GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

GGT 2030
GROWING GAUTENG TOGETHER

Tshivenḓa/English

# Mbekanyamushumo ya u Khwinifhadza Mbalo dza Gireidi ya Ṱ̂
# Grade R Mathematics Improvement Programme

## Wekishopo ya 10 ● Workshop 10
## Nyendedzi ya Mutshimbidzi ● Facilitator's Guide

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

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

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

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

**ACKNOWLEDGEMENTS**

Special thanks to:

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



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Mbalo dza Gireidi ya Ṱ na Thandela ya u Khwinisa Dzinyambo ndi vhurangeli ha **Gauteng Department of Education** na vhafarakani navho vha ndeme vha, **Gauteng Education Development Trust**.

Mveledziso na vhubveledzi ha vhupfumbudzi na zwishumiswa zwa kiḽasirumu ya Mbalo dza Gireidi ya Ṱ na Thandela ya u Khwinisa Dzinyambo zwo konadzea nga ndambedzo ya thandela u bva kha vha **United States Agency for International Development** na vha **Zenex Foundation**.

Mbalo dza Gireidi ya Ṱ na Thandela ya u Khwinisa Dzinyambo i langulwa nga vha **JET Education Services** na **Schools Development Unit ya UCT** na **Wordworks** sa vhafarakani vha thekhinikhala.

**Schools Development Unit** (SDU) ngei **University of Cape Town** (UCT) ndi mufarakani wa thekhinikhala wa mbalo kha Mbalo dza Gireidi ya Ṱ na Thandela ya u Khwinisa Dzinyambo. SDU ndi yuniti ngomu ha School of Education tsha UCT ine ya sedzesa kha mveledziso ya phurofeshinala ya vhagudisi kha Mbalo, Saintsi, Ḽitheresi/Dzinyambo na Zwikili zwa Vhutshilo u bva kha Gireidi ya Ṱ u ya kha Gireidi ya 12. SDU i ṋetshedza ndalukanyo dza mugudisi na khoso pfufhi dzo themendelwaho dza UCT, mushumo wo ḓisendekaho nga tshikolo, mveledziso ya matheriala na ṱhoḓisiso zwa u tikedza u gudisa na u guda nga nyambo dzoṱhe dza Afrika Tshipembe.

**NDIVHUHO**

Ndivhuho dzo khetheaho kha:

- Vhaofisiri vha Khethekanyo ya Kharikhuḽamu, Pfunzo ya Vhagudisi na Pfunzo yo Khetheaho ya Gauteng Department of Education, kha u shela havho mulenzhe kha u shandulela matheriala ashu.
- Vhaofisiri na vhagudisi vha Western Cape Education Department (WCED) kha u shela havho mulenzhe kha u khunyeledza u thomiwa ha Grade R Mathematics Programme (R-Maths) kha ḽa Western Cape vhukati ha 2016 na 2019.
- Tshigwada tsha vhaṅwali vha R-Maths: vhashumi vha SDU na vhaeletshedzi.



Mbekanyamushumo ya u sika muhumbulo na ndangulo: Vho Cally Kuhne na Vho Tholisa Matheza
U pindulela na ndangulo ya thandela ya nyanḓadzo: Vho Arabella Koopman
Mukonanyi wa u pindulela (Tshivenḓa): Vho Ingrid Brink
U pindulela kha Tshivenḓa: Vho Alugumi Rathumbu
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# Overview

## Purpose

This is the tenth 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 continue assisting teachers to implement the Maths Programme in their classrooms. Participants will have the opportunity to reflect on their implementation of the Maths Programme and discuss their planning, teaching and assessment. They will also consider learner progress, and individual developmental and learning needs. Participants will reflect on appropriate assessment strategies for capturing learner progress. The workshop explores the content for Term 4 Weeks 1–3 and its classroom implementation.

References to the Grade R Mathematics Content Areas are taken from the *Curriculum and Assessment Policy Statement (CAPS)*: *Grade R Mathematics (Final Draft),* 2011*,* Department of Basic Education, South Africa.

## Learning outcomes

- To reflect on the implementation of Term 3 Weeks 7–10
- To reflect on the use of the guiding principles of teaching maths in Grade R
- To deepen understanding of continuous learner observation in Grade R
- To reflect on informal forms of assessment in Grade R
- To reflect on challenges and find solutions to implementing the Maths Programme
- To map out the Maths Programme content to be taught in Term 4 Weeks 1–3

## Workshop content

- Opening and reflection (1 hour)
- Session 1: Observation and assessment (1 hour)

TEA

- Session 2: The guiding principles of teaching maths in Grade R (1 hour)
- Session 3: Introducing numbers 10 and 0 (1 hour)

LUNCH

- Session 4: Planning for teaching (1½ hours)
- Closing activities (30 minutes)

# Manweledzo

## Ndivho

Iyi ndi wekishopo ya vhufumi kha dza fumimbili dza Mbekanyamushumo ya u Khwinifhadza Mbalo dza Gireidi ya Ṱ ine ya vhumba tshipiḓa tsha Muhasho wa Pfunzo wa Gauteng (GDE) Mbalo dza Gireidi ya Ṱ na Thandela ya u Khwinisa Dzinyambo.

Ndivho ya wekishopo iyi ndi u thusa vhagudisi u thoma Mbekanyamushumo ya Mbalo ngomu kiḽasirumuni dzavho. Vhashelamulenzhe vha ḓo vha na tshikhala tsha u amba nga zwe vha lavhelesa. Vha ḓo tandula uri milayo ya nyendedzi dza u funza mbalo kha Gireidi ya Ṱ i fanela u thusa hani u pulana havho, u funza na u linga. Vha ḓo dovha hafhu vha sedza mvelaphanḓa ya vhagudi, na ṱhoḓea dza u guda na mveledziso dza mugudi nga eṱhe. Wekishopo i tandula magudiswa a Kotara ya 4 Vhege ya 1–3 na u thomiwa hao kiḽasini.

U referentsiwa kha Sia ḽa Magudiswa ḽa Mbalo dza Gireidi ya Ṱ zwo dzhiwa kha *Tshitatamennde tsha Phoḽisi tsha Kharikhuḽamu na u Linga* (*TSHIPHOKHALI): Mbalo dza Gireidi ya Ṱ (Mvetamveto ya u Fhedzisela)*, 2011, Muhasho wa Pfunzo ya Mutheo, Afrika Tshipembe.

## Mvelelo dza u guda

- U humbula nga u thomiwa ha Kotara ya 3 Vhege ya 7–10
- U amba nga tshumiso ya milayo ya nyendedzi dza u funza mbalo kha Gireidi ya Ṱ
- U khwaṱhisedza u pfesesa u lavhelesa hu bvelaho phanḓa ha mugudi kha Gireidi ya Ṱ
- U amba nga nḓila dzi si fomaḽa dza u linga kha Gireidi ya Ṱ
- U amba nga dzikhaedu na u wana thandululo dza u thoma Mbekanyamushumo ya Mbalo
- U pulana magudiswa a Mbekanyamushumo ya Mbalo ane a ḓo funzwa kha Kotara ya 4 Vhege ya 1–3

## Magudiswa a wekishopo

- Mvulatswinga na mihumbulo (Awara 1)
- Dzulo ḽa 1: U lavhelesa na u linga (Awara 1)

TIE

- Dzulo ḽa 2: Milayo ya nyendedzi dza u funza mbalo kha Gireidi ya Ṱ (Awara 1)
- Dzulo ḽa 3: U ḓivhadza nomboro 10 na 0 (Awara 1)

TSHISWIṰULO

- Dzulo ḽa 4: U pulanela u funza (Awara 1½)
- Nyito dza u vala (Minetse ya 30

## Preparation

- PPT welcome and outcomes
- Familiarise yourself with all the PowerPoints and videos
- Read:
  *Concept Guide*, pages 14–73
  *Activity Guide: Term 4*, pages 22–69
- Bring the post box
- Remind participants to bring their:
  *Concept Guide*
  *Activity Guide: Term 3*
  *Activity Guide: Term 4*
  *Poster Book*
- Cut out the eight pictures of the guiding principles (Appendix B)
- Prepare one set of the number cards in Appendix C for each group

## Materials

- Flipchart paper, kokis
- Prestik
- A *Resource Kit* for each group

## Ndugiselo

- PPT u ṱanganedza na mvelelo
- U ḓivha dziPowerPoint na dzividiyo dzoṱhe
- Kha vha vhale:
  *Nyendedzi ya Ḓivhaipfi*, masiaṱari a 14–73
  *Nyendedzi ya Nyito: Kotara ya 4*, masiaṱari a 22–69
- Kha vha ḓe na bogisi ḽa poswo
- Kha vha humbudze vhashelamulenzhe u ḓa na:
  *Nyendedzi ya Ḓivhaipfi*,
  *Nyendedzi ya Nyito: Kotara ya 3*
  *Nyendedzi ya Nyito: Kotara ya 4*
  *Bugu ya Dziphositara*
- Kha vha gere zwifanyiso zwa malo zwa milayo ya nyendedzi (Ṱhumetshedzo ya B)
- Kha vha dzudzanye sete nthihi ya magaraṱa a nomboro kha Ṱhumetshedzo ya C u itela tshigwada tshiṅwe na tshiṅwe

## Matheriala

- Bammbiri ḽa fiḽipitshati, dzikhokhi
- Tshinambatedzi
- Khithi ya Zwishumiswa ya tshigwada tshiṅwe na tshiṅwe

# Opening and reflection **1 hour**

Reflection involves thinking and talking about your experiences and what you have learnt.

## Reflection on implementation

**Facilitator's notes**

- PPT: Learning outcomes of the workshop.
- Discuss the post box comments and feedback from the previous workshop. Remind participants to 'post' any new comments and feedback during the workshop.
- Remind participants of the *Take back to school task* from the end of Workshop 9.
- Refer participants to **Activity 1** and read through the instructions aloud.
- Give each group a sheet of flipchart paper. Participants complete the activity in their groups. Groups then present their newspaper article.
- After the presentations, summarise the successes and challenges and discuss the implications for classroom implementation.

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

**Take back to school task (Workshop 9)**

1. Use *Activity Guide: Term 3* to plan and implement Term 3 Weeks 7–10 of the Maths Programme.
2. Make notes of what worked well, what did not work well and how you resolved any challenges during your implementation of Term 3 Weeks 7–10.
3. Write comments in the book that you use to keep track of each learner's progress (learner observation book). Use the **'Check that learners are able to'** observation list (eye box) during each of the teacher-guided activities to guide your observations and comments.
4. Bring your learner observation book and the notes you made when reflecting on each day's teaching to the next workshop.
5. Bring a copy of the Term 3: Exemplar Record of Continuous Assessments (from *Activity Guide: Term 3*) to the next workshop.

**Activity 1**

1. In your group, prepare a newspaper article on teaching and learning maths in Grade R. Use the Maths Programme and your classroom implementation of it as the basis for your article. Include the following:

# Mvulatswinga na mihumbulo **Awara 1**

Mvulatswinga i katela u humbula na u amba nga tshenzhemo yavho na zwe vha guda.

## U amba nga u thoma

**Notsi dza mutshimbidzi**

- PPT: Mvelelo dza u guda dza wekishopo.
- Kha vha haseledze mahumbulwa a bogisini ḽa poswo na mbigela murahu u bva kha wekishopo yo fhiraho. Kha vha humbudze vhashelamulenzhe u 'posa' mahumbulwa maswa maṅwe na maṅwe na mbigela murahu nga tshifhinga tsha wekishopo.
- Kha vha humbudze vhashelamulenzhe nga *Mushumo wa u ṱuwa nawo tshikoloni* u bva mafheleloni a Wekishopo ya 9.
- Kha vha rumele vhashelamulenzhe kha **Nyito ya 1** vha vhalele nṱha ndaela.
- Kha vha ṋee tshigwada tshiṅwe na tshiṅwe shithi ḽa bammbiri ḽa fiḽipitshati. Vhashelamulenzhe vha fhedzisa nyito zwigwadani zwavho. Zwigwada zwa konaha u kumedza atikili ya gurannḍa yazwo.
- Nga murahu ha mikumedzo, kha vha ite manweledzo a zwe zwa shuma zwavhuḓi na dzikhaedu vha haseledze uri zwi ḓo kwama hani u thoma ngomu kiḽasini.

*Mushumo wa u ṱuwa nawo tshikoloni* u bva kha Wekishopo ya 9 ngoyu.

**Mushumo wa u ṱuwa nawo tshikoloni (Wekishopo ya 9)**

1. Kha vha shumise *Nyendedzi ya Nyito: Kotara ya 3* u pulana na u thoma Kotara ya 3 Vhege ya 7–10 dza Mbekanyamushumo ya Mbalo
2. Kha vha ite notsi dza zwe zwa shuma zwavhuḓi, zwe zwa si shume zwavhuḓi na uri vho tandulula hani dzikhaedu dziṅwe na dziṅwe nga tshifhinga tsha u thoma havho Kotara ya 3 Vhege ya 7–10.
3. Kha vha ṅwale mahumbulwa buguni ine vha i shumisa u itela u sedza mvelaphanḍa ya mugudi muṅwe na muṅwe (bugu ya u lavhelesa vhagudi). Kha vha shumise mutevhe wa u lavhelesa wa **'Kha vha ṱole uri vhagudi vha a kona u'** (kha iṱo tshibogisini) nga tshifhinga tsha nyito dzo rangwaho phanḍa nga mugudisi dziṅwe na dziṅwe u itela u endedza u lavhelesa havho na mahumbulwa.
4. Kha vha ḓe na bugu ya u lavhelesa vhagudi na notsi dze vha ita musi vha tshi khou amba nga u funza ha ḓuvha ḽiṅwe na ḽiṅwe kha wekishopo i tevhelaho.
5. Kha vha ḓe na khophi ya Kotara ya 3: Tsumbo ya Rekhodo ya u Linga hu yaho Phanḍa (u bva kha *Nyendedzi ya Nyito: Kotara ya 3*) kha wekishopo i tevhelaho.

**Nyito ya 1**

1. Tshigwadani tshavho, kha vha dzudzanye atikili ya gurannḍa nga u funza na u guda mbalo kha Gireidi ya Ṱ. Kha vha shumise Mbekanyamushumo ya Mbalo na u thoma hayo kiḽasirumuni yavho sa mutheo wa atikili yavho. Kha vha katele zwi tevhelaho:

- why maths in Grade R is important
- your successes and challenges with implementing the Maths Programme in Terms 1, 2 and 3
- strategies you used to resolve challenges.

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

- ndi ngani mbalo dzi dza ndeme kha Gireidi ya Ṱ
- u bvelela havho na dzikhaedu dza u thoma Mbekanyamushumo ya Mbalo kha Kotara ya 1, 2 na 3
- maano e vha shumisa u tandulula dzikhaedu.

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_____

2. Kha vha ṅwale atikili ya gurannḓa kha bammbiri ḽa fiḽipitshati.
3. Vha ḓo kumedza atikili yavho kha zwiṅwe zwigwada vha fhindula mbudziso dziṅwe na dziṅwe dzavho.

# Session 1: Observation and assessment **1 hour**

## Observation in Grade R

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

## Objective observation

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

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

**Facilitator's notes**

- PPT: Photo from **Activity 2**.
- Explain that in **Activity 2** participants will practise their observation skills.
- Read through **Activity 2** together and make sure everyone understands that it is an individual activity and not to be discussed with anyone.
- When everyone has finished the activity, give participants a turn to call out what they have written. Write down each observation (exactly as it is called out) and tick the observations that are repeated.
- Discuss the importance of being objective when observing. Make the point that teachers need to record facts (what is seen and heard) and not assumptions or opinions (what they think may be happening and why).
- Read through the list of observations that participants called out and discuss whether each statement is a FACT or an ASSUMPTION. Write 'F' or 'A' next to each statement. For example:
  - The learner has built a construction using rectangle-shaped and triangle-shaped blocks. **F**
  - The learner is not managing to balance the triangle-shaped blocks. **A**
  - The learner is focused on the block-building task. **F**
  - The learner in the background is very happy. **A**
- Participants go through their own lists, marking each statement with an 'F' or an 'A'.
- Wrap up the activity with a discussion about the importance of objective observation.

# Dzulo ḽa 1: U lavhelesa na u linga **Awara 1**

## U lavhelesa kha Gireidi ya Ṱ

U lavhelesa ndi tshipiḓa tsha ndeme tsha maitele a u funza, u guda na u linga. Kha Gireidi ya Ṱ, ngona ya ndeme ya u linga ndi u lavhelesa. Vhagudisi vha kuvhanganya mafhungo nga vhagudi nga tshifhinga tsha nyito dza kiḽasi yoṱhe, nyito dza tshigwada tshiṱuku na u tamba nga u funa (ngomu na nnḓa ha kiḽasi). Nga tshifhinga tsha nyito dzo rangwaho phanḓa nga mugudisi, u shumisana havho na vhagudi nga vhoṱhe zwi ṋetshedza mafhungo a ndeme nga mvelaphanḓa yavho. Nga u rekhoda mvelaphanḓa ya vhagudi vha tshi pfesesa ḓivhaipfi tiwa ya mbalo kha bugu ya notsi yavho tshifhinga tshoṱhe, vha fhaṱa tshifanyiso tsho fhelelaho tsha mugudi muṅwe na muṅwe.

## U lavhelesa hu sa ṱaluli

U itela uri u lavhelesa hu shume zwavhuḓi, vhagudisi vha fanela u pfesesa na u ḓivha zwine vha fanela u sedzesa khazwo.

Kha nyito i tevhelaho, vha ḓo ita nḓowenḓowe ya zwikili zwavho zwa u lavhelesa. *Iyi ndi nyito ya muthu nga eṱhe. Ndi zwa ndeme uri vha sa ambe na muthu nga zwe vha lavhelesa.*

**Notsi dza mutshimbidzi**

- PPT: Tshifanyiso u bva kha **Nyito ya 2**.
- Kha vha ṱalutshedze uri kha **Nyito ya 2** vhashelamulenzhe vha ḓo ita nḓowenḓowe ya zwikili zwavho zwa u lavhelesa.
- Kha vha vhale **Nyito ya 2** vhoṱhe vha khwaṱhisedze uri muṅwe na muṅwe u a pfesesa uri ndi nyito ya muthu nga eṱhe nahone a i haseledzwi na vhaṅwe.
- Musi vhoṱhe vho fhedza nyito, kha vha ṋee vhashelamulenzhe diso ḽa u vhala zwe vha ṅwala. Kha vha ṅwale u lavhelesa huṅwe na huṅwe (kokotolo zwenezwo musi zwi tshi khou vhalwa) vha swaye u lavhelesa hu dovhololaho.
- Kha vha haseledze ndeme ya u sa ṱalula musi vha tshi lavhelesa. Kha vha ambe uri vhagudisi vha fanela u rekhoda mbuno (zwine zwa khou vhoniwa na u pfiwa) hu si zwine vha humbulela kana mihumbulo (zwine vha humbula uri zwi nga vha zwi tshi khou itea na uri ndi ngani).
- Kha vha vhale mutevhe wa u lavhelesa he vhashelamulenzhe vha vhala vha haseledze arali tshitatamennde tshiṅwe na tshiṅwe tshi MBUNO kana KHUMBULELWA. Kha vha ṅwale 'M' kana 'K' tsini ha tshitatamennde tshiṅwe na tshiṅwe. Sa tsumbo:
  - Mugudi o fhaṱa mbumbo a tshi shumisa zwibuḽoko zwa tshivhumbeo tsha ṱhofundeiṋa na ṱhofunderaru. **M**
  - Mugudi ha khou kona u langa u linganya zwibuḽoko zwa tshivhumbeo tsha ṱhofunderaru. **K**
  - Mugudi o sedzesa kha mushumo wa u fhaṱa nga zwibuḽoko. **M**
  - Mugudi a re nga murahu o takala nga maanḓa. **K**
- Vhashelamulenzhe vha vhala mitevhe yavho, vha tshi swaya tshitatamennde tshiṅwe na tshiṅwe nga 'M' kana 'K'.
- Kha vha fhedzise nyito nga khaseledzo ya ndeme ya u lavhelesa hu sa ṱaluli.

## Activity 2

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

**My observations:**

_____

_____

_____

_____

**Facilitator's notes**

- After watching **Video 1**, add participants' observations to the list you recorded in **Activity 2**.
- Remind participants of the difference between a FACT and an ASSUMPTION. Write 'F' or 'A' next to each statement.

## Video 1

*Activity Guide: Term 3*, Week 8, Workstation 3: Bingo game (page 150)

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

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## Nyito ya 2

Kha vha lavhelese tshifanyiso tsha vhagudi vhavhili vha Gireidi ya Ṱ vha tshi khou tamba nga zwibuḽoko. Kha vha ṅwale zwine vha khou vhona musi vha tshi sedza tshifanyiso.

**Zwe nda vhona:**

_____

_____

_____

_____

| **Notsi dza mutshimbidzi** |
|---|
| ♦ Nga murahu ha u ṱalela **Vidiyo ya 1**, kha vha engedze zwe vhashelamulenzhe vha lavhelesa kha mutevhe we vha rekhoda kha **Nyito ya 2**.<br>♦ Kha vha humbudze vhashelamulenzhe nga phambano vhukati ha MBUNO na KHUMBULELWA. Kha vha ṅwale 'M' kana 'K' tsini ha tshitatamennde tshiṅwe na tshiṅwe. |

## Vidiyo ya 1

*Nyendedzi ya Nyito: Kotara ya 3*, Vhege ya 8, Tshiṱitshi tsha u shumela tsha 3: mutambo wa Bingo (siaṱari ḽa 151)

1. Kha vha ṱalele vidiyo ya tshigwada tsha vhagudi tshi tshi khou tamba mutambo, wa Bingo. Kha vha ṅwale zwe vha vhona kha vhagudi.

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

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

Objective observation involves:

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

**Activity 3**

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

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_____
_____

2. Refer to (3) to (5) of the *Take back to school task* from Workshop 9 (page 10).
   - Discuss your use of the **'Check that learners are able to'** observation list (eye box) during teacher-guided activities.
   - Show members of your group your learner observation book.
   - Take turns to discuss a learner's progress. Which mathematical skills did you observe? How do you know? (What did the learner do and say?)
   - Explain how you captured this information using the Term 3: Exemplar Record of Continuous Assessments.
   - Did you manage to implement a differentiated approach to teaching and learning in your class. If so, how?

_____
_____
_____
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_____

2. Ndi hufhio u lavhelesa havho hu re mbuno nahone ndi hufhio hu re khumbulelwa? Kha vha sedze mutevhe wavho vha ṅwale ‘M’ kana ‘K’ tsini na tshitatamennde tshiṅwe na tshiṅwe.

Musi ri tshi ṅwala zwine ra **humbula** uri mugudi a nga ita kana a nga si kone u ita, kana vhuḓipfi ha mugudi, ri khou humbulela. Nḓila yone fhedzi ya u ḓivha zwine mugudi a khou humbula kana vhuḓipfi hawe, ndi u mu humbela uri a vha vhudze.

U lavhelesa hu sa ṱaluli hu katela:

- u ṱalusa fhedzi zwine vha khou vhona na u pfa
- u rekhoda zwine mugudi a khou ita na u amba nga vhuḓalo nga hune zwa konadzea
- u sa haṱula – vha lingedze u sa ṋea mihumbulo na kuvhonele zwavho
- u lavhelesa mugudi muṅwe na muṅwe tshifhinga tshoṱhe, kha nyito dzo fhambanaho na nga zwifhinga zwo fhambanaho zwa ḓuvha.

**Nyito ya 3**

1. Kha vha humbule nga zwe vha lavhelesa nga muthihi wa vhagudi vhavho kha Kotara ya 3. Ndi nḓivho ya mbalo na zwikili zwifhio zwine mugudi a khou bvelela khazwo?

_____
_____
_____
_____

2. Kha vha sedze kha (3) u ya kha (5) dza *Mushumo wa u ṱuwa nawo tshikoloni* u bva kha Wekishopo ya 9 (siaṱari ḽa 11).
   - Kha vha haseledze tshumiso yavho ya mutevhe wa u lavhelesa wa **‘Kha vha ṱole uri vhagudi vha a kona u’** (kha iṱo tshibogisini) nga tshifhinga tsha nyito dzo rangwaho phanḓa nga mugudisi.
   - Kha vha sumbedze miraḓo ya tshigwada tshavho bugu ya u lavhelesa vhagudi yavho.
   - Kha vha sielisane u haseledza mvelephanḓa ya mugudi. Ndi zwikili zwa mbalo zwifhio zwe vha vhona? Vha zwi ḓivha hani? (Ndi zwifhio zwe mugudi a ita na u amba?)
   - Kha vha ṱalutshedze uri vho ṅwalisa hani mafhungo aya vha tshi shumisa Kotara ya 3: Tsumbo ya Rekhodo ya u Linga hu yaho Phanḓa.
   - Vho kona u thoma maele a u fhambanyisa a u funza na u guda kiḽasini yavho. Arali zwo ralo, hani?

_____
_____
_____
_____
_____
_____

## Assessment in Grade R

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

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

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

**Facilitator's notes**

- Wrap up this session with a discussion about the importance of continuous observation and the regular recording of learner information as a basis for assessment.

## U linga kha Gireidi ya Ṱ

U linga kha Gireidi ya Ṱ hu shumiswa u itela u dzhia tsheo nga nḓila ya khwinesa ya u tikedza mveledziso ya mugudi muṅwe na muṅwe. Nga tshifhinga tsha nyito dzo rangwaho phanḓa nga mugudisi, nyito dza kiḽasi yoṱhe khathihi na dziṅwe nyito kha mbekanyamushumo ya ḓuvha ḽiṅwe na ḽiṅwe, vha ḓo vha na zwikhala zwa u lavhelesa vhagudi na u wana nḓivho nga mvelaphanḓa yavho. Mafhungo aya a fanela u endedza u pulana havho u itela u isa phanḓa u funza na u guda.

Thebuḽu dza u linga hu yaho phanḓa dzi re kha TSHIPHOKHALI na kha *Nyendedzi dza Nyito* dza Mbekanyamushumo ya Mbalo dzo ḓisendeka kha magudiswa ane o no funzwa kha kotara iṅwe na iṅwe nahone dzi nga shumiswa u ita manweledzo a mvelaphanḓa ya mugudi muṅwe na muṅwe nga tshifhinga tsha kotara iyo.

Vha dzhiele nzhele uri zwikili na vhuḓifari zwi fanela u lavheleswa lunzhi u itela uri phetheni dza mveledziso dzi kone u rekhodiwa nga murahu ha tshifhinga.

**Notsi dza mutshimbidzi**

- Kha vha pendele dzulo iḽi nga khaseledzo ya ndeme ya u lavhelesa hu yaho phanḓa na u dzulela u rekhoda mafhungo a mugudi sa mutheo ya u linga.

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

**1 hour**

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

**Facilitator's notes**

- PPT: Figure 5, page 14, *Concept Guide*.
- Discuss the importance of being conscious of the guiding principles of teaching maths in Grade R and how these inform our approach to teaching. It is only when we are aware of these principles and reflect on how we incorporate them in our teaching that they become a part of how we approach our classroom practice.
- Divide the participants into eight small groups. Assign one guiding principle to each group. Give the corresponding picture of this principle (Appendix B) to each group.
- Participants discuss their principle in their small groups. They then present their understanding and observations of how their principle plays out in the classroom.
- The participants paste the A5 picture on flipchart paper and write their comments underneath it to share with the whole group.

**Activity 4**

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

1. In your group, discuss the following questions:
   - What is your understanding of this principle 'in action'?
   - Does the Maths Programme make it possible to incorporate this principle in your daily teaching?
   - Now that you have implemented the Maths Programme for three terms, what are your reflections on this principle?
   - How would your teaching be affected if this principle was absent from your classroom approach?

2. Paste the picture onto a sheet of flipchart paper. Write your comments below the picture so that you can share these with the whole group.

# Dzulo ḽa 2: Milayo ya nyendedzi dza u funza mbalo kha Gireidi ya Ṱ

**Awara 1**

Kha u pfumbudzwa hoṱhe kha Mbekanyamushumo ya Mbalo, ro amba nga milayo ya nyendedzi dza u funza mbalo kha Gireidi ya Ṱ na uri izwi zwo katelwa hani ngomu ha nḓowelo ya kiḽasini ya ḓuvha ḽiṅwe na ḽiṅwe. Miṅwe ya milayo yo leluwa u i topola na u i thoma u fhira miṅwe. Sa vhagudisi ri fanela u dzulela u ḓivha uri hani, ngafhi na lini hune ra khou shumisa milayo iyi ngomu kiḽasini dzashu.

**Notsi dza mutshimbidzi**

- PPT: Figara ya 5, siaṱari ḽa 15, *Nyendedzi ya Ḓivhaipfi*.
- Kha vha haseledze ndeme ya u ṱalukanya milayo ya nyendedzi dza u funza mbalo kha Gireidi ya Ṱ na uri izwi zwi nga thusa hani maele ashu a u funza. Ndi musi ri tshi ḓivha milayo iyi na u amba ngauri ri nga i katela hani kha u funza hashu hune ya vha tshipiḓa tsha uri ri thomise hani nḓowelo ya kiḽasini yashu.
- Kha vha khethekanye vhashelamulenzhe vha bve zwigwada zwiṱuku zwa malo. Kha vha ṋee tshigwada tshiṅwe na tshiṅwe mulayo wa nyendedzi muthihi. Kha vha vha ṋetshedze tshifanyiso tshi ṱutshelanaho na mulayo uyu (Ṱhumetshedzo ya B) kha tshigwada tshiṅwe na tshiṅwe.
- Vhashelamulenzhe vha haseledza mulayo wavho zwigwadani zwavho zwiṱuku. Vha konaha u kumedza kupfesesele kwavho na u lavhelesa uri uyu mulayo u shuma hani ngomu kiḽasini.
- Vhashelamulenzhe vha nambatedza tshifanyiso tsha A5 kha bammbiri ḽa fiḽipitshati na u ṅwala mahumbulwa fhasi hatsho u itela u kovhana na tshigwada tshoṱhe.

**Nyito ya 4**

Mutshimbidzi u ḓo ṋea muṅwe wa milayo ya nyendedzi dza u funza mbalo kha Gireidi ya Ṱ tshigwada tshavho. Vha ḓo ṱanganedza tshifanyiso tsha mulayo uyu.

1. Tshigwadani tshavho, kha vha haseledze mbudziso dzi tevhelaho:
   - Ndi kufhio kupfesesele kwavho kwa mulayo uyu 'u tshi khou shuma'?
   - Mbekanyamushumo ya Mbalo i a zwi konisa u katela mulayo uyu kha u funza havho ha ḓuvha ḽiṅwe na ḽiṅwe?
   - Zwino vhunga vho thoma Mbekanyamushumo ya Mbalo ya kotara tharu, ndi zwifhio zwine vha nga amba nga mulayo uyu?
   - Kufunzele kwavho ku ḓo kwamea hani arali mulayo uyu wo vha u siho kha maele a kiḽasirumu yavho?

2. Kha vha nambatedze tshifanyiso kha shithi ḽa bammbiri ḽa fiḽipitshati. Kha vha ṅwale mahumbulwa fhasi ha tshifanyiso u itela uri vha ḓo kona u kovhana izwi na tshigwada tshihulwane.

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

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

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

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

THE EIGHT PRINCIPLES OF GRADE R MATHS

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

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

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

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

1. **Mulayo wa magudiswa.** U guda hu bvelela kha nyimele dzi pfeseseaho na dzo teaho.

2. **Mulayo wa nyito.** Vhagudi vha fanela u dzhenela kha maitele a u guda na u funza.

8. **Mulayo wa nḓowenḓowe.** U guda hu pfumbiswa nga kha u ita nḓowenḓowe ya zwikili zwiswa na nḓivho.

7. **Mulayo wa vhukateli.** U guda hu bvelela kha vhupo vhune muṅwe na muṅwe o ṱanganedzwa, o katelwa, u farwa zwavhuḓi, u a ṱhonifhiwa nahone u kona u shela mulenzhe.

3. **Mulayo wa u tamba.** Vhana vha guda khwinesa kha nyito dzine vha tamba nga u funa na dzine dza endedzwa.

MILAYO YA MALO YA
*GRADE R MATHS*

6. **Mulayo wa nyendedzi.** U guda hu bvelela musi mugudisi a tshi ranga phanḓa vhagudi kha u bveledza nḓivho ntswa.

5. **Mulayo wa mvuvhano.** U guda hu bvelela musi hu na vhudavhidzani na u kovhana mihumbulo.

4. **Mulayo wa maimo.** Vhagudi vha pfuka nga kha maimo o fhambanaho a u pfesesa na mveledziso.

# Session 3: Introducing numbers 10 and 0 **1 hour**

## Introducing number 10

| **Facilitator's notes** |
|---|
| ♦ PPT: Summarise information below.<br>♦ Discuss the base 10 number system that we use. Emphasise that in Grade R learners only need to work with and understand the numbers 0–10. (**Activity 5** is for enrichment. It is not intended for use in Grade R classrooms.)<br>♦ When using expanding number cards (flashcards) like the ones in Appendix C to make two-digit and three-digit numbers, always use the units (ones), tens or hundreds. Never use only the units to represent a two-digit or three-digit number. For example: for 11 use 10 and 1, not 1 and 1.<br>♦ Explain that in Grade 1 learners begin to work with place value. They need to understand the value of each digit in the number. It is important that Grade R learners understand that 10 is a number and not just 1 + 0. Learners should make groups of ten. They should also use sticks to make bundles to represent ten and match the bundle with the 'ten' number word card.<br>♦ **Emphasise that teachers should not introduce place value in Grade R and that Activity 5 is an enrichment activity for workshop participants only**. |

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

- tens
- hundreds
- thousands, and so on.

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

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

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

# Dzulo ḽa 3: U ḓivhadza nomboro 10 na 0 **Awara 1**

## U ḓivhadza nomboro 10

| **Notsi dza mutshimbidzi** |
|---|
| ♦ PPT: Kha vha ite manweledzo a mafhungo a re afho fhasi.<br>♦ Kha vha haseledze sisiṱeme ya desimala ya 10 ine ra i shumisa. Kha vha ombedzele uri kha Gireidi ya Ṱ vhagudi vha fanela u shuma fhedzi nga na u pfesesa nomboro 0–10. (**Nyito ya 5** ndi ya u pfumisa nḓivho. A yo ngo itelwa u shumiswa kiḽasini dza Gireidi ya Ṱ.)<br>♦ Musi vha tshi shumisa magaraṱa a nomboro ya nothesheni yo tatamudzwaho (magaraṱatai) u fana na a re kha Ṱhumetshedzo ya C u ita nomboro dza didzhithi mbili na didzhithi tharu, tshifhinga tshoṱhe vha shumise nomboro tshiṱahe (tshithihi), mahumi kana maḓana. Vha songo shumisa fhedzi nomboro tshiṱahe u imela nomboro ya didzhithi mbili kana didzhithi tharu. Sa tsumbo: u itela 11 kha vha shumise 10 na 1, hu si 1 na 1.<br>♦ Kha vha ṱalutshedze uri kha Gireidi ya 1 vhagudi vha thoma u shuma nga vhuimo ha nomboro. Vha fanela u pfesesa ndeme ya didzhithi iṅwe na iṅwe kha nomboro. Ndi zwa ndeme uri vhagudi vha Gireidi ya Ṱ vha pfesese uri 10 ndi nomboro nahone a si 1 + 0. Vhagudi vha fanela u ita zwigwada zwa fumi. Vha fanela hafhu u shumisa zwitanda u ita madzanda u itela u imela fumi na u fanyisa dzanda na garaṱa ḽa ipfinomboro 'fumi'.<br>♦ **Kha vha ombedzele uri vhagudisi vha fanela u sa ḓivhadza vhuimo ha nombro kha Gireidi ya Ṱ na uri Nyito ya 5 ndi nyito ya u pfumisa nḓivho u itela vhashelamulenzhe vha re kha wekishopo fhedzi**. |

Zwiga zwa nomboro zwa fumi zwo shumiswaho kha sisiṱeme ya vhuimo ha nomboro yashu ndi 0, 1, 2, 3, 4, 5, 6, 7, 8 na 9. Zwiga izwi zwa nomboro zwi shumiswa u imela nomboro tshiṱahe (tshithihi) na u imela ndeme dza nomboro dzi sa gumi, sa tsumbo:

- mahumi
- maḓana
- zwigidi, ngauralongauralo.

Vhagudi vha Vhuimo ha Fhasi vha fanela u pfesesa uri zwiga zwa nomboro zwi fanaho zwi nga shumiswa u imela ndeme dzo fhambanaho, zwi tshi ya ngauri vhuimo ha tshiga tsha nomboro kha nomboro. Sa tsumbo, kha iṅwe na iṅwe ya nomboro i re afho fhasi '3' i na ndeme dzo fhambanaho:

- kha 3, ndeme yayo ndi 'raru'
- kha 31, ndeme yayo ndi 'furaru'
- kha 349, ndeme yayo ndi 'maḓana mararu'.

Vhuimo ha nomboro ndi ḓivhaipfi i konḓelaho vhagudi u pfesesa. Vhaṱoḓisisi vho wana uri vhunzhi ha vhagudi vha u swika kha vhukale ha miṅwaha ya malo vha humbula uri '1' kha 15 zwi amba 'thihi'.

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

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

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

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

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

 **Activity 5**

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

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

14 31 22 43

1. Represent each number using counters: make groups of ten and single ones.
2. Represent each number using sticks and string: make bundles of ten and single ones.
3. Label the bundles with the correct number cards.
4. Talk about how many groups of ten and how many ones each number has.
5. Discuss the value of each numeral.

Kha Gireidi ya 1 vhagudi vha tandula sisiṱeme ya desimala ya fumi, vha tshi shuma nga nomboro u bva kha 11 u ya phanḓa. Vha imela nomboro idzi nga zwigwada zwa mahumi na zwa tshithihi (nomboro ya tshiṱahe). Musi vha tshi shuma nga nomboro 11–19, vha thoma u pfesesa uri kha nomboro i fanaho na 14, tshiga tsha nomboro 1:

- a tshi ambi uri ndi 1
- tshi imela 10 luthihi
- zwenezwo, ndi fumi 1 (tshigwada 1 tsha fumi).

Vha dovha vha pfesesa uri tshiga tsha nomboro 4 kha 14, tshi imela 4.

**VHO VHA VHA TSHI ZWI DIVHA?**

Kha Vhuimo ha Fhasi, vhagudi vha amba nga 'mahumi' na 'nomboro tshiṱahe' sa 'zwigwada zwa fumi' na 'tshithihi'. Vha imela nomboro dza didzhithi mbili na didzhithi tharu vha tshi shumisa mimodele ya zwigwada na magaraṱa a nomboro ya notshesheni yo tatamudzwaho.

A ri ḓivhadzi vhuimo ha nomboro kha Gireidi ya Ṱ. Tsho sedzeswaho kha gireidi iyi ndi u pfesesa ndeme ya nomboro 0–10 na u fhaṱa ḓivhaipfi ya nomboro yo khwaṱhaho ngomu ha tsielano iyi. Arali vhagudi vha na ḓivhaipfi yavhuḓi ya nomboro u swika kha 10, nḓivho iyi i nga engedzwa kha Gireidi ya 1 na dziṅwe gireidi.

**Nyito ya 5**

**KHA VHA DZHIELE NZHELE!**

**Nyito iyi ndi ya u bveledza nḓivho yavho vhone vhaṋe na u pfumisa nḓivho. A yo ngo tea vhagudi vha Gireidi ya Ṱ. Vha SONGO ḓivhadza nyito iyi kha Gireidi ya Ṱ.**

Kha vha shumise zwithu zwa u vhalela ngazwo, zwitanda na magaraṱa a nomboro zwo ṋetshedzwaho u imela nomboro dzi tevhelaho:

14 31 22 43

1. Kha vha imele nomboro iṅwe na iṅwe vha tshi shumisa zwithu zwa u vhalela ngazwo: kha vha ite zwigwada zwa fumi na zwa tshithihi.
2. Kha vha imele nomboro iṅwe na iṅwe vha tshi shumisa zwitanda na muḓali: kha vha ite madzanda a fumi na a tshithihi.
3. Kha vha leibele madzanda nga magaraṱa a nomboro o teaho.
4. Kha vha ambe nga uri nomboro iṅwe na iṅwe i na zwigwada zwingana zwa fumi na zwingana zwa tshithihi.
5. Kha vha haseledze ndeme ya tshiga tsha nomboro tshiṅwe na tshiṅwe.

6. Which apparatus do you think was more appropriate for representing the concepts of 'groups of ten' ('tens') and 'ones'? Explain you answer.

_____
_____
_____
_____

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

_____
_____
_____
_____

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

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

**Facilitator's notes**

- After **Activity 6**, take feedback from the groups on ideas for teaching the number 10. These could include:
  - number frieze and story
  - dot card activities
  - number washing line
  - comparing groups of objects
  - structure beads
  - number track.
- Discuss whether these activities would be suitable for whole class, teacher-guided or small group activities.
- Emphasise that when applying the number symbol 10 to a group of objects, learners should use the number symbol card '10' and not number symbol cards '1' and '0'.

 **Activity 6**

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

_____
_____
_____

6. Ndi zwishumiswa zwifhio zwine vha humbula uri ho vha zwone zwo teaho u imela ḓivhaipfi ya ‘zwigwada zwa fumi’ (‘mahuni’) na ‘tshithihi’? Kha vha ṱalutshedze phindulo yavho.

_____
_____
_____
_____

7. Vha khou vhona mini nga ndeme ya zwiga zwa mbalo kha nomboro dze vha imela nga magaraṋa a nomboro?

_____
_____
_____
_____

Vhagudi vha Gireidi ya Ṱ **a vho ngo fanela u pfesesa vhuimo ha nomboro**. Vha fanela zwavho u:

- pfesesa ndeme (‘ndi zwingana’) ya nomboro 0–10
- pfesesa phaṱhekhanyo dzo fhambanaho dza nomboro u swika kha 10
- pfesesa uri na musi 10 yo vhumbwa nga zwiga zwa mbalo 1 na 0, A SI 1 + 0 nahone i na ndeme yayo (‘ndi zwingana’)
- pfesesa na u kona u imela ndeme dzo fhambanaho dza 1, 0 na 10.

**Notsi dza mutshimbidzi**

- Nga murahu ha **Nyito ya 6**, kha vha dzhie mbigela murahu u bva kha zwigwada nga mihumbulo ya u funza nomboro 10. Izwi zwi katela:
  - tshati ya luvhondoni ya mbalo na tshiṱori
  - nyito dza garaṱa ḽa tshithoma
  - muthambi wa u anea nomboro
  - u vhambedza zwigwada zwa zwithu
  - vhulungu ha u vhalela
  - mutalombalo.
- Kha vha haseledze arali idzi nyito dzi tshi nga vha dzo tea nyito dza kiḽasi yoṯhe, dzo rangwaho phanḓa nga mugudisi kana dza tshigwada tshiṱuku.
- Kha vha ombedzele uri musi vha tshi shumisa tshiga tsha nomboro 10 kha tshigwada tsha zwithu, vhagudi vha fanela u shumisa garaṱa ḽa tshiga tsha nomboro ‘10’ hu si magaraṱa a zwiga zwa nomboro ‘1’ na ‘0’.

### Nyito ya 6

1. Tshigwadani tshavho, kha vha haseledze mihumbulo ya u funza nomboro 10 kiḽasini yavho ya Gireidi ya Ṱ. Vha katele tshumiso ya u imela ho fhambanaho.

_____
_____
_____

_____
_____
_____
_____
_____

2. Present your ideas to the whole group.

## Introducing number 0

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

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

 **Video 2**

*Activity Guide: Term 4*, Week 3, Day 1 #4 and #5, Day 2 #2 and #4, Day 3 #3, Day 4 #4, Day 5 #4 (pages 56–63)

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

2. Write down your observations.

_____
_____
_____
_____

_____
_____
_____
_____
_____

2. Kha vha kumedze mihumbulo yavho kha tshigwada tshihulwane.

## U ḓivhadza nomboro 0

Kha Gireidi ya Ṱ, vhagudi vha fanela u pfesesa uri pumu ndi nomboro na uri tshiga tsha nomboro tshaḽo ndi '0'.

Vhana vhaṱuku vha a konḓelwa u pfesesa ḓivhaipfi ya 'u sa vha na tshithu'. Musi vhagudi vho sedzana na phulethi, tshifaredzi, bogisi kana sagana zwi si na tshithu vha anzela u shumisa maipfi a fanaho na 'u fhela', 'u ṱuwa zwoṱhe', 'a hu na tsho salaho', 'a hu na tshithu' kana 'u sa vha na tshithu' u ṱalusa nyimele. Vhagudisi vha fanela u ṱanganedza hedzi ṱhaluso dzi re dzone, fhedzi vha fanela u ḓivhadza ipfi 'pumu'. Ipfi 'pumu' ḽi fanela u shumiswa tshifhinga tshoṱhe, na musi vha tshi vhalela u humela murahu, sa tsumbo, musi vha tshi vhalela u humela murahu u bva kha iṋa: 'iṋa, raru, mbili, nthihi, pumu'. Tshiga '0' tshi fanela u vhewa kha muthambi wa u anea nomboro. Magaraṱa a nomboro 0 a fanela u shumiswa u imela uri tshithu (u fana na phulethi, tshidongo, tshitibo, bogisi) a hu na tshithu.

### Vidiyo ya 2

*Nyendedzi ya Nyito: Kotara ya 4*, Vhege ya 3, Ḓuvha ḽa 1 #4 na #5, Ḓuvha ḽa 2 #2 na #4, Ḓuvha ḽa 3 #3, Ḓuvha ḽa 4 #4, Ḓuvha ḽa 5 #4 (masiaṱari a 56–63)

1. Kha vha ṱalele vidiyo ya mugudisi a tshi khou ḓivhadza na u pfumbisa ḓivhaipfi ya pumu.
   - Ni khou vhona hu tshi khou itea mini?
   - Ḓivhaipfi ya pumu yo ḓivhadzwa hani?
   - Ndi zwifhio zwe vhagudi vha ita na u bula?
   - Mushumo wa mugudisi wo vha ufhio?
   - Mbuelo ya u shumisa nyito dzo fhambanaho u funza ḓivhaipfi yo vha ifhio?

2. Kha vha ṅwale fhasi zwe vha vhona.

_____
_____
_____
_____

**Facilitator's notes**

- Discuss the kinds of classroom activities that were used to help learners understand the value of '0', for example:
  - adding '0' to the jumping number track and asking what number the learner started on ('no jumps yet')
  - counting groups of objects that include 0 objects
  - matching empty groups of objects to the '0' number card
  - including '0' in the counting sequence (on the number line)
  - showing empty hands to represent '0'.

**Notsi dza mutshimbidzi**

- Kha vha haseledze tshakha dza nyito dza kiḽasini dze dza shumiswa u thusa vhagudi u pfesesa ndeme ya ‘0’, sa tsumbo:
  - u engedza ‘0’ kha mutalombalo wa u fhufha vha vhudzisa uri ndi nomboro ifhio ye mugudi a thoma khayo (‘ha athu fhufha’)
  - u vhalela zwigwada zwa zwithu zwine zwa katela 0 wa zwithu
  - u fanyisa zwigwada zwa zwithu zwi si na tshithu na garaṱa ḽa nomboro ‘0’
  - u katela ‘0’ kha thevhekano ya u vhalela (kha mutalombalo)
  - u sumbedza zwanḓa zwi si na tshithu u itela u imela ‘0’.

# Session 4: Planning for teaching **1½ hours**

This workshop session prepares participants for implementing Term 4 Weeks 1–3. By this stage of the year, the teacher will have noticed distinct differences between learners' levels of progress. Term 4 builds on the content of Terms 1, 2 and 3. Some learners will be ready for this, while others will need support and more consolidation to progress. It is important to plan and prepare for this difference in learner competence to ensure that all the content and skills of Grade R Mathematics are covered, and learners are well prepared for Grade 1.

**Facilitator's notes**

- Move between the small groups as participants discuss the planning and preparation for teaching Term 4 Weeks 1–3 in **Activity 7**. Assist them by making suggestions on overcoming challenges.
- Each small group plans the three weeks and completes the templates in Appendix A.
- The small groups present their responses to the questions in **Activity 7**. The whole group discusses differentiated teaching and learning.

**Activity 7**

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

# Dzulo ḽa 4: U pulanela u funza **Awara 1½**

Dzulo iḽi ḽa wekishopo ḽi lugisela vhashelamulenzhe u thoma Kotara ya 4 Vhege ya 1–3. Nga tshino tshifhinga tsha ṅwaha, mugudisi u ḓo vha o no limuwa phambano vhukati ha ḽeveḽe dza mvelaphanḓa dza vhagudi. Kotara ya 4 i fhaṱa kha magudiswa a Kotara ya 1, 2 na 3. Vhaṅwe vhagudi vha ḓo vha vho no lugela izwi, ngeno vhaṅwe vha tshi ḓo ṱoḓa thikhedzo na u pfumbiswa hunzhi u itela mvelaphanḓa. Ndi zwa ndeme u pulana na u lugisela phambano iyi kha vhukoni ha vhagudi u itela uri magudiswa oṱhe na zwikili zwa Mbalo dza Gireidi ya Ṱ zwo kwamiwa, nahone vhagudi vho lugiselwa zwavhuḓi u ya kha Gireidi ya 1.

**Notsi dza mutshimbidzi**

- Kha vha tshimbile vhukati ha zwigwada zwiṱuku zwenezwi vhashelamulenzhe vha tshi khou haseledza u pulana na u lugisela u funza Kotara ya 4 Vhege ya 1–3 kha **Nyito ya 7**. Kha vha vha thuse nga u dzinginya nga u kunda dzikhaedu.
- Tshigwada tshiṱuku tshiṅwe na tshiṅwe tshi pulanela vhege tharu na u fhedzisa themphuḽeithi kha Ṱhumetshedzo ya A.
- Zwigwada zwiṱuku zwi kumedza phindulo dzazwo dza mbudziso dzi re kha **Nyito ya 7**. Tshigwada tshoṱhe tshi haseledza u fhambanyisa u funza na u guda.

### Nyito ya 7

1. Tshigwadani tshavho, kha vha fhedzise themphuḽeithi dza u pulanela Kotara ya 4 Vhege ya 1–3 (Ṱhumetshedzo ya A).
2. Kha vha haseledze mbudziso dzi tevhelaho:
   - Vhege yo dzudzanywa hani?
   - Magudiswa a fhaṱa hani kha ngudo dzo fhiraho?
   - Nyito dza kiḽasi yoṱhe dzi a sika zwavhuḓi zwikhala zwa khaseledzo na thandulo ya nḓivho ntswa?
   - Nyito yo rangwaho phanḓa nga mugudisi i ṋetshedza hani vhagudisi zwikhala zwa u linga na u tikedza vhagudi?
   - Hone nyito dza tshigwada tshiṱuku dzo ḓiimisaho dzi a tendela nḓowenḓowe yo linganelaho ya nḓivho ntswa na zwikili?
   - Vha nga lugisela hani nyito dza u engedza u itela u tikedza vhagudi vhane a vha athu kona tshikili tiwa?
   - Kha vha dzinginye dziṅwe nḓila dza u engedza zwikhala zwa u guda u itela vhagudi vha konaho.
   - Vha nga shuma hani na mushumisani u lugisela vhege iṅwe na iṅwe?

# Closing activities

**30 minutes**

**Facilitator's notes**

- **Workshop reflection:** Ask participants to take a few minutes to reflect on the day and to page through their *Participant's Workbook*. Ask them to jot down any questions or comments to share with the whole group.
  Ask individual participants to volunteer responses to the following:
  - I learnt …
  - I did not like …
  - I enjoyed …
  - I now understand …
  - I'm still not clear about …
  - I would like more information on …
- Encourage participants to add any comments and feedback not yet shared to the post box.
- **Take back to school task:** Read through this task. Ask if there is anything that is not clear and that requires more explanation.
- **Evaluation:** Hand out copies of the Workshop Evaluation Form and have participants complete the form.
- **Next workshop:** Give dates for the next workshop and close the workshop.

**Activity 8**

**Workshop reflection:** Take a few minutes to reflect on the day. Page through your *Participant's Workbook* to remind yourself of what was covered. Write down your thoughts.

- I learnt _____
  _____
- I did not like _____
  _____
- I enjoyed _____
  _____
- I now understand _____
  _____
- I'm still not clear about _____
  _____
- I would like more information on _____
  _____

Share your reflections with the whole group.

# Nyito dza u vala

**Minetse ya 30**

**Notsi dza mutshimbidzi**

- **U amba nga wekishopo:** Kha vha humbele vhashelamulenzhe u dzhia minetse i si gathi u amba nga ḓuvha na u fhenḓa *Bugu ya Mushumo ya Vhashelamulenzhe* yavho. Kha vha vha humbele u ṅwala mbudziso dziṅwe na dziṅwe kana mahumbulwa u itela u kovhana na tshigwada tshihulwane.
  Kha vha humbele mushelamulenzhe nga vhoṱhe u vha vhathu vho ḓiṋetshedzaho u fhindula zwi tevhelaho:
  - Ndo guda …
  - A tho ngo takalela …
  - Ndo ḓiphiṋa …
  - Zwino ndi a pfesesa …
  - A thi athu vha khagala nga …
  - Ndi kha ḓi ṱoḓa maṅwe mafhungo manzhi nga …
- Kha vha ṱuṱuwedze vhashelamulenzhe u engedza mahumbulwa afhio na afhio na mbigela murahu zwi sa athu kovhiwa kha bogisi ḽa poswo.
- **Mushumo wa u ṱuwa nawo tshikoloni:** Kha vha vhale mushumo uyu. Kha vha vhudzise arali hu na zwiṅwe zwi sa pfali zwine zwa ṱoḓa u ṱalutshedzwa.
- **U linga:** Kha vha phakhele khophi dza Fomo ya u Linga ya Wekishopo vha ri vhashelamulenzhe vha ḓadze idzo fomo
- **Wekishopo i tevhelaho:** Kha vha ṋee maḓuvha a wekishopo i tevhelaho vha vale wekishopo.

## Nyito ya 8

**U amba nga wekishopo**: Kha vha dzhie minetse i si gathi u amba nga ḓuvha. Kha vha fhenḓe *Bugu ya Mushumo ya Vhashelamulenzhe* yavho u vha humbudza nga zwe zwa kwamiwa. Kha vha ṅwale mihumbulo yavho.

- Ndo guda _____
  _____
- A tho ngo takalela _____
  _____
- Ndo ḓiphiṋa _____
  _____
- Zwino ndi a pfesesa _____
  _____
- A thi athu vha khagala nga _____
  _____
- Ndi kha ḓi ṱoḓa maṅwe mafhungo manzhi nga _____
  _____

Kha vha kovhane zwe vha amba na tshigwada tshihulwane.

**Take back to school task**

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

**Evaluation**

Complete the Evaluation Form.

**Mushumo wa u ṱuwa nawo tshikoloni**

1. Kha vha shumise *Nyendedzi ya Nyito: Kotara ya 4* u pulana na u thoma Kotara ya 4 Vhege ya 1–3 dza Mbekanyamushumo ya Mbalo.
2. Kha vha ṅwale mahumbulwa buguni ine vha i shumisa u itela u sedza mvelaphaṋa ya mugudi muṅwe na muṅwe (bugu ya u lavhelesa vhagudi). Kha vha shumise mutevhe wa u lavhelesa wa **'Kha vha ṱole uri vhagudi vha a kona u'** (kha iṱo tshibogisini) nga tshifhinga tsha nyito dzo rangwaho phaṋa nga mugudisi dziṅwe na dziṅwe u itela u endedza u lavhelesa havho na mahumbulwa.
3. Kha vha ite notsi dza zwe zwa shuma zwavhuḓi, zwe zwa si shume zwavhuḓi, na uri vho tandulula hani dzikhaedu dziṅwe na dziṅwe nga tshifhinga tsha u thoma havho Kotara ya 4 Vhege ya 1–3.
4. Kha vha ḓe na bugu ya u lavhelesa vhagudi na notsi dze vha ita musi vha tshi khou amba nga u funza ha ḓuvha ḽiṅwe na ḽiṅwe kha wekishopo i tevhelaho.

**U linga**

Kha vha ḓadze Fomo ya u Linga.

## APPENDIX A: TERM 4 WEEKLY PLANNING TEMPLATE

### Term 4: Activity Plan: Week ____

<table>
<tr><td colspan="5">CONTENT AREA:</td></tr>
<tr><td colspan="5">TOPIC:<br><br>INTRODUCE NEW KNOWLEDGE:<br><br>PRACTISE:</td></tr>
<tr><td colspan="2">Whole class activities</td><td>Teacher-guided activity</td><td colspan="2">Workstation activities (independent small group activities)</td></tr>
<tr><td>Day 1</td><td></td><td rowspan="5"></td><td>Activity 1</td><td rowspan="5"></td></tr>
<tr><td>Day 2</td><td></td><td>Activity 2</td></tr>
<tr><td>Day 3</td><td></td><td>Activity 3</td></tr>
<tr><td>Day 4</td><td></td><td>Activity 4</td></tr>
<tr><td>Day 5</td><td></td></tr>
</table>

**ṬHUMETSHEDZO YA A: THEMPHUḼEITHI YA U PULANA YA VHEGE NGA VHEGE YA KOTARA YA 4**

**Kotara ya 4: Pulane ya Nyito: Vhege ____**

| **SIA ḽA MAGUDISWA:** | | | | |
|---|---|---|---|---|
| **THERO:**<br><br>**KHA VHA ḒIVHADZE NḒIVHO NTSWA:**<br><br>**NḒOWEDZO:** | | | | |
| **Nyito dza kiḽasi yoṱhe** | | **Nyito yo rangwaho phanḓa nga mugudisi** | **Nyito dza tshiṱitshini tsha u shumela (nyito dza tshigwada tshiṱuku tsho ḓiimisaho)** | |
| **Ḓuvha ḽa 1** | | | **Nyito ya 1** | |
| **Ḓuvha ḽa 2** | | | **Nyito ya 2** | |
| **Ḓuvha ḽa 3** | | | **Nyito ya 3** | |
| **Ḓuvha ḽa 4** | | | **Nyito ya 4** | |
| **Ḓuvha ḽa 5** | | | | |

## Term 4: Activity Plan: Week ____

| **CONTENT AREA:** | | | | |
|---|---|---|---|---|
| **TOPIC:**<br><br>**INTRODUCE NEW KNOWLEDGE:**<br><br>**PRACTISE:** | | | | |
| **Whole class activities** | | **Teacher-guided activity** | **Workstation activities (independent small group activities)** | |
| **Day 1** | | | **Activity 1** | |
| **Day 2** | | | **Activity 2** | |
| **Day 3** | | | **Activity 3** | |
| **Day 4** | | | **Activity 4** | |
| **Day 5** | | | | |

## Kotara ya 4: Pulane ya Nyito: Vhege ____

| **SIA ḽA MAGUDISWA:** | | | | |
|---|---|---|---|---|
| **THERO:**<br><br>**KHA VHA ḒIVHADZE NḒIVHO NTSWA:**<br><br>**NḒOWEDZO:** | | | | |
| **Nyito dza kiḽasi yoṱhe** | | **Nyito yo rangwaho phanḓa nga mugudisi** | **Nyito dza tshiṱitshini tsha u shumela (nyito dza tshigwada tshiṱuku tsho ḓiimisaho)** | |
| **Ḓuvha ḽa 1** | | | **Nyito ya 1** | |
| **Ḓuvha ḽa 2** | | | **Nyito ya 2** | |
| **Ḓuvha ḽa 3** | | | **Nyito ya 3** | |
| **Ḓuvha ḽa 4** | | | **Nyito ya 4** | |
| **Ḓuvha ḽa 5** | | | | |

**Term 4: Activity Plan: Week ____**

<table>
<tr><td colspan="5">CONTENT AREA:</td></tr>
<tr><td colspan="5">TOPIC:<br><br>INTRODUCE NEW KNOWLEDGE:<br><br>PRACTISE:</td></tr>
<tr><td colspan="2">Whole class activities</td><td>Teacher-guided activity</td><td colspan="2">Workstation activities (independent small group activities)</td></tr>
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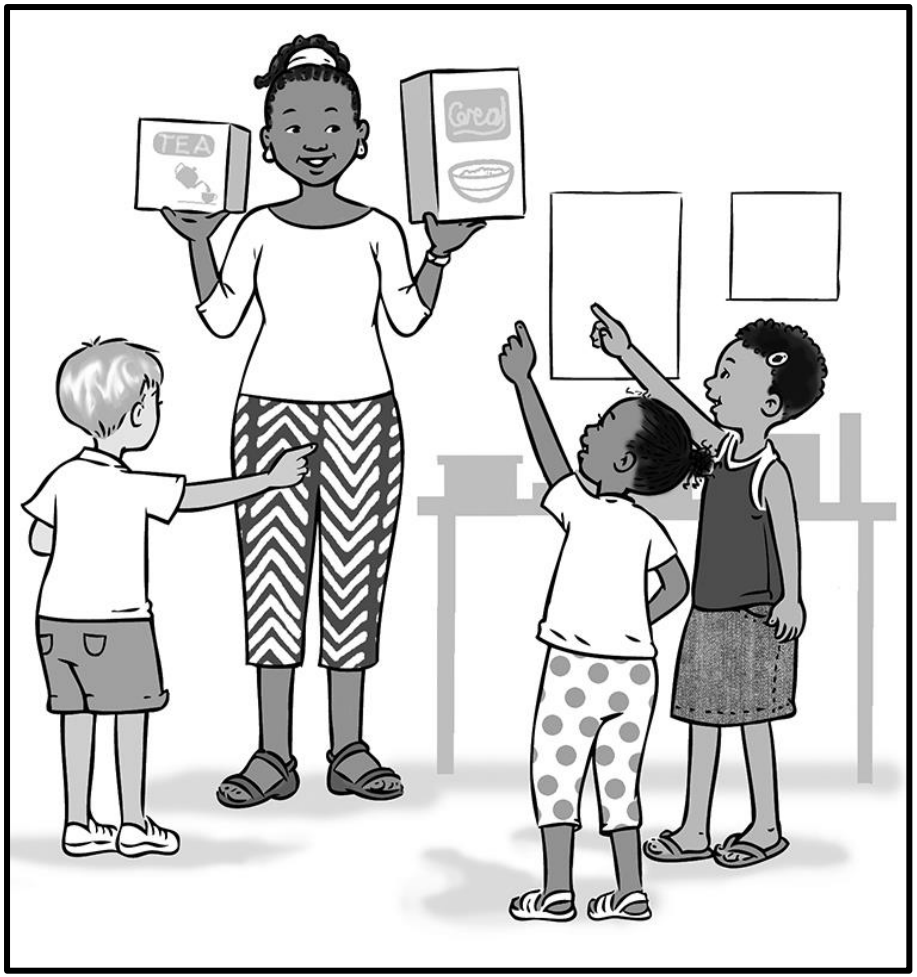
<tr><td>Day 2</td><td></td><td>Activity 2</td></tr>
<tr><td>Day 3</td><td></td><td>Activity 3</td></tr>
<tr><td>Day 4</td><td></td><td>Activity 4</td></tr>
<tr><td>Day 5</td><td></td></tr>
</table>

## Kotara ya 4: Pulane ya Nyito: Vhege ____

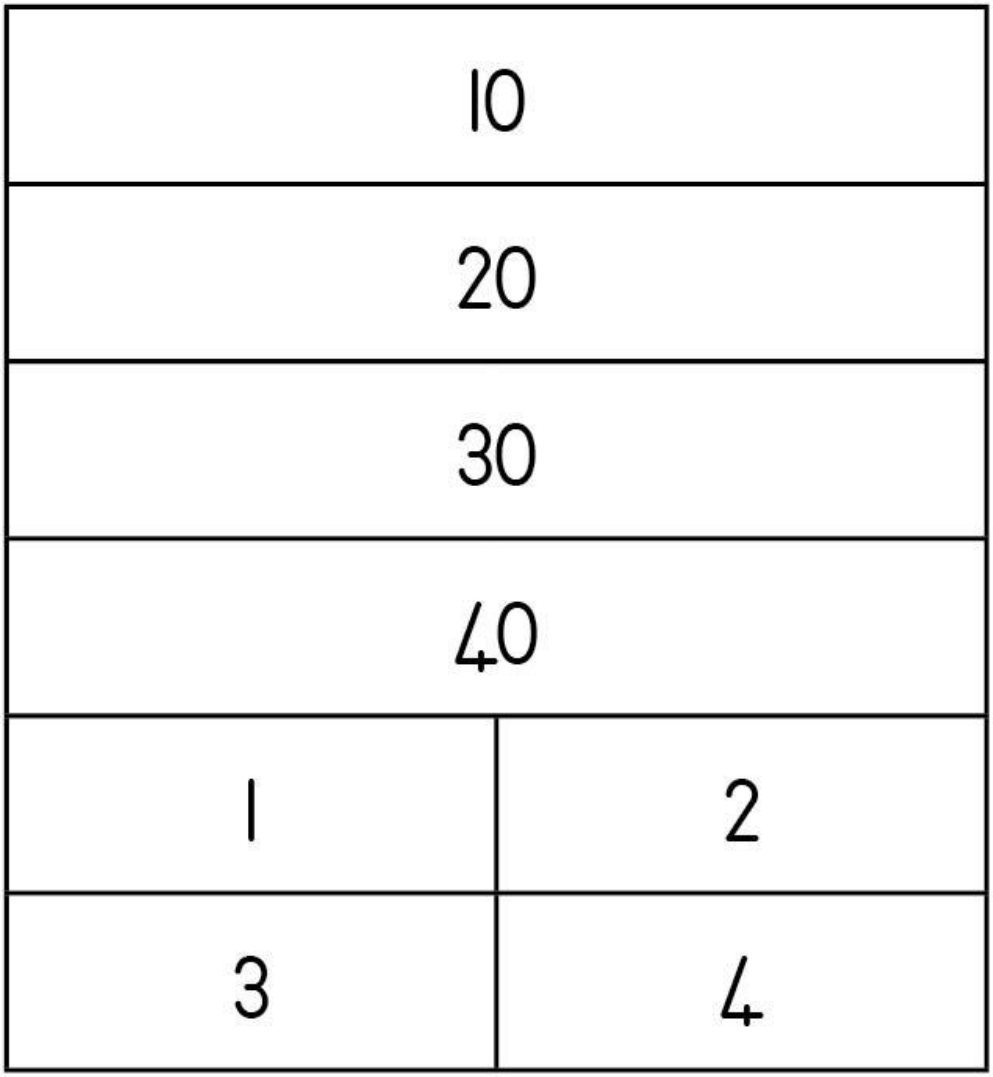
| **SIA ḽA MAGUDISWA:** | | | | |
|---|---|---|---|---|
| **THERO:**<br><br>**KHA VHA ḒIVHADZE NḒIVHO NTSWA:**<br><br>**NḒOWEDZO:** | | | | |
| **Nyito dza kiḽasi yoṱhe** | | **Nyito yo rangwaho phanḓa nga mugudisi** | **Nyito dza tshiṱitshini tsha u shumela (nyito dza tshigwada tshiṱuku tsho ḓiimisaho)** | |
| **Ḓuvha ḽa 1** | | | **Nyito ya 1** | |
| **Ḓuvha ḽa 2** | | | **Nyito ya 2** | |
| **Ḓuvha ḽa 3** | | | **Nyito ya 3** | |
| **Ḓuvha ḽa 4** | | | **Nyito ya 4** | |
| **Ḓuvha ḽa 5** | | | | |

**APPENDIX B: THE GUIDING PRINCIPLES OF TEACHING MATHS IN GRADE R (PICTURES)**
**ṰHUMETSHEDZO YA B: MILAYO YA NYENDEDZI DZA U FUNZA MBALO KHA GIREIDI YA Ṱ (ZWIFANYISO)**

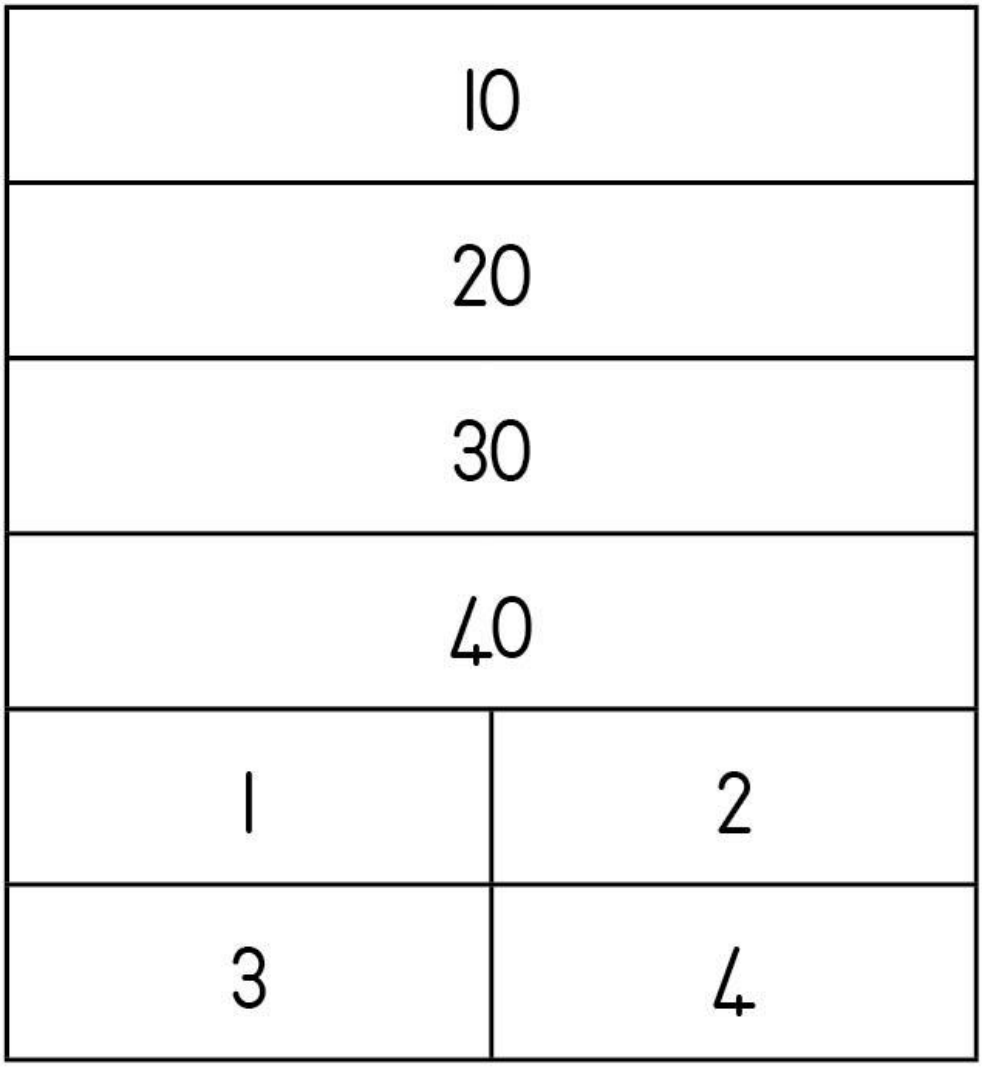

TEA
Cereal

6

**APPENDIX C: EXPANDING NUMBER CARDS**



**ṰHUMETSHEDZO YA C: U ṰANḐAVHUDZA MAGARAṰA A NOMBORO**



# Workshop 10 Evaluation Form

1. Did the workshop meet your expectations?

_____
_____
_____
_____

2. What did you learn in this workshop that helped you the most?

_____
_____
_____
_____

3. Was there anything that you did not like or had difficulty understanding?

_____
_____
_____
_____

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

_____
_____
_____
_____

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

_____
_____
_____
_____

# Fomo ya u Linga ya Wekishopo ya 10

1. Wekishopo yo swikelela ndavhelelo dzavho?

_____
_____
_____
_____

2. Ndi zwifhio zwe vha guda kha iyi wekishopo zwe zwa vha thusesa?

_____
_____
_____
_____

3. Ho vhuya ha vha na zwiṅwe zwe vha si zwi takalele kana zwe vha konḓelwa u zwi pfesesa?

_____
_____
_____
_____

4. Vha ḓo shumisa hani zwe vha guda ngomu kiḽasirumuni yavho ya Gireidi ya Ṱ?

_____
_____
_____
_____

5. Vha na zwine vha tama u dzinginya u itela u khwinisa wekishopo dzi tevhelaho?

_____
_____
_____
_____