IsiNdebele/English

# IHlelo lokuThuthukisa
# iimBalo zeGreyidi R
# Grade R Mathematics
# Improvement Programme



## Isifundobandulo 10 ● Workshop 10

**INcwadi yokuSebenzela yomHlanganyeli ● Participant's Workbook**

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

Ukwenziwa nokukhiqizwa kweensetjenziswa zebandulo nezetlasi zePhrojekthi yokuThuthukiswa kweemBalo namaLimi kwaGreyidi R kukghonakele ngomusa wokusekelwa ngemali yephrojekthi ebuya ku-**United States Agency for International Development** kunye ne-**Zenex Foundation**.

IPhrojekthi yokuThuthukiswa kweemBalo namaLimi kwaGreyidi R ilawulwa yi-**JET Education Services** ne-**Schools Development Unit** ye-**UCT** kunye ne-**Wordworks** njengababambisani kezobuqharhaqharha.

I**Schools Development Unit** (SDU) ye-**University of Cape Town** (UCT) imbambisani kezobuqharhaqharha beembalo kuPhrojekthi yokuThuthukiswa kweemBalo namaLimi kwaGreyidi R. I-SDU iyiyunithi ngaphakathi kwe-School of Education ye-UCT eqalene nokuthuthukiswa kobukghwari babotitjhere beemBalo, iSayensi, ilwazi lokuTlola nokuFunda/iLimi namaKghono wePilo ukusukela kwaGreyidi R ukuya kwaGreyidi 12. I-SDU inikela abotitjhere iziqu zokufundisa neemfundo ze-UCT ezifitjhani eziphasisiweko, umsebenzi onzinze esikolweni, ukwenziwa kwemethiriyeli nerhubhululo ukusekela ukufundisa nokufunda kibo boke ubujamo beSewula Afrika.

**AMAGAMA WOKUTHOKOZA**
Ukuthokoza okukhethekileko:

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

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# Overview

## Purpose

This is the 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)

# Isirhunyezo

## Umnqopho

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

Umnqopho wesifundobandulwesi kusiza abotitjhere ukusebenzisa iHlelo leemBalo ngematlasinabo. Abahlanganyeli bazakuthola ithuba lokuzindla ngokusebenzisa kwabo iHlelo leemBalo begodu bakhulumisane ngokuhlela, ukufundisa nokuhlola kwabo. Godu bazakuyelela iragelophambili lomfundi, neendingo zokuthuthuka nokufunda komfundi ngamunye. Abahlanganyeli bazakuzindla ngamano afaneleko wokuhlola ukuthola iragelophambili labafundi. Isifundobandulo lesi sihlola okumumethweko kweThemu 4 Iimveke 1–3 nokwenziwa komsebenzi ngetlasini.

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

## Imiphumela yokufunda

- Ukuzindla ngokusetjenziswa kweThemu 3 Iimveke 7–10
- Ukuzindla ngokusetjenziswa kwemithethokambiso ehlahla ukufundisa iimbalo kwaGreyidi R
- Ukuqinisa ukuzwisisa ukutjheja abafundi okuragela phambili kwaGreyidi R
- Ukuzindla ngeendlela ezingakahleleki zokuhlola kwaGreyidi R
- Ukuzindla ngeentjhijilo nokuthola iinsombululo zokuphumelelisa iHlelo leemBalo
- Ukuhlela okumumethweko kweHlelo leemBalo ekufanele kufundiswe ngeThemu 4 Iimveke 1–3

## Okumumethweko kwesifundobandulo

- Ukuvula nokuzindla                                                      (I-iri 1)
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ITIYE

- Isetjhini 2: Imithethokambiso ehlahla ukufundiswa kweembalo kuGreyidi R
                                                                         (I-iri 1)
- Isetjhini 3: Ukwethula iinomboro 10 no-0                                (I-iri 1)

ISIDLO SEMINI

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

# Opening and reflection

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.

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# Ukuvula nokuzindla

Ukuzindla kufaka hlangana ukucabanga nokukhuluma ngelemuko lakho nangalokho okufundileko.

## Ukuzindla ngokusebenza

Naku *Umsebenzi obuyiselwa esikolweni* wesiFundobandulo 9.

> **❗ Umsebenzi obuyiselwa esikolweni (IsiFundobandulo 9)**
>
> 1. Sebenzisa *umHlahlandlela wemiSebenzi: Ithemu 3* ukuhlela nokwenza Ithemu 3 Iimveke 7–10 zeHlelo leemBalo.
> 2. Tlola amanothi ngalokho okusebenze kuhle, lokho okungakasebenzi kuhle nokobana uzirarulule njani iintjhijilo nofana ngezinjani ngesikhathi sokwenza Ithemu 3 Iimveke 7–10.
> 3. Tlola imibono ngencwadini oyisebenzisela ukubulunga ilandelelo leragelophambili lomfundi ngamunye (incwadi yokutjheja abafundi). Sebenzisa irhelo lokutjheja '**Tjheja bonyana abafundi bayakwazi uku**' (ngebhoksini lelihlo) ngesikhathi somunye nomunye umsebenzi ohlahlwa ngutitjhere ukuhlahla ukutjheja nemibono yakho.
> 4. Yiza nencwadi yakho yokutjheja abafundi namanothi owenzileko lokha nawuzindla ngelanga lokufundisa ngalinye kusifundobandulo esilandelako.
> 5. Yiza nekhophi yeThemu 3: Isibonelo seRekhodi yokuHlola okuRagela phambili (*yomHlahlandlela wemiSebenzi: Ithemu 3*) kusifundobandulo esilandelako.

## 👥 Umsebenzi 1

1. Esiqhemeni senu, lungisani i-athikili yephephandaba emayelana nokufundisa nokufunda iimbalo kwaGreyidi R. Sebenzisani iHlelo leemBalo nokwenziwa kwalo ngetlasini njengesisekelo se-athikili yenu. Fakani hlangana okulandelako:
   ♦ kubayini iimbalo ziqakathekile kwaGreyidi R
   ♦ okuphumeleleko neentjhijilo zenu zokusebenzisa iHlelo leemBalo kuThemu 1, 2 neye-3
   ♦ amano eniwasebenzisileko ukurarulula iintjhijilo lezi.

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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. Tlolani i-athikili yephephandaba ephepheni letjhadi eliphendlekako.
3. Nizakwethula i-athikili yenu kezinye iinqhema bese niphendula yoke imibuzo yabo.

# 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.

### Ukutjheja kwaGreyidi R

Ukutjheja yingcenye eqakathekileko yekambiso yokufundisa, ukufunda nokuhlola. KwaGreyidi R, indlela eqakathekileko yokuhlola kutjheja. Abotitjhere babuthelela ilwazi mayelana nabafundi ngesikhathi semisebenzi yetlasi loke, imisebenzi yesiqhema esincani nangesikhathi sokudlala okutjhaphulukileko (ngaphakathi nangaphandle kwetlasi). Ngesikhathi semisebenzi ehlahlwa ngutitjhere, ukukhulumisana kwakho nomfundi ngamunye kunikela ilwazi elinesizo ngokuthuthuka kwabo. Ngokurekhoda ukuthuthuka kwabafundi ekuzwisiseni kwabo imiqondo ekhethekileko yeembalo ngencwadini yakho yamanothi, wakha isithombe esipheleleko somfundi ngamunye. Ukutjheja kuyingcenye eqakathekileko yekambiso yokufundida, ukufunda nokuhlola.

### Ukutjheja okunehloso

Ukuze ukutjheja kube yipumelelo, abotitjhere kufanele bezwisise bebazi bonyana khuyini ekufanele banqophane nakho.

Emsebenzini olandelako, uzazijayeza amakghono wakho wokutjheja. *Lo msebenzi womuntu ngamunye. Kuqakathekile bonyana ungakhulumi nomuntu namunye ngalokho okutjhejileko.*

### 👥 Umsebenzi 2

Qala isithombe sabafundi ababili bakwaGreyidi R abadlala ngamabhlogo. Tlola phasi lokho okutjhejileko lokha nawuqala isithombe.

**My observations:**

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### Video 1

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

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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.

**Engikutjhejileko:**

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**Ividiyo 1**

1.  Bukela ividiyo yesiqhema sabafundi abadlala umdlalo, i-*Bingo*. Tlola lokho okutjhejileko ngabafundi.

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2.  Ngikuphi kwalokho okutjhejileko okumaqiniso begodu ngikuphi okukucabangela? Funda irhelo lakho loke bese utlola 'Q' nofana 'C' eduze nesitatimende ngasinye.

Lokha nasitlola lokho **esikucabangako** bonyana umfundi angakghona nofana angekhe akghona ukukwenza, nokobana umfundi uzizwa njani, siyazicabangela. Indlela eyodwa yokwazi bonyana umfundi ucabangani nofana uzizwa njani, kubabuza bakutjele.

Ukutjheja okunehloso kubandakanya:

♦  ukutlhadlhula lokho okubonako nokuzwako kwaphela

♦  ukurekhoda lokho umfundi akwenzako nalokho akutjhoko ngokuzeleko ngendlela ekungakghonakala ngayo

♦  ukungagwebi – balekela ukunikela imibono nemicabango yakho

♦  ukutjheja qho umfundi ngamunye, emisebenzini ehlukileko nangeenkhathi ezihlukileko zelanga.

**Activity 3**

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

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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?

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## 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 ngalokho okutjhejileko ngomfundi *munye* kuThemu 3. Ngiliphi ilwazi namakghono weembalo umfundi lo awathuthukisako?

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2. Qala ku (3) ukuya ku (5) *woMsebenzi obuyiselwa esikolweni* wesiFundobandulo 9 (ikhasi 9).

♦ Khulumisanani ngokusebenzisa kwenu irhelo lokutjheja **ʹTjheja bonyana abafundi bayakwazi uku**ʹ (ngebhoksini lelihlo) ngesikhathi semisebenzi ehlahlwa ngutitjhere.

♦ Khombisa amalunga wesiqhema sakho incwadi yakho yokutjheja abafundi.

♦ Dlheganani ngokukhulumisana ngokuthuthuka komfundi. Ngiwaphi amakghono weembalo owatjhejileko? Wazi njani? (Umfundi wenzeni begodu wathini?)

♦ Hlathulula bonyana ulitlole njani ilwazi leli ngokusebenzisa Ithemu 3: Isibonelo seRekhodi yokuHlola okuRagela phambili.

♦ Ingabe ukwazile ukusebenzisa indlela yokuhlukanisa ukufundisa nokufunda ngetlasini lakho? Nangabe kunjalo, njani?

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## Ukuhlola kwaGreyidi R

Ukuhlola kwaGreyidi R kusetjenziselwa ukuthatha iinqunto mayelana nendlela engcono yokusekela ukuthuthuka komfundi ngamunye. Ngesikhathi semisebenzi ehlahlwa ngutitjhere, imisebenzi yetlasi loke kunye neminye imisebenzi esehlelweni langamalanga, uzakuba namathuba wokutjheja abafundi bese uthola ilwazi ngokuthuthuka kwabo. Ilwazi leli kufanele lihlahle ukuhlela kwakho kobana uragele phambili nokufundisa nokufunda.

Amathebula wokuhlola okuragela phambili ku-CAPS *nakumiHlahlandlela yemiSebenzi* weHlelo leemBalo asekelwe phezu kokumumethweko okufundisiweko ngethemu ngayinye begodu kungasetjenziselwa ukurhunyeza ukuthuthuka komfundi ngamunye ngesikhathi sethemu.

Yelela bonyana amakghono nokuziphatha kufanele kutjhejwe amahlandla ambalwa kobana iphetheni yokuthuthuka irekhodwe ngokukhamba 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.

# Isetjhini 2: Imithethokambiso ehlahla ukufundiswa kweembalo kuGreyidi R

Kikho koke ukubandulwa ngeHlelo leemBalo, besiqala imithethokambiso ehlahla ukufundisa iimbalo kwaGreyidi R nokobana lokhu kuhlanganiswa njani nekambiso yetlasini yangamalanga. Eminye yemithethokambiso kulula ukuyifanisa nokuyisebenzisa kuneminye. Njengabotitjhere kufanele sihlale siyelela bonyana siyisebenzisa njani imithethokambiso le, kuphi nokobana nini ngematlasini wethu.

**Activity 4**

Umkghonakalisi uzakunikela isiqhema sakho munye wemithethokambiso ehlahla ukufundisa iimbalo kwaGreyidi R. Nizakuthola isithombe somthethokambiso lo.

1. Esiqhemeni senu, khulumisanani ngemibuzo elandelako:
   ♦ Khuyini ukuzwisisa kwakho komthethokambiso lo 'ngokwenza'?
   ♦ Ingabe iHlelo leemBalo lenza kukghonakale ukuhlanganisa umthethokambiso lo nokufundisa kwakho kwangamalanga?
   ♦ Njengombana sele usebenzise iHlelo leemBalo kumathemu amathathu, khuyini ozindla ngakho mayelana nomthethokambiso lo?
   ♦ Ukufundisa kwakho kungathinteka njani nangabe umthethokambiso lo awukho kukambiso yakho yangetlasini?

2. Namathiselani isithombe lesi ephepheni letjhadi eliphendlekako. Tlolani imibono yenu ngenzasi kwesithombe kobana nizokwabelana ngalokhu nesiqhema soke.

**THE EIGHT PRINCIPLES OF GRADE R MATHS**

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.

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

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

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

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

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

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

8. **Umthethokambiso wokujayeza.** Ukufunda kuhlanganiswa ngokuzijayeza amakghono nelwazi elitjha.

1. **Umthethokambiso wobujamo.** Ukufunda kwenzeka ebujameni obuzwisisekako nobufaneleko.

2. **Umthethokambiso womsebenzi.** Abafundi kufanele babandakanywe bunqopha ekambisweni yokufunda nokufundiswa.

7. **Umthethokambiso wokufaka koke.** Ukufunda kwenzeka endaweni lapho woke umuntu amukelekile, afakwe, aphathwe kuhle, ahlonitjhwe begodu akwazi ukuzibandakanya.

IMITHETHOKAMBISO
EBUNANE
YE-*GRADE R MATHS*

3. **Umthethokambiso wokudlala.** Abantwana bafunda ngcono emisebenzini yokudlala ngokutjhaphuluka nokudlala okuhlahliweko.

6. **Umthethokambiso wokuhlahla.** Ukufunda kwenzeka lokha abotitjhere bahlahla abafundi bathuthuke elwazini elitjha.

5. **Umthethokambiso wokukhulumisana.** Ukufunda kwenzeka lokha nakunokukhulumisana nokwabelana ngemibono.

4. **Umthethokambiso wezinga.** Abafundi badlula emazingeni ahlukileko wokuzwisisa nokukhula.

# 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 <u>3</u>, its value is 'three'
- ♦ in <u>3</u>1, its value is 'thirty'
- ♦ in <u>3</u>49, 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.

# Isetjhini 3: Ukwethula iinomboro 10 no-0

## Ukwethula inomboro 10

Amatshwayo weenomboroalitjhumi asetjenziswe ehlelweni lethu lobukhulu beenomboro ngilawa 0, 1, 2, 3, 4, 5, 6, 7, 8 no-9. Amatshwayo weenomboro la asetjenziselwa ukujamiselela imivo (ngakunye) nokujamiselela inomboro engapheleliko yobukhulu, isibonelo:

♦ amatjhumi
♦ amakhulu
♦ iinkulungwana, njalonjalo.

Abafundi besiGaba seFundo esiSekelo kufanele bezwisise bonyana iinomboro ezifanako zingasetjenziswa ukujamiselela ubukhulu obuhlukileko, ngokuya ngesikhundla sobunomboro enomborweni. Isibonelo, inomboro ngayinye engenzasi u-'3' unobukhulu obuhlukileko:

♦ ngaku <u>3</u>, ubukhulu bakhe 'kuthathu'
♦ ngaku <u>3</u>1, ubukhulu bakhe 'matjhumi amathathu'
♦ ngaku <u>3</u>49, ubukhulu bakhe 'makhulu amathathu'.

Ubukhulu bedijithi muqondo obudisi kobana abafundi bawuzwisise. Abarhubhululi bathola bonyana abafundi abanengi ukufikela eminyakeni yobudala ebunane bacabanga bonyana u-'1' ngaku-15 utjho 'kunye'.

KwaGreyidi 1 abafundi bahlola irherho ledisimali, ngokusebenza ngeenomboro ukusuka ku-'11' ukuya phambili. Bajamiselela iinomboro lezi ngeenqhema zamatjhumi nangakunye (imivo). Lokha nabasebenza ngeenomboro 11–19, bathoma ukuzwisisa bonyana ngenomborweni efana no-14, itshwayo lenomboro 1:

♦ alitjho ku-1
♦ ijamiselela abokunye aba-10
♦ ngalokho-ke, litjhumi li-1 (isiqhema si-1 setjhumi).

Bayezwisisa godu bonyana itshwayo lenomboro 4 ku-14, lijamiselela ku-4.

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**UTHI BEWAZI?**

KusiGaba seFundo esiSekelo, abafundi bakhuluma 'ngamatjhumi' 'nemivo' njenge 'iinqhema zamatjhumi' nabo 'kunye' ababodwa. Bajamiselela iinomboro zamadijithi amabili nezamadijithi amathathu ngokusebenzisa iindlela zokwenza iinqhema namakarada wenotheyitjhini enabileko.

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 you answer.
_____
_____
_____
_____

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

Asithuli ubukhulu bedijithi kwaGreyidi R. Umnqopho kileGreyidi usekuzwisiseni ubukhulu beenomboro 0–10 nekwakheni umqondo wenomboro oqinileko ngakilelirherho. Nangabe abafundi banomqondo omuhle weenomboro ukufika ku-10, ilwazi leli lingalulelwa kuGreyidi 1 nakwamanye amagreyidi.

![icon] **Umsebenzi 5**

**OKUQAKATHEKILEKO!**
**Umsebenzi lo ngewokuthuthukisa nokunothisa ilwazi lakho. Awukafaneli abafundi bakwaGreyidi R. UNGAWETHULI umsebenzi lo kwaGreyidi R.**

Sebenzisa iimbalisi, iingojwana namakarada weenomboro anikelweko ukujamiselela iinomboro ezilandelako:

# 14   31   22   43

1. Jamiselela inomboro ngayinye ngokusebenzisa iimbalisi: yenza iinqhema zetjhumi nezomuvo ngamunye.
2. Jamiselela inomboro ngayinye ngokusebenzisa iingojwana nentambo: yenza iinyanda zetjhumi nezomuvo ngamunye.
3. Lebula iinyanda ngamakarada weenomboro afaneleko.
4. Khulumani ngokobana ziinqhema ezingaki zetjhumi nokobana inomboro ngayinye inakunye okungaki.
5. Khulumisanani ngobukhulu betshwayo lenomboro ngayinye.

6. Ngisiphi isisetjenziswa ocabanga bonyana besifaneleke khulu ukujamiselela imiqondo 'yeenqhema zetjhumi' ('amatjhumi') begodu nabo 'kunye'? Hlathulula ipendulo yakho.

_____
_____
_____
_____

7. Khuyini okutjhejako okumayelana nobukhulu betshwayo lenomboro eenomborweni ozijamiselele ngamakarada weenomboro?

_____
_____
_____
_____

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 bakwaGreyidi R **abadingi ukuzwisisa ubukhulu bedijithi**. Bafanele uku:

♦ zwisisa ubukhulu ('ubungaki') beenomboro 0–10
♦ zwisisa iinhlanganisela ezihlukileko zeenomboro ukufika e-10
♦ zwisisa bonyana nanyana u-10 akhiwe ngamatshwayo weenomboro 1 no-0, AKUSUYE u-1+0 nokobana unobukhulu bakhe ('ubungaki')
♦ zwisisa nokwazi ukujamiselela ubukhulu obuhlukileko buka-1, 0 no-10.

# 👥 Umsebenzi 6

1.  Esiqhemeni senu, khulumisanani ngemibono yokufundisa inomboro 10 ngetlasini yakho yakwaGreyidi R. Fakani hlangana ukusetjenziswa kweenjamiseleli ezihlukileko.

_____
_____
_____
_____
_____
_____
_____
_____

2.  Yethulani imibono yenu esiqhemeni soke.

## Ukwethula inomboro 0

KwaGreyidi R, abafundi bafanele ukuzwisisa bonyana uziro uyinomboro begodu itshwayo lenomboro yakhe ngu-'0'.

Abantwana abancani bathola umqondo 'welize' kunzima ukuwuzwisisa. Lokha abafundi nabaqalene nepuleyidi, isiphathi, ibhoksi nofana umgodla onganalitho, bavame ukusebenzisa amagama afana nokuthi 'akusenalitho', 'kuphele koke', 'akukasali litho', 'akunanto' nofana 'kudududu' ukutlhadlhula ubujamo. Abotitjhere kufanele bamukele iintlhadlhulo lezi ezifaneleko, kodwa kufanele godu bathule igama 'ziro'. Igama 'ziro' kufanele lihlale lisetjenziswa, nalokha kubalwa ukuya phambili nofana ukuya emuva, isib., lokha nakubalwa ukuya emuva ukusuka kokune: 'kune, kuthathu, kubili, kunye, ziro'. Itshwayo '0' kufanele libekwe kudrada yokweneka yeenomboro. Amakarada wenomboro 0 kufanele asetjenziswe ukujamiselela bonyana into (enjengepuleyidi, isikhafthini, isivalo, ibhoksi) ayinalitho.

**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. Bukela ividiyo katitjhere athula abe ahlanganisa umqondo kaziro.
   ♦ Khuyini okubona kwenzeka?
   ♦ Umqondo kaziro wethulwe njani?
   ♦ Khuyini abafundi abakwenzako nabakutjhoko?
   ♦ Kwakuyini indima edlalwa ngutitjhere?
   ♦ Kwakuyini umvuzo wokusebenzisa imisebenzi ehlukileko ukufundisa umqondo lo?

2. Tlola phasi lokho okutjhejileko.

_____

_____

_____

_____

# 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?

# Isetjhini 4: Ukuhlelela ukufundisa

Isetjhini yesifundobandulo lesi ilungiselela abahlanganyeli ukwenziwa kweThemu 4 Iimveke 1–3. Kilesisigaba somnyaka, utitjhere kufanele bona sele ayelele umehluko obonakalako 31hakathi kwamazinga wokuthuthuka kwabafundi. Ithemu 4 yakhela phezu kokumumethweko kweThemu 1, 2 neye-3. Abanye abafundi bazakulungela lokhu, lokha abanye bazakudinga isekelo nokuhlanganiswa kobana baragele phambili. Kuqakathekile ukuhlela nokulungiselela umahluko lo osepumelelweni yomfundi ukuqinisekisa bonyana koke okumumethweko namakghono weembalo zakwaGreyidi R kwenziwe, nabafundi balungiselelwe iGreyidi 1 ngokwaneleko.

**Umsebenzi 7**

1.  Esiqhemeni senu, yenzani imifuziselo yokuhlela yeThemu 4 Iimveke 1–3 (Isithasiselo A).
2.  Khulumisanani ngemibuzo elandelako:
    ♦  Iveke yakheke njani?
    ♦  Okumumethweko kwakhela njani phezu kweemfundo ezidlulileko?
    ♦  Ingabe imisebenzi yetlasi loke yakha amathuba wemikhulumiswano nokuhlola ilwazi elitjha ngepumelelo?
    ♦  Umsebenzi ohlahlwa ngutitjhere uwanikela njani amathuba wokobana utitjhere ahlole abe asekele abafundi?
    ♦  Ingabe imisebenzi yesiqhema esincani esizijameleko ivumela ngokwaneleko ukuzijayeza ilwazi namakghono amatjha?
    ♦  Ungayilungisa njani imisebenzi yokungezelela ukusekela abafundi abangakghoni ngokwaneleko ikghono elithileko?
    ♦  Phakamisa iindlela ezinye zokunabisa amathuba wokufunda kwabafundi esele bathuthukile.
    ♦  Ungasebenza njani nomsebenzisani ukulungiselela iveke ngayinye?

# 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.

# Imisebenzi yokuvala

**Umsebenzi 8**

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

♦ Ngifunde _____
_____

♦ Akhenge ngithande _____
_____

♦ Ngizithabisile _____
_____

♦ Sengiyezwisisa kwanje_____
_____

♦ Ngisengakacacelwa mayelana _____
_____

♦ Ngingathanda ilwazi elingaphezulu mayelana _____
_____

Yabelana ngokuzindla kwakho nesiqhema soke.

**❗ Umsebenzi obuyiselwa esikolweni**

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

**Ukuhlunga**
Zalisa iForomo lokuHlunga.

**APPENDIX A: TERM 4 WEEKLY PLANNING TEMPLATE**

**Term 4: Activity Plan: Week _____**

| CONTENT AREA: | | |
|---|---|---|
| **TOPIC:**<br><br>**INTRODUCE NEW KNOWLEDGE:**<br><br>**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 UMFUZISELO WOKUHLELA WAQOBE YIVEKE**

**Ithemu 4: Ihlelo Lomsebenzi: Iveke _____**

| ISIGABA SOKUMUMETHWEKO: | | |
|---|---|---|
| **ISIHLOKO:** <br><br> **YETHULA ILWAZI ELITJHA:** <br><br> **UKUJAYEZA:** | | |
| **Imisebenzi yetlasi loke** | **Umsebenzi ohlahlwa ngutitjhere** | **Imisebenzi yesitetjhi sokusebenzela (imisebenzi ezijameleko esiqhema esincani)** |
| **Ilanga 1** | | **Umsebenzi 1** |
| **Ilanga 2** | | **Umsebenzi 2** <br><br> **Umsebenzi 3** |
| **Ilanga 3** | | **Umsebenzi 4** |
| **Ilanga 4** | | |
| **Ilanga 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: Ihlelo Lomsebenzi: Iveke _____**

| **ISIGABA SOKUMUMETHWEKO:** | | | |
|---|---|---|---|
| **ISIHLOKO:** | | | |
| **YETHULA ILWAZI ELITJHA:** | | | |
| **UKUJAYEZA:** | | | |
| **Imisebenzi yetlasi loke** | **Umsebenzi ohlahlwa ngutitjhere** | **Imisebenzi yesitetjhi sokusebenzela (imisebenzi ezijameleko esiqhema esincani)** | |
| **Ilanga 1** | | **Umsebenzi 1** | |
| | | **Umsebenzi 2** | |
| **Ilanga 2** | | | |
| | | **Umsebenzi 3** | |
| **Ilanga 3** | | | |
| | | **Umsebenzi 4** | |
| **Ilanga 4** | | | |
| **Ilanga 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: Ihlelo Lomsebenzi: Iveke _____**

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

_____
_____
_____
_____

# Isifundobandulo 10 Iforomo lokuHlunga

1.  Ingabe isifundobandulo sibe ngilokho ebegade ukulindele?

_____
_____
_____
_____

2.  Khuyini okufundileko kilesisifundobandulo okukusize khulu?

_____
_____
_____
_____

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

_____
_____
_____
_____

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

_____
_____
_____
_____

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

_____
_____
_____
_____