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EDUCATION
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GROWING GAUTENG TOGETHER

Setswana/English

Lenaneotokafatso la Dipalo tša Mophato R Grade R Mathematics Improvement Programme



Thutano 8 • Workshop 8
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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Programme conceptualisation and management: Cally Kuhne and Tholisa Matheza

Translation and publishing project management: Arabella Koopman

Translation co-ordination (Sotho languages): Lorato Trok

Translation: Gaoretelelwe Benjamin Phuti

Editing (Setswana): Lorato Trok

Illustrations: Jiggs Snaddon-Wood

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 tlase ga School of Education sa UCT e e totileng tokafatso ya boporofesenele 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 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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- 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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Motlhami le molaodi wa lenaneo: Cally Kuhne le Tholisa Matheza
Phetolelo le phasalatso ya bolaodi jwa lenaneo: Arabella Koopman
Morulaganyi wa phetolelo (dipuo tsa Sesotho): Lorato Trok
Phetolelo: Gaoretelelwe Benjamin Phuti
Tseleganyo (Setswana): Lorato Trok
Ditshwantsho: Jiggs Snaddon-Wood

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Overview

Purpose

This is the eighth of twelve Grade R Mathematics Improvement 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 continue assisting teachers to implement the Maths Programme in their classrooms. Participants will have the opportunity to reflect on their observations. They will explore how the guiding principles of teaching maths in Grade R should inform their planning, teaching and assessment. They will also consider learner progress, and individual developmental and learning needs. The workshop explores the content for Term 3 Weeks 4–6 and its classroom implementation.

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 3 Weeks 1–3
- ◆ To explore play-based strategies to support teaching maths in Grade R
- ◆ To deepen the understanding of the Maths Programme's topics
- ◆ To reflect on challenges and find solutions to implementing the Maths Programme
- ◆ To map out the Maths Programme content to be taught in Term 3 Weeks 4–6

Workshop content

- ◆ Opening and reflection (1 hour)
 - ◆ Session 1: Measurement (1 hour)
- TEA
- ◆ Session 2: Measurement (continued) (1 hour)
 - ◆ Session 3: Revisiting Grade R maths topics (1 hour)
- LUNCH
- ◆ Session 4: Planning for teaching (1½ hours)
 - ◆ Closing activities (30 minutes)

Thadiso

Maitlhommo

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

Maitlhommo a thutano eno ke go thusa barutabana go diragatsa Lenaneo la Dipalo mo diphaposiborutelong tsa bona. Batsayakarolo ba tlaa nna le tšhono ya go sedisisa dikelotlhoko tsa bona. Ba tlaa sedisisa gore melawana e e kaelang go ruta dipalo tsa Mophato R e tshwanetse go tshwaela jang mo go rulaganyetseng, go ruteng le go tthatlhoba. Gape ba tlaa ela tlhoko tswelelopele ya barutwana, le ditlhokego tsa kgolo le tsa go ithuta tsa motho ka esi. Thutano e sedisisa diteng tsa Kgweditharo 3 Dibeke 4–6 le tiragatso ya tsona mo phaposiborutelong.

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 3 Dibeke 1–3
- ◆ Go sedisisa ditogamaano tse di ikaegileng ka metshameko go tshegetsa go ruta dipalo mo Mophatong wa R
- ◆ Go tiisa go tthaloganya ditlhogo tsa Lenaneo la Dipalo
- ◆ Go sedisisa dikgwetlho le go batla ditharabololo tsa go diragatsa Lenaneo la Dipalo
- ◆ Go rulaganya diteng tsa Lenaneo la Dipalo tse di tshwanetseng go rutiwa mo Kgweditharong 3 Dibeke 4–6

Diteng tsa thutano

- ◆ Pulo le tshedisiso (Ura e le 1)
 - ◆ Karolo 1: Tekanyo (Ura e le 1)
- TEE
- ◆ Karolo 2: Tekanyo (tsweletso) (Ura e le 1)
 - ◆ Karolo 3: Go lebelela ditlhogo tsa dipalo tsa Mophato R gape (Ura e le 1)
- DIJOTSHEGARE
- ◆ Karolo 4: Go ithulaganyetsa go ruta (Diura di le 1½)
 - ◆ Ditirwana tsa tswalelo (Metsotso e le 30)

Opening and reflection

1 hour

Here is the *Take back to school task* from Workshop 7.



Take back to school task (Workshop 7)

1. Use the Term 3 Weekly Planning Template in Appendix A to plan and implement Term 3 Weeks 1–3 of the Maths Programme.
2. Document how you used the '**Check that learners are able to**' observation list (in the eye box) during each of the teacher-guided activities.
3. Write an evaluation of what worked well, what did not work so well and what you could do differently to improve teaching and learning.
4. Bring your evaluation to the next workshop.



Activity 1

1. In your group, share your successes and challenges with implementing the Maths Programme in Term 3 Weeks 1–3.

2. Discuss your use of the '**Check that learners are able to**' observation list (in the eye box) during each of the teacher-guided activities.

3. Share strategies for improving teaching and learning for the challenges you identified.

4. Write the main points of your discussion on flipchart paper. Report back on your discussion to the large group.

Tirwana e o e busetsang kwa sekolong ke eno go tswa mo Thutanong ya 7.



Tirwana e o e busetsang kwa sekolong (Thutano 7)

1. Dirisa Thempoleiti ya Thulaganyetso ya Beke le Beke ya Kgweditharo 3 mo Mametlelelong ya A go rulaganyetsa le go diragatsa Kgweditharo 3 Dibeke 1-3 tsa Lenaneo la Dipalo.
2. Kwala gore o dirisitse jang lenanekelothoko la '**Ela tlhoko gore barutwana ba kgona go**' (mo lebokosong la leitlho) ka nako ya ditirwana tse dingwe le tse dingwe tse di kaelwang ke morutabana.
3. Kwala tshekatsheko ya se se dirileng sentle, se se sa dirang sentle le gore ke eng se o ka se dirang ka tsela e nngwe go tokafatsa go ruta le go ithuta.
4. Tlaya ka tshekatsheko ya gago kwa thutanong e e latelang.



Tirwana 1

1. Mo setlhopheng sa gago, aroganang katlego le dikgwetlho tsa lona mo go diragatseng Lenaneo la Dipalo mo Kgweditharong ya 3 Dibeke 1-3.

2. Buisanang ka ga tiriso ya lona mo lenaneng la kelothoko la '**Ela tlhoko gore barutwana ba kgona go**' (mo lebokosong la leitlho) ka nako ya ditirwana tse dingwe le tse dingwe tse di kaelwang ke morutabana.

3. Go lepalepana le dikgwetlho tse lo di lemogileng, aroganang malepa a go tokafatsa go ruta le go ithuta.

4. Kwala dintlhakgolo tsa dipuisano tsa lona mo pampiring ya tshatephetogi. Begelang sethlopha se segolo ka ga dipuisano tsa lona.



Video 1

Watch the video of a teacher working with a small group of learners during the teacher-guided activity in Term 3 Week 3.

Observe how the teacher:

- ◆ has prepared the small group activity
- ◆ manages the transitions between the eight tasks
- ◆ uses questions to guide the learners
- ◆ records her observations of what has been learnt using the '**Check that learners are able to**' observation list.



Video 1

Lebelela video ya morutabana a dira le setlhopha se sennye sa barutwana ka nako ya tirwana e e kaelwang ke morutabana mo Kgweditharong ya 3 Beke 3.

Ela tlhoko gore morutabana:

- ◆ o rulagantse jang tirwana ya setlhopha se sennye
- ◆ o tsamaisa jang dineeletsano magareng ga ditirwana tse robedi
- ◆ o dirisa jang dipotso go kaela barutwana
- ◆ o rekota jang dikelotlhoko tsa gagwe tsa gore ke eng se se ithutilweng ka go dirisa lenanekelotlhoko la **'Ela tlhoko gore barutwana ba kgona go'**.

Session 1: Measurement

1 hour

In Terms 1 and 2, time and length were the focus of Measurement. This session will revisit these topics and expand the discussion of Measurement to include mass, and capacity and volume.

Measurement is about finding out ‘how much’ there is of something. In Grade R, the focus of measurement is on:

- ◆ time
- ◆ length
- ◆ mass
- ◆ capacity and volume.

In the next activity, you will explore each of these measurement concepts.

Learners in Grade R measure informally, by direct comparison and by using non-standard units of measurement. Learners develop their estimation skills during informal measurement activities. They estimate how long or how heavy they think something is and then use a non-standard measuring instrument to find out how accurate their estimation was.



Activity 2

With your group, move to the measurement workstation you have been assigned to and answer the questions in your *Participant's Workbook*. Rotate to the next workstation when you receive the signal.

Length

Refer to page 210 of the *Concept Guide*. What vocabulary did you use during this activity?

Karolo 1: Tekanyo

Ura e le 1

Mo Dikgweditharong 1 le 2, nako le bolelee di ne di totilwe ke Tekanyo. Karolo eno e tlaa lebelela ditlhogo tseno gape le go atolosa puisano ka ga Tekanyo go akaretsa boima, le mothamo le volumo.

Tekanyo e ka ga go batlisisa go na le 'bokaakang' jwa selo. Mo Mophatong wa R, Tekanyo e tobile:

- ◆ nako
- ◆ bolelee
- ◆ boima
- ◆ mothamo le volumo.

Mo tirwaneng e e latelang, lo tlaa tlhotlhomisa mogopolo o mongwe le o mongwe wa tekanyo.

Barutwana ba Mophato R ba lekanya ka go sa tlhomamang, ka go bapisa ka tllhamalalo le ka go dirisa diyuniti tse di sa tlhomamang tsa tekanyo. Barutwana ba godisa dikgono tsa bona tsa tekanyetso ka nako ya ditirwana tsa tekanyo e e sa tlhomamang. Ba lekanyetsa gore ba akanya gore selo se seleele kgotsa se boima go le kana kang mme ba bo ba dirisa sedirisa sa go lekanya se se sa tlhomamang go batlisisa gore tekanyetso ya bona e nepagetse go le kana kang.



Tirwana 2

Tsamaela kwa seteišenetirong se lo se tlhaoletsweng, wena le setlhopha sa gago mme lo arabe dipotso tse di mo *Bukatiro ya Batsayakarolo*. Refosanelang go ya kwa seteišenetirong se sengwe fa lo supediwa jalo.

Boleele

Lebelela tsebe 211 ya *Kaedi ya Mogopolo*. O dirisitse tlotlofoko efe ka nako ya tirwana eno?

Find the answer to each of the following and identify the non-standard unit of measurement you used.

	Estimate (guess)	Non-standard unit of measurement	Length
1. Who has the longest shoe?			
2. Who is the shortest?			
3. How long is your <i>Participant's Workbook</i> ?			
4. Who has the longest arm?			
5. How wide is your table?			
6. How many hand spans is the height of the door?			

Capacity and volume

Refer to page 210 of the *Concept Guide*. What vocabulary did you use during this activity?

Find the answer to each of the following and identify the non-standard unit of measurement you used.

	Estimate (guess)	Non-standard unit of measurement	Capacity or volume
1. Which two containers of water will fill the jug?			
2. Which bottle holds the most cups of water?			
3. How many cups of water do you think it will take to fill the vase?			
4. How many cups of water will it take to half-fill the vase?			
5. Which container on the table has the least amount of water in it?			
6. Which two containers have the same amount of water?			

Batla dikarabo tsa potso nngwe le nngwe ya tse di latelang mme o tthaole yuniti e e sa tthomamang ya tekanyo e o e dirisitseng.

	Lekanyetsa (fopholetsa)	Yuniti e e sa tthomamang ya tekanyo	Boleele
1. Ke mang yo o nang le setlhako se segolo go gaisa?			
2. Ke mang yo mokhutshwane go gaisa?			
3. <i>Bukatira</i> ya gago ya <i>Batsayakarolo</i> e telele go le kana kang?			
4. Ke mang yo o nang le letsogo le leleele go gaisa?			
5. Tafole ya gago e sephara go le kana kang?			
6. Bogodimo jwa lebatladi bo ka nna selekanyo se se kana kang sa boatlhamo jwa seatla?			

Mothamo le volumo

Lebelela tsebe 211 ya *Kaedi ya Mogopolo*. O dirisitse tlotlofoko efe ka nako ya tirwana eno?

Batla dikarabo tsa potso nngwe le nngwe ya tse di latelang mme o tthaole yuniti e e sa tthomamang ya tekanyo e o e dirisitseng.

	Lekanyetsa (fopholetsa)	Yuniti e e sa tthomamang ya tekanyo	Mothamo kgotsa volumo
1. Ke ditshodi dife tse pedi tsa metsi tse di tlaa tlatsang jeke?			
2. Ke lebotlolo lefe le le tsayang dikopi tse dintsi go gaisa tsa metsi?			
3. O akanya gore bolompoto e tlaa tladiwa ke dikopi di le kae tsa metsi?			
4. Bolompoto bo ka bewa gare ke dikopi di le kae tsa metsi?			
5. Ke setshodi sefe mo papetleng se se nang le bokaakang jo bonnye tota jwa metsi mo go sona?			
6. Ke ditshodi dife tse pedi di nang le bokaakang jo bo tshwanang jwa metsi?			

Mass

Refer to page 210 of the *Concept Guide*. What vocabulary did you use during this activity?

Find the answer to each of the following and identify the non-standard unit of measurement you used.

	Estimate (guess)	Non-standard unit of measurement	Mass
1. Whose handbag in your group is the heaviest?			
2. Which book in your group is the lightest?			
3. Who is the heaviest in your group? Who is the lightest?			
4. Which fruit is the heaviest?			
5. Which bottle weighs the most?			

Time

Refer to page 210 of the *Concept Guide*. What vocabulary did you use during this activity?

Find the answer to each of the following and identify the non-standard unit of measurement you used.

	Estimate (guess)	Non-standard unit of measurement	Time
1. Who arrived the earliest this morning?			
2. Who arrived the latest?			
3. How long does it take to walk from your chair to the car?			
4. Who walked the fastest from their chair to the car?			
5. Would it take longer to eat lunch or drive to school?			

Boima

Lebelela tsebe 211 ya *Kaedi ya Mogopolo*. O dirisitse tlotlofoko efe ka nako ya tirwana eno?

Batla dikarabo tsa potso nngwe le nngwe ya tse di latelang mme o tthaole yuniti e e sa tthomamang ya tekanyo e o e dirisitseng.

	Lekanyetsa (fopholetsa)	Yuniti e e sa tthomamang ya tekanyo	Boima
1. Ke kgetsana ya ga mang e e boima go gaisa mo setlhopheng?			
2. Ke buka efe e e bofebo go gaisa mo setlhopheng sa gago?			
3. Ke mang yo o boima go gaisa mo setlhopheng sa gago? Ke mang yo o bofebo go gaisa?			
4. Ke leungo lefe le le boima go gaisa?			
5. Ke lebotlolo lefe le le kalang go gaisa?			

Nako

Lebelela tsebe 211 ya *Kaedi ya Mogopolo*. O dirisitse tlotlofoko efe ka nako ya tirwana eno?

Batla dikarabo tsa potso nngwe le nngwe ya tse di latelang mme o tthaole yuniti e e sa tthomamang ya tekanyo e o e dirisitseng.

	Lekanyetsa (fopholetsa)	Yuniti e e sa tthomamang ya tekanyo	Nako
1. Ke mang yo o gorogileng pele go gaisa mo mosong ono?			
2. Ke mang yo o gorogileng wa bofelo?			
3. Go go tsaya nako e kana kang go tswa mo setulong sa gago go ya kwa koloing?			
4. Ke mang yo o tsamaileng ka pele go gaisa go tswa mo setulong sa gagwe go ya kwa koloing?			
5. A go tlaa tsaya nako e telejana go ja dijotshegare kgotsa go kgweetsa go ya sekolong?			

Session 2: Measurement (continued)

1 hour



Activity 3

Consider the measurement activities that you have just experienced in Activity 2. How is your classroom set up to provide similar learning experiences?

In Grade R, Measurement focuses on estimating, weighing, comparing and ordering objects according to how heavy or light they are.

Learners may find it difficult to understand that a small object can be heavier than a larger object. They need many opportunities to explore small heavy objects, small light objects, big heavy objects and big light objects.



Video 2

Watch the video of comparing the mass of one object against another.

Discuss these questions.

- ◆ What do you see happening?
- ◆ What concepts are being taught and learnt?
- ◆ What skills are being practised?
- ◆ What are the learners doing and saying?
- ◆ How is the teacher mediating learning?

Karolo 2: Tekanyo (tsweletso)

Ura e le 1



Tirwana 3

Leba ditirwana tsa tekanyo tse o di itemogetseng go sa le gale mo Tirwaneng 2. Phaposiborutelo ya gago e rulagantswe jang go neela maitemogelo a a tshwanang a go ithuta.

Mo Mophatong wa R, Tekanyo e totile go lekanyetsa, go kala, go bapisa le go rulaganya dilo ka tatelano go ya ka gore di boima kgotsa di bofefe go le kana kang.

Barutwana ba ka bona go le thata go tlhaloganya gore selo se sennye se ka nna boima go na le se segolo. Ba tlhoka ditšhono di le dintsi go tlhotlhomisa dilo tse dinnye tse di boima, dilo tse dinnye tse di bofefe, dilo tse dikgolo tse di boima le dilo tse dikgolo tse di bofefe.



Video 2

Lebelela video ya go bapisa boima jwa selo se sengwe kgatllhanong le se sengwe.

Buisanang ka ga dipotso tseno.

- ◆ O bona go diragalang?
- ◆ Ke megopolo efe e e rutiwang le go ithutiwa?
- ◆ Ke dikgono dife tse di ikatisetswang?
- ◆ Barutwana ba dirang mme e bile ba a reng?
- ◆ Morutabana o tsereganya go ithuta jang?

Session 3: Revisiting Grade R maths topics

1 hour

As you know, the Maths Programme is designed to introduce new knowledge and build on this progressively across the weeks and terms. During this session, we will revisit Content Areas and topics that we have dealt with in previous workshops and we will discuss how these topics have been presented in the Maths Programme.



Activity 4

The facilitator will give a topic to each group to discuss.

You are required to prepare a presentation on your understanding of the topic and how the Maths Programme deals with the development of the concepts and skills related to it. Read the relevant information associated with your topic in the *Concept Guide* (pages 138–219).

You will receive ONE of the following topics:

1. How are shapes introduced and consolidated in the Maths Programme? Refer to Term 3, Week 4, Days 1, 2 and 3 to support your discussion.
2. Position and direction are difficult concepts for young children to grasp. How does the Maths Programme present these topics in Terms 1, 2 and 3? Refer to Term 3, Week 4, Days 4 and 5 to support your discussion.
3. Term 3, Week 4, Day 5 deals with the topic of symmetry. Explain your understanding of this topic. Share your experiences of teaching symmetry and how your learners have demonstrated their understanding of it.
4. Dot cards are used throughout the Maths Programme. Discuss the value of using this resource and if/how it contributes to building number concept. Refer to Term 3, Weeks 4 and 6 to support your discussion.
5. Discuss the routine that is used to introduce a new number in the Maths Programme. Explain how this routine builds on and consolidates the development of number concept. Refer to Term 3, Week 6 to support your discussion.

Karolo 3: Go lebelela ditlhogo tsa dipalo tsa Mophato R gape

Ura e le 1

Jaaka o itse, Lenaneo la Dipalo le laoletswa go tlhagisa kitso e ntšhwa le go agelela mo go yona go ralala dibeke le dikgweditharo. Ka nako ya karolo eno, re tlaa lebelela Dikaroloteng gape le ditlhogo tse re setseng re di lebeletse mo dithutanong tse di fetileng mme e bile re tlaa buisana gore ditlhogo tseno di tlhagisitse jang mo Lenaneong la Dipalo.



Tirwana 4

Mofathosi o tlaa neela sethlopha se sengwe le se sengwe setlhogo go buisana ka ga sona.

O tlhoka go baakanya tlhagiso eo mo go yona o tlhaloganyang setlhogo le ka moo Lenaneo la Dipalo le diranang ka teng le kgolo ya megopolo le dikgono tse di amanang le lona. Buisa tshedimosetso e e maleba e e amanang le setlhogo sa gago mo *Kaeding ya Mogopolo* (ditsebe 138–219).

O tlaa neelwa SENGWE sa ditlhogo tse di latelang:

1. Dipopego di tlhagisiwa le go tsolotannngwa jang mo Lenaneong la Dipalo? Lebelela Kgweditharo 3, Beke 4, Malatsi 1, 2 le 3 go tshegetsa puisano ya lona.
2. Boemo le kaelo ke megopolo e e thata go ka tshwarelelwa ke bana ba bannye. Lenaneo la Dipalo le tlhagisa jang ditlhogo tseno mo Kgweditharong ya 1, 2 le 3? Lebelela Kgweditharo 3, Beke 4, Malatsi 4 le 5 go tshegetsa puisano ya lona.
3. Kgweditharo 3, Beke 4, Letsatsi 5 go lebeletse setlhogo sa tekano. Tlhalosa ka moo o tlhaloganyang setlhogo seno ka teng. Arogana maitemogelo a gago a go ruta tekano le gore barutwana ba gago ba supile jang ka moo ba e tlhaloganyang ka teng.
4. Dikarataronho di dirisiwa go ralala Lenaneo la Dipalo. Tlhalosa botlhokwa jwa go dirisa sediriswa seno le gore a mme e na le seabe/e tshwaela jang mo mogopolong wa go aga dinomere. Lebelela Kgweditharo 3, Dibeke 4 le 6 go tshegetsa puisano ya lona.
5. Buisanang ka ga moetlo o o dirisiwang go tlhagisa nomere e ntšhwa mo Lenaneong la Dipalo. Tlhalosa gore moetlo ono o agelela jang le go tsolotanya kgolo ya mogopolo wa dipalo. Lebelela Kgweditharo 3, Beke 6 go tshegetsa puisano ya lona.

6. Explain how word problems are used to teach addition, subtraction, grouping (multiplication) and equal sharing (division). Discuss the importance of the use of language and the structure of the word problem. Also included a motivation for the use of fingers and concrete apparatus during problem-solving activities. Refer to Week 6, Day 5 and the teacher-guided activities to provide examples.
7. How does the Maths Programme facilitate learning how to sequence/order the counting numbers (oral counting)? Consider each of the resources below to support your discussion:
- ◆ songs and rhymes
 - ◆ number washing line
 - ◆ jumping tracks
 - ◆ number symbol cards.
- How do these activities link to the concept of ordinal numbers? Refer to Term 3, Week 6 for examples to support your discussion.
8. A real understanding of counting is achieved when learners are able to count each object in a collection and know that the last count represents the total number of the collection. This is a difficult concept for learners to grasp. How does the Maths Programme provide opportunities for learners to develop the concept of cardinality?

6. Tlhalosa gore dipalofoko di dirisiwa jang go ruta tlhakanyo, ntsho, kokoanyo (go atisa) le go aroganya ka go lekana (go arola). Tlhalosa botlhokwa jwa tiriso ya puo le kagego ya palofoko. Gape akaretsa tlotlheletso ya tiriso ya menwana le dilo tse di tshwaregang ka nako ya tharabololo ya dipalo. Lebelela Beke 6, Letsatsi 5 le ditirwana tse di kaelwang ke morutabana go neela dikao.

7. Lenaneo la Dipalo le thusa jang go ithuta go tthatlhamisa/rulaganya dinomore tsa go bala (go balela kwa godimo)? Dirisa sediriswa se sengwe le se sengwe sa tse di fa tlase go tshegetsang puisano ya lona:

- ◆ mogala wa dinomore
- ◆ mela ya go tloa
- ◆ dikaratatshwao tsa nomore.

Ditirwana tseno di golagana jang le mogopolo wa dipalokemotatelano? Lebelela Kgweditharo 3, Beke 6 go bona dikao tse di tshegetsang puisano ya lona.

8. Go tlhaloganya go bala ga nnete go fitlhelelwa fa barutwana ba kgona go bala selo se sengwe le se sengwe mo kokoanyong le go itse gore palo ya bofelo e emela palogotlhe ya kokoanyo. Ono ke mogopolo o o thata go o tshwarelela. Lenaneo la Dipalo le neelana jang ka ditšhono gore barutwana ba nne le mogopolo wa bonoko?

Session 4: Planning for teaching

1½ hours

It is important to plan and prepare thoroughly for each week. This will allow you to feel confident about what you are doing and help you to focus on teaching and working with the learners. As you have already experienced in Terms 1 and 2, the Maths Programme is carefully structured, and the maths content is presented in a progressive developmental sequence. It has been designed to ensure that all the Grade R Mathematics content and skills are covered and learners are well prepared for Grade 1. Teachers need to be cautious about selecting activities from different weeks and leaving other activities out.



Activity 5

1. In your group, complete the planning templates for Term 3 Weeks 4–6 (Appendix A).
2. Your group will present an overview of your planning discussion to the other groups. Note the main points of your discussion on flipchart paper. Include answers to the following questions:
 - ◆ How could you work with a colleague to prepare for each week?
 - ◆ How is the week structured?
 - ◆ How do the topics build on previous lessons?
 - ◆ Do the whole class activities successfully open the way for discussion and exploration of new knowledge?
 - ◆ How does the teacher-guided activity provide opportunities for the teacher to assess and support the learners?
 - ◆ Do the independent small group activities allow for adequate practice of new knowledge and skills?

Karolo 4: Go ithulaganyetsa go ruta

Diura di le 1½

Go bothokwa go rulaganyetsa le go ipaakanyetsa beke e nngwe le e nngwe sentle. Seno se tlaa dira gore o itshepe tebang le se o se dirang le go go thusa go tsepama mo go ruteng le go dira le barutwana. Jaaka o setse o itemogetse mo Kgweditharong 1 le 2, Lenaneo la Dipalo le rulagantswe ka kelotlhoko, le diteng tsa dipalo di tlhagisitswe ka tatelano e e tlisang kgolo. Le tlhamilwe go netefatsa gore diteng tsotlhe tsa Dipalo tsa Mophato R le dikgono di lebeletse le gore barutwana ba ipaakanyeditse Mophato 1 sentle. Barutabana ba tlhoka go nna kelotlhoko ka ditirwana tse ba di tlhophang go tswa mo dibekeng tse di farologaneng le go tlogela ditirwana tse dingwe.



Tirwana 5

1. Mo ditlhopheng tsa lona, tlatsang dithempoleiti tsa Kgweditharo 3 Dibeke 4–6 (Mametlelelo A).
2. Setlhopha sa gago se tlaa tlhagisetsa ditlhopha tse dingwe thadiso ya puisano e lo e rulagantseng. Kwalang dintlhakgolo tsa puisano ya lona mo pampiring ya tšhatephetogi. Akaretsa dikarabo tsa dipotso tse di latelang:
 - ◆ O ne o ka dira jang le molekane go ipaakanyetsa beke nngwe le nngwe?
 - ◆ Beke e rulagantswe jang?
 - ◆ Ditlhogo di agelela jang mo dikamusong tse di fetileng?
 - ◆ A ditirwana tsa phaposiborutelo yotlhe di bula tsela ya dipuisano ka katlego le tekeletso ya kitso e ntšhwa?
 - ◆ Tirwana e e kaelwang ke morutabana e neelana jang ka ditšhono tsa gore morutabana a tlhatlhobe le go tshegetsatsa barutwana?
 - ◆ A ditirwana tse di ikemetseng tsa ditlhopha tse dinnye di letla ikatiso e e lekaneng ya kitso e ntšhwa le dikgono?

Closing activities

30 minutes



Activity 6

Workshop reflection: Take a few minutes to reflect on the day. Page through your *Participant's Workbook* to remind yourself of what was covered. Write down your thoughts.

Share your reflections with the large group.



Take back to school task

1. Use *Activity Guide: Term 3* to plan and implement Term 3 Weeks 4–6 of the Maths Programme.
2. Write comments in the book that you use to keep track of each learner's progress (learner observation book). Use the '**Check that learners are able to**' observation list (eye box) during each of the teacher-guided activities to guide your observations and comments.
3. Make notes of what worked well, what did not work well and how you resolved any challenges during your implementation of Term 3 Weeks 4–6.
4. Bring your learner observation book and the notes you made when reflecting on each day's teaching to the next workshop.

Evaluation

Complete the Evaluation Form.



Tirwana 6

Tshedisiso ya thutano: Tsaya metsotso e le mmalwa go sedisisa ka ga letsatsi. Phetlha *Bukatiro ya Batsayakarolo* ya gago go ikgopotsa se se dirilweng.

Arogana ditshedisiso tsa gago le setlhopha se segolo.



Tirwana e o e busetsang kwa sekolong

1. Dirisa *Kaedi ya Ditirwana: Kgweditharo 3* go rulaganya le go diragatsa Kgweditharo 3 Dibeke 4–6 tsa Lenaneo la Dipalo.
2. Kwala ditshwaelo mo bukeng tse o di dirisang go ela tlhoko tswelelopele ya morutwana (buka ya ngwana ya kelotlhoko). Dirisa lenanekelotlhoko (lebokoso la leitlho) la '**Ela tlhoko gore barutwana ba kgona go**'. Ka nako ya ditirwana tse dingwe le tse dingwe tse di kaelwang ke morutabana go kaela dikelotlhoko le ditshwaelo tsa gago.
3. Kwala dintlha tsa se se dirileng sentle thata, se se sa dirang sentle le gore ba rarabolotse jang dikgwetlho dingwe ka nako ya tiragatso ya Kgweditharo 3 Dibeke 4–6.
4. Tlala ka buka ya morutwana ya kelotlhoko le dintlha tse o di kwadileng fa o sedisisa thuto ya letsatsi le lengwe le le lengwe mo thutanong e e latelang.

Tlhatlhobo

Tlatsa Foromo ya Tlhatlhobo.

APPENDIX A: TERM 3 WEEKLY PLANNING TEMPLATE

Term 3: Activity Plan: Week ____

CONTENT AREA:				
TOPIC:				
INTRODUCE NEW KNOWLEDGE:				
PRACTISE:				
Whole class activities		Teacher-guided activity	Workstation activities (independent small group activities)	
Day 1			Activity 1	
Day 2			Activity 2	
Day 3			Activity 3	
Day 4			Activity 4	
Day 5				

MAMETLELELO A: KGWEDITHARO 3 THEMPOLEITI YA THULAGANYO YA BEKE LE BEKE

Kgweditharo 3: Thulaganyo ya ditirwana: Beke ____

KAROLOTENG:				
SETLHOGO:				
TLHAGISA KITSO E NTŠHWA:				
IKATISE:				
Ditirwana tsa phaposiborutelo yotlhe		Tirwana e e kaelwang ke morutabana	Ditirwana tsa seteišenetiro (ditirwana tse di ikemetseng tsa setlhopha se sennye)	
Letsatsi 1			Tirwana 1	
Letsatsi 2			Tirwana 2	
Letsatsi 3			Tirwana 3	
Letsatsi 4			Tirwana 4	
Letsatsi 5				

Term 3: Activity Plan: Week ____

CONTENT AREA:				
TOPIC:				
INTRODUCE NEW KNOWLEDGE:				
PRACTISE:				
Whole class activities		Teacher-guided activity	Workstation activities (independent small group activities)	
Day 1			Activity 1	
Day 2			Activity 2	
Day 3			Activity 3	
Day 4			Activity 4	
Day 5				

Kgweditharo 3: Thulaganyo ya ditirwana: Beke ____

KAROLOTENG:				
TLHAGISA KITSO E NTŠHWA:				
TLHAGISA KITSO E NTŠHWA:				
IKATISE:				
Ditirwana tsa phaposiborutelo yotlhe		Tirwana e e kaelwang ke morutabana	Ditirwana tsa seteišenetiro (ditirwana tse di ikemetseng tsa setlhopha se sennye)	
Letsatsi 1			Tirwana 1	
Letsatsi 2			Tirwana 2	
Letsatsi 3			Tirwana 3	
Letsatsi 4			Tirwana 4	
Letsatsi 5				

Term 3: Activity Plan: Week ____

CONTENT AREA:				
TOPIC:				
INTRODUCE NEW KNOWLEDGE:				
PRACTISE:				
Whole class activities		Teacher-guided activity	Workstation activities (independent small group activities)	
Day 1			Activity 1	
Day 2			Activity 2	
Day 3			Activity 3	
Day 4			Activity 4	
Day 5				

Kgweditharo 3: Thulaganyo ya ditirwana: Beke ____

KAROLOTENG:				
TLHAGISA KITSO E NTŠHWA:				
TLHAGISA KITSO E NTŠHWA:				
IKATISE:				
Ditirwana tsa phaposiborutelo yotlhe		Tirwana e e kaelwang ke morutabana	Ditirwana tsa seteišenetiro (ditirwana tse di ikemetseng tsa setlhopha se sennye)	
Letsatsi 1			Tirwana 1	
Letsatsi 2			Tirwana 2	
Letsatsi 3			Tirwana 3	
Letsatsi 4			Tirwana 4	
Letsatsi 5				

Workshop 8 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 Tlhatlhubo ya Thutano 8

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?
