

Luhlelo Lwekwenta Kancono Tibalo TeLibanga R Grade R Mathematics Improvement Programme



Umhlanganosikolo 9 • Workshop 9
Inkhombandlela Yemfundzisi • Facilitator's Guide

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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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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)

Sibutsetelo

Inhloso

Lona ngumhlanganosikolo wemfica walelishumi nakubili yeLuhlelo Lwekwenta Kancono Tibalo TeLibanga R (Luhlelo Lwetibalo), loyincenye yeLitiko Letemfundvo laseGauteng (Gauteng Department of Education (GDE) Umklamo Wetibalo TeLibanga R Nekwenta Kancono Lulwimi.

Inhloso yalomhlanganosikolo kusita bothishela kutsi bafezekise Luhlelo Lwetibalo emaklasini abo. Bahlanganyeli batawuba nelitfuba lekubuyeketa loko labakwentile ekufezekiseni Luhlelo Lwetibalo baphindze futsi bakhulume ngekulungiselelwa, kufundzisa kanye nekuhlola kwabo. Batawuphindze futsi bacabange ngenchubekembili yemfundzi, kanye nekutfufuka kwangamunye netidzingo tekufundza. Bahlanganyeli batawubuyeketa emasubuciko ekuhlola lafanele ekubhala inchubekembili yebafundzi. Lomhlanganosikolo wehlwaya lokucuketfwe kweThemu 3 Emaviki 7–10 nekufezekiswa kwawo eklasini.

Emareferensi kuMikhakha Yalokucuketfwe Tibalo TeLibanga R atsetfwe ku*Sitatimende Senchubomgomo Yekharikhulamu Nekuhlola (i-CAPS): Tibalo TeLibanga R (Luhlaka Lwekugcina)*, 2011, Litiko Letemfundvo Lesisekelo, laseNingizimu Afrika.

Imiphumela yekufundza

- ◆ Kubuyeketa kufezekiswa kweThemu 3 Emaviki 4–6
- ◆ Kwehlwaya emasubuciko lamiselwe ekudlaleni kwesekela kufundzisa tibalo teLibanga R
- ◆ Kujulisa kuvisisa umcondvo wetinombolo kuMkhakha Walokucuketfwe weTinombolo, Ema-ophareshini neBudlelwane kanye nekuchumanisa loku ekufezekisweni kwetibalo eklasini leLibanga R
- ◆ Kujulisa kuvisisa kweluhlolo lolufanele kuLibanga R
- ◆ Kubuyeketa tinsayeya tetisombululo tekufezekisa Luhlelo Lwetibalo
- ◆ Kuhlela lokucuketfwe kweLuhlelo Lwetibalo lokutawufundziswa kuThemu 3 Emaviki 7–10

Lokucuketfwe kwemhlanganosikolo

- ◆ Kuvula nekubuyeketa (1 li-awa)
 - ◆ Iseshini 1: Tinombolo, Ema-ophareshini neBudlelwane (1 li-awa)
- LITIYA
- ◆ Iseshini 2: Tinombolo, Ema-ophareshini neBudlelwane (kuyachubeka) (1 li-awa)
 - ◆ Iseshini 3: Kubala kuLibanga R (1 li-wa)
- KUDLA KWASEMINI
- ◆ Iseshini 4: Kuhlelela kufundzisa (1½ ema-awa)
 - ◆ Imisebenti yekuvala (30 emaminitisi)

Preparation

- ◆ PPT welcome and outcomes
- ◆ Familiarise yourself with all the PowerPoints and videos
- ◆ Read:
 - Concept Guide*, pages 138–161
 - Activity Guide: Term 3*, pages 120–185
- ◆ Bring the post box
- ◆ Remind participants to bring their:
 - Concept Guide*
 - Activity Guide: Term 2*
 - Activity Guide: Term 3*
 - Poster Book*
- ◆ Write the following sentences on four large strips of paper:
 - I learnt ...
 - I did not like ...
 - I now understand ...
 - I'm still not clear about ...
- ◆ Cut A4 paper strips for each group.

Materials

- ◆ Flipchart paper, kokis
- ◆ Prestik
- ◆ *A Resource Kit* for each group

Kulungiselela

- ◆ PPT kwemukela nemiphumela
- ◆ Tetayete onkhe ema-PowerPoints nemavidiyo
- ◆ Fundza:
 - Inkhombandlela Yemcondvo*, emakhasi 138–161
 - Inkhombandlela Yemsebenti: Ithemu 3*, emakhasi 120–185
- ◆ Wota nelibhokisi leliposi
- ◆ Khumbuta bahlanganyeli kutsi bete naloku:
 - Inkhombandlela Yemcondvo*
 - Inkhombandlela Yemsebenti: Ithemu 2*
 - Inkhombandlela Yemsebenti: Ithemu 3*
 - Incwadzi Yemaphosta*
- ◆ Bhala lemisho lelandzelako kumicu yemaphepha lemine:
 - Ngifundze ...
 - Angikatsandzi ...
 - Manje sengiyavisisa ...
 - Solo angikacaciseleki nge ...
- ◆ Sikela licembu ngalinye imicu yeliphepha le-A4.

Emamethiriyeli

- ◆ Liphepha lefliphushadi, emakhokhi
- ◆ Iphrestikhi
- ◆ *Ikhithi Yetinsita* yelicembu ngalinye

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.

Facilitator's notes

- ◆ PPT: Learning outcomes of the workshop.
- ◆ Put the sentence strips on the wall:
 - I learnt ...
 - I did not like ...
 - I now understand ...
 - I'm still not clear about ...
- ◆ Place A4 paper strips on each table. Participants write their responses to the sentence strips on the A4 paper strips. Use Prestik to display their strips under the relevant sentences.
- ◆ Discuss the post box comments and feedback from the previous workshop. Remind participants to 'post' any new comments and feedback during the workshop.

Reflection on implementation

Facilitator's notes

- ◆ Remind participants of the *Take back to school task* from the end of Workshop 8.
- ◆ Refer participants to **Activity 1** and **2** and read through the instructions. Participants complete the activities in their groups. Groups then share key points with the large group.
- ◆ After the small group discussions, take comments from each group. Summarise the successes and challenges and discuss the implications for classroom 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.

Kuvula nekubuyeketa

1 li-awa

Kubuyeketa kufaka ekhatsi kucabanga nekukhuluma ngaloko lohlangabetene nako kanye naloko lokufundzile. Cabanga ngemihlanganosikolo yeTibalo loyihambele bese ucedzela imisho lebekwe ngumfundzisi.

Emanotsi emfundzisi

- ◆ PPT: Imiphumela yekufundza yemhlanganosikolo.
- ◆ Beka lemicu yemisho elubondzeni:
 - Ngifundze ...
 - Angikatsandzi ...
 - Manje sengiyavisisa ...
 - Solo angikacaciseleki nge ...
- ◆ Beka imicu yeliphepha le-A4 etafuleni ngalinye. Bahlanganyeli babhala timphendvulo tabo talemicu yemisho lekumicu yeliphepha le-A4. Sebentisa Iphrestikhi kukhombisa lemicu ngaphasi kwemisho lefanele.
- ◆ Khuluma ngekuphawula lokusebhokisini leliposi kanye nembiko wemhlanganosikolo lowendlulile. Khumbuta bahlanganyeli kutsi 'bapose' nanoma ngukuphi kuphawula lokusha nembiko wangalesikhatsi umhlanganosikolo usachubeka.

Kubuyeketa nekufezekisa

Emanotsi emfundzisi

- ◆ Khumbuta bahlanganyeli *Umsebenti wekubuyisela emuva esikolweni* losekupheleni kweMihlanganosikolo 8.
- ◆ Tjela bahlanganyeli bafundze **Umsebenti 1** newe-2 bese bafundza tonkhe ticondziso. Bahlanganyeli bayenta bacedze imisebenti ngemacembu. Emacembu Abelana emaphuzu labalulekile nelicembu lelikhulu.
- ◆ Ngemuva kwetingogco temacembu lamancane, tsatsa tiphakamiso telicembu ngalinye. Butsetela timphumelelo netinsayeya bese ucoqa ngemtselela wekufezekisa eklasini.

Umsebenti wekubuyisela emuva esikolweni weMhlanganosikolo 8, ukudzinge kutsi wente naku lokulandzelako:

- ◆ Kusebentisa *Inkhombandlela Yemsebenti: Ithemu 3* kulungiselela nekufezekisa Ithemu 3 Emaviki 4–6 eLuhlelo Lwetibalo
- ◆ Bhala kuphawula encwadzini lobhalela kuyo inchubekelembili yemfundzi ngamunye (incwadzi yekubukisisa bafundzi) Sebentisa luhlu lweku'**Hlola kutsi bafundzi bayakhona ku'** (libhokisi leliso) ngesikhatsi semsebenti loholwa nguthishela ngamunye kukhombindlela kuphawula nekubukisisa kwakho.
- ◆ Bhala emanotsi ngaloko lokusebente kahle kakhulu nekutsi utisombulule kanjani tinsayeya takho ngesikhatsi sekufezekisa Ithemu 3 Emaviki 4–6.

Kulemisebenti lelandzelako sebentisa incwadzi yekubukisisa bafundzi kanye nemanotsi lowasebentise ngesikhatsi ubuyeketa kufundzisa kwelilanga ngalinye.



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.

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



Video 1

Activity Guide: Term 3, Week 6, Teacher-guided activity (pages 114–117)

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.



Umsebenti 1

1. Yabelana ngemasubuciko ekwenta kancono kufundzisa nekufundza kwetinsayeya lohlangabetene nato nawufezekisa Luhlelo Lwetibalo kuThemu 3 Emaviki 4–6. Yabelana ngemasubuciko ekwenta kancono kufundzisa nekufundza letinsayeya lotitfolile.

2. Coca ngekusebentisa kwakho luhlu lwekubukisisa '**Hlola kutsi bafundzi bayakhona ku**' (kulibhokisi leliso) ngesikhatsi sangamunye wemisebenti leholwa nguthishela. Khombisa emalunga elicembu lakho incwadzi yekubukisisa bafundzi. Khetsa umfundzi munye bese ukhulula ngekubukisisa kwakho inchubekelembili yalomfundzi.

3. Bhala phasi emaphuzu labalulekile engcogco yakho ephepheni lefliphushadi. Bika ngengcogco yakho ecenjini lelikhulu.



Ividiyo 1

Inkhombandlela Yemsebenti: Ithemu 3, Liviki 6, Umsebenti loholwa nguthishela (emakhasi 114–117)

Bukela ividiyo yathishela asebenta nelicembu lelincane lebafundzi ngesikhatsi semsebenti loholwa nguthishela kuThemu 3 Liviki 6. Kugcila kwetfu kwalomhlanganosikolo kusekutseni thishela uyingenelela kanjani imisebenti yetinombolo.

Bukisisa kutsi thishela usebenta kanjani kulemisebenti lesitfupha. Caphela kutsi:

- ◆ utibeka kanjani tinkinga
- ◆ lulwimi lalusebentisako uma abuta imibuto
- ◆ uwakha kanjani umsebenti ngamunye
- ◆ imibuto layibutako kukhomba bafundzi indlela.



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.

2. Did you face any challenges? If so, how did you solve them?

Facilitator's notes

Show the video and lead a discussion based on the maths activities and questions. If participants do not mention the following points, add them to the discussion.

- ◆ The activities are short. The teacher doesn't linger unnecessarily when handing out apparatus or talk to one learner for too long. Transitions are quick and the teacher manages the six activities within the allocated time.
- ◆ Both the questions asked and language used are clear and concise.
- ◆ Activities build on previous knowledge and expand new ideas.
- ◆ Listening to and observing **each** learner provides insight into their progress. It helps you to identify their abilities and the gaps in their skill and/or understanding.



Umsebenti 2

Fundza umsebenti loholwa nguthishela (emakhasi 114–117) kuLiviki 6
leNkhombandlela Yemsebenti: Ithemu 3.

1. Khuluma ngekutsi uwuphetse kanjani kanye neliklasi lakho lomsebenti loholwa nguthishela.

2. Uhlangebetene netinsayeya? Uma ngabe kunjalo, utisombulule kanjani?

Emanotsi emfundzisi

Khombisa levidiyo bese uhlola ingcogco lemiselwe kulemisebenti yetibalo nemibuto. Uma ngabe bahlanganyeli abawasho lamaphuzu lalandzelako, wafake kulengcogco.

- ◆ Lemisebenti mifishane. Thishela akahlali ndzawonye sikhatsi lesidze ngalokungenasidzingo uma anika bafundzi emathulusi noma-ke akhulume nemfundzi munye sikhatsi lesidze. Tingucuko tiyashesha futsi thishela ulawula imisebenti lesitfupha ngalesikhatsi lesibekiwe.
- ◆ Imibuto lebutwako kanye nelulwimi lolusetjentiswako kuyacaca futsi kufisha.
- ◆ Imisebenti yakhela elwatini lwaphambilini iphindze futsi ikhulise imibono lemisha.
- ◆ Kulalela kanye nekubukisisa umfundzi **ngamunye** kuniketa lwati ngenchubekelembili yabo. Kukusita kutsi ukhone kubona emakhono nemagebe kumakhono kanye/noma kuvisisa kwabo.

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

Facilitator's notes

- ◆ 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 while learning 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.
- ◆ Choose one group to present their **Activity 3** discussion.

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.

Iseshini 1: Tinombolo, Ema-ophareshini neBudlelwane

1 li-awa

Kulemihlanganasikolo leyendlulile sikhulume ngeMkhakha Walokucuketfwe weTinombolo, Ema-ophareshini neBudlelwane. Kuleseshini sitawubuyela emuva kutihloko letehlukene bese sikhulisa ingcogco yetfu kute kutsi sichubeke sivirus umcondvo wetinombolo. Sitawehlwaya letinhlangothi letilandzelako tetinombolo bese sitichumanisa nalokwentiwa eklasini.

- ◆ kubala ngemlomo
- ◆ isabhithayizingi
- ◆ kumelela tinombolo
- ◆ kubala ema-objekthi
- ◆ tinombolondzawo
- ◆ kubala.

Kubala ngemlomo

Emanotsi emfundzisi

- ◆ Kubala ngemlomo kufaka ekhatsi kusho emagama etinombolo ngekulandzelana. Bafundzi balandzelanisa tinombolo ngesikhatsi senhlalayenta yemisebenti yekubala ngemlomo nangesikhatsi setingucuko. Tingoma, tilandzelo netenteko tenta kubala ngemlomo kube yintfo lejabulisako babe bafundza kuhleleka kwetinombolo. Uma bafundzi sebakwati kuphindzaphindza kulandzelana kwetinombolo ngekuhleleka lokufanele, babese bacala kukhuluma ngebudlelwane lobusemkhatsini wetinombolo, sib. nguyiphi inombolo lephambili, emkhatsini noma ngemuva kwalenye inombolo.
- ◆ Khetsa linye licembu letfule ingcogco yalo ye**Msebenti 3**.

Bantfwana bafundza kuhleleka kwemagama etinombolo ngesikhatsi badlala, bahlabela, kanye nekuphindzaphindza tingucuko.

Njengobe sati, kubala ngemlomo kufaka ekhatsi kusho emagama etinombolo ngekulandzelana. Bafundzi balandzelanisa tinombolo ngesikhatsi senhlalayenta yemisebenti yekubala ngemlomo nangesikhatsi setingucuko. Tingoma, tilandzelo netento tenta kubala ngemlomo kube yintfo lejabulisako kepha kugcila ekuhlelekeni kwetinombolo. Uma bafundzi sebakwati kuphindzaphindza kulandzelana kwetinombolo ngekuhleleka lokufanele, babese bacala kukhuluma ngebudlelwane lobusemkhatsini wetinombolo, sib. nguyiphi inombolo lephambili, emkhatsini noma ngemuva kwalenye inombolo.



Umsebenti 3

Ecenjini, khuluma ngekutsi lemisebenti lelandzelako ikukhutsate njani kufundza kulandzelana kwemagama ekubala eklasini lakho:

- ◆ tingoma netilandzelo
- ◆ lilayini lekweneka letinombolo
- ◆ indlela yekuzupha.

Facilitator's notes

- ◆ PPT: Different 'meanings' of number and different kinds of numbers.
- ◆ Discuss different 'meanings' of number and different kinds of numbers, and the focus of number in Grade R.



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.

Emanotsi emfundzisi

- ◆ PPT: 'Tinshokutsi' tetinombolo letehlukene kanye netinhloso tetinombolo letehlukene.
- ◆ Khuluma 'ngetinshokutsi' tetinombolo netinhlobo letehlukene tetinombolo, kanye nekugcila kwenombolo kuLibanga R.



Umsebenti 4

Fundza lolwatiso kumakhasi 138–143 bese ubuka ledayagramu lesetulu kumakhasi 144–145 eNkhombandlela Yemfundzi.

Ecenjini lakho, khuluma ngetinhangotsi taletinombolo letilandzelako:

- ◆ 'tinshokutsi' tetinombolo letehlukene

- ◆ tinhlobo tetinombolo letehlukene

Bafundzi beLibanga R basebenta kakhulu ngetinombolo letiphelele 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 ne-10. (KuLibanga 1 loku kuyelulwa kuye ku-20 nekwendlula lapho.) Sigcila ekubaleni nekumelela tinombolo ngetindlela letehlukene kanye nekunika bafundzi ematfuba ekusebenta ngetinombolo etimeni letehlukene.

Subitising

Facilitator's notes

- ◆ Use the dot cards from the *Resource Kit*.
- ◆ Ask participants to tell you 'how many' they see as you flash each dot card quickly:
 - Show a card with 3 dots.
 - Show a card with 2 dots.
 - Hold the above cards alongside each other.
- ◆ Explain what subitising is (*Concept Guide* pages 144–147) and discuss how this skill benefits children as they learn about number:
 - Learners associate number names with small collections.
 - Learners recognise the total in a collection (up to five) without counting.
 - Learners start to recognise that, for example, 'five and one is six'.
 - It builds number sense.
 - Learners understand that a number can be broken down and built up. (These number combinations lay the foundation for bonds.)
 - It builds the memorisation and automation of number facts.
- ◆ Discuss classroom activities that reinforce subitising. These include:
 - dot card activities
 - structure beads
 - dice games
 - dominoes
 - shake-and-break activities.



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?

Isabithayizingi

Emanotsi emfundzisi

- ◆ Sebentisa emakhadi emacashati laku*Khithi Yetinsita*.
- ◆ Cela bahlanganyeli bakutjele kutsi babona 'mangaki' ngesikhatsi ukhombisa masinyane lelikhadi lemacashati ngalinye:
 - Khombisa likhadi lelinemacashati la-3.
 - Khombisa likhadi lelinemacashati la-2.
 - Phatsa lamakhadi langetulu uwalinganise.
- ◆ Chaza kutsi isabithayizingi iyini (*Inkhomba Yemcondvo* emakhasi 144–147) bese ukhuluma ngekutsi lelikhono libazuzisa ini bantfwana ngesikhatsi bafundza ngetinombolo:
 - Bafundzi bahlobanisa emagama etinombolo nemagcogco lamancane.
 - Bafundzi babona samba egcogcweni (kute kufike kusihlanu) ngaphandle kwekubala.
 - Bafundzi bacala kubona kutsi, sibonelo, 'sihlanu nakunye sitfupha'.
 - Kwakha umcondvo wetinombolo.
 - Bafundzi bavisisa kutsi inombolo ungayibhidlita uphindze futsi uyakhe. (Lenombolo tinhlanganisela takha sisekelo semabhondi.)
 - Kwakha kukhumbula kanye nekutentakalela kwemaciniso etinombolo.
- ◆ Khuluma ngemisebenti legcizelela isabithayizingi. Loku kufaka ekhatsi:
 - imisebenti yemakhadi emacashati
 - buhlalusakhiwo
 - imidlalo yelidayisi
 - emadomino
 - imisebenti yekukhuhlutisa bese uyehlukanisa.



Umsebenti 5

Bukisisa umfundzisi. Sikhatsi ngasinye uma aveta likhasi, shano ngekushesha longakhona ngako ngesikhatsi utsi ubona emacashati 'lamangaki'.

1. Ubale licashati ngalinye ngalinye? Kungani ungakenti njalo?

2. Ucabanga kutsi yini inzuzo yekugcizelela lelikhono lesabithayizingi?

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

Facilitator's notes

- ◆ PPT: Animation of the diagram in this section that shows the link between a number and its different representations.
- ◆ Explain the concept of number as detailed below.
- ◆ Explain that learners need to understand each component in order to make the connection between them.
 1. The '5' in the centre of the diagram is the number 5, and this is an abstract idea.
 2. Learners need to be able to represent the concept of 5 as a collection, using concrete manipulatives, like counters, to represent the number 5.
 3. Learners then need to learn that '5' can be written as a symbol and that the symbol 5 also represents the collection (of counters).
 4. Learners then need to learn that the number word 'five' can be written to represent the symbol and the collection.
 5. Finally, learners need to make the connection between these different representations of five to fully understand the concept.

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. Nguyiphi imisebenti loyisebentisile yekugcizelela bukhoni bekwenta isabithayizingi kumaseshini etibalo eThemu 1 neye-2
-
-
-
-

Fundza emakhasi 144–147 e*Nkhombandlela Yemcondvo*.

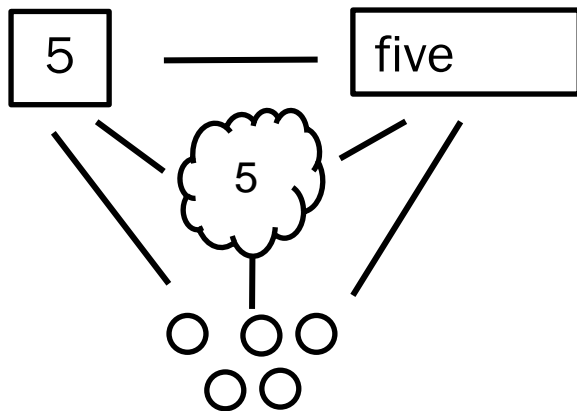
Kumelela inombolo

Emanotsi emfundzisi

- ◆ PPT: Kucwayita kwemdwebo kuleseshini kukhombisa sichumanisi (ilinki) emkhatsini wenombolo nekumelwa (kuboniswa kwayo).
- ◆ Chaza umcondvo wenombolo njengobe kubekwe kabanti ngentasi.
- ◆ Chaza kutsi bafundzi bafanele kutsi bavisise umkhakha ngamunye kute kutsi bakwati kwenta kuchumana emkhatsini wabo.
 1. Le-'5' emkhatsini waledayagramu yinombolo 5, futsi loku ngumcondvo longaphatseki.
 2. Bafundzi bafanele kutsi bakhone kukhombisa umcondvo we-5 njengeligogco, basebentisa tintfo letiphathsekako, njengetibali, kukhombisa inombolo 5.
 3. Bafundzi badzinga kufundza kutsi '5' angabhalwa njengeluphawu nekutsi futsi lolo luphawu ngu -5 nalo futsi lumelela ligogco (letibali).
 4. Bafundzi-ke badzinga kufundza kutsi leligama lenombolo 'sihlanu' lingabhalwa limelele luphawu neligogco.
 5. Kwekugcina, bafundzi badzinga kutsi bente luchumano emkhatsini wekumelela sihlanu ngalokwehlukene kute kutsi bawuvise ngalokuphelele lomcondvo.

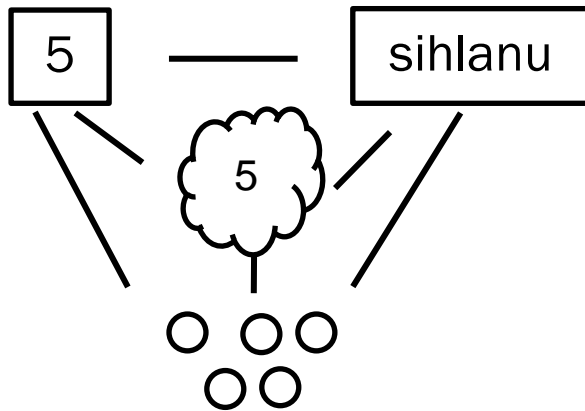
Inombolo ingumcondvo longaphatseki. Ngumbono losenhloko yakho. Siyatibona tinombolo, ngako-ke sifanele kutsi sitfole tindlela letehlukene tekumelela (kutikhombisa) lenombolo lekubhekiswe kuyo. Bafundzi badzinga kwenta luchumano emkhatsini wembono wenombolo, sib., 5, kanye nekumelwa kwayo lokwehlukene, njengeligogco lema-objekthi, luphawu, ligama. Bafanele kutsi futsi bavisise kutsi uma sishi, 'mangaki' emaswidi, kushaya tandla, tindlu, emalanga ekutalwa, sib., sihlanu sihlala sisho lona lelo nani lenombolo letintfo.

Bafundzi badzinga kucabanga 'ngebungaki' noma kubaluleka lokufananako kwenombolo. Kukhuluma nebafundzi ngalomcondvo, bothishela badzinga kwetfula lombono basebentisa ema-objekthi lacondzile laphathsekako, sibonelo, tibali. Kusita bafundzi bavisise umcondvo wetinombolo, bafanele kutsi babone kutsi tinombolo tingamelelwa ngetindlela letehlukene. Bafundzi nabo badzinga kutsi bente luchumano emkhatsini wekumelelwa kwenombolo, sibonelo i-objekthi, sitfombe, luphawu kanye neligama.



Facilitator's notes

- ◆ Discuss how the idea of multiple representations informs the methodology of introducing a number through a story in the Maths Programme.
- ◆ Remind participants of the routine used for teaching each number:
 - Number frieze and story: build the house by showing the picture/s, house number, doorbell/s and number word.
 - Matching objects, number symbols, number words and dot cards.



Emanotsi emfundzisi

- ◆ Chaza kutsi umbono wekumelwa ngalokwehlukahlukene wesekela indlelanchubo yekwetfula inombolo ngekusebentisa indzaba kuLuhlelo Lwetibalo.
- ◆ Khumbuta bahlanganyeli ngenhlayenta lesetjentiswe kufundzisa inombolo ngayinye:
 - Ifrizi yetinombolo nendzaba: yakha indlu ngekukhombisa sitfombe/titfombe, inombolo yendlu, insimbi /tinsimbi yasemnyango kanye neligama lenombolo.
 - Matanisa ema-objekthi, timphawu tetinombolo, emagama etinombolo kanye nemakhadi emacashati.

Session 2: Numbers, Operations and Relationships (continued)

1 hour

Counting objects

Facilitator's notes

- ◆ Allow 40 minutes for this section of Session 2.
- ◆ PPT: Summarise the counting principles (*Concept Guide* page 148–149). Present them one at a time. These counting principles are the basis of learning to count. Once learners can apply these principles, we can say that they are able to count. Highlight that learners need to be able to demonstrate all five of the counting principles before we can say that they are able count.
- ◆ Ask participants to use the apparatus on the table to demonstrate their understanding of each of the counting principles.
- ◆ To consolidate, demonstrate each principle to the whole group.
- ◆ Discuss the daily classroom activities that reinforce the counting of objects that participants have done in Terms 1 and 2.
- ◆ Read the 'In practice' box on page 150 of the *Concept Guide* to explain how learners progress as they learn to count and combine groups of 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	

Iseshini 2: Tinombolo, Ema-ophareshini neBudlelwane (kuyachubeka)

1 li-awa

Kubala ema-objekthi

Emanotsi emfundzisi

- ◆ Vumela emaminitisi la-40 kulesigaba seSeshini ye-2.
- ◆ PPT: Butsetela imitsetfomgomo yekubala (*Inkhombandlela Yemcondvo* likhasi 148–149). Yetfule ngamunye ngamunye. Lemitsetfomgomo yekubala itisekelo tekufundza kubala. Uma bafundzi sebakwati kusebentisa lemitsetfomgomo, sesingasho sitsi bayakwati kubala. Phakamisa kutsi bafundzi badzinga kwati kukhombisa yonkhe yosihlanu imitsetfomgomo yekubala ngembi kwekutsi sitsi sebatakwati kubala.
- ◆ Cela bahlanganyeli basebentise emathulusi lasetafuleni kukhombisa kuvisisa kwabo imitsetfomgomo yekubala ngamunye.
- ◆ Kuhlenganisa, kukhombisa lonkhe licembu umtsetfomgomo ngamunye.
- ◆ Khuluma ngemisebenti yeliklasi yamalanga onkhe legcizelela kubala ema-objekthi bahlanganyeli labawente kuThemu 1 neye-2.
- ◆ Fundza libhokisi la ‘Tetayete’ ekhasini 151 le*Nkhombandlela Yemcondvo* kuchaza kutsi bafundzi bachubekelumbili kanjani ngesikhatsi bafundza kubala baphindze futsi bahlanganise emacembu ema-objekthi.

Kubala kutsi ‘**kungaki**’, bafundzi badzinga kubona kutsi i-objekthi ngayinye kuligcogco itfolo ligama lenombolo nekutsi futsi ubala i-objekthi ngayinye kanye kuphela.

Kunemitsetfomgomo yekubala lesihlanu lechaza inchubo yekufundza kubala. Uma bafundzi seba-visisa futsi sebakhona nekuyisebentisa yonkhe yosihlanu lemitsetfomgomo, siyakhona kusho kutsi sebayakwati kubala.



Umsebenti 6

Fundza lwatiso kumakhasi 148–151 e*Nkhombandlela Yemfundzi*.

1. Sebentisa emathulusi laniketiwe kukhombisa lemitsetfomgomo ngesikhatsi ichazwa ku*Nkhombandlela Yemcondvo*.
2. Khuluma ngemtsetfomgomo ngamunye futsi utakhele akho emanotsi kulelithebuli lelingentasi kuchaza kuvisisa kwakho lemitsetfomgomo.

Umtsetfosimo wekucondzanisa kwakunye nakunye	
Umtsetfosimo wekulandzelana lokusimeme	

Cardinal principle	
Abstraction principle	
Order-irrelevance principle	

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**.

Facilitator's notes

- ◆ Allow 20 minutes for this section of Session 2.
 - ◆ Participants select six animal counters from the *Resource Kit* and arrange these in a row, facing left.
 - ◆ Ask these questions:
 - Which animal is first?
 - Which animal is second?
 - Where is the chicken placed?
 - Which animal is next?
 - What is the colour of the third animal?
- Note: Participants will have different arrangements of animals, so allow them to give answers according to the order of the animals in their arrangement.
- ◆ Ask participants to turn the animals so that they are facing right.
 - ◆ Repeat the above questions.
 - ◆ Discuss how ordinal numbers can be practised during daily routines and activities, e.g., while lining up or when doing outdoor races.
 - ◆ Refer to the number washing line. Ask which number is *first, second, next to, before*.



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.

Umtsetfosimo wekulandzelana lokusimeme	
Umtsetfosimo wekungaphatseki ngesandla	
Umtsetfosimo wekulandzelana lokungahlobani	

Tinombolondzawo

Sikhulumile ngaletinombolo letikutjela kutsi 'kungaki'. Leti tibitwa ngekutsi **tinombolo tekhadinali**.

Kuphindze futsi kube netinombolo letikhombisa sikhundla sentfo noma umuntfu kuluchungechunge noma kuhleleka. Tibitwa ngekutsi **tinombolondzawo**.

Emanotsi emfundzisi

- ◆ Sebentisa emaminitsi lange-20 kulesigaba seSeshini ye-2
- ◆ Bahlanganyeli bakhetsa tibali tetilwane letisitfupha ku*Khithi Yetinsita* bese batihlela tiba ngumugca, tibuke ngasencele.
- ◆ Buta lemibuto:
 - Ngusiphi silwane sekucala?
 - Ngusiphi silwane sesibili?
 - Inkhukhu ibekwe kuphi?
 - Ngusiphi silwane lesilandzelako?
 - Silwane sesitsatfu sinembala lonjani?
- Caphela: Bahlanganyeli batawuhlela tilwane ngetindlela letehlukene, ngako-ke bavumele bakunike timphendvulo ngekuya kwekuhlelembiswa kwetilwane ekuhleleni kwabo.
- ◆ Cela bahlanganyeli bagucule letilwane kute kutsi tibuke etulu.
- ◆ Phindza lemibuto lengetulu.
- ◆ Khuluma ngekutsi kungatetayetwa kanjani tinombolondzawo ngesikhatsi senhlalayenta yemalanga onkhe nemisebenti, sib. ngesikhatsi nime ludwendvwe noma uma benta imijaho yangaphandle.
- ◆ Buka layini wekweneka wetinombolo. Buta kutsi nguyiphi inombolo *yekucala, yesibili, eceleni kwe, ngembi kwe*.



Umsebenti 7

Hlela tibali tetilwane etafuleni lakho ngekuya kweticondziso temfundzisi. Phendvula imibuto yakhe mayelana nesikhundla setibali tetilwane.

Session 3: Calculation in Grade R

1 hour

Facilitator's notes

- ◆ Discuss calculation in Grade R by summarising the text below.
- ◆ **Activity 8:** Give each small group a different kind of apparatus:
 - counters
 - structure beads
 - dot cards
 - Unifix blocks.Note: You will have more than one group with the same kind of apparatus.
- ◆ After each group has demonstrated, discuss the different ways learners find out about number combinations through building up and breaking down numbers.
- ◆ Point out that understanding numbers greater than 5 is based on number concepts learnt for numbers 5 and less. Reflect on how Terms 1 and 2 have provided experiences for learning about numbers 1–5. This forms the foundation for understanding numbers greater than 5.

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.

Iseshini 3: Kubala kuLibanga R

1 li-awa

Emanotsi emfundzisi

- ◆ Khuluma ngekubala kuLibanga R ngekubutsetela lombhalo longentasi.
- ◆ **Umsebenti 8:** Nika licembu lelincane ngalinye emathulusi lahlukene:
 - tibali
 - buhlalusakhiwo
 - emakhadi emacashati
 - emabhlokhi eYunifiksi.Caphela: Utawuba nemacembu langetulu kwalinye lanemathulusi lafananako.
- ◆ Ngemuva kwekutsi licembu ngalinye selikhombisile, khuluma ngetindlela letehlukene bafundzi labatfolo ngato ngenhlanganisela yetinombolo ngekwakha nekubhidlita tinombolo.
- ◆ Shano kutsi kuvisisa tinombolo letingetulu kwe-5 kumiselwe kumicondvo yetinombolo letifundvwe kunombolo 5 nangaphasi. Buyeketa kutsi lthemu 1 neye-2 ente kutsi kufundvwe ngetinombolo 1–5. Loku kwakha sisekelo sekuvisisa tinombolo letingetulu kwe-5.

Bafundzi badzinga kuvisisa bukhulu betinombolo nebudlelwane emkhatsini wato ngembi kwekutsi bacale kwenta ema-ophareshini njengekuhlanganisa nekususa. Badzinga kwati, sibonelo, ku-3 'mungaki'; ku-3 uta ngemuva kwe-4, ngemuva kwa-2 nasemkhatsini waku-2 naku-4; na-3 kungetulu kwa-2 ngakunye kuphindze futsi kube ngaphasi kwa-4.

Kusebenta ngetibali, buhlalusakhiwo, emakhadi emacashati, kanye nemdlalo wekukhuhlutisa bese uyahlukanisa kuniketa umfundzi ngamunye ematfuba ekuvisisa kutsi tinombolo tingakhiwa tiphindze futsi tibhidlitwe. Ngalendlela lena, kancane kancane bacala kubona kutsi noma nguyiphi inombolo yakhiwe ngetinhlanganisela taletinye tinombolo letinyenti. Sibonelo, inombolo 5 ingakhiwa ngaloku:

- ◆ ku-4 naku-1
- ◆ ku-1 na-1 kanye na-1 na-2
- ◆ 0 na-5.

KuLibanga R, bafundzi behlwaya tindlela letehlukene tekwakha nekubhidlita tinombolo, nekuhlanganisa nekususa basebentisa tibali.



Umsebenti 8

Fundza lwatiso kumakhasi 154–156 e*Nkhombandlela Yemfundzi*.

Cabanga ngekutsi uyisebentise kanjani imethiriyeli loyinikiwe kuLuhlelo Lwetibalo kusita bafundzi bavisise ema-ophareshini etinombolo (kubala) kanye nebudlelwane. Sebentisa lemethiriyeli kukhombisa loku.

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.

Word problems

Facilitator's notes

- ◆ Briefly reflect on word problems and questions discussed in Workshop 6. Explain that when we talk about word problems, we are not referring to open-ended questions. Word problems or 'story sums' are situations/contexts that require Grade R learners to apply addition, subtraction, sharing and grouping strategies.
- ◆ In groups, participants solve the word problems in **Activity 9**.
- ◆ For each word problem, discuss their responses to the questions.
- ◆ Remind participants that the language used needs to be simple and clear. The confusion and difficulty that learners experience when solving word problems is often a result of the language structure used to express the problem, rather than a lack of mathematical understanding.

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.

1. Bafundzi bawehlwaya kanjani umcondvo wetinombolo kuLuhlelo Lwetibalo basebentisa imethiriyeli labayinikiwe?
2. Nguyiphi leminyane imibuto longayisebentisa letawukhombindlela kufundza kwabo? (Fundza likhasi 157 le*Nkhombandlela Yemcondvo* tibonelo temibuto.)

Lungiselela kubika ngengcogco yakho ecenjini lonkhe.

Tibalo temagama

Emanotsi emfundzisi

- ◆ Buyeketa ngekushesha tibalo temagama nemibuto lekukhulunywe ngayo kuMhlanganosikolo 6. Chaza kutsi uma sikhuluma ngetibalo temagama, asisho imibuto levulekile. Tibalo temagama noma 'indzaba yetibalo' timo/ngulokucuketfwe lokudzinga bafundzi beLibanga R kutsi basebentise emasubuciko ekuhlanganisa, kususa, kwaba kanye newekubeka ngemacembu.
- ◆ Ngemacembu, bahlanganyeli basombulula tibalo temagama ku**Msebenti 9**.
- ◆ Kusibalo semagama ngasinye, khuluma ngetimphendvulo tabo temibuto.
- ◆ Khumbuta bahlanganyeli kutsi lulwimi lolusetjentiswako lufanele kutsi lube lula futsi lucace. Kudideka nebulukhuni bafundzi labahlangabetana nabo uma basombulula tibalo temagama buvamisa kuba ngumphumela wekuhleleka kwelulwimi lolusetjentiswa kusho noma kwetfula inkinga, kunekuvisisa tibalo.

Bafundzi belibanga R badzinga kusombulula tinkinga ngemlomo tibalo temagama letifaka ekhatsi kuhlanganisa, kususa, kanye nekwaba ngalokulinganako kanye nekwenta emacembu. Lokunye futsi kutsi badzinga kuchaza tabo tindlela tekucabanga kanye netindlela tekusombulula tinkinga letehlukene.

Nika bafundzi sikhatsi lesinyenti sekucabanga futsi ubente basebentise ema-objekthi mbamba (sib. tibali, iminwe, buhlalusakhiwo) kusombulula letinkinga bese ubuka timphendvulo tabo.

Uma wetfula sibalo semagama kubafundzi, kubalulekile kutsi ubakhutsate:

- ◆ tfole emasubuciko ekusombulula lenkinga
- ◆ chaza kutsi bayisombulule kanjani lenkinga
- ◆ shano kutsi kungani bacabanga kutsi imphendvulo yabo ingiyo.

Kungetfulwa timo letetayelekile tekuhlanganisa nekususa njengetinkinga. Indlela sibalo semagama lesihlelwe ngayo, incuma kutsi kulula noma kulukhuni kangakanani kususombulula. Kubalulekile kusebentisa lulwimi lolucacile futsi lolulula uma wetfula tibalo temagama.

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.
 - ◆ 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.

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:

KuMhlanganosikolo 6 sibuke kubaluleka kwekusebentisa lululwimi lolucacile, lolulula kanye nekubuta imibuto lefanele ngesikhatsi semisebenti yekusombulula tinkinga. Siphindze futsi sakhe tibalo temagama mbamba esimeni bafundzi labangatimatanisa nato. KuMsebenti 9 utawukhuluma ngekusombulula inkinga ngalokubanti.



Umsebenti 9

1. Buka lesibalo semagama lesingentasi.
 - ◆ Ungayisombulula kanjani inkinga ngayinye?
 - ◆ Ucabanga kutsi bafundzi beLibanga R bangayisombulula kanjani inkinga ngayinye?
 - ◆ Kungani letinkinga tilukhuni kakhulu kunaletinye?
 - ◆ Sebentisa letibali letisetifuleni lakho ukhombise bafundzi kutsi bangatisombulula kanjani letinkinga.

Hlanganisa	Hlukanisa
Laylah unemaswidi la-6. Malusi umupha 2. Laylah unamangaki emaswidi sekawonkhe?	Kunemaswidi la-8. Laylah udla emaswidi la-3. Malusi usalelwe ngulamangaki?
Laylah unemaswidi la-5. Udzinga kuba nalamanye lamangaki kute kutsi abe nala-8?	Laylah unemaswidi la-8. Malusi udla lamanye. Kusele la-4. Malusi udle mangaki?
Laylah bekanemaswidi. Malusi umupha lamanye la-2. Manje sewunala-8 Laylah bekanamangaki ekucaleni?	Laylah bekanemaswidi. Uphe Malusi emaswidi la-6. Usalelwe ngemaswidi la-2 Bekanamangaki emaswidi ekucaleni?

2. Bhala sibalo semagama longasetfula kubafundzi bakho beLibanga R ngakunye kwaloku lokulandzelako:

Addition: $4 + 5 =$

Subtraction: $7 - 3 =$

Equal sharing without a remainder: 8 shared between 4 learners

Equal sharing with a remainder: 5 shared between 2 learners

Facilitator's notes

- ◆ PPT: The 'combine' and 'separate' table.
- ◆ In Grade R, most learners will solve problems using these strategies or techniques:
 - counting all
 - using counters or fingers to represent the collections being combined or separated.Very few learners will count on from the biggest number because this level of number knowledge is still being developed.
- ◆ Ask participants to share their examples with the whole group.

Kuhlanganisa: 4 + 5 =

Kususa: 7-3 =

Kwabelana ngalokulinganako lokunensalela: loku-8 kwabelwe bafundzi la-4

Kwabelana ngalokulinganako lokungenansalela: loku-5 kwabelwe bafundzi laba-2

Emanotsi emfundzisi

- ◆ PPT: Lithebuli 'lekuhlanganisa' kanye ne'kwehlukana'.
- ◆ KuLibanga R, bafundzi labanyenti batawusombulula tinkinga basebentisa lamasubuciko noma emasu:
 - kubala konkhe
 - kusebentisa tibali noma iminwe kumelela emagcogco lahlanganiswako nalehlukaniswako.Bambalwa bafundzi labatawubala bachubeke basuka kunombolo lenkhulu kakhulu ngoba lelizinga lekwati tinombolo lisatfufuka.
- ◆ Cela bahlanganyeli babelane tibonelo tabo ecenjini lonkhe.

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.

Facilitator's notes

Show the video and discuss the challenges and opportunities for differentiated teaching and learning in Grade R. If participants do not mention the following points, add them to the discussion.

- ◆ Learners can all do the same activity, but easier questions can be posed.
- ◆ The teacher can offer more guidance to slower/weaker learners and encourage more advanced learners to discuss their reasoning.
- ◆ Learners can be placed in ability groups for some activities and in mixed-ability groups for other activities.
- ◆ Observation and the recording of observation are important. They enable the teacher to have insight into each learner's progress and to know how to assist learners.

Video 2

Video 1 edited to include a teacher talking about how she manages differentiated teaching and learning, and assessment in her class.

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.

Iseshini 4: Kuhlelela kufundzisa

1½ ema-awa

Leseshini yemhlanganosikolo ilungiselela bahlanganyeli kufezekisa Ithemu 3 Emaviki 7–10. Kulesigaba lesi semnyaka, thishela utawube sekacaphela kutsi umehluko emkhatsini wemazinga enchubekembili yebafundzi. Ithemu 3 yakhela kulocuketfwe kuThemu 1 neye-2. Labanye bafundzi batawube sebakulungele loku, kantsi labanye bona batawube basadzinga kwesekelwa kanye nekuhlanganisa lokunyenti kunchubekembili. Kubalulekile kulungiselela nekuhlelela lomehluko ekwatini kwebafundzi kucinisekisa kutsi konkhe lokucuketfwe nemakhono eTibalo teLibanga R kuyafundvwa, nekutsi futsi bafundzi batilungiselele Ithemu 4.

Emanotsi emfundzisi

Khombisa ividiyo bese ukhuluma ngetinsayeya nematfuba ekufundzisa nekufundza lokwehlukene kuLibanga R. Uma ngabe bahlanganyeli abawasho lamaphuzu lalandzelako, wafake kulengcogco.

- ◆ Bonkhe bafundzi bangenta umsebenti lofananako, kodvwa kungabutwa imibuto lelula.
- ◆ Thishela angakhombindlela kakhulu bafundzi labahamba kancane/lababutsakatsaka bese ukhutsata bafundzi labadvonsa embili kutsi bakhulume ngekucabanga kwabo.
- ◆ Bafundzi bangabekwa emacenjini ngekuya kwemakhono mayelana nemisebenti nasemacenjini lanemakhono lahlanganisiwe mayelana nemisebenti.
- ◆ Kubukisisa kanye nekubhala loko lokubukisisiwe kubalulekile. Kwenta thishela akhone kubona kutsi inchubekembili yemfundzi ngamunye kanye nekwati kutsi bafundzi bangasitwa kanjani.



Ividiyo 2

Ividiyo 1 ilungisiwe kute ifake ekhatsi thishela akhuluma ngekutsi ukulawula kanjani kufundzisa nekufundza lokwehlukahlukanisiwe, kanye neluhlolo eklasini lakhe.

Bukela levidiyo yathishela akhuluma ngekutsi ubukana kanjani nemkhakha wekwati kwebafundzi eklasini lakhe. Lalela kutsi batsini mayelana nekuhlelela nekulawula umehluko emkhatsini wemazinga emakhono ebafundzi nekutsi uhlela kanjani kute kutsi akwati kwesekela tidzingo tebafundzi ngekwehlukana.

Bhala imibono yakho mayelana nekufundzisa nekufundza lokwehlukahlukene eklasini lakho.

Facilitator's notes

- ◆ Move between the groups as participants discuss the planning and preparation for teaching Term 3 Weeks 7–10 in **Activity 10**. Assist by making suggestions on overcoming challenges.
- ◆ Each group presents their main discussion points to the whole group.



Activity 10

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?

Emanotsi emfundzisi

- ◆ Hamba emkhatsini wemacembu ngesikhatsi bahlanganyeli bacocisana ngekuhlela nekulungiselela kufundzisa Ithemu 3 Emaviki 7–10 ku**Msebenti 10**. Sita ngekubeka imibono mayelana nekuncoba tinsayeya.
- ◆ Licembu ngalinye litakwetfulela emaphuzu labalulekile engcogco yalo ecenjini lonkhe



Umsebenti 10

1. Ecejini lakho, yenta ucedze emathemplethi eThemu 3 Emaviki 7–10 (Sengeto A).
2. Licembu lakho litawetfula sibutsetelo sengcogco yenu yekuhlela kulamanye emacembu. Bhala phasi emaphuzu labalulekile engcogco yakho ephepheni lefliphushadi. Faka timphendvulo talemibuto lelandzelako:
 - ◆ Ngutiphi tinsayeya locabanga kutsi utawuhlangabetana nato ekufezekiseni Emaviki 7–10?
 - ◆ Ungatisombulula kanjani tonkhe letinsayeya kute ufezekise ngalokuyimphumelelo?
 - ◆ Imisebenti leholwa nguthishela iwaveta njani ematfuba ekutsi thishela ahlole ngemphumelelo aphindze asekele bafundzi ngemphumelelo?
 - ◆ Yenta imisebenti yemacembu lamancane latimele inikete kutetayeta lokwenele lwati nemakhono lamasha?

Closing activities

30 minutes

Facilitator's notes

- ◆ **Workshop reflection:** Ask participants to take a few minutes to reflect on the day and to page through their *Participant's Workbook*. Ask them to jot down any questions or comments to share with the whole group.
Ask individual participants to volunteer responses and write these on the flipchart.
- ◆ Encourage participants to add any comments and feedback not yet shared to the post box.
- ◆ **Take back to school task:** Read through this task. Ask if there is anything that is not clear and that requires more explanation.
- ◆ **Evaluation:** Hand out copies of the Workshop Evaluation Form and have participants complete the form.
- ◆ **Next workshop:** Give dates for the next workshop and close the workshop.



Activity 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.

Emanotsi emfundzisi

- ◆ **Lubuyeketo lwemhlanganosikolo:** Cela bahlanganyeli batsatse emaminitsi lambalwa babuyekete lusuku baphindze futsi bavule emakhasi ku*Ncwadzi Yekusebentela Yemhlanganyeli* yabo. Bacele babhale phasi nanoma nguyiphi imibuto nekuphawula kute kutsi babelane nelicembu lonkhe. Cela bahlanganyeli ngabanye kutsi bavalontyiye baphendvule bese utibhala phasi kufliphushadi yakho.
- ◆ Khutsata bahlanganyeli kutsi bengete tiphakamiso tabo nekwetfula umbiko wa lokusengakafakwa kulelibhokisi leliposi.
- ◆ **Umsebenti wekubuyisela emuva esikolweni:** Fundza wonkhe lomsebenti. Babute kutsi kukhona yini lokungacaci futsi lokudzinga kuchazwa kabanti
- ◆ **Kuhlolisisa:** Banike emakhophi eLifomu Lekuhlolisisa Umhlanganosikolo futsi yenta bahlanganyeli baligcwalise lelifomu.
- ◆ **Umhlanganosikolo lolandzelako:** Niketa tinsuku temhlanganosikolo lolandzelako.



Umsebenti 11

Lubuyeketo lwemhlanganosikolo: Tsatsa emaminitsi lambalwa ucabange ngalolusuku. Buka yonkhe *Incwadzi Yekusebentela Yemhlanganyeli* utikhumbute ngaloko lokufundziwe. Bhala phasi imicabango yakho.

Yabelana ngelubuyeketo lwakho nelicembu lelikhulu.



Umsebenti wekubuyisela emuva esikolweni

1. Sebentisa *Inkhombandlela Yemsebenti: Ithemu 3* kuhlela nekufezekisa Ithemu 3 Emaviki 7–10 eLuhlelo Lwetibalo.
2. Bhala emanotsi aloko lokwenteke kahle kakhulu nekutsi tinsayeya utisombulule kanjani ngesikhatsi sekufezekisa Ithemu 3 Emaviki 7–10.
3. Bhala kuphawula encwadzini lobhalela kuyo inchubekelembili yemfundzi ngamuye (incwadzi yekubukisisa bafundzi) Sebentisa **'Hlola kutsi bafundzi bayakhona ku'** (libhokisi leliso) ngesikhatsi semsebenti loholwa nguthishela ngamunye kukhombindlela kuphawula nekubukisisa kwakho.
4. Wota nencwadzi yekubukisisa bafundzi bakho bese ubhala emanotsi lowente ngesikhatsi ubuyeketa kufundzisa kwelilanga ngalinye kuMhlanganosikolo lolandzelako.
5. Wota nekhophi yeThemu 3: Sibonelo seLirekhodi leLuhlolo Loluchubekako (lesiku*Nkhombandlela Yemsebenti: Ithemu 3*) kumhlanganosikolo lolandzelako.

Evaluation

Complete the Evaluation Form.

Kuhlolisisa

Gcwalisa leLifomu Lekuhlolisisa.

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				

SENGETO A: ITHEMPLETHI YEKUHLELELA LIVIKI LETHEMU 3

Ithemu 3: Luhlelolisu Lwemsebenti: Liviki_____

UMKHAKHA WALOKUCUKETFWE:				
SIHLOKO:				
YETFULA LWATI LOLUSHA:				
TETAYETE:				
Imisebenti yeliklasi lonkhe		Umsebenti loholwa nguthishela	Imisebenti yenzawo yekusebentela (imisebenti letimele yemacembu lamancane)	
Lilanga 1			Umsebenti 1	
Lilanga 2			Umsebenti 2	
Lilanga 3			Umsebenti 3	
Lilanga 4			Umsebenti 4	
Lilanga 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: Luhlelolisu Lwemsebenti: Liviki_____

UMKHAKHA WALOKUCUKETFWE:				
SIHLOKO:				
YETFULA LWATI LOLUSHA:				
TETAYETE:				
Imisebenti yeliklasi lonkhe		Umsebenti loholwa nguthishela	Imisebenti yenzawo yekusebentela (imisebenti letimele yemacembu lamancane)	
Lilanga 1			Umsebenti 1	
Lilanga 2			Umsebenti 2	
Lilanga 3			Umsebenti 3	
Lilanga 4			Umsebenti 4	
Lilanga 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: Luhlelolisu Lwemsebenti: Liviki_____

UMKHAKHA WALOKUCUKETFWE:				
SIHLOKO:				
YETFULA LWATI LOLUSHA:				
TETAYETE:				
Imisebenti yeliklasi lonkhe		Umsebenti loholwa nguthishela	Imisebenti yenzawo yekusebentela (imisebenti letimele yemacembu lamancane)	
Lilanga 1			Umsebenti 1	
Lilanga 2			Umsebenti 2	
Lilanga 3			Umsebenti 3	
Lilanga 4			Umsebenti 4	
Lilanga 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: Luhlelolisu Lwemsebenti: Liviki_____

UMKHAKHA WALOKUCUKETFWE:				
SIHLOKO:				
YETFULA LWATI LOLUSHA:				
TETAYETE:				
Imisebenti yeliklasi lonkhe		Umsebenti loholwa nguthishela	Imisebenti yenzawo yekusebentela (imisebenti letimele yemacembu lamancane)	
Lilanga 1			Umsebenti 1	
Lilanga 2			Umsebenti 2	
Lilanga 3			Umsebenti 3	
Lilanga 4			Umsebenti 4	
Lilanga 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?

Lifomu Lekuhlolisisa Umhlanganosikolo 9

1. Lomhlanganosikolo ufinyelele yini ezingeni lebewulilindzele?

2. Yini lokufundzile kulomhlanganosikolo lokubalulekile lokukusite kakhulu?

3. Kukhona yini longakakutsandzi noma lokutfole kulukhuni?

4. Utakusebentisa kanjani eklasini leLibanga R loku lokufundzile?

5. Ikhona yini imibono lonayo yekwenta kancono imihlanganosikolo lechubekako?
