3 ya Lenaneo la Dipalo?

   _____

   _____

   _____

   _____

Go hlatha dibopego tša mahlakorepedi (dikhutlotharo)

Ka Mphatong wa R, barutwana ba lemoga, hlatha le go bolela maina a dibopego tša mahlakorepedi: didiko, disekwere, dikhutlotharo le dikhutlonnethwii. Lenaneo la Dipalo le šišinya gape gore barutwana ba hlohleletšwa go hlaloša dipharologantšho tša dibopego tše, mohl, methaladi ya thwii goba ya go kgopama, palo ya methaladi le dikhutlo.

Barutwana ba diriša tsebo ya bona ya dibopego gomme ba tiišetša thuto ye mešongwaneng ya sehlopha se sennyane ntle le tlhahlo.

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📹 Video 3

Watch the video of the teacher introducing the learners to the triangle.

Notice how the teacher encourages the learners to describe the properties of the triangle.

_____

_____

_____

_____

Activity Guide: Term 1 provides many opportunities throughout the term for teachers to use open-ended questions. The *Poster Book* is used during whole class activities and small group teacher-guided activities to encourage learners to express their own ideas and solve problems.

In Activity 7, you will discuss a poster and talk about whether the questions posed are 'open-ended' or 'closed' questions.

👥 Activity 7

1. Look at Poster 8 and respond to the following questions.
♦ How many triangles can you see?
_____

♦ How do you know it is a triangle?
_____

♦ How many sides does it have?
_____

♦ How many corners does it have?
_____

♦ How many lines?
_____

♦ Can you see any other triangles?
_____

♦ What other shapes can you see?
_____

♦ What is the same about these two shapes?
_____

♦ What is different about these two shapes?
_____

📹 Bideo ya 3

Bogela bideo ya morutiši a tsebiša barutwana khutlotharo.

Lemoga ka fao morutiši a hlohleletšago barutwana go hlaloša dipharologantšho tša khutlotharo.

_____

_____

_____

_____

Pukutlhahlo ya Mešongwana: Kotara ya 1 e fa barutiši menyetla ye mentši ya go diriša dipotšišo tša go lokologa mo kotareng. *Puku ya Diphoustara* e dirišwa ka nako ya mešongwana ya barutwana ka moka le nako ya mešomo ya dihlopha tše nnyane tša go hlahlwa ke morutiši go hlohleletša barutwana go hlagiša dikgopolo tša bona le go rarolla mathata.

Mošongwaneng wa 7, le tla ahlaahla phoustara la bolela ge eba go botšišitšwe 'dipotšišo tša go lokologa goba 'dipotšišothwii'.

👥 Mošongwana wa 7

1. Lebelela Phoustara ya 8 o arabe dipotšišo tše di latelago.
♦   O bona dikhutlotharo tše kae?
_____

♦   O tseba bjang gore ke khutlotharo?
_____

♦   E na le mahlakore a makae?
_____

♦   E na le dikhutlo tše kae?
_____

♦   Methaladi ke ye mekae?
_____

♦   O bona dikhutlotharo tše dingwe?
_____

♦   O bona dibopego dife tše dingwe?
_____

♦   Dibopego tše pedi di swana ka eng?
_____

♦   Dibopego tše pedi tše di fapana ka eng?
_____

2. Which of the questions above are open-ended and which are closed questions?

_____

_____

The **guidance principle** encourages teachers and learners to work together to solve problems using effective questioning.

♦ **Closed questions** are questions that have a limited 'yes' or 'no' response. Closed questions can be helpful in finding out what learners know, like 'Which shape is a triangle?', 'What colour is it?'

♦ **Open-ended questions** have more than one possible answer, stimulate thinking and encourage learners to express their own ideas when solving problems.

Not all learners will grasp these concepts or learn the maths language at the same time (**level principle**).

Maths vocabulary

When learners investigate, and describe shapes and objects, they use everyday language like 'flat', 'smooth' and 'pointy'. Teachers can introduce maths vocabulary to replace everyday language, for example: straight lines, curved lines, corners, sides. We also talk about how long something is, how wide it is and refer to the height of something.

Refer to the pages 190–193 of the *Concept Guide* to read more about asking questions related to teaching and learning Space and Shape (Geometry) concepts. Also read page 192 for more about Space and Shape (Geometry) vocabulary in Grade R.

2. Dipotšišo tša go lokologa ke dife, dipotšišothwii ke dife?

_____

_____

Setheo sa tlhahlo se hlohleletša barutiši le barutwana go šoma mmogo ge ba rarolla mathata ba diriša dipotšišo tša go phethagala.

♦   **Dipotšišothwii** ke dipotšišo tša go hloka karabo ya 'ee' goba 'aowa'. Dipotšišothwii di ka thuša go utulla seo barutwana ba se tsebago, bjalo ka 'Sebopego sa khutlotharo ke sefe?', 'Ke mmala ofe?'

♦   **Dipotšišo tša go lokologa** ke dipotšišo tša go ba le dikarabo tše dintši, tša go tutuetša go nagana le go hlohleletša barutwana go hlagiša dikgopolo tša bona ge ba rarolla mathata.

Ga se barutwana ka moka bao ba tlogo kwešiša mareo a goba go ithuta leleme la dipalo ka nako yona yeo (**setheo sa kgato ya maleba**).

Tlotlontšu ya dipalo

Ge barutwana ba nyakišiša, le go hlaloša dibopego le dilo, ba diriša leleme la ka mehla bjalo ka 'papetla', 'boreledi' le 'ntlha'. Barutiši ba ka tsebiša tlotlontšu ya dipalo legatong la leleme la tšatši ka tšatši, mohlala: methaladi ya thwii, methaladi ya go kgopama, dikhutlo, mahlakore. Re bolela le ka botelele bja selo, bophara le go bontšha bogodimo bja selo.

Lebelelaa matlakala a 190–193 ka go *Pukutlhahlo ya Mareo* go bala ka botlalo ka ga go botšiša dipotšišo tša go tswalana le go ruta le go ithuta mareo a Sekgoba le Sebopego (Tšeometri). Bala le letlakala la 193 go kwa tše dintši ka ga tlotlontšu ya Sekgoba le Sebopego (Tšeometri) ka Mphatong wa R.

Session 3: Measurement

1 hour

The focus of Term 1 Week 8 is Measurement: time and length.

Term 1 Content overview: Measurement

Activity 8

Refer to the Measurement Content Area on pages 132–135 of the *Concept Guide*.
In your group, review:

1. What concepts are covered in Term 1?

_____

_____

2. What are the differences between this content and the content from CAPS?

_____

_____

What is measurement?

In Activity 9 we will discuss the question 'What is measurement?'.

Activity 9

Look at the picture below and answer the question.

Who is the biggest?

_____

Thuto ya 3: Kelo

Nepišo ya Karolo ya 1 Beke ya 8 ke Kelo: nako le botelele.

Kotara ya 1 Kakaretšo ya diteng: Kelo

Mošongwana wa 8

Šupetša Karolo ya Diteng ya Kelo matlakaleng a 132–135 ka go *Pukutlhahlo ya Mareo*. Sehlopheng sa gago, ahlaahlang:

1. Go akareditšwe mareo afe Kotareng ya 1?

    _____

    _____

2. Go na le diphapano dife magareng ga diteng tše le diteng tša ka gare ga SEPHOLEKE?

    _____

    _____

Kelo ke eng?

Mošongwaneng wa 9 re tla ahlaahla potšišo 'Kelo ke eng?'.

Mošongwana wa 9

Lebelela seswantšho sa ka tlase gomme o arabe potšišo.

Ke ofe yo e lego yo mogolo ka go fetiša?

_____

Measurement is about finding 'how much' there is of a thing, e.g.:

♦ the length of something
♦ how much something holds
♦ the mass of something
♦ how long it takes to do something.

In order to measure, we need to decide on which attribute (feature/characteristic) we want to measure, e.g. length, mass, time. We use the following words to describe the measurements: taller, heavier, older.

We need to use units to measure. These can be non-standard units or standard units.

♦ **Non-standard measuring units** include hands, feet, crayons, pieces of string, sticks and blocks.
♦ **Standard measuring units** include litres, millilitres, kilograms, grams, metres, hours, minutes, etc.

In Grade R learners measure **informally** and use **non-standard measuring units** to measure time, length, mass, capacity and volume.

Direct comparison

Measurement in Grade R includes comparing the attribute of something 'directly' with something else. For example, measuring the length of a crayon against another crayon or comparing the height of two learners standing back-to-back.

Observe the facilitator measuring a group of participants and then complete Activity 10 in your group.

Activity 10

Refer to pages 194–207 of the *Concept Guide* to read more about Measurement and pages 136–149 of *Activity Guide: Term 1* before you answer the questions below.

Kelo ke go hwetša 'bogolo' bja selo, mohl:

♦ botelele bja selo

♦ gore selo se rwala go kaakang

♦ boima bja selo

♦ nako ye o e tšeago go dira se sengwe.

Go ela, re swanetše go nagana gore re nyaka lehlaodi (seka/semelo) le re nyakago go le ela, mohl, botelele, boima, nako. Re diriša mantšu a latelago go hlaloša dikelo: telelenyana, boimanyana, golonyana.

Re hloka go ela ka diuniti. E ka ba diuniti tša tekanyetšo goba tša go hloka tekanyetšo.

♦ **Metšo ya go se tlwaelege: mokgwa wa go lekanyet**ša dilo bjalo ka go šomiša seeta, letlakala goba poloko e ka ba seatla, leoto goba mmele.

♦ **Diuniti/Met**š**o ya go tlwaelega ya go kala/ela** di akaretša dilitara, dimililitara, dikilogramo, digramo, dimetara, diiri, metsotso, bj.bj.

Ka Mphatong wa R barutwana ba ela ka tsela ye e sego ya semmušo gomme ba diriša **diuniti tša kelo tša go se tlwaelege** go ela nako, botelele, boima, motano le bolumo.

Papetšo ya thwii

Kelo ka Mphatong wa R e akaretša go bapetša lehlaodi la selo se sengwe 'thwii' le selo se sengwe. Mohlala, go ela botelele bja kherayone kgahlanong le kherayone ye nngwe goba go bapetša botelele bja barutwana ba babedi ba furalelane.

Lebelela monolofatši ge a ela sehlopha sa batšeakarolo gomme o dire Mošongwana wa 10 le sehlopha sa gago.

Mošongwana wa 10

Lebelela matlakala a 194–207 ka go *Pukutlhahlo ya Mareo* go bala go gontši ka ga Kelo le matlakala a 136–149 ka go *Pukutlhahlo ya Mešongwana: Kotara ya 1* pele o araba dipotšišo tša ka tlase.

1. What non-standard unit of measurement was used to measure the height of the participants?

_____

2. What other non-standard units of measurement could be used to measure the height of the participants?

_____

Time

Time is a difficult abstract concept for learners to understand. Learners need to understand how time passes in their own lives, so teachers need to relate time to the learner's daily experiences and events that are familiar to them.

Activity 11

Refer back to Term 1 Week 8 in *Activity Guide: Term 1* and with a partner discuss how time is taught in these lessons. Share your ideas about the following.
1. How can Grade R teachers/practitioners help learners understand more about the concepts of:
♦ day and night?
♦ yesterday, today and tomorrow?
♦ how long things take?
♦ the sequence of time?

_____
_____
_____
_____
_____
_____

2. How can you use your daily programme activities to teach learners about the concept of time?

_____
_____
_____
_____

1. Go dirišitšwe uniti efe ya kelo ya go hloka tekanyetšo go ela botelele bja batšeakarolo?

_____

2. Ke diuniti dife tše dingwe tša kelo tša go hloka tekanyetšo tše di ka dirišwago go ela botelele bja batšeakarolo?

_____

Nako

Nako ke lereo la kgopolo leo barutwana ba swarago bothata go le kwešiša. Barutwana ba hloka go tseba gore nako e sepela bjang maphelong a bona, gomme barutiši ba hloka go amanya nako le maitemogelo a barutwana a tšatši ka tšatši le ditiragalo tše ba di tlwaetšego.

Mošongwana wa 11

Lebelela Kotara ya 1 Beke ya 8 ka go *Pukutlhahlo ya Mešongwana: Kotara ya 1* gomme wena le mogwera le bolele gore nako e dirišwa bjang dithutong tše. Abelana ka dikgopolo ka ga tše di latelago.

1. Barutiši/batlhahli ba Mphato wa R ba ka thuša barutwana bjang gore ba kwešiše go gontši ka ga mareo:

♦ mosegare goba bošego?

♦ maabane, lehono le gosasa?

♦ nako ye e tšeago ke dilo?

♦ tatelano ya nako?

_____
_____
_____
_____
_____
_____

2. O ka diriša mešongwana ya lenanephethagatšo la tšatši ka tšatši bjang go ruta barutwana ka ga lereo la nako?

_____
_____
_____
_____

3. What vocabulary is important to understand the concept of time?

_____

_____

_____

Refer to pages 194–207 of the *Concept Guide* to read more about Measurement and time. Refer to the page 210 of the *Concept Guide* to read more about asking questions related to teaching and learning of Measurement in Grade R.

3. Ke tlotlontšu efe ye e lego bohlokwa go kwešiša lereo la nako?

_____

_____

_____

Lebelela matlakala a 194–207 ka go *Pukutlhahlo ya Mareo* go bala ka botlalo ka ga Kelo le nako. Lebelela letlakala la 211 ka go *Pukutlhahlo ya Mareo* go bala ka botlalo ka ga go botšiša dipotšišo tša go amana le go ruta le go ithuta Kelo ka Mphatong wa R.

Session 4: Numbers, Operations and Relationships

1 hour

In Workshop 2, you were introduced to the concepts of counting and representation of number. In this workshop we will see how the same ideas continue into Week 6 as the number 3 is introduced. The same routine is followed as with numbers 1 and 2, namely:

Tell the *Number 3 story* and dramatise as you build up the story with the different representations of the number using frieze cards from the *Resource Kit*:

♦   animal (picture)

♦   number symbol

♦   number word

♦   dots (representing the doorbells).
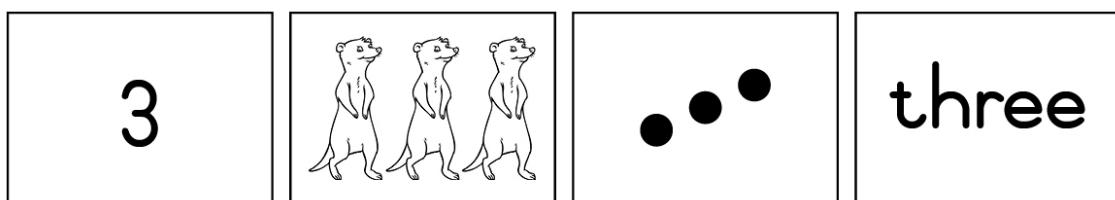
Look for objects and match the number symbol (3) and number word (three). In Week 6, learners are introduced to dot cards (from the *Resource Kit*). Learners match counters to the dot cards and discuss that 3 is made up of 1 and 2 dots.

Term 1 Content overview: Numbers, Operations and Relationships

Week 7 focuses on Space and Shape (Geometry) while Week 8 focuses on Measurement. The focus of Week 9 in Term 1 is once more on number concepts. In this session, you will investigate the relationship between numbers.

Activity 12

Refer to the Numbers, Operations and Relationships content overview on pages 114–123 of the *Concept Guide*. In your group, discuss the following features of the content overview:

1.   What is Topic 1.4?

2.   What sub-topics are listed under this topic?

3.   What are the differences between the blue and black text? Explain why you think this is so.

Thuto ya 4: Dinomoro, Tirišo le Tswalano

Ka Thutofatlhošong ya 2, o tsebišitšwe mareo a go bala le kemedi ya dinomoro. Thutofatlhošong ye re tlo bona ka fao dikgopolo tše di tšwelago pele ge go tsebišwa nomoro 3 ka go Beke ya 6. Go latelwa mokgwa wona wola wa go itlwaetša wa dinomoro 1 le 2, e lego:

Anega kanegelo ya *Nomoro 3* le e diragatše ge le oketša kanegelo ka dikemedi tša go fapana tša nomoro le diriša dikarata tša tšhate ya tlotlontšu le dinomoro tše e lego ka gare ga *Dithušathuto tša Phapoši*:

♦ phoofolo (seswantšho)
♦ leswao la nomoro
♦ leina la nomoro
♦ marontho (kemedi ya dipele tša mabati).
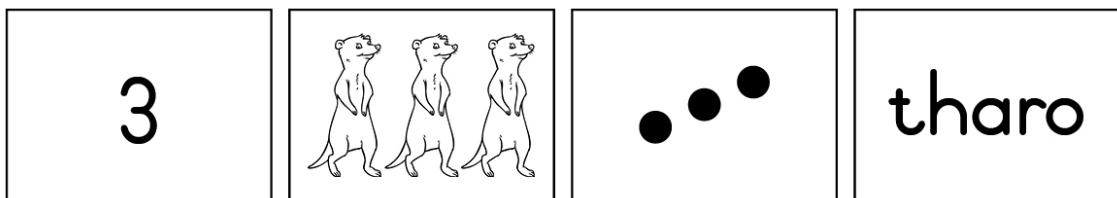
Nyaka dilo gomme o tswalanye leswao la nomoro (3) le leina la nomoro (tharo). Mo Bekeng ya 6, barutwana ba tsebišwa dikarata tša marontho (tša ka gare ga *Dithušathuto tša Phapoši*). Barutwana ba tswalanya dibaledi le dikarata tša marontho gomme ba bolela gore 3 e dirwa ke lerontho le 1 le a 2.

Kotara ya 1 Kakaretšo ya diteng: Dinomoro, Tirišo le Tswalano

Beke ya 7 e nepiša Sekgoba le Sebopego (Tšeometri) mola Beke ya 8 e nepiša go Kelo. Nepišo ya Beke ya 9 ka go Kotara ya 1 e sa le go mareo a dinomoro. Thutong ye, o tlo nyakišiša ditswalano magareng ga dinomoro.

Mošongwana wa 12

Lebelela kakaretšo ya diteng ya Dinomoro, Tirišo le Tswalano matlakaleng a 114–123 ka go *Pukutlhahlo ya Mareo*. Sehlopheng sa gago, ahlaahlang dika tše di latelago tša kakaretšo ya diteng:

1. Hlogotaba ya 1.4 ke eng?
2. Go ngwadilwe dihlogotaba dife tše dinnyane ka tlase ga hlogotaba ye?
3. Phapano ke eng magareng ga sengwalwa se setalalerata le se seso? Hlaloša gore ke ka lebaka la eng o nagana bjalo.

Calculating

In Grade R learners do not do number operations like addition and subtraction, multiplication and division. These concepts are gradually built up through investigation and through problem solving. For example: *I have three apples. I eat one. How many apples do I have left?*

Learners need to understand the relationship between numbers. Activities that involve breaking down and building up numbers help learners to understand the relationships between numbers and the value of numbers. For example: *5 is made up of 2 and 3, 1 and 4.*

Demonstration

Watch the demonstration of a 'shake-and-break' game and then discuss your observations in your group.

Activity 13

Discuss the demonstration you have just watched.
1. What number concepts could the learners learn by playing this game?
_____
_____

2. What questions did the facilitator use that highlighted addition and subtraction?
_____
_____
_____
_____

Not all learners will demonstrate an understanding of these number concepts at the same time (**level principle**).

Go hlakanya

Ka Mphatong wa R barutwana ga ba dire dipalo tše bjalo ka tša go hlakanya, go ntšha, go atiša le go arola. Mareo a a bopiwa ka dinyakišišo le ka go rarolla mathata. Mohlala: *Ke na le diapole tše tharo. Ke ja e tee. Ke šetše ka diapole tše kae?*

Barutwana ba hloka go kwešiša tswalano magareng ga dinomoro. Mešongwana ya go akaretša go aroganya le go bopa dinomoro e thuša barutwana go kwešiša ditswalano magareng ga dinomoro le boleng bja dinomoro. Mohlala: *5 e bopiwa ke 2 le 3, 1 le 4.*

Go bontšha

Bogelang pontšho ya moraloko wa 'šikinya-o-aroganye' gomme le bolele ka tše le di bonego sehlopheng.

Mošongwana wa 13

Ahlaahlang pontšho ye le bego le e bogetše.

1. Barutwana ba tla ithuta mareo afe a dipalo ka moraloko wo?
    _____
    _____

2. Monolofatši o dirišitše dipotšišo dife tša go laetša go hlakanya le go ntšha?
    _____
    _____
    _____
    _____

Ga se barutwana ka moka bao ba tlogo laetša kwešišo ya mareo a ka nako yona yeo (**setheo sa kgato ya maleba**).

35

Session 5: Planning for teaching

1 hour

Term 1 Content Summary (Weeks 6–9)

Appendix A: Term 1 Weekly Content Summary (Weeks 6–9) outlines the main Content Area Focus for each week, the topics to be covered, the new knowledge and practise focus for each week, and suggested activities for whole class, teacher-guided and independent group work for the week.

Activity 14

Look at Appendix A: Term 1 Weekly Content Summary (Weeks 6–9). Answer the questions.

Questions	Week 6	Week 7	Week 8	Week 9
What is the Content Area Focus for the week?				
What are the key concepts that learners will be learning?				
What new knowledge is introduced?				
What skills are being practised?				

Thuto ya 5: Go beakanyetša go ruta

Kakaretšo ya Diteng ya Kotara ya 1 (Dibeke tša 6–9)

Mamatletšo ya A: Kotara ya 1 Kakaretšo ya Diteng ya Beke ka Beke (Dibeke tša 6–9) e laetša Nepišokgolo ya Karolo ya Diteng ya beke ye nngwe le ye nngwe, dihlogotaba tše di tlogo akaretšwa, tsebo ye mpsha le nepišo ya go ikatiša ya beke ye nngwe le ye nngwe, le mešongwana ye e šišintšwego ya barutwana ka moka, ya go hlahlwa ke morutiši le mošomo wa sehlopha ntle le tlhahlo wa beke.

👪 Mošongwana wa 14

Lebelela Mamatletšo ya A: Kotara ya 1 Kakaretšo ya Diteng ya Beke ka Beke (Dibeke tša 6–9). Araba dipotšišo.

Dipotšišo	Beke ya 6	Beke ya 7	Beke ya 8	Beke ya 9
Nepišo ya Karolo ya Diteng ya beke ke efe?				
Barutwana ba tlo ithuta mareokgolo afe?				
Go tsebišwa tsebo efe ye mpsha?				
Go ikatišwa mabokgoni afe?				

Activity Guide: Term 1: Weeks 6, 7, 8 and 9

Refer to Weeks 6, 7, 8 and 9 in *Activity Guide: Term 1*. Complete Activity 15 in your group.

Activity 15

Find Weeks 6, 7, 8 and 9 in *Activity Guide: Term 1*. Answer the questions.

1.   What is the Content Area Focus for each week?
2.   What topics and new knowledge are taught in each week?
3.   How does the 'Practise' content link to the previous week?
4.   What do you need to get ready before teaching each week?
5.   Read the whole class activities and small group activities.
6.   Discuss in your small group how you will plan and organise your class for these four weeks of teaching.

Remember that in Grade R assessment is informal and continuous. We need to observe learners throughout the day, inside and outside the classroom. The eye icon reminds us that we need to observe the learners while they are busy, and we need to listen carefully while they are talking to us and to their peers.

The Maths Programme is designed around the rotation of small groups during a week and the teacher pays special attention to one group a day, watching and listening as the learners complete specific tasks. This time gives the teacher the opportunity to carefully observe each learner and gather information on their progress.

Look at the shaded block at the end of the teacher-guided activity: '**Check that learners are able to**'. The teacher makes a mental note of each learner and once the learners have left for the day she writes down her observations in a dedicated observation book that has space for each learner's notes.

Pukutlhahlo ya Mareo: Kotara ya 1: Dibeke tša 6, 7, 8 le 9

Lebelela Dibeke tša 6, 7, 8 le 9 ka go *Pukutlhahlo ya Mešongwana: Kotara ya 1*. Dira Mošongwana wa 15 sehlopheng sa gago.

Mošongwana wa 15

Hwetša Dibeke tša 6, 7, 8 le 9 ka go *Pukutlhahlo ya Mešongwana: Kotara ya 1*. Araba dipotšišo.

1. Nepišo ya Karolo ya Diteng ya beke ye nngwe le ye nngwe ke efe?
2. Go rutwa dihlogotaba dife le tsebo efe ye mpsha bekeng ye nngwe le ye nngwe?
3. Diteng tša 'Go ikatiša' di tswalana bjang le beke ya go feta?
4. O hloka go itokiša bjang pele o ruta beke ye nngwe le ye nngwe?
5. Bala mešongwana ya barutwana ka moka le mešongwana ya sehlopha se sennyane.
6. Mo sehlopheng se sennyane bolelang gore le tlo beakanya le go rulaganya phapoši bjang mo dibekeng tše nne tša go ruta.

Ka Mphatong wa R go dirwa tekolo ye e sego ya semmušo ye e tšwelago pele. Re swanetše go lebelela barutwana letšatši ka moka, ka gare le ka ntle ga phapoši. Aekhone ya leihlo e re gopotša gore re hloka go hlokomela barutwana ge ba šoma, ebile re hloka go ba theeletša ka hlokomelo ge ba bolela le rena le barutwana ba bangwe.

Lenaneo la Dipalo le diretšwe go fana sebaka ga dihlopha tše nnyane mo bekeng gomme morutiši o fa sehlopha se setee šedi ya go kgethega ka letšatši, a bogetše le go theeletša barutwana ge ba dira mošomo wo itšego. Nako ye e fa morutiši monyetla wa go lebelela morutwana yo mongwe le yo mongwe gabotse le go kgoboketša tshedimošo ya tšwelopele ya bona.

Lebelela poloko ya go fifatšwa mafelelong a mošongwana wa go hlahlwa ke morutiši: **'Lekola gore barutwana ba kgona go'**. Morutiši o swara tše a di bonago ka ga morutwana yo mongwe le yo mongwe ka hlogong gomme ge barutwana ba ile gae, o ngwala se a se bonego ka pukung ya temogo ya go ba le sekgoba sa morutwana yo mongwe le yo mongwe.

Closing activities

Activity 16

Lessons learnt: Think about what you learnt during the workshop and complete the table.

Things I am already doing that work well	New ideas that I would like to try

Take back to school task

1. Read the *Concept Guide* pages that were referred to during this workshop.
2. Use *Activity Guide: Term 1* to plan and implement Weeks 6–9 of the Maths Programme, including creating a maths area with a focus on the concept for each week.
3. Write an evaluation of what worked well and what did not work so well. Bring your plan and evaluation to the next workshop.
4. Bring examples or photographs of work that learners did.

Evaluation

Complete the Evaluation Form.

Mešongwana ya go tswalela

Mošongwana wa 16

Dithuto tše go ithutilwego tšona: Nagana ka se o ithutilego sona ka thutofatlhošong gomme o feleletše tafola.

Dilo tše ke di dirago tše di šomago gabotse	Dikgopolo tše diswa tše ke ratago go di leka

Mošomo wo o tlo boelago le wona sekolong

1. Bala matlakala a *Pukutlhahlo ya Mareo* ao a šupeditšwego ka nako ya thutofatlhošo ye.
2. Diriša *Pukutlhahlo ya Mešongwana: Kotara ya 1* go beakanya le go phethagatša Dibeke tša 6–9 tša Lenaneo la Dipalo, go akaretšwa le go hlama karolo ya dipalo ya go nepiša lereo la beke ye nngwe le ye nngwe.
3. Ngwala tekolo ya tše di šomilego gabotse le tše di sa šomago gabotse. Etla le peakanyo ya gago le tekolo thutofatlhošong ye e latelago.
4. Etla le mehlala goba dinepe tša mešomo ye e dirilwego ke barutwana.

Tekolo

Tlatša Foromo ya Tekolo.

APPENDIX A: TERM 1 WEEKLY CONTENT SUMMARY (WEEKS 6–9)
Term 1: Activity Plan

<table>
<tr><td colspan="6" align="center">Week 6</td></tr>
<tr><td colspan="6">CONTENT AREA: PATTERNS, FUNCTIONS and ALGEBRA</td></tr>
<tr><td colspan="6">TOPIC: Geometric patterns
INTRODUCE NEW KNOWLEDGE: Identify patterns, copy patterns, complete patterns, introduce number 3, sequencing numbers 1–3. Making groups the same.
PRACTISE: Oral counting 1–5, counting objects 1–5, number concept 1 and 2, circle, square, big and small, forwards and backwards</td></tr>
<tr><td colspan="2">Whole class activities</td><td>Teacher-guided activity</td><td colspan="3">Workstation activities</td></tr>
<tr><td>Day 1</td><td>Introduce number 3 number frieze story.</td><td rowspan="6">Play a movement game using symbols 1 and 2.
Match and order dot picture/number cards 1–3.
Simple pattern using counters. Discuss the pattern, use counters to copy the pattern.
Problem solving 1–3. Making groups the same.</td><td>Activity 1</td><td colspan="2">Frame a picture using pattern and draw three objects.</td></tr>
<tr><td>Day 2</td><td>Uses different sized and coloured circles to make simple patterns. Discuss patterns (repetition, differences, similarities).</td><td>Activity 2</td><td colspan="2">Fingerprint counting.</td></tr>
<tr><td rowspan="2">Day 3</td><td rowspan="2">Body percussion patterns and problem solving.</td><td>Activity 3</td><td colspan="2">Pattern cards using counters and sticks.</td></tr>
<tr><td>Activity 4</td><td colspan="2">Template with playdough – make 3.</td></tr>
<tr><td>Day 4</td><td>Using big and small circles and objects to make simple patterns. Identify patterns in classroom.</td><td></td><td colspan="2"></td></tr>
<tr><td>Day 5</td><td>Problem solving 1–3. Making groups the same.</td><td></td><td colspan="2"></td></tr>
<tr><td colspan="6" align="center">Week 7</td></tr>
<tr><td colspan="6">CONTENT AREA: SPACE and SHAPE (GEOMETRY)</td></tr>
<tr><td colspan="6">TOPIC: Recognise, identify and name 2-D shapes: triangle; describe and compare 3-D objects and 2-D shapes: triangles; sort 2-D shapes; figure ground; symmetry
INTRODUCE NEW KNOWLEDGE: Triangle; figure ground; position (in front and behind); oral counting 1–10
PRACTISE: Oral counting 1–10, sequencing number 1–3, counting objects 1–5, reinforce number concept 1–3, what number before/after, circle, square, symmetry, big and small</td></tr>
<tr><td colspan="2">Whole class activities</td><td>Teacher-guided activity</td><td colspan="3">Workstation activities</td></tr>
<tr><td>Day 1</td><td>Introduce triangle and its properties.</td><td rowspan="5">Oral counting.
Touch and count using number towers 1–3 (Unifix blocks).
One-to-one correspondence.
Properties of a triangle (2-D).
Sort and compare 3-D objects and 2-D shapes into two groups, one of triangles and one not triangles.</td><td>Activity 1</td><td colspan="2">Triangle activity – cut and decorate four triangles.</td></tr>
<tr><td>Day 2</td><td>Identify triangle shapes in <i>Poster Book</i>, problem solving.</td><td>Activity 2</td><td colspan="2">Butterfly prints – symmetry.</td></tr>
<tr><td>Day 3</td><td>In front of and behind; midline crossing.</td><td>Activity 3</td><td colspan="2">Shape person – use pre-cut shapes.</td></tr>
<tr><td>Day 4</td><td>Compare biggest and smallest. Bigger and smaller.</td><td>Activity 4</td><td colspan="2">Shape puzzles – (minimum six pieces).</td></tr>
<tr><td>Day 5</td><td>Symmetry.</td><td></td><td colspan="2"></td></tr>
</table>

MAMATLETŠO YA A: KOTARA YA 1 KAKARETŠO YA DITENG YA BEKE KA BEKE (DIBEKE TŠA 6–9)

Kotara ya 1: Peakanyo ya Mošongwana

Beke ya 6			
KAROLO YA DITENG: DIPATRONE, DIFANKŠENE le ALTŠEBRA			
HLOGOTABA: Dipatrone tša tšeometri			
TSEBIŠA TSEBO YE MPSHA: Hlatha dipatrone, kopisa dipatrone, feleletša dipatrone, tsebiša nomoro 3, go latelanya dinomoro 1–3. Go dira gore dihlopha di swane.			
GO IKATIŠA: Go balela godimo 1–5, go bala dilo 1–5, lereo la nomoro 1 le 2, sediko, sekwere, kgolo le nnyane, pele le morago			
Mešongwana ya barutwana ka moka		**Mošomo wa go hlahlwa ke morutiši**	**Mešongwana ya mafelong a go šomela**
Letšatši la 1	Tsebiša kanegelo ya tšhate ya tlotlontšu le dinomoro ya nomoro 3.	Bapala moraloko wa mosepelo ka maswao a 1 le 2.	**Mošongwana wa 1**	Direla seswantšho foreime ka patrone o be o thale dilo tše tharo.
Letšatši la 2	Dira dipatrone tše bonolo ka didiko tša bogolo le mebala ya go fapana. Ahlaahlang dipatrone (poeletšo, diphapano, tša go swana).	Tswalanya o be o latelanye dikarata tša seswantšho sa lerontho/nomoro 1–3. Dipatrone tše bonolo o diriša dibaledi. Ahlaahlang patrone, kopisa patrone ka dibaledi. Tharollo ya mathata 1–3. Go dira gore dihlopha di swane.	**Mošongwana wa 2** **Mošongwana wa 3** **Mošongwana wa 4**	Go bala kgatišo ya monwana. Dikarata tša patrone ka dibaledi le dikotana. Dithempoleiti tša tlhama – dira tše 3.
Letšatši la 3	Dipatrone tša tšhomišo ya ditho tša mmele go tšweletša modumo le tharollo ya mathata.			
Letšatši la 4	Go dira dipatrone tše bonolo ka didiko tše dikgolo le tše dinnyane le dilo. Hlatha dipatrone ka phapošing.			
Letšatši la 5	Tharollo ya mathata 1–3. Go dira gore dihlopha di swane.			
Beke ya 7			
KAROLO YA DITENG: SEKGOBA le SEBOPEGO (TŠEOMETRI)			
HLOGOTABA: Lemoga, hlatha o be o bolele maina a dibopego tša mahlakorepedi: khutlotharo; hlaloša o be o bapetše dilo tša mahlakoretharo le dibopego tša mahlakorepedi: dikhutlotharo; hlaola dibopego tša mahlakorepedi; temogo; go lekanela			
TSEBIŠA TSEBO YE MPSHA: Khutlotharo; temogo; boemo (ka pele le ka morago); go balela godimo 1–10			
GO IKATIŠA: Go balela godimo 1–10, go latelanya nomoro 1–3, go bala dilo 1–5, gatelela lereo la nomoro 1–3, nomoro efe pele ga/ka morago ga, sediko, sekwere, go lekanela, kgolo le nnyane			
Mešongwana ya barutwana ka moka		**Mošomo wa go hlahlwa ke morutiši**	**Mešongwana ya mafelong a go šomela**
Letšatši la 1	Tsebiša khutlotharo le dipharologantšho tša yona.	Go balela godimo. Swara o be o bale o diriša ditora tša dinomoro 1–3 (dipoloko tša Unifix). Tee-ka-tee tša go swana. Dipharologantšho tša khutlotharo (2-D). Hlaola o be o bapetše dilo tša mahlakoretharo le dibopego tša mahlakorepedi ka dihlopha tše pedi, se setee sa dikhutlotharo gomme se sengwe e se be sa dikhutlotharo.	**Mošongwana wa 1**	Mošongwana wa khutlotharo – ripa o be o kgabiše dikhutlotharo tše nne.
Letšatši la 2	Hlatha dibopego tša khutlotharo ka *Pukung ya Diphoustara,* tharollo ya mathata.		**Mošongwana wa 2** **Mošongwana wa 3** **Mošongwana wa 4**	Dikgatišo tša dirurubele – go lekanela. Motho wa dibopego – diriša dibopego tše di ripilwego. Marara a dibopego – (bonnyane diripa tše tharo).
Letšatši la 3	Pele ga le ka morago ga; mothaladigare wa go putla.			
Letšatši la 4	Bapetša kgolo ka go fetiša le nnyane ka go fetiša. Kgolonyana le nnyane nnyane.			
Letšatši la 5	Go lekanela.			

Week 8		
CONTENT AREA: MEASUREMENT		
TOPIC: Time: day and night; Length: compare and order objects to describe height		
INTRODUCE NEW KNOWLEDGE: Sequencing day and night, light and dark; height chart; position (on, under, on top, below, next to, between); counting backwards 5–1		
PRACTISE: Oral counting 1–10, counting backwards from 5, sequencing numbers 1–3, counting objects 1–5, reinforce number concept 1–3, patterns		

Whole class activities		**Teacher-guided activity**	**Workstation activities**	
Day 1	Day and night; light and dark.	Routine introduction.	**Activity 1**	Day and night activity – cutting out pictures.
Day 2	Introduce height chart; position vocabulary.	Day and night; dark and light activities:	**Activity 2**	Draw from shortest to tallest.
Day 3	Height chart. Sorting day and night everyday objects.	- blanket - activity cards.	**Activity 3**	Paste shapes from biggest to smallest.
Day 4	Poster – Day and night. Positional vocabulary: on, under, below and on top.	Day and night story and sequencing. Position (on, under, below, on top, next to,	**Activity 4**	Day/night matching cards.
Day 5	Compare heights. Movement-positions.	between). Pattern (animals). Height chart.		

Week 9		
CONTENT AREA: NUMBERS, OPERATIONS and RELATIONSHIPS		
TOPIC: Describe, order and compare numbers; estimation; problem-solving techniques; using numbers in familiar contexts; position		
INTRODUCE NEW KNOWLEDGE: Estimation, numbers in familiar contexts, one more, one less, position (up/down)		
PRACTISE: Oral counting 1–10, counting backwards from 5, sequencing numbers 1–3, counting objects 1–5, number concept 1–3, problem-solving techniques. Circle, square and triangle.		

Whole class activities		**Teacher-guided activity**	**Workstation activities**	
Day 1	Describe and order numbers 1–3.	Oral counting.	**Activity 1**	Playdough making 1–3 objects.
Day 2	Matching number representations 1–3. Estimation.	One-to-one correspondence. Describe and order numbers 1–3.	**Activity 2**	Draw pictures 1–3 in shapes.
Day 3	Counting – one more/one less. Position: up and down.	Estimation. Shake and break.	**Activity 3**	Pasting. Picture with three stars, two trees, one moon.
Day 4	Problem solving (more/less). Poster 1.		**Activity 4**	Puzzles (minimum six piece).
Day 5	Using number in familiar context: How old are you?			

Beke ya 8			
KAROLO YA DITENG: KELO			
HLOGOTABA: Nako: mosegare le bošego; Botelele: hlaloša botelele ka go bapetša le go latelanya dilo			
TSEBIŠA TSEBO YE MPSHA: Go latelanya mosegare le bošego, lesedi le leswiswi; tšhate ye telele; boemo (go, ka tlase, godimo, ka tlase, kgauswi le, gare ga); go balela morago 5–1			
GO IKATIŠA: Go balela godimo 1–10, go balela morago go thoma ka 5, go latelanya dinomoro 1–3, go bala dilo 1–5, gatelela mareo a dinomoro 1–3, dipatrone			
Mešongwana ya barutwana ka moka		**Mošomo wa go hlahlwa ke morutiši**	**Mešongwana ya mafelong a go šomela**
Letšatši la 1	Mosegare le bošego; lesedi le leswiswi.	Tsebišo ya go itlwaetša ditlwaelo. Mosegare le bošego; mešongwana ya lesedi le leswiswi:	**Mošongwana wa 1** Mošongwana wa mosegare le bošego – go ripa diswantšho.
Letšatši la 2	Tsebiša tšhate ye telele; tlotlontšu ya boemo.	- kobo	**Mošongwana wa 2** Thala go thoma ka ye telele ka go fetiša go fihla ka ye kopana ka go fetiša.
Letšatši la 3	Tšhate ye telele. Go hlaola dilo tša tšatši ka tšatši tša mosegare le bošego.	- dikarata tša mešongwana. Kanegelo ya mosegare le bošego le go latelanya.	**Mošongwana wa 3** Kgomaretša dibopego go thoma ka ye kgolo ka go fetiša go fihla ka ye nnyane ka go fetiša.
Letšatši la 4	Phoustara – Mosegare le bošego. Tlotlontšu ya boemo: go, ka tlase ga, ka tlase le ka godimo.	Boemo (go, ka tlase, ka tlase, ka godimo, kgauswi le, gare ga).	**Mošongwana wa 4** Dikarata tša go tswalana tša mosegare/bošego.
Letšatši la 5	Bapetša botelele. Boemo bja mesepelo.	Patrone (diphoofolo). Tšhate ye telele.	
Beke ya 9			
KAROLO YA DITENG: DINOMORO, TIRIŠO le TSWALANO			
HLOGOTABA: Hlaloša, latelanya o be o bapetše dinomoro; kakanyo; mekgwa ya go rarolla mathata; go diriša dinomoro dikamanong tša go tlwaelega; boemo			
TSEBIŠA TSEBO YE MPSHA: Kakanyo, dinomoro tša dikamano tša go tlwaelega, ntši ka tee, nnyane ka tee, boemo (godimo/tlase)			
GO IKATIŠA: Go balela godimo 1–10, go balela morago go thoma ka 5, go latelanya dinomoro 1–3, go bala dilo 1–5, lereo la nomoro 1–3, mekgwa ya go rarolla mathata. Sediko, sekwere le khutlotharo.			
Mešongwana ya barutwana ka moka		**Mošomo wa go hlahlwa ke morutiši**	**Mešongwana ya mafelong a go šomela**
Letšatši la 1	Hlaloša o be o latelanye dinomoro 1–3.	Go balela godimo.tee-ka-tee tša go swana Hlaloša o be o latelanye dinomoro 1–3. Kakanyo. Šikinya o be o robaganye.	**Mošongwana wa 1** Tlhama ya go dira dilo tše 1–3.
Letšatši la 2	Go bapetša dikemedi tša dinomoro 1–3. Kakanyo.		**Mošongwana wa 2** Thala diswantšho tše 1–3 ka dibopego.
Letšatši la 3	Go bala – ntši ka tee/nnyane ka tee. Boemo: godimo le tlase.		**Mošongwana wa 3** Go kgomaretša. Seswantšho sa dinaledi tše tharo, mehlare ye mebedi, ngwedi o tee.
Letšatši la 4	Tharollo ya mathata (ntši/nnyane). Phoustara ya 1.		**Mošongwana wa 4** Marara (bonnyane diripa tše tshela).
Letšatši la 5	Go diriša dinomoro dikamanong tša go tlwaelega: O na le mengwaga ye mekae?		

Workshop 3 Evaluation Form

1. Did the workshop meet your expectations?

_____
_____
_____
_____

2. What did you learn in this workshop that helped you the most?

_____
_____
_____
_____

3. Was there anything that you did not like or had difficulty understanding?

_____
_____
_____
_____

4. How will you apply what you have learnt in your Grade R classroom?

_____
_____
_____
_____

5. Do you have any suggestions for improving further workshops?

_____
_____
_____
_____

Foromo ya Tekolo ya Thutofatlhošo ya 3

1. Na thutofatlhošo e fihleletše tše o bego o di lebeletše?

_____
_____
_____
_____

2. O ithutile eng go thutofatlhošo ye se se go thušitšego kudu?

_____
_____
_____
_____

3. Go na le se o se go wa se rata goba o sa se kwešiše go?

_____
_____
_____
_____

4. O tlo phethagatša se o ithutilego sona bjang phapošing ya gago ya Mphato wa R?

_____
_____
_____
_____

5. Go na le tše o di šišinyago go kaonafatša dithutofatlhošo tše di latelago?

_____
_____
_____
_____