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GROWING GAUTENG TOGETHER

IsiNdebele/English

Ihlelo lokuThuthukisa iimBalo zeGreyidi R Grade R Mathematics Improvement Programme



Isifundobandulo 9 • Workshop 9

INcwadi yokuSebenzela yomHlanganyeli • Participant's Workbook

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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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IPhrojekthi yokuThuthukiswa kweemBalo namaLimi kwaGreyidi R imuzamo womNyango wezeFundo weGauteng (Gauteng Department of Education) nombambisani wayo oqakathekileko, i-Gauteng Education Development Trust.

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Contents

Overview

Purpose	page 6
Learning outcomes	page 6
Workshop content	page 6

Workshop content

Opening and reflection	page 8
Session 1: Numbers, Operations and Relationships	page 12
Session 2: Numbers, Operations and Relationships (continued)	page 18
Session 3: Calculation in Grade R	page 22
Session 4: Planning for teaching	page 30
Closing activities	page 32
Appendix A: Term 3 Weekly Planning Template	page 34
Workshop 9 Evaluation Form	page 42

Okumumethweko

Isirhunyezo

Umnqopho	ikhasi 7
Imiphumela yokufunda	ikhasi 7
Okumumethweko kwesifundobandulo	ikhasi 7

Okumumethweko kwesifundobandulo

Ukuvula nokuzindla	ikhasi 9
Isetjhini 1: Inomboro, ama-Opharetjhini noBudlelwana	ikhasi 13
Isetjhini 2: Inomboro, ama-Opharetjhini noBudlelwana (kuyaraga).....	ikhasi 19
Isetjhini 3: Ukubala kwaGreyidi R	ikhasi 23
Isetjhini 4: Ukuhlelela ukufundisa.....	ikhasi 31
Imisebenzi yokuvala.....	ikhasi 33
Isithasiselo A: Ithemu 3 Umfuziselo wokuHlela waqobe yiVeke	ikhasi 35
Isifundobandulo 9 Iforomo lokuHlunga	ikhasi 43

Overview

Purpose

This is the ninth 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 continue assisting teachers to implement the Maths Programme in their classrooms. Participants will have the opportunity to reflect on their implementation of the Maths Programme and discuss their planning, teaching and assessment. They will also consider learner progress, and individual developmental and learning needs. Participants will reflect on appropriate assessment strategies for capturing learner progress. The workshop explores the content for Term 3 Weeks 7–10 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 4–6
- ◆ To explore play-based strategies to support teaching maths in Grade R
- ◆ To deepen understanding of number concept in the Numbers, Operations and Relationships Content Area and to link these to the implementation of maths in the Grade R classroom
- ◆ To deepen understanding of appropriate assessment in Grade R
- ◆ 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 7–10

Workshop content

- ◆ Opening and reflection (1 hour)
 - ◆ Session 1: Numbers, Operations and Relationships (1 hour)
- TEA
- ◆ Session 2: Numbers, Operations and Relationships (continued) (1 hour)
 - ◆ Session 3: Calculation in Grade R (1 hour)
- LUNCH
- ◆ Session 4: Planning for teaching (1½ hours)
 - ◆ Closing activities (30 minutes)

Isirhunyezo

Umnqopho

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

Umnqopho wesifundobandulwesi kusiza abotitjhere ukusebenzisa iHlelo leemBalo ngematlasinabo. Abahlanganyeli bazakuthola ithuba lokuzindla ngokusebenzisa kwabo iHlelo leemBalo begodu bakhulumisane ngokuhlela, ukufundisa nokuhlola kwabo. Godu bazakuyelela iragelophambili lomfundi, neendingo zokuthuthuka nokufunda komfundi ngamunye. Abahlanganyeli bazakuzindla ngamano afaneleko wokuhlola ukuthola iragelophambili labafundi. Isifundobandulo lesi sikhloka okumumethweko kweThemu 3 iimveke 7–10 nokwenziwa komsebenzi ngetlasini.

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

Imiphumela yokufunda

- ◆ Ukuzindla ngokusetjenziswa kweThemu 3 iimveke 4–6
- ◆ Ukuhlola amano anzinze ekudlaleni ukusekela ukufundisa iimbalo kwaGreyidi R
- ◆ Ukuqinisa ukuzwisisa umqondo wenomboro kusiGaba sokuMumethweko seeNomboro, ama-Opharetjhini noBudlelwana nokuhlanganisa lokhu ekwenzeni iimbalo ngetlasini yeGreyidi R
- ◆ Ukuqinisa ukuzwisisa ukuhlola okufaneleko kwaGreyidi R
- ◆ Ukuzindla ngeentjhijilo nokuthola iinsombululo zokuphumelelisa iHlelo leemBalo
- ◆ Ukuhlela okumumethweko kweHlelo leemBalo ekufanele kufundiswe ngeThemu 3 iimveke 7–10

Okumumethweko kwesifundobandulo

- ◆ Ukuvula nokuzindla (I-iri 1)
- ◆ Isetjhini 1: Iinomboro, ama-Opharetjhini noBudlelwana (I-iri 1)

ITIYE

- ◆ Isetjhini 2: Iinomboro, ama-Opharetjhini noBudlelwana (kuyaraga) (I-iri 1)
- ◆ Isetjhini 3: Ukubala kwaGreyidi R (I-iri 1)

ISIDLO SEMINI

- ◆ Isetjhini 4: Ukuhlelela ukufundisa (Ama-iri 1½)
- ◆ Imisebenzi yokuvala (Imizuzu 30)

Opening and reflection

1 hour

Reflection involves thinking and talking about your experiences and what you have learnt. Consider the Maths workshops you have attended and complete the sentences the facilitator displays.

Reflection on implementation

The *Take back to school task* from Workshop 8, required you to do the following:

- ◆ Use *Activity Guide: Term 3* to plan and implement Term 3 Weeks 4–6 of the Maths Programme.
- ◆ Write comments in the book that you use to keep track of each learner’s progress (learner observation book), and use the ‘**Check that learners are able to**’ observation list during each of the teacher-guided activities to guide your observations and comments.
- ◆ 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.

In the next activities make use of your learner observation book and the notes you made when reflecting on each day’s teaching.



Activity 1

1. In your group, share your successes and challenges with implementing the Maths Programme in Term 3 Weeks 4–6. Share strategies for improving teaching and learning for the challenges you identified.

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.
Show members of your group your learner observation book.
Select one learner and discuss your observations of this learner’s progress.

Ukuvula nokuzindla

I-iri 1

Ukuzindla kufaka hlangana ukucabanga nokukhuluma ngelemuko lakho nangalokho okufundileko. Yelela iimfundobandulo zeemBalo ozikhambeleko bese wenza imitjho etjengiswa mkghonakalisi.

Ukuzindla ngokusebenza

Umsebenzi obuyiselwa esikolweni wesiFundobandulo 8, ufuna bona wenze okulandelako:

- ◆ Sebenzisa *umHlahlandlela wemiSebenzi: Ithemu 3* ukuhlela nokwenza Ithemu 3 limveke 4–6 zeHlelo leemBalo.
- ◆ Tlola imibono ngencwadini oyisebenzisela ukubulunga ilandelelo leragelophambili lomfundi ngamunye (incwadi yokutjheja abafundi), bese usebenzisa irhelo lokutjheja **‘Tjheja bonyana abafundi bayakwazi uku’** ngesikhathi somsebenzi ohlahlwa ngutitjhere ngamunye ukuhlahla ukutjheja kwakho nemibono yakho.
- ◆ Tlola amanothi walokho okusebenze kuhle, lokho okungakasebenzi kuhle nokobana uzirarulule njani iintjhijilo nofana ngezinjani ngesikhathi sokwenza Ithemu 3 limveke 4–6.

Emisebenzini elandelako sebenzisa incwadi yakho yokutjheja abafundi namanothi owenze lokha nawuzindla ngokufundisa kwelanga ngalinye.



Umsebenzi 1

1. Esiqhemeni senu, yabelanani ngokuphumeleleko neentjhijilo zokusebenzisa iHlelo leemBalo ngeThemu 3 limveke 4–6. Yabelanani ngamano wokuthuthukisa ukufundisa nokufunda mayelana neentjhijilo enizivezileko.

2. Hlathulula ngokusebenzisa kwakho irhelo lokutjheja **‘Tjheja bonyana abafundi bayakwazi uku’** (ngebhoksini lelihlo) ngesikhathi semisebenzi ehlahlwa ngutitjhere.

Khombisa amalunga wesiqhema sakho incwadi yakho yokutjheja abafundi. Khetha umfundi munye bese uhlathulula ngalokho okutjhejileko ngeragelophambili lomfundi lowo.

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

 **Video 1**

Watch the video of a teacher working with a small group of learners during the teacher-guided activity in Term 3 Week 6. The focus of our observation in this workshop is on how the teacher mediates the number activities.

Observe how the teacher works through the six activities. Notice:

- ◆ how she poses problems
 - ◆ the language she uses when asking questions
 - ◆ how she sets up each activity
 - ◆ the questions she asks to guide the learners.
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 **Activity 2**

Refer to the teacher-guided activity (pages 114–117) in Week 6 of *Activity Guide: Term 3*.

1. Discuss how you managed this teacher-guided activity with your class.
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2. Did you face any challenges? If so, how did you solve them?
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3. Tlolani amaphuzu wenu aqakathekileko wemikhulumiswano yenu etjhadini lephepha eliphendlekako. Bikani ngemikhulumiswano yenu esiqhemeni esikhulu.



Ividiyo 1

Bukelani ividiyo katitjhere osebenza nesiqhema esincani sabafundi ngesikhathi somsebenzi ohlahlwa ngutitjhere kuThemu 3 Iveke 6. Umnqopho wokutjheja kwethu kilesi sifundobandulo usekutheni utitjhere ufundisa njani imisebenzi yenomboro.

Tjheja bonyana utitjhere usebenza njani phakathi kwemisebenzi esithandathu. Yelela:

- ◆ uyithula njani imiraro
 - ◆ ilimi alisebenzisako lokha nakabuza imibuzo
 - ◆ uwuhlela njani umsebenzi ngamunye
 - ◆ imibuzo ayibuzako ukuhlahla abafundi.
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Umsebenzi 2

Qala umsebenzi ohlahlwa ngutitjhere (amakhasi 114–117) Iveke 6 yomHlahlandlela wemiSebenzi: Ithemu 3.

1. Hlathulula bonyana uwulawule njani umsebenzi ohlahlwa ngutitjhere netlasi yakho.
-
-
-

2. Ingabe kuneentjhjilo ohlangabezene nazo? Nangabe kunjalo, uzirarulule njani?
-
-
-

Session 1: Numbers, Operations and Relationships

1 hour

In previous workshops we have discussed the Numbers, Operations and Relationships Content Area. In this session we will revisit different number topics and expand our discussion to further understand number concept. We will explore the following aspects of number and connect them to classroom practice:

- ◆ oral counting
- ◆ subitising
- ◆ representing number
- ◆ counting objects
- ◆ ordinal numbers
- ◆ calculating.

Oral counting

Children learn the correct order of number words as they play, sing, and repeat rhymes.

As we know, oral counting involves saying the number words in order. Learners sequence numbers during routine oral counting activities and during transitions. Songs, rhymes and actions make oral counting fun, but the focus is on the order of the numbers. Once learners can repeat a sequence of numbers in the correct counting order, they begin to talk about the relationship between the numbers, e.g., which number is *before*, *between* or *after* another number.



Activity 3

In your group, discuss how the following activities have promoted learning the sequence of counting words in your class:

- ◆ songs and rhymes
- ◆ number washing line
- ◆ jumping tracks.

Isetjhini 1: Iinomboro, ama-Opharetjhini noBudlelwana

I-iri 1

Imfundobandulo ezidlulileko sikhulumisene ngesiGaba sokuMumethweko seeNomboro, ama-Opharetjhini noBudlelwana. Kilesetjhini sizakubuyelela iinhloko zenomboro ezihlukileko bese sinabisa imikhulumiswano yethu ngokuya phambili nokuzwisisa umqondo wenomboro. Sizakuhlola amaphuzu wenomboro alandelako bese siwahlanganisa nokujayeza kwangetlasini:

- ◆ ukubala ngomlomo
- ◆ ukusabithayiza
- ◆ ukujamiselela inomboro
- ◆ ukubala izinto
- ◆ iinomborosikhundla
- ◆ ukubala.

Ukubala ngomlomo

Abantwana bafunda irhemo leenomboromagama elifaneleko lokha nabadlalako, bavuma, nalokha nababuyelela imilolozelo.

Njengombana sazi, ukubala ngomlomo kubandakanya ukutjho iinomboromagama ngerhemo. Abafundi balandelanisa iinomboro ngesikhathi semisebenzi yekambiso yokubala nangesikhathi sokutjintja. Iingoma, imilolozelo nezenzo kwenza ukubala ngomlomo kubemnandi, kodwana umnqopho uphezu kwerhemo leenomboro. Lokha abafundi nasele bakwazi ukubuyelela ilandelano leenomboro ngerhemo lokubala elifaneleko, bathoma ukukhuluma ngobudlelwana phakathi kweenomboro, isib., ngiyiphi inomboro *engaphambili*, *ephakathi nofana engemuva* kwenye inomboro.



Umsebenzi 3

Esiqhemeni sakho, khulumisanani ngokobana imisebenzi elandelako ilithuthukise njani ilandelano lokufunda amagama wokubala ngetlasini lakho:

- ◆ iingoma nemilolozelo
- ◆ idrada yokweneka yeenomboro
- ◆ umzila wokweqa.



Activity 4

Read the information on pages 138–143 and look at the diagram at the top of pages 144–145 of the *Concept Guide*.

In your group, discuss the following aspects of number:

- ◆ different ‘meanings’ of number

- ◆ different kinds of numbers

Learners in Grade R work mostly with the whole numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10. (In Grade 1 this is extended to 20 and beyond.) We focus on counting and representing number in different ways and provide opportunities for learners to engage with numbers in different contexts.

Subitising



Activity 5

Observe the facilitator. Each time she/he flashes a card, say as quickly as you can ‘how many’ dots you see.

1. Did you count each dot one by one? Why not?

2. What do you think the benefit is of reinforcing the skill of subitising?



Umsebenzi 4

Fundani ilwazi elisemakhasini 138–143 bese niqala umdwebo ophezulu emakhasini 44–145 *womHlahlandlela womQondo*.

Esiqhemeni senu, khulumisanani ngamaphuzu alandelako wenomboro:

- ◆ 'iinhlathululo' zenomboro ezihlukileko

- ◆ imihlobo ehlukeleko yeenomboro

Abafundi beGreyidi R basebenza khulu ngeenomboro ezipheleleko 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 ne-10. (KwaGreyidi 1 lokhu kuyanabiswa ukufika ema-20 nangaphezulu.) Sinqophana nokubala nokujamiselela inomboro ngeendlela ezihlukileko bese sinikela abafundi amathuba wokuzibandakanya neenomboro ebujameni obuhlukileko.

Ukusabithayiza



Umsebenzi 5

Tjheja umkghonakalisi. Ngaso soke isikhathi nakakhombisa ikarada, yitjho msinyana ngendlela ongakghona ngayo bonyana 'mangaki' amaqatjhazi owabonako.

1. Ubale iqatjhazi linye ngalinye? Kuba yini?

2. Ucabanga bonyana khuyini inzuzo yokugandelela ikghono lokusabithayiza?

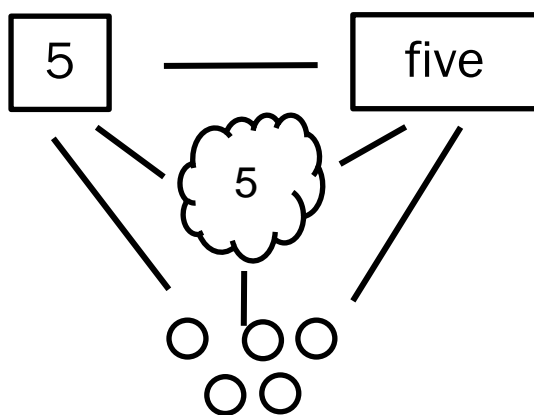
3. What activities that reinforce the ability to subitise have you used in your Term 1 and 2 maths sessions?

Refer to pages 144–147 of the *Concept Guide*.

Representing number

A number is an abstract concept. It is an idea that exists in your head. We can't see numbers, so we have to find different ways to represent (show) the number that is being referred to. Learners need to make the connection between the idea of a number, e.g., 5, and its different representations, like a collection of objects, a symbol, a word. They also need to understand that if we say, 'how many' sweets, claps, houses, birthdays, etc., five always refers to the same number of these things.

Learners need to internalise the 'how muchness' or numerosity of the number. To communicate this concept to learners, teachers need to introduce the idea using concrete objects, for example, counters. To help learners understand the concept of a number, they need to realise that numbers can be represented in different ways. Learners also need to make the connection between different representations of the number, for example an object, picture, symbol and word.



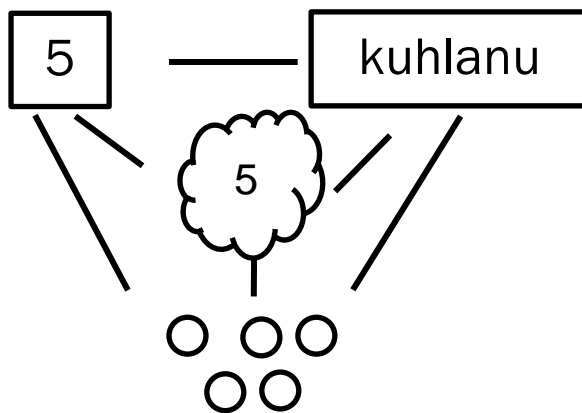
3. Ngimiphi imisebenzi egandelela ikghono lokusabithayiza olisebenzisileko Kusetjhini yeembalo kuThemu 1 neye-2?

Qala amakhasi 144–147 womHlahlandlela womQondo.

Ukujamiselela inomboro

Inomboro imqondo ongaphathekiko. Imbono ohlala ngehlokweni yakho. Asikwazi ukubona iinomboro, ngalokho kufanele sithole iindlela ezihlukileko zokujamiselela (ukukhombisa) inomboro leyo ekukhulunywa ngayo. Abafundi kufanele benze ubuhlobo phakathi kombono wenomboro, isib., 5, neenjamiseleli zayo ezihlukileko, njengebuthalelo lezinto, itshwayo, igama. Godu kufanele bezwisise bonyana nangabe sithi, 'mangaki' amaswidi, ukuwahla, izindlu, amalanga wokubelethwa, njll., kuhlanu kuhlala kuqalise enomborweni efanako yezinto lezi.

Abafundi kufanele bacabangisise 'ubungaki' nofana ubunengi benomboro. Ukudlulisela umqondo lo kubafundi, abotitjhere kufanele bathule ilwazi leli ngokusebenzisa izinto eziphathekako, isibonelo, iimbalisi. Ukusiza abafundi bezwisise umqondo wenomboro, kufanele bayelele bonyana iinomboro zingajanyiselelwa ngeendlela ezihlukileko. Abafundi godu bafanele benze ubudlelwana phakathi kweenjamiseleli ezihlukileko zenomboro, isibonelo, into, isithombe, itshwayo negama.



Session 2: Numbers, Operations and Relationships (continued)

1 hour

Counting objects

To count '**how many**', learners need to realise that each object in a group has a number name and that you count each object only once.

There are five counting principles that describe the process of learning to count. Once learners have understood and can apply all five of these counting principles, we are able to say that they can count.



Activity 6

Read the information on pages 148–151 of the *Concept Guide*.

1. Use the apparatus provided to demonstrate these principles as they are explained in the *Concept Guide*.
2. Discuss each principle in your group and make your own notes in the table below to explain your understanding of each principle.

One-to-one correspondence principle	
Stable order principle	
Cardinal principle	
Abstraction principle	
Order-irrelevance principle	

Isetjhini 2: Iinomboro, ama-Opharetjhini noBudlelwana (kuyaraga)

I-iri 1

Ukubala izinto

Ukubala bonyana **'kungaki'**, abafundi kufanele balemuke bonyana into ngayinye esiqhemeni inegama lenomboro nokobana ubala into ngayinye kanye kwaphela.

Kunemithethokambiso yokubala emihlanu ethadhlhula ikambiso yokufunda ukubala. Abafundi nasele bazwisisa begodu bakwazi ukusebenzisa yomihlanu imithethokambiso yokubala le, singakwazi ukutjho bonyana bayakwazi ukubala.



Umsebenzi 6

Funda ilwazi elisemakhasini 148–151 *womHlahlandlela womQondo*.

1. Sebenzisa iinsetjenziswa ezinikelweko ukutjengisa imithethokambiso le njengombana ihlathulwe *kumHlahlandlela womQondo*.
2. Khulumisanani ngomthethokambiso ngamunye esiqhemeni senu bese nenza amanothi wenu ethebuleni engenzasi ukuhlathulula ukuzwisisa kwenu umthethokambiso ngamunye.

Umthethokambiso wokukhambelanisa kunye kokunye	
Umthethokambiso werhemo elinzinzileko	
Umthethokambiso wekhadinali	
Umthethokambiso wokuhlukanisa	
Umthethokambiso ongakaphathelani nerhemo	

Ordinal numbers

We have discussed the kinds of numbers that tell you 'how many'. These are called **cardinal numbers**.

There are also numbers that indicate the position of something or someone in a series or order. These are called **ordinal numbers**.



Activity 7

Arrange the animal counters on your table according to the facilitator's instructions. Answer her/his questions about the position of the animal counters.

Iinomborosikhundla

Khesakhulumisana ngemihlobo yeenomboro ekutjela bonyana 'kungaki'. Lezi zibizwa ngokobana **ziinomboro zekhadinali**.

Kukhona godu iinomboro ezitjengisa isikhundla sento nofana somuntu elandelanweni nofana erhemeni. Lezi zibizwa ngokobana **ziinomborosikhundla**.



Umsebenzi 7

Hlelani iimbalisi zeenlwana etafuleni yenu ngokuya ngokwemilayelo yomkghonakalisi. Phendulani imibuzo yakhe emayelana nesikhundla seembali zeenlwana.

Session 3: Calculation in Grade R

1 hour

Learners need to understand the value of numbers and the relationships between them before they can do operations like addition and subtraction. They need to know, for example, 'how many' three is; 3 comes before 4, after 2 and between 2 and 4; and 3 is one more than 2 and one less than 4.

Working with counters, structure beads, dot cards, and the shake-and-break game provides opportunities for learners to understand that numbers can be built up or broken down. In this way, they gradually recognise that any number is made up of many different combinations of other numbers. For example, number 5 can be made up of:

- ◆ 4 and 1
- ◆ 1 and 1 and 1 and 2
- ◆ 0 and 5.

In Grade R, learners explore different ways of building up and breaking down numbers, and adding and subtracting using counters.



Activity 8

Read the information on pages 154–156 of the *Concept Guide*.

Think about how you have used the materials provided in the Maths Programme to help learners understand number operations (calculations) and relationships. Use the materials to demonstrate this.

1. How do learners explore the concept of number in the Maths Programme using the materials provided?
2. What questions could you ask that would guide their learning? (Refer to page 156 of the *Concept Guide* for examples of questions.)

Prepare to present your discussion to the whole group.

Isetjhini 3: Ukubala kwaGreyidi R

I-iri 1

Abafundi kufanele bezwisise ukuqakatheka kweenomboro nobudlelwana phakathi kwazo ngaphambi kobana benze imisebenzi efana nokuhlanganisa nokukhupha. Kufanele bazi, isibonelo, 'kungaki' kuthathu; u-3 uza ngaphambi kuka-4, ngemva ko-2 naphakathi kuka-2 no-4, begodu u-3 ungaphezulu ngakunye ku-2 bese uba ngaphasi ngakunye ku-4.

Ngokusebenza ngeembalisi, imincamo ehlalakileko, amakarada wamaqatjhazi, nomdlalo khuhluza uhlukanise kunikela abafundi amathuba wokuzwisisa bonyana iinomboro zingakhiwa nofana zingahlukaniswa. Ngalendlela, kancanikancani bayabona bonyana nofana ngiyiphi inomboro yakhiwe ngeenhlanguanisela ezinengi ezihlukileko zeenomboro ezinye. Isibonelo, inomboro 5 ingakhiwa ngu:

- ◆ 4 no-1
- ◆ 1 no-1 no-1 no-2
- ◆ 0 no-5.

KwaGreyidi R, abafundi bahlola iindlela ezihlukileko zokwakha nokuhlukanisa iinomboro, nokusebenzisa iimbalisi ukuhlanganisa nokukhupha.



Umsebenzi 8

Funda ilwazi elisemakhasini 154–156 *womHlahlandlela womQondo*.

Cabanga ngokobana uyisebenzise njani imethiriyeli enikelweko yeHlelo leemBalo ukusiza abafundi ukuzwisisa ama-opharetjhini weenomboro (ukubalisisa) nobudlelwana. Sebenzisa imethiriyeli ukutjengisa lokhu.

1. Abafundi bawuhlola njani umqondo wenomboro eHlelweni leemBalo ngokusebenzisa imethiriyeli enikelweko?
2. Ngimiphi imibuzo ongayibuza engahlahla ukufunda kwabo? (Qala ikhasi 157 *lomHlahlandlela womQondo* ukuthola iimbonelo zemibuzo.)

Zilungiseleleni ukwethula imikhulumiswano yenu esiqhemeni esipheleleko.

Word problems

Grade R learners need to orally solve word problems involving addition, subtraction, and equal sharing and grouping. They also need to explain their own reasoning and ways of solving different problems.

Give learners plenty of time to think and let them use real objects (e.g. counters, fingers, structure beads) to solve the problems and check their answers.

When presenting a word problem to learners, it is important to encourage them to:

- ◆ find a strategy to solve the problem
- ◆ explain how they solved the problem
- ◆ say why they think their answer is correct.

Common addition and subtraction contexts can be presented as word problems. The way that the word problem is structured, determines how easy or difficult it is to solve. It is important to use clear, simple language when presenting word problems.

In Workshop 6 we looked at the importance of using clear, simple language and asking appropriate questions during problem-solving activities. We also designed real-world problems in contexts that learners could relate to. In Activity 9, you will discuss problem solving in more detail.



Activity 9

1. Look at the word problems below (page 26).
 - ◆ How would you solve each problem?
 - ◆ How do you think your Grade R learners would solve each problem?
 - ◆ Why are some of these problems more difficult than others?
 - ◆ Use the counters on your table to show how learners would solve the problems.

Imiraro yamagama

Abafundi bakwaGreyidi R kufanele bararulule imiraro yegama ngomlomo ngokubandakanya ukuhlanganisa, ukukhupha, nokwabelana ngokulinganako nokwenza iinqhema. Godu bafanele bahlathulule ikghono labo lokucabanga neendlela zokurarulula imiraro ehlukeleko.

Nikela abafundi isikhathi esaneleko sokucabanga bese ubavumela ukusebenzisa izinto zamambala (isib. iimbalisi, imino, imincamo ehlekeleko) ukurarulula imiraro nokuhlola iimpendulo zabo.

Lokha nawethula umraro wegama kubafundi, kuqakathekile ukubakhuthaza ngalokhu:

- ◆ ukuthola amano wokurarulula umraro
- ◆ ukuhlathulula bonyana bawurarulule njani umraro
- ◆ ukutjho bonyana kubayini bacabanga bona ipendulo yabo ilungile.

Ubjamo obujayelekileko bokuhlanganisa nokukhupha bungathulwa njengemiraro yegama. Indlela umraro wegama wakhiwe ngakhona, ilawula bonyana kulula nofana kubudisi kangangani ukuwurulula. Kuqakathekile ukusebenzisa ilimi elitsengileko, elilula lokha nawethula umraro wegama.

KusiFundobandulo 6 siqale ukuqakatheka kokusebenzisa ilimi elitsengileko, elilula nokubuza imibuzo efaneleko ngesikhathi semisebenzi yokurarulula imiraro. Godu sitlame imiraro yephasi lamambala ebumeni abafundi ababuzwisisako. Umsebenzi 9, nizakukhulumisana ngokurarulula umraro ngokunabileko.



Umsebenzi 9

1. Qala imiraro yamagama engenzasi (ikhasi 27).
 - ◆ Uzawurarulula njani umraro ngamunye?
 - ◆ Ucabanga bonyana abafundi bakho bakwaGreyidi R bazawurarula njani umraro ngamunye?
 - ◆ Kubayini eminye yemiraro le ibudisi kuneminye?
 - ◆ Sebenzisa iimbalisi ezisetifuleni yakho ukutjengisa bonyana abafundi bangayirulula njani imiraro le.

Combine	Separate
Laylah has 6 sweets. Malusi gives her 2 more. How many sweets does Laylah have altogether?	There are 8 sweets. Laylah eats 3 sweets. How many are left for Malusi?
Laylah has 5 sweets. How many more does she need to have 8?	Laylah has 8 sweets. Malusi eats some. There are 4 left. How many did Malusi eat?
Laylah had some sweets. Malusi gives her 2 more. Now she has 8. How many did Laylah start with?	Laylah had some sweets. She gave 6 sweets to Malusi. She has 2 sweets left. How many sweets did she start with?

2. Write a word problem that you could present to your Grade R learners for each of the following:

Addition: $4 + 5 =$

Subtraction: $7 - 3 =$

Equal sharing without a remainder: 8 shared between 4 learners

Hlanganisa	Hlukanisa
ULaylah unamaswidi asi-6. UMalusi umnikela amanye ama-2. Mangaki amaswidi uLaylah anawo nasele awoke?	Kunamaswidi abu-8. ULaylah udla amaswidi ama- 3. Mangaki amaswidi asalele uMalusi?
ULaylah unamaswidi ama-5. Mangaki amanye awadingako kobana abe namaswidi abu-8?	ULaylah unamaswidi abu-8. UMalusi udla amanye. Kusele amaswidi ama-4. UMalusi udle mangaki?
ULaylah bekanamaswidi. UMalusi umnikela amanye ama-2. Kwanjesi unamaswidi abu-8. ULaylah uthome ngamaswidi amangaki?	ULaylah bekanamaswidi. Unikela uMalusi amaswidi asi-6. Usele namaswidi ama-2. Uthome ngamaswidi amangaki?

2. Tlola umraro wamagama ongawuthula kubafundi bakho beGreyidi R walokhu okulandelako ngakunye:

Ukuhlanganisa: $4 + 5 =$

Ukukhupha: $7 - 3 =$

Ukwaba kungabi nesalela: ku-8 kwabelwa abafundi aba-4

Equal sharing with a remainder: 5 shared between 2 learners

Ukwabelana okulinganako okunesalela: ku-5 kwabelwa abafundi aba-2

Session 4: Planning for teaching

1½ hours

This workshop session prepares participants for implementing Term 3 Weeks 7–10. By this stage of the year, the teacher will have noticed distinct differences between learners' levels of progress. Term 3 builds on the content of Terms 1 and 2. Some learners will be ready for this, while others will need support and more consolidation to progress. It is important to plan and prepare for this difference in learner competence to ensure that all the content and skills of Grade R Mathematics are covered, and learners are well prepared for Term 4.



Watch the video of a teacher discussing how she deals with the range of learner competence in her class. Listen to what she says about planning and managing the difference between learners' ability levels and how she goes about her planning in order to support the learners' individual needs.

Note your ideas about differentiated teaching and learning in your classroom.



1. In your group, complete the planning templates for Term 3 Weeks 7–10 (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:
 - ◆ What challenges do you anticipate in implementing Weeks 7–10?
 - ◆ How can you solve each of these challenges in order to achieve successful implementation?
 - ◆ 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?

Isetjhini 4: Ukuhlelela ukufundisa

Ama-iri 1½

Isetjhini yesifundobandulo lesi ilungiselela abahlanganyeli ukwenziwa kweThemu 3 Iimveke 7–10. Kilesisigaba somnyaka, utitjhere kufanele bona sele ayelele umehluko obonakalako phakathi kwamazinga wokuthuthuka kwabafundi. Ithemu 3 yakhela phezu kokumumethweko kweThemu 1 neye-2. Abanye abafundi bazakulungela lokhu, lokha abanye bazakudinga isekelo nokuhlanganiswa kobana baragele phambili.

Kuqakathekile ukuhlela nokulungiselela umahluko lo osepumelelweni yabafundi ukuqinisekisa bonyana koke okumumethweko namakghono weembalo zakwaGreyidi R kwenziwe, nabafundi balungiselelwe Ithemu 4 ngokwaneleko.



Ividiyo 2

Bukela ividiyo katitjhere akhulumisana ngokobana uqalana njani nepumelelo ehlukeneko yabafundi betlasi lakhe. Lalela lokho akutjhoko mayelana nokuhlela nokulawula ukuhluka phakathi kwezinga lamakghono wabafundi nokobana ulenza njani ihlelo lakhe kobana asekele iindingo zabafundi ngamunye.

Yelega imibono yakho mayelana nokufundisa nokufunda okuhlukahlukeneko ngetlasini lakho.



Umsebenzi 10

1. Esiqhemeni senu, yenzani iimfuziselo yokuhlela yeThemu 3 Iimveke 7–10 (Isithasiselo A).
2. Isiqhema senu sizakwethula kezinye iinqhema isirhunyezo semikhulumiswano yenu yokuhlela. Tlolani amaphuzu aqakathekileko wemikhulumiswano yenu kutjhadi lephepha eliphendlekako. Faka hlangana iimpendulo zemibuzo elandelako:
 - ◆ Ngiziphi iintjhijilo enzilindeleko ekwenzeni Iimveke 7–10?
 - ◆ Ningazirarulula njani iintjhijilo lezi ngasinye kobana nikwazi ukusebenza ngepumelelo efaneleko.
 - ◆ Umsebenzi ohlahlwa ngutitjhere uwanikela njani amathuba wokobana utitjhere ahlole abe asekele abafundi?
 - ◆ Ingabe imisebenzi yesiqhema esincani esizijameleko ivumela ngokwaneleko ukuzijayeza ilwazi namakghono amatjha?

Closing activities

30 minutes



Activity 11

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 7–10 of the Maths Programme.
2. Make notes of what worked well, what did not work well and how you resolved any challenges during your implementation of Term 3 Weeks 7–10.
3. 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.
4. Bring your learner observation book and the notes you made when reflecting on each day's teaching to the next workshop.
5. Bring a copy of Term 3: Exemplar Record of Continuous Assessments (from *Activity Guide: Term 3*) to the next workshop.

Evaluation

Complete the Evaluation Form.



Umsebenzi 11

Ukuzindla ngesifundobandulo: Thatha imizuzu embalwa uzindle ngelanga leli. Phendla *iNcwadi yokuSebenzela yomHlanganyeli* ukuzikhumbuza ngalokho esele kwenziwe. Tlola phasi imicabango yakho.

Yabelana ngokuzindla kwakho nesiqhema esikhulu.



Umsebenzi obuyiselwa esikolweni

1. Sebenzisa *umHlahlandlela wemiSebenzi: Ithemu 3* ukuhlela nokwenza Ithemu 3 Iimveke 7–10 zeHlelo leemBalo.
2. Tlola amanothi ngalokho okusebenze kuhle, lokho okungakasebenzi kuhle nokobana uzirarulule njani iintjhijilo nofana ngezinjani ngesikhathi sokwenza Ithemu 3 Iimveke 7–10.
3. Tlola imibono ngencwadini oyisebenzisela ukubulunga ilandelelo leragelophambili lomfundi ngamunye (incwadi yokutjheja abafundi). Sebenzisa irhelo lokutjheja **‘Tjheja bonyana abafundi bayakwazi uku’** (ngebhoksini lelihlo) ngesikhathi somunye nomunye umsebenzi ohlahlwa ngutitjhere ukuhlahla ukutjheja nemibono yakho.
4. Yiza nencwadi yakho yokutjheja abafundi namanothi owenzileko lokha nawuzindla ngelanga lokufundisa ngalinye kusifundobandulo esilandelako.
5. Yiza nekhophi yeThemu 3: Isibonelo seRekhodi yokuHlola okuRagela phambili (*yomHlahlandlela wemiSebenzi: Ithemu 3*) kusifundobandulo esilandelako.

Ukuhlunga

Zalisa iForomo lokuHlunga.

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				

ISITHASISELO A: ITHEMU 3 UMFUZISELO WOKUHLELA WAQOBE YIVEKE

Ithemu 3: Ihlelo Lomsebenzi: Iveke ____

ISIGABA SOKUMUMETHWEKO:				
ISIHLOKO:				
YETHULA ILWAZI ELITJHA:				
UKUJAYEZA:				
Imisebenzi yetlasi loke		Umsebenzi ohlahlwa ngutitjhere	Imisebenzi yesitetjhi sokusebenzela (imisebenzi ezijameleko yesiqhema esincani)	
Ilanga 1			Umsebenzi 1	
Ilanga 2			Umsebenzi 2	
Ilanga 3			Umsebenzi 3	
Ilanga 4			Umsebenzi 4	
Ilanga 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				

Ithemu 3: Ihlelo Lomsebenzi: Iveke ____

ISIGABA SOKUMUMETHWEKO:				
ISIHLOKO:				
YETHULA ILWAZI ELITJHA:				
UKUJAYEZA:				
Imisebenzi yetlasi loko		Umsebenzi ohlahlwa ngutitjhere	Imisebenzi yesitetjhi sokusebenzela (imisebenzi ezijameleko yesiqhema esincani)	
Ilanga 1			Umsebenzi 1	
Ilanga 2			Umsebenzi 2	
Ilanga 3			Umsebenzi 3	
Ilanga 4			Umsebenzi 4	
Ilanga 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				

Ithemu 3: Ihlelo Lomsebenzi: Iveke ____

ISIGABA SOKUMUMETHWEKO:				
ISIHLOKO:				
YETHULA ILWAZI ELITJHA:				
UKUJAYEZA:				
Imisebenzi yetlasi loke		Umsebenzi ohlahlwa ngutitjhere	Imisebenzi yesitetjhi sokusebenzela (imisebenzi ezijameleko yesiqhema esincani)	
Ilanga 1			Umsebenzi 1	
Ilanga 2			Umsebenzi 2	
Ilanga 3			Umsebenzi 3	
Ilanga 4			Umsebenzi 4	
Ilanga 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				

Ithemu 3: Ihlelo Lomsebenzi: Iveke ____

ISIGABA SOKUMUMETHWEKO:				
ISIHLOKO:				
YETHULA ILWAZI ELITJHA:				
UKUJAYEZA:				
Imisebenzi yetlasi loke		Umsebenzi ohlahlwa ngutitjhere	Imisebenzi yesitetjhi sokusebenzela (imisebenzi ezijameleko yesiqhema esincani)	
Ilanga 1			Umsebenzi 1	
Ilanga 2			Umsebenzi 2	
Ilanga 3			Umsebenzi 3	
Ilanga 4			Umsebenzi 4	
Ilanga 5				

Workshop 9 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 9 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?
