GAUTENG PROVINCE
EDUCATION
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GROWING GAUTENG TOGETHER

Setswana/English

# Lenaneotokafatso la Dipalo tsa Mophato R
# Grade R Mathematics Improvement Programme

## Thutano 2 ● Workshop 2
## Kaedi ya Mofatlhosi ● Facilitator's Guide

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**.

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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.

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Porojeke ya Lenaneotokafatso la Dipalo le Puo tsa Mophato wa R ke itshimololelo ya **Lefapha la Thuto la Gauteng (Gauteng Department of Education)** mmogo le badirisani ba bona ba botlhokwa, **Gauteng Education Development Trust**.

Tlhabololo le tlhagiso ya didiriswa tsa katiso le phaposiborutelo ya Porojeke ya Lenaneotokafatso la Dipalo le Puo tsa Mophato wa R e kgontshitswe ke tshegetso ya **United States Agency for International Development** le **Zenex Foundation** ka matlole.

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**Schools Development Unit** (SDU) kwa **University of Cape Town** (UCT) ke badirisani ba setegeniki ba dipalo go Porojeke ya Lenaneotokafatso la Dipalo le Puo tsa Mophato wa R. SDU ke yuniti e e ka fa tlase ga School of Education sa UCT e e totileng tokafatso ya boporofešenale jwa barutabana mo Dipalong, Bonetetshing, Kitsokwalo/Puo le Dikgonotshelo go simolola ka Mophato R go fitlha ka Mophato 12. SDU e neelana ka thuto ka boithutedi jwa borutabana le dithutokhutshwe tse di dumeletsweng tsa UCT, tiro ya kwa sekolong, tlhagiso ya dibukana le dipatlisiso go tshegetsa go ruta le go ithuta mo makaelong otlhe a Aforikaborwa.

**DITEBOGO**

Ditebogo di lebisiwa segolobogolo go:

- Batlhankedi ba Lefapha la Thuto la Gauteng mo Lephateng la Kharikhulamo, Bokaedi jwa Thuto ya Barutabana le Thuto e e Kgethegileng ka ntlha ya seabe sa bona go dirisa dibukana tseno tsa rona.
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- Setlhopha se se kwalang *R-Maths*: Badiri ba SDU le bagakolodi.


Porojeke ya Lenaneotokafatso la Dipalo tsa Mophato R le tserwe go tswa mo *R-Maths*, e phasaladitswe lwantlha ka 2017 ke Schools Development Unit, ya University of Cape Town. Tetlokhopi ya *R-Maths* e tshwerwe ke University of Cape Town.



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# Overview

## Purpose

This is the second 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. The focus of this workshop is Space and Shape (Geometry). Participants will strengthen their knowledge and understanding of teaching and learning in this Content Area, prepare for teaching Space and Shape (Geometry) activities in their classrooms and reflect on the guiding principles that inform teaching.

## Learning outcomes

- To reflect on the implementation of Term 1 Weeks 1–2
- To explore strategies to support teaching maths in Grade R (e.g. problem solving, investigation, exploration, questioning, critical thinking, active listening, observation)
- To engage with the Maths Programme content of Term 1 Weeks 3–5 (Space and Shape (Geometry))
- To apply the Maths Programme principles in weekly planning

## Workshop content

- Opening and reflection (1 hour)
- Session 1: Content overview (1 hour)

TEA

- Session 2: Space and Shape (Geometry) (2 hours)

LUNCH

- Session 3: Planning for teaching (2 hours)

## Preparation

- PPT welcome and outcomes
- Copy and cut out the Appendix B strips and place them into one envelope per group.
- Set up a simple obstacle course in an open space.
- Prepare the tables with materials before each session.

# Thadiso

## Maitlhomo

Eno ke thutano ya bobedi ya dithutano di le lesomepedi tsa Lenaneotokafatso la Dipalo tsa Mophato R (Lenaneo la Dipalo), le e leng karolo ya Porojeke ya Lenaneotokafatso la Dipalo le Puo tsa Mophato wa R la Lefapha la Thuto la Gauteng (GDE).

Maitlhomo a thutano eno ke go thusa barutabana go diragatsa Lenaneo la Dipalo mo diphaposiborutelong tsa bona. Thutano eno e totile Boalo le Popego (Jeometeri). Batsayakarolo ba tlaa matlafatsa kitso le go tlhaloganya ga bona ga go ruta le go rutiwa mo Karolong eno ya Diteng, ba tlaa ipaakanyetsa go ruta ditirwana tsa Boalo le Popego (Jeometeri) mo diphaposiborutelong tsa bona le go sedisisa melawana ya go kaela e e kaelang go ruta.

## Dipoelothuto

- Go sedisisa tiragatso ya Kgweditharo 1 Dibeke 1–2
- Go sedisisa ditogamaano tsa go tshegetsa go ruta dipalo mo Mophato R (sk. tharabololo ya dipalo, tlhotlhomisa, tshedisiso, go botsa dipotso, go akanyetsa go go tseneletseng, go reetsa ka matlhagatlhaga, kelotlhoko)
- Go inaakanya le Diteng tsa Lenaneo la Dipalo la Kgweditharo 1 Dibeke 3–5 (Boalo le Popego (Jeometeri))

Go dirisa melawana ya Lenaneo la Dipalo mo go ipaakanyeng ga beke le beke

## Diteng tsa thutano

- Pulo le tshedisiso (Ura e le 1)
- Karolo 1: Thadiso ya diteng (Ura e le 1)

TEE

- Karolo 2: Boalo le Popego (Jeometeri) (Diura di le 2)

DIJOTSHEGARE

- Karolo 3: Go ithulaganyetsa go ruta (Diura di le 2)

## Ipaakanyo

- PPT kamogelo le dipoelo
- Kopolola le go segolola dikgemetšhana tsa Mametlelelo B mme o di tsenye mo enfolopong e le nngwe ya setlhopha se sengwe le se sengwe.
- Seta sebakakgoreletso se se bonolo mo sebakeng se se bulegileng.
- Baakanya ditafole di na le didiriswa pele ga karolo e nngwe le e nngwe.

## Materials

- Flipchart paper, kokis
- Props for obstacle course
- *Concept Guide*
- *Poster Book*
- *Activity Guide: Term 1*
- Boxes, balls and ramps for each table
- Large sheet of newsprint (for tracing around a person)
- Newsprint and crayons for each table
- Attribute blocks for each table

## Didiriswa

- Pampiri ya tšhatephetogi, dikhokhi
- Diporopo tsa sebakakgoreletsi
- *Kaedi ya Mogopolo*
- *Buka ya Diphousetara*
- *Kaedi ya Ditirwana: Kgweditharo 1*
- Mabokoso, dikgwele le dirempe tsa tafole nngwe le nngwe
- Letlhare le legolo la dikgang tse di gatisitsweng (go sala motho morago)
- Dikgang tse di gatisitsweng le dikherayone tsa tafole e nngwe le e nngwe
- Dibolokoponagalo tsa tafole e nngwe le e nngwe

# Opening and reflection **1 hour**

**Facilitator's notes**

- PPT: Open the session, welcome participants and read through the outcomes for the workshop.
- Remind participants of the *Take back to school* task from the end of Workshop 1. Ask participants to work in groups to reflect on this task and to complete **Activity 1**.
- Groups share key points with the large group.
- List examples of good practice on newsprint and encourage participants to write these down or take a photograph of the newsprint as a record.
- On the ground, place a piece of string the length of the classroom. Mark one end of the string: 1 = the Maths Programme has made a big difference to my teaching. Mark the other end of the string: 10 = the Maths Programme has made no difference to my teaching.
- Invite a few participants at a time to stand on the string indicating where they fit on the scale and to explain why they chose to stand there.

In your Workshop 1 *Take back to school* task you were asked to complete several activities. We would like you to spend a few minutes reflecting on your progress so far.

In your groups, think about your maths teaching over the past two weeks and how successfully you have implemented Term 1 Weeks 1–2.

**Activity 1**

In your group, discuss your successes and challenges with implementing Term 1 Weeks 1–2 of the Maths Programme. Allow each person to have a turn to present their reflections.

1. Briefly describe how you organised your classroom and how you prepared for teaching these two weeks.

_____

_____

_____

2. Discuss what worked well and what you found difficult to implement. Does anyone have any helpful suggestions?

_____

_____

_____

# Pulo le tshedisiso

**Ura e le 1**

**Dintlha tsa mofatlhosi**

- PPT: Bula karolo, amogela batsayakorolo mme o buise dipoelo tsa thutano.
- Gopotsa batsayakarolo ka ga *Tirwana e o e busetsang kwa sekolong* go tswa kwa bokhutlong jwa Thutano 1. Kopa batsayakarolo go dira ka ditlhopha go sedisisa tirwana eno le go dira **Tirwana 1**
- A ditlhopha di arogane dintlha tsa botlhokwa le setlhopha se segolo.
- Kwala lenane la dikao tsa ditiragatso tse di siameng mo dikgannyeng tse di gatisitsweng mme o rotloetse batsayakarolo go di kwala kgotsa go di tsaya setshwantsho jaaka rekoto.
- Baya semikana sa mogala wa boleele jwa phaposiborutelo mo bodilong. Tshwaya bontlhabongwe jwa mogala: 1 = Lenaneo la Dipalo le dirile phapang e e seng kana ka sepe mo go ruteng ga me. Tshwaya bontlhabongwe jo bongwe: 10 = Lenaneo la Dipalo ga le a dira phapang epe mo go ruteng ga me.
- Laletsa batsayakarolo ba le mmalwa ka nako e le nngwe go ema mo mogaleng o o supang moo ba leng maleba gona- mo sekaleng le go tlhalosa gore ke ka ntlha yang ba eme foo.

Mo Thutanong 1 ya gago, mo tirwaneng ya *Tirwana e o* e *busetsang kwa sekolong*, o kopilwe go dira ditirwana tse dintsinyana. Re kopa gore mo metsotsong e le mmalwa o sedisise tswelelopele ya gago go fitlha gajaana.

Mo ditlhopheng tsa lona, akanya ka ga go ruta dipalo ga gago mo dibekeng tse pedi tse di fetileng le gore o kgonne go diragatsa jang Kgweditharo 1 Dibeke 1–2 ka katlego.

### Tirwana 1

Mo setlhopheng sa lona, buisanang ka ga katlego le dikgwetlho ka go diragatsa Kgweditharo 1 Dibeke 1–2 tsa Lenaneo la Dipalo. Letla gore mongwe le mongwe a nne le tšhono ya go tlhagiso ditshedisiso tsa bona.

1. Ka bokhutshwane tlhalosa gore o rulagantse jang phaposiborutelo ya gago le gore o ipaakanyeditse jang go ruta mo dibekeng tse pedi tseno.

_____

_____

_____

2. Buisanang ka gore ke eng se se diregileng sentle le gore ke eng se o boneng se le boima go diragadiwa. A go na le yo o nang le ditshikhinyo tse di ka thusang?

_____

_____

_____

3. Share how and when you applied the guiding principles of teaching in your daily programme Mathematics focus time?

_____

_____

_____

**Facilitator's notes**

- Wrap us this session with feedback from each group. Refer to specific activities in *Activity Guide: Term 1* to support what participants share.
- Discuss the video with a focus on how participants managed the teacher-guided activity in Week 2.

## Video 1

*Activity Guide: Term 1*, Week 2, Teacher-guided activity #3 (page 46)

Watch the video of the teacher-guided activity which involves a small group of learners.

What do you think the intention of the activity is? Pay special attention to how the teacher prompts the learners with questions and how she observes each learner.

_____

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In Workshop 1 we discussed the eight guiding principles of teaching maths in Grade R. Activity 2 requires that you to match each of the eight principles with two statements that best describe it.

**Facilitator's notes**

- Hand out one envelope containing the eight guiding principles of teaching and matching statements to each group.
- Explain that the participants need to match the principles with the statements to complete **Activity 2**.

## Activity 2

1. Each group has been given an envelope containing a number of strips. Find the eight guiding principles of teaching and place them in a row on your table.
2. Discuss each of the statements and decide with which principle it fits best. Place the statement under this principle.

3. Arogana ka gore o diragaditse jang melawana e e kaelang ya go ruta mo nakong e e tobilweng lenaneo la gago la Dipalo la letsatsi le letsatsi?

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_____
_____

**Dintlha tsa Mofatlhosi**

- Sobokanya karolo eno ka go neela ditlamorago tsa setlhopha se sengwe le se sengwe. Lebelela ditirwana tse di rileng mo *Kaedi ya Ditirwana*: *Kgweditharo* 1 go tshegetsa se batsayakarolo ba se aroganang.
- Buisanang ka ga video lo tobile ka moo batsayakarolo ba kgonneng tirwana e e kaelwang ke morutabana mo Bekeng 2.

## Video 1

*Kaedi ya Ditirwana: Kgweditharo 1*, Beke 2, Tirwana e e kaelwang ke morutabana #3 (tsebe 47)

Lebelela video ya tirwana e e kaelwang ke morutabana e e akaretsang setlhopha se sennye sa barutwana.

O akanya gore maikaelelao a tirwana ke afe? Tota mokgwa o morutabana o gwetlhang barutwana ka dipotso ka ona le gore o ela jang morutwana mongwe le mongwe tlhoko.

_____
_____
_____

Mo Thutanong 1, re tlhalositse melawana e e kaelang ya go ruta dipalo tsa Mophato wa R e le robedi. Tirwana ya 2 e tlhoka gore o nyalanye molawana o mongwe le o mongwe wa e le robedi le dipolelo tse pedi tse di o tlhalosang go gaisa.

**Dintlha tsa mofatlhosi**

- Neelana ka enfolopo e le nngwe e e nang le melawana e e kaelang ya go ruta e le robedi le dipolelo tse di nyalanang le setlhopha se sengwe le se sengwe.
- Tlhalosa gore batsayakarolo ba tlhoka go nyalanya melawana le dipolelo go dira **Tirwana 2**.

## Tirwana 2

1. Setlhopha sengwe le sengwe se neetswe enfolopo e e nang le dikgemetšhana tse di mmalwa. Batla melawana e e kaelang ya go ruta e le robedi mme o e beye mo moleng mo tafoleng ya gago.
2. Buisanang ka ga polelo nngwe le nngwe mme lo swetse gore ke molawana ofe o o maleba go gaisa. Baya polelo ka fa tlase ga molawana.

# Session 1: Content overview **1 hour**

**Facilitator's notes**

- Refer participants to pages 126–131 of the *Concept Guide*. Remind participants that this table provides the framework for all maths planning and will be used and referenced throughout the training.
- Ask participants to work in groups to complete **Activity 3**. Ask one person from each group to share their ideas.

## Term 1 Content overview: Space and Shape (Geometry)

The content for teaching and learning in Weeks 3–5 focuses mainly on the CAPS Content Area, Space and Shape (Geometry). This content involves more than teaching learners to identify geometric shapes. Their understanding of space and shape depends to a large extent on whether they understand and can use position vocabulary to describe the location of an object (e.g. on, in, next to, behind, in front of). Learners also need to be able to see objects from different positions or views (e.g. from the top, from the bottom, turned sideways, flipped upside down).

**Facilitator's notes**

- Ask the participants: If I say 'space and shape' what words come to mind?
- List the words that they share on flipchart paper.

Read the content overview for Space and Shape (Geometry) on pages 126–131 of the *Concept Guide*. It provides an overview of the Maths Programme content to be taught in each term of Grade R.

- The text in blue is the content from the Grade R CAPS for Mathematics.
- The text descriptions and content in black have been added to extend and build on CAPS.
- The topics are sequenced to show a developmental progression from one topic to another.

**Activity 3**

Look at 3.1–3.4 of the content overview for Space and Shape (Geometry) on pages 126–131 of the *Concept Guide*. In your group, do the following:

# Karolo 1: Thadiso ya diteng

**Ura e le 1**

**Dintlha tsa mofatlhosi**

- Lebisa batsayakarolo ditsebe 126–131 tsa *Kaedi ya Mogopolo*. Gopotsa batsayakarolo gore papetla eno e tlamela ka letlhomeso la ithulaganyetso ya dipalo yotlhe mme e tlaa dirisetswa le go dirisiwa jaaka motswedi mo katisong yotlhe.
- Kopa batsayakarolo go dira ka ditlhopha go dira **Tirwana 3**. Kopa motho a le mongwe go tswa mo setlhopheng se sengwe le se sengwe go arogana dikakanyo tsa bona.

## Kgweditharo 1 Thadiso ya diteng: Boalo le Popego (Jeometeri)

Diteng tsa go ruta le go ithuta mo Dibekeng 3–5 di tobile thata Karoloteng ya PPKT, Boalo le Popego (Jeometeri). Diteng tseno ga se fela go ruta barutwana go tlhaola dipopego tsa sejeometeri. Go tlhaloganya popego ga bona go ikaegile thata ka gore a ba tlhaloganya le gore ba ka tlhaloganya le go ka dirisa tlotlofoko ya boemo go tlhalosa lefelo la selo (sk. mo go, mo, gaufi le, morago, fa pele ga). Barutwana gape ba tlhoka go kgona go ka bona dilo go tswa mo boemong kgotsa tebong e e farologaneng (sk. go tswa kwa godimo, go tswa kwa tlase, thepogela kwa matlhakoreng, kgonamisa).

**Dintlha tsa mofatlhosi**

- Kopa batsayakarolo: Fa ke re 'boalo le popego' ke mafoko afe a o a akanyang?
- Anaanela mafoko a ba a aroganang mo pampiring ya tšhatephetogi.

Buisa thadiso ya diteng ka ga Boalo le Popego (Jeometeri) mo ditsebeng 126–131 tsa *Kaedi ya Mogopolo*. E neelana ka ga thadiso ya diteng tsa Lenaneo la Dipalo tse di tshwanetseng go rutiwa mo kgweditharong nngwe le nngwe ya Mophato wa R.

- Temana e e kwadilweng ka mmala o motala ke diteng tse di tswang mo PPKT ya Dipalo tsa Mophato R.
- Diteng tsa tlhaloso le diteng tse di kwadilweng ka mokwalo o montsho di tsentswe go atolosa le go agelela mo PPKT.
- Ditlhogo di latelana go bontsha tswelelopele e e golang go tswa mo setlhogong se sengwe go ya go se sengwe.

**Tirwana 3**

Lebelela 3.1–3.4 tsa thadiso ya diteng tsa Boalo le Popego (Jeometeri) mo ditsebeng 126–131 tsa *Kaedi ya Mogopolo*. Mo setlhopheng sa gago, dira tse di latelang:

1. Look at each topic and discuss the content and developmental progression across the four terms.

_____
_____
_____
_____

2. Look at the text in black and discuss what the Maths Programme adds to the content from CAPS.

_____
_____
_____
_____

Refer to the black text. Main additions to CAPS are:
- position of child in relation to their surroundings
- exploring 3-D objects: flat, round, square or rectangular shape
- rectangle (referred to incidentally in Term 1 and taught in Term 3)
- recognise, identify and name 2-D shapes
- comparing rectangles and squares
- curved and straight lines.

3. Why do you think that the weighting of Space and Shape (Geometry) is the second highest of the Content Areas in Grade R?

_____
_____
_____
_____

Understanding more about their world – everything around us has a shape. Learning the correct language enables learners to talk about and describe shapes.
Many of the terms also apply to understanding the position of number in the counting sequence or the sequence of items in a pattern. Many life skills depend on spatial awareness and skills, e.g. following directions or reading a map, packing things into a container, etc.

4. How have you approached teaching Space and Shape (Geometry) in your classroom? Give examples of lessons and activities that you have used in the past.

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_____
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_____

1. Lebelela setlhogo sengwe le sengwe mme lo buisanele diteng le tswelelopele e e tlisang tlhabololo go ralala dikgweditharo di le nne.

_____
_____
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_____

2. Lebelela mokwalo o o kwadilweng ka bontsho mme lo buisane ka ga se Lenaneo la Dipalo le se tshwaelang mo diteng tsa PPKT.

_____
_____
_____
_____

Lebelela mokwalo o montsho. Ditlaleletso tse dikgolo go PPKT ke:
- boemo jwa ngwana bo ikaegile ka tikologo ya gagwe
- go sedisisa dilo tsa 3-D: popego e e sephaphathi, kgolokwe, khutlonne kgotsa khutlonnetsepa
- khutlonnetsepa (e e lebeletseng se se diragalang mo Kgweditharong ya 1 le go rutiwa mo Kgweditharong ya 3)
- lemoga, tlhaola le go taya dipopego tsa 2-D maina
- go bapisa dikhutlonnetsepa le dikhutlonne
- methalo e e kgogoropo le e e tlhamaletseng.

3. Ke ka ntlha yang fa o akanya gore tekanyetso ya Boalo le Popego (Jeometeri) ke ya bobedi e e kwa godimo ya Dikaroloteng mo Mophatong wa R?

_____
_____
_____
_____

Go tlhaloganya lefatshe la bona go feta – dilo tsotlhe tse di re potologileng di na le popego. Go ithuta puo e e nepagetseng go kgontsha barutwana go bua ka ga dipopego le go di tlhalosa.
Bontsi jwa mareo gape bo dira mo go tlhaloganyeng boemo jwa dipalo mo tatelanong ya go bala kgotsa tatelanong ya dilwana mo pateroneng. Bontsi jwa dikgono tsa botshelo bo ikaegile ka temoso ya sebaka le dikgono, sk. go latela dikaelo kgotsa go buisa mmepe, go phutha dilo go di tsenya mo setshoding, j.j.

4. O inaakantse jang le go ruta Boalo le Popego (Jeometeri) mo phaposiborutelong ya gago? Neela dikao tsa dithuto le ditirwana tse o di dirisitseng mo nakong e e fetileng.

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_____

# Session 2: Space and Shape (Geometry) 2 hours

## Spatial concepts (30 minutes)

Learners start to learn about spatial concepts such as position, direction, orientation (different views) and perspective as they use their own bodies to explore the relationship between themselves, other people and objects.

**Facilitator's notes**

- Set up an obstacle course using chairs, hula hoops, planks, tables and a box.
- Examples of instructions to use:
  - Take two steps forward.
  - Jump into the hula hoop.
  - Jump out of the hula hoop.
  - Stand with one leg in the hula hoop.
  - Crawl forwards through the legs of the table.
  - Stand up and turn around.
  - Take three steps backwards.
  - Put one leg inside the hula hoop.
  - Jump over the box.
  - Walk between the chairs.
  - Stand in the box.

 **Activity 4**

The facilitator has set up a simple obstacle course. With a partner take turns to guide each other through the obstacle course. Use positional and directional language to give clear instructions.

### Using the *Poster Book* to talk about position and direction

**Facilitator's notes**

PPT: Poster 9: Ask questions that require answers that use position and direction words.

The Maths Programme's *Poster Book* provides opportunities to use real-life contexts to explore concepts. On Poster 9 of the *Poster Book* you can see where Malusi lives in relation to other people and places in his neighbourhood. This poster can be used to stimulate discussion about the position of people and objects in relation to one another and to encourage learners to use and become familiar with the language that describes space, position and direction. Learners link maths to their everyday lives as they discuss and solve problems.

# Karolo 2: Boalo le Popego (Jeometeri) **Diura di le 2**

## Megopolo ya manno **(Metsotso e le 30)**

Barutwana ba simolola go ithuta ka ga megopolo ya manno jaaka boemo, kaelo, tlwaetso (melebo e e farologaneng) le kakanyo fa ba ntse ba dirisa mebele ya bona go sedisisa dikamano magareng ga bona, batho ba bangwe le dilo.

**Dintlha tsa mofatlhosi**

- Dira sebakakgoreletso ka go dirisa ditulo, dihulahupu, mapolanka, ditafole le lebokoso.
- Dikao tsa ditaelo tse o ka di dirisang:
  - Tsaya dikgato tse pedi go ya kwa pele.
  - Tlolela mo hulahupung.
  - Tlolela kwa ntle ga hulahupu.
  - Ema ka leoto le le lengwe mo hulahupung.
  - Gagabela kwa pele o feta mo gare ga maoto a tafole.
  - Emelela mme o retologe.
  - Tsaya dikgato tse tharo go ya kwa morago.
  - Tsenya leoto le le lengwe mo gare ga hulahupu.
  - Tlola lebokoso.
  - Tsamaya mo magareng ga ditulo.
  - Ema mo lebokosong.

**Tirwana 4**

Mofatlhosi o dirile sebakakgoreletso se se bonolo. Refosana le molekane go kaelana mo sebakakgoreletsong. Dirisang puo ya boemo le ya bokaedi go neela ditaelo tse di utlwalang.

**Go bua ka ga boemo le kaelo ka go dirisa *Buka ya Diphousetara***

**Dintlha tsa mofatlhosi**

PPT: Phousetara 9: Botsa dipotso tse di tlhokang dikarabo tse di dirisang mafoko a boemo le kaelo.

*Buka ya Diphousetara* ya Lenaneo la Dipalo e tlamela ka ditšhono tsa go ka dirisa makaelo a botshelo jwa nnete go sedisisa megopolo. Mo Phousetareng 9 mo *Bukeng ya Diphousetara* o kgona go bona moo Malusi o nnang gona ka go mo bapisa le batho ba bangwe mo boagisaning. Phousetara e ka dirisiwa go tlhotlheletsa dipuisano ka ga boemo jwa batho le dilo ka go di bapisa le tse dingwe le go rotloetsa barutwana go dirisa le go itse puo e e tlhalosang boalo, boemo le kaelo. Barutwana ba golagana dipalo le botshelo jwa bona jwa letsatsi le letsatsi fa ba buisana le go rarabolola dipalo.

**Facilitator's notes**

- Ask participants to complete **Activity 5** in their small groups. Have each group report back on the activity.
- Remind participants that position and direction questions and vocabulary are introduced not only during Mathematics focus times, but are also woven into the daily programme throughout the school day. Also remind them that the teacher plays an important role in modelling appropriate vocabulary.

## Activity 5

In your group, look at Poster 9 and discuss the following:

1. What position and direction words could you introduce to learners and encourage them to use?

_____

_____

_____

**Position:** on top of, behind, in front of, in, on, under, next to.
**Direction**: turn, straight, forwards, towards, away from, left, right, to, from, around, along, through.

2. What other questions could you ask learners that would help them to learn about position, direction, orientation (views) and perspective?

_____

_____

_____

Examples:
- Where is …?
- What is in front/behind/under/next to the …?
- How will Malusi get to …?

**Facilitator's notes**

- Draw attention to Malusi waving goodbye to Granny. Ask the participants:
  - What do you see in the picture?
  - Where do you think Malusi is going?
  - How do you think he will get there?
- List the direction words as they are called out, e.g. turn, straight, forwards, towards, away from, left, right, to, from, around, along, through.
- Ask the participants: Where in the playground could Malusi hide from the other learners?
- List the position words, e.g. top of, behind, in, on, under, bottom, next to, upside down.
- PPT: Briefly define the spatial concepts of position, direction, orientation (views) and perspective. Discuss how learners first use their own bodies to explore spatial concepts.
- Ask participants what kinds of activities in their daily programmes will help learners develop the understanding of these spatial concepts.

Refer to pages 172–177 of the *Concept Guide* to read more about space.

**Dintlha tsa mofatlhosi**

- Kopa batsayakarolo go dira **Tirwana 5** mo ditlhopheng tsa bona tse dinnye. A setlhopha se sengwe le se sengwe se bege ka ga tirwana.
- Gopotsa batsayakarolo gore dipotso tsa boemo le kaelo le tlotlofoko ga di tlhagisiwe fela mo Nakong e e tobileng ya Dipalo, mme gape di ageletswe mo lenaneong la letsatsi le letsatsi mo letsatsing lotlhe la sekolo. Ba gopotse gape gore morutabana o na le seabe se se seng kana ka sepe mo go diriseng tlotlofoko e e maleba.

## Tirwana 5

Mo setlhopheng sa gago, lebelela Phousetara 9 mme lo buisane ka ga tse di latelang:

1. O ka tlhagisetsa barutwana mafoko afe a boemo le kaelo le go ba rotloetsa go a dirisa?

_____

_____

_____

**Boemo:** mo godimo ga, fa morago, fa pele ga, mo teng, mo, ka fa tlase, gaufi le.
**Kaelo**: thepoga, tlhamalala, kwa pele, go ya, go tswa, molema, moja, go ya go, go tswa go, go potologa, go bapa le, go ralala.

2. Ke dipotso dife gape tse o ka di botsang barutwana tse di ka ba thusang go ithuta ka ga boemo, kaelo, tlwaetso (melebo) le kakanyo?

_____

_____

_____

Dikao:
- … se kae?
- Ke eng se se fa pele/fa morago/ka fa tlase/gaufi le …?
- Malusi o tlaa fitlha jang kwa …?

**Dintlha tsa mofatlhosi**

- Gogela tlhokomela mo go Malusi a laela Nkoko ka go tsholetsa seatla. Botsa batsayakarolo:
  - Lo bonang mo setshwantshong?
  - Lo akanya gore Malusi o ya kae?
  - Lo akanya gore o ya go fitlha jang koo?
- Neela lenane la mafoko a bokaedi fa a buiwa, sk. thepoga, tlhamalala, kwa pele, go ya, go tswa, Molema, moja, go ya go, go tswa go, go potologa, go bapa le, go ralala.
- Botsa batsayakarolo: Malusi o ka tswa a iphitlhetse bana ba bangwe fa kae mo lebaleng la go tshameka?
- Neela mafoko a boemo, sk. godimo ga, fa morago, mo teng ga, mo, ka fa tlase, kwa morago, gaufi le, pitikolotswe.
- PPT: Ka bokhutshwane tlhalosa megopolo ya manno a boemo, kaelo, tlwaetso (melebo) le kakanyo. Buisanang ka moo barutwana ba dirisang mebele ya bona go sedisisa megopolo ya manno.
- Botsa batsayakarolo gore ke mefuta efe ya ditirwana mo mananeong a bona a letsatsi le letsatsi e e ka ba thusang go godisa go tlhaloganya megopolo eno ya manno.

Lebelela ditsebe 172–177 tsa *Kaedi ya Mogopolo* go buisa go le gontsi ka ga boalo.

## Introducing shapes (1 hour)

**Facilitator's notes**

- In Grade R learners recognise, identify and name three-dimensional (3-D) objects and two-dimensional (2-D) shapes.
- Refer to pages 178–189 of the *Concept Guide*.
- Discuss the terms '2-D shapes' and '3-D objects'.
- Use real objects to demonstrate as you explain the difference between these terms.

In Grade R learners focus on recognising, identifying and naming three-dimensional (3-D) objects and two-dimensional (2-D) shapes.

- 3-D means that an object has three dimensions: length, breadth (width) and height.
- 2-D means that a shape has two dimensions: length and breadth (width).

### Recognising, identifying and comparing three-dimensional objects

**Facilitator's notes**

- Discuss how learners engage with the properties of 3-D objects as they explore everyday materials such as boxes, cans, toilet roll inners, balls and so on.
- Ask participants what they provide in their classrooms that helps learners to discuss, compare and sort objects. Explain that the next activity will demonstrate how to help learners recognise the properties of objects.
- Show the video and ask participants to complete the activity in their groups.

In Grade R learners explore the properties of everyday objects. They build constructions using recycled household materials such as boxes, cans, tubs, toilet roll inners, balls and so on. They investigate and describe box- and ball-shaped objects. They compare and sort objects and talk about similarities and differences.

**Video 2**

*Activity Guide: Term 1*, Week 3, Day 1 #4 (page 54)

Watch the video of a teacher talking to learners who are sorting a collection of objects. Listen to how she prompts the learners to explain how they are sorting the objects and how to use the correct terms to describe each object.

Refer to pages 178–181 of the *Concept Guide* to read more about 3-D objects.

## Go tlhagisa dipopego (Ura e le 1)

**Dintlha tsa mofatlhosi**

- Mo Mophatong wa R, barutwana ba lemoga, tlhaola le go neela maina a dilo tsa tlhakoretharo (3-D) le dibopego tsa tlhakorepedi (2-D).
- Lebelela ditsebe 178–189 tsa *Kaedi ya Mogopolo*.
- Buisanang ka ga mareo 'dibopego tsa 2-D' le 'dilo tsa 3-D'.
- Dirisa dilo tsa nnete go supa fa o tlhalosa pharologano magareng ga mareo.

Mo Mophato wa R, barutwana ba lebelela go lemoga, go tlhaola le go neela maina a dilo tsa tlhakoretharo (3-D) le dibopego tsa tlhakorepedi (2-D).

- 3-D e kaya gore selo se na le matlhakore a mararo: boleele, boalo (bophara) le bogodimo.
- 2-D e kaya gore sebopego se na le matlhakore a mabedi: boleele le boalo (bophara).

### Go lemoga, go tlhaola le go bapisa dilo tsa tlhakoretharo

**Dintlha tsa mofatlhosi**

- Buisanang ka ga moo barutwana ba mekamekanang le diponagalo tsa dilo tsa 3-D ka teng fa ba sedisisa dilo tsa letsatsi le letsatsi jaaka mabokoso, meteme, mateng a dipampiri tsa ntlwanaboithusetso, dikgwele jalo le jalo.
- Botsa batsayakarolo ka ga tse ba neelanang ka tsona mo diphaposiborutelong tsa bona go ba thusa go buisana, go bapisa le go rulaganya dilo. Tlhalosa gore tirwana e e latelang e tlaa supa gore barutwana ba ka thusiwa jang go lemoga diponagalo tsa dilo.
- Bontsha batsayakarolo video mme o ba kope go dira tirwana mo ditlhopheng tsa bona.

Barutwana ba Mophato wa R ba sedisisa diponagalo tsa dilo tse di tlwaelegileng. Ba aga dikago ka go dirisa dilo tse di dirisiwang gape tsa mo lapeng jaaka mabokoso, meteme, ditshodi, mateng a dipampiri tsa ntlwanaboithusetso, dikgwele jalo le jalo. Ba tlhotlhomisa le go tlhalosa dilo tse di bopegileng jaaka mabokoso le dikgwele. Ba bapisa dilo le go di rulaganya le go bua ka ga ditshwano le dipharologano tsa tsona.

**Video 2**

*Kaedi ya Ditirwana: Kgweditharo 1*, Beke 3, Letsatsi 1 #4 (tsebe 55)

Lebelela video ya morutabana a bua le barutwana ba ba rulaganyang dilo tse di kokoantsweng. Reetsa ka moo a tlhotlheletsang barutwana go tlhalosa gore ba rulaganya dilo jang le gore ba dirisa jang mareo a a nepagetseng go tlhalosa selo se sengwe le se sengwe.

Lebelela ditsebe 178–181 tsa *Kaedi ya Ditirwana* go buisa go le gontsi ka ga dilo tsa 3-D.

## Moving from 3-D objects to 2-D shapes

**Facilitator's notes**

- Ask a volunteer to join you. Ask participants to look at this person from the front, the top and the side, and to describe what they see. Explain that we can view this person from many different positions if we move or if we turn them.
- Ask the volunteer to lie flat on his/her back on a large sheet of paper and trace around him/her with a koki. Once the outline has been drawn, have the participant stand up.
- Ask participants what they see on the paper.
- Ask questions that focus on the person and on the shape or outline of the person, for example: Can you look at the drawing from different positions?
- Place a number of boxes, a large piece of paper and crayons on each group's table. Explain that the participants will explore the boxes in **Activity 6**.
- After the activity discuss what participants observed. Point out that this activity helps learners create shapes by tracing around the base of objects.

In Grade R, the focus is on the properties of objects and shapes. Learners learn to identify and describe the properties of both objects and shapes.

### Activity 6

Explore and describe the properties of a box.

- Place a box on a piece of paper.
- Trace around the base of the box.
- Describe the lines of your drawing.
  Straight, four, two long and two short/all the same

**Go tswa go dilo tsa 3-D go ya go dibopego tsa 2-D**

**Dintlha tsa mofatlhosi**

- Kopa moithaopi go dira le wena. Kopa batsayakarolo go lebelela motho yo go tswa kwa pele, go tswa kwa godimo le kwa matlhakoreng, le go tlhalosa se ba se bonang. Tlhalosa gore re kgona go leba motho yono go tswa mo boemong jo bo farologaneng fa re mo tshikinya kgotsa re mo retolola.
- Kopa moithaopi go robala a kaname mo letlhareng le legolo la pampiri mme o mo thalelele ka khokhi. Fa molantle o thadilwe, kopa motsayakarolo go emelela.
- Botsa batsayakarolo gore ba bonang mo pampiring.
- Botsa dipotso tse di tobileng motho le popego kgotsa molantle wa motho, sekao: a o ka leba sethalo go tswa mo boemong jo bo farologaneng?
- Baya mabokoso a le mmalwa, letlhare le legolo la pampiri le dikherayone mo tafoleng ya setlhopha se sengwe le se sengwe. Tlhalosa gore batsayakarolo ba tlaa sedisisa mabokoso mo **Tirwaneng 6**.
- Morago ga tirwana, buisanang ka se batsayakarolo ba se etseng tlhoko. Supa gore tirwana eno e thusa barutwana go tlhama dipopego ka go thalelela mathoko a dilo.

Mo Mophato wa R, go totilwe diponagalo tsa dilo le dipopego. Barutwana ba ithuta go tlhaola le go tlhalosa diponagalo tsa dilo le dipopego.

### Tirwana 6

Sedisisa le go tlhalosa diponagalo tsa lebokoso.

- Baya lebokoso mo lenathwaneng la pampiri.
- Thalelela lethoko la lebokoso.
- Tlhalosa mela ya mothalo wa gago.

  Tlhamaletse, mene, e mebedi e meleele fa e mebedi e le mekhutshwane/e tshwana yotlhe

- Name the shape you have drawn.
- How do you know it's a square/rectangle?
- How many sides does it have?
- How many corners does it have?
- What is the difference between the box and the square/rectangle?

**Recognising, describing and comparing two-dimensional shapes**

**Facilitator's notes**

- Explain that learners also need opportunities to explore a variety of shapes to find out what the common properties of a particular shape are. Refer participants to **Activity 7** and ask them to use their attribute blocks and to follow the instructions.
- Point out that the attribute block is an object. (It has length, width and height.) If you focus on the surface of the attribute block by running your finger along the edges, you will follow the lines and trace the length and width of the shape, e.g. a square, rectangle, triangle or circle (the edge of the circle is curved).
- Ensure that participants understand the difference between 3-D and 2-D and can explain this to learners.
- Emphasise that in Grade R learners do not learn the terms 3-D and 2-D. They only talk about 'objects' and 'shapes', but they should use the correct vocabulary to describe the properties.
- Link **Activity 7** to Poster 8 and briefly discuss the shapes.
- Explain the term 'orientation'.

Learners need to observe and discuss a variety of 2-D shapes to find out what the common properties of a particular shape are, e.g. even though all triangles may not look exactly the same, they all have three sides and three corners; all rectangles have four sides regardless of the orientation.

Use the attribute blocks on your table to explore 2-D shapes.

**Activity 7**

In your group, talk about the shape of the surface of each attribute block.

- Look for a shape that has four corners.
- Use your finger to trace around the shape. What is the shape called?
- Look for a shape that has no straight sides.
- Use your finger to trace around the shape. What is the shape called?
- Think of a question that would encourage learners to think and reason.

Refer to pages 182–189 of the *Concept Guide* to read more about 2-D shapes.

- Neela leina la popego e o e thadileng.
- O itse jang gore ke khutlonne/khutlonnetsepa?
- E na le matlhakore a le makae?
- E na le dikhutlo di le kae?
- Pharologano magareng ga lebokoso le khutlonne/khutlonnetsepa ke efe?

**Go lemoga, go tlhalosa le go bapisa dibopego tsa tlhakorepedi**

**Dintlha tsa mofatlhosi**

- Tlhalosa gore barutwana le bona ba tlhoka ditšhono go sedisisa dipopego tsa methalethale go batla diponagalo tse di tlwaelegileng tsa popego e e rileng. Kopa batsayakarolo go lebelela **Tirwana 7** mme o ba kope go dirisa dibolokoponagalo tsa bona le go latela ditaelo.
- Supa gore bolokoponagalo ke selo. (e na le boleele, bophara le bogodimo.) Fa o tobile bodilo jwa bolokoponagalo ka go tsamaisa monwana mo godimo ga mathoko, o tlaa latela mela le go thalelela boleele le bophara jwa popego, sk. khutlonne, khutlonnetsepa, khutlotharo kgotsa sediko (lethoko la sediko le kgogoropo).
- Netefatsa gore batsayakarolo ba tlhaloganya pharologano magareng ga 3-D le 2-D le gore ba ka di tlhalosetsa barutwana.
- Gatelela gore mo Mophatong wa R, barutwana ga ba ithute mareo 3-D le 2-D. Ba bua fela ka ga 'dilo' le 'dipopego', fela ba tshwanetse go dirisa tlotlofoko e e nepagetseng go tlhalosa diponagalo.
- Golaganya **Tirwana 7** le Phousetara 8 mme o tlhalose dipopego ka bokhutshwane.
- Tlhalosa lereo 'tlwaetso'.

Barutwana ba tlhoka go lemoga le go buisana ka ga methalethale ya dibopego tsa 2-D go tlhotlhomisa gore diponagalo tse di tshwanang tsa popego e e rileng ke dife, sk. le fa dikhutlotharo tsotlhe di ka tswa di sa lebege di tshwana, tsotlhe di na le matlhakore a marao le dikhutlo tse tharo; dikhutlonnetsepa tsotlhe di na le matlhakore a le mane go sa kgathalesege tlwaetso ya tsona.

Dirisa dibolokoponagalo mo tafoleng ya gago go sedisisa dibopego tsa 2-D.

**Tirwana 7**

Mo setlhopheng sa gago, buang ka ga popego ya boalo jwa bolokoponagalo e nngwe le e nngwe.

- Batla popego e e nang le dikhutlo tse nne.
- Dirisa monwana wa gago go thalelela popego. Popego e bidiwang?
- Batla popego e e senang matlhakore a a tlhamaletseng.
- Dirisa monwana wa gago go thalelela popego. Popego e e bidiwang?
- Akanya ka ga potso e e ka rotloetsang barutwana go akanya le go neela mabaka.

Lebelela ditsebe 182–189 tsa *Kaedi ya Mogopolo* go buisa go le gontsi ka dipopego tsa 2-D.

## Symmetry (30 minutes)

**Facilitator's notes**

- PPT: Symmetrical and non-symmetrical shapes and objects. Refer to pages 188–191 of the *Concept Guide*.
- Remind participants about the **practice principle** and that learners need many opportunities to practise new skills and apply them in different contexts.

An object or shape has symmetry when it can be divided into two equal halves along a central line. Symmetrical patterns can be found on our bodies, in nature, in the built environment and in pictures. Line symmetry divides the shape into two identical parts. The line can be horizontal or vertical.

Refer to pages 188–191 of the *Concept Guide* to read more about symmetry.

The **practice principle:** Learners should have plenty of time to practise new skills and knowledge. When learners have regular practice in what they have already learnt, they become more competent and more confident. Learners enjoy repetition and practice. The Grade R teacher should provide repeated opportunities for learners to practise and improve new skills.

## Tekano (Metsotso e le 30)

**Dintlha tsa Mofatlhosi**

- PPT: Dipopego tsa tekano le tse e seng tsa tekano le dilo. Lebelela ditsebe 188–191 tsa *Kaedi ya Mogopolo*.
- Gopotsa batsayakarolo ka ga **molawana wa tiragatso** le gore barutwana ba tlhoka ditšhono tse dintsi go diragatsa dikgono tse dišwa le go di diragatsa mo makaelong a a farologaneng.

Selo kgotsa popego e na le tekano fa e kgona go aroganngwa ka diripa tse pedi tse di lekanang go iphaphatha le mola-gare. Dipaterone tsa tekano di ka bonwa mo mebeleng ya rona, mo tlhagong, mo tikologong e e ageletsweng le mo ditshwantshong. Tekano ya mela e arola popego ka dikarolo tse pedi tse di lekanang. Mola o ka rapalala kgotsa wa thokgama.

Lebelela ditsebe 188–191 tsa *Kaedi ya Mogopolo* go buisa go le gontsi ka tekano.

**Molawana wa tiragatso:** Barutwana ba tshwanetse ba bo ba na le nako e ntsi go ikatisetsa dikgono le kitso e ntšhwa. Fa barutwana ba na le ikatiso ya nako le nako tebang le se ba setseng ba se ithutile, ba nna le bokgoni jo bontsi le go itshepa thata. Barutwana ba itumelela poeletso le ikatiso. Morutabana wa Mophato wa R o tshwanetse go neelana ka ditšhono tse di ipoeletsang gore barutwana ba ikatise le go tokafatsa dikgono tse dišwa.

# Session 3: Planning for teaching **2 hours**

**Facilitator's notes**

- Refer participants to Appendix A: Term 1 Weekly Content Summary (Weeks 3–5).
- Read the whole class, teacher-guided and workstation activities sections.
- Have participants work in groups to complete **Activity 8**.

## Term 1 Content Summary (Weeks 3–5) **(40 minutes)**

Appendix A: Term 1 Weekly Content Summary (Weeks 3–5) 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.

Read the whole class, teacher-guided and workstation activities sections and complete Activity 8.

**Activity 8**

Look at Appendix A: Term 1 Weekly Content Summary (Weeks 3–5). Answer the questions.

| Questions | Week 3 | Week 4 | Week 5 |
|---|---|---|---|
| What is the Content Area Focus for the week? | Space and Shape (Geometry) | Space and Shape (Geometry) | Space and Shape (Geometry) |
| What are the key concepts that learners will be learning? | Properties of 3-D objects<br>Spatial concepts: in and out<br>Big and small | Properties of 2-D shapes (circle)<br>Symmetry | Properties of 2-D shapes (square)<br>Backwards, forwards inside, outside |
| What new knowledge is introduced? | Counting objects 1–5<br>Properties of boxes and balls<br>Objects that roll or slide<br>Position: in and out<br>Big and small<br>Biggest and smallest | Circle<br>Symmetry<br>Number 2 | 2-D shape: square<br>Direction: forwards and backwards<br>Position: inside and outside |
| What skills are being practised? | Oral counting 1–5<br>Reinforce number 1<br>Sorting | Oral counting 1–5<br>Number 1<br>Counting objects 1–5 | Circle<br>Number concept 1 and 2<br>Oral counting 1–5<br>Counting objects 1–5 |

# Karolo 3: Go ithulaganyetsa go ruta **Diura di le 2**

**Dintlha tsa mofatlhosi**

- Kopa batsayakarolo go lebelela Mametlelelo A: Kgweditharo 1 Khutshwafatso ya Diteng tsa Beke le Beke (Dibeke 3–5).
- Buisa dikarolwana tsa ditirwana tsa phaposiborutelo yotlhe, tse di kaelwang ke morutabana le tsa seteišenetiro.
- A batsayakarolo ba dire ka ditlhopha go wetsa **Tirwana 8.**

## Kweditharo 1 Khutshwafatso ya Diteng (Dibeke 3–5) **(Metsotso 40)**

Mametlelelo A: Kgweditharo 1 Khutshwafatso ya Diteng tsa Beke le Beke (Dibeke 3–5) e thadisa Karoloteng e e Lebeletsweng ya beke le beke, ditlhogo tse di tshwanetseng go lejwa, kitso e ntšhwa le ikatiso e e lebeletsweng ya beke nngwe le nngwe, le ditirwana tse di tshikhintsweng tsa phaposiborutelo yotlhe, tirwana e e kaelwang ke morutabana le tirwana ya boikemedi ya beke.

Buisa dikarolwana tsa ditirwana tsa phaposiborutelo yotlhe, tse di kaelwang ke morutabana le tsa seteišenetiro mme o dire Tirwana 8.

**Tirwana 8**

Lebelela Mametlelelo A: Kgweditharo 1 Khutshwafatso ya Diteng tsa Beke le Beke (Dibeke 3–5). Araba dipotso.

| Dipotso | Beke 3 | Beke 4 | Beke 5 |
|---|---|---|---|
| Karoloteng e e Lebeletsweng mo bekeng eno ke efe? | Boalo le Popego (Jeometeri) | Boalo le Popego (Jeometeri) | Boalo le Popego (Jeometeri) |
| Barutwana ba tlaa bo ba ithuta megopolo efe ya botlhokwa? | Dipharologantsho tsa dilo tsa 3-D<br>Megopolo ya manno mo teng le kwa ntle<br>Kgolo le nnye | Dipharologantsho tsa dipopego tsa 2-D (sediko)<br>Tekano | Dipharologantsho tsa dipopego tsa 2-D (khutlonne)<br>Kwa morago, kwa pele<br>Mo teng, kwa ntle |
| Go tlaa tlhagisiwa kitso efe e ntšhwa? | Go bala dilo 1–5<br>Dipharologantsho tsa mabokoso le dikgwele<br>Dilo tse di relelang kgotsa tse di kgokologang<br>Maemo: mo teng le kwa ntle<br>Kgolo le nnye<br>Kgolo thata le nnye thata | Sediko<br>Tekano<br>Nomore 2 | Popego ya 2-D: khutlonne<br>Bontlha: kwa pele le kwa morago<br>Maemo: mo teng le kwa ntle |
| Ke dikgono dife tse di diragadiwang mo Bekeng ya 2? | Go balela kwa godimo 1–5<br>Go gatelela nomore 1<br>Go rulaganya | Go balela kwa godimo 1–5<br>Nomore 1<br>Go bala dilo 1–5 | Sediko<br>Megopolo ya dipalo 1 le 2<br>Go balela kwa godimo 1–5<br>Go bala dilo 1–5 |

## Activity Guide: Term 1: Weeks 3, 4 and 5 (60 minutes)

### Video 3

*Activity Guide: Term 1*, Week 5, Day 3 #4 (page 90)

Watch the video of learners discussing a poster.

1. Make a note of the questions and maths problems that the teacher presents to the learners during the poster discussion.

_____
_____
_____

2. Write down other questions that the teacher could have asked.

_____
_____
_____

Refer to Weeks 3, 4 and 5 in *Activity Guide: Term 1*. Complete Activity 9 in your group.

### Activity 9

1. Find Weeks 3, 4 and 5 in *Activity Guide: Term 1*. Answer the questions.
   - What is the Content Area Focus for each week?
   - What topics and new knowledge are taught in each week?
   - How does the 'Practise' content link to the previous week?
   - What do you need to get ready before teaching each week?
   - Read the whole class activities and small group activities.
   - Discuss in your small group how you will plan and organise your class for these three weeks of teaching.
2. Refer to Appendix A: Term 1 Weekly Content Summary (Weeks 3–5). Match the whole class and small group activities in Weeks 3, 4 and 5 of the *Activity Guide: Term 1* to the Content Summary for each week.

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.

## Kaedi ya Ditirwana: Kgweditharo 1: Dibeke 3, 4 le 5 (Metsotso 60)

### Video 3

*Kaedi ya Ditirwana: Kgweditharo 1*, Beke 5, Letsatsi 3 #4 (tsebe 91)

Lebelela video ya barutwana ba buisanela phousetara.

1. Kwala dipotso le ditirwana tsa dipalo tse morutabana o di tlhagisetsang barutwana ka nako ya go buisanela phousetara.

_____
_____
_____

2. Kwala dipotso tse dingwe tse morutabana o ka bong a di boditse.

_____
_____
_____

Lebelela Dibeke 3, 4 le 5 mo *Kaedi ya Ditirwana*: *Kgweditharo 1*. Dirang Tirwana 9 mo ditlhopheng tsa lona.

### Tirwana 9

1. Batla Dibeke 3, 4 le 5 mo *Kaeding ya Ditirwana: Kgweditharo 1*. Araba dipotso.
   - Karoloteng e e Lebeletsweng ya beke nngwe le nngwe ke efe?
   - Ke setlhogo le kitso efe e ntšhwa tse di rutiwang mo bekeng e nngwe le e nngwe?
   - Diteng tsa 'Ikatise' di golagana jang le beke e fetileng?
   - O tlhokang go ipaakanya pele ga o ruta beke nngwe le nngwe?
   - Buisa ditirwana tsa phaposiborutelo yotlhe le tsa ditlhopha tse dinnye?
   - Mo setlhopheng sa gago se sennye, buisanang gore lo tlaa rulaganya jang diphaposiborutelo tsa lona mo dibekeng tse tharo tseno tsa go ruta.
2. Lebelela Mametlelelo A: Kgweditharo 1 Khutshwafatso ya Diteng tsa Beke le Beke (Dibeke 3–5). Nyalanya ditirwana tsa phaposiborutelo yotlhe le tsa ditlhopha tse dinnye mo Bekeng 3, 4 le 5 ya *Kaedi ya Ditirwana: Kgweditharo 1* le Khutshwafatso ya Diteng tsa Beke nngwe le nngwe.

Gopola gore mo Mophato wa R, tlhatlhobo ke e e sa tlhomamang mme e bile ke e e tswelelang. Re tlhoka go ela barutwana botlhe tlhoko letsatsi lotlhe, mo gare le kwa ntle ga phaposiborutelo. Aekhone ya leitlho e re gopotsa gore re tlhoka go ela barutwana tlhoko fa ba ntse ba dira, le gore re tlhoka go reetsa ka kelotlhoko fa ba bua le rona le balekane ba bona.

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.

## Closing activities (20 minutes)

**Facilitator's notes**

- **Lessons learnt:** Ask participants to think about what they have learnt during the workshop and to complete **Activity 10** individually.
- **Take back to school task:** Read through this task. Ask if there is anything that is not clear and that requires more explanation.
- **Evaluation:** Hand out copies of the Workshop Evaluation Form and have participants complete the form.
- **Next workshop:** Give dates for the next workshop and close the workshop.

 **Activity 10**

**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 |
|---|---|
| | |

Lenaneo la Dipalo le thadilwe go lebeletswe tikologo ya ditlhopha tse dinnye mo gare ga beke mme morutabana a lebelele setlhopha se le sengwe mo letsatsing, a ba lebeletse le go ba reetsa fa barutwana ba dira ditirwana tse di rileng. Nako eno e naya morutabana tšhono go ela tlhoko morutwana yo mongwe le yo mongwe ka kelotlhoko le go kokoanya tshedimosetso ka ga tswelelopele ya bona.

Lebelela boloko e e ntshofaditsweng kwa bokhutlong jwa tirwana e e kaelwang ke morutabana: '**Tlhola gore a barutwana ba kgona go**'. Morutabana a tseye dintlha ka ga morutwana mongwe le mongwe mo tlhogong mme fa barutwana ba na le letsatsi ba tsamaile a kwale tse a di etseng tlhoko mo bukeng e e tlhaoletsweng go ela tlhoko e e nang le sebaka sa go ka kwala dintlha ka ga morutwana mongwe le mongwe.

## Ditirwana tsa tswalelo **(Metsotso e le 20)**

| **Dintlha tsa mofatlhosi** |
|---|
| ♦ **Se o se ithutileng**: Kopa batsayakarolo go akanya ka ga se ba se ithutileng mo thutanong le go dira **Tirwana 10** ya motho ka nosi. |
| ♦ **Tirwana e o e busetsang kwa sekolong**: Buisa tirwana eno. Botsa gore a go na le sengwe se se sa tlhakang mme se tlhoka go tlhalosiwa gape. |
| ♦ **Tlhatlhobo**: Ntsha dikhophi tsa Foromo ya Tlhatlhobo ya Thutano mme o kope batsayakarolo go e tlatsa. |
| ♦ **Thutano e e latelang**: Neela matlha a thutano e e latelang mme o khutlise thutano. |

### **Tirwana 10**

**Se o se ithutileng:** Akanya ka ga se o se ithutileng ka nako ya thutano mme o tlatse papetla.

| **Dilo tse ke setseng ke di dira mme di dira sentle** | **Dikakanyo tse diswa tse ke ratang go di lekeletsa** |
|---|---|
| | |

**Take back to school task**

1. Read the *Concept Guide* pages that were referred to during this workshop.
2. Prepare a Space and Shape (Geometry) maths area. Take a photograph of it and bring it to the next workshop.
3. Use *Activity Guide: Term 1* to plan and implement Weeks 3–5 of the Maths Programme. When planning, think about how the guiding principles will inform your planning and teaching:

   - How will you find out what learners already know and understand? (**level principle**)

   - How will you build on the prior knowledge that learners bring from home? (**context principle**)

   - How will you ensure that the planned activities are meaningful for learners? (**context principle**)

   - How will you build active listening and speaking into your planned activities? (**interaction principle**)
4. Write a reflection of what worked well and what did not work so well. Bring your reflection notes and some examples of work that the learners did to the next workshop.

**Evaluation**

Complete the Evaluation Form.

**Tirwana e o e busetsang kwa sekolong**

1. Buisa ditsebe tsa *Kaedi ya Mogopolo* tse di neng di lebilwe ka nako ya thutano.
2. Baakanya lefelo la dipalo tsa Boalo le Popego (Jeometeri). Le tseye ditshwantsho mme o tle ka tsona mo thutanong e e latelang.
3. Dirisa *Kaedi ya Ditirwana*: *Kgweditharo* 1 go ithulaganya le go diragatsa Dibeke 3–5 tsa Lenaneo la Dipalo. Fa o ipaakanya, akanya ka gore melawana e e kaelang e tlaa nna le seabe mo ithulaganyong le thutong ya gago:

   - O tlaa lemoga jang se barutwana ba setseng ba se itse le go se tlhaloganya? (**molawana wa maemo**)

   - O tlaa agelela jang mo kitsong ya pele e barutwana ba tlang ka yona go tswa kwa gae? (**molawana wa bokaelo**)

   - O tlaa netefatsa jang gore ditirwana tse di rulagantsweng di botlhokwa mo barutwaneng? (**molawana wa bokaelo**)

   - O tlaa agelela jang theetso le go bua ka matlhagatlhaga mo ditirwaneng tsa gago tse di rulagantsweng? (**molawana wa tirisano**)
4. Kwala tshedisiso ya se se dirileng sentle le gore ke eng se se sa dirang sentle. Tlaya ka dintlha tsa gago tsa tshedisiso le dikao tse dingwe tsa tiro tse barutwana ba di dirileng mo thutanong e e latelang.

**Tlhatlhobo**

Tlatsa Foromo ya Tlhatlhobo.

## APPENDIX A: TERM 1 WEEKLY CONTENT SUMMARY (WEEKS 3–5)

### Term 1: Activity Plan

<table>
<tr><th colspan="5">Week 3</th></tr>
<tr><td colspan="5">CONTENT AREA: SPACE AND SHAPE (GEOMETRY)</td></tr>
<tr><td colspan="5">TOPIC: Recognise, identify and name 3-D objects; describe, sort and compare 3-D objects (boxes and balls); position, orientation and views: in and out<br>INTRODUCE NEW KNOWLEDGE: Counting objects 1–5, properties of boxes and balls, objects that roll or slide, position: in and out, big/small, biggest/smallest<br>PRACTISE: Oral counting 1–5, reinforce number concept (1), sorting</td></tr>
<tr><th colspan="2">Whole class activities</th><th>Teacher-guided activity</th><th colspan="2">Workstation activities</th></tr>
<tr><td>Day 1</td><td>Explore properties of boxes and balls.</td><td rowspan="5">Counting one-to-one correspondence 1–5.<br>Big and small game.<br>Properties of boxes and balls.<br>Compare boxes and balls.<br>Sort objects that slide and roll.</td><td>Activity 1<br>Activity 2<br>Activity 3<br>Activity 4</td><td>Construct objects with boxes.<br>Big and small playdough balls – sorting.<br>Paint prints with boxes or blocks.<br>Build animal shelters for the farm animals with building blocks.</td></tr>
<tr><td>Day 2</td><td>Compare sizes of boxes and balls.</td></tr>
<tr><td>Day 3</td><td>Explore which can slide, which can roll; big/biggest and small/smallest.</td></tr>
<tr><td>Day 4</td><td>Discuss why objects roll and slide.</td></tr>
<tr><td>Day 5</td><td>Position: in and out.</td></tr>
<tr><th colspan="5">Week 4</th></tr>
<tr><td colspan="5">CONTENT AREA: SPACE AND SHAPE (GEOMETRY)</td></tr>
<tr><td colspan="5">TOPIC: Recognise, identify and name 2-D shapes (circle); compare 3-D objects and 2-D shapes; symmetry<br>INTRODUCE NEW KNOWLEDGE: Circle, symmetry, introduce number 2<br>PRACTISE: Oral counting 1–5, counting objects 1–5, number 1</td></tr>
<tr><th colspan="2">Whole class activities</th><th>Teacher-guided activity</th><th colspan="2">Workstation activities</th></tr>
<tr><td>Day 1</td><td>Introduce 2; number frieze story.</td><td rowspan="5">Naming the shape and colour of counters from the Resource Kit.<br>Circle activity – properties.<br>Number dot cards, pictures and symbols 1 and 2.</td><td>Activity 1<br>Activity 2<br>Activity 3<br>Activity 4</td><td>Playdough template – make 2.<br>Circle prints – paint and containers.<br>‘Plate’ template – cut and paste pictures of food.<br>Body puzzles.</td></tr>
<tr><td>Day 2</td><td>What is a shape? Introduce the circle.</td></tr>
<tr><td>Day 3</td><td>Find circles in the classroom.</td></tr>
<tr><td>Day 4</td><td>Count different body parts; explore symmetry in their own body.</td></tr>
<tr><td>Day 5</td><td>Circle (use poster) and symmetry in a picture.</td></tr>
</table>

## MAMETLELELO B: KGWEDITHARO 1 KHUTSHWAFATSO YA DITENG TSA BEKE LE BEKE (DIBEKE 3–5)

## Kgweditharo 1: Thulaganyo ya Ditirwana

<table>
<tr><th colspan="5">Beke 3</th></tr>
<tr><td colspan="5">KAROLOTENG: BOALO LE POPEGO (JEOMETERI)</td></tr>
<tr><td colspan="5">SETLHOGO: Lemoga, tlhaola le go neela maina a dilo tsa 3-D; tlhalosa, rulaganya le go bapisa dilo tsa 3-D (mabokoso le dibolo): boemo, tlwaetso le dipono: mo teng le kwa ntle<br>TLHAGISA KITSO E NTŠHWA: Go bala dilo 1–5, diponagalo tsa mabokoso le dibolo, dilo tse di kgokologang kgotsa tse di relelang, boemo: mo teng le kwa ntle, kgolo/nnye, kgolo thata/nnye thata<br>IKATISE: Go bala dilo 1–5, go gatelela mogopolopalo (1), go rulaganya</td></tr>
<tr><th colspan="2">Ditirwana tsa phaposiborutelo yotlhe</th><th>Tirwana e e kaelwang ke morutabana</th><th colspan="2">Ditirwana tsa Seteišenetiro</th></tr>
<tr><td>Letsatsi 1</td><td>Sedisisa diponagalo tsa mabokoso le dikgwele.</td><td rowspan="5">Go bala tsamaelano ya nngwe ka nngwe 1–5.<br>Motshameko wa kgolo le nnye.<br>Diponagalo tsa mabokoso le dikgwele.<br>Bapisa mabokoso le dikgwele.<br>Rulaganya dilo tse di relelang le tse di kgokologang.</td><td>Tirwana 1<br>Tirwana 2<br><br>Tirwana 3<br>Tirwana 4</td><td>Bopa dilo ka mabokoso.<br>Dibolo tse dikgolo le tse dinnye tsa tege ya go tshameka– go di rulaganya.<br>Penta dikgatiso ka mabokoso kgotsa diboloko.<br>Aga masaka a diphologolo tsa polasa ka dibolokokago.</td></tr>
<tr><td>Letsatsi 2</td><td>Bapisa bogolo jwa mabokoso le dibolo.</td></tr>
<tr><td>Letsatsi 3</td><td>Sedisisa tse di relelang, tse di ka kgokologang; kgolo/kgolo thata le nnye/nnye thata.</td></tr>
<tr><td>Letsatsi 4</td><td>Buisanang gore goreng dilo di kgokologa le go relela.</td></tr>
<tr><td>Letsatsi 5</td><td>Boemo: mo teng le kwa ntle.</td></tr>
<tr><th colspan="5">Beke 4</th></tr>
<tr><td colspan="5">KAROLOTENG: BOALO LE POPEGO (JEOMETERI)</td></tr>
<tr><td colspan="5">SETLHOGO: Lemoga, tlhaola le go neela maina a dipopego tsa 2-D (sediko); bapisa dilo tsa 3-D le dipopego tsa 2-D; tekano<br>TLHAGISA KITSO E NTŠHWA: Sediko, tekano, tlhagisa nomore 2<br>IKATISE: Go balela kwa godimo 1–5, go bala dilo 1–5, nomore 1</td></tr>
<tr><th colspan="2">Ditirwana tsa phaposiborutelo yotlhe</th><th>Tirwana e e kaelwang ke morutabana</th><th colspan="2">Ditirwana tsa Seteišenetiro</th></tr>
<tr><td>Letsatsi 1</td><td>Tlhagisa 2; kanelo ya nomorekgabisi.</td><td rowspan="5">Go neela leina la popego le mmala wa dibadi go tswa mo Kgetsaneng ya Didiriswa.<br>Tirwana ya sediko – diponagalo.<br>Dikaratarontho tsa dinomore, ditshwantsho le matshwao 1 le 2.</td><td>Tirwana 1<br>Tirwana 2<br>Tirwana 3<br><br>Tirwana 4</td><td>Thempoleiti ya tege ya go tshameka – dira 2.<br>Dikgatiso tsa sediko – pente le ditshodi.<br>Thempoleiti ya ‘Poleite’ –segolola le go kgomaretsa ditshwantsho tsa dijo.<br>Diphazele tsa mmele.</td></tr>
<tr><td>Letsatsi 2</td><td>Popego ke eng? Tlhagisa sediko.</td></tr>
<tr><td>Letsatsi 3</td><td>Batla didiko mo phaposiborutelong.</td></tr>
<tr><td>Letsatsi 4</td><td>Bala dirwe tse di farologaneng tsa mmele; a ba sedisise tekano mo mebeleng ya bona.</td></tr>
<tr><td>Letsatsi 5</td><td>Sediko (dirisa phousetara) le tekano mo setshwantshong.</td></tr>
</table>

<table>
<tr><th colspan="5">Week 5</th></tr>
<tr><td colspan="5">CONTENT AREA: SPACE AND SHAPE (GEOMETRY)</td></tr>
<tr><td colspan="5">TOPIC: Recognise, identify and name 2-D shapes (square); compare 3-D objects and 2-D shapes (box and square); direction: forwards/backwards; position: inside/outside<br>INTRODUCE NEW KNOWLEDGE: Square, directionality (forwards/backwards), position (inside/outside)<br>PRACTISE: Circle, oral counting 1–5, counting objects 1–5, number concept 1 and 2</td></tr>
<tr><th colspan="2">Whole class activities</th><th>Teacher-guided activity</th><th colspan="2">Workstation activities</th></tr>
<tr><td>Day 1</td><td>Introduce the square (vocabulary).</td><td rowspan="5">Oral counting/matching dot, number cards 1 and 2.<br>Touch counting Unifix blocks, build Unifix towers.<br>Properties of a box and a square.<br>Feely bag (boxes and balls).<br>2-D square activity – tracing around a box.<br>Position (inside/outside).</td><td>Activity 1</td><td>Playdough with circle and square cookie cutter to make model.</td></tr>
<tr><td>Day 2</td><td>Properties of the square; difference between circle and square.</td><td>Activity 2</td><td>Cut out squares and paste to make a picture.</td></tr>
<tr><td>Day 3</td><td>Word problem (Poster Book) – square; find squares in the class.</td><td>Activity 3</td><td>Sorting square-shaped and circle-shaped objects.</td></tr>
<tr><td>Day 4</td><td>Directionality (forwards and backwards).</td><td>Activity 4</td><td>Puzzles (minimum six pieces).</td></tr>
<tr><td>Day 5</td><td>Make patterns with squares, colours.</td><td></td><td></td></tr>
</table>

<table>
<tr><th colspan="5">Beke 5</th></tr>
<tr><td colspan="5">KAROLOTENG: BOALO LE POPEGO (JEOMETERI)</td></tr>
<tr><td colspan="5">SETLHOGO: Lemoga, tlhaola le go neela maina a dilo tsa 2-D (khutlonne); bapisa dilo tsa 3-D le dipopego tsa 2-D (lebokoso le khutlonne); kaelo: kwa pele/kwa morago; boemo: mo teng/kwa ntle<br>TLHAGISA KITSO E NTŠHWA: Khutlonne, bokaedi (kwa pele/kwa morago), boemo (mo teng/kwa ntle)<br>IKATISE: Sediko, go balela kwa godimo 1–5, go bala dilo 1–5, mogopolopalo 1 le 2</td></tr>
<tr><th colspan="2">Ditirwana tsa Phaposiborutelo yotlhe</th><th>Tirwana e e kaelwang ke morutabana</th><th colspan="2">Ditirwana tsa Seteišenetiro</th></tr>
<tr><td>Letsatsi 1</td><td>Tlhagisa khutlonne (tlotlofoko).</td><td rowspan="5">Go balela kwa godimo/Go nyalanya marontho, dikaratapalo 1 le 2.<br>Kgoma o bala Dibolokokgogedi, agang ditora tsa kgogedi.<br>Dipharologantsho tsa lebokoso le khutlonne.<br>Kgetsanakgomô (mabokoso le dikgwele).<br>Diponagalo tsa lebokoso le khutlonne.<br>Tirwana ya dikhutlonne tsa 2-D–thalelela lebokoso.<br>Boemo (mo teng/kwa ntle).</td><td>Tirwana 1</td><td>Tege ya go tshameka le disegakuku tsa khutlonne go dira mmotlolo.</td></tr>
<tr><td>Letsatsi 2</td><td>Diponagalo tsa khutlonne; pharologano magareng ga sediko le khutlonne.</td><td>Tirwana 2</td><td>Segolola dikhutlonne mme o di kgomaretse go dira setshwantsho.</td></tr>
<tr><td>Letsatsi 3</td><td>Dipalo tsa mafoko (Buka ya Diphousetara) – khutlonne; batla dikhutlonne mo phaposiborutelong.</td><td>Tirwana 3</td><td>Go rulaganya dilo tse di bopegileng jaaka dikhutlonne le tse di bopegileng jaaka didiko.</td></tr>
<tr><td>Letsatsi 4</td><td>Bokaedi (kwa pele le kwa morago).</td><td>Tirwana 4</td><td>Diphazele (bonnye dikarolwana di le thataro).</td></tr>
<tr><td>Letsatsi 5</td><td>Dira dipaterone 9 ka dikhutlonne, mebala.</td><td></td><td></td></tr>
</table>

# Workshop 2 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 Tlhatlhobo ya Thutano 2

1. A thutano e kgonne go fitlhelela ditsholofelo tsa gago?

_____
_____
_____
_____

2. Ke eng se o se ithutileng mo thutanong eno se se go thusitseng go gaisa?

_____
_____
_____
_____

3. A go na le sengwe se o sa se ratang kgotsa se se neng se go thatafalela?

_____
_____
_____
_____

4. O ya go diragatsa jang se o se ithutileng mo phaposiborutelong ya gago ya Mophato wa R?

_____
_____
_____
_____

5. A go na le se o se tshikhinyang go ka thusa go tokafatsa dithutano tse di latelang?

_____
_____
_____
_____