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GROWING GAUTENG TOGETHER

IsiZulu/English

Uhlelo Lokuthuthukisa Izibalo Zebanga R Grade R Mathematics Improvement Programme



**Umhlangano Wokucobelelana Ngolwazi 10 • Workshop 10
Incwadi Yokusebenzela Yababambiqhaza • Participant's Workbook**

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The **Schools Development Unit (SDU)** at the **University of Cape Town (UCT)** is the mathematics technical partner to the Grade R Mathematics and Language Improvement Project. The SDU is a unit within UCT's School of Education that focuses on teachers' professional development in Mathematics, Science, Literacy/Language and Life Skills from Grade R to Grade 12. The SDU offers teacher qualifications and approved UCT short courses, school-based work, materials development and research to support teaching and learning in all South African contexts.

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Overview

Purpose

This is the tenth 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 4 Weeks 1–3 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 7–10
- ◆ To reflect on the use of the guiding principles of teaching maths in Grade R
- ◆ To deepen understanding of continuous learner observation in Grade R
- ◆ To reflect on informal forms of 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 4 Weeks 1–3

Workshop content

- ◆ Opening and reflection (1 hour)
 - ◆ Session 1: Observation and assessment (1 hour)
- TEA
- ◆ Session 2: The guiding principles of teaching maths in Grade R (1 hour)
 - ◆ Session 3: Introducing numbers 10 and 0 (1 hour)
- LUNCH
- ◆ Session 4: Planning for teaching (1½ hours)
 - ◆ Closing activities (30 minutes)

Ukubuka ngelibanzi

Inhloso

Lo oweshumi emihlanganweni yokucobelelana ngolwazi eyishumi nambili ngaphansi kwesihloko: Uhlelo Lokuthuthukisa Izibalo ZeBanga R (Uhlelo Lwezibalo), eyingxenye YoMnyango WezeMfundo wesiFundazwe saseGauteng (Gauteng Department of Education (GDE Uhlelo Lokuthuthukisa Izibalo neziLimi ZeBanga R.

Inhloso yalo mhlango 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 4 Amasonto 1–3 kanye nokusetshenziswa kwalo ekilasini.

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

Imiphumela yokufunda

- ◆ Ukudlinza ngokusetshenziswa kweThemu 3 Amasonto 7–10
- ◆ Ukudlinza ngokusetshenziswa kwemigomo elawula ukufundiswa kwezibalo eBangeni R
- ◆ Ukujulisa ukuqondwa kokuqaphela okuqhubekayo komfundi eBangeni R.
- ◆ Ukudlinza ngokuhlola okungahlelekile eBangeni R
- ◆ Ukudlinza ngezinsalelo nokuthola izixazululo ekusebenziseni uHlelo LweziBalo
- ◆ Ukuklama ulwazi loHlelo LweziBalo oluzofundiswa kuThemu 4 Amasonto 1–3

Okuqukethwe komhlangano wokucobelelana ngolwazi

- ◆ Ukuvula nokudlinza (1 ihora)
 - ◆ Iseshini 1: Ukuqaphela nokuhlola (1 ihora)
- ITIYE
- ◆ Iseshini 2: Imigomo elawula ukufundiswa kwezibalo eBangeni R (1 ihora)
 - ◆ Iseshini 3: Ukwethula izinombolo 10 no-0 (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.

Reflection on implementation

Here is the *Take back to school task* from Workshop 9.



Take back to school task (Workshop 9)

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 the Term 3: Exemplar Record of Continuous Assessments (from *Activity Guide: Term 3*) to the next workshop.



Activity 1

1. In your group, prepare a newspaper article on teaching and learning maths in Grade R. Use the Maths Programme and your classroom implementation of it as the basis for your article. Include the following:
 - ◆ why maths in Grade R is important
 - ◆ your successes and challenges with implementing the Maths Programme in Terms 1, 2 and 3
 - ◆ strategies you used to resolve challenges.

Ukuvula nokudlinza

1 ihora

Ukuzindla kuhlunganisa ukucabanga nokukhuluma ngokwenzeke kuwe nalokho okufundile.

Ukudlinza nokuqalisa

Nanku *Umsebenzi obuyela nawo esikoleni* ophuma eMhlanganweni Wokucobelelana Ngolwazi 9.



Umsebenzi obuyela nawo esikoleni (Umhlangano Wokucobelelana Ngolwazi 9)

1. Sebenzisa *Umhlahandlela 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 inqubekelaphambili 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*Mhlahandlela Wemisebenzi: Ithemu 3*) kuya kumhlangano wokucobelelana ngolwazi olandelayo.



Umsebenzi 1

1. Eqenjini lakho, lungisa i-athikili yephephandaba ngokufundisa nokufunda izibalo eBangeni R. Sebenzisa Uhlelo LweZibalo kanye nokusetshenziswa kwalo ekilasini njengesisekelo se-athikili yakho. Faka okulandelayo:
 - ◆ ukuthi zibaluleke ngani izibalo eBangeni R
 - ◆ impumelelo nezinsalelo zakho ekusebenziseni Uhlelo LweZibalo kuThemu 1, 2 no-3
 - ◆ amasu owasebenzise ukuxazulula izinsalelo.

2. Write the newspaper article on flipchart paper.
3. You will present your article to the other groups and answer any of their questions.

2. Bhala i-athikili yephephandaba eshadini eliphenywayo.
3. Uzokwethula i-athikili kwamanye amaqembu bese uphendula imibuzo yawo.

Session 1: Observation and assessment

1 hour

Observation in Grade R

Observation is an important part of the process of teaching, learning and assessment. In Grade R, the main assessment method is observation. Teachers gather information about learners during whole class activities, small group activities and free play (inside and outside the classroom). During the teacher-guided activities, your interaction with individual learners provides valuable information about their progress. By recording the learners' progress in understanding specific maths concepts in your notebook on an ongoing basis, you build up a complete picture of each learner.

Objective observation

For observation to be effective, teachers need to understand and know what to focus on.

In the next activity, you will practise your observation skills. *This is an individual activity. It is very important that you do not talk to anyone about your observations.*



Activity 2

Look at the photograph of two Grade R learners playing with blocks. Write down what you observe when you look at the photograph.



Iseshini 1: Ukuqaphela nokuhlola

1 ihora

Ukuqaphela eBangeni R

Ukuqaphela kuyingxenywe ebalulekile yenqubo yokufundisa, ukufunda nokuhlola. EBangeni R, indlela esemqoka yokuhlola ukuqaphela. Othisha baqokelela ulwazi ngabafundi ngesikhathi semisebenzi yekilasi lonke, imisebenzi yamaqembu amancane kanye nokudlala okukhululekile (ngaphakathi nangaphandle kwekilasi). Ngesikhathi semisebenzi eholwa uthisha ukuxhumana kwakho nabafundi ngabanye kunika ulwazi olubalulekile ngenqubekelaphambili yabo. Ngokuqopha ebhukwini lakho inqubekelaphambili yabafundi ekuqondeni imiqondo yezibalo ekhethekile ngokuqhubekayo, wakha isithombe esiphelele ngomfundi ngamunye.

Ukuqaphela okunenhloso

Ukuze ukuqaphela kusebenze, othisha badinga ukuqonda futhi bakwazi okumele bagxile kukho.

Emsebenzini olandelayo, uzozijwayeza amakhono akho okuqaphela. *Lona umsebenzi kayedwana. Kubalulekile ukuthi awukhulumi namuntu ngokuqaphelile.*



Umsebenzi 2

Buka isithombe sabafundi beBanga R bedlala ngamabhulokhi. Bhala phansi okuqaphelayo uma ubuka lesi sithombe.



My observations:



Video 1

1. Watch the video of a group of learners playing the game, Bingo. Write down your observations of the learners.

2. Which of your observations are facts and which are assumptions? Go through your list and write an 'F' or 'A' next to each statement.

When we write what we **think** a learner can or cannot do, or what a learner is feeling, we are making assumptions. The only way to know what a learner is thinking or feeling, is to ask them to tell you.

Objective observation involves:

- ◆ describing only what you see and hear
- ◆ recording what the learner is doing and saying in as much detail as possible
- ◆ not judging – avoid giving your own ideas and opinions
- ◆ observing each learner regularly, in different activities and at different times of the day.

Ukuqaphela kwami:



Ividiyo 1

1. Buka ividiyo yeqembu labafundi bedlala umdlalo kaBingo. Bhala phansi okuqaphele ngabafundi.

2. Yikuphi ukuqaphela kwakho okungamaqiniso futhi yikuphi okuwukucabangela? Funda uhlu lwakho bese ubhala u-'Q' noma u-'C' eceleni kwesitatimende ngasinye.

Uma sibhala ngesicabanga ukuthi umfundi angakwenza noma angeke akwenze, noma into ayizwayo umfundi, siyazicabangela nje. Ukuphela kwendlela yokwazi ukuthi umfundi ucabangani noma uzwani, ukuthi umcele akutshele.

Ukuqaphela okunenhloso kubandakanya:

- ◆ ukuchaza okubonayo nokuzwayo kuphela
- ◆ ukuqopha okwenziwa nokushiwo umfundi ngemininingwane eminingi ngangokunokwenzeka
- ◆ ukungehluleli – gwema ukunika imibono nemicabango yakho
- ◆ ukuqaphela umfundi ngamunye njalo, emisebenzini eyehlukene nangezikhathi ezehlukene zosuku.



Activity 3

1. Think about your observations of *one* of your learners in Term 3. What mathematical knowledge and skills is this learner developing?

2. Refer to (3) to (5) of the *Take back to school task* from Workshop 9 (page 8).
 - ◆ Discuss your use of the '**Check that learners are able to**' observation list (eye box) during teacher-guided activities.
 - ◆ Show members of your group your learner observation book.
 - ◆ Take turns to discuss a learner's progress. Which mathematical skills did you observe? How do you know? (What did the learner do and say?)
 - ◆ Explain how you captured this information using the Term 3: Exemplar Record of Continuous Assessments.
 - ◆ Did you manage to implement a differentiated approach to teaching and learning in your class. If so, how?

Assessment in Grade R

Assessment in Grade R is used to make decisions about the best way to support each learner's development. During teacher-guided activities, whole class activities as well as other activities in the daily programme, you will have opportunities to observe learners and gain insight into their progress. This information should guide your planning for further teaching and learning.

The continuous assessment tables in CAPS and in the Maths Programme's *Activity Guides* are based on the content that has been taught each term and can be used to summarise each learner's progress during the term.

Note that skills and behaviours should be observed on several occasions so that patterns of development over time can be recorded.



Umsebenzi 3

1. Cabanga ngokuqaphela kwakho umfundi *oyedwa* kubafundi bakho kuThemu 3. Yiluphi ulwazi lwezibalo namakhono oluthuthukiswa yilo mfundi?

2. Bhakisa ku-(3) kuye ku-(5) ko*Msebenzi obuyela nawo esikoleni* ophuma kuMhlangano Wokucobelelana Ngolwazi 9 (ikhasi 9).
 - ◆ Xoxa ngokusebenzisa kwakho uhlu lokuqaphela **'Ukuhlola ukuthi abafundi bayakwazi uku-'** (ibhokisi lesa) ngesikhathi semisebenzi eholwa uthisha.
 - ◆ Khombisa amalungu eqembu lakho ibhuku lokuqaphela abafundi lakho.
 - ◆ Shintshanani ngokuxoxa ngenqubekelaphambili yomfundi. Yimaphi amakhono ezibalo owaqaphelile? Wazi kanjani? (Yini eyenziwe futhi yashiwo umfundi?)
 - ◆ Chaza ukuthi ulufake kanjani lolu lwazi usebenzisa Ithemu 3: Isibonelo seRekhodi Lokuhlola Okuqhubekayo.
 - ◆ Ukwazile ukusebenzisa indlela ehlukanisayo ekufundiseni nasekufundeni ekilasini lakho. Uma kunjalo, kanjani?

Ukuhlola eBange R

Ukuhlola eBange R kusetshenziselwa ukwenza izinqumo ngendlela engcono kakhulu ukweseka ukuthuthuka komfundi ngamunye. Ngesikhathi semisebenzi eholwa uthisha, imisebenzi yekilasi lonke neminye imisebenzi ohlelweni lwansuku zonke, uzoba namathuba okuqaphela abafundi bese uzuzisa ukuqonda ngenqubekelaphambili yabo. Lolu lwazi kumele luholelelelele kwakho ekufundiseni nasekufundeni okuqhubekayo.

Amathebhula okuhlola okuqhubekayo kuCAPS nase*Mihlahlandleleni Yemisebenzi* yoHlelo LweZibalo asekelwe olwazini oselufundisiwe ngethemu ngayinye futhi angasetshenziselwa ukufingqa inqubekelaphambili yomfundi ngamunye ngethemu.

Qaphela ukuthi amakhono nokuziphatha kumele kuqashelwe ngezikhathi eziningana ukuze amaphethini okuthuthuka aqoshwe ngokuhamba kwesikhathi.

Session 2: The guiding principles of teaching maths in Grade R

1 hour

Throughout the Maths Programme training, we have referred to the guiding principles of teaching maths in Grade R and how these are incorporated into daily classroom practice. Some of the principles are easier to identify and implement than others. As teachers we need to be constantly aware of how, where and when we are using these principles in our classrooms.



Activity 4

The facilitator will assign one of the guiding principles of teaching maths in Grade R to your group. You will receive a picture of this principle.

1. In your group, discuss the following questions:
 - ◆ What is your understanding of this principle ‘in action’?
 - ◆ Does the Maths Programme make it possible to incorporate this principle in your daily teaching?
 - ◆ Now that you have implemented the Maths Programme for three terms, what are your reflections on this principle?
 - ◆ How would your teaching be affected if this principle was absent from your classroom approach?
2. Paste the picture onto a sheet of flipchart paper. Write your comments below the picture so that you can share these with the whole group.

Iseshini 2: Imigomo elawula ukufundiswa kwezibalo eBangeni R

1 ihora

Kukho konke ukuqeqeshwa koHlelo LweZibalo, sinibhekise kwimigomo elawula ukufundiswa kwezibalo eBangeni R kanye nokuthi zibandakanywe kanjani ezinhlelweni zansuku zonke zokwenziwa ekilasini. Eminye yemigomo kulula ukuyikhomba kanye nokuyenza kuneminye. Njengothisha sidinga njalo ukwazi ukuthi siyisebenzisa kanjani le migomo, kuphi noma nini emakilasini ethu.



Umsebenzi 4

Umdidiyeli uzonikeza owodwa wemigomo elawula ukufundiswa kwezibalo eBangeni R eqenjini lakho. Uzothola isithombe salo mgomo.

1. Eqenjini lakho, xoxa ngale mibuzo elandelayo:
 - ◆ Uwuqonda kanjani lo mgomo othi 'ukwenza'?
 - ◆ Ngabe uHlelo LweZibalo lwenza kube lula ukuhlanganisa lo mgomo ekufundiseni kwakho kwansuku zonke?
 - ◆ Manje njengoba usulusebenzisile uHlelo LweZibalo lwamathemu amathathu, udlinze wathini kulo mgomo?
 - ◆ Bekungathinteka kanjani ukufundisa kwakho ukuba lo mgomo ubungekho endleleni yokwenza yekilasi lakho?
2. Namathisela isithombe ephepheni leshadi eliphenywayo. Bhala ukuphawula kwakho ngaphansi kwesithombe ukuze wabelane ngakho neqembu lonke.



1. The context principle. Learning takes place in meaningful and appropriate situations.



2. The activity principle. Learners should be directly involved in the learning-teaching process.



8. The practice principle. Learning is consolidated through practising new skills and knowledge.



7. The inclusivity principle. Learning takes place in an environment where everyone is welcomed, included, treated fairly, respected and can participate.



3. The play principle. Children learn best in free-play and guided-play activities.



6. The guidance principle. Learning takes place when teachers guide learners in developing new knowledge.



5. The interaction principle. Learning takes place when there is communication and sharing of ideas.



4. The level principle. Learners pass through various levels of understanding and development.



1. **Umgomo wesimo.**
Ukufunda kwenzeka ezimweni ezihlelekile futhi ezifanelekile.



2. **Umgomo womsebenzi.** Kumele abafundi bazibandakanye kwinqubo yokufunda nokufundisa.



8. **Umgomo wokwenza.** Ukufunda kuqiniswa ngokwenza amakhono amasha kanye nolwazi.



7. **Umgomo wokumbandakanya.** Ukufunda kwenzeka endaweni lapho kwamukelwa wonke umuntu abe yingxenye, aphantswe kahle, ahlonishwe futhi abambe iqhaza.



3. **Umgomo wokudlala.** Abantwana bafunda kangcono ekudlaleni okukhululekile nasemisebenzini eyimidlalo eholwayo.



6. **Umgomo wokuholwa.** Ukufunda kwenzeka uma othisha besiza abafundi ukuthuthukisa ulwazi olusha.



5. **Umgomo wokuxhumana.** Ukufunda kwenzeka uma kunokuxhumana kanye nokwabelana kwemibono.



4. **Umgomo wamazanga.** Abafundi badlula emazingeni amaningi okuqonda nokuthuthuka.

Session 3: Introducing numbers 10 and 0

1 hour

Introducing number 10

The ten numerals used in our place value number system are 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9. These numerals are used to represent units (ones) and to represent an infinite number of values, for example:

- ◆ tens
- ◆ hundreds
- ◆ thousands, and so on.

Learners in the Foundation Phase need to understand that the same numeral can be used to represent different values, depending on the position of the numeral in a number. For example, in each of the numbers below '3' has a different value:

- ◆ in 3, its value is 'three'
- ◆ in 31, its value is 'thirty'
- ◆ in 349, its value is 'three hundred'.

Place value is a difficult concept for learners to understand. Researchers have found that many learners up to the age of eight think that the '1' in 15 means 'one'.

In Grade 1 learners explore the base ten number system, working with numbers from 11 onwards. They represent these numbers with groups of tens and single ones (units). When they work with numbers 11–19, they begin to understand that in a number like 14, the numeral 1:

- ◆ does not mean 1
- ◆ represents 10 ones
- ◆ therefore, is also 1 ten (1 group of ten).

They also understand that the numeral 4 in 14, represents 4.

DID YOU KNOW?

In the Foundation Phase, learners talk about 'tens' and 'units' as 'groups of ten' and single 'ones'. They represent two-digit and three-digit numbers using grouping models and expanding number cards.

Iseshini 3: Ukwethula izinombolo 10 no-0 1 ihora

Ukwethula inombolo 10

Amanumerali (izinombolo) ayishumi asetshenziswe ohlelweni lwethu lwesibalibungako angu-0,1, 2, 3, 4, 5, 6, 7, 8, no-9. Lezi zinombolo zisetshenziswa ukumela ugwejenombolo (okukodwa) kanye nokumela inombolo engapheli inani, isibonelo:

- ◆ amashumi
- ◆ amakhulu
- ◆ azinkulungwane, njalo njalo.

Abafundi eSigabeni esiyisiSekelo badinga ukuqonda ukuthi inombolo eyodwa efanayo ingasetshenziswa ukumela amanani angefani, kuye ngokuthi inumerali ikusiphi isikhundla enombolweni. Isibonelo, kulezo nalezo zinombolo ezingaphansi koku- '3' inenani elehlukile:

- ◆ koku-3 inani 'okuthathu'
- ◆ kokungama- 31 inani lakho 'amashumi amathathu'
- ◆ kokungama-349, inani lakho 'amakhulu amathathu'

Isimelibungako siwumqondo onzima ukuba abafundi bawuzwe kahle. Abacwaningi sebethole ukuthi abafundi abaningi kuze kufike eminyakeni eyisishiyagalombili bacabanga ukuthi u-'1' kokuyi-15 usho 'okukodwa'.

EBangeni 1 abafundi bahlola uhlelo lokubala okwesekelwe eshumini, besebenza ngezinombolo kusuka kokuyi-11 kuya phambili. Okumela lezi zinombolo ngamaqoqo okuyishumi kanye nokungakodwa (ugwejenombolo). Uma besebenza ngezinombolo 11-19, baqala ukuqonda ukuthi enombolweni enjenge-14, inombolo 1:

- ◆ ayisho oku-1
- ◆ imele okuyishumi okukodwa
- ◆ ngakho-ke, iyishumi eli-1 (iqoqo elilodwa lokuyishumi).

Bayaqonda futhi ukuthi inombolo 4 kokuyi -14, imele oku-4.

UTHI BEWAZI?

ESigabeni esiyisiSekelo, abafundi bakhuluma 'ngamashumi' kanye 'nogwejenombolo' njenga-'maqoqo okuyishumi' kanye 'nokungakodwa'. Amela izinombolo ezinamadijithi amabili noma amathathu usebenzisa isibonelo sokuqoqela ndawonye amakhadi ezinombolo okwandisa ngokucozulula.

We do not introduce place value in Grade R. The focus in this grade is on understanding the value of the numbers 0–10 and on building a strong number concept within this range. If learners have a good concept of the numbers to 10, this knowledge can be extended in Grade 1 and other grades.



Activity 5

IMPORTANT!

This activity is for the development of your own knowledge and enrichment. It is not appropriate for Grade R learners. Do NOT introduce this activity in Grade R.

Use the counters, sticks and number cards provided to represent the following numbers:

14 31 22 43

1. Represent each number using counters: make groups of ten and single ones.
2. Represent each number using sticks and string: make bundles of ten and single ones.
3. Label the bundles with the correct number cards.
4. Talk about how many groups of ten and how many ones each number has.
5. Discuss the value of each numeral.
6. Which apparatus do you think was more appropriate for representing the concepts of 'groups of ten' ('tens') and 'ones'? Explain your answer.

7. What do you notice about the value of the numerals in the numbers you represented with the number cards?

Asisethuli isimelibungako eBangeni R. Okugxilwe kukho kuleli banga ukuqonda inani lezinombolo 0-10 kanye nokwakha ulwazi lwezinombolo oluqinile ngaphakathi kulobu bubanzi. Uma abafundi benolwazi oluhle lwezinombolo kuya kokuyi-10, lolu lwazi lunganwetshwa eBangeni 1 nakwamanye amabanga.



Umsebenzi 5

KUBALULEKILE!

Lo msebenzi owokuthuthukisa ulwazi lwakho kanye nokuzinithisa. Awubalungele abafundi beBanga R. Ungawethuli lo msebenzi eBangeni R.

Sebenzisa izibalisi, izinti kanye namakhadi ezinombolo anikeziwe ukumela okulandelayo:

14 31 22 43

1. Sebenzisa izibalisi ukumela inombolo ngayinye: yenza amaqoqo okuyishumi kanye nokukodwa.
2. Sebenzisa izinti nezintambo ukumela inombolo ngayinye: yenza inyanda yokuyishumi kanye nokukodwa.
3. Fakela izinyanda amalebula ngekhadi lenombolo efanele.
4. Khuluma ngokuthi mangaki amaqoqo okuyishumi nokuthi kungaki okukodwa inombolo ngayinye enakho.
5. Xoxa ngenani lenombolo ngalinye.
6. Yimaphi amathuluzi ocabanga ukuthi abefanele kakhulu ukumela ulwazi 'lwamaqoqo okuyishumi' ('amashumi') kanye 'nokukodwa'? Chaza impendulo yakho.

7. Yini oyiqaphelayo ngenani lamanumerali ezinombolweni ezimelwe ngamakhadi ezinombolo?

Grade R learners **do not need to understand place value**. They do need to:

- ◆ understand the value (the 'how muchness') of numbers 0–10
- ◆ understand the different combinations of numbers up to 10
- ◆ understand that even though 10 is made up of the numerals 1 and 0, it is NOT $1 + 0$ and it has its own value ('how muchness')
- ◆ understand and be able to represent the different values of 1, 0 and 10.



Activity 6

1. In your group, discuss ideas for teaching the number 10 in your Grade R classroom. Include the use of different representations.

2. Present your ideas to the whole group.

Introducing number 0

In Grade R, learners need to understand that zero is a number and the number symbol for it is '0'.

Young children find the concept of 'emptiness' difficult to understand. When learners are faced with an empty plate, container, box or bag they will often use words such as 'no more', 'all gone', 'nothing left', 'none' or 'empty' to describe the situation. Teachers should accept these correct descriptions, but should also introduce the word 'zero'. The word 'zero' should be used consistently, even when counting down or backwards, e.g., when counting backwards from four: 'four, three, two, one, zero'. The symbol '0' should be placed on the number washing line. The 0 number cards should be used to represent that an object (such as a plate, tub, lid, box) is empty.

Abafundi beBanga R **abadingi ukuqonda isimelibungako**. Badinga uku-:

- ◆ qonda inani ('ubungakanani') lenombolo 0-10
- ◆ qonda izinhlanguanisela ezehlukahlukene zezinombolo zifike kokuyi -10
- ◆ qonda ukuthi noma ngabe i-10 lakhiwe izinombolo 1no-0, AKUYENA u-1+0 futhi linenani lalo ('ubungakanani')
- ◆ qonda bese ekwazi ukumela amanani ahlukene oku-1, 0 kanye ne-10.



Umsebenzi 6

1. Eqenjini lakho xoxa ngemibono yokufundisa inombolo 10 ekilasini lenu leBanga R. Faka ukusetshenziswa kokwethuliwe okuhlukene.

2. Yethula imibono yakho eqenjini lonke.

Ukwethula inombolo 0

EBangeni R, abafundi badinga ukuqonda ukuthi uziro uyinombolo futhi uphawu lwenombolo u-'0'.

Izingane ezincane zithola umqondo 'wokungekho' kunzima ukuwuzwa. Uma abafundi behlangana nokungenalutho njengepuleti, isitsha, ibhokisi noma isikhwama, bavame ukusebenzisa amagama anjengokuthi 'kuphelile', 'kuhambe konke', 'akusele lutho', 'akukho' noma 'akunalutho' ukuchaza isimo. Othisha kumele bazamukele lezi zincazelo njengeziyizo, kodwa kumele bethule igama 'uziro'. Igama 'uziro' kumele lisetshenziswe ngokungaguquki, ngisho kubalwa kwehliwa noma kuyiwa emuva, isib., uma kubalwa kuyiwa emuva kusuka kokune: 'kune, kuthathu, kubili, kunye, uziro'. Uphawu '0' kumele lubekwe kulayini wokweneka wezinombolo. Amakhadi enombolo 0 kumele asetshenziswe ukumela ukuthi into (njengepuleti, umgqomo, isivalo, ibhokisi) ayinalutho.



Video 2

1. Watch the video of a teacher introducing and consolidating the concept of zero.
 - ◆ What do you see happening?
 - ◆ How was the concept of zero introduced?
 - ◆ What did the learners do and say?
 - ◆ What was the role of the teacher?
 - ◆ What was the benefit of using a variety of activities to teach the concept?

2. Write down your observations.



Ividiyo 2

1. Buka ividiyo kathisha ethula futhi eqinisa umqondo kaziro.
 - ◆ Ubona kwenzekani?
 - ◆ Wethulwe kanjani umqondo kaziro?
 - ◆ Benzeni abafundi futhi batheni?
 - ◆ Iliphi iqhaza elibanjwa uthisha?
 - ◆ Yikuphi okuzuzwe ngokusebenzisa imisebenzi eyehlukahlukene ukufundisa lo mqondo?

2. Bhala phansi okuqaphelile.

Session 4: Planning for teaching

1½ hours

This workshop session prepares participants for implementing Term 4 Weeks 1–3. By this stage of the year, the teacher will have noticed distinct differences between learners' levels of progress. Term 4 builds on the content of Terms 1, 2 and 3. 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 Grade 1.



Activity 7

1. In your group, complete the planning templates for Term 4 Weeks 1–3 (Appendix A).
2. Discuss the following questions:
 - ◆ How is the week structured?
 - ◆ How does the content build on previous lessons?
 - ◆ Do the whole class activities successfully create opportunities for the discussion and exploration of new knowledge?
 - ◆ How does the teacher-guided activity provide opportunities for the teacher to assess and support the learners?
 - ◆ Do the independent small group activities allow for adequate practice of new knowledge and skills?
 - ◆ How could you prepare additional activities to support learners who have not yet mastered a particular skill?
 - ◆ Suggest some ways to extend learning opportunities for advanced learners.
 - ◆ How could you work with a colleague to prepare for each week?

Iseshini 4: Ukuhlelela ukufundisa

1½ amahora

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



Umsebenzi 7

1. Eqenjini lakho, qedela amathempulethi okuhlela kaThemu 4 Amasonto 1–3 (Isithasiselo A).
2. Xoxa ngemibuzo elandelayo:
 - ◆ Lihleleke kanjani isonto?
 - ◆ Lwakhela kanjani ulwazi ezifundweni ezedlule?
 - ◆ Ngabe imisebenzi yekilasi lonke iyawaveza ngempumelelo amathuba okuxoxa kanye nokuhlola ulwazi olusha?
 - ◆ 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?
 - ◆ Ungayilungiselela kanjani imisebenzi eyengeziwe ukulekelela abafundi abangakabi yizingcweti zekhono elithile?
 - ◆ Phakamisa izindlela ezithize zokwelula amathuba okufunda kubafundi asebephambili.
 - ◆ Ungasebenza kanjani nomlingani wakho ukulungiselela isonto ngalinye?

Closing activities

30 minutes



Activity 8

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.

- ◆ I learnt _____

- ◆ I did not like _____

- ◆ I enjoyed _____

- ◆ I now understand _____

- ◆ I'm still not clear about _____

- ◆ I would like more information on _____

Share your reflections with the whole group.



Take back to school task

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

Evaluation

Complete the Evaluation Form.



Umsebenzi 8

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.

- ◆ Ngifunde _____
- ◆ Angikuthandanga _____
- ◆ Ngijatshuliswe _____
- ◆ Manje ngiqonda _____
- ◆ Angikacacelwa ukuthi _____
- ◆ Ngingathanda ulwazi oluningi ngo- _____

Yabelana ngemidlinzo yakho neqembu lonke.



Umsebenzi obuyela nawo esikoleni

1. Sebenzisa *Umhlahlandlela Wemisebenzi: Ithemu 4* ukuhlela nokwenza Ithemu 4 Amasonto 1–3 yoHlelo LweZibalo.
2. Bhala imibono ebhukwini olisebenzisela ukulandelela inqubekelaphambili 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.
3. Bhala amanothi ezinto ezisebenzeke kahle, ezingasebenzanga kahle kanye nokuthi uzixazulule kanjani izinkinga ngesikhathi sokwenza okunqunywe kuThemu 4 Amasonto 1–3.
4. Letha ibhuku lokuqaphela labafundi bakho kanye namanothi owenze ngesikhathi udlinza ngokufundisiwe kosuku ngalunye emhlanganweni olandelayo wokucobelelana ngolwazi.

Ukuhlola

Gcwalisa Ifomu Lokuhlola.

APPENDIX A: TERM 4 WEEKLY PLANNING TEMPLATE

Term 4: 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 4 ITHEMPULETHI YOKUHLELA KWAMASONTO ONKE

Ithemu 4: Uhlelo Lomsebenzi: Isonto ____

INGXENYE YOLWAZI:				
ISIHLOKO:				
YETHULA ULWAZI OLUSHA:				
ZEJWAYEZE:				
Imisebenzi yekilasi lonke		Umsebenzi oholwa nguthisha	Imisebenzi yesiteshi sokusebenzela (imisebenzi yokuzimela yamaqembu amancane)	
Usuku 1			Umsebenzi 1	
Usuku 2			Umsebenzi 2	
Usuku 3			Umsebenzi 3	
Usuku 4			Umsebenzi 4	
Usuku 5				

Term 4: 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 4: Uhlelo Lomsebenzi: Isonto ____

INGXENYE YOLWAZI:				
ISIHLOKO:				
YETHULA ULWAZI OLUSHA:				
ZEJWAYEZE:				
Imisebenzi yekilasi lonke		Umsebenzi oholwa nguthisha	Imisebenzi yesiteshi sokusebenzela (imisebenzi yokuzimela yamaqembu amancane)	
Usuku 1			Umsebenzi 1	
Usuku 2			Umsebenzi 2	
Usuku 3			Umsebenzi 3	
Usuku 4			Umsebenzi 4	
Usuku 5				

Term 4: 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 4: Uhlelo Lomsebenzi: Isonto ____

INGXENYE YOLWAZI:				
ISIHLOKO:				
YETHULA ULWAZI OLUSHA:				
ZEJWAYEZE:				
Imisebenzi yekilasi lonke		Umsebenzi oholwa nguthisha	Imisebenzi yesiteshi sokusebenzela (imisebenzi yokuzimela yamaqembu amancane)	
Usuku 1			Umsebenzi 1	
Usuku 2			Umsebenzi 2	
Usuku 3			Umsebenzi 3	
Usuku 4			Umsebenzi 4	
Usuku 5				

Workshop 10 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 Wokucobelana Ngolwazi 10

1. Ngabe umhlangano wokucobelana ngolwazi uhlangabezene nalokho obukulindele?

2. Yini oyifundile kulo mhlangano wokucobelana ngolwazi ekusize kakhulu?

3. Ngabe kukhona ongakuthandanga noma okuthola kunzima ukukuqonda?

4. Uzokusebenzisa kanjani lokho okufundile ekilasini lakho leBanga R?

5. Ngabe unazo iziphakamiso zokuthuthukisa eminye imihlangano yokucobelana ngolwazi?
