GAUTENG PROVINCE
EDUCATION
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GGT 2030
GROWING GAUTENG TOGETHER

Xitsonga/English

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

Ndzetelavutivi wa 3 ● Workshop 3

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**.

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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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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**.

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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.
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Overview

Purpose

This is the third 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 implement the Maths Programme in their classrooms. Participants will strengthen their understanding of the CAPS Content Areas covered in Weeks 6–9 of Term 1 and practise skills in mediating maths learning.

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 Weeks 3–5
- To apply the Maths Programme principles in weekly planning
- To explore strategies to support teaching maths in Grade R
- To engage with the Maths Programme content of Term 1 Weeks 6–9 (Patterns, Functions and Algebra; Space and Shape (Geometry); Measurement; Numbers, Operations and Relationships)
- To start to understand how learners' different interests and ability levels inform learning and teaching

Workshop content

- Opening and reflection (1 hour)
- Session 1: Patterns, Functions and Algebra (1 hour)

TEA

- Session 2: Space and Shape (Geometry) (1 hour)
- Session 3: Measurement (1 hour)

LUNCH

- Session 4: Numbers, Operations and Relationships (1 hour)
- Session 5: Planning for teaching (1 hour)

Nkatsakanyo

Xikongomelo

Lowu i wa vunharhu 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)).

Xikongomelo xa ndzetelavutivi lowu i ku pfuna vadyondzisi ku tirhisa Nongonoko wa Matematiki etikamareni to dyondzela ta vona. Vatekaxiave va ta tiyisa ntwisiso wa vona wa Swiyenge swa Vundzeni swa XIPHOKHAMA leswi angarheliweke eka Mavhiki ya 6–9 ya Kotara ya 1 na ku titoloveta swikili eka ku hlanganisa madyondzelo ya matematiki.

Mikongomiso eka Swiyenge swa Vundzeni wa 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 dyondza

- Ku ehleketisisa hi matirhelo ya Mavhiki ya 3–5 ya Kotara ya 1
- Ku tirhisa milawu ya Nongonoko wa Matematiki eka nkunguhato wa vhiki na vhiki
- Ku valanga maqhinga ya ku seketela ku dyondzisa matematiki eka Giredi ya V
- Ku tirhana na vundzeni bya Nongonoko wa Matematiki wa Mavhiki ya 6–9 ya Kotara ya 1 (Tipatironi, Tifankixini na Alijebura; Ndhawu na Xivumbeko (Jometiri); Mpimo; Tinomboro, Tioparexini na Vuxaka)
- Ku sungula ku twisisa hilaha mitsakelo yo hambanahambana ya vadyondzi na hilaha tilevhele ta vuswikoti ti letelaka hakona madyondzelo na madyondziselo

Vundzeni bya ndzetelavutivi

- Ku pfula na ku ehleketisisa (1 ya awara)
- Sexini ya 1: Tipatironi, Tifankixini na Alijebura (1 ya awara)

TIYA

- Sexini ya 2: Ndhawu na Xivumbeko (Jometiri) (1 ya awara)
- Sexini ya 3: Mpimo (1 ya awara)

LANCI

- Sexini ya 4: Tinomboro, Tioparexini na Vuxaka (1 ya awara)
- Sexini ya 5: Nkunguhato wa ku dyondzisa (1 ya awara)

Opening and reflection **1 hour**

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

Activity 1

1. Discuss your progress in implementing Weeks 3–5 and the *Take back to school* task from Workshop 2.
2. Share your photograph of the Space and Shape (Geometry) focus in the maths area.
3. How did you record your observations of each learner during the teacher-guided activity?
4. Which teaching principles are you more aware of in your classroom?

Video 1

Watch the video of how the teacher uses a rhyme to practise counting and solving word problems.

Discuss how you managed this and other lessons that incorporated rhymes into counting activities.

_____
_____
_____
_____

Ku pfula na ku ehleketisisa

1 ya awara

Ehleketisisani hi mayelana na ku tirhisiwa ka Nongonoko wa Matematiki eka nongonoko wa wena wa siku na siku kutani u hetisa nghingiriko lowu landzelaka entlaweni wa wena.

Nghingiriko wa 1

1. Kanelani ku humelela ka n'wina eka ku tirhisa Mavhiki ya 3–5 na *Xintirhwana xo tlhelela na xona exikolweni* kusuka eka Ndzetelavutivi wa 2.
2. Avelana xinepe xa wena xa nkongomo wa Ndhawu na Xivumbeko (Jometiri) eka ndhawu ya matematiki.
3. Xana u yi rhekodile njhani mixiyaxiyo ya wena ya mudyondzi un'wana na un'wana hi nkarhi wa nghingiriko lowu leteriwaka hi mudyondzisi?
4. Xana i milawu yo dyondzisa yihi leyi u yi tivaka swinene ekamareni ro dyondzela ra wena?

Vhidiyo ya 1

Hlalelani vhidiyo ya hilaha mudyondzisi a tirhisaka hakona rhayimi ku titoloveta ku hlayela na ku ololoxa swiphiqo swa marito.

Kanelani hilaha u lawuleke hakona leswi na tidyondzotsongo tin'wana leti ti katseke tirhayimi eka migingiriko ya ku hlayela.

_____

_____

_____

_____

Session 1: Patterns, Functions and Algebra

1 hour

This workshop focuses on teaching the following Maths Programme content: Term 1 Weeks 6–9. This session focuses on Term 1 Week 6: Patterns, Functions and Algebra.

Term 1 Content overview: Patterns, Functions and Algebra

Refer to the Patterns, Functions and Algebra Content Area on page 124 of the *Concept Guide*.

 **Activity 2**

In your group, discuss:

1. What concepts are covered in Term 1?

_____
_____
_____

2. What are the differences between the content and the content from CAPS?

_____
_____
_____

Understanding patterns

Developing an understanding of patterns is an important part of maths. Patterns are all around us and children encounter lots of patterns in their daily lives at home and at school.

Think about your own understanding of the Content Area: Patterns, Functions and Algebra and complete Activity 3 with your group.

Sexini ya 1: Tipatironi, Tifankixini na Alijebura

1 ya awara

Ndzetelavutivi lowu wu kongomisa eka ku dyondzisa vundzeni bya Nongonoko wa Matematiki: Mavhiki ya 6–9 ya Kotara ya 1. Sexini leyi yi kongomisa eka Vhiki ra 6 ra Kotara ya 1: Tipatironi, Tifankixini na Alijebura.

Nkatsakanyo wa vundzeni wa Kotara ya 1: Tipatironi, Tifankixini na Alijebura

Kongomisa eka Xiyenge xa Vundzeni xa Tipatironi, Tifankixini na Alijebura lexi nga eka pheji ya 124 ya *Xiletelo xa Minongoti*.

Nghingiriko wa 2

Entlaweni wa n'wina, kanelani:

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

_____
_____
_____

2. Xana hi kwihi ku hambana exikarhi ka vundzeni lebyi na vundzeni byo huma eka XIPHOKHAMA?

_____
_____
_____

Ku twisisa tipatironi

Ku tumbuluxa ntwisiso wa tipatironi i xiphemu xa nkoka xa matematiki. Tipatironi ti kona hinkwakonkwako laha hi nga kona naswona vana va hlangana na tipatironi to tala evuton'wini bya vona bya siku na siku ekaya na le xikolweni.

Ehleketa hi mayelana na ntwisiso wa wena n'wini wa Xiyenge xa Vundzeni: Tipatironi, Tifankixini na Alijebura kutani u hetisa Nghingiriko wa 3 na ntlawa wa wena.

Activity 3

In your group, discuss:

1. What kinds of patterns might Grade R learners observe in their daily lives?

_____

_____

2. Look at Poster 7 in the *Poster Book*.

- ♦ What patterns do you see?

_____

_____

- ♦ What is the pattern?

_____

_____

- ♦ Can you repeat the pattern? Explain.

_____

_____

A **pattern** describes the regular sequence of objects, pictures, movements, actions or events that are repeated in a predictable way.
A **sequence** is the particular order in which objects, pictures, movements, actions or events follow each other.

Identifying patterns

In a regular pattern, we can see how the elements in the sequence are repeated. We can also predict the order or sequence of the elements and how they will be repeated to create a pattern. In the pattern below we can see that the circle and square are repeated and we can predict what the next shape in the sequence will be.

Nghingiriko wa 3

Entlaweni wa n'wina, kanelani:

1. Xana i mixaka yihi ya tipatironi leyi vadyondzi va Giredi ya V va nga ha hlanganaka na yona evuton'wini bya vona bya siku na siku?

_____

_____

2. Langutani eka Phositara ya 7 leyi nga eka *Buku ya Tiphositara*.

- Xana i tipatironi tihi leti mi ti vonaka?

_____

_____

- Xana patironi leyi i yini?

_____

_____

- Xana u nga kota ku vuyelela patironi leyi? Hlamusela.

_____

_____

Patironi yi hlamusela hi ku hlawulekisa malongolokelo ya ntolovelo ya michumu, mifambafambo, swiendlo kumbe swiendleko leswi swi vuyeleriweke hi ndlela yo vhumbeka.

Malongolokelo i nandzelelano wo karhi lowu michumu, swifaniso, mifambafambo, swiendlo kumbe swiendleko swi landzelelanaka hayona

Ku kuma tipatironi

Eka patironi yo olova, hi nga kota ku vona hilaha swiphemu leswi nga eka malongolokelo swi vuyeleriwaka hakona. Hi nga tlhela hi kota ku vhumba nandzelelano kumbe malongolokelo ya swiphemu na hilaha swi nga ta vuyeleriwa hakona ku tumbuluxa patironi. Eka patironi leyi nga laha hansi hi nga kota ku vona leswaku xirhendzevutana na xikwere swa vuyeleriwa naswona hi nga kota ku vhumba leswaku xivumbeko lexi landzelaka eka malongolokelo lama xi ta va yini.

Activity 4

1. Which shape is first?

_____

2. Which shape is next?

_____

3. What shape do you think will come after the last square?

_____

4. How would you extend the pattern?

_____

Repeating patterns are made up of a repeated sequence of elements, e.g. shapes, colours, sounds, objects, movements.

In the next activity, the facilitator will show you a sequence of shapes. You will use the attribute blocks on your table to copy this sequence and discuss how to extend this to create a pattern.

Activity 5

1. What is the pattern?

_____

_____

2. What is the repeating part of the sequence?

_____

_____

Nghingiriko wa 4

1. Xana i xivumbeko xi rhangaka?

_____

2. Xana i xivumbeko xihi xi landzelaka?

_____

3. Xana i xivumbeko xihi u ehleketaka leswaku xi ta ta endzhaku ka xikwere lexo hetelela?’

_____

4. Xana ndzi boheka ku endla yini ku ndlandlamuxa patironi leyi?

_____

Tipatironi leti vuyelelaka ti vumbiwa hi malongolokelo lama vuyeleriweke ya swiphemu, xik. swivumbeko, mihlovo, mipfumawulo, michumu, mifambafambo.

Eka nghingiriko lowu landzelaka, muhumelerisi u ta mi kombisa malongolokelo ya swivumbeko. Mi ta tirhisa tibuloko ta swihlawulekisi leti nga etafuleni ra n’wina ku kopunula malongolokelo lama kutani mi kanela hilaha leswi swi nga ndlandlamukisiwaka hakona ku tumbuluxa patironi.

Nghingiriko wa 5

1. Xana patironi leyi i yini?

_____

_____

2. Xana i yini xiphemu lexi vuyelelaka xa patironi leyi?

_____

_____

Introduce learners to patterns that start with only one attribute that differs, e.g. shape, and provide enough items in the sequence so that learners can work out what the pattern is (the repeating part in the sequence).

It is important for teachers to provide a range of opportunities for learners to identify, copy and create different kinds of patterns using sounds, actions, objects and pictures.

Video 2

Watch the video of the teacher setting up activities that provide opportunities for learners to create and discuss patterns.

Notice how the teacher guides the learners through questions and prompts to create a pattern. Write down the vocabulary that she and the learners using during these activities.

_____

_____

_____

_____

Refer to pages 160–173 of the *Concept Guide* to read more about teaching Patterns, Functions and Algebra in Grade R. You will also find a list of appropriate questions and vocabulary for this Content Area.

The **level principle** says that learners are at different starting points in Grade R. Each learner's prior knowledge is the starting point for what they will learn. They can use what they know already to learn new maths concepts and skills.

Tivisa vadyondzi eka tipatironi leti ti sungulaka hi xihlawulekisi xin'we ntsena lexi xi hambanaka, xik. xivumbeko, na ku nyika michumu yo enela leyi nga eka malongolokelo lama ku endlela leswaku vadyondzi va kota ku tirha va kuma leswaku patironi leyi i yini (xiphemu lexi vuyelelaka eka malongolokelo lama).

I swa nkoka leswaku vadyondzisi va nyika vadyondzi swivandlanene swo hambanahambana ku kuma, ku kopunula na ku tumbuluxa mixaka yo hambanahambana hi ku tirhisa mipfumawulo, swiendlo, michumu na swifaniso.

Vhidiyo ya 2

Hlalelani vhidiyo ya mudyondzisi a ri karhi a lulamisa migingiriko leyi yi nyikaka swivandlanene eka vadyondzi ku tumbuluxa tipatironi na ku ti kanela.

Vonani hilaha mudyondzisi a leteleka hakona vadyondzi hi ku tirhisa swivutiso na switsundzuxo ku tumbuluxa patironi. Tsalani ntivomarito lowu yena na vadyondzi va wu tirhisaka hi nkarhi wa migingiriko leyi.

_____

_____

_____

_____

Kongomisa eka tipheji ta 160–173 ta *Xiletelo xa Minongoti* ku hlaya swo tala hi mayelana na ku dyondzisa Tipatironi, Tifankixini na Alijebura eka Giredi ya V. U ta tlhela u kuma nxaxamelo wa swivutiso leswi faneleke na ntivomarito wa Xiyenge xa Vundzeni lexi.

Nawu wa levhele wu vula leswaku vadyondzi va le ka tindhawu to sungula to hambanahambana eka Giredi ya V. Vutivi bya khale bya mudyondzi un'wana na un'wana i ndhawu ya masungulo ya leswi a nga ta swi dyondza. Va nga tirhisa leswi se va swi tivaka ku dyondza minongoti na swikili swa matematiki swintshwa.

Session 2: Space and Shape (Geometry) **1 hour**

The focus of Term 1 Week 7 is Space and Shape (Geometry). In Workshop 2, we discussed 3-dimensional objects and 2-dimensional shapes and the content of Weeks 3–5 to be implemented in the classroom.

Term 1 Content overview: Space and Shape (Geometry)

 **Activity 6**

Refer to the Space and Shape (Geometry) Content Area on pages 126–131 of the *Concept Guide*. You will see that circles, squares and triangles are introduced in CAPS in Term 1 and rectangles are introduced in Term 4. The Maths Programme suggests that rectangles are introduced incidentally in Term 1.

1. When you taught squares did you find that learners confused squares and rectangles? Give reasons to support your answer.

_____

_____

_____

_____

2. How were rectangles introduced in Week 3 of the Maths Programme?

_____

_____

_____

_____

Identifying 2-dimensional shapes (triangles)

In Grade R learners recognise, identify and name 2-dimensional shapes: circles, squares, triangles and rectangles. The Maths Programme also suggests that learners are encouraged to describe the properties of these shapes, e.g. straight or curved lines, number of lines and corners.

Learners apply their new knowledge of shapes and reinforce this learning in the independent small group activities.

Sexini ya 2: Ndhawu na Xivumbeko (Jometiri)

1 ya awara

Nkongomo wa Vhiki ra 7 ra Kotara ya 1 i Ndhawu na Xivumbeko (Jometiri). Eka Ndzetelavutivi wa 2, hi kanele michumu ya matlhelo ma3 na swivumbeko swa matlhelo ma2 na vundzeni bya Mavhiki ya 3–5 leswi faneleke ku tirhisiwa ekamareni ro dyondzela.

Nkatsakanyo wa vundzeni wa Kotara ya 1: Ndhawu na Xivumbeko (Jometiri)

Nghingiriko wa 6

Kongomisa eka Xiyenge xa Vundzeni xa Ndhawu na Xivumbeko (Jometiri) eka tipheji ta 126–131 ta *Xiletelo xa Minongoti*. Mi ta vona leswaku swirhendzevutana, swikwere na tinhlanharhu swa tivisiwa eka XIPHOKHAMA eka Kotara ya 1 na tinhlamune ta tivisiwa eka Kotara ya 4. Nongonoko wa Matematiki wu ringanyeta leswaku tinhlamune ti tivisiwa hi xiwelo eka Kotara ya 1.

1. Loko u dyondzisa swikwere xana u kume leswaku vadyondzi va hlanganisiwa nhloko hi swikwere na tinhlamune? Nyika swivangelo ku seketela nhlamulo ya n'wina.

_____

_____

_____

_____

2. Xana tinhlamune ti tivisiwile njhani eka Vhiki ra 3 ra Nongonoko wa Matematiki?

_____

_____

_____

_____

Ku kuma swivumbeko swa matlhelo ma2 (tinhlanharhu)

Eka Giredi ya V vadyondzi va lemuka, kuma na ku nyika mavito ya swivumbeko swa matlhelo ma2: swirhendzevutana, swikwere, tinhlanharhu na tinhlamune. Nongonoko wa Matematiki wu tlhela wu ringanyeta leswaku vadyondzi va khutaziwa ku hlamusela hi ku hlawulekisa swihlawulekisi swa swivumbeko leswi, xik. tilayini to thwixama kumbe tilayini to gombonyoka, nhlayo ya tilayini na tikhona.

Vadyondzi va tirhisa vutivi bya vona byintshwa bya swivumbeko na ku tiyisa ku dyondza loku eka migingiriko ya mitlawa leyitsongo leyi tshunxekeke.

Video 3

Watch the video of the teacher introducing the learners to the triangle.

Notice how the teacher encourages the learners to describe the properties of the triangle.

_____

_____

_____

_____

Activity Guide: Term 1 provides many opportunities throughout the term for teachers to use open-ended questions. The *Poster Book* is used during whole class activities and small group teacher-guided activities to encourage learners to express their own ideas and solve problems.

In Activity 7, you will discuss a poster and talk about whether the questions posed are 'open-ended' or 'closed' questions.

Activity 7

1. Look at Poster 8 and respond to the following questions.

- How many triangles can you see?

_____

- How do you know it is a triangle?

_____

- How many sides does it have?

_____

- How many corners does it have?

_____

- How many lines?

_____

- Can you see any other triangles?

_____

- What other shapes can you see?

_____

- What is the same about these two shapes?

_____

- What is different about these two shapes?

_____

 **Vhidiyo ya 3**

Hlalelani vhidiyo ya mudyondzisi loyi a tivisaka vadyondzi yinhlanharhu.
Vonani hilaha mudyondzisi a khutazaka vadyondzi hakona ku hlamusela swihlawulekisi swa yinhlanharhu.

_____

_____

_____

_____

Xiletelo xa Migingiriko: Kotara ya 1 yi nyika vadyondzisi swivandlanene swo tala eka kotara hinkwayo ku tirhisa swivutiso leswi nga na makumu yo pfuleka. *Buku ya Tiphositara* yi tirhisiwa hi nkarhi wa migingiriko ya tlilasi hinkwayo na migingiriko leyi leteriwaka hi mudyondzisi ya mitlawa leyitsongo ku khutaza vadyondzi ku paluxa mianakanyo ya vona na ku ololoxa swiphiqo.

Eka Nghingiriko wa 7, mi ta kanela phositara na ku vulavula hi mayelana na loko swivutiso leswi vutisiwaka swi ri swivutiso leswi nga na 'makumu yo pfuleka' kumbe swo 'pfaleka'.

 **Nghingiriko wa 7**

1. Langutani Phositara ya 8 kutani mi hlamula swivutiso leswi landzelaka.

♦ Xana i tinhlanharhu tingani mi kotaka ku ti vona?

_____

♦ Xana mi swi tiva njhani leswaku leyi i yinhlanharhu?

_____

♦ Xana yi na matlhelo mangani?

_____

♦ Xana yi na tikhona tingani?

_____

♦ Xana i tilayini tingani?

_____

♦ Xana mi nga kota ku vona tinhlanharhu tin'wana tihi kumbe tihi?

_____

♦ Xana i swivumbeko swihi swin'wana mi kotaka ku swi vona?

_____

♦ Xana hi swihi swi fanaka hi mayelana na swivumbeko leswimbirhi?

_____

♦ Xana hi kwihi ku hambana hi mayelana na swivumbeko leswimbirhi?

_____

2. Which of the questions above are open-ended and which are closed questions?

_____

_____

The **guidance principle** encourages teachers and learners to work together to solve problems using effective questioning.

- **Closed questions** are questions that have a limited 'yes' or 'no' response. Closed questions can be helpful in finding out what learners know, like 'Which shape is a triangle?', 'What colour is it?'
- **Open-ended questions** have more than one possible answer, stimulate thinking and encourage learners to express their own ideas when solving problems.

Not all learners will grasp these concepts or learn the maths language at the same time (**level principle**).

Maths vocabulary

When learners investigate, and describe shapes and objects, they use everyday language like 'flat', 'smooth' and 'pointy'. Teachers can introduce maths vocabulary to replace everyday language, for example: straight lines, curved lines, corners, sides. We also talk about how long something is, how wide it is and refer to the height of something.

Refer to the pages 190–193 of the *Concept Guide* to read more about asking questions related to teaching and learning Space and Shape (Geometry) concepts. Also read page 192 for more about Space and Shape (Geometry) vocabulary in Grade R.

2. Xana hi swihi swa swivutiso leswi vutisiweke laha henhla swi nga na makumu yo pfuleka naswona hi swihi swi nga swivutiso swo pfaleka?

_____

_____

Nawu wa ndzetelo wu khutaza vadyondzisi na vadyondzi ku tirhisana ku ololoxa swiphiqo hi ku tirhisa mavutiselo ya kahle.

- **Swivutiso swo pfaleka** i swivutiso leswi nga na nhlamulo leyi pimiweke ya 'ina' kumbe 'e-e'. Swivutiso swo pfaleka swi nga pfuna eka ku kumisisa leswi vadyondzi va swi tivaka, ku fana na 'Xana i xivumbeko xihi xi nga yinhlanharhu?', 'Xana i xa muhlovo muni?
- **Swivutiso leswi nga na makumu yo pfuleka** swi na kutlula nhlamulo yin'we leyi nga vaka yona, swi nyanyula ku ehleketa na ku khutaza vadyondzi ku paluxa mianakanyo ya vona vini loko va ri karhi va ololoxa swiphiqo.

A hi vadyondzi hinkwavo va nga ta twisisa minongoti leyi kumbe ku dyondza ririmi ra matematiki hi nkarhi wo fana (**nawu wa levhele**).

Ntivomarito wa matematiki

Loko vadyondzi va lavisisa, na ku hlamusela swivumbeko na michumu, va tirhisa ririmi ra masiku hinkwawo ro tanihi 'patlama', 'rhetela', na 'tontswa'. Vadyondzisi va nga tivisa ntivomarito wa matematiki ku siva ririmi ra masiku hinkwawo, tanihi xikombiso: tilayini to thwixama, tilayini to gombonyoka, tikhona, matlhelo. Hi tlhela hi vulavula hi mayelana na hilaha xin'wana xi nga leha hakona, hilaha xi nga anama hakona na ku kongomisa eka vulehelahenhla bya xin'wana.

Kongomisa eka tipheji ta 190–193 ta *Xiletelo xa Minongoti* ku hlaya swo tala hi mayelana na ku vutisa swivutiso leswi fambelanaka na madyondziselo na madyondzelo ya minongoti ya Ndhawu na Xivumbeko (Jometiri). Tlhela u hlaya pheji ya 192 ku kuma swo tala hi mayelana na ntivomarito wa Ndhawu ya Xivumbeko (Jometiri) eka Giredi ya V.

Session 3: Measurement **1 hour**

The focus of Term 1 Week 8 is Measurement: time and length.

Term 1 Content overview: Measurement

Activity 8

Refer to the Measurement Content Area on pages 132–135 of the *Concept Guide*.
In your group, review:

1. What concepts are covered in Term 1?

_____

_____

2. What are the differences between this content and the content from CAPS?

_____

_____

What is measurement?

In Activity 9 we will discuss the question 'What is measurement?'.

Activity 9

Look at the picture below and answer the question.

Who is the biggest?

_____

Sexini ya 3: Mpimo

1 ya awara

Nkongomo wa Vhiki ra 8 ra Kotara ya 1 i Mpimo: nkarhi na vulehi.

Nkatsakanyo wa vundzeni wa Kotara ya 1: Mpimo

Nghingiriko wa 8

Kongomisa eka Xiyenge xa Vundzeni xa Mpimo lexi nga eka tipheji ta 132–135 ta *Xiletelo xa Minongoti*.

Entlaweni wa n'wina, kambisisani:

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

_____

_____

2. Xana hi kwihi ku hambana exikarhi ka vundzeni lebyi na vundzeni byo huma eka XIPHOKHAMA?

_____

_____

Xana mpimo i yini?

Eka Nghingiriko wa 9 hi ta kanela xivutiso lexi 'Xana mpimo i yini?'.

Nghingiriko wa 9

Languta xifaniso lexi nga laha hansi kutani u hlamula xivutiso lexi.

Xana i mani lokulukumba eka hinkwavo?

_____

Measurement is about finding 'how much' there is of a thing, e.g.:

- the length of something
- how much something holds
- the mass of something
- how long it takes to do something.

In order to measure, we need to decide on which attribute (feature/characteristic) we want to measure, e.g. length, mass, time. We use the following words to describe the measurements: taller, heavier, older.

We need to use units to measure. These can be non-standard units or standard units.

- **Non-standard measuring units** include hands, feet, crayons, pieces of string, sticks and blocks.
- **Standard measuring units** include litres, millilitres, kilograms, grams, metres, hours, minutes, etc.

In Grade R learners measure **informally** and use **non-standard measuring units** to measure time, length, mass, capacity and volume.

Direct comparison

Measurement in Grade R includes comparing the attribute of something 'directly' with something else. For example, measuring the length of a crayon against another crayon or comparing the height of two learners standing back-to-back.

Observe the facilitator measuring a group of participants and then complete Activity 10 in your group.

Activity 10

Refer to pages 194–207 of the *Concept Guide* to read more about Measurement and pages 136–149 of *Activity Guide: Term 1* before you answer the questions below.

Mpimo wu hi mayelana na ku kuma leswaku ‘i swingani’ leswi swi nga eka xilo, xik.:

- vulehi bya xin’wana
- i swo tala kufika kwihi xi swi khomaka
- ntiko wa xin’wana
- swi teka nkarhi wo leha kufika kwihi ku endla xin’wana.

Hi xikongomelo xa ku pima, hi fanele ku teka xiboho hi mayelana na leswaku i xihlawulekisi (xivumbeko/xikombo) xihi hi lavaka ku xi pima, xik. vulehi, ntiko, nkarhi. Hi tirhisa marito lama landzelaka ku hlamusela hi ku hlawulekisa mipimo: lehanyana, tikanyana, khalenyana.

Hi fanele ku tirhisa tiyuniti ku pima. Tona ti nga va ti ri tiyuniti leti nga riki ta ntolovelo kumbe tiyuniti ta ntolovelo.

- **Tiyuniti leti nga riki ta ntolovelo** ti katsa swandla, mikondzo, tikhirayoni, swiphemu swa ngoti, swimhandzana na tibuloko.
- **Tiyuniti to pima ta ntolovelo** ti katsa tilitara, timililitara, tikhilogiramu, tigiramu, timitara, tiawara, timinete, sw. na sw.

Eka Giredi ya V vadyondzi va pima hi ndlela ya **nkamafundza** naswona va tirhisa **tiyuniti leti nga riki ta ntolovelo** ku pima nkarhi, vulehi, ntiko, vundzeni na vholomu.

Mfananiso wo kongoma

Mpimo eka Giredi ya V wu katsa ku fananisa xihlawulekisi xa xin’wana ‘hi ku kongoma’ na xin’wana xo karhi. Tanihi xikombiso, ku pima vulehi bya khirayoni na khirayoni yin’wana kumbe ku fananisa vulehelahenhla bya vadyondzi vambirhi lava nga yima va fularhelana hi mihlana.

Xiyaxiyani muhumelerisi a ri karhi a pima ntlawa wa vatekaxiave kutani mi hetisa Nghingiriko wa 10 entlaweni wa n’wina.

Nghingiriko wa 10

Kongomisa eka tipheji ta 194–207 ta *Xiletelo xa Minongoti* ku hlaya swo tala hi mayelana na Mpimo na tipheji ta 136–149 ta *Xiletelo xa Migingiriko: Kotara ya 1* u nga si hlamula swivutiso leswi nga laha hansi.

1. What non-standard unit of measurement was used to measure the height of the participants?

_____

2. What other non-standard units of measurement could be used to measure the height of the participants?

_____

Time

Time is a difficult abstract concept for learners to understand. Learners need to understand how time passes in their own lives, so teachers need to relate time to the learner's daily experiences and events that are familiar to them.

 **Activity 11**

Refer back to Term 1 Week 8 in *Activity Guide: Term 1* and with a partner discuss how time is taught in these lessons. Share your ideas about the following.

1. How can Grade R teachers/practitioners help learners understand more about the concepts of:

- day and night?
- yesterday, today and tomorrow?
- how long things take?
- the sequence of time?

_____
_____
_____
_____
_____
_____

2. How can you use your daily programme activities to teach learners about the concept of time?

_____
_____
_____
_____

1. Xana i yuniti yihi leyi nga riki ya ntolovelo ya mpimo yi tirhisiweke ku pima vulehelahenhla bya vatekaxiave?

_____

2. Xana i tiyuniti tihi tin'wana leti nga riki ta ntolovelo ta mpimo ti nga tirhisiwaka ku pima vulehelahenhla bya vatekaxiave?

_____

Nkarhi

Nkarhi i nongoti wa xianakanyiwa wo tika eka vadyondzi ku wu twisisa. Vadyondzi va fanele ku twisisa hilaha nkarhi wu hundzaka hakona evuton'wini bya vona vini, hikokwalaho vadyondzi va fanele ku fambelanisa nkarhi eka mitokoto na swiendleko swa siku na siku swa vadyondzi leswi swi nga toloveleka eka vona.

Nghingiriko wa 11

Kongomisa nakambe eka Vhiki ra 8 ra Kotara ya 1 eka *Xiletelo xa Migingiriko: Kotara ya 1* kutani na mutirhisani wa wena mi kanela hilaha nkarhi wu dyondzisiwaka hakona eka tidyondzotsongo leti. Avelanani mianakanyo ya n'wina hi mayelana na leswi landzelaka.

1. Xana vadyondzisi/vatirhi va Giredi ya V va nga pfuna njhani vadyondzi ku twisisa swo tala hi mayelana na minongoti ya: nhlekanhi na vusiku?
   - tolo, namuntlha na mundzuku?
   - xana swilo swi teka nkarhi wo leha kufika kwihi?
   - malongolokelo ya nkarhi?

_____
_____
_____
_____
_____
_____

2. Xana u nga yi tirhisa njhani migingiriko ya wena eka nongonoko wa siku na siku ku dyondzisa hi mayelana na nongoti wa nkarhi?

_____
_____
_____
_____

3. What vocabulary is important to understand the concept of time?

_____
_____
_____

Refer to pages 194–207 of the *Concept Guide* to read more about Measurement and time. Refer to the page 210 of the *Concept Guide* to read more about asking questions related to teaching and learning of Measurement in Grade R.

3. Xana i ntivomarito wihi wu nga wa nkoka eka ntwisiso wa nongoti wa nkarhi?

_____
_____
_____

Kongomisa eka tipheji ta 194–207 ta *Xiletelo xa Minongoti* ku hlaya swo tala hi mayelana na Mpimo na Nkarhi. Kongomisa eka pheji ya 211 ya *Xiletelo xa Minongoti* ku haya swo tala hi mayelana na ku vutisa swivutiso leswi fambelanaka na madyondziselo na madyondzelo ya Mpimo eka Giredi ya V.

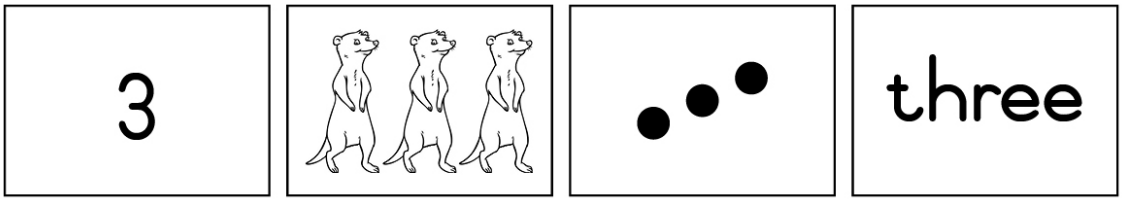
Session 4: Numbers, Operations and Relationships

1 hour

In Workshop 2, you were introduced to the concepts of counting and representation of number. In this workshop we will see how the same ideas continue into Week 6 as the number 3 is introduced. The same routine is followed as with numbers 1 and 2, namely:

Tell the *Number 3 story* and dramatise as you build up the story with the different representations of the number using frieze cards from the *Resource Kit*:

- animal (picture)
- number symbol
- number word
- dots (representing the doorbells).



Look for objects and match the number symbol (3) and number word (three). In Week 6, learners are introduced to dot cards (from the *Resource Kit*). Learners match counters to the dot cards and discuss that 3 is made up of 1 and 2 dots.

Term 1 Content overview: Numbers, Operations and Relationships

Week 7 focuses on Space and Shape (Geometry) while Week 8 focuses on Measurement. The focus of Week 9 in Term 1 is once more on number concepts. In this session, you will investigate the relationship between numbers.

Activity 12

Refer to the Numbers, Operations and Relationships content overview on pages 114–123 of the *Concept Guide*. In your group, discuss the following features of the content overview:

1. What is Topic 1.4?
2. What sub-topics are listed under this topic?
3. What are the differences between the blue and black text? Explain why you think this is so.

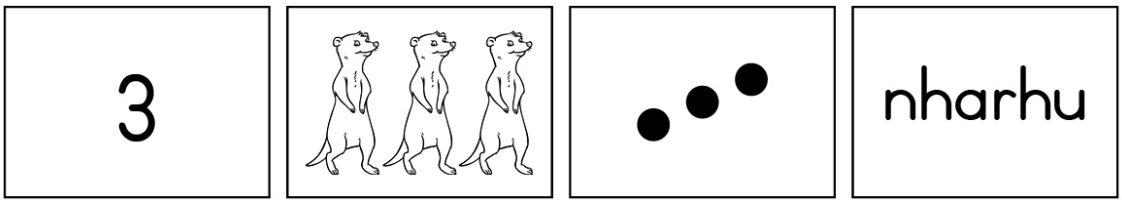
Sexini ya 4: Tinomboro, Tioparexini na Vuxaka

1 ya awara

Eka Ndzetelavutivi wa 2, mi tivisile minongoti ya ku hlayela na ku endla vuyimeri bya nomboro. Eka ndzetelavutivi lowu hi ta vona hilaha mianakanyo yo fana yi yaka emahlweni hakona eka Vhiki ra 6 loko nomboro ya 3 yi ri karhi yi tivisiwa. Endlelo ra masiku hinkwawo ro fana ra landzeleriwa na le ka tinomboro ta 1 na 2, ku nga:

Rungula *Xitori xa nomboro ya 3* kutani mi endla ntlangu tanihiloko u ri karhi u aka xitori hi vuyimeri byo hambanahambana bya nomboro hi ku tirhisa makhadi ya swipendiwankhaviso kusuka eka *Khiti ya Swipfuno*:

- xiharhi (xifaniso)
- mfungho wa nomboro
- rito ra nomboro
- mathonsi (ku endla vuyimeri bya tibele ta le rivantini).



Lava michumu kutani u yi pananisa na mfungho wa nomboro (3) na rito ra nomboro (nharhu). Eka Vhiki ra 6, vadyondzi va tivisiwa eka makhadi ya mathonsi (kusuka eka *Khiti ya Swipfuno*). Vadyondzi va pananisa swihlayeri eka makhadi ya mathonsi kutani va kanela leswaku 3 yi vumbiwa hi mathonsi ya 1 na 2.

Nkatsakanyo wa vundzeni wa Kotara ya 1: Tinomboro, Tioparexini na Vuxaka

Vhiki ra 7 ri kongomisa eka Ndhawu na Xivumbeko (Jometiri) loko Vhiki ra 8 ri kongomisa eka Mpimo. Nkongomo wa Vhiki ra 9 ra Kotara ya 1 wu tlhela wu va eka minongoti ya tinomboro. Eka sexini leyi, u ta lavisisa vuxaka exikarhi ka tinomboro.

Nghingiriko wa 12

Kongomisa eka nkatsakanyo wa vundzeni wa Tinomboro, Tioparexini na Vuxaka lowu nga eka tipheji ta 114–123 ta *Xiletelo xa Minongoti*. Entlaweni wa n'wina, kanelani swihlawulekisi leswi landzelaka swa nkatsakanyo wa vundzeni:

1. Xana Nhlokomhaka ya 1.4 i yini?
2. Xana i tinhlokomhakatsongo tihi leti ti xaxametiweke ehansi ka nhlokomhaka leyi?
3. Xana hi kwihi ku hambana exikarhi ka xitsariwa xa muhlovo wa wasi na xa muhlovo wa ntima? Hlamusela leswaku hikwalahokayini u ehleketa leswaku leswi swi tano.

Calculating

In Grade R learners do not do number operations like addition and subtraction, multiplication and division. These concepts are gradually built up through investigation and through problem solving. For example: *I have three apples. I eat one. How many apples do I have left?*

Learners need to understand the relationship between numbers. Activities that involve breaking down and building up numbers help learners to understand the relationships between numbers and the value of numbers. For example: *5 is made up of 2 and 3, 1 and 4.*

Demonstration

Watch the demonstration of a 'shake-and-break' game and then discuss your observations in your group.

 **Activity 13**

Discuss the demonstration you have just watched.

1. What number concepts could the learners learn by playing this game?

_____

_____

2. What questions did the facilitator use that highlighted addition and subtraction?

_____

_____

_____

_____

Not all learners will demonstrate an understanding of these number concepts at the same time (**level principle**).

Ku khakhuleta

Eka Giredi ya V vadyondzi a va endli tioparexini ta tinomboro to tanihi nhlanganiso na nsuso, andziso na avanyiso. Minongoti leyi yi akiwa kuya ehenhla hi katsongotsongo hi ku tirhisa vulavisisi na hi ku tirhisa ku ololoxa swiphiqo. Tanihi xikombiso: *Ndzi na maapula manharhu. Ndzi dya rin'we. Xana i maapula mangani lama ndzi nga sala na wona?*

Vadyondzi va fanele ku twisisa vuxaka exikarhi ka tinomboro. Migingiriko leyi yi khumbaka ku tlhantlha na ku aka tinomboro yi pfuna vadyondzi ku twisisa vuxaka exikarhi ka tinomboro na nkoka wa tinomboro. Tanihi xikombiso: *5 yi vumbiwa hi 2 na 3, 1 na 4*.

Nkombiso

Hlalelani nkombiso wa ntlangu wa 'dludla kutani u hangalasa' kutani endzhaku ka swona mi kanela mixiyaxiyo ya n'wina entlaweni wa n'wina.

Nghingiriko wa 13

Kanelani nkombiso lowu ma ha ku wu hlalelaka.

1. Xana i minongoti yihi ya tinomboro vadyondzi va nga yi dyondzaka hi ku tlanga ntlangu lowu?

_____

_____

2. Xana hi swihi swivutiso leswi muhumelerisi a swi tirhiseke leswi swi kombisaka nhlanganiso na nsuso?

_____

_____

_____

_____

A hi vadyondzi hinkwavo va nga ta kombisa ntwisiso wa minongoti leya tinomboro hi nkarhi wo fana (**nawu wa levhele**).

Session 5: Planning for teaching **1 hour**

Term 1 Content Summary (Weeks 6–9)

Appendix A: Term 1 Weekly Content Summary (Weeks 6–9) outlines the main Content Area Focus for each week, the topics to be covered, the new knowledge and practise focus for each week, and suggested activities for whole class, teacher-guided and independent group work for the week.

Activity 14

Look at Appendix A: Term 1 Weekly Content Summary (Weeks 6–9). Answer the questions.

Questions	Week 6	Week 7	Week 8	Week 9
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?				

Sexini ya 5: Nkunguhato wa ku dyondzisa **1 ya awara**

Nkomiso wa Vundzeni wa Kotara ya 1 (Mavhiki ya 6–9)

Xiengetelwa xa A: Nkomiso wa Vundzeni wa Vhiki na Vhiki wa Kotara ya 1 (Mavhiki ya 6–9) wu katsakanya nkongomokulu wa Xiyenge xa Vundzeni wa vhiki rin'wana na rin'wana, tinhlokomhaka leti angarheliwaka, vutivi byintshwa na nkongomo wa ku titoloveta wa vhiki rin'wana na rin'wana, na migingiriko leyi ringanyetiwaka ya tlilasi hinkwayo, ntirho lowu leteriwaka hi mudyondzisi na ntirho wa ntlawa lowu tshunxekeke wa vhiki.

Nghingiriko wa 14

Languta Xiengetelwa xa A: Nkomiso wa Vundzeni wa Vhiki na Vhiki wa Kotara ya 1 (Mavhiki ya 6–9). Hlamula swivutiso leswi.

Swivutiso	Vhiki ra 6	Vhiki ra 7	Vhiki ra 8	Vhiki ra 9
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: Weeks 6, 7, 8 and 9

Refer to Weeks 6, 7, 8 and 9 in *Activity Guide: Term 1*. Complete Activity 15 in your group.

Activity 15

Find Weeks 6, 7, 8 and 9 in *Activity Guide: Term 1*. Answer the questions.

1. What is the Content Area Focus for each week?
2. What topics and new knowledge are taught in each week?
3. How does the 'Practise' content link to the previous week?
4. What do you need to get ready before teaching each week?
5. Read the whole class activities and small group activities.
6. Discuss in your small group how you will plan and organise your class for these four weeks of teaching.

Remember that in Grade R assessment is informal and continuous. We need to observe learners throughout the day, inside and outside the classroom. 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 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: '**Check that learners are able to**'. 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.

Xiletelo xa Migingiriko: Kotara ya 1: Mavhiki ya 6, 7, 8 na 9

Kongomisa eka Mavhiki ya 6, 7, 8 na 9 eka *Xiletelo xa Migingiriko: Kotara ya 1.* Hetisa Nghingiriko wa 15 eka ntlawa wa wena.

Nghingiriko wa 15

Kuma Mavhiki ya 6, 7, 8 na 9 eka *Xiletelo xa Migingiriko: Kotara ya 1*. Hlamula swivutiso leswi.

1. Xana hi wihi Nkongomo wa Xiyenge xa Vundzeni wa vhiki rin'wana na rin'wana?
2. Xana i tinhlokomhaka tihi na vutivi byintshwa byi dyondzisiwaka eka vhiki rin'wana na rin'wana?
3. Xana vundzeni bya 'Titoloveti' byi xakelanisa njhani na vhiki leri nga hundza?
4. Xana hi swihi leswi u fanelaka ku tshama u swi lulamisile u nga si dyondzisa vhiki rin'wana na rin'wana?
5. Hlaya migingiriko ya tlilasi hinkwayo na migingiriko ya mitlawa leyitsongo.
6. Kanelani entlaweni wa n'wina lowutsongo hilaha mi nga ta kunguhata na ku lulamisa tlilasi ya n'wina hakona eka mavhiki lama mune ya ku dyondzisa.

Tsundzuka leswaku makambelelo ya Giredi ya V i ya nkamafundza na leswaku ma ya emahlweni. Hi fanele ku xiyaxiya vadyondzi esikwini hinkwaro, endzeni na le handle ka kamara ro dyondzela. 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.

Nongonoko wa Matematiki wu endliwile hi mayelana na ku cincana ka 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 nkarhi wa 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 nghingiriko lowu leteriweke hi mudyondzisi: '**Kamba leswaku vadyondzi va kota ku'.** 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 yi nga na tinotsi ta mudyondzi un'wana na un'wana.

Closing activities

Activity 16

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 6–9 of the Maths Programme, including creating a maths area with a focus on the concept for each week.
3. Write an evaluation of what worked well and what did not work so well. Bring your plan and evaluation to the next workshop.
4. Bring examples or photographs of work that learners did.

Evaluation

Complete the Evaluation Form.

Migingiriko yo pfala

Nghingiriko wa 16

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 6–9 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.
3. Tsala nkambelo wa leswi swi tirheke kahle swinene na leswi swi nga tirhangiki kahle ngopfu. Tana na kungu ra wena na nkambelo wa wena eka ndzetelavutivi lowu landzelaka.
4. Tana na swikombiso kumbe swinepe swa ntirho lowu vadyondzi va endleke.

Nkambelo

Tatisa Fomo leya Nkambelo.

APPENDIX A: TERM 1 WEEKLY CONTENT SUMMARY (WEEKS 6–9)

Term 1: Activity Plan

<table>
<tr><th colspan="5">Week 6</th></tr>
<tr><td colspan="5">CONTENT AREA: PATTERNS, FUNCTIONS and ALGEBRA</td></tr>
<tr><td colspan="5">TOPIC: Geometric patterns
INTRODUCE NEW KNOWLEDGE: Identify patterns, copy patterns, complete patterns, introduce number 3, sequencing numbers 1–3. Making groups the same.
PRACTISE: Oral counting 1–5, counting objects 1–5, number concept 1 and 2, circle, square, big and small, forwards and backwards</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 number 3 number frieze story.</td><td rowspan="5">Play a movement game using symbols 1 and 2.
Match and order dot picture/number cards 1–3.
Simple pattern using counters. Discuss the pattern, use counters to copy the pattern.
Problem solving 1–3. Making groups the same.</td><td>Activity 1</td><td>Frame a picture using pattern and draw three objects.</td></tr>
<tr><td>Day 2</td><td>Uses different sized and coloured circles to make simple patterns. Discuss patterns (repetition, differences, similarities).</td><td>Activity 2</td><td>Fingerprint counting.</td></tr>
<tr><td>Day 3</td><td>Body percussion patterns and problem solving.</td><td>Activity 3</td><td>Pattern cards using counters and sticks.</td></tr>
<tr><td>Day 4</td><td>Using big and small circles and objects to make simple patterns. Identify patterns in classroom.</td><td>Activity 4</td><td>Template with playdough – make 3.</td></tr>
<tr><td>Day 5</td><td>Problem solving 1–3. Making groups the same.</td><td></td><td></td></tr>
<tr><th colspan="5">Week 7</th></tr>
<tr><td colspan="5">CONTENT AREA: SPACE and SHAPE (GEOMETRY)</td></tr>
<tr><td colspan="5">TOPIC: Recognise, identify and name 2-D shapes: triangle; describe and compare 3-D objects and 2-D shapes: triangles; sort 2-D shapes; figure ground; symmetry
INTRODUCE NEW KNOWLEDGE: Triangle; figure ground; position (in front and behind); oral counting 1–10
PRACTISE: Oral counting 1–10, sequencing number 1–3, counting objects 1–5, reinforce number concept 1–3, what number before/after, circle, square, symmetry, big and small</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 triangle and its properties.</td><td rowspan="5">Oral counting.
Touch and count using number towers 1–3 (Unifix blocks).
One-to-one correspondence.
Properties of a triangle (2-D).
Sort and compare 3-D objects and 2-D shapes into two groups, one of triangles and one not triangles.</td><td>Activity 1</td><td>Triangle activity – cut and decorate four triangles.</td></tr>
<tr><td>Day 2</td><td>Identify triangle shapes in Poster Book, problem solving.</td><td>Activity 2</td><td>Butterfly prints – symmetry.</td></tr>
<tr><td>Day 3</td><td>In front of and behind; midline crossing.</td><td>Activity 3</td><td>Shape person – use pre-cut shapes.</td></tr>
<tr><td>Day 4</td><td>Compare biggest and smallest. Bigger and smaller.</td><td>Activity 4</td><td>Shape puzzles – (minimum six pieces).</td></tr>
<tr><td>Day 5</td><td>Symmetry.</td><td></td><td></td></tr>
</table>

XIENGETELWA XA A: NKOMISO WA VUNDZENI WA VHIKI NA VHIKI WA KOTARA YA 1 (MAVHIKI YA 6–9)

Kotara ya 1: Kungu ra Migingiriko

Vhiki ra 6					
XIYENGE XA VUNDZENI: TIPATIRONI, TIFANKIXINI NA ALIJEBURA					
NHLOKOMHAKA: Tipatironi ta jometiri **TIVISA VUTIVI BYINTSHWA:** Kuma tipatironi, kopunula tipatironi, hetisa tipatironi, tivisa nomboro ya 3, ku longoloxela tinomboro ta 1–3. Ku endla mitlawa yi fana. **TITOLOVETI:** Ku hlayela ka swanomu 1–5, ku hlayela michumu 1–5, nongoti wa tinomboro ta 1 na 2, xirhendzevutana, xikwere, nkulu na ntsongo, kuya emahlweni na kuya endzhaku					
Migingiriko ya tlilasi hinkwayo		**Nghingiriko lowu leteriwaka hi mudyondzisi**		**Migingiriko ya le ka xitichi xo tirhela**	
Siku ra 1	Tivisa xitori xa xipendiwankhaviso xa nomboro ya 3.	Tlangani ntlangu wa mfambafambo hi ku tirhisa mifungho ya 1 na 2. Pananisa na ku longoloxela swifaniso swa mathonsi/makhadi ya tinomboro 1–3. Patironi yo olova hi ku tirhisa swihlayeri. Kanelani patironi leyi, tirhisani swihlayeri ku kopunula patironi leyi. Ku ololoxa swiphiqo 1–3. Ku endla mitlawa yi fana.	**Nghingiriko wa 1**	Endla rimba ra xifaniso hi ku tirhisa patironi kutani u dirowa michumu yinharhu.	
Siku ra 2	Tirhisa swirhendzevutana leswi nga na tisayizi to hambanahambana na mihlovo yo hambanahambana ku endla tipatironi to olova. Kanelani tipatironi (mbuyelelo, ku hambana, ku fanana).		**Nghingiriko wa 2**	Nhlayelo wa migandlo ya tintiho.	
Siku ra 3	Tipatironi ta mpfumawulo lowu humesiwaka hi swirho swa miri na ku ololoxa swiphiqo.		**Nghingiriko wa 3**	Makhadi ya tipatironi hi ku tirhisa swihlayeri na swimhandzana)	
Siku ra 4	Ku tirhisa swirhendzevutana leswikulukumba na leswitsongo na michumu leyikulukumba na leyitsongo ku endla tipatironi to olova. Kuma tipatironi leti nga eka kamara ro dyondzela.		**Nghingiriko wa 4**	Thempuleti hi vumba byo tlangisa – endla 3.	
Siku ra 5	Ku ololoxa swiphiqo 1–3. Ku endla mitlawa yi fana.				

Vhiki ra 7					
XIYENGE XA VUNDZENI: NDHAWU NA XIVUMBEKO (JOMETIRI)					
NHLOKOMHAKA: Tiva, kuma na ku vula mavito ya swivumbeko swa 2-D: yinhlanharhu; hlamusela kutani u fananisa michumu ya 3-D na swivumbeko swa 2-D: tinhlanharhu; ava swivumbeko swa 2-D; swifaniso swa swivumbeko; ndzinganiso **TIVISA VUTIVI BYINTSHWA:** Yinhlanharhu; swifaniso swa swifaniso; xiyimo (emahlweni na endzhaku ka); ku hlayela ka swanomu 1–10 **TITLOVETI:** Ku hlayela ka swanomu 1–10, ku longoloxela tinomboro 1–3, ku hlayela michumu 1–5, ku tiyisa nongoti wa tinomboro ta 1–3, xana i mani nomboro leyi nga emahlweni ka/endzhaku ka, xirhendzevutana, xikwere, ndzinganiso, nkulu na ntsongo					
Migingiriko ya tlilasi hinkwayo		**Nghingiriko lowu leteriwaka hi mudyondzisi**		**Migingiriko ya le ka xitichi xo tirhela**	
Siku ra 1	Tivisa yinhlanharhu na swihlawulekisi swa yona.	Ku hlayela ka swanomu. Khumba kutani u hlayela hi ku tirhisa swihondzo swa tinomboro ta 1–3 (tibuloko ta Unifix). Ku yelana ka xin'we-eka-xin'we. Swihlawulekisi swa yinhlanharhu (2-D). Ava na ku fananisa michumu ya 3-D na swivumbeko swa 2-D hi mitlawa yimbirhi, wun'we wa tinhlanharhu na wun'we lowu nga riki wa tinhlanharhu.	**Nghingiriko wa 1**	Nghingiriko wa tinhlanharhu – tsema kutani u khavisa mune wa tinhlanharhu.	
Siku ra 2	Kuma swivumbeko swa tinhlanharhu eka *Buku ya Tiphositara*, ku ololoxa swiphiqo.		**Nghingiriko wa 2**	Swikandziyisiwa swa maphaphatana – ndzinganiso.	
Siku ra 3	Emahlweni ka na endzhaku ka; ku tirhisa swirho swa ximatsi na xinene.		**Nghingiriko wa 3**	Munhu wa xivumbeko – tirhisa swivumbeko leswi rhangeke swi tsemiwa.	
Siku ra 4	Fananisa nkulukumba kutlula hinkwaswo na ntsongo kutlula hinkwaswo. Nkulukumbanyana, ntsongonyana		**Nghingiriko wa 4**	Swiphazamiso swa xivumbeko – (mpimohansi wa tsevu wa swiphemu).	
Siku ra 5	Ndzinganiso.				

<table>
<tr><th colspan="5">Week 8</th></tr>
<tr><td colspan="5">CONTENT AREA: MEASUREMENT</td></tr>
<tr><td colspan="5">TOPIC: Time: day and night; Length: compare and order objects to describe height
INTRODUCE NEW KNOWLEDGE: Sequencing day and night, light and dark; height chart; position (on, under, on top, below, next to, between); counting backwards 5–1
PRACTISE: Oral counting 1–10, counting backwards from 5, sequencing numbers 1–3, counting objects 1–5, reinforce number concept 1–3, patterns</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>Day and night; light and dark.</td><td rowspan="5">Routine introduction.
Day and night; dark and light activities:
- blanket
- activity cards.
Day and night story and sequencing.
Position (on, under, below, on top, next to, between).
Pattern (animals).
Height chart.</td><td>Activity 1</td><td>Day and night activity – cutting out pictures.</td></tr>
<tr><td>Day 2</td><td>Introduce height chart; position vocabulary.</td><td>Activity 2</td><td>Draw from shortest to tallest.</td></tr>
<tr><td>Day 3</td><td>Height chart. Sorting day and night everyday objects.</td><td>Activity 3</td><td>Paste shapes from biggest to smallest.</td></tr>
<tr><td>Day 4</td><td>Poster – Day and night. Positional vocabulary: on, under, below and on top.</td><td>Activity 4</td><td>Day/night matching cards.</td></tr>
<tr><td>Day 5</td><td>Compare heights.
Movement-positions.</td><td></td><td></td></tr>
<tr><th colspan="5">Week 9</th></tr>
<tr><td colspan="5">CONTENT AREA: NUMBERS, OPERATIONS and RELATIONSHIPS</td></tr>
<tr><td colspan="5">TOPIC: Describe, order and compare numbers; estimation; problem-solving techniques; using numbers in familiar contexts; position
INTRODUCE NEW KNOWLEDGE: Estimation, numbers in familiar contexts, one more, one less, position (up/down)
PRACTISE: Oral counting 1–10, counting backwards from 5, sequencing numbers 1–3, counting objects 1–5, number concept 1–3, problem-solving techniques. Circle, square and triangle.</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>Describe and order numbers 1–3.</td><td rowspan="5">Oral counting.
One-to-one correspondence.
Describe and order numbers 1–3.
Estimation.
Shake and break.</td><td>Activity 1</td><td>Playdough making 1–3 objects.</td></tr>
<tr><td>Day 2</td><td>Matching number representations 1–3.
Estimation.</td><td>Activity 2</td><td>Draw pictures 1–3 in shapes.</td></tr>
<tr><td>Day 3</td><td>Counting – one more/one less.
Position: up and down.</td><td>Activity 3</td><td>Pasting. Picture with three stars, two trees, one moon.</td></tr>
<tr><td>Day 4</td><td>Problem solving (more/less). Poster 1.</td><td>Activity 4</td><td>Puzzles (minimum six piece).</td></tr>
<tr><td>Day 5</td><td>Using number in familiar context: How old are you?</td><td></td><td></td></tr>
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<table>
<tr><th colspan="5">Vhiki ra 8</th></tr>
<tr><td colspan="5">XIYENGE XA VUNDZENI: MPIMO</td></tr>
<tr><td colspan="5">NHLOKOMHAKA: Nkarhi: nhlekanhi na vusiku; Vulehi: fananisa na ku landzelelanisa michumu ku hlamusela vulehelahenhla
TIVISA VUTIVI BYINTSHWA: Ku longoloxela nhlekanhi na vusiku, ku vonakala na munyama; chati ya vulehelahenhla; xiyimo (ehenhla, ehenhla ka, ehansi ka, ekusuhi na, exikarhi ka); ku hlayela kuya endzhaku 5–1
TITOLOVETI: Ku hlayela ka swanomu 1–10, ku hlayela kuya endzhaku kusuka eka 5, ku longoloxela tinomboro ta 1–3, ku hlayela michumu 1–5, tiyisa nongoti wa tinomboro 1–3, tipatironi.</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>Nhlekanhi na vusiku; ku vonakala na munyama.</td><td rowspan="5">Manghenelo ya siku na siku.
Nhlekanhi na vusiku; migingiriko ya ku vonakala na munyama:
- nkumba
- makhadi ya migingiriko.
Xitori xa ninhlekanhi na xa nivusiku na ku longoloxela.
Xiyimo (ehenhla, ehansi, ehenhla ka, ehansi ka, ekusuhi na, exikarhi ka).
Patironi (swiharhi),
Chati ya vulehelahenhla.</td><td>Nghingiriko wa 1</td><td>Nghingiriko wa ninhlekanhi na wa nivusiku – ku tsema swifaniso.</td></tr>
<tr><td>Siku ra 2</td><td>Tivisa chati ya vulehelahenhla; ntivomarito wa xiyimo</td><td>Nghingiriko wa 2</td><td>Dirowa kusuka eka lexo koma kutlula hinkwaswo kufika eka lexo leha kutlula hinkwaswo.</td></tr>
<tr><td>Siku ra 3</td><td>Chati ya vulehelahenhla. Ku ava michumu ya masiku hinkwawo ya ninhlekanhi na ya nivusiku.</td><td>Nghingiriko wa 3</td><td>Namarheta swifaniso kusuka eka lexikulukumba kutlula hinkwaswo kufika eka lexitsongo kutlula hinkwaswo.</td></tr>
<tr><td>Siku ra 4</td><td>Phositara – Nhlekanhi na vusiku. Ntivomarito wa xiyimo: ehenhla, ehansi, ehansi ka na ehenhla ka.</td><td>Nghingiriko wa 4</td><td>Makhadi lama pananaka ya ninhlekanhi/nivusiku.</td></tr>
<tr><td>Siku ra 5</td><td>Fananisa vulehelahenhla.
Swiyimo swa mfambafambo.</td><td></td><td></td></tr>
<tr><th colspan="5">Vhiki ra 9</th></tr>
<tr><td colspan="5">XIYENGE XA VUNDZENI: TINOMBORO, TIOPAREXINI NA VUXAKA</td></tr>
<tr><td colspan="5">NHLOKOMHAKA: Hlamusela, longoloxa na ku fananisa tinomboro; nkumbetelo; tithekiniki ta ku ololoxa swiphiqo; ku tirhisa tinomboro eka mivangu ya ntolovelo; xiyimo
TIVISA VUTIVI BYINTSHWA: Nkumbetelo, tinomboro eka mivangu ya ntolovelo, nkulu hi n’we/ntsongo hi n’we, xiyimo (ehenhla/ehansi)
TITOLOVETI: Ku hlayela ka swanomu 1–10, ku hlayela kuya endzhaku kusuka eka 5, ku longoloxela tinomboro ta 1–3, ku hlayela michumu 1–5, nongoti wa tinomboro 1–3, tithekiniki ta ku ololoxa swiphiqo. Xirhendzevutana, xikwere na yinhlanharhu</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>Hlamusela na ku longoloxa tinomboro 1–3.</td><td rowspan="5">Ku hlayela ka swanomu.
Ku yelana ka xin’we-eka-xin’we.
Hlamusela na ku longoloxa tinomboro 1–3.
Nkumbetelo.
Dludla kutani u hangalasa.</td><td>Nghingiriko wa 1
Nghingiriko wa 2
Nghingiriko wa 3
Nghingiriko wa 4</td><td>Vumba byo tlangisa ku endla michumu ya 1–3.
Dirowa swifaniso swa 1–3 hi swivumbeko.
Ku namarheta. Xifaniso hi tinyeleti tinharhu, misinya yimbirhi, n’weti wun’we.
Swiphazamiso (mpimohansi wa tsevu wa swiphemu).</td></tr>
<tr><td>Siku ra 2</td><td>Ku pananisa vuyimeri bya tinomboro ta 1–3. Nkumbetelo.</td></tr>
<tr><td>Siku ra 3</td><td>Ku hlayela - nkulu hi n’we/ ntsongo hi n’we
Xiyimo: ehenhla na ehansi</td></tr>
<tr><td>Siku ra 4</td><td>Ku ololoxa swiphiqo (tala/ntsongo). Phositara ya 1.</td></tr>
<tr><td>Siku ra 5</td><td>Ku tirhisa nomboro eka mbangu wa ntolovelo: Xana u na malembe mangani hi vukhale?</td></tr>
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Workshop 3 Evaluation Form

1. Did the workshop meet your expectations?

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_____
_____
_____

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?

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_____

4. How will you apply what you have learnt in your Grade R classroom?

_____
_____
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_____

5. Do you have any suggestions for improving further workshops?

_____
_____
_____
_____

Fomo ya Nkambelo ya Ndzetelavutivi wa 3

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?

_____
_____
_____
_____