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GROWING GAUTENG TOGETHER

IsiNdebele/English

IHlelo lokuThuthukisa iimBalo zeGreyidi R Grade R Mathematics Improvement Programme



Isifundobandulo 6 • Workshop 6
INcwadi yokuSebenzela yomHlanganyeli • Participant's Workbook

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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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Ukuthokoza okukhethekileko:

- Iinkhulu zePhiko labaNgophisi leKharikhyulamu, iPhiko labaNgophisi laboTitjhere bezeFundo nePhiko labaNgophisi leFundo eKhethekileko yomNyango wezeFundo weGauteng, ekutjhugululweni kwemethiriyali yethu.
- Abasebenzi nabotitjhere be-Western Cape Education Department (WCED) ngokufaka kwabo isandla epumelweni yokusetjenziswa kwe-Grade R Mathematics Programme (R-Maths) eTjhingalanga Kapa phakathi komnyaka we-2016 nowe-2019.
- Isiqhema sokutlola se-R-Maths: Abasebenzi nabathintanisi be-SDU.



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Overview

Purpose

This is the sixth 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 assist teachers with the implementation of the Maths Programme in their classrooms, especially the Content Areas covered in Term 2 Weeks 8–10. Participants will reflect on their ongoing assessment of learners' progress and will document developmental concerns related to the learners that may require special interventions and support. Participants will also reflect on teaching strategies that strengthen learners' problem-solving skills.

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 2 Weeks 4–7
- ◆ To explore strategies to support teaching maths in Grade R
- ◆ To reflect on the Maths Programme's principles in the weekly plan
- ◆ To engage with the Maths Programme content of Term 2 Weeks 8–10 (Space and Shape (Geometry); Measurement; Numbers, Operations and Relationships)
- ◆ To apply knowledge of informal, continuous assessment to learning and teaching

Workshop content

Opening and reflection	(1 hour)
Session 1: Space and Shape (Geometry)	(1 hour)
TEA	
Session 2: Measurement	(1 hour)
Session 3: Numbers, Operations and Relationships	(1 hour)
LUNCH	
Session 4: Numbers, Operations and Relationships	(45 minutes)
Session 5: Term 2 Assessment	(1 hour)
Closing activities	(15 minutes)

Isirhunyezo

Umnqopho

Lesi sifundobandulo sesithandathu kezilitjhumi nambili zeHlelo lokuThuthukisa iimBalo zeGreyidi R, eliyincenye yomNyango wezeFundo weGauteng (Gauteng Department of Education (GDE)) iPhrojekthi yokuThuthukiswa kweemBalo namaLimi kwaGreyidi R.

Umnqopho wesifundobandulwesi kusiza abotitjhere ukusebenzisa iHlelo leemBalo ngematlasinabo, khulukhulu iinGaba zokuMumethweko ezenziwe ngeThemu 2 Iimveke 8–10. Abahlanganyeli bazakuzindla ngeragelophambili lokuhlola kwabo abafundi begodu bazakutlola phasi okubatshwenyako okuphathelene nabafundi abangadinga ingenelelo nesekele elikhethekileko. Abahlanganyeli godu bazakuzindla ngamano aqinisa amakghono wabafundi wokurarulula imiraro.

Iintjengisi zeenGaba zokuMumethweko zeemBalo zakwaGreyidi R zithethwe kusi*Tatimende somGomo weKharikhyulamu nokuHlola (i-CAPS): IimBalo zakwaGreyidi R* (Umtlamo wokugcina), 2011, UmNyango wezeFundo esiSekelo, eSewula Afrika.

Imiphumela yokufunda

- ◆ Ukuzindla ngokusetjenziswa kweThemu 2 Iimveke 4–7
- ◆ Ukuhlola amano wokusekela ukufundisa iimbalo kwaGreyidi R
- ◆ Ukuzindla ngemithethokambiso yeHlelo leemBalo esehlelweni laqobe yiveke
- ◆ Ukuzibandakanya nokumumethweko kweHlelo leemBalo leThemu 2 Iimveke 8-10 (IsiKhala neBumbeko (Ijyomethri); Ukumeda; Iinomboro, ama-Opharetjhini noBudlelwana)
- ◆ Ukusebenzisa ilwazi lokuhlola okuragela phambili okungakahlaleki ekufundeni nekufundiseni.

Okumumethweko kwesifundobandulo

- ◆ Ukuvula nokuzindla (1-iri)
 - ◆ Isetjhini 1: IsiKhala neBumbeko (Ijyomethri) (1-iri)
- ITIYE
- ◆ Isetjhini 2: Ukumeda (1-iri)
 - ◆ Isetjhini 3: Iinomboro, ama-Opharetjhini noBudlelwana (1-iri)
- ISIDLO SEMINI
- ◆ Isetjhini 4: Iinomboro, ama-Opharetjhini noBudlelwana (Imizuzu 45)
 - ◆ Isetjhini 5: Ukuhlola Ithemu 2 (1-iri)
 - ◆ Imisebenzi yokuvala (Imizuzu 15)

Opening and reflection

1 hour

Here is the *Take back to school* task from Workshop 5.



Take back to school task (Workshop 5)

1. Continue to use the Record of Continuous Assessments in *Activity Guide: Term 2* to assess your learners. Make use of your ongoing observation notes to build up evidence of what learners understand and can do.
2. Identify any concerns you have about individual learner's emerging grasp of maths concepts.
3. Bring copies of rubrics that you used for maths assessment to the next workshop.
4. Bring a completed assessment record for one learner to the next workshop.
5. Use *Activity Guide: Term 2* to plan and implement Weeks 4–7 of the Maths Programme, including creating a maths area with a focus on the concept for each week.
6. Make notes on what worked well, what did not work so well and what you could do differently to improve teaching and learning.



Activity 1

1. In your groups, discuss your progress in implementing Term 2 Weeks 4–7.
 - ◆ What worked well (strengths)?
 - ◆ What did not work well (challenges)?
 - ◆ What could you do to improve teaching and learning in your classroom?

Record the main points of your discussion on flipchart paper to share with the other groups later.

Naku *Umsebenzi obuyiselwa esikolweni* wesiFundobandulo 5.



Umsebenzi obuyiselwa esikolweni (isiFundobandulo 5)

1. Ragela phambili nokusebenzisa iRekhodi lokuHlola okuRagela phambili *kumHlahlandlela wemiSebenzi: Ithemu 2* ukuhlola abafundi bakho. Sebenzisa amanothi wakho wokutjheja kwakho okuragako ukwakha ubufakazi balokho abafundi abakuzwisako nalokho abakwazi ukukwenza.
2. Tshwaya nofana ngikuphi okukutshwenyako mayelana nomfundi ngamunye othoma ukuzwisisa imiqondo yeembalo.
3. Letha amakhophi wamarubhrikhi owasebenzisileko ukuhlola iimbalo kusifundobandulo esilandelako.
4. Letha amarekhodo aphelileko wokuhlola womfundi munye kusifundobandulo esilandelako.
5. Sebenzisa *UmHlahlandlela wemiSebenzi: Ithemu 2* ukuhlela nokusebenzisa limveke 4–7 zeHlelo leemBalo, ukufaka hlangana ukwakha indawo yeembalo ngokunqopha umqondo weveke ngayinye.
6. Yenza amanothi ngalokho okusebenze kuhle, lokho okungakasebenzi kuhle nalokho ongakwenza ngokuhlukileko ukuthuthukisa ukufundisa nokufunda.



Umsebenzi 1

1. Ngeenqhema zenu, khulumisanani ngeragelophambili lokusebenzisa iThemu 2 limveke 4–7.
 - ◆ Khuyini okusebenze kuhle (okunamandla)?
 - ◆ Khuyini okungakasebenzi kuhle (iintjhijilo)?
 - ◆ Khuyini ongakwenza ukwenza ngcono ukufundisa nokufunda ngetlasini yakho?

Rekhoda amaphuzu aqakathekileko wemikhulumiswano yenu ephepheni letjhadi ephendlekako nizokwabelana nezinye iinqhema ngemva kwesikhathi.

2. Discuss how successful you were in:
 - ◆ recording notes about individual learners after each teacher-guided activity in Weeks 4–7.
 - ◆ completing the Term 2: Record of Continuous Assessments on pages 190–193 of *Activity Guide: Term 2* for each learner.

Record the main points of your discussion on your flipchart paper.

3. Discuss one learner’s areas of success and/or difficulty and how you recorded these. Record the main points of your discussion on your flipchart paper.

In the *Take back to school* task in Workshop 5 you were asked to bring copies of the learner assessment rubrics you use as part of the Maths Programme to this workshop. In Activity 2, your group will discuss these rubrics and how assessment information is captured and shared. In Session 5, we will discuss rubrics in more detail.



Activity 2

1. In your groups, share examples of maths rubrics you have used as part of your assessment process.
2. Discuss how you capture the learners’ progress on the SA-SAMS system and how this information is shared with parents.

Record the main points of your discussion on flipchart paper to share with the other groups later.

2. Khulumisanani ngokobana niphumelele njani kilokhu:
 - ◆ ukurekhoda amanothi mayelana nomfundi ngamunye ngemva komsebenzi ohlahlwa ngutitjhere ngamunye weemVeke 4–7.
 - ◆ ekwenzeni Ithemu 2: Irekhodi yokuHlola okuRagela phambili emakhasini 190–193 *womHlahlandlela wemiSebenzi: Ithemu 2 lomfundi ngamunye.*

Rekhoda amaphuzu aqakathekileko wemikhulumiswano yenu etjhadini eliphendlekako.

3. Khulumisanani ngeendawo lapha umfundi oyedwa aphumelela khona/anobudisi khona nokobana ukurekhode njani lokhu. Rekhodani amaphuzu aqakathekileko wemikhulumiswano yenu etjhadini eliphendlekako.

Umsebenzi obuyiselwa esikolweni wesiFundobandulo 5 ubawiwe bonyana ulethe amakhophi werubhrikhi yokuhlola abafundi oyisebenzisa njengencenye yeHlelo leemBalo kilesi isifundobandulo. Umsebenzi 2, isiqhema sakho sizakukhulumisana ngamarubhrikhi lawa nokobana ilwazi lokuhlola litlolwe belabiwa njani. Kusetjhini 5, sizakukhulumisana ngamarubhrikhi ngokunabileko.



Umsebenzi 2

1. Eenqhemeni zebu, yabelanani ngeembonelo zamarubhrikhi weembalo owasebenzise njengencenye yekambiso yokuhlola.
2. Khulumisanani ngokobana nilitole njani iragelophambili labafundi ehlelweni le-SA-SAMS nokobana ilwazi leli labiwa njani nababelethi.

Rekhodani amaphuzu aqakathekileko wemikhulumiswano yenu ephepheni letjhadini eliphendlekako kobana nizowabelana neenqhema ezinye ngemuva kwesikhathi.

 **Video 1**

Watch the video of a teacher observing a group of learners completing a maths activity. Listen to her talking about how she observes and records her learners' progress and how she deals with their different levels of competence.

Discuss how you deal with learners who are not achieving success in the structured weekly plans, as well as those learners who exceed expectations.

The **level principle**: Not all learners progress at the same speed. Some learners need more time to consolidate a skill or concept while others grasp ideas more quickly. The challenge for teachers is to accommodate learners at different levels and to adapt the weekly plan to provide support or extension activities where necessary.





Ividiyo 1

Bukelani ividiyo katitjhere otjheja isiqhema sabafundi abenza umsebenzi weembalo. Mlaleleni lokha nakakhuluma ngokobana utjheja begodu arekhode njani iragelophambili labafundi bakhe nokobana uqalana njani namazinga wabo ahlukileko wamakghono.

Khulumisanani ngokobana niqalana njani nabafundi abangaphumeleli emahlelweni ahlekileko weveke, kunye nabafundi abaphumelela ngokudluleleko.

Umthethokambiso wezinga: Akusibo boke abafundi abathuthuka ngebelo elifanako. Abanye abafundi badinga isikhathi esingaphezulu ukubamba ikghono nofana umqondo lokha abanye nababamba imibono msinyana. Isitjhijilo sabotitjhere kukwamukela abafundi emazingeni ahlukileko nokutjhugulula ihlelo laqobe yiveke ukunikela isekelo nofana ukunabisa imisebenzi lapho kutlhogeka khona.



Session 1: Space and Shape (Geometry)

1 hour

This workshop focuses on teaching the content of Term 2 Weeks 8–10. The focus of Term 2 Week 8 is Space and Shape (Geometry).

Terms 1–4 Content overview: Space and Shape (Geometry)

Refer to the content overview for Space and Shape (Geometry) on pages 126–131 of the *Concept Guide* and complete Activity 3.



Activity 3

1. What Space and Shape content has already been introduced in Terms 1 and 2?

2. What concepts still need to be covered in Term 2?

Properties of shapes

Learners need many opportunities to compare and sort shapes according to their properties and to describe the similarities and differences of shapes.



Activity 4

The facilitator will give your group a set of shapes.

1. Sort the shapes.
2. Discuss why you sorted them in this way.
3. Sort the shapes in another way.
4. Discuss why you sorted them in this way.

Isetjhini 1: IsiKhala neBumbeko (Ijyomethri)

1-iri

Lesi sifundobandulo siqophene nokufundisa okumumethweko kweThemu 2 Iimveke 8–10. Umnqopho weThemu 2 Iveke 8 IsiKhala neBumbeko (Ijyomethri).

Ithemu 1–4 Isirhunyezo sokumumethweko: IsiKhala neBumbeko (Ijyomethri)

Qala isirhunyezo sokumumethweko kwesiKhala neBumbeko (Ijyomethri) emakhasini 126–131 wom*Hlahlandlela womQondo* bese nenza Umsebenzi 3.



Umsebenzi 3

1. Ngikuphi okumumethweko kwesiKhala neBumbeko esele kuthuliwe ngeThemu 1 naye-2?

2. Ngimiphi imiqondo esadinga ukwenziwa ngeThemu 2?

Amatshwayo wamabumbeko

Abafundi badinga amathuba amanengi wokumadanisa nokuhlela amabumbeko ngokuya ngokwamatshwayo wawo nokuthadhlhula ukufana nokuhluka kwamabumbeko.



Umsebenzi 4

Umkghonakalisi uzakunikela isiqhema sakho isede yamabumbeko.

1. Hlelani ngamaneko amabumbeko la.
2. Khulumisanani ngokobana kubayini niwahlele ngalindlela.
3. Hlelani amabumbeko ngenye indlela.
4. Khulumisanani ngokobana kubayini niwahlele ngalindlela.

Term 2 Content Summary: Week 8

Refer to Appendix A: Term 2 Weekly Content Summary (Weeks 8–10). Read the content overview for Week 8: Space and Shape (Geometry) on page 20 of *Activity Guide: Term 2*.

The Space and Shape (Geometry) Content Area was also the focus of Term 2 Weeks 3 and 4. In previous workshops, you have discussed the Space and Shape concepts that need to be covered.

The Weekly Content Summary for Week 8 provides an overview of planning for the week: whole class activities, teacher-guided activities and workstation activities done in independent small groups.



Activity 5

1. Take a few minutes to familiarise yourself with the Week 8 content in Appendix A: Term 2 Weekly Content Summary (Weeks 8–10).
2. Match this with the content on pages 138–153 of *Activity Guide: Term 2*. Identify how the whole class, teacher-guided and workstation activities link with the Week 8 content in Appendix A.

Ithemu 2 Isirhunyezo sokuMumethweko: Iveke 8

Qala Isithasiselo A: Isirhunyazo sokuMumethweko kwaQobe yiVeke (Iimveke 8–10).
Funda isirhunyezo sokumumethweko kweVeke 8: IsiKhala neBumbeko (Ijijomethri)
ekhasini 21 *UmHlahlandlela wemiSebenzi: Ithemu 2*.

IsiGaba sokuMumethweko kwesiKhala neBumbeko (Ijijomethri) naso besimnqopho
weThemu 2 Iimveke 3 neye-4. Kumfundobandulo ezidlulileko, nikhulumisene
ngemiqondo yesiKhala neBumbeko ekufanele yenziwe.

Isirhunyezo sokuMumethweko kwaqobe yiVeke kweVeke 8 kunikela isirhunyezo
sokuhlelela iveke: imisebenzi yetlasi yoke, imisebenzi ehlahlwa ngutitjhere nemisebenzi
yeentetjhini zokusebenzela eyenziwa ngeenqhema ezincani ezizijameleko.



Umsebenzi 5

1. Thatha imizuzu embalwa ukuzijayeza ngokumumethweko kweVeke 8 Isithasiselo
A: Isirhunyazo sokuMumethweko kwaQobe yiVeke (Iimveke 8–10).
2. Khambelanisa lokhu nokumumethweko okusemakhasini 138–153
womHlahlandlela wemiSebenzi: Ithemu 2. Fanisani bonyana imisebenzi yetlasi loke,
ehlahlwa ngutitjhere neyesitetjhi sokusebenzela ihlangana njani nokumumethweko
kweVeke 8 isiThasiselo A.

Session 2: Measurement

1 hour

The focus of Term 2 Week 9 is Measurement.

Terms 1–4 Content overview: Measurement

Refer to the content overview for Measurement on pages 132–135 of the *Concept Guide*.



Activity 6

1. What Measurement concepts are covered in Term 2?

2. What are the differences between the Maths Programme content and the CAPS content?

Directly comparing objects: length

In Term 1 of the Maths Programme the focus of the Measurement Content Area was time (day, night, days of the week, sequencing events, etc.) and the height chart. In Term 2 Week 9, the focus is on using non-standard units to measure and compare length.



Activity 7

1. **Direct comparison**

Choose a partner to stand next to. The rest of your group members should compare your heights.

- ◆ Who is taller? _____
- ◆ Who is shorter? _____
- ◆ Find a third person who is taller than both of these people.
- ◆

2. **Using non-standard units of measurement**

Choose three objects (e.g. a key, a cellphone, a purse).

- ◆ Use one of these items at a time to measure this *Participant's Workbook*.
- ◆ Report your findings to the group.

Isetjhini 2: Ukumeda

1-iri

Umnqopho weThemu 2 Iveke 9 Ukumeda.

Ithemu 1–4 Isirhunyezo sokuMumethweko: Ukumeda

Qala isirhunyezo sokumumethweko Ukumeda emakhasini 32–135 womHlahlandlela womQondo.



Umsebenzi 6

1. Ngimiphi imiqondo yokumeda eyenziwe bgeThemu 2?

2. Ngimiphi imehluko phakathi kokumumethweko kweHlelo leemBalo nokumumethweko kwe-CAPS?

Ukumadanisa izinto bunqopha: ubude

KuThemu 1 yeHlelo leemBalo umnqopho wesiGaba sokuMumethweko sokuMeda bekusikhathi (imini, ubusuku, amalanga weveke, ukulandelanisa izehlakalo, njll.) netjhadi lokuphakama. KuThemu 2 Iveke 9, umnqopho usekusebenziseni amayunithi wokumeda angakavami ukumeda nokumadanisa ubude.



Umsebenzi 7

1. **Ukumadanisa bunqopha**

Khetha umlingani ongajama eduze naye. Woke amanye amalunga wesiqhema kufanele amadanise ukuphakama kwenu.

- ◆ Ngubani omude khulu? _____
- ◆ Ngubani omfitjhani khulu? _____
- ◆ Tholani umuntu wesithathu ophakamileko kunabo bobabili abantu laba.

2. **Ukusebenzisa amayunithi wokumeda angakavami**

Khetha izinto ezintathu (isib. isikhiya, ufunjathwako, isipatjhi).

- ◆ Sebenzisa yinye yama-ayithemu lawa ngasikhathi sinye ukumeda *iNcwadi yokuSebenzela yomHlanganyeli*.
- ◆ Bika lokho okutholileko esiqhemeni.

Term 2 Content Summary: Week 9

Refer to Appendix A: Term 2 Weekly Content Summary (Weeks 8–10). Read the content overview for Week 9: Measurement on page 20 of *Activity Guide: Term 2*.

Read the whole class activities for Week 9 on pages 154–165 of *Activity Guide: Term 2*.



Activity 9

In your groups, discuss how length is taught during the whole class activities in Week 9.

1. What could you do if a learner is not yet able to compare and order objects according to length – long/longer and short/shorter by the end of Week 9?

2. What could you do if some learners complete a workstation activity successfully quicker than planned?

Ithemu 2 Isirhunyezo sokuMumethweko: Iveke 9

Qala Isithasiselo A: Isirhunyezo sokuMumethweko kwaQobe yiVeke (Iimveke 8–10).

Funda isirhunyezo sokumumethweko kweVeke 9: Ukumeda ekhasini 21

UmHlahlandlela wemiSebenzi: Ithemu 2.

Funda yoke imisebenzi yetlasi loke yeVeke 9 amakhasi 154–165 *womHlahlandlela wemiSebenzi: Ithemu 2.*



Umsebenzi 9

Eenqhemeni zenu, khulumisanani ngokobana ubude bafundiswa njani ngesikhathi semisebenzi yetlasi loke ngeVeke 9.

1. Ngikuphi ongakwenza nangabe umfundi usengakakwazi ukumadanisa nokurhemisa izinto ngokuya ngobude – de/-de khulu nokufitjhani/fitjhani khulu ekupheleni kweVeke 9?

2. Ngikuphi ongakwenza nange abanye abafundi bangaqeda umsebenzi wesitetjhini sokusebenzela ngepumelelo msinyana kunalokho obekuhleliwe?

Session 3: Numbers, Operations and Relationships

1 hour

The focus of Term 2 Week 10 is Numbers, Operations and Relationships.

Terms 1–4 Content overview: Numbers, Operations and Relationships

The Numbers, Operations and Relationships Content Area was also the focus in Weeks 1, 2 and 5 of Term 2, and you discussed the number concepts that need to be covered in previous workshops. Look at the content overview for Numbers, Operations and Relationships on pages 114–123 of the *Concept Guide*.



Activity 10

What number concepts still need to be covered in Term 2?

Problem solving

Teachers need to provide learners with many opportunities to solve problems so that they can apply their maths knowledge and skills in new contexts. All games and activities involve problem solving. Word problems in maths introduce a specific type of problem solving that involves solving addition, subtraction, multiplication and division problems. In Grade R learners solve addition and subtraction problems by counting and using concrete apparatus to help them find a solution. They use grouping and one-to-one sharing to solve multiplication and division problems.

The biggest challenge in presenting word problems to learners, is to ensure that there is appropriate questioning and use of language. When teachers present a word problem, they need to listen carefully to learners' responses and guide them to solve the problem using a strategy that is suitable for their level of understanding.

The posters in the *Poster Book* have been designed to provide learners with a set of pictures that relate to their lives and provide contexts for solving real-life problems.

In Week 10 Day 4 (page 180 of *Activity Guide: Term 2*), Poster 1 is used to encourage learners to solve problems that involve numbers 1–5.

Isetjhini 3: Iinomboro, ama-Opharetjhini noBudlelwana

i-Iri 1

Umnqopho weThemu 2 Iveke 10 ziiNomboro, ama-Opharetjhini noBudlelwana.

Ithemu 1–4 Isirhunyezo sokumumethweko: Iinomboro, ama-Opharetjhini noBudlelwana

IsiGaba sokuMumethweko iiNomboro, ama-Opharetjhini noBudlelwana nakho bekumnqopho weeVeke 1, 2, neye-5 zeThemu 2, begodu nikhulumisene ngoqondo weenomboro obekufanele wenziwe ngemfundobandulo ezidlulileko. Qala isirhunyezo sokumumethweko kweeNomboro, ama-Opharetjhini noBudlelwana emakhasini 114–123 womHlahlandlela womQondo.



Umsebenzi 10

Ngiwuphi umqondo weenomboro osafanele ukwenziwa ngeThemu 2?

Ukurarulula umraro

Abotitjhere kufanele banikele abafundi amathuba amanengi wokurarulula imiraro kobana bakwazi ukusebenzisa ilwazi namakghono wabo weembalo ebujameni obutjha. Yoke imidlalo nemisebenzi ibandakanya ukurarulula umraro. Imiraro yamagama eembalweni yethula ihlobo lokurarulula umraro elikhethekileko elibandakanya imiraro yokuhlanganisa, ukukhupha, ukubuyabuyelela nokuhlukanisa. KwaGreyidi R abafundi bararulula imiraro yokuhlanganisa nokukhupha ngokubala nokusebenzisa iinsetjenziswa eziphathekako ukubasiza bathole isisombululo. Basebenzisa ukwenza iinqhema nokwaba ngakunye kokunye ukurarulula imiraro yokubuyabuyelela nokuhlukanisa.

Isitjhijilo esikhulu ekuthuleni imiraro yamagama kubafundi, kuqinisekisa bonyana kunokubuza nokusetjenziswa kwelimi ngefanelo. Lokha abotitjhere nabathula umraro wegama, kufanele balalele kuhle iimpendulo zabafundi bese bayabahlahla ukurarulula umraro ngokusebenzisa amano afaneleko akhambisana nezinga labo lokuzwisisa.

Amaphosta we-Ncwadi yamaPhosta atlanyelwe ukunikela abafundi isede yeenthombe ezikhambelana nepilo yabo nokunikela ubujamo bokurarulula imiraro yepilo yamambala.

NgeVeke 10 iLanga 4 (ikhasi 181 umHlahlandlela wemiSebenzi: Ithemu 2), iPhosta 1 isetjenziselwa ukukhuthaza abafundi ukurarulula imiraro ebandakanya iinomboro 1–5.



Activity 11

In your groups, refer to Poster 1. Think of appropriate word problems for each of these skills:

- ◆ comparing
- ◆ matching
- ◆ counting
- ◆ addition
- ◆ subtraction
- ◆ grouping
- ◆ equal sharing.

When you do word-problem activities with your learners, allow them to use their fingers or counters to help them solve the problems.

One of the sections in Numbers, Operations and Relationships is, 'Solve problems in context'. In your groups, read the content overview for Term 2 for this section on page 120 of the *Concept Guide*. Then complete Activity 12.



Activity 12

Reflect on Activity 11.

1. What concepts and skills are taught and learnt in the topic: Problem-solving techniques?

2. What concepts and skills are taught and learnt in topic: Addition and subtraction?



Umsebenzi 11

Eenqhemeni zenu, qalani iPhosta 1. Cabangani ngemiraro yamagama efaneleka amakghono lawa ngalinye:

- ◆ ukumadanisa
- ◆ ukukhambelanisa
- ◆ ukubala
- ◆ ukuhlanganisa
- ◆ ukukhupha
- ◆ ukwenza iinqhema
- ◆ ukwabelana ngokulingana.

Lokha nawenza imisebenzi yomraro wegama nabafundi, bavumele basebenzise imino yabo nofana iimbalisi ukubasiza bararulule imiraro.

Esinye seengaba zeeNomboro, ama-Opharetjhini noBudlelwana ku-, 'Ukurarulula imiraro ebujameni'. Eenqhemeni zenu, fundani isirhunyezo sokumumethweko kweThemu 2 ngesigaba lesi ekhasini 121 *umHlahlandlela womQondo*. Bese nenza Umsebenzi 2.



Umsebenzi 12

Zindlani ngomSebenzi 11.

1. Ngimiphi imiqondo namakghono afundisiweko begodu yafundwa esihlokweni: Amano wokurarulula umraro?

Estimation

Learners develop estimation skills and make a 'sensible' guess about 'how many objects' there are in a collection. During measurement activities, they estimate how heavy or how long something is, or how many cups will fill a jug before they do the actual measuring.



Activity 13

The facilitator will show you two jars. Estimate how many objects are in each jar and respond to her questions.

Learners need to be able to use terms such as: *too few, too many, more than, enough, not enough, nearly, close to, about the same, just under, just over.*

Teachers can plan estimation activities that encourage learners to make sensible guesses about the quantity of a group of objects or the measurement of an object.

Term 2 Content Summary: Week 10

Refer to Appendix A: Term 2 Weekly Content Summary (Weeks 8–10). Read the content overview for Week 10: Numbers, Operations and Relationships on page 20 of *Activity Guide: Term 2*.



Activity 14

1. What are the topics for Week 10?
-
-

2. Ngimiphi imiqondo namakghono afundisiweko begodu yafundwa esihlokweni: Ukuhlanganisa nokukhupha?
-
-

Isilinganiso

Abafundi baba namakghono wokulinganisa bese benza ukufunisela 'okuzwakalako' nbokobana 'zingaki izinto' ezisebuthelweni. Ngesikhathi semisebenzi yokumeda, balinganisa bonyana into ibudisi nofana yide kangangani, nofana makopi amangaki azakuzalisa ijege ngaphambi kobana bamede kwamambala.



Umsebenzi 13

Umkghonakalisi uzanikhombisa amabhodlelo amabili. Linganisani bonyana zizinto ezingaki ezingebhodlelweni ngalinye bese niphendula imibuzo yakhe.

Abafundi kufanele bakwazi ukusebenzisa amathemu anjengokuthi: *kumbalwa khulu, kunengi khulu, kungaphezulu kuna-, kwanele, akukaneli, pheze, eduze na-, pheze kuyafana, ngaphasana, ngaphezudlwana.*

Abotitjhere bangahlela imisebenzi yokulinganisa ekhuthaza abafundi ukwenza ukufunisela okuzwisisekako mayelana nobungako bebuthelelo lezinto nofana ukumeda into.

Ithemu 2 Isirhunyezo sokuMumethweko: Iveke 10

Qala Isithasiselo A: Isirhunyezo sokuMumethweko kwaQobe yiVeke (Iiveke 8–10). Funda isirhunyezo sokumumethweko kweVeke 10: Inomboro, ama-Opharetjhini noBudlelwana ekhasini 21 *umHlahlandlela wemiSebenzi: Ithemu 2.*



Umsebenzi 14

1. Ngiziphi iinhloko zeVeke 10?

2. What new knowledge is introduced in this week?

3. What skills from previous weeks are practised?

Refer to the estimation activities in Week 10 (*Activity Guide: Term 2*, pages 174 (Day 1), 176 (Day 2) and 178 (Day 3)).

2. Ngiliphi ilwazi elitjha elethulwa ngeveke le?

3. Ngiwaphi amakghono wangeemveke ezidlulileko ajayezwako?

Qala imisebenzi yesilinganiso kuVeke 10 (*umHlahlandlela wemiSebenzi: Ithemu 2*, amakhasi 175 (Ilanga 1), 177 (Ilanga 2) nele-179 (Ilanga 3).

Session 4: Numbers, Operations and Relationships

45 minutes

The Maths Programme focuses on one main Content Area each week. You will have noticed that even though when the weekly Content Area Focus is not ‘number’, the number routines continue every day of each week. The reason for this is that repetition and practice are essential for consolidating the learners’ developing number skills.

The whole class activities for each day of the week always start with three number routines:

- ◆ a song or rhyme
- ◆ oral counting
- ◆ counting objects.

These three number routines are planned to match the number range for each term.



Activity 15

Find the Term 2 daily number routines in *Activity Guide: Term 2* and complete the table. Week 1 has been done for you.

Week	Content Area Focus	Song or rhyme	Oral counting	Counting objects
1	Numbers, Operations and Relationships	A rhyme from Term 1	1-10 5-1	1-5 (birthday chart)
2				
3				

Isetjhini 4: Iinomboro, ama-Opharetjhini noBudlelwana

Imizuzu 45

Ihlelo leemBalo linqophana nesiGaba sokuMumethweko esiqakathekileko esisodwa iveke ngayinye. Kufanele bonyana sele utjhejile bonyana nanyana umNqopho wesiGaba sokuMumethweko waqobe yiveke ungasiyo 'inomboro', iinkambiso zenomboro ziragela phambili ngamalanga iveke ngayinye. Unobangela walokhu kukobana ukubuyelela nokujayeza kuqakathekile ekuhlanganiseni amakghono wabafundi athuthukako wenomboro.

Imisebenzi yetlasi loke yelanga ngalinye leveke ivame ukuthoma ngeenkambiso ezintathu zenomboro:

- ◆ ingoma nofana umlolozelo
- ◆ ukubala ngomlomo
- ◆ ukubala izinto.

Iinkambiso ezintathu zenomboro lezi zihlelelwe ukukhambelanisa irherho lenomboro yethemu ngayinye.



Umsebenzi 15

Thola iinkambiso zenomboro zangamalanga kuThemu 2 kumHlahlandlela wemiSebenzi: Ithemu 2 bese uzalisa ithebula. Iveke 1 sewenzelwe yona.

Iveke	Umnqopho wesiGaba sokuMumethweko	Ingoma nofana umlolozelo	Ukubala ngomlomo	Ukubala izinto
1	Iinomboro, ama-Opharetjhini noBudlelwana	Umlolozelo weThemu 1	1-10 5-1	1-5 (itjhadi lamalanga wokubelethwa)
2				
3				

4				
5				
6				
7				
8				
9				
10				

Having looked through the number content for Term 2, you will have noticed that the number routines are practised every day of each week regardless of the Content Area Focus and that the progression in number range increases across the term.

4				
5				
6				
7				
8				
9				
10				

Ngemva kobana kuqalwe okumumethweko kwenomboro kweThemu 2, uzakutjheja bonyana iinkambiso zenomboro zijayezwa ngamalanga weveke ngayinye nofana kungimuphi umNqopho wesiGaba sokuMumethweko neragelophambili lokungezeleleka kwerherho lenomboro ithemu yoke.

Session 5: Term 2 Assessment

1 hour

Video 2

Watch the video of a teacher presenting word problems to a small group of learners.

Observe how each learner solves the problem. Notice how the teacher uses prompts when a learner has difficulty.

Activity 16

Look at the rubric on page 106 of the *Concept Guide*.

In your groups, discuss how you would score each of the learners using this scale. Give reasons for your decisions based on the assessment criteria for each rating code.

Isetjhini 5: Ukuhlola ithemu 2

1-iri



Ividiyo 2

Bukelani ividiyo katitjhere nakathula imiraro yamagama esiqhemeni esincani sabafundi.

Tjheja bonyana umfundi ngamunye uwurarulula njani umraro. Yelela bonyana utitjhere uzisebenzisa njani iinkhuthazi lokha umfundi nakanobudisi.



Umsebenzi 16

Qala irubhrikhi ekhasini 107 *umHlahlandlela womQondo*.

Eenqhemeni zenu, khulumisanani ngokobana nizomnikela njani umfundi ngamunye umphumela ngokusebenzisa isikala lesi. Nikela abonobangela besiqunto enisithetheko ngokusekelwa ziindlela zokuhlola zekhowudu yokulinganisa ngayinye.

Closing activities

15 minutes



Activity 17

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 any questions or comments to share with the group.



Take back to school task

1. Use *Activity Guide: Term 2* to plan and implement Weeks 8–10 of the Maths Programme.
2. Write an evaluation of what worked well, what did not work so well and what you could do differently to improve teaching and learning.
3. Bring your evaluation to the next workshop.

Evaluation

Complete the Evaluation Form.



Umsebenzi 17

Ukuzindla kwesifundobandulo: Thatha imizuzu embalwa uzindle ngelanga leli. Phendla *iNcwadi yokuSebenzela yomHlanganyeli* ukuzikhumbuza ngalokho okwenziweko. Tlola phasi nofana ngiwuphi umbuzo nofana imibono uzokwabelana nesiqhema soke.



Umsebenzi obuyiselwa esikolweni

1. Sebenzisa *umHlahlandlela wemiSebenzi: Ithemu 2* ukuhlela nokwenza nokusebenzisa iiVeke 8–10 zeHlelo leemBalo.
2. Tlola ukuhlunga ngalokho okusebenze kuhle, lokho okungakasebenzi kuhle nalokho ongakwenza ngokuhlukileko ukuthuthukisa ukufundisa nokufunda.
3. Yiza nokuhlunga kwakho kusifundobandulo esilandelako.

Ukuhlunga

Zalisa iForomo lokuHlunga.

APPENDIX A: TERM 2 WEEKLY CONTENT SUMMARY (WEEKS 8-10)

Term 2: Activity Plan

Week 8				
CONTENT AREA: SPACE AND SHAPE (GEOMETRY)				
TOPIC: Properties of shapes – compare same and different, sort according to properties; position; orientation and views				
INTRODUCE NEW KNOWLEDGE: Follow direction and midline crossing				
PRACTISE: Oral counting 1–20, counting backwards from 7, sequencing numbers 1–5, counting objects 1–7, reinforce number concept 1–5, what number comes before/after, practise using all shapes				
Whole class activities		Teacher-guided activity	Workstation activities	
Day 1	Forwards/backwards.	Counting – show me 1–3, 5–7 counters. Working with all taught shapes. Midline crossing. Position – direction. Forwards/backwards.	Activity 1	Sorting activity – using cut-out shapes. Make shapes using playdough and make a copy. Masking tape shapes – learners follow shapes using blocks. Match shapes using shape cards.
Day 2	Reinforce all shapes (I spy ...).			
Day 3	Shape game.		Activity 2	
Day 4	What can I do: Lost my ... (shape).		Activity 3	
Day 5	Obstacle course (requires a big space/outdoors). Midline crossing.		Activity 4	
Week 9				
CONTENT AREA: MEASUREMENT				
TOPIC: Length – compare and order objects using appropriate vocabulary to describe length				
INTRODUCE NEW KNOWLEDGE: Measuring and comparing length (long/short, longer/shorter, longest/shortest)				
PRACTISE: Oral counting 1–20, counting backwards from 7, counting objects 1–7, estimation 1–7, tall/short				
Whole class activities		Teacher-guided activity	Workstation activities	
Day 1	Longer/shorter (height).	Longer than/shorter than. Taller than/shorter than. Measurement with everyday objects.	Activity 1	Shorter/longer (pre-cut strips of different length). Wiggly worms (to make a poster shortest to longest). Measure blocks using string. Playdough and lined paper (different lengths).
Day 2	Comparing lengths of ribbons.			
Day 3	Sorting objects by length (coloured paper strips).		Activity 2	
Day 4	Height chart comparison (from Term 1).		Activity 3	
Day 5	Height chart comparison (taller/shorter than you).		Activity 4	

ISITHASISELO A: ITHEMU 2 ISIRHUNYEZO SOKUMUMETHWEKO KWAQOBE YIVEKE (IIMVEKE 8-10)

Ithemu 2: Ihlelo Lemisebenzi

Iveke 8			
ISIGABA SOKUMUMETHWEKO: ISIKHALA NEBUMBeko (IJIYOMETHRI)			
ISIHLOKO: Amatshwayo wamabumbeko – madanisa okufanako nokuhlukileko, hlela ngokwamatshwayo; isikhundla, ubujamo nokuqaleka kwento			
UKWETHULA ILWAZI ELITJHA: Landela ikombatjhuba nomuda oqunta phakathi			
UKUJAYEZA: Ukubala ngomlomo 1–20, ukubala ukuya emuva ukusuka ku-7, ukulandelanisa iinomboro 1–5, ukubala izinto 1–7, ukugandelela umqondo wenomboro 1–5, khuyini okuza ngaphambili/ngemva, jayeza ukusebenzisa woke amabumbeko			
Imisebenzi yetlasi loke		Umsebenzi ohlahlwa ngutitjhere	Imisebenzi yesitetjhi sokusebenzela
Ilanga 1	Ukuya phambili/ukuya emuva.	Ukubala – ngikhombisa iimbalisi 1–3, 5–7. Ukusebenza ngamabumbeko woke afundisiweko. Ukweqa umuda oqunta phakathi. Isikhundla – ikombatjhuba. Ukuya phambili/ukuya emuva.	Umsebenzi 1 Umsebenzi 2 Umsebenzi 3 Umsebenzi 4
Ilanga 2	Gandelela woke amabumbeko (Ngiyahlola ...).		
Ilanga 3	Umdlalo wamabumbeko.		
Ilanga 4	Ngingenzani: Ngilahlekelwe yi ... (ibumbeko).		
Ilanga 5	Isiqabomdlalo (kufuneka isikhala esikhulu/ngaphandle). Ukweqa umuda oqunta phakathi.		
Iveke 9			
ISIGABA SOKUMUMETHWEKO: UKUMEDA			
ISIHLOKO: Ubude – madanisa bese urhemisa izinto ngokusebenzisa ilwazimagama elifaneleko ukutlahlhula ubude			
YETHULA ILWAZI ELITJHA: Ukumeda nokumadanisa ubude (-de/fitjhani, -danyana/-fitjhazana, -de khulu/-fitjhani khulu)			
UKUJAYEZA: Ukubala ngomlomo 1–20, ukubala uye emuva ukusuka ku-7, ukubala izinto 1–7, ukulinganisa 1–7, -phakama/-fitjhani			
Imisebenzi yetlasi loke		Umsebenzi ohlahlwa ngutitjhere	Imisebenzi yesitetjhi sokusebenzela
Ilanga 1	-danyana/fitjhazana/(ukuphakama).	-danyana kuna-/fitjhazana kuna. -phakeme kuna-/fitjhazana kuna. Ukumeda ngezinto zangamalanga.	Umsebenzi 1 Umsebenzi 2 Umsebenzi 3 Umsebenzi 4
Ilanga 2	Ukumadanisa ubude bamaribhoni.		
Ilanga 3	Ukuhlela izinto ngobude (imitletle yephepha enombala).		
Ilanga 4	Ukumadanisa ngetjhadhi lokuphakama (ukusukela ngeThemu 1).		
Ilanga 5	Ukumadanisa ngetjhadhi lokuphakama (uphakeme/mfitjhazana kunawe).		

Week 10

CONTENT AREA: NUMBERS, OPERATIONS AND RELATIONSHIPS

TOPIC: Describe, compare and order numbers; addition and subtraction (oral); problem solving

INTRODUCE NEW KNOWLEDGE: Breaking down and building up numbers, problem-solving techniques, addition and subtraction using concrete objects, numbers in familiar settings (address and phone number)

PRACTISE: Oral counting 1–20, counting backwards from 7, sequencing numbers 1–5, counting objects 1–7, reinforce number concept 1–5, what number comes before/after

Whole class activities		Teacher-guided activity	Workstation activities	
Day 1	Ordering, using numbers 1–5. Dot cards.	Ordering numbers and dot cards (1–5). Fewer/more/less than. Decomposition of numbers. Phone numbers and addresses.	Activity 1	Write numbers 1–5 and draw dots using white board markers and plastic sheets. Count sticks to match. Tracing shapes according to given number. Feely cups with number of objects – feel amount and show number symbol. Number matching pictures.
Day 2	Addition using concrete objects. Musical chairs.		Activity 2	
Day 3	Subtraction using concrete objects.		Activity 3	
Day 4	Problem solving. Poster 1.		Activity 4	
Day 5	Memory game: Address and phone number. Game: Making groups of 1–5 learners.			

Iveke 10				
ISIGABA SOKUMUMETHWEKO: IINOMBORO, AMA-OPHARETJHINI NOBUDLELWANA				
ISIHLOKO: Ukuthadhlula, ukumadanisa nokurhemisa iinomboro; ukuhlanganisa nokukhupha (ngomlomo); ukurarulula umraro				
UKWETHULA ILWAZI ELITJHA: Ukuhlukanisa nokwakha iinomboro, amano wokurarulula umraro, ukuhlanganisa nokukhupha ngokusebenzisa izinto eziphathekako, iinomboro eendaweni ezijayelekileko (isiphande nenomboro zomtato)				
UKUJAYEZA: Ukubala ngomlomo 1-20, ukubala ukuya emuva ukusuka ku-7, ukulandelanisa iinomboro 1-5, ukubala izinto 1-7, ukugandelela umqondo wenomboro 1-5, ngiyiphi inomboro eza ngaphambili/ngemva				
Imisebenzi yetlasi loka		Umsebenzi ohlahlwa ngutitjhere	Imisebenzi yesitetjhi sokusebenzela	
Ilanga 1	Ukurhemisa, ngokusebenzisa iinomboro 1-5. Amakarada wamaqatjhazi.	Ukurhemisa iinomboro namakarada wamaqatjhazi (1-5). Mbadlwana/ngaphezulu/ncani kuna-. Ukuhlukanisa iinomboro ngeenqhema. Iinomboro zomtato neemphande.	Umsebenzi 1	Tlola iinomboro 1-5 bese udweba amaqatjhazi usebenzise iimeregi zebhodi emhlophe namatjhidi weplastiki. Bala iingojuana ukukhambelanisa.
Ilanga 2	Ukuhlanganisa ngokusebenzisa izinto eziphathekako. Iintulo zomvumo.		Umsebenzi 2	Ukugadangisa amabumbeko ngokwenomboro enikelweko.
Ilanga 3	Ukukhupha ngokusebenzisa izinto eziphathekako.		Umsebenzi 3	Amakopi wokuzwelela enezinto ezinengi - zwelela inani bese ukhombisa itshwayo lenomboro.
Ilanga 4	Ukurarulula umraro. IPhosta 1.		Umsebenzi 4	Iinthombe ezikhambelana neenomboro.
Ilanga 5	Umdlalo womkhumbulo: Isiphande nenomboro yomtato. Umdlalo: Ukwenza iinqhema zabafundi 1-5.			

Workshop 6 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?

Isifundobandulo 6 Iforomo lokuHlunga

1. Ingabe isifundobandulo sibe ngilokho ebegade ukulindele?

2. Khuyini okufundileko kilesisifundobandulo okukusize khulu?

3. Ikhona into nofana khuyini ongakhange uyithande nofana obenobudisi ukuyizwisisa?

4. Uzokusebenzisa njani lokho okufundileko ngetlasini yakho yakwa-Greyidi R?

5. Kukhona imibono onayo emayelana nokwenza iimfundobandulo ezizako zibe ngcono?
