



**GAUTENG PROVINCE**  
EDUCATION  
REPUBLIC OF SOUTH AFRICA

**GGT 2030**  
GROWING GAUTENG TOGETHER

Xitsonga/English

# **Nongonoko wa Antswiso wa Matematiki wa Giredi ya V Grade R Mathematics Improvement Programme**



**Ndzetelavutivi wa 1 • Workshop 1  
Buku ya Ntirho Vatekaxiave • Participant's Workbook**

The Grade R Mathematics and Language Improvement Project is an initiative of the **Gauteng Department of Education** and its key partner, the **Gauteng Education Development Trust**.

The development and production of the training and classroom resources for the Grade R Mathematics and Language Improvement Project were made possible by generous project funding from the **United States Agency for International Development** and the **Zenex Foundation**.

The Grade R Mathematics and Language Improvement Project is managed by **JET Education Services** with **UCT's Schools Development Unit** and **Wordworks** as technical partners.

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

## ACKNOWLEDGEMENTS

Special thanks to:

- The Gauteng Department of Education Curriculum, Teacher Education and Special Education Directorate officials for their contribution to the adaptation of our materials.
- The Western Cape Education Department (WCED) officials and teachers for their contribution to the successful implementation of the Grade R Mathematics Programme (R-Maths) in the Western Cape between 2016 and 2019.
- The R-Maths writing team: SDU staff and consultants.



The Grade R Mathematics Improvement Programme is adapted from *R-Maths*, first published in 2017 by the Schools Development Unit, University of Cape Town. Copyright of *R-Maths* is held by the University of Cape Town.

The Grade R Mathematics Improvement Programme is licensed under a Creative Commons Attribution 4.0 International Licence [Attribution-NonCommercial-ShareAlike].



This licence allows re-users to distribute, remix, adapt, and build upon the material in any medium or format for non-commercial purposes only, and only so long as attribution is given to the creator. If you remix, adapt, or build upon the material, you must license the modified material under identical terms. To view the full conditions for this licence, visit: <https://creativecommons.org/licenses/by-nc-sa/4.0/>

Programme conceptualisation and management: Cally Kuhne and Tholisa Matheza

Translation and publishing project management: Arabella Koopman

Translation: Maurice Hlangwani

Editing (Xitsonga): Gezani Chabalala

Illustrations: Jiggs Snaddon-Wood

Phurojeke ya Antswiso wa Matematiki na Tindzimi ya Giredi ya V i matshalatshala ya **Ndzawulo ya Dyondzo ya Gauteng (Gauteng Department of Education)** na mutirhisankulu wa yona, **Gauteng Education Development Trust**.

Nhluvukiso na vuhumelerisi bya swipfuno swa vuleteri na swa le kamareni ro dyondzela swa Phurojeke ya Antswiso wa Matematiki na Tindzimi ya Giredi ya V swi endlile swi koteka hi timali ta tiphurojeke to hananiwa kusuka eka **United States Agency for International Development** na **Zenex Foundation**.

Phurojeke ya Antswiso wa Matematiki na Tindzimi ya Giredi ya V yi fambisiwa hi **JET Education Services** na **Schools Development Unit** ya **UCT** na **Wordworks** tanihi vatirhisani va xithekiniki.

**Schools Development Unit (SDU)** leyi nga eka **University of Cape Town (UCT)** i mutirhisani wa xithekiniki wa matematiki eka Phurojeke ya Antswiso wa Matematiki na Tindzimi ya Giredi ya V. SDU i yuniti leyi kumekaka eka School of Education ya le UCT leyi yi kongomisaka eka nhluvukiso wa xiphurofexinali wa vadyondzisi eka Matematiki, Sayense, Litheresi/Ririmi na Swikili swa Vutomi kusuka eka Giredi ya V kufika eka Giredi ya 12. SDU yi nyika mithwaso ya vudyondzisi na tikhoso to koma ta UCT leti pfumeleriweke, ntirho lowu kumekaka exikolweni, nhluvukiso wa timatheriyali na ndzavisiso ku seketela madyondziselo na madyondzelo eka mivangu ya Afrika-Dzonga hinkwayo.

## SWIKHENSO

Ku khensa ko hlawuleka eka:

- Vakulukumba va Ndzawulotsongo ya Kharikhulamu, Dyondzo ya Vadyondzisi na Dyondzo yo Hlawuleka ta Ndzawulo ya Dyondzo ya Gauteng eka vuhoxaxandla bya vona ku fambelanisa matheriyali wa hina.
- Vakulukumba na vadyondzisi va Western Cape Education Department (WCED) eka vuhoxaxandla bya vona eka nsimeko lowu humeleleke wa Grade R Mathematics Programme (R-Maths) eKapa-Vupeladyambu exikarhi ka 2016 na 2019.
- Xipano xo tsala xa *R-Maths*: Vatirhi na vatsundzuxi va SDU.



Nongonoko wa Antswiso wa Matematiki wa Giredi ya V wu fambelanisiwile kusuka eka *R-Maths*, wu kandziyisiwile rosungula hi 2017 hi Schools Development Unit, University of Cape Town. Mfaneloxinawu ya mutumbuluxi ya *R-Maths* yi khomiwile hi University of Cape Town.

Nongonoko wa Antswiso wa Matematiki wa Giredi ya V wu nyikiwile layisense ehansi ka Creative Commons Attribution 4.0 International Licence [Attribution-NonCommercial-ShareAlike].



Mpfumelelo lowu wu pfumelela vatirhisi-kambe ku va va hangalasa, ku pfallanganyisa na kambe, ku tekelela na ku aka ehenhla ka xitirhisiwa hi xihangalasa mahungu kumbe xivumbeko xin'wana na xin'wana ntsena ku nga ri hi xikongomelo xa ku endla mali, naswona ntsena nxiximo wu nyikiwa mutumbuluxi. Loko u pfallanganyisa nakambe, tekela kumbe ku aka ehenhla ka xitirhisiwa, u fanele ku pasisa xitirhisiwa lexi antswisiweke ehansi ka swipimelo leswi fanaka. Ku vona swipimelo hi vutalo swa layisense leyi, endzela: <https://creativecommons.org/licenses/by-nc-sa/4.0/>

Ku vumbiwa ka nongoti na malawulelo ya nongonoko: Cally Kuhne na Tholisa Matheza  
Vuhundzuluxeri na malawulelo ya phurojeke ya vukandziyisi: Arabella Koopman  
Vuhundzuluxeri bya Xitsonga: Maurice Hlangwani  
Vuhleri na vuhlayisi bya Xitsonga: Gezani Chabalala  
Swifaniso: Jiggs Snaddon-Wood

# Contents

## Overview

Purpose .....	page 6
Learning outcomes .....	page 6
Workshop content .....	page 6
House rules .....	page 8

## Workshop content

Session 1: Orientation to the Maths Programme .....	page 10
Session 2: Numbers, Operations and Relationships .....	page 36
Session 3: Implementing the five-group teaching model .....	page 48
Appendix A: The Guiding Principles of Teaching Maths in Grade R .....	page 60
Appendix B: Term 1 Weekly Content Summary (Weeks 1–2) .....	page 64
Workshop 1 Evaluation Form .....	page 66

# Leswi nga endzeni

## Nkatsakanyo

Xikongomelo .....	pheji ya 7
Mivuyelo ya dyondzo .....	pheji ya 7
Vundzeni bya ndzetelavutivi .....	pheji ya 7
Milawu ya yindlu .....	pheji ya 9

## Vundzeni bya ndzetelavutivi

Sexini ya 1: Ntiviso eka Nongonoko wa Matematiki .....	pheji ya 11
Sexini ya 2: Tinomboro, Tioparexini na Vuxaka .....	pheji ya 37
Sexini ya 3: Ku tirhisa modlolo wa madyondziselo ya mitawu leya ntlhanu .....	pheji ya 49
Xiengetelwa xa A: Milawu yo Letela ya ku Dyondzisa Matematiki eka Giredi ya V .....	pheji ya 61
Xiengetelwa xa B: Nkomiso wa Vundzeni wa Vhiki na Vhiki wa Kotara ya 1 (Mavhiki ya 1–2) .....	pheji ya 65
Fomo ya Nkambelo ya Ndzetelavutivi wa 1 .....	pheji ya 67

# Overview

## Purpose

This is the first 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.

Participants will receive information on the components and guiding principles of teaching mathematics in Grade R. They will reflect on and discuss these within the context of their own planning and teaching. Participants will also review the Curriculum and Assessment Policy Statement (CAPS) Grade R Mathematics Content Areas. They will plan the daily programme Mathematics focus time for the first two weeks of Term 1. Throughout the workshop they will reflect on the guiding principles that inform teaching and learning.

*\*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*

Mathematics is the formal subject name, but in this *Participant's Workbook* and during our discussions we will refer to it as 'maths'. (Read more about this on page 10 of the *Concept Guide*.)

## Learning outcomes

- ◆ To become familiar with the Maths Programme and how it supports and extends the content of CAPS Grade R Mathematics
- ◆ To explore the components of the Maths Programme
- ◆ To understand the teaching principles presented in the Maths Programme
- ◆ To plan a Term 1 week based on the five-group teaching model
- ◆ To engage with the Maths Programme content of Term 1 Weeks 1–2 (Numbers, Operations and Relationships)

## Workshop content

- ◆ Session 1: Orientation to the Maths Programme (2 hours)  
TEA
- ◆ Session 2: Numbers, Operations and Relationships (2 hours)  
LUNCH
- ◆ Session 3: Implementing the five-group teaching model (2 hours)

# Nkatsakanyo

## Xikongomelo

Lowu i wo sungula wa khumembirhi ya miletelavutivi ya Nongonoko wa Antswiso wa Matematiki wa Giredi ya V (Nongonoko wa Matematiki), leyi yi vumbaka xiphemu xa Phurojeke ya Antswiso wa Matematiki na Tindzimi ya Giredi ya V ya Ndzawulo ya Dyondzo ya Gauteng (Gauteng Department of Education) (GDE).

Vatekaxiave va ta kuma vuxokoxoko hi mayelana na swiphemutsongo na milawu yo letela ya ku dyondzisa matematiki eka Giredi ya V. Va ta ehleketisisa na ku kana leswi endzeni ka mbangu wa nkunguhato na madyondziselo ya vona vini. Vatekaxiave va ta tlhela va kambisisa Swiyenge swa Vundzeni swa Xitatimente xa Pholisi ya Kharikhulamu na Makambeleso (XIPHOKHAMA) ya Matematiki wa Giredi ya V swa Xitatimente xa Pholisi ya Kharikhulamu na Makambeleso (XIPHOKHAMA). Va ta kunguhata nkarhi wa nkongomo wa nongonoko wa Matematiki wa siku na siku wa mavhiki mambirhi lamo sungula ya Kotara ya 1. Hi nkarhi wa ndzetelavutivi hinkwawo va ta ehleketisisa hi mayelana na milawu yo letela leyi yi letelaka madyondziselo na madyondzelo.

\*Swiyenge swa Vundzeni swa Matematiki wa Giredi ya V swi tekiwa kusuka eka *Xitatimente xa Pholisi ya Kharikhulamu na Makambeleso (XIPHOKHAMA: Matematiki wa Giredi ya V (Mpfapfarhuto wo Hetelela)*, 2011, Ndzawulo ya Dyondzo ya Masungulo, Afrika-Dzonga

## Mivuyelo ya dyondzo

- ◆ Ku kota ku tiva Nongonoko wa Matematiki na hilaha wu seketelaka na ku ndlandlamukisa hakona vundzeni bya XIPHOKHAMA xa Matematiki wa Giredi ya V
- ◆ Ku valanga swiphemutsongo swa Nongonoko wa Matematiki
- ◆ Ku twisisa milawu ya madyondziselo lama andlariweke eka Nongonoko wa Matematiki
- ◆ Ku kunguhata vhiki ra Kotara ya 1 hi ku ya hi modlolo wa madyondziselo ya mitlawa ya ntlhanu
- ◆ Ku tirhana na vundzeni bya Nongonoko wa Matematiki wa Mavhiki ya 1–2 ya Kotara ya 1 (Tinomboro, Tioparexini na Vuxaka)

## Vundzeni bya ndzetelavutivi

- ◆ Sexini ya 1: Ntiviso eka Nongonoko wa Matematiki (2 wa tiawara)  
TIYA
- ◆ Sexini ya 2: Tinomboro, Tioparexini na Vuxaka (2 wa tiawara)  
LANCI
- ◆ Sexini ya 3: Ku tirhisa modlolo wa madyondziselo ya milawu leya ntlhanu (2 wa tiawara)

## **House rules**

- ◆ Be punctual.
- ◆ Turn off your cellphone during sessions.
- ◆ Give everyone a chance to participate.
- ◆ Listen to each other's ideas.



## **Milawu ya yindlu**

- ◆ Fika hi nkarhi.
- ◆ Tima selifoni ya wena hi nkarhi wa tisexini.
- ◆ Nyika munhu un'wana na un'wana nkarhi wa ku teka xiave.
- ◆ Yingiselanani mianakanyo ya n'wina.

# Session 1: Orientation to the Maths Programme

2 hours

## Registration

### Welcome and house rules

(10 minutes)

Welcome to the first of twelve maths workshops for the Gauteng Department of Education (GDE) Grade R Mathematics and Language Improvement Project.

Let's start with an introduction to the presenters and agree on a set of house rules.

### Sharing teaching experiences

(15 minutes)



#### Activity 2

1. Take some time to reflect on your experience of teaching Grade R, especially teaching maths in Grade R. Think about your training and how it prepared you for maths teaching. Also try to identify your strengths and weaknesses in maths.

---

---

---

---

2. Share some of your good experiences and bad experiences with a partner.
3. Choose one person from your group to capture the thoughts that everyone shared.

# Sexini ya 1: Ntiviso eka Nongonoko wa Matematiki

2 wa tiawara

## Ntsariso

### Ku amukela na milawu ya yindlu

(10 ra timinete)

Ha mi amukela eka wo sungula wa khumembirhi ya miletelovutivi ya matematiki ya Phurojeke ya Antswiso wa Matematiki na Tindzimi ya Giredi ya V ya Ndzawulo ya Dyondzo ya Gauteng (Gauteng Department of Education) (GDE).

A hi sunguleni hi ntiviso wa vaandlari kutani hi pfumelelana hi xikatsa xa milawu ya yindlu.

### Ku avelana mitokoto yo dyondzisa

(15 wa timinete)



#### Nghingiriko wa 2

1. Teka nkarhinyana ku ehleketisisa hi ntokoto wa wena wa ku dyondzisa Giredi ya V, ngopfungopfu ku dyondzisa matematiki eka Giredi ya V. Ehleketa hi mayelana na vuleteri bya wena na hilaha byi ku lulamiseleke hakona eka ku dyondzisa matematiki. Tlhela u ringeta ku kuma matimba na mitsano ya wena eka matematiki.

---

---

---

---

2. Avelanani yin'wana ya mitokoto ya wena ya kahle na mitokoto ya wena yo biha na mutirhisani wa wena.
3. Hlawulani munhu un'we kusuka eka ntlawa wa n'wina ku rhekoda miehleketo leyi munhu un'wana na un'wana a yi avelanaka.

## The Grade R Maths Programme

(30 minutes)

### Why a Maths Programme for Grade R?

Many South African primary school learners underperform in Language and Mathematics. A high percentage of learners fail to achieve even the minimum expected standards in these core subjects. There has been slow progress in the improvement of educational outcomes and in narrowing the achievement gap between learners from different backgrounds. The reasons for this are complex, go beyond the classroom and are affected by children's development and well-being from birth.

One of the critical issues around preschool access and attendance, as well as infrastructure and school management in South Africa, has been the fundamental questions about what and how children are learning. In order for all children to have a better chance of fulfilling their potential in Mathematics, the focus must broaden to include maths development in Grade R and, crucially, to provide Grade R teachers and practitioners with the knowledge and skills needed to support young children's maths learning.

The GDE identified Early Childhood Development as its Strategic Goal 1 and one of its key goals is to improve Home Language and Mathematics learning in Grade R. Through the Grade R Mathematics and Language Improvement Programme, the GDE is striving to improve performance in Grade R and prepare learners for Grade 1.

We believe that the Maths Programme will make an important contribution to the implementation of CAPS and that it will enhance the existing learning opportunities for all learners in Grade R so that they develop to their full potential.

### What is the Grade R Maths Programme?

The Maths Programme focuses on teaching and learning one maths concept or topic at a time. The main focus of each week is on one CAPS Content Area. New knowledge is introduced through:

- ◆ whole class activities
- ◆ small group activities: teacher-guided activities and independent (side) activities
- ◆ free choice activities.

**Hikwalahokayini ku va na Nongonoko wa Matematiki eka Giredi ya V?**

Vadyondzi vo tala va le xikolweni xa phurayimari va le Afrika-Dzonga va tirha hi xiyimo xa le hansi eka Ririmi na Matematiki. Nhlayo hi tiphesente ta le henhla ta vadyondzi va hluleka ku fikelela hambu mipimo leyi languteriwaka ya mpimohansi eka tidyondzokulu leti. Ku vile na ku ya emahlweni ko nonoka eka antswiso wa mivuyelo ya dyondzo na ku pfariwa ka vangwa ra mfikelelo exikarhi ka vadyondzi kusuka eka vundzhaku byo hambanahambana. Swivangelo swa leswi swi pfilunganile, swi humela ehandle ka kamara ro dyondzela naswona swi khumbiwa hi ku kula na ku hanya kahle ka vana kusuka eku velekiweni.

Yin'wana ya timhaka ta nkoka swonghasi hi mayelana na mfikelelo wa xikolo xa tindzumulo na matelo, xikan'we na swimakiwakulu na malawulelo ya xikolo eAfrika-Dzonga, ku vile swivutiso swa masungulo hi mayelana na leswi vana va swi dyondzaka na hilaha va dyondzaka kona. Hi xikongomelo xa leswaku vana hinkwavo va kuma xivandlanene xo antswa xa ku humelerisa vuswikoti bya vona eka Matematiki, nkongomo wu boheka ku anama ku kota ku katsa nhluvukiso wa matematiki eka Giredi ya V na, swa nkoka swinene, ku nyika vadyondzisi va Giredi ya V na vatirhi lava nga na vutivi a swikili leswi lavekaka ku seketela ku dyondza matematiki ka vana lavatsongo.

GDE yi kume Nhluvukiso wa Dyondzo ya Tindzumulo tanihi Xikongomelokulu xa Xiqhinga xa 1 naswona xin'wana xa swikongomelokulu swa wona swa nkoka i ku antswisa madyondzelo ya Ririmi ra le Kaya na Matematiki eka Giredi ya V. Hi ku tirhisa Nongonoko wa Antswiso wa Matematiki na Tindzimi wa Giredi ya V, GDE yi tikarhatela ku antswisa matirhelo eka Giredi ya V na ku lulamisela vadyondzi ku ya eka Giredi ya 1.

Ha kholwa leswaku Nongonoko wa Matematiki wu ta endla vuhoxaxandla bya nkoka eka ku tirhisiwa ka XIPHOKHAMA na leswaku wu ta tiyisa swivandlanene swa ku dyondza leswi nga kona swa vadyondzi hinkwavo eka Giredi ya V ku endlela leswaku va hluvukisa vuswikoti bya vona hi vutalo.

**Xana Nongonoko wa Matematiki wa Giredi ya V i yini?**

Nongonoko wa Matematiki wu kongomisa eka ku dyondzisa na ku dyondza nongoti kumbe nhlokomhaka ya matematiki yin'we hi nkarhi. Nkongomokulu wa vhiki rin'wana na rin'wana wu le ka Xiyenge xa Vundzeni xa XIPHOKHAMA. Vutivi byintshwa byi tivisiwa hi ku tirhisa:

- ◆ migingiriko ya tllasi hinkwayo
- ◆ migingiriko ya ntlawa lowutsongo: migingiriko leyi leteriwaka hi mudyondzisi na migingiriko leyi tshunxekeke (ya le tlhelo)
- ◆ migingiriko yo hlawula va tshunxekile.

The Maths Programme:

- ◆ supports, extends and reinforces the content of CAPS Grade R Mathematics. It does not replace CAPS and it assumes that teachers have some prior knowledge and understanding of CAPS Grade R Mathematics.
- ◆ promotes focus time so that learners can practise newly acquired skills and knowledge, and embeds practise opportunities in planned maths activities and experiences.
- ◆ gives teachers a detailed guide that supports teaching and learning.
- ◆ is guided by eight principles that contribute to successful teaching and learning.
- ◆ supports teachers in making the link between Grade R Mathematics concepts and later mathematical competence.
- ◆ emphasises the weekly observation of learners as a tool for gathering information about each child to inform planning and assessment.

Refer to page 10 of the *Concept Guide* to read more about the Grade R Mathematics Improvement Programme.

Read more about the Maths Programme's guiding principles on pages 14–73 of the *Concept Guide*.

Nongonoko wa Matematiki wu:

- ◆ seketela, ndlandlamukisa na ku tiyisa vundzeni bya Matematiki wa Giredi ya V wa XIPHOKHAMA. A wu sivi XIPHOKHAMA naswona wu swi teka wonge vadyondzisi va na vutivi bya nkarhi lowu nga hundza na ntwisiso wa XIPHOKHAMA xa Matematiki wa Giredi ya V.
- ◆ kondletela nkarhi wa nkongomo ku endlela leswaku vadyondzi va titoloveta swikili na vutivi lebyi kumekeke byintshwa na naswona, wu tiyisa swivandlanene swa vutitoloveti eka migingiriko na mitokoto ya matematiki leyi kunguhatiweke.
- ◆ nyika vadyondzisi xiletelo lexi koxometiweke lexi xi seketelaka madyondziselo na madyondzelo.
- ◆ leteriwa hi nhungu wa milawu leyi yi hoxaka xandla eka madyondziselo na madyondzelo lama humelelaka.
- ◆ seketela vadyondzisi eka ku endla vuxaka exikarhi ka minongoti ya Matematiki wa Giredi ya V kutani endzhaku ka swona vuswikoti bya matematiki.
- ◆ tshikelela nxiyaxiyo wa vhiki na vhiki wa vadyondzi tanihi xitirho xa ku hlengeleta vuxokoxoko hi mayelana na n'wana un'wana na un'wana ku letela nkunguhato na makambelelo.

Kongomisa eka pheji ya 10 ya *Xiletelo xa Minongoti* ku hlaya swo tala hi mayelana na Nongonoko wa Antswiso wa Matematiki wa Giredi ya V.

Hlaya swo tala hi mayelana na milawu yo letela ya Nongonoko wa Matematiki leyi nga eka tipheji ta 14–73 ta *Xiletelo xa Minongoti*.

## **Time allocation for Mathematics in Grade R (10 minutes)**

CAPS suggests that the instructional time for Mathematics in Grade R should be 23 hours per week. However, CAPS does not provide a weighting or a breakdown of the time that should be spent on each Content Area for each term.

## **Maths in the Grade R daily programme (20 minutes)**

The daily programme in Grade R is not a timetable like the ones used in higher grades.

In Grade R the day is organised around the developmental needs of the learners. The day begins with time to talk and sing and ends with rest and stories. During the day, teachers plan activities for Home Language, Life Skills and Mathematics knowledge and understanding. During play and interaction with the teacher and other learners there are many opportunities for the integration of new skills and time to practise what has been learnt.

The Maths Programme suggests a way of organising the daily programme with focus time for Home Language, Life Skills and Mathematics.

Refer to pages 82–93 of the *Concept Guide* to read more about organising your classroom for the daily Mathematics focus session.



**Avelo wa nkarhi eka Matematiki eka Giredi ya V (10 ra timinete)**

XIPHOKHAMA xi ringanyeta leswaku nkarhi wa ndzetelo wa Matematiki eka Giredi ya V wu fanele ku va 23 wa tiawara hi vhiki. Hambiswiritano, XIPHOKHAMA a xi nyiki ntikelo kumbe ntlhantlho wa Giredi ya V wa nkarhi lowu wu faneleke ku tirhisiwa eka Xiyenge xa Vundzeni xin'wana na xin'wana eka kotara yin'wana na yin'wana.

**Matematiki eka nongonoko wa siku na siku eka**

**Giredi ya V**

**(20 wa timinete)**

Nongonoko wa siku na siku eka Giredi ya V a hi xikombamikarhi ku fana na leswi hi swi tirhisaka eka tigiredi ta le henhla.

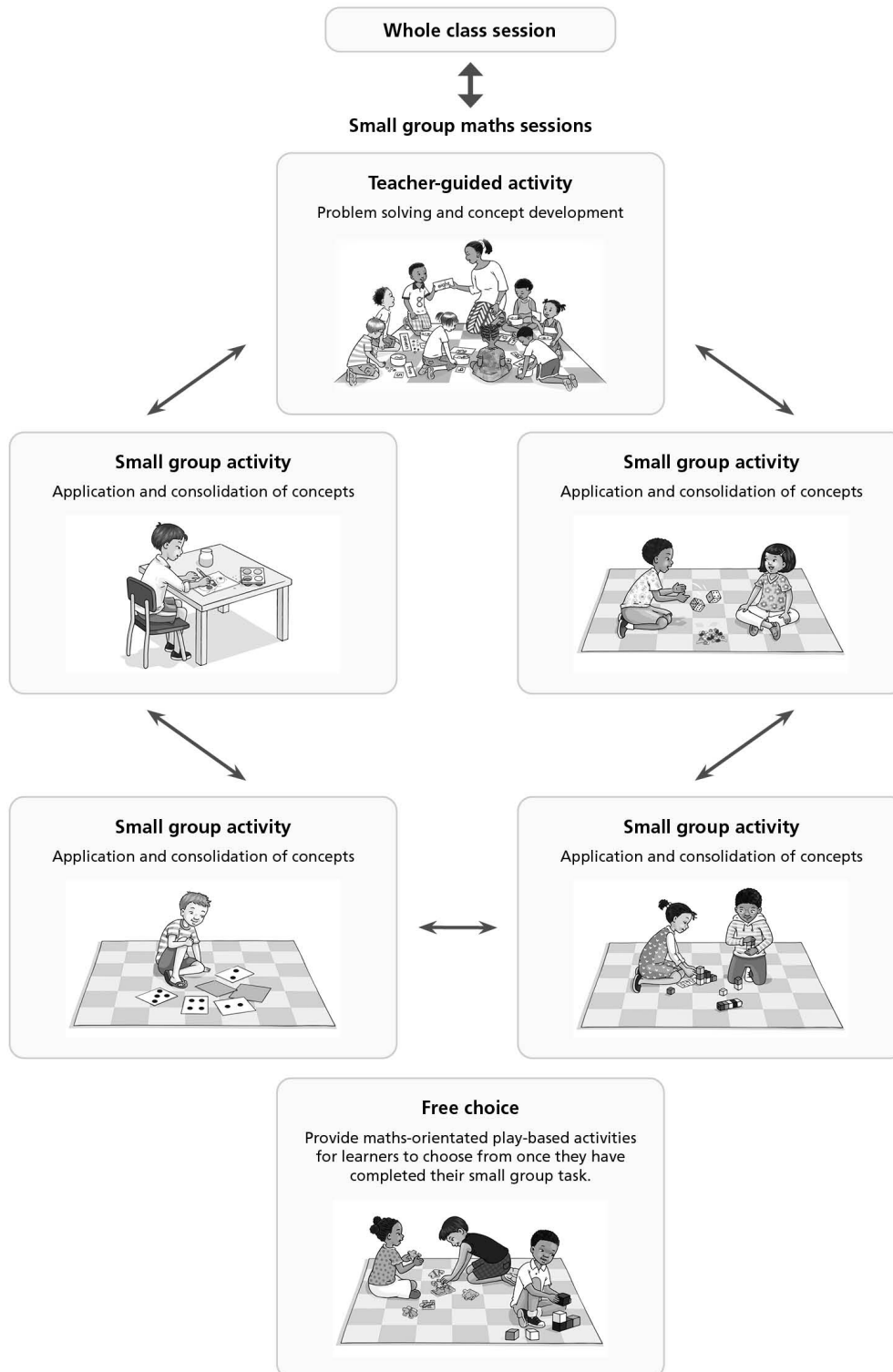
Eka Giredi ya V siku ri lulamisiwa ku rhendzeleka na swilaveko swa nhluvukiso wa vadyondzi. Siku ri sungula hi nkarhi wa ku vulavula na ku yimbelela kutani ri fika emakumu hi ku wisa na switori. Esikwini, vadyondzisi va kunguhata migingiriko ya vutivi na ntwisiso wa Ririmi ra le Kaya, Swikili swa Vutomi na Matematiki. Hi nkarhi wa ku tlanga na mbulavurisano na mudyondzisi na vadyondzi lavan'wana ku na swivandlanene swo tala swa mpfanganiso wa swikili swintshwa na nkarhi wa ku titoloveta leswi swi dyondziweke.

Nongonoko wa Matematiki wu ringanyeta ndlela ya ku lulamisa nongonoko wa siku na siku ku ri na nkarhi nkongomo eka Ririmi ra le Kaya, Swikili swa Vutomi na Matematiki.

Kongomisa eka tipheji ta 82–93 ta *Xiletelo xa Minongoti* ku hlaya hi mayelana na ku lulamisa kamara ra wena ro dyondzela ra sexini ya nkongomo ya Matematiki ya siku na siku.

## Daily Mathematics focus time

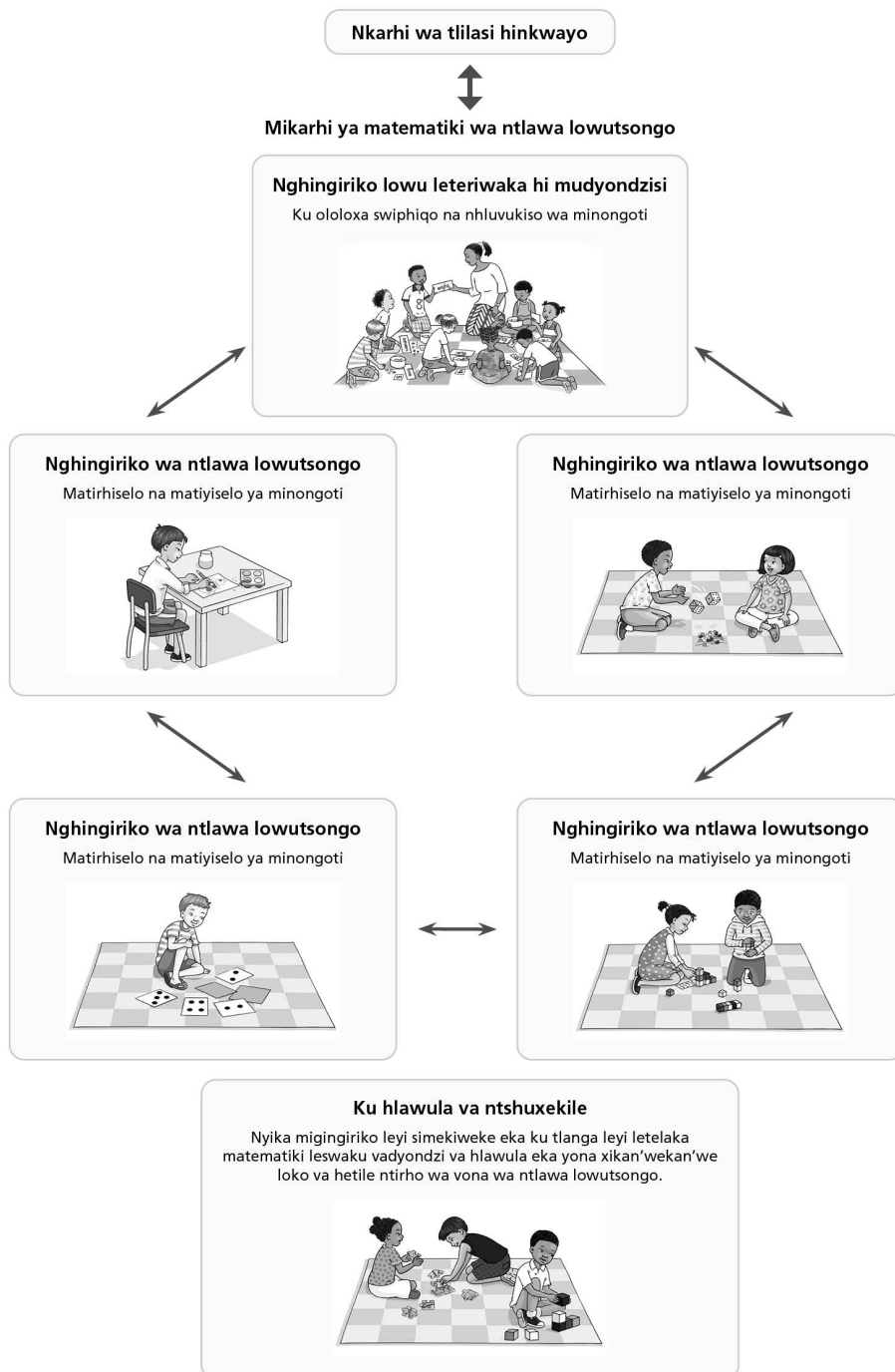
The Language training introduced you to a two-week teaching and learning cycle. The Maths Programme also follows a structured approach to organising the class for the Mathematics focus time. The Maths Programme’s teaching and learning cycle is based on five small group activities that are rotated during one week. The lessons begin on a Monday and end on a Friday.



## Nkarhi wa nkongomo wa Matematiki wa siku na siku

Vuleteri bya Ririmi byi ku tivise eka ndzhendzeleko wa ku dyondzisa na ku dyondza wa mavhiki mambirhi. Nongonoko wa Matematiki wu tlhela wu landzelela endlelo leri nga na xivumbeko ku lulamisela tlilasi eka nkarhi wa nkongomo wa Matematiki.

Ndzhendzeleko wa ku dyondzisa na ku dyondza wa Nongonoko wa Matematiki wu simekiwile eka ntlhanu wa misingiriko ya mitlawa leyitsongo leyi cincanaka eka vhiki rin'we. Tidyondzotsongo ti sungula hi Musumbhunuku kutani ti fika emakumu hi Ravuntlhanu.



# Session 2: Numbers, Operations and Relationships

2 hours

## Term 1–4 content overview (CAPS) (45 minutes)

The Maths Programme is aligned to and extends the content of the five Mathematics Content Areas of CAPS. The table on pages 114–137 of the *Concept Guide* provides a content overview of the maths to be taught in Grade R. It also shows what content is to be taught each term.

- ◆ The text in blue is the content from the CAPS for Grade R Mathematics.
- ◆ The text in black has been added to extend and build on CAPS.
- ◆ The topics are sequenced to show a developmental progression from one topic to the next.

Refer to pages 110–113 of the *Concept Guide* and read 1.1, 1.2 and 1.3 on pages 114–117. After reading numbers 1.1, 1.2 and 1.3, complete Activities 7 and 8.



### Activity 2

Look through the Term 1–4 content overview for the Content Area: Numbers, Operations and Relationships, in the *Concept Guide* and in the CAPS document. In your group, discuss:

1. What does the Maths Programme add to the content of CAPS?

---

---

---

---

2. What counting concepts are covered in Numbers, Operations and Relationships in Term 1?

---

---

---

---

# Sexini ya 2: Tinomboro, Tioparexini na Vuxaka

2 wa tiawara

## Nkatsakanyo wa vundzeni wa Kotara ya 1–4 (XIPHOKHAMA)

(45 wa timinete)

Nongonoko wa Matematiki wu fambelanisiwile na ku ndlandlamukisa vundzeni bya ntlhanu wa Swiyenge swa Vundzeni bya Matematiki swa XIPHOKHAMA. Tafula leri nga eka tipheji ta 114–137 ta *Xiletelo xa Minongoti* ri nyika nkatsakanyo wa vundzeni bya matematiki lebyi faneleke ku dyondzisiwa eka Giredi ya V. Ri tlhela ri komba leswaku i vundzeni byi lebyi byi faneleke ku dyondzisiwa kotara yin'wana na yin'wana.

- ◆ Xitsariwa lexi nga hi muhlovo wa wasi i vundzeni kusuka eka XIPHOKHAMA xa Matematiki wa Giredi ya V.
- ◆ Xitsariwa lexi nga hi muhlovo wa ntima xi engeteriwile ku ndlandlamukisa na ku aka ehenhla ka XIPHOKHAMA.
- ◆ Tinhlokomhaka ti longoloxiwile ku komba ku ya emahlweni ka nhluvukiso kusuka eka nhlokomhaka yin'we kuya eka leyi landzelaka.

Kongomisa eka tipheji ta 110–113 ta *Xiletelo xa Minongoti* na ku hlaya 1.1, 1.2 na 1.3 eka tipheji ta 114–117. Endzhaku ka ku hlaya tinomboro ta 1.1, 1.2 na 1.3, hetisani Migingiriko ya 7 na 8.



### Nghingiriko wa 2

Languta eka nkatsakanyo wa vundzeni wa Kotara ya 1–4 ku kuma Xiyenge xa Vundzeni: Tinomboro, Tioparexini na Vuxaka, eka *Xiletelo xa Minongoti* na le ka tsalwa ra XIPHOKHAMA. Entlaweni wa n'wina, kanelani.

1. Xana hi swihi leswi Nongonoko wa Matematiki wu swi engetelaka eka vundzeni bya XIPHOKHAMA?

---

---

---

---

2. Xana hi yihi minongoti ya nhlayelo leyi angarheliweke eka Tinomboro, Tioparexini na Vuxaka eka Kotara ya 1?

---

---

---

---

## Important concepts in Numbers, Operations and Relationships

(1¼ hours)

### Counting

#### Oral counting (rhythmic, rote or acoustic counting)

Oral counting involves a learner memorising the names and counting order of numbers, often in a rhyme or song.

In Grade R learners learn the correct order of number names and repeat the sequence daily. The purpose of counting out loud is to help learners understand that when we count aloud there is a set order for the numbers: beginning at one, then two, three, four, etc. Initially learners do not fully understand the meaning of the number names and might skip numbers in a counting sequence. Reciting a rhyme or series of numbers orally means repeating the number names from memory. Even when learners count in steps of two, five and ten they are using their knowledge of this number order. Memorising number names and repeating them in the correct counting order does not necessarily mean that learners can count. This is different from counting to find out 'how much'.

Arrange yourselves into small groups of five and find an open space in the training room for the next activity.



#### Activity 3

1. In your small groups, say the rhyme, *One, two, three, four, five*, with actions.

#### **One, two, three, four, five**

One, two, three, four, five

Once I caught a fish alive.

'Why did you let it go?'

Because it bit my finger so.

One, two, three, four, five

Then I caught a frog alive.

'What did you do with that?'

I said hello and put it back.

## Minongoti ya nkoka eka Tinomboro, Tioparexini na Vuxaka

(1¼ wa tiawara)

### **Ku hlayela**

**Ku hlayela ka swanomu (ku hlayela ka nsumo, ku hlayela hi bela enhlokweni/ku hlayela hi ncino)**

Ku hlayela ka swanomu ku khumba mudyondzi wo bela enhlokweni mavito na nandzelelano wa tinomboro, hakanyingi leti nga eka rhayimi kumbe risimu.

Eka Giredi ya V, vadyondzi va dyondza nandzelelano lowu nga lulama wa mavito ya tinomboro na ku vuyelela malongolokelo lama siku na siku. Xikongomelo xa ku hlayela ehenhla i ku pfuna vadyondzi ku twisisa leswaku loko hi hlayela ehenhla ku na nandzelelano lowu vekiweke wa tinomboro, ku sungula eka n'we, endzhaku ka yona ku landzela mbirhi, nharhu, mune sw.sw. Emasungulweni, vadyondzi a va twisisi hi vutalo nhlamuselo ya mavito ya tinomboro naswona va nga ha tlula tinomboro eka malongolokelo ya nhlayelo. Ku tlhokovetsela rhayimi kumbe ntlhandlamano wa tinomboro hi nomu swi vula ku vuyelela tinomboro kusuka eka vutsundzuki. Hambiloko vadyondzi va hlayela hi magoza ya mbirhi, ntlhanu na khume va le ku tirhiseni ka vutivi bya nandzelelano lowu wa tinomboro. Ku bela enhlokweni mavito ya tinomboro na ku ma vuyelela hi nandzelelano lowu nga lulama a swi vuli ngopfungopfu leswaku vadyondzi lava va kota ku hlayela. Leswi swi hambanile na ku hlayela ku kumisisa leswaku 'i swingani'.

Tivekeni hi n'wexe hi mitlawa leyitsongo ya ntlhanu kutani mi kuma ndhawu yo pfuleka ekamareni ro dyondzela eka nghingiriko lowu landzelaka.



### **Nghingiriko wa 3**

1. Emitlaweni ya nwina leyitsongo, vulani rhayimi leyi, *N'we, mbirhi, nharhu, mune, ntlhanu*, ku ri na swiendlo.

### ***N'we, mbirhi, nharhu, mune, ntlhanu***

Tiyisisa: n'we, mbirhi, nharhu, mune, ntlhanu

Ndzi tshama ndzi khoma nhlampfi ya nkanu.

'Hikwalahokayini u yi tshike yi famba?'

Hikuva yi ndzi lume ritiho loko ndzi yi mbamba.

N'we, mbirhi, nharhu, mune, ntlhanu

Endzhaku ka swona ndzi khoma chela ra nkanu.

'Xana u endle yini hi rona?'

Ndzi lo avuxeni ndzi ri tshika ri pona.

2. Do you think using a rhyme like this one is good practice for teaching counting in Grade R? Give reasons for your answer.

---

---

---

Refer to pages 76 and 196 of *Activity Guide: Term 1* for this rhyme.



#### Activity 4

In the same small groups, answer these questions:

1. What would learners learn by saying this rhyme?

---

---

---

---

2. What do learners learn when they repeat a sequence of numbers in the correct counting order?

---

---

---

---



2. Xana mi ehleketa leswaku ku tirhisa rhayimi yo fana na leyi i endlelo ra kahle eka ku dyondzisa nhlayelo eka Giredi ya V? Nyikani swivangelo swa nhlamulo ya n'wina.

---

---

---

Kongomisa eka tipheji ta 77 na 197 ta *Xiletelo xa Migingiriko: Kotara ya 1* ku kuma rhayimi leyi.



#### **Nghingiriko wa 4**

Emitlaweni leyitsongo yaliya, hlamulani swivutiso leswi:

1. Xana hi swihi leswi vadyondzi va nga ta swi dyondza hi ku vula rhayimi leyi?

---

---

---

---

2. Xana hi swihi leswi vadyondzi va swi dyondzaka loko va vuyelela malnglokelo ya tinomoro hi nandzelelano wa nhlayelo lowu nga lulama?

---

---

---

---

### Counting objects (rational counting)

Counting objects involves one-to-one correspondence. This means that each object or event to be counted is matched with a number word. To count 'how many', learners need to realise that each object in a collection gets a number word ('one, two, three, four ...') and that you count each object only once.

Once learners know the order of the counting numbers, they begin to understand that each number in the counting sequence is one bigger than the number before and one smaller than the next number. They:

- ◆ can mentally compare numbers and see that two is one more than one and that three is one more than two.
- ◆ realise that numbers grow by one each time.
- ◆ realise that any number in the counting sequence is exactly one more than the previous number.



#### Video 3

Watch the video of learners counting a collection of objects. This is a teacher-guided activity. Notice how the teacher observes each learner and asks questions to prompt them to share their ideas.

---

---

---

---

### Representing numbers



#### Activity 5

How many different ways can you find to represent the number 5?

---

---

---

---

### **Ku hlayela michumu (nhlayelo wa mitsengo)**

Ku hlayela michumu swi khumba ku yelana ka xin'we-eka-xin'we. Leswi swi vula leswaku nchumu kumbe xiendleko xin'wana na xin'wana lexi faneleke ku hlayeriwa xi pananisiwa na vito ra nomboro. Ku hlayela leswaku 'i swingani', vadyondzi va fanele ku vona leswaku nchumu wun'wana na wun'wana lowu nga eka nhlengelo wu kuma vito ra nomboro ('n'we, mbirhi, nharhu, mune ...') na leswaku u hlayela nchumu wun'wana na wun'wana kan'we ntsena.

Xikan'wekan'we loko vadyondzi va tiva nandzelelano wa tinomboro to hlayela, va sungula ku twisisa leswaku nomboro yin'wana na yin'wana leyi nga eka malongolokelo yo hlayela i yikulukumba hi n'we kutlula nomboro leyi nga emahlweni ka yona naswona i yitsongo hi n'we kutlula nomboro leyi landzelaka. Va:

- ◆ va nga fananisa emihleketweni tinomboro naswona va nga kota ku vona leswaku mbirhi i yikulu hi n'we kutlula n'we na leswaku nharhu i n'we kutlula mbirhi.
- ◆ nga vona leswaku tinomboro ti kula hi n'we nkarhi wun'wana na wun'wana.
- ◆ nga vona leswaku nomboro yihi kumbe yihi eka malongolokelo ya nhlayelo i n'we kwatsa, kutlula nomboro leyi nga hundza.



### **Vhidiyo ya 3**

Hlalelani vhidiyo ya vadyondzi va ri karhi va hlayela nhlengelo wa michumu. Lowu i nghingiriko lowu leteriwa hi mudyondzisi. Vona hilaha mudyondzisi a xiyaxiyaka hakona mudyondzi un'wana na un'wana kutani u vutisa swivutiso ku va tsundzuxa ku avelana mianakanyo ya vona.

---

---

---

---

### **Ku endla vuyimeri bya tinomboro**



### **Nghingiriko wa 5**

Xana i tindlela to hambanahambana tingani leti u nga ti kumaka ku endla vuyimeri bya nomboro ya 5?

---

---

---

---

Learners begin to represent numbers using their fingers, and then gradually start to use other methods, such as objects, drawings, pictures or symbols. Learners progress:

- ◆ from using actual objects to represent (stand in for) numbers, e.g. lemons, sweets, pencils, leaves
- ◆ to using pictures or drawings to represent the objects, e.g. a drawing of a lemon, person, car
- ◆ to using counters to represent the objects or pictures, e.g. plastic discs to show the number of lemons
- ◆ to using marks to represent the physical objects and pictures, e.g. circles, dots, tally marks, clapping sounds, drumbeats, stamping feet
- ◆ to using number symbols and number words, e.g. '2' or 'two'.

The Maths Programme uses an approach that introduces numbers 0–10 one at a time and follows the same teaching routine for each number.

- ◆ A story is told about the number. This raises learners' interest and provides a familiar, fun context that connects with learners' lives and interests.
- ◆ Each number has a particular animal character. The story featuring the animal is used to build a number frieze to represent the number.
- ◆ Dramatising the story provides opportunities for learners to respond kinaesthetically (learning through acting and moving their bodies).
- ◆ Objects are collected to represent the number in various ways. The objects are put in the maths area.
- ◆ Learners match objects to pictures, dot cards, number symbols and number words.
- ◆ The *Poster Book* provides real-life contexts to stimulate discussion and encourage problem solving.

The number 'one' is introduced in the second week of Term 1 to familiarise learners with this routine. The same routine is used as each new number is introduced, adding one more to the number the learners learnt previously.

Vadyondzi va sungula ku endla vuyimeri bya tinomboro hi ku tirhisa tintiho ta vona kutani endzhaku ka swona hi katsongotsongo va sungula ku tirhisa maendlelo man'wana, yo tanihi michumu, swidirowiwa, swifaniso kumbe mifungo. Vadyondzi va ya emahlweni:

- ◆ kusuka eka ku tirhisa michumu ya xiviri ku endla vuyimeri (ku yimela) bya tinomboro, xik. swikwavava, swiwitsi, tipensele, matluka
- ◆ kuya eka ku tirhisa swifaniso kumbe swidirowiwa ku endla vuyimeri bya michumu, xik. xidirowiwa xa xikwavava, munhu, movha
- ◆ kuya eka ku tirhisa swo hlayela ku endla vuyimeri bya michumu kumbe swifaniso, xik. tidisiki ta pulasitiki ku komba nhlayo ya swikwavava
- ◆ kuya eka ku tirhisa mithalo ku endla vuyimeri bya michumu yo khomeka na swifaniso, xik. swirhendzevutana, mathonsi, mithalo, mimpfumawulo ya miphokotelo, mimpfumawulo ya ndzhumba, ku gima mikondzo
- ◆ kuya eka ku tirhisa mifungo ya tinomboro na mavito ya tinomboro yo tsariwa, xik. '2' kumbe 'mbirhi'.

Nongonoko wa Matematiki wu tirhisa endlelo leri ri tivisaka tinomboro ta 0–10 yin'we hi nkarhi naswona ri landzelela nghingiriko wa siku na siku wa madyondziselo yo fana eka nomboro yin'wana na yin'wana.

- ◆ Xitori xa runguriwa hi mayelana na nomboro leyi. Leswi swi tlakusa ntsakelo wa vadyondzi naswona swi nyika mbangu wo tiphina, wo toloveleka lowu wu khomanaka na vutomi na mitsakelo ya vadyondzi.
- ◆ Nomboro yin'wana na yin'wana yi na xihlawulekisi xa xiharhi xo karhi. Xitori lexi xi kombisaka xiharhi xi tirhisiwa ku aka xipendiwankhavisio xa nomboro ku endla vuyimeri bya nomboro leyi.
- ◆ Ku endla ntlangu wa xitori swi nyika swivandlanene eka vadyondzi ku angula hi ndlela yo tirhisa swirho swa miri (ku dyondza hi ku endla na ku fambafambisa miri ya vona).
- ◆ Michumu ya hlengeletywa u endla vuyimeri bya nomboro hi tindlela to hambanahambana. Michumu leyi yi vekiwa eka ndhawu ya matematiki.
- ◆ Vadyondzi va pananisa michumu eka swifaniso, makhadi ya mathonsi, mifungo ya tinomboro na mavito ya nomboro
- ◆ *Buku ya Tiphositara* yi nyika mivangu ya vutomi bya xiviri ku nyanyula nkanelo na ku khutaza ku ololoxa swiphiso.

Nomboro ya 'n'we' ya tivisiwa eka vhiki ra vumbirhi ra Kotara ya 1 ku toloveta vadyondzi na nghingiriko lowa siku na siku. Nghingiriko lowa siku na siku wu tirhisiwa tanihiloko nomboro yintshwa yi tivisiwa, ku engeteriwa n'we ehenhla ka nomboro leyi vadyondzi va yi dyondzeke eka nkarhi lowu nga hundza.

Before completing the next activity, interact with the facilitator as she tells the story for number 1 and builds up the number frieze using the house template and animal frieze cards. After listening to the story, complete Activity 11.



### Activity 6

What are the different ways that the number 1 was represented in the story?

---

---

---

---

Ku nga si hetisiwa nghingiriko lowu landzelaka, vulavurisana na muhumelerisi loko a ri karhi a rungula xitori xa nomboro ya 1 na ku aka xipendiwankhavisio xa tinomboro hi ku tirhisa thempuleti na makhadi ya swipendiwankhavisio swa swiharhi tinomboro. Endzhaku ka ku yingisela xitori lexi, hetisa Nghingiriko wa 11.



### **Nghingiriko wa 6**

Xana hi tihi tinomboro to hambanahambana leti nomboro ya 1 yi yimeriweke hatona exitorini?

---

---

---

---

## **Session 3: Implementing the five-group teaching model**

**2 hours**

We have already discussed how to organise your classroom for maths teaching and learning during Mathematics focus time. This section outlines how to plan and implement the Maths Programme and focuses on preparing for the teaching of Weeks 1 and 2 of Term 1.

### **Term 1 Content Summary (Weeks 1-2)**

**(1 hour)**

Appendix B: Term 1 Weekly Content Summary (Weeks 1-2) provides a summary of the content and offers suggestions for teaching and learning maths for each week with the following information:

- ◆ main Content Area Focus for the week
- ◆ topic(s) to be covered
- ◆ New knowledge and Practise focus for the week
- ◆ suggested activities for whole class and small groups (teacher-guided activity and workstation activities) for the week.

Read whole class activities, teacher-guided activity and workstation activities in Appendix B: Term 1 Weekly Content Summary (Weeks 1-2).



## **Sexini ya 3: Ku tirhisa modlolo wa madyondziselo ya milawu leya ntlhanu** 2 wa tiawara

Se hi kanerile hilaha u nga lulamisaka hakona kamara ra wena ro dyondzela ra ku dyondzisa na ku dyondza matematiki hi nkarhi wa nkongomo wa Matematiki. Xiyenge lexi xi katsakanya hilaha ku kunguhatiwaka na ku tirhisiwa hakona Nongonoko wa Matematiki naswona xi kongomisa eka ku lulamisela ku dyondzisiwa ka Mavhiki ya 1 na 2 ya Kotara ya 1.

### **Nkatsakanyo wa Vundzeni wa Kotara ya 1**

**(Mavhiki ya 1-2)**

**(1 ya awara)**

Xiengetelwa xa B: Nkomiso wa Vundzeni wa Vhiki na Vhiki wa Kotara ya 1 (Mavhiki ya 1-2) wu nyika nkomiso wa vundzeni naswona wu nyika swiringanyeto swa madyondziselo na madyondzelo ya matematiki ya vhiki rin'wana na rin'wana ku ri na vuxokoxoko lebyi landzelaka:

- ◆ Nkongomokulu wa Xiyenge xa Vundzeni wa vhiki
- ◆ (ti)nhlokomhaka leyi faneleke ku angarheliwa
- ◆ nkongomo wa Vutivi byintshwa na Titoloveti wa vhiki leri
- ◆ migingiriko leyi ringanyetiwaka ya tlilasi hinkwayo na mitlawo leyitsongo (nghingiriko lowu leteriwa hi mudyondzisi na migingiriko ya le ka xitichi xo tirhela) ya vhiki.

Hlaya migingiriko ya tlilasi hinkwayo, nghingiriko lowu leteriwa hi mudyondzisi na migingiriko ya le ka xitichini xo tirhela leyi nga eka Xiengetelwa xa B: Nkomiso wa Vundzeni wa Vhiki na Vhiki wa Kotara ya 1 (Mavhiki ya 1-2).



### Activity 7

Look at Appendix B: Term 1 Weekly Content Summary (Weeks 1–2). Answer the questions.

Questions	Week 1	Week 2
What is the Content Area Focus for the week?		
What are the key concepts that learners will be learning?		
What new knowledge is introduced?		
What skills are being practised in Week 2?		



## Nghingiriko wa 7

Languta Xiengetelwa xa B: Nkomiso wa Vundzeni wa Vhiki na Vhiki wa Kotara ya 1 (Mavhiki ya 1-2). Hlamula swivutiso leswi.

Swivutiso	Vhiki ra 1	Vhiki ra 2
Xana hi wihi Nkongomo wa Xiyenge xa Vundzeni wa vhiki leri?		
Xana hi yihi minongotikulu leyi vadyondzi va nga ta va va ri eku yi dyondzeni?		
Xana i vutivi byintshwa muni byi tivisiwaka?		
Xana i swikili swihi swi vaka swi titolovetiwa?		

## Activity Guide: Term 1

The *Activity Guides* provide Grade R teachers with a structure and framework and offer weekly suggestions for maths teaching and learning.

Refer to Weeks 1 and 2 in *Activity Guide: Term 1* and the Weekly Content Summary in Appendix B. Complete Activity 13 in your group.



### Activity 8

1. Look at *Activity Guide: Term 1* and add the information to the table.

<b>Race around <i>Activity Guide: Term 1</i></b>	
What is on pages 6, 8 and 10?	
On which page is the 'Our classroom rules' poster?	
On which pages is the content overview for Term 1?	
What information is at the start of each new week?	
Find the <i>Grade R Maths family story</i> .	
Which song is introduced in Week 2?	
Find where number 1 is introduced.	
Find a whole class activity that focuses on oral counting.	
Find a teacher-guided activity that focuses on one-to-one correspondence.	
Find a workstation activity that focuses on consolidating the number concept '1'.	

2. Refer to the whole class activities, teacher-guided activity and workstation activities in Appendix B. Find these activities in *Activity Guide: Term 1*.

## Xiletelo xa Migingiriko: Kotara ya 1

Swiletelo swa Migingiriko swi nyika vadyondzisi va Giredi ya V xivumbeko na rimba na ku nyika swiringanyeto swa vhiki na vhiki swa madyondziselwa na madyondzelo ya matematiki.

Kongomisa eka Mavhiki ya 1 na 2 eka *Xiletelo xa Migingiriko: Kotara ya 1* na Nkomiso wa Vundzeni wa Vhiki na Vhiki lowu nga eka Xiengetelwa xa B. Hetisani Nghingiriko wa 13 entlaweni wa n'wina.



### Nghingiriko wa 8

1. Languta *Xiletelo xa Migingiriko: Kotara ya 1* na ku engetela vuxokoxoko etafuleni.

Tsutsumisa mahlo eka <i>Xiletelo xa Migingiriko: Kotara ya 1</i>	
Xana i yini leswi nga eka tipheji ta , 9 na 11?	
Xana phositara ya 'Milawu ya kamara ro dyondzela ra hina' yi le ka pheji yihi?	
Xana nkatsakanyo wa vundzeni wa Kotara ya 1 wu le ka tipheji tihi?	
Xana i vuxokoxoko muni lebyi byi nga emasungulweni ya vhiki rintshwa rin'wana na rin'wana?	
Kuma <i>Xitori xa ndyangu xa Matematiki ya Giredi ya V.</i>	
Xana i risimu rihi ri tivisiwaka eka Vhiki ra 2?	
Kuma laha nomboro ya 1 yi tivisiwaka kona.	
Kuma nghingiriko wa tilasi hinkwayo lowu wu kongomisaka eka ku hlayela ka swanomu.	
Kuma nghingiriko lowu leteriwaka hi mudyondzisi lowu wu kongomisaka eka ku yelana ka xin'we-eka-xin'we.	
Kuma nghingiriko wa le ka xitichi xo tirhela lowu wu kongomisaka eka ku tiyisa nongoti wa nomboro ya '1'.	

2. Kongomisa eka migingiriko ya tilasi hinkwayo, nghingiriko lowu leteriwaka hi mudyondzisi na migingiriko ya le ka xitichi xo tirhela leyi nga eka Xiengetelwa xa B. Kuma migingiriko leyi eka *Xiletelo xa Migingiriko: Kotara ya 1*.



In Grade R assessment is informal and continuous. We need to observe learners throughout the day, inside and outside the classroom.

The Maths Programme is designed around the rotation of small groups during a week and the teacher pays special attention to one group a day, watching and listening as the learners complete specific tasks. This time gives the teacher the opportunity to carefully observe each learner and gather information on their progress.

Look at the shaded block at the end of the teacher-guided activity in Week 2: '**Check that learners are able to**'. The eye icon reminds us that we need to observe the learners while they are busy, and we need to listen carefully while they are talking to us and to their peers.

The teacher makes a mental note of each learner and once the learners have left for the day, she writes down her observations in a dedicated observation book that has space for each learner's notes.

### Poster Book and Resource Kit

(10 minutes)

The *Resource Kit* has enough apparatus for a small group of six to eight learners. The apparatus that will be used in Term 1 Weeks 1 and 2 includes:

- ◆ counters: animal and fruit counters
- ◆ number cards: number symbol (1) and number word (one).

You will each receive a *Resource Kit* and a *Poster Book*.

Refer to pages 6–17 of *Activity Guide: Term 1* to read about classroom resources and setting up a maths learning environment.



Eka Giredi ya V makambebelelo i ya nkamafundza na lama yaka emahlweni. Hi fanele ku xiyaxiya vadyondzi esikwini hinkwaro, endzeni na le handle ka kamara ro dyondzela.

Nongonoko wa Matematiki wu endlwile hi mayelana na ncincano wa mitlawa leyitsongo evhikini naswona mudyondzisi u kongomisa miehleketo eka ntlawa wun'we hi siku, a hlalela na ku yingisela loko vadyondzi va ri karhi va hetisa swintirhwana swo karhi. Nkarhi lowu wu nyika mudyondzisi xivandlanene xa ku xiyaxiya hi vukheta mudyondzi un'wana na un'wana na ku hlengeleta vuxokoxoko hi mayelana na ku ya emahlweni ka yena.

Languta buloko leyi dzwihatiweke emakumu ka ngingiriko lowu leteriweke hi mudyondzisi eka Vhiki ra 2: '**Kamba leswaku vadyondzi va kota ku**'. Mfungho wa tihlo wu hi tsundzuxa leswaku hi fanele ku xiyaxiya vadyondzi loko va ri eku tirheni, naswona hi fanele ku yingisela hi vukheta loko va ri eku vulavuleni na hina na tintangha ta vona.

Mudyondzisi u endla noti ya miehleketo ya mudyondzi un'wana na un'wana naswona xikan'wekan'we loko vadyondzi va humile eka siku rolero, u tsala mixiyaxiyo ya yena eka buku ya mixiyaxiyo leyi a endleriweke yona leyi yi nga na tinotsi ta mudyondzi un'wana na un'wana.

## **Buku ya Tiphositara na Khiti ya Swipfuno**

**(10 ra timinete)**

*Khiti ya Swipfuno* yi na switirhisiwa swo enela swa ntlawa lowutsongo swa tsevu kufika eka nhungu wa vadyondzi. Switirhisiwa leswi swi nga ta tirhisiwa eka Mavhiki ya 1 na 2 Kotara ya 1 swi katsa:

- ◆ swihlayeri: swihlayeri swa swiharhi na swihlayeri swa mihandzu
- ◆ makhadi ya tinomboro: mfungho wa nomboro (1) na rito ra nomboro (n'we).

Un'wana na un'wana u ta kuma *Khiti ya Swipfuno* na *Buku ya Tiphositara*.

Kongomisa tipheji ta 6-17 ta *Xiletelo xa Migingiriko: Kotara ya 1* ku hlaya hi mayelana na swipfuno swa le kamareni ro dyondzela na ku lulamisa mbangu wo dyondzela matematiki.



Activity 9

**Lessons learnt:** Think about what you learnt during the workshop and complete the table.

Things I am already doing that work well	New ideas that I would like to try



**Take back to school task**

1. Read the *Concept Guide* pages that were referred to during this workshop.
2. Use *Activity Guide: Term 1* to plan and implement Weeks 1–2 of the Maths Programme.
3. Reflect on how the Maths Programme’s guiding principles informed teaching and learning in your classroom.
4. Set up a maths area. Take a photograph of it and bring it to the next workshop.







**Nghingiriko wa 9**

**Tidyondzotsongo leti dyondziweke:** Ehleketa hi mayelana na leswi u swi dyondzeke hi nkarhi wa ndzetelavutivi kutani u hetisa tafula leri.

Swilo leswi ndzi swi endlaka leswi swi tirhaka kahle swinene	Mianakanyo yintshwa leyi ndzi tsakelaka ku yi ringeta



**Xintirhwana xo tlhelela na xona exikolweni**

1. Hlaya tipheji ta *Xiletelo xa Minongoti* leti ku kongomisiweke eka tona hi nkarhi wa ndzetelavutivi.
2. Tirhisa *Xiletelo xa Migingiriko: Kotara ya 1* ku kunguhata na ku tirhisa Mavhiki ya 1-2 ya Nongonoko wa Matematiki.
3. Ehleketisisa hi mayelana na hilaha milawu yo letela ya Nongonoko wa Matematiki yi leteleka madyondziselo na madyondzelo ekamareni ro dyondzela ra wena.
4. Lulamisa ndhawu ya matematiki. Teka xinepe xa yona kutani u ta na xona eka ndzetelavutivi lowu landzelaka.



**Bring the following to the next workshop:**

- ◆ *Poster Book*
- ◆ *Concept Guide*
- ◆ *Activity Guide: Term 1.*

**Evaluation**

Complete the Evaluation Form.

**Tana na leswi landzelaka eka ndzetelavutivi lowu landzelaka:**

- ◆ *Buku ya Tiphositara*
- ◆ *Xiletelo xa Minongoti*
- ◆ *Xiletelo xa Migingiriko: Kotara ya 1*

**Nkambelo**

Tatisa Fomo leya Nkambelo.

## APPENDIX B: TERM 1 WEEKLY CONTENT SUMMARY (WEEKS 1-2)

### Term 1: Activity Plan

Week 1				
<b>CONTENT AREA: NUMBERS, OPERATIONS AND RELATIONSHIPS</b>				
<b>TOPIC: Oral counting and counting objects</b>				
<b>INTRODUCE NEW KNOWLEDGE:</b> Oral counting 1–5, counting objects 1–3, one-to-one correspondence, sequencing daily programme				
Whole class activities		Teacher-guided activity	Workstation activities	
<b>Day 1</b>	Routine, class rules, learner symbols and daily programme.	No teacher-guided small group activity in the first week to allow the teacher to rotate between all five workstations: guiding, assisting and encouraging the learners.  Some learners may not have seen or used the equipment before so the teacher will need to demonstrate and support their first attempts.	<b>Activity 1</b>  <b>Activity 2</b> <b>Activity 3</b> <b>Activity 4</b> <b>Activity 5</b>	Sorting animal and fruit counters by colour (from the <i>Resource Kit</i> ).  Playdough or clay modelling.  Draw a picture.  Six-piece puzzle.  Building blocks.
<b>Day 2</b>	Helper's chart, rhyme, <i>Grade R Maths family story</i> .			
<b>Day 3</b>	Helper's chart, Tidy-up chart, rhyme, oral counting and the <i>Grade R Maths family story</i> .			
<b>Day 4</b>	Rhyme, oral counting, counting objects, sequencing daily events, bowls.			
<b>Day 5</b>	Rhyme, oral counting, learners' symbols.			
Week 2				
<b>CONTENT AREA: NUMBERS, OPERATIONS AND RELATIONSHIPS</b>				
<b>TOPIC: Number symbols and number words</b>				
<b>INTRODUCE NEW KNOWLEDGE:</b> Introduce number 1, solving problems in everyday contexts (rhymes and posters)				
<b>PRACTISE:</b> Oral counting 1–5, counting objects 1–3, vocabulary from previous week				
Whole class activities		Teacher-guided activity	Workstation activities	
<b>Day 1</b>	Song, oral counting, introduce number 1 and the number 1 frieze, body parts ('how many?' games), find one object.	Support learners in their efforts to complete tasks. Ask guiding questions and encourage learners to share their ideas.  Count objects: one-to-one correspondence.  Sort animal counters according to colour.  Match number 1 symbol and word cards with dot card and animal counters.	<b>Activity 1</b> <b>Activity 2</b>  <b>Activity 3</b> <b>Activity 4</b>	Matching counters to dots using egg boxes.  Make one playdough object and draw it.  'One' template using playdough.  Building blocks.
<b>Day 2</b>	Song, oral counting, frieze for number 1, body games.			
<b>Day 3</b>	Song, oral counting, counting objects, reinforce number 1, look for 1 object.			
<b>Day 4</b>	Rhyme, oral counting, problem solving – poster story.			
<b>Day 5</b>	Rhyme, oral counting, counting objects in the poster, solving problems.			

## XIENGETELWA XA B: NKOMISO WA VUNDZENI WA VHIKI NA VHIKI WA KOTARA YA 1 (MAVHIKI YA 1-2)

### Kotara ya 1: Kungu ra Migingiriko

Vhiki ra 1				
<b>XIYENGE XA VUNDZENI: TINOMBORO, TIOPAREXINI NA VUXAKA</b>				
<b>NHLOKOMHAKA: Ku hlayela ka swanomu na ku hlayela michumu</b>				
<b>TIVISA VUTIVI BYINTSHWA:</b> Ku hlayela ka swanomu 1-5, ku hlayela michumu 1-3, ku yelana ka xin'we-eka-xin'we, ku longoloxela nongonoko wa siku na siku				
Migingiriko ya tllasi hinkwayo		Nghingiriko lowu leteriwaka hi mudyondzisi	Migingiriko ya le ka xitichi xo tirhela	
<b>Siku ra 1</b>	Migingiriko ya siku na siku, milawu ya tllasi, mifungo ya vadyondzi na nongonoko wa siku na siku.	A ku na nghingiriko wa mitlawa leyitsongo leyi leteriwaka hi mudyondzisi eka vhiki ro sungula ku pfumelela ku rhendzeleka exikarhi ka switichi swo tirhela leswa ntlhanu hinkwaswo: letela, pfuneta na ku khutaza vadyondzi lava. Vadyondzi van'wana va nga ha va va nga vonani kumbe va nga tirhisangi switirhisiwa leswi eka nkarhi lowu nga hundza hikokwalaho mudyondzisi u ta fanela ku kombisa na ku seketela miringeto ya vona yo sungula.	<b>Nghingiriko wa 1</b>	Ku ava swihlayeri swa swiharhi na swihlayeri swa mihandzu hi muhlovo (kusuka eka <i>Khiti ya Swipfuno</i> ).
<b>Siku ra 2</b>	Chatu ya mupfuni, rhayimi, <i>Xitori xa ndyangu xa Matematiki ya Giredi ya V.</i>		<b>Nghingiriko wa 2</b>	Vumba byo tlangisa kumbe vumba byo modlola.
<b>Siku ra 3</b>	Chatu ya mupfuni, Chatu yo basisa, rhayimi, ku hlayela ka swanomu na <i>Xitori xa ndyangu xa Matematiki ya Giredi ya V.</i>		<b>Nghingiriko wa 3</b>	Dirowa xifaniso.
<b>Siku ra 4</b>	Rhayimi, nhlayelo wa nomu, ku hlayela michumu, ku longoloxela swiendleko swa siku na siku, mikambana.		<b>Nghingiriko wa 4</b>	Xiphazamiso xa swiphemu swa tsevu.
<b>Siku ra 5</b>	Rhayimi, ku hlayela ka swanomu, mifungo ya vadyondzi.		<b>Nghingiriko wa 5</b>	Tibuloko to aka
Vhiki ra 2				
<b>XIYENGE XA VUNDZENI: TINOMBORO, TIOPAREXINI NA VUXAKA</b>				
<b>NHLOKOMHAKA: Mifungo ya tinomboro na mavito ya tinomboro</b>				
<b>TIVISA VUTIVI BYINTSHWA:</b> Tivisa nomboro ya 1, ku ololoxa swiphiko eka mivangu ya masiku hinkwawo (tirhayimi na tiphositara)				
<b>TITOLOVETI:</b> Ku hlayela ka swanomu 1-5, ku hlayela michumu 1-3, ntivomarito kusuka eka vhiki leri nga hundza				
Migingiriko ya tllasi hinkwayo		Nghingiriko lowu leteriwaka hi mudyondzisi	Migingiriko ya le ka xitichi xo tirhela	
<b>Siku ra 1</b>	Risimu, ku hlayela ka swanomu, tivisa nomboro ya 1 na xipendiwankhavisu xa nomboro ya 1, swirho swa miri (mitlangu ya 'i swingani?'), kuma nchumu wun'we.	Seketela vadyondzi eka matshalatshala ya vona ku hetisa swintirhwana. Vutisa swivutiso swo letela na ku khutaza vadyondzi ku avelana mianakanyo. Hlayela michumu: ku yelana ka xin'we-eka-xin'we. Ava swihlayeri swa swiharhi hi ku ya hi muhlovo. Pananisa makhadi ya mifungo ya nomboro ya 1 na makhadi ya marito ya nomboro ya 1 na makhadi ya mathonsi na swihlayeri swa swiharhi.	<b>Nghingiriko wa 1</b>	Ku pananisa swihlayeri eka mathonsi hi ku tirhisa mabokisi ya mandza.
<b>Siku ra 2</b>	Risimu, ku hlayela ka swanomu, xipendiwankhavisu xa nomboro ya 1, mitlangu ya miri.		<b>Nghingiriko wa 2</b>	Endla nchumu wa vumba byo tlangisa swin'we na ku wu dirowa.
<b>Siku ra 3</b>	Risimu, ku hlayela ka swanomu, ku hlayela michumu, tiyisisa nomboro ya 1, lava nchumu wu1.		<b>Nghingiriko wa 3</b>	Thempuleti 'yin'we' hi ku tirhisa vumba byo tlangisa.
<b>Siku ra 4</b>	Rhayimi, ku hlayela ka swanomu, ku ololoxa xiphiko - xitori xa phositara.		<b>Nghingiriko wa 4</b>	Tibuloko to aka.
<b>Siku ra 5</b>	Rhayimi, ku hlayela ka swanomu, ku hlayela michumu leyi nga ephositareni, ku ololoxa swiphiko.			

# Workshop 1 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?

---

---

---

---

# Fomo ya Nkambelo ya Ndzetelavutivi wa 1

1. Xana ndzetelavutivi lowu wu fikelerile swilanguteriwa swa wena?

---

---

---

---

2. Xana u dyondzile yini eka ndzetelavutivi lowu wu ku pfuneke swinene?

---

---

---

---

3. Xana a ku ri na xilo xihhi kumbe xihhi lexi u nga xi tsakelangiki kumbe u veke na ku tikeriwa hi ku xi twisisa?

---

---

---

---

4. Xana u ta swi tirhisa njhani leswi u swi dyondzeke ekamareni ra wena ro dyondzela ra Giredi ya V?

---

---

---

---

5. Xana u na swiringanyeto swihhi kumbe swihhi swa ku antswisa miletelavutivi yo yisa emahlweni?

---

---

---

---