GAUTENG PROVINCE
EDUCATION
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GROWING GAUTENG TOGETHER

Xitsonga/English

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


## Ndzetelavutivi wa 5 ● Workshop 5
### Buku ya Ntirho ya 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.

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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 mutirhisaninkulu 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 endliwile swi koteka hi timali ta tiphurojeke to hananiwa kusuka eka **United States Agency for International Development** na **Zenex Foundation**.

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**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.
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Vuhundzuluxeri bya Xitsonga: Maurice Hlangwani
Vuhleri na vuhlayisisi bya Xitsonga: Gezani Chabalala
Swifaniso: Jiggs Snaddon-Wood

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## Overview



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# Overview

## Purpose

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

The purpose of this workshop is to assist teachers to continue to implement the Maths Programme in their classrooms, to strengthen their understanding of teaching and learning in the Content Areas covered in Term 2 Weeks 4–7 and to reflect on how they are putting the guiding principles of teaching maths into practice in their classrooms.

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 1 Week 10 and Term 2 Weeks 1–3
- To explore strategies to support teaching maths in Grade R
- To reflect on the Maths Programme's guiding principles of teaching
- To engage with the Maths Programme content for Term 2 Weeks 4–7 (Space and Shape (Geometry); Numbers, Operations and Relationships; Patterns, Functions and Algebra; and Data Handling)
- To discuss appropriate observation and assessment in Grade R

## Workshop content

- Opening and reflection (1 hour)
- Session 1: Space and Shape (Geometry) (1 hour)

TEA

- Session 2: Numbers, Operations and Relationships (1 hour)
- Session 3: Patterns, Functions and Algebra (1 hour)

LUNCH

- Session 4: Data Handling (1 hour)
- Closing activities (1 hour)

# Nkatsakanyo

## Xikongomelo

Lowu i wa vuntlhanu wa khumembirhi ya miletelavutivi ya Nongonoko wa Antswiso wa Matematiki wa Giredi ya V, 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).

Xikongomelo xa ndzetelavutivi lowu i ku pfuna vadyondzisi ku tirhisa Nongonoko wa Matematiki etikamareni to dyondzela ta vona, ku tiyisa ntwisiso wa vona wa madyondziselo na madyondzelo eka Swiyenge swa Vundzeni leswi angarheliwaka eka Mavhiki ya 4–7 ya Kotara ya 2 na ku ehleketisisa hi mayelana na hilaha va tirhisaka hakona milawu yo letela ya ku dyondzisa matematiki etikamareni ta vona to dyondzela.

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

## Mivuyelo ya dyondzo

- Ku ehleketisisa hi matirhelo ya Vhiki ra 10 ra Kotara ya 1 na Mavhiki ya 1–3 ya Kotara ya 2
- Ku valanga maqhinga yo seketela ku dyondzisa matematiki eka Giredi ya V
- Ku ehleketisisa hi milawu yo letela ya madyondziselo ya Nongonoko wa Matematiki
- Ku tirhana na vundzeni bya Nongonoko wa Matematiki Mavhiki ya 4–7 ya Kotara ya 2 (Ndhawu na Xivumbeko (Jometiri); Tinomboro, Tioparexini na Vuxaka, Tipatironi, Tifankixini na Alijebura; na Matirhiselo ya Vuxokoxoko bya Tinhlayo)
- Ku kanela nxiyaxiyo na makambelelo lama nga fanela eka Giredi ya V

## Vundzeni bya ndzetelavutivi

- Ku pfula na ku ehleketisisa (1 ya awara)
- Sexini ya 1: Ndhawu na Xivumbeko (Jometiri) (1 ya awara)

TIYA

- Sexini ya 2: Tinomboro, Tioparexini na Vuxaka (1 ya awara)
- Sexini ya 3: Tipatironi, Tifankixini na Alijebura (1 ya awara)

LANCI

- Sexini ya 4: Matirhiselo ya Vuxokoxoko bya Tinhlayo (1 ya awara)
- Migingiriko yo pfala (1 ya awara)

# Opening and reflection **1 hour**

The **inclusivity principle:** All learners should feel welcome, included and happy to participate. Remember to treat all learners fairly and with respect.

Reflect on your implementation of the Maths Programme in your daily programme and complete the following activity.

 **Activity 1**

Discuss your progress in implementing the *Take back to school* task from Workshop 4.

1. What progress in maths did you observe in your learners after implementing Term 1?

_____
_____
_____

2. How did the information in the 'Check that learners are able to' in *Activity Guide: Term 1* assist you in assessing each learner's progress in Term 1?

_____
_____
_____

3. Did you successfully record each learner's progress using 'Term 1: Exemplar Record of Continuous Assessments' on pages 190–193 of *Activity Guide: Term 1*?

_____
_____
_____

# Ku pfula na ku ehleketisisa

**1 ya awara**

**Nawu wa nkatsahinkwavo**: Vadyondzi hinkwavo va fanele ku titwa va amukelekile, va katsiwile na ku tsaka ku teka xiave. Tsundzuka ku khoma vadyondzi hinkwavo hi ndlela leyinene na hi nxiximo.

Ehleketisisani hi mayelana na matirhiselo ya Nongonoko wa Matematiki eka nongonoko wa wena wa siku na siku kutani u hetisa nghingiriko lowu landzelaka.

**Nghingiriko wa 1**

Kanelani ku ya emahlweni ka n'wina eka ku tirhisa *Xintirhwana xo tlhelela na xona exikolweni* kusuka eka Ndzetelavutivi wa 4.

1. Xana i ku ya emahlweni kwihi loku u ku xiyaxiyeke eka vadyondzi va wena endzhaku ka ku tirhisa Kotara ya 1?

_____
_____
_____

2. Xana vuxokoxoko lebyi nga eka 'Kamba leswaku vadyondzi va kota ku' eka *Xiletelo xa Migingiriko: Kotara ya 1* ku ku pfuneta eka ku kambela ku ya emahlweni ka mudyondzi un'wana na un'wana eka Kotara ya 1?

_____
_____
_____

3. Xana u rhekodile hi ndlele leyi humelelaka ku ya emahlweni ka mudyondzi un'wana na un'wana hi ku tirhisa 'Kotara ya 1: Rhekodo ya Xikombiso ya Makambelelo lama Yaka Emahlweni' eka tipheji ta 190–193 ta *Xiletelo xa Migingiriko: Kotara ya 1*?

_____
_____
_____

**Video 1**

Watch the video of the teacher discussing observation and assessment in her Grade R classroom.

What do you think the intention of the activity is? Pay special attention to how the teacher prompts the learners with questions and how she observes each learner.

_____
_____
_____

**Activity 2**

In your small groups, discuss:

1. How you are managing assessment in your classroom.
2. How you use rubrics in your assessment process.
3. How you incorporate the School Based Assessments (SBA) and SA-SAMS online system as part of your assessment process.

Write down the main points of your discussion to share with the whole group. Consider what works well and where you have challenges with assessment.

_____
_____
_____
_____

The **level principle:** Some learners may need more practice and support than other learners. Be sure to allow learners enough time and support to complete activities, to think and to answer questions.

**Vhidiyo ya 1**

Hlalelani vhidiyo ya mudyondzisi loyi a kanelaka nxiyaxiyo na makambelelo ekamareni ro dyondzela ra yena ra Giredi ya V.

Xana u ehleketa leswaku i yini xikongomelo xa nghingiriko lowu? Kongomisa miehleketo swinenenene eka hilaha mudyondzisi a seketelaka vadyondzi hi swivutiso na hilaha a xiyaxiyaka hakona mudyondzi un'wana na un'wana.

_____
_____
_____

**Nghingiriko wa 2**

Emitlaweni ya n'wina leyitsongo, kanelani:

1. Hilaha u lawulaka hakona makambelelo eka kamara ro dyondzela ra wena.
2. Hilaha u tirhisaka hakona tirhubiriki eka endlelo ra wena ra makambelelo.
3. Hilaha u katsaka hakona School Based Assessments (SBA) na tisisiteme ta le ka inthanete ta SA-SAMS tanihi xiphemu xa endlelo ra wena ra makambelelo.

Tsalani timhakakulu ta nkanelo wa n'wina ku avelana na ntlawa hinkwawo. Anakanya hi leswi swi tirhaka kahle swinene na laha u vaka na mitlhontlho kona hi makambelelo.

_____
_____
_____
_____

**Nawu wa levhele**: Vadyondzi van'wana va nga ha lava vutitoloveti byo tala na nseketelo wo tala kutlula van'wana. Tiyisisa leswaku u pfumelela vadyondzi nkarhi wo enela na nseketelo wo tala ku hetisa migingiriko, ku ehleketa na ku hlamula swivutiso.

# Session 1: Space and Shape (Geometry) **1 hour**

## Term 2 Content overview: Space and Shape (Geometry)

This session focuses on teaching the content of Term 2 Week 4 – Space and Shape (Geometry). Remember that Space and Shape (Geometry) was also the focus of Week 3 which we covered in Workshop 4.

Read the content overview for Space and Shape (Geometry) on pages 126–131 of the *Concept Guide* and complete Activity 3.

 **Activity 3**

What Space and Shape concepts are presented in 3.1 and 3.2 of the content overview?

_____

_____

_____

In Grade R learners describe, sort and compare 3-D objects and focus on the similarities and differences between them. In Term 2 Week 4 learners sort, compare and describe 3-D objects according to size, colour and shape. They also look at and describe objects in relation to themselves and each other and from different positions (orientation and views). Another focus in Week 4 is on following directions and using vocabulary associated with position.

 **Activity 4**

1. Discuss how you could use objects in your classroom to encourage learners to talk about their position in relation to the objects they are looking at.

_____

_____

_____

_____

_____

# Sexini ya 1: Ndhawu na Xivumbeko (Jometiri)

**1 ya awara**

## Nkatsakanyo wa Vundzeni wa Kotara ya 2: Ndhawu na Xivumbeko (Jometiri)

Sexini leyi yi kongomisa eka ku dyondzisa vundzeni bya Vhiki ra 4 ra Kotara ya 2 – Ndhawu na Xivumbeko (Jometiri). Tsundzuka leswaku Ndhawu na Xivumbeko (Jometiri) swi tlhele swi va nkongomo wa Vhiki ra 3 lowu hi wu angarheleke eka Ndzetelavutivi wa 4.

Hlaya nkatsakanyo wa vundzeni wa Ndhawu na Xivumbeko (Jometiri) lowu nga eka tipheji ta 126–131 ta *Xiletelo xa Minongoti* kutani u hetisa Nghingiriko wa 3.

**Nghingiriko wa 3**

Xana i minongoti yihi ya Ndhawu na Xivumbeko yi nyikiweke eka 3.1 na 3.2 ya nkatsakanyo wa vundzeni?

_____
_____
_____

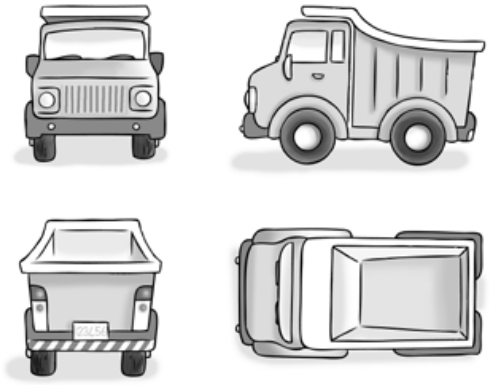
Eka Giredi ya V vadyondzi va hlamusela, va ava na ku fananisa michumu ya 3-D naswona va kongomisa eka ku fanana na ku hambana exikarhi ka yona. Eka Vhiki ra 4 ra Kotara ya 2 vadyondzi va ava, va fananisa na ku hlamusela michumu ya 3-D hi ku ya hi sayizi, muhlovo na xivumbeko. Va tlhela va languta na ku hlamusela michumu hi ku yelana na vona vini na kusuka eka swiyimo swo hambanahambana (vonakelo na mavonelo). Nkongomo wun'wana eka Vhiki ra 4 wu le ka matlhelo lama landzelaka na ku tirhisa ntivomarito lowu fambelanaka na xiyimo.

**Nghingiriko wa 4**

1. Kanelani hilaha mi nga tirhisa hakona michumu leyi nga ekamareni ro dyondzela ra n'wina ku khutaza vadyondzi ku vulavula hi mayelana na xiyimo xa vona hi ku yelana na michumu leyi va nga yi languta.

_____
_____
_____
_____
_____

2. Look at the pictures. Describe where you would stand in order to see each of the views of the truck.



_____

_____

## Term 2 Week 4

Refer to the teacher-guided activity on pages 80–83 of *Activity Guide: Term 2*.

**Activity 5**

1. Which Space and Shape concepts are presented?

_____

_____

_____

_____

_____

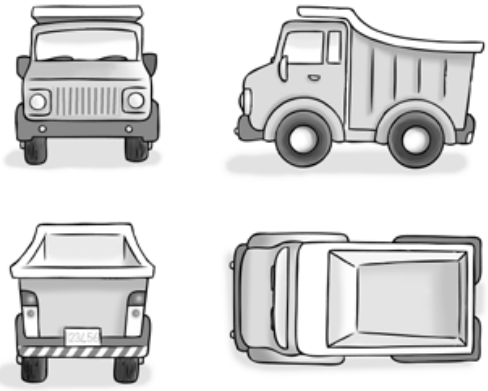
2. Give examples of guiding questions that are asked in the teacher-guided activities. Will these questions encourage learners to talk about the concepts in question 1?

_____

_____

_____

2. Languta swifaniso leswi. Hlamusela laha u nga ta yima kona leswaku u kota ku vona rin'wana na rin'wana ra matlhelo ya tiraka.



_____

_____

## Vhiki ra 4 ra Kotara ya 2

Kongomisa eka nghingiriko lowu leteriwaka hi mudyondzisi lowu nga eka tipheji ta 80–83 ta *Xiletelo xa Migingiriko: Kotara ya 2*.

### Nghingiriko wa 5

1. Xana i minongoti yihi ya Ndhawu na Xivumbeko yi andlariweke?

_____

_____

_____

_____

_____

2. Nyika swikombiso swa swivutiso swo letela leswi swi vutisiwaka eka migingiriko leyi leteriwaka hi mudyondzisi. Xana swivutiso leswi swi ta khutaza vadyondzi ku vulavula hi mayelana na minongoti leyi nga eka xivutiso xa 1?

_____

_____

_____

Learners need many opportunities to play with and sort collections of 3-D objects. Teachers need to understand the underlying concepts in Space and Shape (Geometry) and communicate these using the correct maths language.

The following points should be remembered.

- An object is three-dimensional (3-D). You can look at it from the top, the bottom and the sides. 3-D objects have length, breadth (width) and height.
- A shape is two-dimensional (2-D). Shapes include circles, triangles, squares and rectangles. They have length and breadth (width).
- As learners explore the properties of 3-D objects they will identify objects that 'look like' 2-D shapes, e.g. the door looks like a rectangle, the road sign looks like a triangle, the plate looks like a circle. They will start to understand that the surfaces of 3-D objects look like 2-D shapes.

The **interaction principle:** Learning involves communication and the sharing of ideas. Responding in an appropriate way to something is a very important part of communication and of teaching and learning. Always listen to learners when they share their ideas or respond to your questions.

## Term 2 Content Summary (Week 4)

 **Activity 6**

Refer to Appendix A: Term 2 Weekly Content Summary (Weeks 4–7). Read the content overview for Week 4: Space and Shape (Geometry) on page 10 of *Activity Guide: Term 2*.

1. What are the topics for Week 4?

_____

_____

2. What new knowledge is introduced in this week?

_____

_____

_____

3. What skills from previous weeks are practised?

_____

_____

_____

Vadyondzi va lava swivandlanene swo tala ku tlanga hi swona na ku ava mihlengelo ya michumu ya 3-D. Vadyondzisi va fanele ku twisisa minongoti ya masungulo leyi nga eka Ndhawu na Xivumbeko (Jometiri) kutani va yi tivisa hi ku tirhisa ririmi ra matematiki leri nga lulama.

Timhaka leti landzelaka ti fanele ku tsundzukiwa.

- Nchumu wu na matlhelo manharhu (3-D). U nga wu languta kusuka ehenhla, ehansi na le matlhelo. Michumu ya 3-D yi na vulehi, vuanami na vulehelahenhla. vulehi, vuanami (anama) na vulehelahenhla.
- Xivumbeko xi na matlhelo mambirhi (2-D). Swivumbeko swi katsa swirhendzevutana, tinhlanharhu, swikwere na tinhlamune. Swi na vulehi na vuanami. vulehi na vuanami (anama).
- Tanihiloko vadyondzi va ri karhi va valanga swihlawulekisi swa michumu ya 3-D va ta kuma michumu leyi yi 'langutekaka ku fana na' swivumbeko swa 2-D, xik. rivanti ri languteka ku fana na yinhlamune, mfungho wa le magondzweni wu langutekaka ku fana na yinhlanharhu, puleti yi languteka ku fana na xirhendzevutana. Va ta sungula ku twisisa leswaku tshaku ra michumu ya 3-D ri languteka ku fana na swivumbeko swa 2-D.

**Nawu wa n'wangulano**: Ku dyondza swi khumba mbulavurisano na ku avelana ka miehleketo. Ku angula hi ndlela leyi faneleke eka swin'wana i xiphemu xa nkoka swinene xa mbulavurisano na xa madyondziselo na madyondzelo. Mikarhi hinkwayo yingisela vadyondzi loko va avelana mianakanyo ya vona kumbe va hlamula swivutiso.

## Nkatsakanyo wa Vundzeni wa Kotara ya 2 (Vhiki ra 4)

### Nghingiriko wa 6

Kongomisa eka Xiengetelwa xa A: Nkomiso wa Vundzeni wa Vhiki na Vhiki wa Kotara ya 2 (Mavhiki ya 4–7). Hlaya nkatsakanyo wa vundzeni wa Vhiki ra 4: Ndhawu na Xivumbeko (Jometiri) leswi nga eka pheji ya 10 ya *Xiletelo xa Migingiriko: Kotara ya 2*.

1. Xana hi tihi tinhlokomhaka ta Vhiki ra 4?

_____

_____

2. Xana i vutivi byintshwa byihi lebyi byi tivisiwaka eka vhiki leri?

_____

_____

_____

3. Xana i swikili swihi kusuka eka mavhiki lama nga hundza swi titolovetiwaka?

_____

_____

_____

# Session 2: Numbers, Operations and Relationships

**1 hour**

The focus of Term 2 Week 5 is Numbers, Operations and Relationships.

## Term 2 Content overview: Numbers, Operations and Relationships

Previous workshops have presented the Content Area Focus: Numbers, Operations and Relationships. In this session we look at the Term 1–4 content overview (*Concept Guide*, pages 114–123) again.

 **Activity 7**

What new numbers are introduced in Term 2?

_____

## Term 2 Week 5: Teaching number

The number 'five' is introduced in Term 2 Week 5. The Maths Programme encourages the use of numbers in different situations and the use of multiple representations, e.g. a symbol, a word, a picture, dot cards, counters, claps. The routine used for introducing each number engages learners in a routine that is familiar, predictable, fun and presents the number in different ways.

 **Activity 8**

Refer to the Week 5 whole class activities in *Activity Guide: Term 2* (pages 90–99). Describe the routine that is used to teacher the number '5'.

Day 1

_____
_____
_____
_____

Day 2

_____
_____
_____
_____

# Sexini ya 2: Tinomboro, Tioparexini na Vuxaka

**1 ya awara**

Nkongomo wa Vhiki ra 5 ra Kotara ya 2 i Tinomboro, Tioparexini na Vuxaka.

## Nkatsakanyo wa Vundzeni wa Kotara ya 2: Tinomboro, Tioparexini na Vuxaka

Miletelavutivi ya nkarhi lowu nga hundza yi nyikile Nkongomo wa Xiyenge xa Vundzeni: Tinomboro, Tioparexini na Vuxaka. Eka sexini leyi hi languta eka nkatsakanyo wa vundzeni wa Kotara ya 1–4 (*Xiletelo xa Minongoti*, tipheji ta 114–123) nakambe.

**Nghingiriko wa 7**

Xana i vamani tinomboro tintshwa leti tivisiwaka eka Kotara ya 2?

_____

## Vhiki ra 5 ra Kotara ya 2: Ku dyondzisa nomboro

Nomboro ya ‘ntlhanu’ yi tivisiwa eka Vhiki ra 5 ra Kotara ya 2. Nongonoko wa Matematiki wu khutaza ku tirhisa tinomboro eka swiyimo swo hambanahambana na ku tirhisa vuyimerinyingi, xik. mfungho, rito, xifaniso, makhadi ya mathonsi, swihlayeri, miphokotelo. Migingiriko ya siku na siku leyi tirhisiwaka ku tivisa nomboro yin’wana na yin’wana yi katsa migiriko ya siku na siku ya vadyondzi leyi nga toloveleka, ya vhumbeka, ya tsakisa naswona yi andlala nomboro hi tindlela to hambanahambana.

**Nghingiriko wa 8**

Kongomisa eka Vhiki ra 5 leri nga eka *Xiletelo xa Migingiriko: Kotara ya 2* (tipheji ta 90–99). Hlamusela nghingiriko wa siku na siku lowu tirhisiwaka ku dyondzisa nomboro ya ‘5’.

Siku ra 1

_____

_____

_____

_____

Siku ra 2

_____

_____

_____

_____

Day 3

_____
_____
_____
_____

Day 4

_____
_____
_____

_____

Day 5

_____
_____
_____
_____

## The number washing line

The numbers 1 to 5 were pegged onto the number washing line in the maths area as they were introduced in Term 1. It is only in Week 5 that learners actively engage with the number washing line. Many teachers put up number lines from 0 to 10 or even to 20 in the classroom before learners are able to count or recognise these numbers.

Initially the Maths Programme's focus on the number washing line is incidental. From Week 5 it is used to focus on sequencing (ordering) numbers and talking about the relationship between numbers.

Use the number washing line to:

- order and compare numbers e.g.:
  - What number comes before 3?
  - What number is between 3 and 5?
  - What number comes after 4?
- explore how numbers increase from left to right, and decrease from right to left.
- use maths language such as *before*, *after*, *between*.

In the video the facilitator demonstrates a washing line activity that supports the teaching of number.

Read the activity that introduces the washing line to learners on page 94 of *Activity Guide: Term 2*.

Siku ra 3

_____
_____
_____
_____

Siku ra 4

_____
_____
_____
_____

Siku ra 5

_____
_____
_____
_____

## Mugiva wa tinomboro

Tinomboro ta 1 kufika eka 5 a ti phekisiwile emugiveni wa tinomboro eka ndhawu ya matematiki loko ti ri karhi ti tivisiwa eka Kotara ya 1. Ko va ntsena eka Vhiki ra 5 leri vadyondzi va tirhaneke hi ku gingirika na mugiva wa tinomboro. Vadyondzisi vo tala va veketela tilayini ta tinomboro kusuka eka 0 kufika eka 10 kumbe hambi kufika eka 20 ekamareni ro dyondzela vadyondzi va nga si kota ku hlayela tinomboro leti.

Ekusunguleni nkongomo wa Nongonoko wa Matematiki eka mugiva wa tinomboro wo va xiwelo. Kusuka eka Vhiki ra 5 wu tirhisiwa ku kongomisa eka ku longoloxela (landzelelanisa) tinomboro na ku vulavula hi mayelana na vuxaka exikarhi ka tinomboro.

Tirhisa mugiva wa tinomboro ku:

- landzelelanisa na ku fananisa tinomboro xik.:
  - Xana i mani nomboro leyi yi taka emahlweni ka 3?
  - Xana i mani nomboro leyi yi nga exikarhi ka 3 na 5?
  - Xana i mani nomboro leyi yi taka endzhaku ka 4?
- valanga hilaha tinomboro ti engetelaka hakona kusuka eximatsini kuya exineneni, na ku hunguteka kusuka exineneni kuya eximatsini.
- tirhisa ririmi ra matematiki ro tanihi *emahlweni ka, endzhaku ka, exikarhi ka*.

Eka vhidiyo muhumelerisi u kombisa nghingiriko wa mugiva wa tinomboro lowu wu seketelaka madyondziselo ya nomboro.

Hlaya nghingiriko lowu wu tivisaka mugiva eka vadyondzi lowu nga eka pheji ya 94 ya *Xiletelo xa Migingiriko: Kotara ya 2*.

**Video 2**

Watch the video of the teacher using the number washing line to order the numbers 1 to 5. Notice how she scaffolds the activity and note the questions that she asks to prompt the learners.

Discuss the value of using a number washing line in Grade R.

_____
_____
_____
_____

**Sequencing numbers:** Learners place the numbers in the correct counting order. Learners see the number line each day and during incidental discussions talk about each number.
**Order:** Learners discuss the numbers in relation to each other. The teachers asks which number comes before, after or between other numbers. Learners use correct maths language to describe the position of the numbers in relation to each other.

## Structure beads

The structure beads in your *Resource Kit* come in lengths of 10 beads grouped in fives, according to colour (five red beads and five yellow beads).

Structure beads help learners to:

- automatically recognise the number of beads in a group without counting, e.g. '4'.
- understand that one number may be a combination of two or more other numbers, e.g. '4' is made up of 2 and 2 or 1 and 3.
- develop skills in counting on from a given number, e.g. start at 3 and count on to 5.
- begin to work with addition and subtraction.
- begin to work with bonds of ten.

In this next activity, use your 10 structure beads to explore different number combinations. Follow your facilitator's lead and respond to the questions as set out in Activity 9.

**Vhidiyo ya 2**

Hlalelani vhidiyo ya mudyondzisi loyi a tirhisaka mugiva wa tinomboro ku landzelelanisa tinomboro ta 1 kufika eka 5. Vonani hilaha a tirhisaka xikhafula hakona eka nghingiriko nakambe lemukani swivutiso leswi a swi vutisaka ku tlhontlha vadyondzi.

Kanelani hi nkoka wa ku tirhrisa mugiva wa tinomboro eka Giredi ya V.

_____
_____
_____
_____

**Ku longoloxela tinomboro:** Vadyondzi va veketela tinomboro hi nandzelelano wo hlayela lowu nga lulama. Vadyondzi va vona layini ya tinomboro siku rin'wana na rin'wana na hi nkarhi wa mbulavulo wa mikanelo ya xiwelo hi mayelana na nomboro yin'wana na yin'wana.
**Nandzelelano:** Vadyondzi va kanela tinomboro ku ya hi ku yelana ka tona. Mudyondzisi u vutisa leswaku i nomboro yihi leyi yi taka emahlweni ka, endzhaku ka kumbe exikarhi ka tinomboro tin'wana. Vadyondzi va tirhisa ririmi ra matematiki leri nga lulama ku hlamusela xiyimo xa tinomboro hi ku yelana ka tona..

## Vuhlalu bya swivumbeko

Vuhlalu bya swivumbeko lebyi nga eka *Khiti ya Swipfuno* ya wena byi ta hi vulehi bya 10 ra vuhlalu lebyi ntlawahatiweke hi vantlhanu, hi ku ya hi muhlovo (nthanu wa vuhlalu byo tshwuka na ntlhanu wa vuhlalu bya xitshopana).

Vuhlalu bya swivumbeko byi pfuna vadyondzi ku:

- lemuka xikan'wekan'we nhlayo ya vuhlalu lebyi nga entlaweni handle ko hlayela, xik. '4'.
- twisisa leswaku nomboro yin'we yi nga ha va nkatsano wa tinomboro tin'wana timbirhi kumbe kutlula, xik. '4' yi vumbiwa hi 2 na 2 kumbe 1 na 3.
- hluvukisa swikili eka ku hlayela kuya emahlweni kusuka eka nomboro leyi nyikiweke, xik. sungula eka 3 kutani u hlayela kuya emahlweni kufika eka 5.
- sungula ku tirha hi ku hlanganisa na ku susa.
- sungula ku tirha hi tibondo ta khume.

Eka nghingiriko lowu landzelaka, tirhisa vuhlalu bya swivumbeko bya 10 bya wena ku valanga eka mikatsano ya tinomboro to hambanahambana. Landzelela vurhangeri bya muhumelerisi wa wena kutani u hlamula swivutiso tanihilaha swi lulamisiweke hakona eka Nghingiriko wa 9.

**Activity 9**

1. Show me two beads.
2. Show me one more bead.
3. Show me one fewer than four beads.
4. Show me four beads. Now show me one more than four. How many do you have?
5. What did you do to make it one more?
6. Show me one fewer than five. How many do you have?
7. What did you do to make it one less?
8. Now take one away. How many do you have?
9. Add one. How many do you have?

Read the activity that introduces the structure beads to learners on page 100 of *Activity Guide: Term 2*, step 3. In groups, discuss this activity.

**Activity 10**

How does this structure bead activity help to develop the learners' number sense?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

The **practice principle:** Learners should have plenty of time to practise new skills and knowledge. When learners get regular practice in what they have already learnt, they get better at it and become more confident. They enjoy repetition and practice.

**Nghingiriko wa 9**

1. Ndzi kombi vuhlalu byimbirhi.
2. Ndzi kombi rihlalu rin'we ro engetela?
3. Ndzi kombi vuhlalu byitsongo hi rin'we eka mune wa vuhlalu.
4. Ndzi kombi vuhlalu bya mune. Sweswi ndzi kombe byo tala hi rin'we kutlula mune. Xana i byingani u nga na byona?
5. Xana hi swihi leswi u swi endleke ku byi endla byo tala hi rin'we?
6. Ndzi kombi byitsongo hi rin'we eka ntlhanu. Xana i byingani u nga na byona?
7. Xana hi swihi leswi u swi endleke ku byi endla byitsongo hi rin'we?
8. Sweswi susa rin'we? Xana i byingani u nga na byona?
9. Engetela rin'we. Xana i byingani u nga na byona?

Hlaya nghingiriko lowu wu tivisaka vuhlalu bya swivumbeko eka vadyondzi lowu nga eka pheji ya 100 ya *Xiletelo xa Migingiriko: Kotara ya 2*, goza ra 3. Hi mitlawa, kanelani nghingiriko lowu.

**Nghingiriko wa 10**

Xana nghingiriko lowa vuhlalu bya swivumbeko wu pfuna njhani vadyondzi ku hluvukisa ntwisiso wa nomboro wa vadyondzi?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

**Nawu wa vutitoloveti**: Vadyondzi va fanele ku va na nkarhi wo tala wa ku titoloveta swikili na vutivi byintshwa. Loko vadyondzi va kuma vutitoloveti bya nkarhi na nkarhi eka leswi se va swi dyondzeke, va antswa eka swona na ku va na vutitshembi swinene. Va tiphina hi mbuyelelo na vutitoloveti.

## Term 2 Content Summary (Week 5)

 **Activity 11**

Refer to Appendix A: Term 2 Weekly Content Summary (Weeks 4–7). Read the content overview for Week 5: Numbers, Operations and Relationships on page 18 of *Activity Guide: Term 2*.

1. What are the topics for Week 5?

_____

_____

2. What new knowledge is introduced in this week?

_____

_____

_____

3. What skills from previous weeks are practised?

_____

_____

_____

4. Match the activities in Appendix A: Term 2 Weekly Content Summary (Weeks 4–7) with the lessons in each week.

## Nkatsakanyo wa Vundzeni wa Kotara ya 2 (Vhiki ra 5)

 **Nghingiriko wa 11**

Kongomisa eka Xiengetelwa xa A: Nkomiso wa Vundzeni wa Vhiki na Vhiki wa Kotara ya 2 (Mavhiki ya 4–7). Hlaya nkatsakanyo wa vundzeni wa Vhiki ra 5: Tinomboro, Tioparexini na Vuxaka leswi nga eka pheji ya 18 ya *Xiletelo xa Migingiriko: Kotara ya 2*.

1. Xana hi tihi tinhlokomhaka ta Vhiki ra 5?

_____

_____

2. Xana i vutivi byintshwa byihi lebyi byi tivisiwaka eka vhiki leri?

_____

_____

_____

3. Xana i swikili swihi kusuka eka mavhiki lama nga hundza swi titolovetiwaka?

_____

_____

_____

4. Pananisa migingiriko leyi nga eka Xiengetelwa xa A: Nkomiso wa Vundzeni wa Vhiki na Vhiki wa Kotara ya 2 (Mavhiki ya 4–7) lowu nga na tidyondzotsongo eka vhiki rin'wana na rin'wana.

# Session 3: Patterns, Functions and Algebra **1 hour**

The focus of Term 2 Week 6 is Patterns, Functions and Algebra.

## Term 2 Content overview: Patterns, Functions and Algebra

Refer to Patterns, Functions and Algebra in the content overview (*Concept Guide*, page 124).

**Activity 12**

1. What concepts are covered in Term 2?

_____

_____

_____

2. What are the differences between the Maths Programme content and the CAPS content?

_____

_____

_____

## Term 2 Week 6: Describe, copy and extend patterns

In Workshop 3, the focus of Patterns, Functions and Algebra was on recognising/identifying the repeat in a pattern. We also discussed the difference between a sequence and a pattern. Term 2 Week 6 builds on the content introduced in Term 1 Week 6.

In Term 2 Week 6 learners:

- describe the repeat in patterns using objects, pictures and sounds.
- copy patterns that others have made with objects, pictures and sounds.
- extend patterns that others have made.
- create their own patterns at various levels of difficulty such as:
  - circle, square; circle, square
  - circle, square, triangle; circle, square, triangle
  - circle, circle, square; circle, circle, square
  - red circle, blue circle, yellow square; red circle, blue circle, yellow square.
- tell what is missing when part of a pattern is hidden.

# Sexini ya 3: Tipatironi, Tifankixini na Alijebura

**1 ya wara**

Nkongomo wa Vhiki ra 6 ra Kotara ya 2 i Tipatironi, Tifankixini na Alijebura.

## Nkatsakanyo wa Vundzeni wa Kotara ya 2: Tipatironi, Tifankixini na Alijebura

Kongomisa eka Tipatironi, Tifankixini na Alijebura leswi nga eka nkatsakanyo wa vundzeni (*Xiletelo xa Minongoti*, pheji ya 125).

**Nghingiriko wa 12**

1. Xana i minongoti yihi leyi angarheliwaka eka Kotara ya 2?

_____

_____

_____

2. Xana hi kwihi ku hambana exikarhi ka vundzeni bya Nongonoko wa Matematiki na vundzeni bya XIPHOKHAMA?

_____

_____

_____

## Vhiki ra 6 ra Kotara ya 2: Hlamusela, kopunula na ku ndlandlamukisa tipatironi

Eka Ndzetelavutivi wa 3, nkongomo wa Tipatironi, Tifankixini na Alijebura a wu ri eka ku lemuka/ku kuma mbuyelelo lowu nga eka patironi. Hi tlhele hi kanela ku hambana exikarhi ka malongolokelo na patironi. Vhiki ra 6 ra Kotara ya 2 ri aka ehenhla ka vundzeni lebyi tivisiweke eka Vhiki ra 6 Kotara ya 1.

Eka Vhiki ra 6 Kotara ya 2 vadyondzi va:

- hlamusela mbuyelelo lowu nga eka tipatironi hi ku tirhisa michumu, swifaniso na mipfumawulo.
- kopunula tipatironi leti van'wana va ti endleke hi michumu, swifaniso na mipfumawulo.
- ndlandlamukisa tipatironi leti van'wana va ti endleke.
- tumbuluxa tipatironi ta vona vini eka tilevhele to hambanahambana ta matikelo to tanihi:
  - xirhendzevutana, xikwere; xirhendzevutana, xikwere
  - xirhendzevutana, xikwere, yinhlanharhu; xirhendzevutana, xikwere, yinhlanharhu
  - xirhendzevutana, xirhendzevutana, xikwere; xirhendzevutana, xirhendzevutana, xikwere
  - xirhendzevutana xo tshwuka, xirhendzevutana xa wasi, xikwere xa xitshopana; xirhendzevutana xo tshwuka, xirhendzevutana xa wasi, xikwere xa xitshopana.
- vula leswaku xana i yini xi kayivelaka loko xiphemu xa patironi xi tumbetiwile.

**Activity 13**

Refer to Week 6 in *Activity Guide: Term 2* (pages 104–119).

1. Discuss how the whole class activities present lessons on pattern.

_____
_____
_____

2. Read steps 5 and 6 of the teacher-guided activity on page 116. How does the teacher scaffold the activities and guide the learners with questions?

_____
_____
_____

## Term 2 Content Summary (Week 6)

**Activity 14**

Refer to Appendix A: Term 2 Weekly Content Summary (Weeks 4–7). Read the content overview for Week 6: Patterns, Functions and Algebra on page 20 of *Activity Guide: Term 2*.

1. What are the topics for Week 6?

_____
_____

2. What new knowledge is introduced in this week?

_____
_____
_____

3. What skills from previous weeks are practised?

_____
_____
_____

4. Match the activities in Appendix A: Term 2 Weekly Content Summary (Weeks 4–7) with the lessons in each week.

**Nghingiriko wa 13**

Kongomisa eka Vhiki ra 6 eka *Xiletelo xa Migingiriko: Kotara ya 2* (tipheji ta 104–119).

1. Kanelani hilaha migingiriko ya tlilasi hinkwayo yi nyikaka hakona tidyondzotsongo leti nga eka patironi.

_____
_____
_____

2. Hlaya magoza ya 5 na 6 ya nghingiriko lowu leteriwaka hi mudyondzisi eka pheji ya 116. Xana mudyondzisi u tirhisa njhani xikhafula eka migingiriko ku letela vadyondzi hi swivutiso?

_____
_____
_____

## Nkatsakanyo wa Vundzeni wa Kotara ya 2 (Vhiki ra 6)

**Nghingiriko wa 14**

Kongomisa eka Xiengetelwa xa A: Nkomiso wa Vundzeni wa Vhiki na Vhiki wa Kotara ya 2 (Mavhiki ya 4–7). Hlaya nkatsakanyo wa vundzeni wa Vhiki ra 6: Tipatironi, Tifankixini na Alijebura eka pheji ya 21 ya *Xiletelo xa Migingiriko: Kotara ya 2*.

1. Xana hi tihi tinhlokomhaka ta Vhiki ra 6?

_____
_____

2. Xana i vutivi byintshwa byihi lebyi byi tivisiwaka eka vhiki leri?

_____
_____
_____

3. Xana i swikili swihi kusuka eka mavhiki lama nga hundza swi titolovetiwaka?

_____
_____
_____

4. Pananisa migingiriko leyi nga eka Xiengetelwa xa A: Nkomiso wa Vundzeni wa Vhiki na Vhiki wa Kotara ya 2 (Mavhiki ya 4–7) na tidyondzotsongo eka vhiki rin'wana na rin'wana.

# Session 4: Data Handling

**1 hour**

The focus of Term 2 Week 7 is Data Handling.

## Term 2 Content overview: Data Handling

Refer to Data Handling in the content overview (*Concept Guide*, page 136).

**Activity 15**

1. What concepts are covered in Term 2?

_____

_____

_____

2. What are the differences between the Maths Programme content and the CAPS content?

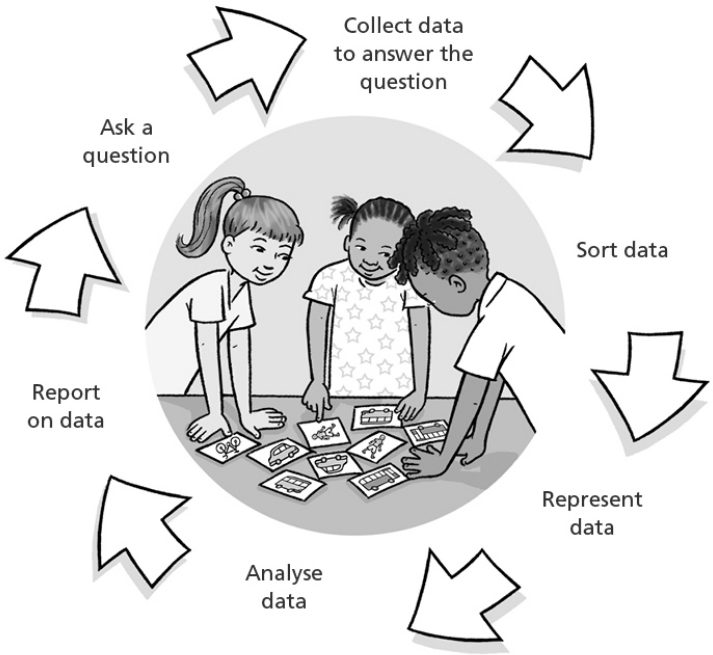
_____

_____

_____

## Data Handling

The Data Handling Content Area focuses on the purpose and process of handling data. It involves solving a problem or answering a question by collecting, sorting, representing and interpreting data.



# Sexini ya 4: Matirhiselo ya Vuxokoxoko bya Tinhlayo

**1 ya awara**

Nkongomo wa Vhiki ra 7 ra Kotara ya 2 i Matirhiselo ya Vuxokoxoko bya Tinhlayo.

## Nkatsakanyo wa Vundzeni wa Kotara ya 2: Matirhiselo ya Vuxokoxoko bya Tinhlayo

Kongomisa eka Matirhiselo ya Vuxokoxoko bya Tinhlayo lama nga eka nkatsakanyo wa vundzeni (*Xiletelo xa Minongoti*, pheji ya 136).

**Nghingiriko wa 15**

1. Xana i minongoti yihi leyi angarheliwaka eka Kotara ya 2?

_____

_____

_____

2. Xana hi kwihi ku hambana exikarhi ka vundzeni bya Nongonoko wa Matematiki na vundzeni bya XIPHOKHAMA?

_____

_____

_____

## Matirhiselo ya Vuxokoxoko bya Tinhlayo

Xiyenge xa Vundzeni xa Matirhiselo ya Vuxokoxoko bya Tinhlayo xi kongomisa eka xikongomelo na endlelo ra matirhiselo ya vuxokoxoko bya tinhlayo. Xi khumba ku ololoxa xiphiqo kumbe ku hlamula xivutiso hi ku hlengeleta, ku ava, ku endla vuyimeri na ku humesa nhlamuselo ya vuxokoxoko bya tinhlayo.

In Grade R learners should have many opportunities to sort objects according to one or more attributes, such as colour, size or shape. Sorting is part of Data Handling, but it is not the only focus. It is important to always bring the learners back to the question that has been posed and the reason why they are collecting, sorting and thinking of ways to represent the data.

Questions are key to Data Handling, e.g.:

- I wonder which cooldrink most learners like?
- How should we collect our data?
- How should we sort the data?
- How should we represent the data?

 **Activity 16**

Discuss how you could plan and implement a Data Handling activity based on the above questions. Record your ideas on flipchart paper.

**Representing data**

Grade R learners explore different ways of showing or displaying the information they have collected. A **pictograph** is a way of representing data using pictures. In the whole class activity on Day 3 of Week 7, learners discuss how they come to school. Each learner is given a smiley face on **exactly the same size piece of paper**. They display the data by putting their picture in a column to represent four different means of transport. It is important to place the data in the columns, **without spaces** between the pieces of paper. The data is clearly represented and easy to interpret in order to answer the question: 'How do most learners come to school?'.

Eka Giredi ya V vadyondzi va fanele ku va na swivandlanene swo tala swa ku ava michumu hi ku ya hi xihlawulekisi xin'we kumbe swo tala, swo tanihi muhlovo, sayizi kumbe xivumbeko. Ku ava i xiphemu xa Matirhiselo ya Vuxokoxoko bya Tinhlayo, kambe a hi wona nkongomo wu ri woxe. I swa nkoka mikarhi hinkwayo ku vuyisela vadyondzi eka xivutiso lexi xi vutisiweke na xivangelo xa leswaku hikwalahokayini va ri eku hlengeleteni, eku aveni na le ku ehleketeni hi tindlela ta ku endla vuyimeri bya vuxokoxoko bya tinhlayo.

Swivutiso i mhakakulu eka Matirhiselo ya Vuxokoxoko bya Tinhlayo, xik.:

- A ndzi tivi leswaku i namuneti yihi leyi vadyondzi vanyingi va yi tsakelaka?
- Xana hi fanele ku byi hlengeleta njhani vuxokoxoko bya hina bya tinhlayo?
- Xana hi fanele ku byi ava njhani vuxokoxoko bya hina bya tinhlayo?
- Xana hi fanele ku byi endla njhani vuyimeri vuxokoxoko lebya tinhlayo?

**Nghingiriko wa 16**

Kanelani hilaha mi nga kunguhataka hakona na ku tirhisa hakona nghingiriko wa Matirhiselo ya Vuxokoxoko bya Tinhlayo hi ku ya hi swivutiso leswi nga laha henhla. Rhekoda mianakanyo ya wena eka phepha ra chati yo pfula.

**Ku endla vuyimeri bya vuxokoxoko bya tinhlayo**

Vadyondzi va le ka Giredi ya V va valanga tindlela to hambanahambana ta ku kombisa vuxokoxoko lebyi va byi hlengeleteke. **Phikitogiramu** i ndlela ya ku endla vuyimeri bya vuxokoxoko bya tinhlayo hi ku tirhisa swifaniso. Eka nghingiriko wa tlilasi hinkwayo eka Siku ra 3 ra Vhiki ra 7, vadyondzi va kanela hilaha va taka hakona exikolweni. Mudyondzi un'wana na un'wana u nyikiwa xikandza xo n'wayitela eka **xiphemu xa phepha xa sayizi yo fana kwatsa**. Va kombisa vuxokoxoko bya tinhlayo hi ku vekela xifaniso xa vona eka kholomu ku endla vuyimeri bya mune wa tindlela to hambana ta swifambo. I swa nkoka ku vekela vuxokoxoko bya tinhlayo eka tikholomu leti, **ku ri hava swivandla** exikarhi ka swiphemu swa phepha. Vuxokoxoko bya tinhlayo byi endliwa vuyimeri hi ndlela leyi nga erivaleni na ku va byi olova ku humesa nhlamuselo hi xikongomelo xa ku hlamula xivutiso lexi: 'Xana vadyondzi vanyingi va ta njhani exikolweni?'.

## Term 2 Content Summary (Week 7)

 **Activity 17**

Refer to Appendix A: Term 2 Weekly Content Summary (Weeks 4–7). Read the content overview for Week 7: Data Handling on page 20 of *Activity Guide: Term 2*.

1. What are the topics for Week 7?

_____
_____

2. What new knowledge is introduced in this week?

_____
_____
_____

3. What skills from previous weeks are practised?

_____
_____
_____

4. Match the activities in Appendix A: Term 2 Weekly Content Summary (Weeks 4–7) with the lessons in each week.

5. Refer to the teacher-guided activity in Week 7 (*Activity Guide: Term 2*, page 132). Discuss how the teacher guides the learners to sort the animals and then represent the data on a grid.

## Nkatsakanyo wa Vundzeni wa Kotara ya 2 (Vhiki ra 7)

 **Nghingiriko wa 17**

Kongomisa eka Xiengetelwa xa A: Nkomiso wa Vundzeni wa Vhiki na Vhiki wa Kotara ya 2 (Mavhiki ya 4–7). Hlaya nkatsakanyo wa vundzeni wa Vhiki ra 7: Matirhiselo ya Vuxokoxoko bya Tinhlayo lama nga eka pheji ya 21 ya *Xiletelo xa Migingiriko: Kotara ya 2*.

1. Xana hi tihi tinhlokomhaka ta Vhiki ra 7?

_____
_____

2. Xana i vutivi byintshwa byihi byi tivisiwaka eka vhiki leri?

_____
_____
_____

3. Xana i swikili swihi kusuka eka mavhiki lama nga hundza swi titolovetiwaka?

_____
_____
_____

4. Pananisa migingiriko leyi nga eka Xiengetelwa xa A: Nkomiso wa Vundzeni wa Vhiki na Vhiki wa Kotara ya 2 (Mavhiki ya 4–7) na tidyondzotsongo eka vhiki rin'wana na rin'wana

5. Kongomisa eka nghingiriko lowu leteriwaka hi mudyondzisi eka Vhiki ra 7 (*Xiletelo xa Migingiriko: Kotara ya 2*, pheji ya 132). Kanelani hilaha mudyondzisi a letelaka hakona vadyondzi ku ava swiharhi kutani endzhaku ka swona va endla vuyimeri bya vuxokoxoko bya tinhlayo eka giridi.

# Closing activities

**1 hour**

**Activity 18**

**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. Continue to use the Record of Continuous Assessments in *Activity Guide: Term 2* to assess your learners. Make use of your ongoing observation notes to build up evidence of what learners understand and can do.
2. Identify any concerns you have about individual learner's emerging grasp of maths concepts.
3. Bring copies of rubrics that you have used for maths assessment to the next workshop.
4. Bring a completed assessment record for one learner to the next workshop.
5. Use *Activity Guide: Term 2* to plan and implement Weeks 4–7 of the Maths Programme, including creating a maths area with a focus on the concept for each week.
6. Make notes on what worked well, what did not work so well and what you could do differently to improve teaching and learning.

**Evaluation**

Complete the Evaluation Form.

# Migingiriko yo pfala

**1 ya awara**

**Nghingiriko wa 18**

**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. Yana emahlweni u tirhisa rhekodo ya Makambelelo lama Yaka Emahlweni lama nga eka *Xiletelo xa Migingiriko: Kotara ya 2* ku kambela vadyondzi va wena. Tirhisa tinotsi ta nxiyaxiyo lowu yaka emahlweni ku aka vumbhoni bya leswi vadyondzi va swi twisisaka naswona va nga kota ku swi endla.
2. Kuma swivilelo swihi kumbe swihi leswi u nga na swona hi mayelana na ntwisiso lowu tumbulukaka wa mudyondzi hi un'weu'nwe wa minongoti ya matematiki.
3. Tana na tikopi ta tirhubiriki leti u ti tirhiseke eka makambelelo ya matematiki eka ndzetelavutivi lowu landzeleka.
4. Tana na rhekodo ya makambelelo lama hetisiweke ya mudyondzi un'we eka ndzetelavutivi lowu landzelaka.
5. Tirhisa *Xiletelo xa Migingiriko: Kotara ya 2* ku kunguhata na ku tirhisa Mavhiki ya 4–7 ya Nongonoko wa Matematiki, ku katsa na ku tumbuluxa ndhawu ya matematiki leyi nga na nkongomo eka nongoti wa vhiki rin'wana na rin'wana.
6. Endla tinotsi hi mayelana na leswi swi tirheke kahle swinene, leswi swi nga tirhangiki kahle swinene na leswi a wu ta swi endla hi ku hambana ku antswisa madyondziselo na madyondzelo.

**Nkambelo**

Tatisa Fomo leya Nkambelo.

## APPENDIX A: TERM 2 WEEKLY CONTENT SUMMARY (WEEKS 4–7)

## Term 2: Activity Plan

<table>
<tr><th colspan="5">Week 4</th></tr>
<tr><td colspan="5">CONTENT AREA: SPACE AND SHAPE (GEOMETRY)</td></tr>
<tr><td colspan="5">TOPIC: Position, orientation and views; describes, sorts and compares 3-D objects<br>INTRODUCE NEW KNOWLEDGE: Sort 3-D objects according to similarities and differences, one more, one less<br>PRACTISE: Oral counting 1–15 and 5–1, counting objects 1–7, number concept 1–4, reinforce all shapes</td></tr>
<tr><th colspan="2">Whole class activities</th><th>Teacher-guided activity</th><th colspan="2">Workstation activities</th></tr>
<tr><td>Day 1</td><td>Reinforce all shapes/shape hunt.</td><td rowspan="5">Practise 1–4.<br>Describing an object from different positions.<br>Practising shapes and positions.</td><td>Activity 1<br>Activity 2<br>Activity 3<br>Activity 4</td><td rowspan="5">A circle/square/triangle can also be a … (create a picture).<br>Make shapes using cookie cutters and playdough.<br>Block construction – use blocks/Unifix blocks.<br>Puzzles (minimum of 12 pieces).</td></tr>
<tr><td>Day 2</td><td>Feely bag – feel different shapes and describe them.</td></tr>
<tr><td>Day 3</td><td>Find shapes in class using position words.</td></tr>
<tr><td>Day 4</td><td>Shape detectives. One more, one less.</td></tr>
<tr><td>Day 5</td><td>Direction and position. Obstacle course.</td></tr>
<tr><th colspan="5">Week 5</th></tr>
<tr><td colspan="5">CONTENT AREA: NUMBERS, OPERATIONS AND RELATIONSHIPS</td></tr>
<tr><td colspan="5">TOPIC: Recognise number symbols and number words; describes, orders and compares numbers<br>INTRODUCE NEW KNOWLEDGE: Introduce number 5<br>PRACTISE: Oral counting 1–15, counting objects 1–7, count backwards from 5 (rhymes), reinforce number concept 1–4, sequencing numbers 1–4, more/fewer</td></tr>
<tr><th colspan="2">Whole class activities</th><th>Teacher-guided activity</th><th colspan="2">Workstation activities</th></tr>
<tr><td>Day 1</td><td>Introduce 5 (5 monkeys in the fifth house).</td><td rowspan="5">Match number symbols, number words and dot cards (4 and 5).<br>Counting 1–7.<br>Estimate and count. Structure beads.<br>Different configurations of the same number.</td><td>Activity 1<br>Activity 2<br>Activity 3<br>Activity 4</td><td rowspan="5">Playdough mat 5.<br>Ladybird numbers (roll correct number of paper balls).<br>Number matching – pegs.<br>Number puzzles to 5 (using number words).</td></tr>
<tr><td>Day 2</td><td>Reinforce 4 and 5 (number symbols and number words).</td></tr>
<tr><td>Day 3</td><td>Counting forward and backwards. Number line.</td></tr>
<tr><td>Day 4</td><td>Reinforce 4 and 5.</td></tr>
<tr><td>Day 5</td><td>Reinforce numbers 1–5 (dot cards, number symbols, number words to recognise).</td></tr>
</table>

## XIENGETELWA XA A: NKOMISO WA VUNDZENI WA VHIKI NA VHIKI WA KOTARA YA 1 (MAVHIKI YA 4–7)

## Kotara ya 2: Kungu ra Migingiriko

<table>
<tr><th colspan="4">Vhiki ra 4</th></tr>
<tr><td colspan="4">XIYENGE XA VUNDZENI: NDHAWU NA XIVUMBEKO (JOMETIRI)</td></tr>
<tr><td colspan="4">NHLOKOMHAKA: Xiyimo, ndzetelo na matlhelo; hlamusela, ava na ku fananisa swivumbeko swa 3-D<br>TIVISA VUTIVI BYINTSHWA: Ava michumu ya 3-D hi ku ya hi ku fanana na ku hambana, nkulu hi n’we, ntsongo n’we<br>TITOLOVETI: Ku hlayela ka swanomu1–15 na 5–1, ku hlayela michumu 1–7, nongoti wa tinomboro 1–4, tiyisisa swivumbeko hinkwaswo</td></tr>
<tr><th colspan="2">Migingiriko ya tlilasi hinkwayo</th><th>Nghingiriko lowu leteriwaka hi mudyondzisi</th><th colspan="2">Migingiriko ya le ka xitichi xo tirhela</th></tr>
<tr><td>Siku ra 1</td><td>Tiyisisa swivumbeko hinkwaswo/nhloto wa swivumbeko.</td><td rowspan="5">Titoloveti 1–4.<br>Hlamusela nchumu kusuka eka swiyimo swo hambanahambana.<br>Ku titoloveti swivumbeko na swiyimo.</td><td>Nghingiriko wa 1</td><td>Xirhendzevutana/xikwere/yinhlanharhu na yona yi nga va … (tumbuluxa xifaniso).</td></tr>
<tr><td>Siku ra 2</td><td>Bege yo twa – twana swivumbeko swo hambanahambana kutani u swi hlamusela.</td><td>Nghingiriko wa 2</td><td>Endla swivumbeko hi ku tirhisa xitsemakhekhe na vumba byo tlangisa.</td></tr>
<tr><td>Siku ra 3</td><td>Kuma swivumbeko etlilasini hi ku tirhisa marito ya xiyimo.</td><td>Nghingiriko wa 3</td><td>Ku aka hi tibuloko – tirhisa tibuloko/tibuloko ta Unifix.</td></tr>
<tr><td>Siku ra 4</td><td>Valavisisi va swivumbeko. nkulu hi n’we/ntsongo hi n’we.</td><td>Nghingiriko wa 4</td><td>Swiphazamiso (mpimohansi wa 12 wa swiphemu).</td></tr>
<tr><td>Siku ra 5</td><td>Tlhelo na xiyimo. Xihingakanyo</td><td></td><td></td></tr>
<tr><th colspan="4">Vhiki ra 5</th></tr>
<tr><td colspan="4">XIYENGE XA VUNDZENI: TINOMBORO, TIOPAREXINI NA VUXAKA</td></tr>
<tr><td colspan="4">NHLOKOMHAKA: Lemuka mifungho ya tinomboro na mavito ya tinomboro; hlamusela, longoloxa na ku fananisa tinomboro<br>TIVISA VUTIVI BYINTSHWA: Tivisa nomboro ya 5<br>TITOLOVETI: Ku hlayela ka swanomu 1–15, ku hlayela michumu 1–7, hlayela kuya endzhaku kusuka eka 5 (tirhayimi), tiyisisa nongoti wa tinomboro 1–4, ku longoloxela tinomboro 1–4, nkulu/ntsongo</td></tr>
<tr><th colspan="2">Migingiriko ya tlilasi hinkwayo</th><th>Nghingiriko lowu leteriwaka hi mudyondzisi</th><th colspan="2">Migingiriko ya le ka xitichi xo tirhela</th></tr>
<tr><td>Siku ra 1</td><td>Tivisa 5 (5 wa tintohe endlwini ya vuntlhanu).</td><td rowspan="5">Pananisa makhadi ya mifungho ya tinomboro, makhadi ya mavito ya tinomboro na makhadi ya mathonsi ya tinomboro (4 na 5).<br>Ku hlayela 1–7.<br>Kumbetela kutani u hlayela.<br>Vuhlalu bya swivumbeko.<br>Maveketelelo yo hambanahambana y nomboro yin’we.</td><td>Nghingiriko wa 1</td><td>Mete wa vumba byo tlangisa wa 5.</td></tr>
<tr><td>Siku ra 2</td><td>Tiyisisa 4 na 5 (mifungho ya tinomboro na marito ya tinomboro).</td><td>Nghingiriko wa 2</td><td>Tinomboro ta vukohani (khunguluxa nhlayo leyi nga lulama ya tibolo ta phepha).</td></tr>
<tr><td>Siku ra 3</td><td>Ku hlayela kuya emahlweni na kuya endzhaku. Layini ya tinomboro.</td><td>Nghingiriko wa 3</td><td>Ku pananisa tinomboro – tiphekisi.</td></tr>
<tr><td>Siku ra 4</td><td>Tiyisisa 4 na 5.</td><td>Nghingiriko wa 4</td><td>Swiphazamiso swa tinomboro kufika eka 5 (hi ku tirhisa marito ya tinomboro).</td></tr>
<tr><td>Siku ra 5</td><td>Tiyisisa tinomboro ta 1–5 (makhadi ya mathonsi, mifungho ya tinomboro na marito ya tinomboro ku ma lemuka).</td><td></td><td></td></tr>
<tr><th colspan="4">Week 6</th></tr>
</table>

| | | | | |
|---|---|---|---|---|
| **CONTENT AREA:** PATTERNS, FUNCTIONS AND ALGEBRA | | | | |
| **TOPIC: Copies and extends simple repeating patterns; creates own patterns; describes the repeat in patterns**<br>**INTRODUCE NEW KNOWLEDGE:** Copy and extend simple patterns, create and explain own pattern, oral counting 1–20, count backwards from 7<br>**PRACTISE:** Sequencing numbers 1–5, counting objects 1–7, making groups the same | | | | |
| **Whole class activities** | | **Teacher-guided activity** | **Workstation activities** | |
| **Day 1** | Physical patterns. | Focus on number concept 1–5.<br>Shake and break.<br>Make equal groups.<br>Patterns with a partner. Unifix blocks. | **Activity 1**<br>**Activity 2**<br>**Activity 3**<br>**Activity 4** | Extension of a pattern – drawing and colouring in.<br>Snake patterns – using shapes.<br>Pattern cards – using Unifix blocks.<br>Threading patterns with beads. |
| **Day 2** | Identifying patterns in everyday objects. | | | |
| **Day 3** | Problem solving using patterns. | | | |
| **Day 4** | Making patterns using everyday objects. | | | |
| **Day 5** | Sound patterns. | | | |
| **Week 7** | | | | |
| **CONTENT AREA:** DATA HANDLING | | | | |
| **TOPIC: Collects and sort objects; represents sorted collections of objects; discusses and reports on sorted collections of objects**<br>**INTRODUCE NEW KNOWLEDGE:** Draw a picture of collected objects, answer questions on own picture<br>**PRACTISE:** Oral counting 1–20 and backwards from 7, counting objects 1–7, more than/less than/equal to, number concept 1–5, sorting and classifying | | | | |
| **Whole class activities** | | **Teacher-guided activity** | **Workstation activities** | |
| **Day 1** | Collects and sort objects (round or square). | Estimating.<br>Counting.<br>Sorting collections of animals.<br>Pictograph: more/less.<br>Questioning. | **Activity 1**<br>**Activity 2**<br>**Activity 3**<br>**Activity 4** | Cutting and sorting transport pictures.<br>Sorting waste objects.<br>Shape graph (use cut out shapes).<br>Sorting by colour. |
| **Day 2** | Sorting game. Poster 8. | | | |
| **Day 3** | Pictograph: How do you get to school? | | | |
| **Day 4** | Discuss Day 3 results (asking questions). | | | |
| **Day 5** | Collect and sort classroom objects. | | | |

<table>
<tr><th colspan="5">Vhiki ra 6</th></tr>
<tr><td colspan="5">XIYENGE XA VUNDZENI: TIPATIRONI, TIFANKIXINI NA ALIJEBURA</td></tr>
<tr><td colspan="5">NHLOKOMHAKA: Kopunula kutani u ndlandlamuxa tipatironi to vuyelela to olova; tumbuluxa tipatironi ta wena n’wini; hlamusela mbuyelelo eka tipatironi<br>TIVISA VVUTIVI BYINTSHWA: Kopunula na ku ndlandlamukisa tipatironi to vuyelela to olova, tumbuluxa na ku hlamusela patironi ya wena n’wini, ku hlayela kaswanomu 1–20, hlayela kuya endzhaku kusuka eka 7<br>TITOLOVETI: Ku longoloxela tinomboro ta 1–5, ku hlayela michumu 1–7, ku endla mitlawa yi fana</td></tr>
<tr><th colspan="2">Migingiriko ya tlilasi hinkwayo</th><th>Nghingiriko lowu leteriwaka hi mudyondzisi</th><th colspan="2">Migingiriko ya le ka xitichi xo tirhela</th></tr>
<tr><td>Siku ra 1</td><td>Tipatironi to khomeka.</td><td rowspan="5">Kongomisa eka nongoti wa tinomboro ta 1–5.<br>Dludla kutani u tlhantlha.<br>Ku endla mitlawa yo ringana.<br>Tipatironi na mutirhisani. Tibuloko ta Unifix.</td><td rowspan="5">Nghingiriko wa 1<br><br>Nghingiriko wa 2<br><br>Nghingiriko wa 3<br><br>Nghingiriko wa 4</td><td rowspan="5">Ndlandlamukiso wa patironi – ku dirowa na ku penda endzeni.<br>Tipatironi ta tinyoka – hi ku tirhisa swivumbeko.<br>Makhadi ya tipatironi – hi ku tirhisa tibuloko ta Unifix.<br>Ku hulela tipatironi hi vuhlalu.</td></tr>
<tr><td>Siku ra 2</td><td>Ku kuma tipatironi eka michumu ya masiku hinkwawo.</td></tr>
<tr><td>Siku ra 3</td><td>Ku ololoxa swiphiqo hi ku tirhisa tipatironi.</td></tr>
<tr><td>Siku ra 4</td><td>Ku endla tipatironi hi ku tirhisa michumu ya masiku hinkwawo.</td></tr>
<tr><td>Siku ra 5</td><td>Tipatironi ta mipfumawulo.</td></tr>
<tr><th colspan="5">Vhiki ra 7</th></tr>
<tr><td colspan="5">XIYENGE XA VUNDZENI: MATIRHISELO YA VUXOKOXOKO BYA TINHLAYO</td></tr>
<tr><td colspan="5">NHLOKOMHAKA: Hlengeleta kutani u ava michumu; endla vuyimeri bya mihlengelo leyi aviweke ya michumu; kanelani na ku vika hi mihlengelo leyi aviweke ya michumu<br>TIVISA VVUTIVI BYINTSHWA: Dirowa xifaniso xa michumu leyi hlengeletiweke, hlamula swivutiso hi mayelana na xifaniso xa wena n’wini<br>TITOLOVETI: Ku hlayela ka swanomu 1–20 na kuya endzhaku kusuka eka 7, ku hlayela michumu 1–7, tala kutlula/ntsongo kutlula/ringana na, nongoti wa tinomboro 1–5, ku ava na ku ntlawahata</td></tr>
<tr><th colspan="2">Migingiriko ya tlilasi hinkwayo</th><th>Nghingiriko lowu leteriwaka hi mudyondzisi</th><th colspan="2">Migingiriko ya le ka xitichi xo tirhela</th></tr>
<tr><td>Siku ra 1</td><td>Hlengeleta kutani u ava michumu (ya xirhendzevutana kumbe xikwere).</td><td rowspan="5">Ku kumbetela.<br>Ku hlayela.<br>Ku ava mihlengelo ya swiharhi.<br>Phikitogirafu: tala/ntsongo.<br>Ku vutisa.</td><td rowspan="5">Nghingiriko wa 1<br><br>Nghingiriko wa 2<br>Nghingiriko wa 3<br><br>Nghingiriko wa 4</td><td rowspan="5">Ku tsema na ku ava swifaniso swa swifambo.<br>Ku ava michumu ya thyaka.<br>Girafu ya xivumbeko (tirhisa swivumbeko leswi tsemiweke).<br>Ku ava hi muhlovo.</td></tr>
<tr><td>Siku ra 2</td><td>Ntlangu wo ava. Phositara ya 8.</td></tr>
<tr><td>Siku ra 3</td><td>Phikitogirafu: Xana u famba njhani ku ya exikolweni?</td></tr>
<tr><td>Siku ra 4</td><td>Kanelani mivuyelo ya Siku ra 3 (u ri karhi u vutisa swivutiso).</td></tr>
<tr><td>Siku ra 5</td><td>Hlengeleta kutani u ava michumu ya le kamareni ro dyondzela.</td></tr>
</table>

# Workshop 5 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 5

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 xihi kumbe xihi 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 swihi kumbe swihi swa ku antswisa miletelavutivi yo yisa emahlweni?

_____
_____
_____
_____