



**GAUTENG PROVINCE**  
EDUCATION  
REPUBLIC OF SOUTH AFRICA

**GGT 2030**  
GROWING GAUTENG TOGETHER

Setswana/English

# **Lenaneotokafatso la Dipalo tša Mophato R Grade R Mathematics Improvement Programme**



**Thutano 3 • Workshop 3**  
**Bukatiro ya Batsayakarolo • 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**.

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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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- The R-Maths writing team: SDU staff and consultants.



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

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#### DITEBOGO

Ditebogo di lebiswa segolobogolo go:

- Batlhankedi ba Lefapha la Thuto la Gauteng mo Lephatheng 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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- Setlhophla 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 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)

# Thadiso

## Maitlhomō

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

Maitlhomō a thutano eno ke go thusa barutabana go diragatsa Lenaneo la Dipalo mo diphaposiborutelong tsa bona. Batsayakarolo ba tlaa tiisa go tlhaloganya ga bona ga Dikaroloteng tsa PPKT tse di lebilweng mo Dibekeng 6–9 tsa Kgweditharo 1 le go ikatisetsa dikgono tsa go tsereganya go ithuta dipalo.

Metswedi ya Dikaroloteng tsa Dipalo tsa Mophato wa R di tserwe go tswa mo *Polelong ya Pholisi ya Kharikhulamo le Tlhatlhobo (PPKT): Dipalo tsa Mophato wa R (Lokwalo lwa Bofelo)*, 2011, Lefapha la Thutotheo, Aforika Borwa.

## Dipoelothuto

- ◆ Go sedisisa mo tiragatsong ya Kgweditharo 1 Dibeke 3–5
- ◆ Go diragatsa melawana ya Lenaneo la Dipalo mo thulaganyong ya beke le beke
- ◆ Go tlhotlhomisa ditogamaano tsa go tshegetsatsa go ruta dipalo mo Mophatong wa R
- ◆ Go mekamekana le diteng tsa Lenaneo la Dipalo la Kgweditharo 1 Dibeke 6–9 (Dipaterone, Ditiro le Alejibora; Boalo le Popego (Jeometeri); Tekanyo; Dinomore, Ditiro le Dikamano)
- ◆ Go simolola go tlhaloganya ka moo dikgatlhego tse di farologaneng tsa barutwana le maemo a bokgoni jwa bona a nang le seabe ka teng mo go ithuteng le mo go ruteng

## Diteng tsa thutano

- ◆ Pulo le tshedisiso (Ura e le 1)
- ◆ Karolo 1: Dipaterone, Ditiro le Alejibora (Ura e le 1)

### TEE

- ◆ Karolo 2: Boalo le Popego (Jeometeri) (Ura e le 1)
- ◆ Karolo 3: Tekanyo (Ura e le 1)

### DIJOTSHEGARE

- ◆ Karolo 4: Dinomore, Ditiro le Dikamano (Ura e le 1)
- ◆ Karolo 5: Go ithulaganyetsa go ruta (Ura e le 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.

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# Pulo le tshedisiso

Ura e le 1

Sedisisa ka ga tiragatso ya Lenaneo la Dipalo mo lenaneong la gago la letsatsi le letsatsi mme o dire tirwana e e latelang mo setlhopheng sa gago.



## Tirwana 1

1. Buisanang ka ga tswelelopele ya lona mo tiragatsong ya Dibeke 3–5 le *Tirwana e o e busetsang kwa sekolong* go tswa mo Thutanong 2.
2. Arogana ka setshwantsho sa gago se se tobilweng Boalo le Popego (Jeometri) mo lefelong la dipalo.
3. O rekotile jang dilo tse o di etseng tlhoko ka ga morutwana yo mongwe le yo mongwe mo tirwaneng e e kaelwang ke morutabana?
4. Ke melawana efe ya go ruta e o e lemogileng mo phaposiborutelong ya gago?



## Video 1

Lebelela video e e bontshang ka moo morutabana a dirisang morumo go ikatisetsa go bala le go rarabolola dipalo tsa mafoko.

Buisanang ka ga gore o kgonne jang go lepalepana le seno le dithuto tse dingwe tse di tsenyeleditseng merumo mo ditirwaneng tsa go bala.

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# 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?

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

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## 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.

# Karolo 1: Dipaterone, Ditiro le Alejibora

Ura e le 1

Thutano eno e totile go ruta diteng tse di latelang tsa Lenaneo la Dipalo: Kgweditharo 1 Dibeke 6–9. Karolo eno e totile Kgweditharo 1 Beke 6: Dipaterone, Ditiro le Alejibora.

## Kgweditharo 1 Thadiso ya diteng: Dipaterone, Ditiro le Alejibora

Lebelela Karoloteng ya Dipaterone, Ditiro le Alejibora mo tsebeng 125 ya *Kaedi ya Mogopolo*.



### Tirwana 2

Mo sethopheng sa lona, buisanang ka ga:

1. Ke megopolo efe e e lebelelwang mo Kgweditharong ya 1?

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2. Pharologano magareng ga diteng le diteng tsa PPKT ke efe?

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## Go tthaloganya dipaterone

Go godisa go tthaloganya dipaterone ke karolo ya botlhokwa ya dipalo. Dipaterone di re dikologile mme bana ba rona ba kopana le dipaterone tse dintsi mo matshelong a bona kwa gae le kwa sekolong.

Akanya ka moo o tthaloganyang Karoloteng ka teng: Dipaterone, Ditiro le Alejibora mme o dire Tirwana 3 le sethopho sa gago.



### Activity 3

In your group, discuss:

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

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

- ◆ What patterns do you see?

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- ◆ What is the pattern?

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- ◆ Can you repeat the pattern? Explain.

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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.



### Tirwana 3

Mo setlhopheng sa lona, buisanang ka ga:

1. Ke mefuta efe ya dipaterone e barutwana ba Mophato wa R ba ka e elang tlhoko mo matshelong a bona letsatsi le letsatsi?

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2. Lebelela Phousetara 7 mo *Bukeng ya Diphousetara*.

- ◆ O bona dipaterone dife?

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- ◆ Paterone ke eng?

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- ◆ A o ka boeletsa paterone? Tlhalosa.

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**Paterone** e tlhalosa tatelano e e tlwaelegileng ya dilo, ditshwantsho, metsamao le ditiragalo kgotsa ditiro tse di ipoeletsang ka mokgwa o o bonelwang pele.

**Tatelano** ke thulaganyo e e rileng moo dilo, ditshwantsho, metsamao, ditiragalo le ditiro di latelanang ka yona.

### Go tlhaola dipaterone

Mo pateroneng e e tlwaelegileng re kgona go bona gore dielemente mo pateroneng di boeleditswe jang. Mme e bile gape re kgona go bonela pele tatelano kgotsa thulaganyo ya dielemente le gore di tlaa boelediwa jang go tlhama paterone. Mo pateroneng e e latelang, re ka bona gore sediko le khutlonne di boeleditswe, mme e bile re ka bonela pele gore popego e e latelang mo tatelanong e tlaa nna efe.



#### 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?

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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?

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2. What is the repeating part of the sequence?

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#### Tirwana 4



1. Ke popego efe ya ntlha?

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2. Ke popego efe e e latelang?

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3. O akanya gore go ya go tla popego efe morago ga khutlonne ya bofelo?

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4. O ya go atolosa paterone eno jang?

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Go boeletsa dipaterone go dirilwe ka tatelano e e boeleditsweng ya dielemente, sk. dipopego, mebala, medumo, dilo, metsamao.

Mo tirwaneng e e latelang, mofatlhosi o tlaa lo bontsha tatelano ya dipopego. Lo tlaa dirisa dibolokoponagalo mo tafoleng ya lona go kopolola tatelano eno le go buisana ka moo lo ka e atolosang ka teng go tlhama paterone.



#### Tirwana 5

1. Paterone ke eng?

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2. Karolwana e e ipoeletsang ya tatelano ke eng?

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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.

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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.



Tlhagisetša barutwana dipaterone tse di simololang ka ponagalo e le nngwe fela e e farologaneng, sk. popego, mme o ba tlamele ka dilwana tse di lekaneng mo tatelanong gore barutwana ba kgone go tsweletsa se paterone e leng sona (karolwana e e ipoeletsang mo tatelanong).

Go bothokwa gore barutabana ba neelane ka ditšhono tsa methale gore barutwana ba tthaole, kopolole le go tlhama mefuta e e farologaneng ya dipaterone ba dirisa medumo, ditiragatso, dilo le ditshwantsho.



## Video 2

Lebelela video ya morutabana a rulaganya ditirwana tse di tlamelang ka ditšhono tsa gore barutwana ba tlhame le go buisana ka ga dipaterone.

Lemoga ka moo morutabana a kaelang barutwana ka teng ka dipotso le tlhotlheletso ya go tlhama paterone. Kwala tlotlofoko e ena le barutwana ba e dirisang mo ditirwaneng tseno.

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Lebelela ditsebe 160–173 tsa *Kaedi ya Mogopolo* go buisa go le gontsi ka ga go ruta Dipaterone, Ditiro le Alejibora mo Mophatong wa R. Gape o tlaa bona lenane la dipotso tse di maleba le tlotlofoko ya Karoloteng eno.

**Molawana wa maemo** o a re barutwana ba kwa metheong e e farologaneng mo Mophatong wa R. Kitso ya pele ya morutwana yo mongwe le yo mongwe ke motheo wa se ba yang go se ithuta. Ba ka dirisa se ba se itseng go ithuta megopolo e mešwa ya dipalo le dikgono.

## 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.

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

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### 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.

## Karolo 2: Boalo le Popego (Jeometeri)

Ura e le 1

Kgweditharo 1 Beke 7 e tobile Boalo le Popego (Jeometeri). Mo Thutanong 2, re buisane ka ga dilo tsa tlhakore-3 le diboego tsa tlhakore-2 le diteng tsa Dibeke 3–5 go ka diragadiwa mo phaposiborutelong.

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



#### Tirwana 6

Lebelela Karoloteng ya Boalo le Popego (Jeometeri) mo ditsebeng 126–131 tsa *Kaedi ya Mogopolo*. O tlaa bona gore didiko, dikhutlonne le dikhutlotharo di tlhagisitswe mo PPKT mo Kgweditharong 1 le gore dikhutlonnetsepa di tlhagisitswe ka ditiragalo mo Kgweditharong 1.

1. Fa o ne o ruta dikhutlonne a o bone barutwana ba tlhakathakanya dikhutlonne le dikhutlonnetsepa? Neela mabaka go tshegetsa karabo ya gago.

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2. Dikhutlonnetsepa di ne tsa tlhagisiwa jang mo Bekeng 3 ya Lenaneo la Dipalo?

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### Go tlaola diboego tsa tlhakore-2 (dikhutlotharo)

Mo Mophatong wa R barutwana ba lemoga, tlaola le go neela maina a diboego tsa tlhakore-2: didiko, dikhutlonne, dikhutlotharo le dikhutlonnetsepa. Lenaneo la Dipalo gape le tshikhinya gore barutwana ba rotloediwe go tthalosa dipharologantsho tsa dipopego tseno, sk. mela e e tlhamaletseng kgotsa e e kgogoropo, palo ya mela le dikhutlo.

A barutwana ba diragatse kitso ya bona e ntšhwa ya dipopego le go gatelela go ithuta gono mo ditirwaneng tsa bona tsa ditlhopha tse dinnye tsa boikemedi.



### 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.

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*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?

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◆ How do you know it is a triangle?

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◆ 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?

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◆ What is the same about these two shapes?

---

◆ What is different about these two shapes?

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### Video 3

Lebelela video ya morutabana a tlhagisetsa barutwana khutlotharo.

Lemoga ka moo morutabana a rotloetsang barutwana ka teng go tlhalosa dipharologantsho tsa khutlotharo.

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*Kaedi ya Ditirwana: Kgweditharo 1* e tlamela ka ditšhono tse dintsi go ralala kgweditharo gore barutabana ba dirise dipotso tse di bulegileng. *Buka ya Diphousetara* e a dirisiwa ka nako ya ditirwana tsa phaposiborutelo yotlhe le ditirwana tsa ditlhophatse dinnye tse di kaelwang ke morutabana go rotloetsa barutwana go tlhalosa dikakanyo tsa bona le go rarabolola dipalo.

Mo Tirwaneng 7, lo tlaa buisana ka ga phousetara le go bua ka ga gore a dipotso tse di boditsweng 'di bulegile' kgotsa 'di tswalegile'.



### Tirwana 7

1. Lebelela Phousetara 8 mme o tsibogele dipotso tse di latelang.

- ◆ O kgona go bona dikhutlotharo tse kae?

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- ◆ O itse jang gore ke khutlotharo?

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- ◆ E na le matlhakore a le kae?

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- ◆ E na le dikhutlo di le kae?

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- ◆ Mela e kae?

---

- ◆ A o kgona go bona dikhutlotharo tse dingwe?

---

- ◆ Ke dipopego dife gape tse o kgonang go di bona?

---

- ◆ Dipopego tse pedi tseno di tshwana ka eng?

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- ◆ Dipopego tse pedi tseno di farologana ka eng?

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

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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. Ke dife tsa dipotso tse di fa godimo di bulegileng le gore ke dife tse di tswalegileng?

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**Molawana wa go kaelwa** o rotloetsa barutabana le barutwana go dira mmogo go rarabolola dipalo ka go dirisa dipotso tse di utlwalang.

- ◆ **Dipotso tse di tswalegileng** ke dipotso tse di nang le tsibogo e e lekantsweng ya 'ee' kgotsa 'nnyaa'. Dipotso tse di tswalegileng di ka thusa go batla se barutwana ba se itseng, jaaka 'Khutlotharo ke popego efe?', 'E mmala o o ntseng jang?'
- ◆ **Dipotso tse di bulegileng** di na le dikarabo tse di fetang bongwe, di tlhotlheletsa go akanya mme e bile di rotloetsa barutwana go tlhalosa dikakanyo tsa bona fa ba rarabolola dipalo.

Ga se barutwana botlhe ba ka tshwarelelang megopolo kgotsa go ithuta puo ya dipalo ka nako e le nngwe (**molawana wa maemo**).

### **Tlotlofoko ya dipalo**

Fa barutwana ba tlhotlhomisa, le go tlhalosa dipopego le dilo, ba dirisa puo e e tlwaelegileng jaaka 'sephaphathi', 'boleta' le 'e e ntlhana'. Barutabana ba ka tlhagisa tlotlofoko ya dipalo go emisetsa puo e e tlwaelegileng, sekao: mela e e tlhamaletseng, mela e e kgogoropo, dikhutlo, matlhakore. Gape re bua ka gore selo se boleele go le kana kang, se bophara go le kana kang le go bua ka ga bogodimo jwa sengwe.

Lebelela ditsebe 190–193 tsa *Kaedi ya Mogopolo* go buisa go le gontsi ka ga go botsa dipotso tse di amanang le go ruta le go ithuta megopolo ya Boalo le Popego (Jeometeri). Gape buisa tsebe 193 go buisa go le gantsi ka ga tlotlofoko ya Boalo le Popego (Jeometeri) mo Mophatong 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?

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

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## 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?

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# Karolo 3: Tekanyo

Ura e le 1

Kgweditharo 1 Beke 8 e tobile Tekanyo: nako le bolelee.

## Kgweditharo 1 Thadiso ya diteng: Tekanyo



### Tirwana 8

Lebelela Karoloteng ya Tekanyo mo ditsebeng 132–135 tsa *Kaedi ya Mogopolo*.

Mo sethopheng sa gago, lebelela gape gore:

1. Ke megopolo efe e e dirilweng mo Kgweditharong 1?

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2. Pharologano magareng ga diteng tseno le diteng go tswa mo PPKT ke efe?

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## Tekanyo ke eng?

Mo Tirwaneng 9, re tlaa buisanela potso 'Tekanyo ke eng?'



### Tirwana 9

Lebelela setshwantsho se se fa tlase mme o arabe potso.



Ke mang yo mogolo go gaisa?

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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.

Tekanyo e mabapi le go batlisisa gore go na le 'bokaakang' jwa selo, sk.:

- ◆ boleele jwa sengwe
- ◆ sengwe se tshola go le kana kang
- ◆ boima jwa sengwe
- ◆ go tsaya nako e kae go dira sengwe.

Gore re kgone go lekanya, re tlhoka go swetsa gore re batla go lekanya ponagalo (sebopego/popego) efe, sk. boleele, boima, nako. Re dirisa mafoko a a latelang go tthalosa ditekanyo: leejana, boketenyana, mogolwane.

Re tlhoka go dirisa diyuniti go lekanya. Diyuniti tseno e ka nna tse di sa tlhomamang kgotsa tse di tlhomameng.

- ◆ **Yuniti tekanyo e e sa tlhomamang** e akaretsa diatla, dinao, dikherayone, manathwana a mogala, dikota le diboloko.
- ◆ **Yuniti tekanyo e e tlhomameng** e akaretsa dilithara, dimililithara, dikhilokereme, dikereme, dimethara, diura, metsotso, j.j.

Mo Mophatong wa R barutwana ba lekanya **kwa ntle le thulaganyo** mme ba dirisa **diyuniti tekanyo tse di sa tlhomamang** go lekanya nako, boleele, boima, mothamo le volumo.

## Papiso ka tthamalalo

Tekanyo mo Mophatong wa R e akaretsa go bapisa ponagalo ya sengwe le se sengwe 'ka tthamalalo'. Sekao, go bapisa boleele jwa kherayone le kherayone e nngwe kgotsa go bapisa bogodimo jwa barutwana ba babedi ba eme ba bapile mme ba hularelane.

Ela tlhoko mofatlhosi fa a lekanya setlhopha sa batsayakarolo mme morago o dire Tirwana 10 mo setlhopheng sa gago.



### Tirwana 10

Lebelela ditsebe 194–207 tsa *Kaedi ya Mogopolo* go buisa go le gontsi ka ga Tekanyo le ditsebe 136–149 tsa *Kaedi ya Ditirwana: Kgweditharo 1* pele ga o araba dipotso tse di fa tlase.

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

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

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## 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?

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

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1. Go dirisitswe yuniti tekanyo e e sa tlhomamang efe go lekanya bogodimo jwa batsayakarolo?

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2. Go ka dirisiwa diyuniti tekanyo tse di sa tlhomamang dife gape go lekanya bogodimo jwa batsayakarolo?

---

## Nako

Seno ke mogopolo o o thata o o sa tshwarengeng oo barutwana ba ka se o tlhaloganyeng. Barutwana ba tlhoka go tlhaloganya ka moo nako e fetang ka teng mo matshelong a bona, ka jalo barutwana ba tlhoka go tlhalosa nako ka go e bapisa le maitemogelo a barutwana le ditiro tse di tlwaelegileng.



### Tirwana 11

Lebelela Kgweditharo 1 Beke 8 mo *Kaeding ya Tirwana: Kgweditharo 1* mme lo buisane le molekane ka ga ka moo nako e rutiwang ka teng mo dikamusong tseno. Arogana dikakanyo tsa gago ka ga tse di latelang.

1. Barutabana/badiri ba Mophato wa R ba ka thusa jang barutwana go tlhaloganya go le gontsi ka ga megopolo ya:
  - ◆ motshegare le bosigo?
  - ◆ maabane, gompieno le kamoso?
  - ◆ dilo di tsaya nako e kae?
  - ◆ tatelano ya nako?

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2. O ka dirisa jang ditirwana tsa gago tsa lenaneo la letsatsi le letsatsi go ruta barutwana ka ga mogopolo wa nako?

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

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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 tlotlofoko efe e e botlhokwa go tthaloganya mogopolo wa nako?

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Lebelela ditsebe 194–207 tsa *Kaedi ya Mogopolo* go buisa go le gontsi ka ga Tekanyo le nako. Lebelela tsebe 211 ya *Kaedi ya Mogopolo* go buisa go le gontsi ka ga go botsa dipotso tse di amanang le go ruta le go ithuta Tekanyo mo Mophatong wa R.

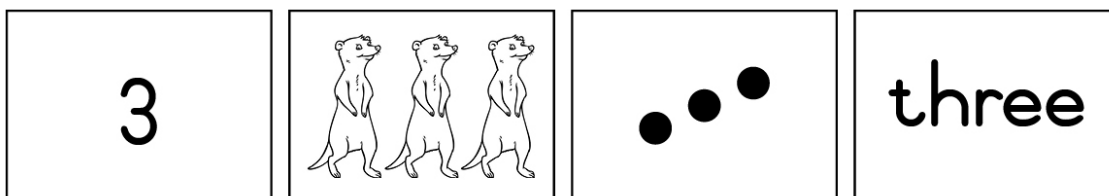
# Session 4: Numbers, Operations and Relationships

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.



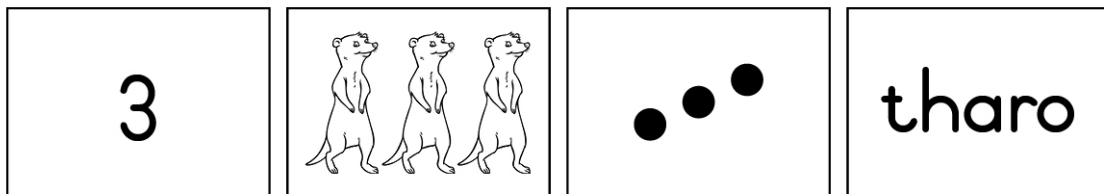
## Karolo 4: Dinomore, Ditiro le Dikamano

Ura e le 1

Mo Thutanong 2, o tthagiseditswe mogopolo wa go bala le tthagiso ya nomore. Mo thutanong eno re tlaa bona gore dikakanyo tseo di tswela jang mo Bekeng 6 fa nomore 3 e tthagisiwa. Go latelwa moetlo o o tshwanang fa dinomore 1 le 2, e bong:

Anaanela *Kanelo ya nomore 3* mme o se diragatse fa o ntse o aga kanelo ka ditlthagiso tse di farologaneng tsa nomore ka go dirisa dikaratakgebisi go tswa mo *Kgetsaneng ya Didiriswa*:

- ◆ phologolo (setshwantsho)
- ◆ letshwaopalo
- ◆ lefokopalo
- ◆ marontho (a emetse dibebe tsa lebatl)



Lebelela dilo go nyalanya letshwaopalo (3) le lefokopalo (tharo). Mo Bekeng 6, barutwana ba tthagisetswa dikaratarontho (go tswa mo *Kgetsaneng ya Didiriswa*). Barutwana ba nyalanya dibadi le dikaratarontho le go buisana gore 3 e dirilwe ke marontho a 1 le 2.

### Kgweditharo 1 Thadiso ya diteng: Dinomore, Ditiro le Dikamano

Beke 7 e totile Boalo le Popego (Jeometri) fa Beke 8 e totile Tekanyo. Beke 9 yona mo Kgweditharong 1 gape e lebeletse megopolopalo. Mo karolong eno, o tlaa tlotlhomisa kamano magareng ga dinomore.



#### Tirwana 12

Lebelela thadiso ya diteng tsa Dinomore, Ditiro le Dikamano mo ditsebeng 114–123 tsa *Kaedi ya Mogopolo*. Mo setlhopheng sa gago, buisanang ka diponagalo tse di latelang tsa thadiso ya diteng:

1. Setlhogo 1.4 ke eng?
2. Ke ditlhogwana dife tse di neetsweng mo tlase ga setlhogo seno?
3. Pharologano magareng ga mokwalo o mopududu le o montsho ke efe? Tlhalosa gore goreng o akanya jalo.

## 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?

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

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

## Go balela

Mo Mophatong wa R, barutwana ga ba dire ditiro tsa dipalo jaaka go tlhakanya le go ntsha, go atisa le go arola. Megopolo eno e agelelwa ka iketlo ka go dirisa tlhotlhomiso le ka go rarabolola dipalo. Sekao: *Ke na le diapole di le tharo. Ke ja e le nosi. Ke setse ka diapole di le kae?*

Barutwana ba tlhoka go tlhaloganya kamano magareng ga dinomere. Ditirwana tse di akaretsang go tlhatlhamolola le go aga dinomere di thusa barutwana go tlhaloganya kamano magareng ga dinomere le boleng jwa tsona. Sekao: *5 e dirilwe ka 2 le 3, 1 le 4.*

## Tiragatso

Lebelela tiragatso ya motshameko wa 'tshikinya le go thuba' mme morago lo buisane ka ga se lo se etseng tlhoko mo setlhopheng sa lona.



### Tirwana 13

Buisanang ka ga tiragatso e lo sa tswang go e lebelela.

1. Barutwana ba ka ithuta megopolopalo efe ka go tshameka motshameko ono?

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2. Mofatlhosi o dirisitse dipotso dife tse di bonaladitseng go tlhakanya le go ntsha?

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Ga se barutwana botlhe ba tlaa supang fa ba tlhaloganya megopolopalo eno ka nako e le nngwe (**molawana wa maemo**).

# 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?				

# Karolo 5: Go ithulaganyetsa go ruta

Ura e le 1

## Kgweditharo 1 Khutshwafatso ya Diteng (Dibeke 6–9)

Mametlelelo A: Kgweditharo 1 Khutshwafatso ya Diteng tsa Beke le Beke (Dibeke 6– 9) e thadisa Karoloteng e e Lebeleletsweng ya beke le beke, ditlhogo tse di tshwanetseng go lejwa, kitso e ntšhwa le ikatiso e e lebeleletsweng ya beke e nngwe le e nngwe, le ditirwana tse di tshikhintsweng tsa phaposiborutelo yotlhe, tirwana e e kaelwang ke morutabana le tirwana ya boikemedi ya beke.



### Tirwana 14

Lebelela Mametlelelo A: Kgweditharo 1 Khutshwafatso ya Diteng tsa Beke le Beke (Dibeke 6–9). Araba dipotso.

Dipotso	Beke 6	Beke 7	Beke 8	Beke 9
Karoloteng e e Lebeleletsweng mo bekeng eno ke efe?				
Barutwana ba tlaa bo ba ithuta megopolo efe ya botlhokwa?				
Go tlaa tlhagisiwa kitso efe e ntšhwa?				
Ke dikgono dife tse di diragadiwang?				

## 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.

## Kaedi ya Ditirwana: Kgweditharo 1: Dibeke 6, 7, 8 le 9

Lebelele Dibeke 6, 7, 8 le 9 mo *Kaeding ya Ditirwana: Kgweditharo 1*. Dira Tirwana 15 mo sethopheng sa gago.



### Tirwana 15

Batla Dibeke 6, 7, 8 le 9 mo *Kaeding ya Ditirwana: Kgweditharo 1*. Araba dipotso.

1. Karoloteng e e Lebeletsweng ya beke e nngwe le e nngwe ke efe?
2. Ke sethogo le kitso e fe e ntšhwa tse di rutiwang mo bekeng e nngwe le e nngwe?
3. Diteng tsa 'Ikatisa' di golagana jang le beke e fetileng?
4. O tlhokang go ipaakanya pele ga o ruta beke e nngwe le e nngwe?
5. Buisa ditirwana tsa phaposiborutelo yotlhe le tsa ditlhopho tse dinnye?
6. Mo sethopheng sa gago se sennyane, buisanang gore lo tlaa rulaganya jang diphaposiborutelo tsa lona mo dibekeng tse nne tseno tsa go ruta.



Gopola gore mo Mophatong wa R, tlathobo ke e e sa tlhomamang mme e bile ke e e tswelolang. 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.

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

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



## Ditirwana tsa tswalelo



### Tirwana 16

**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 dišwa tse ke ratang go di lekeletsa



### Tirwana e o e busetsang kwa sekolong

1. Buisa ditsebe tsa *Kaedi ya Mogopolo* tse di neng di lebeletswe mo thutanong eno.
2. Dirisa *Kaedi ya Ditirwana: Kgweditharo 1* go rulaganyetsa le go diragatsa Dibeke 6–9 tsa Lenaneo la Dipalo, go akaretsa go tlhama lefelo la dipalo go tobilwe mogopolo wa beke e nngwe le e nngwe.
3. Kwala tshekatsheko ya se se atlegileng le se sa atlegang sentle. Tlaya le thulaganyo ya gago mmogo le tshekatsheko ya gago mo thutanong e e latelang.
4. Tlaya le dikao kgotsa ditshwantsho tsa tiro e barutwana ba e dirileng.

### Tlhatlhobo

Tlatsa Foromo ya Tlhatlhobo.

## APPENDIX A: TERM 1 WEEKLY CONTENT SUMMARY (WEEKS 6-9)

### Term 1: Activity Plan

Week 6				
<b>CONTENT AREA:</b> PATTERNS, FUNCTIONS and ALGEBRA				
<b>TOPIC:</b> Geometric patterns				
<b>INTRODUCE NEW KNOWLEDGE:</b> Identify patterns, copy patterns, complete patterns, introduce number 3, sequencing numbers 1-3. Making groups the same.				
<b>PRACTISE:</b> Oral counting 1-5, counting objects 1-5, number concept 1 and 2, circle, square, big and small, forwards and backwards				
Whole class activities		Teacher-guided activity	Workstation activities	
<b>Day 1</b>	Introduce number 3 number frieze story.	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.	<b>Activity 1</b>	Frame a picture using pattern and draw three objects.
<b>Day 2</b>	Uses different sized and coloured circles to make simple patterns. Discuss patterns (repetition, differences, similarities).		<b>Activity 2</b>	Fingerprint counting.
<b>Day 3</b>	Body percussion patterns and problem solving.		<b>Activity 3</b>	Pattern cards using counters and sticks.
<b>Day 4</b>	Using big and small circles and objects to make simple patterns. Identify patterns in classroom.		<b>Activity 4</b>	Template with playdough – make 3.
<b>Day 5</b>	Problem solving 1-3. Making groups the same.			
Week 7				
<b>CONTENT AREA:</b> SPACE and SHAPE (GEOMETRY)				
<b>TOPIC:</b> 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				
<b>INTRODUCE NEW KNOWLEDGE:</b> Triangle; figure ground; position (in front and behind); oral counting 1-10				
<b>PRACTISE:</b> 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				
Whole class activities		Teacher-guided activity	Workstation activities	
<b>Day 1</b>	Introduce triangle and its properties.	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.	<b>Activity 1</b>	Triangle activity – cut and decorate four triangles.
<b>Day 2</b>	Identify triangle shapes in <i>Poster Book</i> , problem solving.		<b>Activity 2</b>	Butterfly prints – symmetry.
<b>Day 3</b>	In front of and behind; midline crossing.		<b>Activity 3</b>	Shape person – use pre-cut shapes.
<b>Day 4</b>	Compare biggest and smallest. Bigger and smaller.		<b>Activity 4</b>	Shape puzzles – (minimum six pieces).
<b>Day 5</b>	Symmetry.			

## MAMETLELELO A: KGWEDITHARO 1 KHUTSHWAFATSO YA DITENG TSA BEKE LE BEKE (DIBEKE 6-9)

### Kgweditharo 1: Thulaganyo ya ditirwana

Beke 6				
<b>KAROLOTENG:</b> DIPATERONE, DITIRO le ALEJIBORA				
<b>SETLHOGO: Dipaterone tsa jeometeri</b>				
<b>TLHAGISA KITSO E NTŠHWA:</b> Tlhaola dipaterone, kopolola dipaterone, feleletsa dipaterone, tlhagisa nomore 3, go latedisanya dinomere 1-3. Go dira gore ditlhophha di tshwane.				
<b>IKATISE:</b> Go balela kwa godimo 1-5, mogopolopalo 1 le 2, sediko, khutlonne, kgolo le nnye, kwa pele le kwa morago				
Ditirwana tsa phaposiborutelo yotlhe		Tirwana e e kaelwang ke morutabana	Ditirwana tsa seteišenetiro	
<b>Letsatsi 1</b>	Go tlhagisa kanelo ya nomorekgabisi ya nomore 3.	Tshameka motshameko wa motshikhinyego o dirisa matshwao 1 le 2.	<b>Tirwana 1</b>	Foreima setshwantsho ka go dirisa paterone mme o thale dilo di le tharo.
<b>Letsatsi 2</b>	Dirisa didiko tsa bogolo le mebala e e farologaneng go dira dipaterone tse di bonolo. Buisanang ka ga dipaterone (poeletso, dipharologano, ditshwano).	Nyalanya le go rulaganya setshwantshorontho/dikaratapalo 1-3. Paterone e e bonolo ka go dirisa dibadi. Buisanang ka ga paterone, dirisa dibadi go kopolola paterone. Go rarabolola dipalo 1-3. Go dira gore ditlhophha di tshwane.	<b>Tirwana 2</b>	Go bala ka kgatisomonwana.
<b>Letsatsi 3</b>	Dipaterone tsa motshikhinyego wa mmele le go rarabolola dipalo.		<b>Tirwana 3</b>	Dira paterone ya dikarata ka go dirisa dibadi le dikota.
<b>Letsatsi 4</b>	Go dirisa didiko le dilo tse dikgolo le tse dinnye go dira dipaterone tse di bonolo. Tlhaola dipaterone mo phaposiborutelong.		<b>Tirwana 4</b>	Thempoleiti ka tege ya go tshameka - dira 3.
<b>Letsatsi 5</b>	Go rarabolola dipalo 1-3. Go dira gore ditlhophha di tshwane.			
Beke 7				
<b>KAROLOTENG:</b> BOALO le POPEGO (JEOMETERI)				
<b>SETLHOGO: Lemoga, tlhaola mme o neele maina a diboego tsa 2-D: khutlotharo; tlhalosa mme o bapise dilo tsa 3-D le diboego tsa 2-D: dikhutlotharo; rulaganya diboego tsa 2-D; bodilo jwa setshwantsho; tekano</b>				
<b>TLHAGISA KITSO E NTŠHWA:</b> Khutlotharo; bodilo jwa setshwantsho; boemo (fa pele le kwa morago); go balela kwa godimo 1-10				
<b>IKATISE:</b> Go balela kwa godimo 1-10, go latedisanya nomore 1-3, go bala dilo 1-5, go gatelela mogopolopalo 1-3, ke nomore efe pele/morago ga sediko, 7khutlonne, tekano, kgolo le nnye				
Ditirwana tsa phaposiborutelo yotlhe		Tirwana e e kaelwang ke morutabana	Ditirwana tsa seteišenetiro	
<b>Letsatsi 1</b>	Tlhagisa khutlotharo le diponagalo tsa yona.	Go balela kwa godimo	<b>Tirwana 1</b>	Tirwana ya dikhutlotharo - segolola mme o kgabise dikhutlotharo di le nne.
<b>Letsatsi 2</b>	Tlhaola diboego tsa khutlotharo mo <i>Bukeng ya Diphousetara</i> , go rarabolola dipalo.	Kgoma mme o bale ka go dirisa ditara tsa dinomere 1-3 (Dibolokogogedi).	<b>Tirwana 2</b>	Kgatiso ya dirurubele - tekano.
<b>Letsatsi 3</b>	Fa pele ga le fa morago; makgabaganyo a molagare.	Tsamaelano ya nngwe ka nngwe Diponagalo tsa khutlotharo (2-D).	<b>Tirwana 3</b>	Motho yo o bopilweng - dirisa diboego tse di segolotsweng go sa le gale.
<b>Letsatsi 4</b>	Bapisa tse dikgolo go gaisa le tse dinnye go gaisa. Kgolwane le Nnyenyana.	Rulaganya mme o bapise dilo tsa 3-D le diboego tsa 2-D ka ditlhophha tse pedi, e nngwe ya dikhutlotharo le e nngwe e e seng ya dikhutlotharo.	<b>Tirwana 4</b>	Diphazele tsa diboego - (dikarolwana tse thataro bonnye).
<b>Letsatsi 5</b>	Tekano.			

Week 8				
<b>CONTENT AREA:</b> MEASUREMENT				
<b>TOPIC:</b> Time: day and night; Length: compare and order objects to describe height				
<b>INTRODUCE NEW KNOWLEDGE:</b> Sequencing day and night, light and dark; height chart; position (on, under, on top, below, next to, between); counting backwards 5-1				
<b>PRACTISE:</b> 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	
<b>Day 1</b>	Day and night; light and dark.	Routine introduction.	<b>Activity 1</b>	Day and night activity – cutting out pictures.
<b>Day 2</b>	Introduce height chart; position vocabulary.	Day and night; dark and light activities:	<b>Activity 2</b>	Draw from shortest to tallest.
<b>Day 3</b>	Height chart. Sorting day and night everyday objects.	- blanket - activity cards.	<b>Activity 3</b>	Paste shapes from biggest to smallest.
<b>Day 4</b>	Poster – Day and night. Positional vocabulary: on, under, below and on top.	Day and night story and sequencing.	<b>Activity 4</b>	Day/night matching cards.
<b>Day 5</b>	Compare heights. Movement-positions.	Position (on, under, below, on top, next to, between). Pattern (animals). Height chart.		
Week 9				
<b>CONTENT AREA:</b> NUMBERS, OPERATIONS and RELATIONSHIPS				
<b>TOPIC:</b> Describe, order and compare numbers; estimation; problem-solving techniques; using numbers in familiar contexts; position				
<b>INTRODUCE NEW KNOWLEDGE:</b> Estimation, numbers in familiar contexts, one more, one less, position (up/down)				
<b>PRACTISE:</b> 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	
<b>Day 1</b>	Describe and order numbers 1-3.	Oral counting.	<b>Activity 1</b>	Playdough making 1-3 objects.
<b>Day 2</b>	Matching number representations 1-3. Estimation.	One-to-one correspondence. Describe and order numbers 1-3.	<b>Activity 2</b>	Draw pictures 1-3 in shapes.
<b>Day 3</b>	Counting – one more/one less. Position: up and down.	Estimation. Shake and break.	<b>Activity 3</b>	Pasting. Picture with three stars, two trees, one moon.
<b>Day 4</b>	Problem solving (more/less). Poster 1.		<b>Activity 4</b>	Puzzles (minimum six piece).
<b>Day 5</b>	Using number in familiar context: How old are you?			

Beke 8				
<b>KAROLOTENG: TEKANYO</b>				
<b>SETLHOGO: Nako: motshegare le bosigo; bapisa mme o rulaganye dilo go tlhalosa bogodimo</b>				
<b>TLHAGISA KITSO E NTŠHWA:</b> Go latedisanya motshegare le bosigo, Lesedi le lefifi; tšhate ya bogodimo; boemo (mo go, tlase, mo godimo, fa tlase, gaufi le, magareng ga); go balela kwa morago 5-1				
<b>IKATISE:</b> Go balela kwa godimo 1-10, go balela kwa morago go tloga ka 5, go latedisanya dinomore 1-3, go bala dilo 1-5, go gatelela megopolopalo 1-3, dipaterone				
Ditirwana tsa phaposiborutelo yotlhe		Tirwana e e kaelwang ke morutabana	Ditirwana tsa seteišenetiro	
<b>Letsatsi 1</b>	Motshegare le bosigo; lesedi le lefifi.	Tlhagiso ya meetlo. Ditirwana tsa motshegare le bosigo; lefifi le lesedi: - kobo - dikarata tsa ditirwana. Dikanelo tsa bosigo le motshegare le tatedisanyo. Boemo (mo go, tlase, ka fa tlase, mo godimo, gaufi le, magareng ga). Paterone (diphologolo). Tšhate ya bogodimo.	<b>Tirwana 1</b> <b>Tirwana 2</b> <b>Tirwana 3</b>  <b>Tirwana 4</b>	Tirwana ya bosigo le motshegare – go segolola ditshwantsho. Thala go tloga go khutshwane go gaisa go ya go leele go gaisa. Kgomaretsa dibopego go tloga go leele go gaisa go ya go khutshwane go gaisa. Dikarata tsa nyalanyo tsa motshegare/bosigo
<b>Letsatsi 2</b>	Tlhagisa tšhate ya bogodimo; tlotlofoko ya boemo.			
<b>Letsatsi 3</b>	Tšhate ya bogodimo. Go rulaganya dilo tse di tlwaelegileng tsa motshegare le bosigo.			
<b>Letsatsi 4</b>	Phousetara – Motshegare le bosigo. Tlotlofoko ya boemo: mo go, tlase, ka fa tlase le mo godimo.			
<b>Letsatsi 5</b>	Bapisa bogodimo. Motsamao-boemo.			
Beke 9				
<b>KAROLOTENG: DINOMORE, DITIRO le DIKAMANO</b>				
<b>SETLHOGO: Tlhalosa, rulaganya le go bapisa dinomore; tekanyetso; malepa a go rarabolola dipalo; go dirisa dinomore mo makaelong a a tlwaelegileng; boemo</b>				
<b>TLHAGISA KITSO E NTŠHWA:</b> Tekanyetso, dinomore mo makaelong a a tlwaelegileng, feta ka nngwe, boemo (godimo/tlase)				
<b>IKATISE:</b> Go balela kwa godimo 1-10, go balela kwa morago go tloga mo go 5, go latedisanya dinomore 1-3, go bala dilo 1-5, mogopolopalo 1-3, malepa a go rarabolola dipalo. Sediko, khutlonne le khutlotharo.				
Ditirwana tsa phaposiborutelo yotlhe		Tirwana e e kaelwang ke morutabana	Ditirwana tsa seteišenetiro	
<b>Letsatsi 1</b>	Tlhalosa mme o rulaganye dinomore 1-3.	Go balela kwa godimo. Tsamaelano ya nngwe ka nngwe. Tlhalosa mme o rulaganye dinomore 1-3. Tekanyetso. Tshikhinya mme o tlhatlhamolole.	<b>Tirwana 1</b> <b>Tirwana 2</b> <b>Tirwana 3</b>  <b>Tirwana 4</b>	Tege ya go tshameka o dira dilo tsa 1-3. Thala ditshwantsho 1-3 mo dipopegong. Go kgomaretsa. Setshwantsho se se nang le dinaledi di le tharo, ditlhare di le pedi, ngwedi o le mongwe. Diphazele (bonnye dikarolwana di le thataro).
<b>Letsatsi 2</b>	Go nyalanya ditlhagiso tsa dinomore 1-3. Tekanyetso.			
<b>Letsatsi 3</b>	Go bala – feta ka nngwe/tlase ka nngwe. Boemo: godimo le tlase.			
<b>Letsatsi 4</b>	Go rarabolola dipalo (feta/tlase). Phousetara 1.			
<b>Letsatsi 5</b>	Go dirisa nomore mo bokaelong jo bo tlwaelegileng: O na le dingwaga di le kae?			

# Workshop 3 Evaluation Form

1. Did the workshop meet your expectations?

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

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

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

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

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# Foromo ya Tlhatlhubo ya Thutano 3

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

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

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

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

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

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