IsiZulu/English

Uhlelo Lokuthuthukisa
Izibalo Zebanga R
Grade R Mathematics
Improvement Programme

Umhlangano Wokucobelelana Ngolwazi 9 ● Workshop 9
Incwadi Yokusebenzela Yababambiqhaza ● Participant's Workbook

Uhlelo Lokuthuthukisa Izibalo neziLimi ZeBanga R luyisinyathelo so**Mnyango WezeMfundo wesiFundazwe saseGauteng (Gauteng Department of Education)** kanye nomlingani wawo osemqoka, i-**Gauteng Education Development Trust**.

Ukuthuthukiswa nokukhiqizwa kokuqeqeshwa kanye nezinsiza zasekilasini zoHlelo Lokuthuthukisa Izibalo neziLimi ZeBanga R kuphumelele ngenxa yoxhaso olunobubele lwephrojekthi oluphuma kwi-**United States Agency for International Development** kanye ne-**Zenex Foundation**.

Uhlelo Lokuthuthukisa Izibalo neziLimi ZeBanga R luphethwe yi-**Jet Education Services** ehlangene ne-**Schools Development Unit** yase-**UCT** ne-**Wordworks** njengabalingani abangochwepheshe ngamakhono athile.

I-**Schools Development Unit** (SDU) e-**University of Cape Town** (UCT) iwumlingani owuchwepheshe wezibalo kuHlelo Lokuthuthukisa Izibalo neziLimi ZeBanga R. I-SDU iyingxenye ephakathi ku-School of Education sase-UCT egxile ekuthuthukisweni kobungcweti bothisha eziBalweni, Isayensi, Ukwazi Ukufunda Nokubhala/ Ulimi kanye namaKhono Empilo kusuka EBangeni R kuya EBangeni le-12. I-SDU inikeza iziqu zobuthishela kanye nezifundo zesikhathi esifushane ezivunywe i-UCT, umsebenzi osekelwe esikoleni ukuthuthukiswa kwezinto kanye nocwaningo ukuze kusekwe ukufundisa nokufunda kuzo zonke izimo zaseNingizimu Afrika.

AMAZWI OKUBONGA
Kubongwa ngokukhethekile:
- Izikhulu zomkhakha woHlelo Lwezifundo, Umkhakha Wokufunda kothisha kanye nomkhakha WokuFunda okukhethekile woMnyango WezeMfundo wesiFundazwe saseGauteng, ngokuzinikela kwabo ukulungisa izinsiza kufunda zethu.
- Izikhulu kanye nothisha be-Western Cape Education Department (WCED) ngokuzinikela ekuqaleni okuyimpumelelo kwe-Grade R Mathematics Programme (R-Maths) eNtshonalanga Kapa phakathi konyaka wezi-2016 nonyaka wezi-2019.
- Iqembu labaphali be-R-Maths: Abasebenzi bakwa-SDU nabaxhumanisi.

Contents

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Overview

Purpose

This is the nineth of twelve Grade R Mathematics Improvement Programme workshops, which form part of the Gauteng Department of Education (GDE) Grade R Mathematics and Language Improvement Project.

The purpose of this workshop is to continue assisting teachers to implement the Maths Programme in their classrooms. Participants will have the opportunity to reflect on their 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)

Ukubuka ngelibanzi

Inhloso

Lo owesishiyagalolunye emihlanganweni yokucobelelana ngolwazi yoHlelo Lokuthuthukiswa Kwezibalo zeBanga R eyishumi nambili, eyingxenye yoMnyango Wezemfundo waseGauteng (GDE) Uhlelo Lokuthuthukisa Izibalo neziLimi ZeBanga R.

Inhloso yalo mhlangano wokucobelelana ngolwazi ukusiza othisha ukuthi baqhubeke nokusebenzisa Uhlelo Lwezibalo emakilasini abo. Ababambiqhaza bazothola ithuba lokucabanga ngokusebenzisa kwabo Uhlelo Lwezibalo futhi baxoxe ngokuhlela, ukufundisa nokuhlola kwabo. Bazobheka nenqubekelaphambili yomfundi futhi, izidingo zokuthuthuka komuntu ngamunye kanye nezokufunda nje-ke. Ababambiqhaza bazocabangisisa ngamasu afanele okuhlola okukhombisa inqubekelaphambili yomfundi. Umhlangano wokucobelelana ngolwazi uhlola ulwazi lukaThemu 3 Amasonto 7–10 kanye nokusetshenziswa kwalo ekilasini.

Ingxenye Yolwazi Yezibalwa zeBanga R ithathwe *Esitatimendeni Senqubomgomo Yohlelo Lwezifundo Nokuhlola (CAPS)*: *Izibalo Zebanga R (Uhlaka Lokugcina),* 2011, Umnyango Wemfundo Eyisisekelo, eNingizimu Afrika.

Imiphumela yokufunda
♦ Ukudlinza ngokusetshenziswa kweThemu 3 Amasonto 4–6
♦ Ukuhlola amasu asekelwe ekudlaleni okuxhasa ukufundisa izibalo kuBanga R
♦ Ukujulisa ukuqonda umqondo wenombolo kuNgxenye Yolwazi yeziNombolo, Izimpawu Kanye Nobudlelwane Bazo nokuxhumanisa lokhu nokusetshenziswa kwezibalo ekilasini leBanga R
♦ Ukujulisa ukuqonda kokuhlolwa okufanele kuBanga R
♦ Ukudlinza ngezinselelo nokuthola izixazululo ekusebenziseni uHlelo LweziBalo
♦ Ukuklama ulwazi loHlelo LweziBalo oluzofundiswa kuThemu 3 Amasonto 7–10

Okuqukethwe komhlangano wokucobelelana ngolwazi
♦ Ukuvula nokuzindla   (1 ihora)
♦ Iseshini 1: Izinombolo, Izimpawu Kanye Nobudlelwane Bazo   (1 ihora)
ITIYE
♦ Iseshini 2: Izinombolo, Izimpawu Kanye Nobudlelwane Bazo
   (kuyaqhubeka)   (1 ihora)
♦ Iseshini 3: Ukubala EBangani R   (1 ihora)
ISIDLO SASEMINI
♦ Iseshini 4: Ukuhlelela ukufundisa   (1½ amahora)
♦ Imisebenzi yokuvala   (30 imizuzu)

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

1 ihora

Ukuzindla kuhlanganisa ukucabanga nokukhuluma ngokwenzeke kuwe nalokho okufundile. Cabanga ngemihlangano yokucobelelana ngolwazi lweZibalo oke waya kuyo bese uqedela imisho umdidiyeli ayikhombisayo.

Ukudlinza nokuqalisa

Umsebenzi obuyela nawo esikoleni ovela kuMhlangano wokucobelelana Ngolwazi 8, ubudinga ukuthi wenze lokhu okulandelayo:

♦ Sebenzisa *Umhlahlandlela Wemisebenzi: Ithemu 3* ukuhlela nokwenza Ithemu 3 Amasonto 4–6 yoHlelo LweziBalo.

♦ Bhala imibono ebhukwini olisebenzisela ukulandelela inqubekelaphambili yomfundi ngamunye (ibhuku lokuqaphela abafundi), bese usebenzisa uhlu lokuqashelwe lokuthi **'Hlola ukuthi abafundi bayakwazi'** ngesikhathi saleyo naleyo misebenzi eholwa uthisha ukukuqondisa kulokho okuqaphele nokuphawula kwakho.

♦ Bhala amanothi ezinto ezisebenzeke kahle, ezingasebenzanga kahle kanye nokuthi uzixazulule kanjani izinkinga ngesikhathi sokwenza okunqunywe kuThemu 3 Amasonto 4–6.

Emisebenzini elandelayo sebenzisa incwadi yakho yokuqaphela umfundi kanye namanothi owenzile lapho uzindla ngokufundisa kosuku ngalunye.

Umsebenzi 1

1. Eqenjini lakho, yabelana ngempumelelo kanye nangezinselelo zakho ekusebenziseni uHlelo LweziBalo kuThemu 3 Amasonto 4–6. Yabelana ngamasu okuthuthukisa ukufundisa nokufunda ngezinselelo ozihlonzile.

_____
_____
_____

2. Xoxa ngokusebenzisa kwakho ingxenye ethi **'Hlola ukuthi abafundi bayakwazi uku-'** yohla lokuqaphela (ebhokisini lehlo) ngesikhathi somsebenzi ngamunye kweholwa nguthisha.
Khombisa amalungu eqembu lakho incwadi yakho yokuqaphela abafundi.
Khetha umfundi oyedwa bese uxoxa ngokuqaphela kwakho inqubekelaphambili yakhe.

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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.

_____
_____
_____
_____
_____
_____
_____
_____

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?

_____
_____
_____

_____

_____

_____

3.   Bhala ephepheni leshadi eliphenywayo amaphuzu asemqoka engxoxo yenu. Bikela iqembu elikhulu ngengxoxo yenu.

📹 Ividiyo 1

Buka ividiyo kathisha osebenza neqembu elincane labafundi ngesikhathi somsebenzi oholwa nguthisha kuThemu 3 Isonto 6. Esigxile kukho kwesikuqaphelayo kulo mhlangano wokucobelelana ngolwazi ukuthi uthisha ungenelela kanjani emisebenzini yezinombolo.

Bheka ukuthi uthisha usebenza kanjani emisebenzini eyisithupha. Qaphela:
♦   ukuthi uzibeka kanjani izinkinga
♦   ulimi alusebenzisayo lapho ebuza imibuzo
♦   ukuthi uwuhlelela kanjani umsebenzi ngamunye
♦   imibuzo ayibuzayo ukuze ahole abafundi.

_____

_____

_____

_____

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_____

👥 Umsebenzi 2

Bhekisa kumsebenzi oholwa nguthisha (amakhasi 114–117) Isonto 6 ku*Mhlahlandlela Wemisebenzi: Ithemu 3*.

1.   Xoxa ngokuthi uwuphathe kanjani nekilasi lakho lo msebenzi oholwa nguthisha.

_____

_____

_____

2.   Ngabe zikhona izinselelo ohlangabezene nazo? Uma zikhona, uzixazulule kanjani?

_____

_____

_____

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.

_____
_____
_____
_____
_____

Iseshini 1: Izinombolo, Izimpawu Kanye Nobudlelwane Bazo

1 ihora

Emihlangaweni yokucobelelana ngolwazi yaphambilini sixoxe ngeNgxenye Yolwazi yeZinombolo, Izimpawu Kanye Nobudlelwane Bazo. Kule seshini sizophinde sibuyekeze izihloko zezinombolo ezahlukene sibuye sandise ingxoxo yethu ukuze siwuzwe kabanzi umqondo wezinombolo. Sizohlola izimpawu ezilandelayo zezinombolo bese sizixhumanisa nokuzejwayeza kwasekilasini:

♦ ukubala ngomlomo
♦ ukubona isamba ungabalanga/ukuqagela
♦ ukumela inombolo
♦ ukubala izinto
♦ izinombolo ezisho isikhundla
♦ ukubala.

Ukubala ngomlomo

Izingane zifunda ukulandelana okufanele kwamagama ezinombolo ngenkathi zidlala, zicula, futhi ziphindaphinda imilolozelo.

Njengoba sazi, ukubala ngomlomo kubandakanya ukusho amagama ezinombolo ngokulandelana. Abafundi balandelanisa izinombolo ngesikhathi semisebenzi yokubala ngomlomo okwejwayelekile nangesikhathi sokudlulela kokuthile. Amaculo, imilolozelo kanye neminyakazo kwenza ukubala ngomlomo kuthokozise, kodwa kube kugxilwe ekulandelaneni kwezinombolo. Uma abafundi sebengaphinda ukulandelana kwezinombolo ngokulandelana kokubala okulungile, baqala ukukhuluma ngobudlelwano obuphakathi kwezinombolo, isib., ukuthi iyiphi inombolo *engaphambili*, *ephakathi* noma *engemva* kwenombolo enye.

Umsebenzi 3

Eqenjini lakho, xoxa ngendlela imisebenzi elandelayo ekhuthaze ngayo ukufunda ukubala ngamagama ngokulandelana ekilasini lakho:
♦ amaculo nemilolozelo
♦ ulayini wokwaneka wezinombolo
♦ umzila wokugxuma.

_____
_____
_____
_____
_____

13

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

Funda ulwazi olusemakhasini 138–143 bese ubheka umdwebo ophezulu emakhasini 144–145 o*Mhlahlandlela Wokuqonda Isifundo*.

Eqenjini lakho, xoxani ngalezi zinto ezilandelayo ngokuphathelene nenombolo:

♦ 'izincazelo' ezahlukene zenombolo

_____
_____
_____
_____

♦ izinhlobo ezahlukene zezinombolo

_____
_____
_____
_____

Abafundi abakuBanga R bafunda ikakhulukazi izinombolo eziphelele 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 no-10. (KuBanga 1 lokhu kwelulelwa kuma-20 kanye nangaphezulu.) Sigxila ekubaleni kanye nokungamela inombolo ngezindlela ezahlukene bese sihlinzeka ngamathuba okuthi abafundi babhekane ngqo nezinombolo ezingqikithini ezahlukene.

Ukubona isamba ungabalanga

Umsebenzi 5

Qaphela umdidiyeli. Njalo nje lapho ekhombisa ikhadi ngokushesha, yisho ngokushesha ngendlela ongakwazi ukwenza ngayo ukuthi 'mangaki' amachashazi owabonayo.

1. Ngabe ubale ichashazi ngalinye ngalinye? Awukwenzanga ngani lokho?

_____
_____
_____
_____

2. Ngabe ucabanga ukuthi kusiza ngani ukugxilisa ikhono lokuqagela?

_____
_____
_____
_____

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.
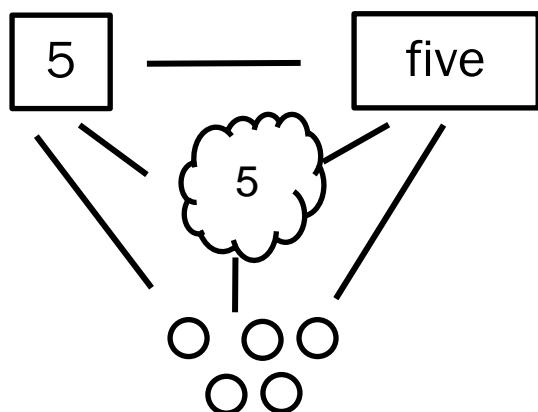
3. Yimiphi imisebenzi egxilisa ukwazi ukuqagela oyisebenzise kumaThemu 1 kanye no-2 amaseshini ezibalo?

_____

_____

_____

_____

Bhekisa emakhasini 144–147 o*Mhlahlandlela Wokuqonda Isifundo*.

Ukumela inombolo

Inombolo wumqondo wokungathinteki. Lo umqondo osekhanda lakho. Asikwazi ukubona izinombolo, ngakho-ke kumele sithole izindlela ezahlukene zokungamela (ukukhombisa) inombolo okubhekiswe kuyo. Abafundi kumele bathole ukuxhumana komqondo wenombolo, isib., 5, kanye nokumeleka kwayo okwehlukene, njengeqoqo lezinto, uphawu, igama. Kumele baphinde baqonde ukuthi uma sithi 'mangaki' amaswidi, ukushaya izandla, izindlu, izinsuku zokuzalwa, njll., ukuthi kuhlanu kuhlale kukhomba isibalo esifanayo salezi zinto.

Abafundi kumele babuqondisise 'ubungaki' noma ubunani benombolo. Ukuze badlulisele lo mqondo kubafundi, othisha kumele bethule umqondo wokusebenzisa izinto eziphathekayo, isibonelo, izinto zokubala. Ukuze usize abafundi ukuthi bawuzwe umqondo wenombolo, badinga ukuqonda ukuthi izinombolo zingamelwa ngezindlela ezahlukene. Kudingeka futhi ukuthi abafundi bakwazi ukuxhumanisa phakathi kokumeleka okwehlukene kwezinombolo, izibonelo: into, isithombe, uphawu kanye negama.
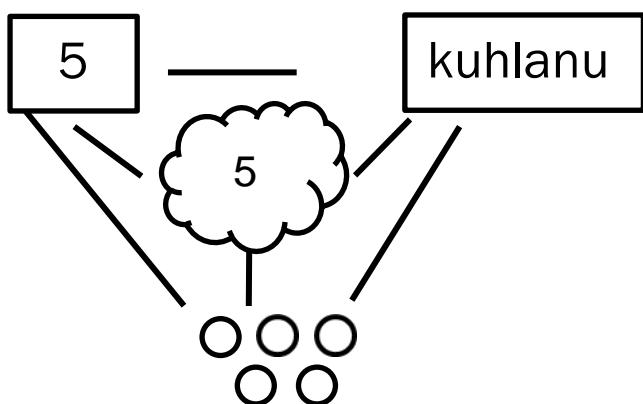
Session 2: Numbers, Operations and Relationships (continued) **1 hour**

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	

Iseshini 2: Izinombolo, Izimpawu Kanye Nobudlelwane Bazo (kuyaqhubeka) **1 ihora**

Ukubala izinto

Ukubala ukuthi '**kungaki**', abafundi badinga ukubona ukuthi into ngayinye eqoqweni inegama lenombolo nokuthi ubala into ngayinye kanye kuphela.

Kukhona imigomo yokubala emihlanu echaza inqubo yokufunda ukubala. Uma abafundi sebeqonda futhi sebengasebenzisa yonke le migomo emihlanu yokubala, siyakwazi ukusho ukuthi sebengabala.

Umsebenzi 6

Funda ulwazi emakhasini 148–151 o*Mhlahlandlela Wokuqonda Isifundo*.

1. Sebenzisa izisetshenziswa ezinikeziwe ukukhombisa le migomo njengoba ichaziwe ku*Mhlahlandlela Wokuqonda Isifundo*.
2. Xoxa ngomgomo ngamunye eqenjini lakho bese wenza amanothi akho ethebhuleni elingezansi ukuze uchaze ukuqonda kwakho umgomo ngamunye.

Umgomo wokukodwa okuqondene nokunye	
Umgomo wokuhleleka okuzinzile	
Umgomo wenhloko	
Umgomo wokusengqondweni	
Umgomo wokuhleleka okungahambisani	

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.

_____
_____
_____
_____

Izinombolo ezisho isikhundla

Sixoxe ngezinhlobo zezinombolo ezikutshela ukuthi 'kungaki'. Lezi zibizwa ngokuthi **izinombolo ezikhomba ubungako**.

Kukhona nezinombolo ezikhombisa isikhundla sento noma umuntu ochungechungeni noma ohlelweni. Lezi zibizwa ngokuthi **izinombolo ezisho isikhundla.**

Umsebenzi 7

Hlela izinto zokubala zezilwane etafuleni lakho ngokuhambisana nemiyalo yomdidiyeli. Phendula imibuzo yakhe mayelana nesikhundla sezinto zokubala zezilwane.

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_____
_____
_____

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.

Iseshini 3: Ukubala EBangani R

Abafundi kudingeka baqonde inani noma isisindo sezinombolo kanye nobudlelwano phakathi kwazo ngaphambi kokuba benze imisebenzi efana nokuhlanganisa nokususa. Kudingeka bazi, ngokwesibonelo, ukuthi 'kungaki' okuthathu; oku-3 kuza ngaphambi koku-4, ngemva koku-2 naphakathi koku-2 noku-4; futhi oku-3 kungaphezu koku-2, kungokukodwa ngaphansi koku-4.

Ukusebenza ngezinto zokubala, ubuhlalu bokuhlela, amakhadi anamachashazi, kanye nomdlalo wokushukuza nokuhlakaza kunikeza amathuba okuba abafundi baqonde ukuthi izinombolo zingakhiwa noma zihlakazwe. Ngale ndlela, kancane kancane bayaqaphela ukuthi noma iyiphi inombolo yakhiwe ngezinhlanganisela eziningi ezihlukahlukene zezinye izinombolo. Isibonelo, inombolo 5 ingenziwa ngalokhu:

♦ 4 no-1
♦ 1 no-1 kanye no-1 no-2
♦ 0 no-5.

Ebangeni R, abafundi bahlola izindlela ezahlukene zokwakha nokuhlakaza izinombolo, bese behlanganisa babuye basuse besebenzisa izinto zokubala.

Umsebenzi 8

Funda ulwazi emakhasini 154–156 o*Mhlahlandlela Wokuqonda Isifundo*.

Cabanga ngendlela osebenzise ngayo izinto ezihlinzekwe oHlelweni Lwezibalo ukusiza abafundi baqonde imisebenzi yenombolo (ukubala) nobudlelwano. Sebenzisa izisetshenziswa ukuze ubonise lokhu.

1. Abafundi baluhlola kanjani ulwazi lwenombolo oHlelweni Lwezibalo besebenzisa izisetshenziswa ezihlinzekiwe?

2. Yimiphi imibuzo ongayibuza engalawula ukufunda kwabo? (Bhekisa ekhasini 157 lo*Mhlahlandlela Wokuqonda Isifundo* ngokuphathelene nezibonelo zemibuzo.)

_____
_____
_____
_____

Lungiselela ukwethula ingxoxo yakho kulo lonke iqembu.

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.

Izinkinga zamagama

Abafundi beBanga R badinga ukuxazulula ngomlomo izinkinga zamagama ezibandakanya ukuhlanganisa, ukususa, nokwabelana ngokulinganayo nokubeka ngamaqoqo. Futhi kumele bakuchaze ukucabanga kwabo kanye nezindlela zokuxazulula izinkinga ezahlukene.

Nika abafundi isikhathi esiningi sokucabanga ubuye ubavumele basebenzise izinto zangempela (isib., izinto zokubala, iminwe, ubuhlalu bokuhlela) ukuxazulula izinkinga nokuhlola izimpendulo zabo.

Uma wethula inkinga yamagama kubafundi, kubalulekile ukubakhuthaza ukuba:
♦ bathole isu lokuxazulula inkinga
♦ bachaze ukuthi bayixazulule kanjani inkinga
♦ basho ukuthi kungani becabanga ukuthi impendulo yabo ilungile.

Kungethulwa izimo zokuhlanganisa nokususa okuvamile njengezinkinga zamagama. Indlela inkinga yegama ehlelwe ngayo, inquma ukuthi kulula noma kunzima kangakanani ukuyixazulula. Kubalulekile ukusebenzisa ulimi olucacile nolulula uma wethula izinkinga zamagama.

Emhlanganweni wokucobelelana ngolwazi 6 sibheke ukubaluleka kokusebenzisa ulimi olucacile, olulula nokubuza imibuzo efanele ngesikhathi semisebenzi yokuxazulula izinkinga. Siphinde saklama izinkinga zamagama zangempela ezimweni abafundi abangakwazi ukuhambisana nazo. KuMsebenzi 9, uzoxoxa ngokuxazulula inkinga ngemidati yakhona.

Umsebenzi 9

1. Bheka izinkinga zamagama ngezansi (ikhasi 27).
♦ Ungayixazulula kanjani inkinga ngayinye?
♦ Ucabanga ukuthi abafundi bakho beBanga R bazoyixazulula kanjani inkinga ngayinye?
♦ Kungani ezinye zalezi zinkinga zinzima kunezinye?
♦ Sebenzisa izinto zokubala ezisetafuleni lakho ukuze ubonise ukuthi abafundi bazozixazulula kanjani izinkinga.

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 ayi-6. UMalusi umnika ama-2 ngaphezulu. Ngabe uLaylah unamaswidi amangaki uma esewonke?	Kunamaswidi ayi-8. ULaylah udla amaswidi ama-3. Mangaki asalele uMalusi?
ULaylah unamaswidi ama-5. Udinga ukuba namanye amangaki ukuze abe nayi-8?	ULaylah unamaswidi ayi-8. UMalusi udla amanye awo. Kusele ama-4. Udle amangaki uMalusi?
ULaylah ubenamaswidi. UMalusi umnika ama-2 ngaphezulu. Manje usenayi-8. Ekuqaleni uLaylah ubenamangaki?	ULaylah ubenamaswidi. Unike uMalusi amaswidi ayi-6. Unamaswidi ama-2 asele. Ekuqaleni ubenamaswidi amangaki?

2. Bhala inkinga yegama ongayethula kubafundi bakho beBanga R ngalokho ngakunye kokulandelayo:

Ukuhlanganisa: 4 + 5 =

_____
_____
_____
_____

Ukususa: 7 – 3 =

_____
_____
_____
_____

Ukwabelana ngokulinganayo ngaphandle kwensalela: oku-8 kwabelwa abafundi aba-4

_____
_____
_____
_____

Equal sharing with a remainder: 5 shared between 2 learners

_____
_____
_____
_____

Ukwabelana ngokulinganayo kube nensalela: oku-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.

Video 2

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.

_____
_____
_____
_____
_____
_____

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?

Iseshini 4: Ukuhlelela ukufundisa   1½ amahora

Le seshini yomhlangano wokucobelelana ngolwazi ilungiselela ababambe iqhaza ukuthi basebenzise okutholakala kuThemu 3 Amasonto 7–10. Ngalesi sigaba sonyaka, uthisha uzobe eseqaphele umehluko onhlobonhlobo phakathi kwamazinga okuqhubekela phambili kwabafundi. Ithemu 3 yakhela kokuqukethwe olwazini lweThemu 1 no-2. Abanye abafundi bazobe sebekulunge lelokhu, kanti abanye bazodinga ukwesekwa nokuqinisa okwengeziwe ukuze bathuthuke. Kubalulekile ukuhlela nokulungiselela lo mahluko ekwazini komfundi ukuqinisekisa ukuthi kwenziwe konke okuqukethwe olwazini namakhono eZibalweni zeBanga R, futhi abafundi bayilungele kahle Ithemu 4.

🎥**Ividiyo 2**

Bukela ividiyo yothisha exoxa ngendlela abhekana ngayo namazinga okusebenza abafundi ekilasini lakhe. Lalela ukuthi uthini ngokuhlela nokulawula umehluko phakathi kwamazinga okwazi ukwenza okuthile kwabafundi nokuthi uqhuba kanjani ngokuphathelene nokuhlela kwakhe ukuze asekele izidingo zomfundi ngamunye.

Qaphela imibono yakho ngokuphathelene nokufundisa nokufunda okuqondene nabathile ekilasini lakho.

_____
_____
_____
_____
_____
_____

👥**Umsebenzi 10**

1. Qedelani ithempulethi yokuhlela yeThemu 3 Amasonto 7–10 (Isithasiselo A) eqenjini lenu.
2. Iqembu lenu lizokwethulela elinye iqembu imibono yokubuka ngelibanzi. Bhala ephepheni leshadi eliphenywayo amaphuzu asemqoka engxoxo yakho. Ufake nezimpendulo zale mibuzo elandelayo:
   ♦ Yiziphi izinselele ozilindele ekusebenziseni okwaMasonto 7–10?
   ♦ Ungazixazulula kanjani zonke lezi zinselele ukuze uphumelele ekusebenziseni lokho okunempumelelo?
   ♦ Ngabe umsebenzi oholwa uthisha unikeza kanjani amathuba okuhlola kothisha kanye nokweseka kwabo abafundi?

   ♦ Ngabe imisebenzi yokuzimela yamaqembu amancane yethula amathuba enele ukulolonga ulwazi olusha kanye namakhono?

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.

Imisebenzi yokuvala

<div align="right">**30 imizuzu**</div>

Umsebenzi 11

Ukudlinza ngomhlangano wokucobelelana ngolwazi: Thatha imizuzu embalwa udlinze ngosuku lolo. Phenya amakhasi *eNcwadi Yokusebenzela Yababambiqhaza* ukuzikhumbuza ngokwenziwa. Bhala phansi noma iyiphi imibuzo noma imibono ukuze wabelane neqembu.

_____
_____
_____
_____
_____

Yabela iqembu elikhulu imidlinzo yakho.

Umsebenzi obuyela nawo esikoleni

1. Sebenzisa *Umhlahlandlela Wemisebenzi: Ithemu 3* ukuhlela nokwenza Ithemu 3 Amasonto 7–10 yoHlelo LweziBalo.
2. Bhala amanothi ezinto ezisebenzeke kahle, ezingasebenzanga kahle kanye nokuthi uzixazulule kanjani izinkinga ngesikhathi sokwenza okunqunywe kuThemu 3 Amasonto 7–10.
3. Bhala imibono ebhukwini olisebenzisela ukulandelela inqubekela phambili yomfundi ngamunye (ibhuku lokuqaphela abafundi). Sebenzisa uhlu lokuqaphela ingxenye ethi **'Hlola ukuthi abafundi bayakwazi uku-'** (ibhokisi lehlo) ngesikhathi semisebenzi eholwa uthisha ukuhola okuqaphelile kanye nemibono.
4. Letha ibhuku lokuqaphela labafundi bakho kanye namanothi owenze ngesikhathi udlinza ngokufundisiwe kosuku ngalunye emhlanganweni olandelayo wokucobelelana ngolwazi.
5. Letha ikhophi yeThemu 3: Isibonelo Irekhodi Lokuhlolwa Okuqhubekayo (kusuka ku*Mhlahlandlela Wemisebenzi: Ithemu 3*) kuya kumhlangano wokucobelelana ngolwazi olandelayo.

Ukuhlola

Gcwalisa iFomu Lokuhlola.

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 ITHEMPULETHI YOKUHLELA KWAMASONTO ONKE

Ithemu 3: Uhlelo Lomsebenzi: Isonto _____

INGXENYE YOLWAZI:			
ISIHLOKO:			
YETHULA ULWAZI OLUSHA:			
ZEJWAYEZE:			
Imisebenzi yekilasi lonke		**Umsebenzi oholwa nguthisha**	**Imisebenzi yesiteshi sokusebenzela (imisebenzi yeqembu elincane elizimele)**
Usuku 1			**Umsebenzi 1**
Usuku 2			**Umsebenzi 2**
Usuku 3			**Umsebenzi 3**
Usuku 4			**Umsebenzi 4**
Usuku 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: Uhlelo Lomsebenzi: Isonto ____

INGXENYE YOLWAZI:			
ISIHLOKO:			
YETHULA ULWAZI OLUSHA:			
ZEJWAYEZE:			
Imisebenzi yekilasi lonke		**Umsebenzi oholwa nguthisha**	**Imisebenzi yesiteshi sokusebenzela (imisebenzi yeqembu elincane elizimele)**
Usuku 1			**Umsebenzi 1**
Usuku 2			**Umsebenzi 2**
Usuku 3			**Umsebenzi 3**
Usuku 4			**Umsebenzi 4**
Usuku 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: Uhlelo Lomsebenzi: Isonto ____

INGXENYE YOLWAZI:			
ISIHLOKO:			
YETHULA ULWAZI OLUSHA:			
ZEJWAYEZE:			
Imisebenzi yekilasi lonke	**Umsebenzi oholwa nguthisha**	**Imisebenzi yesiteshi sokusebenzela (imisebenzi yeqembu elincane elizimele)**	
Usuku 1		**Umsebenzi 1**	
Usuku 2		**Umsebenzi 2**	
Usuku 3		**Umsebenzi 3**	
Usuku 4		**Umsebenzi 4**	
Usuku 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: Uhlelo Lomsebenzi: Isonto ____

INGXENYE YOLWAZI:			
ISIHLOKO: YETHULA ULWAZI OLUSHA: ZEJWAYEZE:			
Imisebenzi yekilasi lonke	**Umsebenzi oholwa nguthisha**	**Imisebenzi yesiteshi sokusebenzela (imisebenzi yeqembu elincane elizimele)**	
Usuku 1		Umsebenzi 1	
Usuku 2		Umsebenzi 2	
Usuku 3		Umsebenzi 3	
Usuku 4		Umsebenzi 4	
Usuku 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?

_____
_____
_____
_____

Ifomu Lokuhlola Lomhlangano Wokucobelelana Ngolwazi 9

1. Ngabe umhlangano wokucobelelana ngolwazi uhlangabezene nalokho obukulindele?

_____
_____
_____
_____

2. Yini oyifundile kulo mhlangano wokucobelelana ngolwazi ekusize kakhulu?

_____
_____
_____
_____

3. Ngabe kukhona ongakuthandanga noma okuthole kunzima ukukuqonda?

_____
_____
_____
_____

4. Uzokusebenzisa kanjani lokho okufundile ekilasini lakho leBanga R?

_____
_____
_____
_____

5. Ngabe unazo iziphakamiso zokuthuthukisa eminye imihlangano yokucobelelana ngolwazi?

_____
_____
_____
_____