

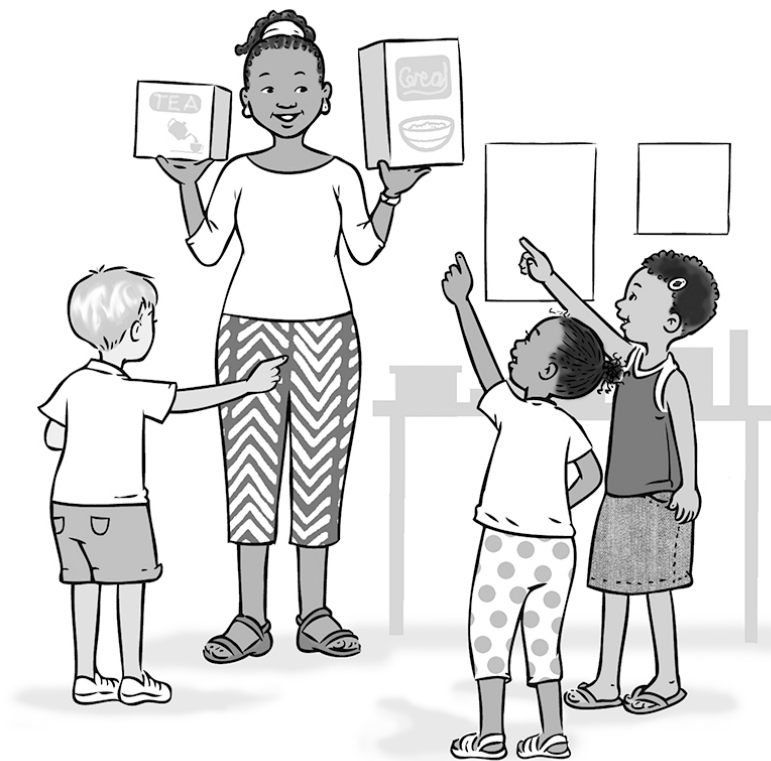


**GAUTENG PROVINCE**  
EDUCATION  
REPUBLIC OF SOUTH AFRICA

**GGT 2030**  
GROWING GAUTENG TOGETHER

Sesotho/English

# **Lenaneo le Ntlafaditsweng la Mmetse la Kereiti ya R Grade R Mathematics Improvement Programme**



**Wekshopo ya 5 • Workshop 5  
Tataiso ya Motsamaisi • 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.

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- The R-Maths writing team: SDU staff and consultants.



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Projeke ya Mmetse wa Kereiti ya R le Ntlatfatso ya Puo ke bohato ba pele ba **Lefapha la Thuto la Gauteng (Gauteng Department of Education)** le molekane wa lona wa sehlooho, **Gauteng Education Development Trust**.

Ntshetsopele le tlhahiso ya mehlodi ya thupelo le ya phaposi ya borutelo bakeng sa Projeke ya Mmetse wa Kereiti ya R le Ntlatfatso ya Puo di ile tsa tswelletswa ke tshetso ka ditjhelete ya diprojeke e fanweng ke **United States Agency for International Development** le **Zenex Foundation**.

Projeke ya Mmetse wa Kereiti ya R le Ntlatfatso ya Puo e tsamaiswa ke **JET Education Services** mmoho le **Schools Development Unit** ya **UCT** le **Wordworks** jwaloka balekane ba setegeniki.

**Schools Development Unit (SDU)** ya **University of Cape Town (UCT)** ke molekane wa setegeniki wa mmetse bakeng sa Projeke ya Mmetse wa Kereiti ya R le Ntlatfatso ya Puo. SDU ke yuniti e kahara School of Education sa UCT e tsepameng ho ntshetsopele ya porofeshene ya matitjhere ho Mmetse, Saense, Tsebo ya ho Bala le ho Ngola/Puo le Bokgoni ba Bophelo ho tloha ho Kereiti ya R ho isa ho Kereiti ya 12. SDU e fana ka mangolo a botitjhere le a dithuto tse kgutshwane tse ananetsweng tsa UCT, mosebetsi o theilweng dikolong, ntshetsopele ya disebediswa le dipuputso bakeng sa ho tshetsa ho ruta le ho ithuta dikarolong tsohle tsa Afrika Borwa.

## DITEBOHO

Diteboho tse kgethehileng ho:

- Baofisiri ba Botsamaisi ba Kharikhulamo, Botsamaisi ba Thuto ya Matitjhere le Botsamaisi ba Thuto e Kgethehileng ba Lefapha la Thuto la Gauteng, bakeng sa nyehelo ya bona ntlatfatsoeng ya disebediswa tsa rona tsa thuto.
- Baofisiri le matitjhere a Western Cape Education Department (WCED) ka nyehelo ya bona bakeng sa ho kenngwa tshetsong ka katleho ha Grade R Mathematics Programme (*R-Maths*) mane Western Cape pakeng tsa 2016 le 2019.
- Sehlopha se ngolang sa *R-Maths*. Basebetsi le baeletsi ba SDU.



Lenaneo le Ntlatfaditsweng la Mmetse la Kereite ya R le ntlatfaditswe ho tloha ho *R-Maths*, e ileng ya phatlalatswa lekgetlo la pele ka 2017 ke Schools Development Unit, University of Cape Town. Tokelo ya kgatiso ya *R-Maths* e tshwerwe ke University of Cape Town.

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# Overview

## Purpose

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

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

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

## Learning outcomes

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

## Workshop content

- ◆ Opening and reflection (1 hour)
- ◆ Session 1: Space and Shape (Geometry) (1 hour)
- TEA
- ◆ Session 2: Numbers, Operations and Relationships (1 hour)
- ◆ Session 3: Patterns, Functions and Algebra (1 hour)
- LUNCH
- ◆ Session 4: Data Handling (1 hour)
- ◆ Closing activities (1 hour)

# Tjhebokakaretso

## Sepheo

Ena ke ya bohloko ya diwekshopo tse leshome le metso e mmedi tsa Lenaneo le Ntlafaditsweng la Mmetse la Kereiti ya R, tse etsang karolo ya Lefapha la Thuto la Gauteng (GDE) Projeke ya Mmetse wa Kereiti ya R le Ntlafatso ya Puo.

Sepheo sa wekshopo ena ke ho thusa matitjhere ho kenya tshebetsong Lenaneo la Mmetse ka diphaposing tsa bona tsa borutelo, ho matlafatsa kutlwisiso ya bona ya ho ruta le ho ithuta ho Dikarolo tsa Dikahare tse entsweng ho Kotara ya 2 Dibeke tsa 4–7 le ho ikgopotsa kamoo ba kenyang tshebetsong dintlhatheo tsa tataiso tsa ho ruta mmetse ka diphaposing tsa bona tsa borutelo.

Dintlha tse buang ka Dikarolo tsa Dikahare tsa Mmetse wa Kereiti ya R di nkilwe ho *Setatemente sa Leano la Kharikhulamo le Tekanyetso (SLKT): Mmetse wa Kereiti ya R (Moralo wa Moshwelella)*, 2011, Lefapha la Thuto ya Motheo, Afrika Borwa.

## Diphetho tsa ho ithuta

- ◆ Ho shebisisa ho kenya tshebetsong ha Kotara ya 1 Beke ya 10 le Kotara ya 2 Dibeke tsa 1–3
- ◆ Ho sibolla mawa a ho tshehetsa ho ruta mmetse Kereiting ya R
- ◆ Ho ikgopotsa dintlhatheo tsa tataiso tsa ho ruta tsa Lenaneo la Mmetse
- ◆ Ho sebetsana le dikahare tsa Lenaneo la Mmetse bakeng sa Kotara ya 2 Dibeke tsa 4–7 (Sebaka le Sebopeho (Jeometri); Dinomoro, Matshwao le Dikamano; Dipaterone, Ditshebetso le Aljebra; le Ho Sebetsa ka Datha)
- ◆ Ho buisana ka ditemoho le ditekanyetso tse loketseng Kereiting ya R

## Dikahare tsa wekshopo

- ◆ Pulo le boikgopotso (Hora e 1)
  - ◆ Karolo ya 1: Sebaka le Sebopeho (Jeometri) (Hora e 1)
- TEYE
- ◆ Karolo ya 2: Dinomoro, Matshwao le Dikamano (Hora e 1)
  - ◆ Karolo ya 3: Dipaterone, Ditshebetso le Aljebra (Hora e 1)
- DIJO TSA MOTSHEARE
- ◆ Karolo ya 4: Ho Sebetsa ka Datha (Hora e 1)
  - ◆ Diketsahalo tsa ho kwala (Hora e 1)

## Preparation

- ◆ PPT welcome and outcomes
- ◆ Read:
  - Concept Guide*, pages 114–131 and 136–137
  - Activity Guide: Term 2*, pages 18–21 and pages 70–137
  - Appendix A: Term 2 Weekly Content Summary (Weeks 4–7)
- ◆ Bring a large toy, e.g. a car, a doll.
- ◆ PPT: Data Handling cycle (from Workshop 4).
- ◆ For Session 4, prepare a pictograph chart, 'How did you travel to this workshop?' with picture cards for 'taxi', 'car', 'walk' and 'other' and 'smiley face' cards for each participant.

## Materials

- ◆ Flipchart paper, kokis
- ◆ *Resource Kit* for each group
- ◆ *Concept Guide*
- ◆ Collection of 3-D objects for each group (Session 2)
- ◆ Washing line and pegs for each group (Session 2)



## Tokisetso

- ◆ PPT kamohelo le diphetho
- ◆ Bala:
  - Tataiso ya Mareo*, maqephe a 114–131 le 136–137
  - Tataiso ya Diketsahalo: Kotara ya 2*, maqephe a 18–21 le maqephe a 70–137
- ◆ Sehlomathiso A: Kotara ya 2 Kakaretso ya Dikahare tsa Beke le beke (Dibeke tsa 4–7)
- ◆ Tloo le sebadiswa se seholo, mohl. kolo, popi.
- ◆ PPT: Saekela ya Ho Sebetsa ka Datha (ho tswa ho Wekshopo ya 4).
- ◆ Bakeng sa Karolo ya 4, hlophisa tjhate ya kerafo ya ditshwantsho, 'O tlile jwang wekshopong ena?' ka dikarete tsa ditshwantsho bakeng sa 'tekesi', 'kolo', 'ho tsamaya' le 'tse ding' le dikarete tsa 'difahleho tse bososelang' bakeng sa monkakarolo ka mong.

## Disebediswa

- ◆ Pampiri ya fliptjhate, dikoki
- ◆ *Khiti ya Disebediswa* bakeng sa sehlopha ka seng
- ◆ *Tataiso ya Mareo*
- ◆ Pokello ya dintho tsa 3-D bakeng sa sehlopha ka seng (Karolo ya 2)
- ◆ Mola wa ho aneha le diphekse bakeng sa sehlopha ka seng (Karolo ya 2)

# Opening and reflection

1 hour

## Facilitator's notes

- ◆ PPT: Open the session and read through the agenda and learning outcomes for the workshop.
- ◆ Remind participants of the *Take back to school* task from the end of Workshop 4.
- ◆ Ask participants to reflect on their observations and assessment of learners, and how they have been implementing the Maths Programme in their classrooms. Discuss what is working well and any concerns that participants may have.

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

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



### Activity 1

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

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

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

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

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## Dinoutso tsa motsamaisi

- ◆ PPT: Bula karolo ena mme o bale lenanetsamaiso le diphetho tsa ho ithuta bakeng sa wekshopo.
- ◆ Hopotsa bankakarolo ka mosebetsi wa *Kgutlela le yona sekolong* ho tswa qetellong ya Wekshopo ya 4.
- ◆ Kopa bankakarolo ho ikgopotsa ka ditemoho le ditekanyetso tsa bona tsa baithuti, le kamoo ba neng ba ntse ba kenya tshebetsong Lenaneo la Mmetse diphaposing tsa bona tsa borutelo. Buisanang ka hore ke eng e sebetsang hantle le dingongoreho dife kapa dife tseo bankakarolo ba ka bang le tsona.

**Ntlhatheo ya kenyeletso:** Baithuti bohle ba lokela ho ikutlwa ba amohelehile, ba kenyeleditswe mme ba thabetse ho nka seabo. Hopola ho tshwara baithuti bohle ka tsela e se nang leeme le ka tlhompho.

Ikgopotseng ka ho kenya tshebetsong ha lona ha Lenaneo la Mmetse lenaneong la lona la letsatsi le letsatsi mme le phethele ketsahalo e latelang.



## Ketsahalo ya 1

Buisanang ka kgatelopele ya lona mabapi le ho kenya tshebetsong mosebetsi wa *Kgutlela le yona sekolong* ho tswa ho Wekshopo ya 4.

1. Le lemohile kgatelopele efe ho mmetse baithuting ba lona kamora ho kenya tshebetsong Kotara ya 1?

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2. Tlhalisoleseding e ho 'Lekola hore baithuti ba kgona ho' ho *Tataiso ya Diketsahalo: Kotara ya 1* e le thusitse jwang ho lekola kgatelopele ya moithuti ka mong ho Kotara ya 1?

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3. Na le rekotile ka katleho kgatelopele ya moithuti ka mong le sebedisa 'Kotara ya 1: Rekoto ya Mohlala ya Tekanyetso e Tswelang' maqepheng a 190–193 a *Tataiso ya Diketsahalo: Kotara ya 1*?

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### Video 1

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

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

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### Facilitator's notes

- ◆ PPT: Summary of notes on rubrics, and Figure 39 and 40 of the *Concept Guide* (pages 106–109).
- ◆ Encourage participants to share their methods of assessment and how they use rubrics. Ask each group to write notes on flipchart paper and present these after **Activity 2**.
- ◆ Refer to the School Based Assessments (SBA) and SA-SAMS online systems to find out how participants engage with these.
- ◆ Remind participants of the **level principle** and discuss how they manage learners with different abilities.



### Activity 2

In your small groups, discuss:

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

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

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



## Video ya 1

Shebellang video ya titjhere a buisana ka temoho le tekanyetso phaposing ya hae ya borutelo ya Kereiti ya R.

O nahana hore sepheo sa ketsahalo ena ke sefe? Shebisisa ka ho qolleha kamoo titjhere a susumetsang baithuti ho bua ka ho ba botsa dipotso le kamoo a shebellang moithuti ka mong.

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### Dinoutso tsa motsamaisi

- ◆ PPT: Kakaretso ya dinoutso ho diruburiki, le Setshwantsho sa 39 le sa 40 tsa *Tataiso ya Mareo* (maqephe a 106–109).
- ◆ Kgothaletsa bankakarolo ho abelana ka mekgwa ya bona ya tekanyetso le kamoo ba sebedisang diruburiki ka teng. Kopa sehlopha ka seng ho ngola dinoutso pampiring ya fliptjhate mme ba di bontshe kamora **Ketsahalo ya 2**.
- ◆ Sheba ho disistime tsa inthanete tsa Tekanyetso e Etsetswang Sekolong (SBA) le SA-SAMS ho fumana kamoo bankakarolo ba sebetsanang le tsona ka teng.
- ◆ Hopotsa bankakarolo ka **ntlhatheo ya mekgahlelo** mme le buisane ka kamoo ba sebetsanang le baithuti ba nang le bokgoni bo fapaneng ka teng.



## Ketsahalo ya 2

Dihlotshwaneng tsa lona, buisanang ka:

1. Kamoo le tsamaisang tekanyetso ka phaposing ya lona ya borutelo.
2. Kamoo le sebedisang diruburiki mokgwatsamaisong wa lona wa tekanyetso.
3. Kamoo le kenyeletsang sistimi ya inthanete ya School Based Assessments (SBA) le SA-SAMS jwaloka karolo ya mokgwatsamaiso wa lona wa tekanyetso.

Ngolang dintlha tsa sehlooho tsa puisano ya lona ho abelana le sehlopha sohle. Hlokomelang tse sebetsang hantle le moo le kopanang le mathata a tekanyetso.

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**Ntlhatheo ya mekgahlelo:** Baithuti ba bang ba ka hloka kwetliso le tshehetso ho feta baithuti ba bang. Netefatsa hore o dumella baithuti ho ba le nako le tshehetso e lekaneng bakeng sa ho phethela diketsahalo, ho nahana le ho araba dipotso.

# Session 1: Space and Shape (Geometry)

1 hour

## Facilitator's notes

- ◆ This workshop focuses on teaching the content of Term 2 Weeks 4–7. The Content Area Focus of Week 4 is Space and Shape (Geometry). Remind participants that this was also the focus of Term 2 Week 3 (covered in Workshop 4).
- ◆ Refer participants to pages 126–131 of the *Concept Guide*.
- ◆ Ask participants to work in groups to complete **Activity 3**.

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

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

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



### Activity 3

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

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## Facilitator's notes

- ◆ Ensure that participants identify the Space and Shape concepts in 3.1 and 3.2 and understand that the focus is on: position, orientation and views; describing 3-D objects in relation to themselves; following directions.
- ◆ In **Activity 4** the focus is on describing an object from different positions (views).
- ◆ In step 1 of **Activity 4**, show the participants the toy car or doll that you brought along (or a shoe or mug). Ask them to look at the object from different positions and to describe what they see. Ask them where they are in relation to the object e.g. *in front of, behind, next to, underneath, above*.

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

# Karolo ya 1: Sebaka le Sebopeho (Jeometri) Hora e 1

## Dinoutso tsa motsamaisi

- ◆ Wekshopo ena e tsepame ho ho ruta dikahare tsa Kotara ya 2 Dibeke tsa 4–7. Tsepamiso ya Karolo ya Dikahare ya Beke ya 4 ke Sebaka le Sebopeho (Jeometri). Hopotsa bankakarolo hore sena e ne e bile e le tsepamiso ya Kotara ya 2 Beke ya 3 (e entsweng ho Wekshopo ya 4).
- ◆ Ere bankakarolo ba shebe maqephe a 126–131 a *Tataiso ya Mareo*.
- ◆ Kopa bankakarolo ho sebetsa ka dihlotshwana ho phethela **Ketsahalo ya 3**.

## Kotara ya 2 Tjhebokakaretso ya dikahare: Sebaka le Sebopeho (Jeometri)

Karolo ena e tsepame ho ho ruta dikahare tsa Kotara ya 2 Beke ya 4 – Sebaka le Sebopeho (Jeometri). Hopola hore Sebaka le Sebopeho (Jeometri) le yona e ne e le tsepamiso ya Beke ya 3 eo re e entseng ho Wekshopo ya 4.

Bala tjhebokakaretso ya dikahare bakeng sa Sebaka le Sebopeho (Jeometri) ho maqephe a 126–131 a *Tataiso ya Mareo* mme le phethele Ketsahalo ya 3.



### Ketsahalo ya 3

Ke mareo afe a Sebaka le Sebopeho a bontshitsweng ho 3.1 le 3.2 ya tjhebokakaretso ya dikahare?

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## Dinoutso tsa motsamaisi

- ◆ Netefatsa hore bankakarolo ba hlwaya mareo a Sebaka le Sebopeho ho 3.1 le 3.2 mme ba utlwisisa hore tsepamiso e ho: boemo, tlwaetso le ditjhebo; ba hlalosa dintho tsa 3-D kamanong le bona; ba latela ditshupiso.
- ◆ Ho **Ketsahalo ya 4** tsepamiso e ho tlhaloso ya ntho ho tswa maamong a fapaneng (ditjhebo).
- ◆ Mohatong wa 1 wa **Ketsahalo ya 4**, bontsha bankakarolo koloi kapa popi ya sebadiswano eo o tllileng le yona (kapa seeta kapa lebekere). Ere ba shebe ntho ho tswa maamong a fapaneng mme ba hlalose seo ba se bonang. Ba botse hore bona ba hokae papisong le ntho e itseng mohl. *ka pela, ka mora, pela, ka tlase, ka hodimo*.

Kereiting ya R baithuti ba hlalosa, ba hlophisa le ho bapisa dintho tsa 3-D mme ba tsepamisa maikutlo a bona ho ditshwano di diphapane pakeng tsa tsona. Ho Kotara ya 2 Beke ya 4 baithuti ba hlophisa, ba bapisa le ho hlalosa dintho tsa 3-D ho ya ka boholo, mmala le sebopeho. Hape ba sheba le ho hlalosa dintho papisong le bona mmoho le ba bang le ho di sheba ho tswa maamong a fapaneng (tlwaetso le ditjhebo). Tsepamiso e nngwe e ho Beke ya 4 e ho ditshupiso tse latelang le ho sebedisa tlotlontswe e tsamaelanang le boemo.



### Activity 4

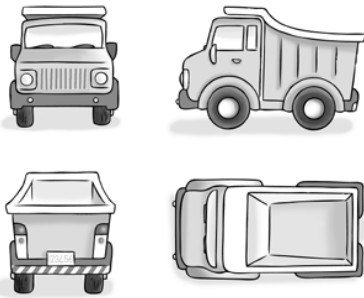
1. Discuss how you could use objects in your classroom to encourage learners to talk about their position in relation to the objects they are looking at.

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



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In front of the truck, looking at the side of the truck, behind the truck, looking down on the truck (from above).

### Term 2 Week 4

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



### Activity 5

1. Which Space and Shape concepts are presented?

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Position, orientation, views: objects look different when viewed from different positions.

Position vocabulary: *front, back, side, above, below, underneath*.

Sorting and identifying shapes.





### Ketsahalo ya 4

1. Buisanang kamoo le ka sebedisang dintho tse ka phaposing ya borutelo ho kgothaletsa baithuti ho bua ka boemo ba bona kamanong le dintho tse ding tseo ba di shebileng.

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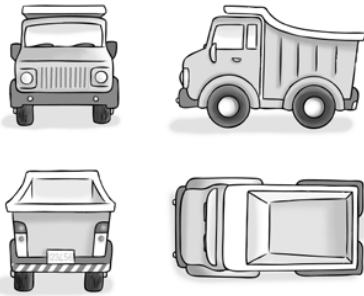


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2. Shebang ditshwantsho. Hlalosang moo le ka emang e le hore le bone e nngwe le e nngwe ya ditjhebo tsa lori.




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Ka pela lori, le shebile lehlakoreng la lori, ka mora lori, le shebetse lori fatshe (ho tswa ka hodimo).

### Kotara ya 2 Beke ya 4

Shebang ho ketsahalo e tataiswang ke titjhere ho maqephe a 80–83 a *Tataiso ya Diketsahalo: Kotara ya 2*.



### Ketsahalo ya 5

1. Ke mareo afe a Sebaka le Sebopeho a bontshwang?

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Boemo, tlwaetso, ditjhebo: dintho di shebeha ka tsela e fapaneng ha di shebelwa ho tswa maamong a fapaneng.

Tlotlontswe ya maemo: *ka pele, ka morao, lehlakore, ka hodimo, ka tlase, ka tlasa*.

Ho hlophisa le ho hlwaya dibopeho.

2. Give examples of guiding questions that are asked in the teacher-guided activities. Will these questions encourage learners to talk about the concepts in question 1?
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Learners need many opportunities to play with and sort collections of 3-D objects. Teachers need to understand the underlying concepts in Space and Shape (Geometry) and communicate these using the correct maths language.

The following points should be remembered.

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

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

## Term 2 Content Summary (Week 4)

### Facilitator's notes

- ◆ By this stage, participants will have engaged with the Weekly Content Summaries in previous workshops. It is important that they make the connection between the CAPS content, planning for a week and the activities for the small group sessions.
- ◆ Remind participants that they also need to plan free choice activities that are linked to the concepts being taught in the week.

2. Fana ka mehlala ya dipotso tse tataisang tse botswang diketsahalong tse tataiswang ke titjhere. Na dipotso tsena di tla kgothaletsa baithuti ho bua ka mareo a ho potso ya 1?
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Baithuti ba hloka menyetla e mengata ho bapala ka dintho tsa 3-D le ho hlophisa dipokello tsa tsona. Matitjhere a lokela ho utlwisisa mareo a motheo ho Sebaka le Sebopeho (Jeometri) mme ba buisane ka ona ba sebedisa puo e nepahetseng ya mmetse.

Dintlha tse latelang di lokela ho hopolwa.

- ◆ Ntho e mahlakore a mararo (3-D). O ka e sheba ho tswa ka hodimo, tlase le ka mahlakoreng. Dintho tsa 3-D di na le bolelele, bophara (bobatsi) le bophahamo.
- ◆ Sebopeho se mahlakore a mabedi (2-D). Dibopeho di kenyeletsa didikadikwe, dikgutlotharo, dikgutlonnetsepa le dikgutlonne. Di na le bolelele le bophara (bobatsi).
- ◆ Ha baithuti ba ntse ba sibolla makgetha a dintho tsa 3-D ba tla hlwaya dintho tse 'shebehang jwaloka' dibopeho tsa 2-D, mohl. lemati le tshwana le kgutlonne, letshwao la tsela le tshwana le kgutlotharo, poleiti e tshwana le sedikadikwe. Ba tla qala ho utlwisisa hore bokahodimo ba dintho tsa 3-D bo shebeha jwaloka dibopeho tsa 2-D.

**Ntlhatheo ya kgokahano:** Ho ithuta ho kenyeletsa kgokahano le ho abelana ka mehopollo. Ho arabela ka tsela e nepahetseng nthong e itseng ke karolo ya bohlokwa ya kgokahano le ya ho ruta le ho ithuta. Kamehla mamela baithuti ha ba bua ka mehopollo ya bona kapa ba araba dipotso tsa hao.

## Kotara ya 2 Kakaretso ya Dikahare (Beke ya 4)

### Dinoutso tsa motsamaisi

- ◆ Mohatong ona, bankakarolo ba tla be ba kopane le Dikakaretso tsa Dikahare tsa Beke le beke tsa diwekshopo tse fetileng. Ho bohlokwa hore ba bone kamano pakeng tsa dikahare tsa SLTK, ho etsa moralo bakeng sa beke le diketsahalo bakeng sa dikarolo tsa dihlotshwana.
- ◆ Hopotsa bankakarolo hore hape ba hloka ho rera diketsahalo tsa kgetho ka bolokolohi tse amanang le mareo a rutilweng bekeng eo.



### Activity 6

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

1. What are the topics for Week 4?

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2. What new knowledge is introduced in this week?

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3. What skills from previous weeks are practised?

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## Ketsahalo ya 6

Sheba ho Sehlophiso A: Kotara ya 2 Kakaretso ya Dikahare tsa Beke le beke (Dibeke tsa 4–7). Bala tšhebokakaretso ya dikahare bakeng sa Beke ya 4: Sebaka le Sebopeho (Jeometri) leqepheng la 10 la *Tataiso ya Diketsahalo: Kotara ya 2*.

1. Dihlooho tsa Beke ya 4 ke dife?

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2. Ke tsebo e ntjha efe e tsebiswang bekeng ena?

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3. Ke bokgoni bofe ho tswa dibekeng tse fetileng bo sebediswang?

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# Session 2: Numbers, Operations and Relationships

1 hour

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

## Facilitator's notes

- ◆ Explain that the focus in Term 2 Week 5 is on Numbers, Operations and Relationships again. Remind participants that this was also the focus of Term 2 Weeks 1 and 2 (covered in Workshop 4).
- ◆ Refer participants to pages 114–123 of the *Concept Guide*.
- ◆ Ask participants to work in groups to complete **Activity 7**.

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

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



### Activity 7

What new numbers are introduced in Term 2?

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4 and 5

## Term 2 Week 5: Teaching number

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

## Facilitator's notes

- ◆ Ask participants to think back to how they introduced numbers in previous weeks.
- ◆ Reflect on how the same routine is used to introduce each new number. Explain that the number 'five' is introduced in Term 2 Week 5 using the same routine as before. Discuss how this routine actively engages learners in learning about the concept of number.
- ◆ Refer participants to page 90 of *Activity Guide: Term 2*.
- ◆ Let them complete **Activity 8** in groups and then report back.

# Karolo ya 2: Dinomoro, Matshwao le Dikamano

Hora e 1

Tsepamiso ya Kotara ya 2 Beke ya 5 ke Dinomoro, Matshwao le Dikamano.

## Dinoutso tsa motsamaisi

- ◆ Hlalosa hore tsepamiso ho Kotara ya 2 Beke ya 5 e ho Dinomoro, Matshwao le Dikamano hape. Hopotsa bankakarolo hore ena hape e ne e le tsepamiso ya Kotara ya 2 Dibeke tsa 1 le2 (tse rutilweng ho Wekshopo ya 4).
- ◆ Romela bankakarolo ho maqephe a 114–123 a *Tataiso ya Mareo*.
- ◆ Kopa bankakarolo hore ba sebetse ka dihlotshwana ho phethela **Ketsahalo ya 7**.

## Kotara ya 2 Tjhebokakaretso ya dikahare: Dinomoro, Matshwao le Dikamano

Diwekshopo tse fetileng di bontshitse Tsepamiso ya Karolo ya Dikahare: Dinomoro, Matshwao le Dikamano. Karolong ena re sheba tjhebokakaretso ya dikahare tsa Kotara ya 1–4 (*Tataiso ya Mareo*, maqephe a 114–123) hape.



### Ketsahalo ya 7

Ke dinomoro dife tse ntjha tse tsebiswang ho Kotara ya 2?

4 le 5

## Kotara ya 2 Beke ya 5: Ho ruta nomoro

Nomoro ya 'hlano' e tsebiswa ho Kotara ya 2 Beke ya 5. Lenaneo la Mmetse le kgothaletsa tshebediso ya dinomoro maamong a fapaneng le tshebediso ya dikemelo tse ngata, mohl. letshwao, lentswe, setshwantsho, dikarete tsa matheba, dibadi, ho opa matsoho. Tsela ya tlwaelo e sebediswang bakeng sa ho tsebisa nomoro ka nngwe e kenyeletsa baithuti ho mokgwa wa tlwaelo o tlwaelehleng, o lebelletsweng, o thabisang mme e hlahisa nomoro ka ditsela tse fapaneng.

## Dinoutso tsa motsamaisi

- ◆ Kopa bankakarolo ho hopola morao ho kamoo ba neng ba tsebisa dinomoro dibekeng tse fetileng.
- ◆ Sekasekang kamoo mokgwatlwaelo ona o sebediswang ka teng ho tsebisa nomoro ka nngwe e ntjha. Hlalosa hore nomoro ya 'hlano' e tsebiswa ho Kotara ya 2 Beke ya 5 ho sebediswa mokgwatlwaelo ona oo jwaloka pele. Buisanang kamoo mokgwatlwaelo ona o kenyeletsang baithuti ka teng ho ithuteng ka lereo la nomoro.
- ◆ Ere bankakarolo ba ye ho leqephe la 91 la *Tataiso ya Diketsahalo: Kotara ya 2*.
- ◆ Ere ba phethele **Ketsahalo ya 8** ka dihlotshwana mme ba fane ka ditlaleho.

- ◆ Make sure that the following points about the routine are mentioned:
  - A story is told about an animal/s and used to build the number frieze.
  - Objects are collected to represent the number and put on the table in the maths area.
  - Learners match the number symbol and number word to dot cards, and also use a combination of dot cards to make the number.
  - Learners use body movements to dramatise the story.
  - The *Poster Book* provides opportunities to count and solve problems in context.
- ◆ The order of the items in the routine may change, but each week these aspects of introducing a number are included in the whole class activities.



### Activity 8

Refer to the Week 5 whole class activities in *Activity Guide: Term 2* (pages 90–99).

Describe the routine that is used to teach the number '5'.

Day 1

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Day 2

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Day 3

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Day 4

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Day 5

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- ◆ Etsa bonnete ba hore dintlha tse latelang tse mabapi le mokgwatlwaelo di a bolelwa:
  - Ho phetwa pale e mabapi le di/phoofolo mme e sebediswa ho aha frizi ya dinomoro.
  - Dintho di bokellwa ho emela nomoro mme di bewa hodima tafole karolong ya mmetse.
  - Baithuti ba nyalanya letshwao la nomoro le lentswe la nomoro ho dikarete tsa matheba, hape ba sebedisa motswako wa dikarete tsa matheba ho etsa nomoro.
  - Baithuti ba sebedisa metsamao ya mmele ho tshwantshisa pale.
  - *Buka ya Diphoustara* e fana ka menyetla ya ho bala dintho le ho rarolla mathata ho ya ka tikoloho.
- ◆ Tatelano ya dintho tse mokgwatlwaelong e ka fetoha, empa bekeng ka nngwe dintlha tsena tsa ho tsebisa nomoro di a kenyeletswa ho diketsahalo tsa tlelase yohle.



### **Ketsahalo ya 8**

Shebang ho Beke ya 5 ho diketsahalo tsa tlelase yohle ho *Tataiso ya Diketsahalo: Kotara ya 2* (maqephe a 90–99).

Hlalosa mokgwatlwaelo o sebediswang bakeng sa ho ruta nomoro ya '5'.

Letsatsi la 1

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Letsatsi la 2

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Letsatsi la 3

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Letsatsi la 4

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Letsatsi la 5

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## The number washing line

### Facilitator's notes

- ◆ Find out if participants have set up number washing lines in their classrooms.
- ◆ Review the importance of the number washing line activities in helping learners to build an understanding of the sequence of counting words and the relationship between numbers.

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

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

Use the number washing line to:

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

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

### Facilitator's notes

- ◆ Demonstrate how to use the number washing line.
- ◆ Refer participants to the washing line activity on page 94 of *Activity Guide: Term 2*.

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



### Video 2

*Activity Guide: Term 2, Week 5, Day 3 #4 (page 94)*

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

## Mola wa ho aneha dinomoro

### Dinoutso tsa motsamaisi

- ◆ Botsa hore na ebe bankakarolo ba hlophisitse mela ya ho aneha dinomoro ka diphaposing tsa bona tsa borutelo.
- ◆ Lekola bohlokwa ba diketsahalo tsa mola wa ho aneha dinomoro bakeng sa ho thusa baithuti ho aha kutlwisiso ya tatelano ya ho bala mantswe le dikamano pakeng tsa dinomoro.

Dinomoro tsa 1 ho isa ho 5 di ne di hakisitswe ka diphekse moleng wa ho aneha dinomoro ho karolo ya mmetse ha di ntse di tsebiswa ho Kotara ya 1. Ke ho Beke ya 5 feela moo baithuti ba kopanang ka mahlahahlaha le mola wa ho aneha dinomoro. Matitjhere a mangata a etsa melapalo ya ho tloha ho 0 ho isa ho 10 kapa esitana le ho fihla ho 20 ka phaposing ya borutelo pele baithuti ba kgona le ho bala kapa ho lemoha dinomoro tsena.

Qalong tsepamiso ya Lenaneo la Mmetse ho mola wa ho aneha dinomoro e etsahala ka tshohanyetso. Ho tloha ho Beke ya 5 e sebedisetswa ho tsepamisa maikutlo ho tlhahlamanyo (tatelano) ya dinomoro le ho bua ka kamano pakeng tsa dinomoro.

Sebedisa mola wa ho aneha dinomoro ho:

- ◆ bea dinomoro ka tatelano le ho di bapisa mohl.:
  - Ke nomoro efe e tlang pele ho 3?
  - Ke nomoro efe e tlang pakeng tsa 3 le 5?
  - Ke nomoro efe e tlang kamora 4?
- ◆ sibolla kamoo dinomoro di eketsehang ho tloha ho le letshehadi ho isa ho le letona, di fokotsehang ho tloha ho le letona ho isa ho le letshehadi.
- ◆ sebedisa puo ya mmetse e jwaloka *pele ho, kamora, pakeng tsa*.

Videong motsamaisi o bontsha ketsahalo ya mola wa ho aneha e tshehetsang ho ruta nomoro.

### Dinoutso tsa motsamaisi

- ◆ Bontsha kamoo ho sebediswang mola wa ho aneha dinomoro.
- ◆ Ere bankakarolo ba shebe ketsahalo ya mola wa ho aneha leqepheng la 95 la *Tataiso ya Diketsahalo: Kotara ya 2*.

Bala ketsahalo e tsebisang mola wa ho aneha ho baithuti leqepheng la 95 la *Tataiso ya Diketsahalo: Kotara ya 2*.



### Video ya 2

*Tataiso ya Diketsahalo: Kotara ya 2, Beke ya 5, Letsatsi la 3 #4 (leqephe la 95)*

Shebellang video ya titjhere ya sebedisang mola wa ho aneha dinomoro ho bea dinomoro ka tatelano 1 ho isa ho 5. Lemoha kamoo a tshehetsang baithuti mme o lemohe dipotso tseo a ba botsang tsona ho kgothaletsa baithuti ho bua.

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

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**Sequencing numbers:** Learners place the numbers in the correct counting order. Learners see the number line each day and during incidental discussions talk about each number.

**Order:** Learners discuss the numbers in relation to each other. The teachers asks which number comes before, after or between other numbers. Learners use correct maths language to describe the position of the numbers in relation to each other.

## Structure beads

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

### Facilitator's notes

- ◆ Discuss the 10-bead structure (five beads, five fingers). Demonstrate the use of a string of beads.
- ◆ Ask participants to take a set of 10 structure beads from the table.
- ◆ Using the information below, discuss the purpose of structure beads.

Structure beads help learners to:

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

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

Buisanang ka bohlokwa ba ho sebedisa mola wa ho aneha dinomoro Kereiting ya R.

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**Ho hlahlamanya dinomoro:** Baithuti ba bea dinomoro ka tatelano e nepahetseng ya ho bala. Baithuti ba bona molapalo letsatsi ka leng mme nakong ya dipuisano tsa tshohanyetso ba bua ka nomoro ka nngwe.

**Tatelano:** Baithuti ba buisana ka dinomoro ho ya kamoo di amanang ka teng. Matitjhere a botsa hore ke nomoro efe e tlang pele, kamora kapa pakeng tsa dinomoro tse ding. Baithuti ba sebedisa puo e nepahetseng ya mmetse ho hlalosa boemo ba dinomoro kamanong le dinomoro tse ding.

## Difaha tsa sebopeho

Difaha tsa sebopeho tse ka hara *Khiti ya Disebediswa* di tla ka bolelele ba difaha tse 10 tse beilweng ka dihlopha tsa tse hlano, ho ya ka mebala (difaha tse hlano tse kgubedu le difaha tse hlano tse tshehla).

### Dinoutso tsa motsamaisi

- ◆ Buisanang ka sebopeho sa difaha tse 10 (difaha tse hlano, menwana e mehlano). Bontsha tshebediso ya difaha tse kgweleng.
- ◆ Kopa bankakarolo ho nka sete ya difaha tsa sebopeho tse 10 tafoleng.
- ◆ Le sebedisa tlhahisoleseding e ka tlase, buisanang ka sepheo sa difaha tsa sebopeho.

Difaha tsa sebopeho di thusa baithuti ho:

- ◆ ehllelwa ka bobona lenane la difaha tse sehlopheng se itseng ntle le ho di bala, mohl. '4'.
- ◆ utlwisisa hore nomoro e le nngwe e ka nna ya eba motswako wa dinomoro tse pedi kapa ho feta, mohl. '4' e etswa ke 2 le 2 kapa 1 le 3.
- ◆ ikahela bokgoni ba ho bala dinto ho tswela pele ho tloha ho nomoro eo ba e filweng, mohl. qala ho 3 mme o bale ho fihlela ho 5.
- ◆ qala ho sebetsa ka ho kopanya le ho tlosa.
- ◆ qala ho sebetsa ka metswako ya leshome.

Ketsahalong ena e latelang, sebedisa difaha tsa sebopeho tse 10 ho sibolla metswako e fapaneng ya dinomoro. Latela tataiso ya motsamaisi wa hao mme o arabe dipotso jwaloka ha di hlahella ho Ketsahalo ya 9.



### Activity 9

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

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

#### Facilitator's notes

- ◆ Explain that participants will now work with their beads and that they should follow your directions and write down their responses.
- ◆ Ask them to work in groups to complete **Activity 10**.



### Activity 10

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

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Learners begin to show a total number of beads (e.g. 3) without having to count in ones.

They are able to show 'one more' or 'one fewer' than a stated amount without counting.

Learners recognise that one number is made up of different combinations of numbers (e.g. 5 consists of 2 and 3, or 1 and 2 and 2).

They begin to use the language of addition and subtraction and apply the concepts to combine/separate groups without counting.

The structure beads provide a physical experience of the total number of beads.



## Ketsahalo ya 9

1. Mpontshe difaha tse pedi.
2. Mpontshe sefaha se seng se le seng.
3. Mpontshe difaha tse mmalwa ho feta nne ka sefaha se le seng.
4. Mpontshe difaha tse nne. Jwale mpontshe difaha tse fetang nne ka se le seng. O na le tse kae?
5. O entse jwang ho etsa hore di be ngata ka se le seng?
6. Mpontshe tse mmalwa ho hlano ka se le seng. O se o ena le tse kae?
7. O entse jwang hore di be mmalwa ka se le seng?
8. Jwale tlosa se le seng. O se o ena le tse kae?
9. Eketsa se le seng. O na le tse kae?

Bala ketsahalo e tsebisang difaha tsa sebopelo ho baithuti leqepheng la 101 la *Tataiso ya Diketsahalo: Kotara ya 2*, mohato wa 3. Ka dihlotshwana, buisanang ka ketsahalo ena.

### Dinoutso tsa motsamaisi

- ◆ Hlalosa hore bankakarolo jwale ba tla sebetsa ka difaha tsa bona le hore ba lokela ho latela ditshupiso tsa hao mme ba ngole dikarabelo tsa bona.
- ◆ Ba kope ho sebetsa ka dihlotshwana ho phethela **Ketsahalo ya 10**.



## Ketsahalo ya 10

Ketsahalo ena ya difaha tsa sebopelo e thusa jwang ho aha kutlwisiso ya moithuti ya dinomoro?

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Baithuti ba qala ho bontsha lenane lohle la difaha (mohl. 3) ntle le ho tlameha ho bala ka bonngwe. Ba kgona ho bontsha 'e nngwe ho feta' kapa 'di mmalwa ka e le nngwe' ho feta lenane le boletsweng ntle le ho bala.

Baithuti ba lemoha hore nomoro e le nngwe e etswa ke metswako e fapaneng ya dinomoro (mohl. 5 e etswa ke 2 le 3, kapa 1 le 2 le 2).

Ba qala ho sebedisa puo ya ho kopanya le ho tlosa le ho sebedisa mareo ho kopanya / ho arohanya dihlopha ntle le ho di bala.

Difaha tsa sebopelo di fana ka boitemohelo ba mmele ba lenane le felletseng la difaha.

### Facilitator's notes

- ◆ Discuss the importance of planning in order to allow learners enough time to practise their new skills and knowledge (the **practice principle**).

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

## Term 2 Content Summary (Week 5)

### Facilitator's notes

- ◆ Remind participants that they also need to plan free choice activities that are linked to the concepts being taught in the week.



### Activity 11

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

1. What are the topics for Week 5?

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2. What new knowledge is introduced in this week?

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3. What skills from previous weeks are practised?

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



### Dinoutso tsa motsamaisi

- ◆ Buisanang ka bohlokwa ba ho etsa moralo ele ho dumella baithuti ho ba le nako e lekaneng ya ho sebedisa bokgoni le tsebo ya bona e ntjha (**ntlhatheo ya boikwetliso**).

**Ntlhatheo ya boikwetliso:** Baithuti ba lokela ho ba le nako e ngata ho ikwetlisa ka bokgoni le tsebo tse ntjha. Ha baithuti ba ikwetlisa kgafetsa ka seo ba seng ba ithutile sona, ba a ntlafala ho sona mme ba be le boitshepo bo fetang. Ba natefelwa ke phetapheto le boikwetliso.

## Kotara ya 2 Kakaretso ya Dikahare (Beke ya 5)

### Dinoutso tsa motsamaisi

- ◆ Hopotsa bankakarolo hore hape ba hloka ho rera diketsahalo tsa kgetho ka bolokolohi tse amanngwang le mareo a rutwang bekeng eo.



### Ketsahalo ya 11

Sheba ho Sehlomathiso A: Kotara ya 2 Kakaretso ya Dikahare tsa Beke le beke (Dibeke tsa 4–7). Bala tjhebokakaretso ya dikahare bakeng sa Beke ya 5: Dinomoro, Matshwao le Dikamano leqepheng la 19 la *Tataiso ya Diketsahalo: Kotara ya 2*.

1. Dihlooho tsa Beke ya 5 ke dife?

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2. Ke tsebo efe e ntjha e tsebiswang bekeng ena?

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3. Ke bokgoni bofe ho tswa dibekeng tse fetileng bo sebediswang?

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4. Nyalanya diketsahalo tse ho Sehlomathiso A: Kotara ya 2 Kakaretso ya Dikahare tsa Beke le beke (Dibeke tsa 4–7) mmoho le dithuto tsa beke ka nngwe.

# Session 3: Patterns, Functions and Algebra 1 hour

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

## Facilitator's notes

- ◆ Explain that the focus in Term 2 Week 6 is on Patterns, Functions and Algebra. Remind participants that this was also the focus of Term 1 Week 6 (covered in Workshop 3).
- ◆ Refer participants to page 124 of the *Concept Guide*.
- ◆ Ask participants to work in groups to complete **Activity 12**.

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

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



### Activity 12

1. What concepts are covered in Term 2?

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

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

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

In Term 2 Week 6 learners:

- ◆ describe the repeat in patterns using objects, pictures and sounds.
- ◆ copy patterns that others have made with objects, pictures and sounds.
- ◆ extend patterns that others have made.
- ◆ create their own patterns at various levels of difficulty such as:

# Karolo ya 3: Dipaterone, Ditshebetso le Algebra

Hora e 1

Tsepamiso ya Kotara ya 2 Beke ya 6 ke Dipaterone, Ditshebetso le Algebra.

## Dinoutso tsa motsamaisi

- ◆ Hlalosa hore tsepamiso ho Kotara ya 2 Beke ya 6 e ho Dipaterone, Ditshebetso le Algebra. Hopotsa bankakarolo hore sena hape e ne e le tsepamiso ya Kotara ya 1 Beke ya 6 (e rutilweng ho Wekshopo ya 3).
- ◆ Ere bankakarolo ba phetle ho leqephe la 125 la *Tataiso ya Mareo*.
- ◆ Kopa bankakarolo ho sebetisa ka dihlotshwana ho phethela **Ketsahalo ya 12**.

## Kotara ya 2 Tjhebokakaretso ya dikahare: Dipaterone, Ditshebetso le Algebra

Shebang ho Dipaterone, Ditshebetso le Algebra ho tjhebokakaretso ya dikahare (*Tataiso ya Mareo*, leqephe la 125).



### Ketsahalo ya 12

1. Ke mareo afe a rutilweng ho Kotara ya 2?

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2. Diphapang ke dife pakeng tsa dikahare tsa Lenaneo la Mmetse le dikahare tsa SLTK?

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## Kotara ya 2 Beke ya 6: Hlalosa, kopolla le ho atolosa dipaterone

Ho Wekshopo ya 3, tsepamiso ya Dipaterone, Ditshebetso le Algebra e ne e le ho ho lemoha/hlwaya phetapheto pateroneng. Hape re ile ra buisana ka phapang pakeng tsa tatelano le paterone. Kotara ya 2 Beke ya 6 e ahella ho dikahare tse tsebisitsweng ho Kotara ya 1 Beke ya 6.

Ho Kotara ya 2 Beke ya 6 baithuti:

- ◆ ba hlalosa phetapheto dipateroneng ba sebedisa dintho, ditshwantsho le medumo.
- ◆ ba kopolla dipaterone tseo ba bang ba di entseng ka dintho, ditshwantsho le medumo.
- ◆ ba atolosa dipaterone tseo ba bang ba di entseng.
- ◆ ba bopa dipaterone tsa bona mekgahlelong e fapaneng ya bothata jwaloka:

- circle, square; circle, square
  - circle, square, triangle; circle, square, triangle
  - circle, circle, square; circle, circle, square
  - red circle, blue circle, yellow square; red circle, blue circle, yellow square.
- ◆ tell what is missing when part of a pattern is hidden.

### Facilitator's notes

- ◆ Think back to Workshop 3: Identifying patterns. Use the attribute blocks and the *Poster Book*. Discuss the difference between a sequence of objects, pictures or events, and what makes a pattern. Remind participants that a pattern requires the repeating of a sequence. Demonstrate this aspect.
- ◆ Have participants work in groups to complete **Activity 13**.



### Activity 13

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

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

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Identifying patterns, using whole body, identifying patterns in the *Poster Book* picture.  
Copy and extend own and others' patterns.  
Explain why it is a pattern or not a pattern.

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

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## Term 2 Content Summary (Week 6)

### Facilitator's notes

- ◆ Ensure that participants make the connection between CAPS and the weekly planning for Week 6, e.g. the Topic and Term 2 content are from CAPS, with some additional content added for the Maths Programme.
- ◆ Discuss why number is also included in a week where the focus is Patterns, Functions and Algebra. Explain that although the content focus is on pattern, we need to practise number every day through whole class and teacher-guided activities.
- ◆ Remind participants to include all concepts incidentally during the daily programme, e.g. the sequence of activities in the daily programme and days of the week are measurement concepts (time), while lining up – first, second, third – are number concepts (ordinal numbers).

- sedikadikwe, kgutlonnetsepa; sedikadikwe, kgutlonnetsepa
  - sedikadikwe, kgutlonnetsepa, kgutlotharo; sedikadikwe, kgutlonnetsepa, kgutlotharo
  - sedikadikwe, sedikadikwe, kgutlonnetsepa; sedikadikwe, sedikadikwe, kgutlonnetsepa
  - sedikadikwe se sefubedu, sedikadikwe se bolou, kgutlonnetsepa e tshehla; sedikadikwe se sefubedu, sedikadikwe se bolou, kgutlonnetsepa e tshehla.
- ◆ bolela ho siyo ha karolo ya dipaterone e patwa.

### Dinoutso tsa motsamaisi

- ◆ Nahana morao ho Wekshopo ya 3: Ho hlwaya dipaterone. Sebedisa diboloko tsa makgetha le *Buka ya Diphoustara*. Buisanang ka phapang pakeng sa tlhahlamano ya dintho, ditshwantsho kapa diketsahalo, le hore na ke eng e etsang paterone. Hopotsa bankakarolo hore paterone e hloka ho phetaphetwa ha tatelano e itseng. Bontsha ntlha ena.
- ◆ Ere bankakarolo ba sebetse ka dihlotshwana ho phethela **Ketsahalo ya 13**.



### Ketsahalo ya 13

Shebang ho Beke ya 6 ho *Tataiso ya Diketsahalo: Kotara ya 2* (maqephe a 104–119).

1. Buisanang kamoo diketsahalo tsa tlelase yohle di fanang ka thuto mabapi le dipaterone.

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Ho hlwaya dipaterone, o sebedisa mmele kaofela, ho hlwaya dipaterone setshwantshong sa *Buka ya Diphoustara*.

Kopolla le ho atolosa dipaterone tsa hao le tsa ba bang.

Hlalosa hore ke hobaneng e le paterone kapa e se paterone.

2. Bala mehato ya 5 le ya 6 ya ketsahalo e tataiswang ke titjhere ho leqephe la 117. Titjhere o tshehetsa jwang diketsahalo le ho tataisa baithuti ka dipotso?

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### Kotara ya 2 Kakaretso ya Dikahare (Beke ya 6)

#### Dinoutso tsa motsamaisi

- ◆ Netefatsa hore bankakarolo ba etsa kgokahano pakeng tsa SLTK le moralo wa beke le beke bakeng sa beke ya 6, mohl. Sehlooho le dikahare tsa Kotara ya 2 di tswa ho SLTK, mmoho le dikahare tsa tlatsetso tse kentsweng bakeng sa Lenaneo la Mmetse.
- ◆ Buisanang ka hore ke hobaneng ha nomoro le yona e kenyeleditswe bekeng eo ho yona tsepamiso e leng Dipaterone, Ditshebetso le Aljebra. Hlalosa hore le ha dikahare di tsepame ho paterone, re lokela ho ikwetlisa ka nomoro letsatsi le leng le le leng ka diketsahalo tsa tlelase yohle le diketsahalo tse tataiswang ke titjhere.
- ◆ Hopotsa bankakarolo ho kenyeletsa mareo ohle ho ya ka ketsahalo nakong ya lenaneo la letsatsi le letsatsi, mohl. tatelano ya diketsahalo lenaneong la letsatsi le letsatsi le matsatsi a beke ke mareo a mometho (nako), ha ba ntse ba eme moleng – -pele, -bobedi, -boraro – ke dikgopolo tsa dinomoro (dinomoro tsa boemo).



### Activity 14

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

1. What are the topics for Week 6?

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2. What new knowledge is introduced in this week?

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3. What skills from previous weeks are practised?

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



### Ketsahalo ya 14

Shebang ho Sehloathiso A: Kotara ya 2 Kakaretso ya Dikahare tsa Beke le beke (Dibeke tsa 4–7). Bala tjebokakaretso ya dikahare bakeng sa Beke ya 6: Dipaterone, Ditshebetso le Aljebra ho leqephe la 21 la *Tataiso ya Diketsahalo: Kotara ya 2*.

1. Dihlooho tsa Beke ya 6 ke dife?

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2. Ke tsebo efe e ntjha e tsebiswang bekeng ena?

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3. Ke bokgoni bofe ho tswa dibekeng tse fetileng bo sebediswang?

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4. Nyalanya diketsahalo tse ho Sehloathiso A: Kotara ya 2 Kakaretso ya Dikahare tsa Beke le beke (Dibeke tsa 4–7) mmoho le dithuto tsa beke ka nngwe.

# Session 4: Data Handling

1 hour

The focus of Term 2 Week 7 is Data Handling.

## Facilitator's notes

- ◆ Explain that the focus in Term 2 Week 7 is on Data Handling. Remind participants that this was also the focus of Term 1 Week 10 (covered in Workshop 4).
- ◆ Refer participants to page 136 of the *Concept Guide*.
- ◆ Ask participants to work in groups to complete **Activity 15**.

## Term 2 Content overview: Data Handling

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



### Activity 15

1. What concepts are covered in Term 2?

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

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## Facilitator's notes

- ◆ Explain to participants that the Data Handling Content Area for Grade R focuses on the purpose and process of data handling. It involves solving a problem or answering a question by collecting, sorting, representing and interpreting data.
- ◆ Collecting and sorting (classifying) data is only part of the data handling process. If teachers do not keep the focus on answering the question, the activity is simply about sorting.
- ◆ Direct participants to follow the data handling process and name the different steps in the process:
  1. Pose a question.
  2. Collect the data (discuss the best way of doing this).
  3. Sort the data.
  4. Represent that data.
  5. Analyse the data.
  6. Report on the data (answer the question).
- ◆ Let participants to work in groups to complete **Activity 16**.
- ◆ Ask one group to present their activity.



# Karolo ya 4: Ho Sebetsa ka Datha

Hora e 1

Tsepamiso ya Kotara ya 2 Beke ya 7 ke Ho Sebetsa ka Datha.

## Dinoutso tsa motsamaisi

- ◆ Hlalosa hore tsepamiso ya Kotara ya 2 Beke ya 7 e ho Ho Sebetsa ka Datha. Hopotsa bankakarolo hore sena e ne e boetse e le tsepamiso ya Kotara ya 1 Beke ya 10 (e rutilweng ho Wekshopo ya 4).
- ◆ Ere bankakarolo ba phetle leqepheng la 137 la *Tataiso ya Mareo*.
- ◆ Kopa bankakarolo ho sebetsa ka dihlotshwana ho phethela **Ketsahalo ya 15**.

## Kotara ya 2 Tjhebokakaretso ya dikahare: Ho Sebetsa ka Datha

Sheba ho Ho Sebetsa ka Datha ho tjhebokakaretso ya dikahare (*Tataiso ya Mareo*, leqephe la 137).



### Ketsahalo ya 15

1. Ke mareo afe a rutilweng ho Kotara ya 2?

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2. Diphapang ke dife pakeng tsa dikahare tsa Lenaneo la Mmetse le dikahare tsa SLTK?

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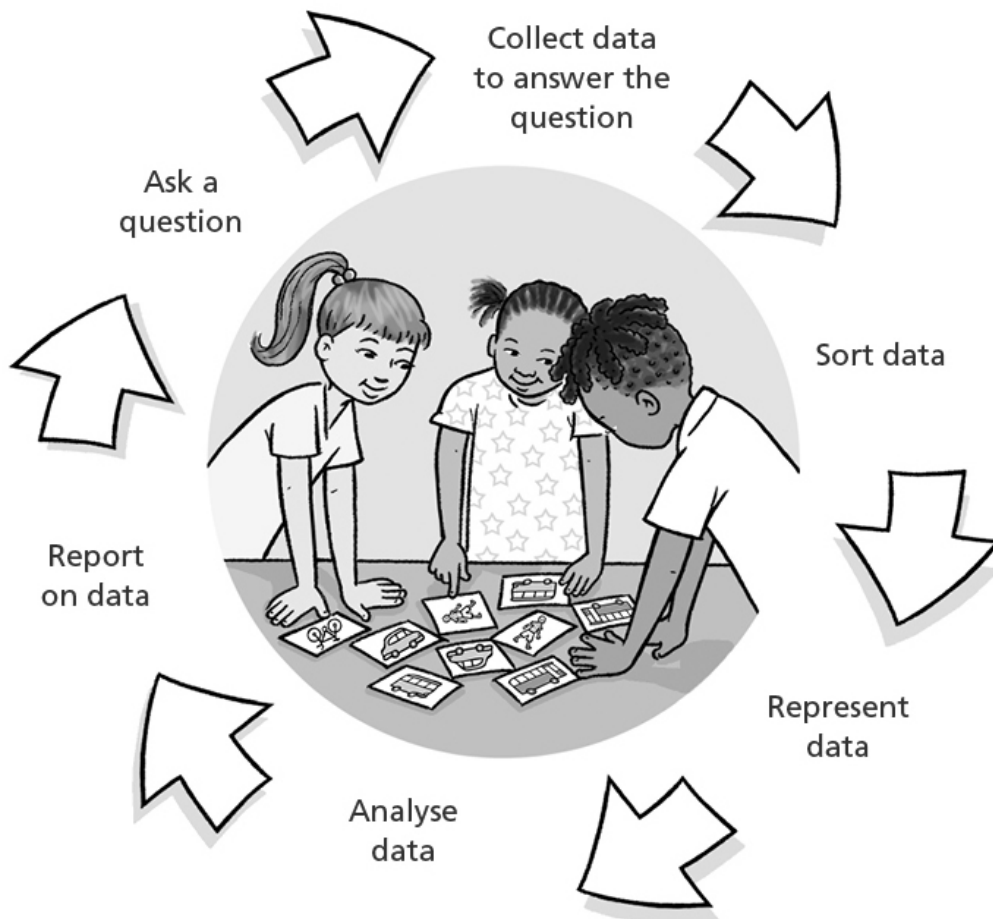
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## Dinoutso tsa motsamaisi

- ◆ Hlalosetsa bankakarolo hore Karolo ya Dikahare tsa Ho Sebetsa ka Datha bakeng sa Kereiti ya R e tsepamisitswe ho sepheo le tshebetso ya ho sebetsa ka datha. E kenyeletsa ho rarolla bothata kapa ho araba potso ka ho bokella, ho hlophisa, ho emela le ho hlalosa datha.
- ◆ Ho bokella le ho hlophisa (ho hlopha) datha ha se feela karolo ya mokgwatshebetso wa ho sebetsa ka datha. Haeba matijhere a sa boloke tsepamiso ho arabeng dipotso, ketsahalo e mpa feela e eba mabapi le ho hlophisa.
- ◆ Tataisa bankakarolo ho latela tshebetso ya ho sebetsa ka datha le ho bolela mehato e fapaneng ho mokgwatshebetso oo:
  1. Botsa potso.
  2. Bokella datha (buisanang ka tsela e ntle ka ho fetisisa ya ho etsa sena).
  3. Hlophisa datha.
  4. Emela datha eo.
  5. Manolla datha.
  6. Tlaleha ka datha (araba potso).
- ◆ Ere bankakarolo ba sebetse ka dihlotshwana ho phethela **Ketsahalo ya 16**.
- ◆ Kopa sehlotshwana se le seng ho hlahisa ketsahalo ya bona.

## Data Handling

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



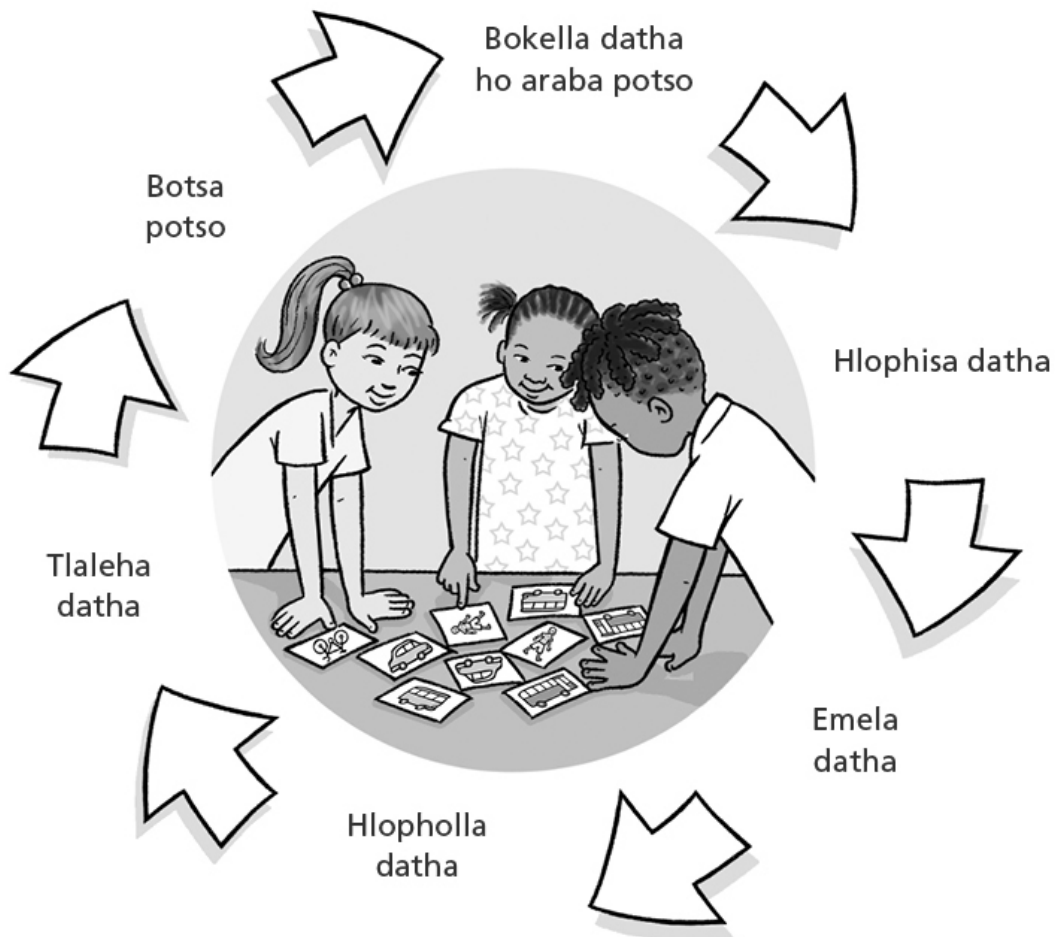
In Grade R learners should have many opportunities to sort objects according to one or more attributes, such as colour, size or shape. Sorting is part of Data Handling, but it is not the only focus. It is important to always bring the learners back to the question that has been posed and the reason why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

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

- ◆ I wonder which coldrink most learners like?
- ◆ How should we collect our data?

## Ho Sebetsa ka Datha

Karolo ya Dikahare ya Ho Sebetsa ka Datha e tsepamisa maikutlo ho sepheo le mokgwatsamaiso wa ho sebetsa ka datha. E kenyelelsa ho rarolla bothata kapa ho araba potso ka ho bokella, ho hlophisa, ho emela le ho hlalosa datha.



Kereiting ya R baithuti ba lokela ho fumana menyetla e mengata ya ho hlophisa dintho ho ya ka lekgetha le le leng kapa a mmalwa, jwaloka mmala, boholo kapa sebopeliso. Ho hlophisa ke karolo ya Ho Sebetsa ka Datha, empa ha se tsepamiso e le nngwe feela. Ho bohlokwa ho dula o kgutlisetsa baithuti potsong e botsitsweng le lebaka la hore ke hobaneng ba bokella, ba hlophisa le ho nahana ka ditsela tsa ho emela datha.

Dipotso ke senotlolo bakeng sa Ho Sebetsa ka Datha, mohl.:

- ◆ Ke a ipotsa hore ebe baithuti ba bangata ba rata dinomaphodi dife?
- ◆ Re lokela ho bokella datha ya rona jwang?

- ◆ How should we sort the data?
- ◆ How should we represent the data?



### Activity 16

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

### Representing data

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

## Term 2 Content Summary (Week 7)



### Activity 17

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

1. What are the topics for Week 7?

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2. What new knowledge is introduced in this week?

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3. What skills from previous weeks are practised?

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- ◆ Re lokela ho hlophisa datha jwang?
- ◆ Re lokela ho emela datha jwang?



### Ketsahalo ya 16

Buisanang kamoo le ka rerang le ho kenya tshebetsong ketsahalo ya Ho Sebetsa ka Datha ho theilwe dipotsong tse ka hodimo mona. Rekota mehopolo ya hao pampiring ya fliptjhate.

#### Ho emela datha

Baithuti ba Kereiti ya R ba sibolla mekgwa e fapaneng ya ho bontsha kapa ho bea pontsheng tlhahisoleseding eo ba e bokelletseeng. **Kerafo ya ditshwantsho** ke tsela ya ho emela datha o sebedisa ditshwantsho. Ho ketsahalo ya tlelase yohle ka Letsatsi la 3 Beke ya 7, baithuti ba buisana ka hore ba tla jwang sekolong. Moithuti ka mong o fuwa sefahleho se bososelang ho **boholo bo lekanang hantle ba sekotwana sa pampiri**. Ba bontsha datha ka ho bea setshwantsho sa bona kholomong ho emela mefuta e mene e fapaneng ya dipalangwang. Ho bohlokwa ho bea datha ka dikholomo, **ntle le dibaka** dipakeng tsa dikotwana tsa pampiri. Datha e bontshwa ka ho hlaka mme e hlaloseha ha bonolo bakeng sa ho araba potso ena: 'Bana ba bangata ba tla jwang sekolong?'

### Kotara ya 2 Kakaretso ya Dikahare (Beke ya 7)



### Ketsahalo ya 17

Sheba ho Sehlophiso A: Kotara ya 2 Kakaretso ya Dikahare tsa Beke le beke (Dibeke tsa 4–7). Bala tjebokakaretso ya dikahare bakeng sa Beke ya 7: Ho Sebetsa ka Datha ho leqephe la 21 la *Tataiso ya Diketsahalo: Kotara ya 2*.

1. Dihlooho tsa Beke ya 7 ke dife?

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2. Ke tsebo efe e ntjha e tsebisitsweng bekeng ena?

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3. Ke bokgoni bofe ho tswa dibekeng tse fetileng bo sebediswang?

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4. Match the activities in Appendix A: Term 2 Weekly Content Summary (Weeks 4–7) with the lessons in each week.
5. Refer to the teacher-guided activity in Week 7 (*Activity Guide: Term 2*, page 132). Discuss how the teacher guides the learners to sort the animals and then represent the data on a grid.

4. Nyalanya diketsahalo tse ho Sehlomathiso A: Kotara ya 2 Kakaretso ya Dikahare tsa Beke le beke (Dibeke tsa 4–7) mmoho le dithuto tsa beke ka nngwe.
5. Sheba ketsahalo e tataiswang ke titjhere e ho Beke ya 7 (*Tataiso ya Diketsahalo: Kotara ya 2*, leqephe la 133). Buisanang kamoo titjhere a tataisang baithuti ho hlophisa diphoofolo le ho bontsha datha keriting.

# Closing activities

1 hour

## Facilitator's notes

- ◆ **Lessons learnt:** Ask participants to think about what they have learnt during the workshop and to complete **Activity 18** individually.
- ◆ **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 18

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

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



## Take back to school task

1. Continue to use the Record of Continuous Assessments in *Activity Guide: Term 2* to assess your learners. Make use of your ongoing observation notes to build up evidence of what learners understand and can do.
2. Identify any concerns you have about individual learner's emerging grasp of maths concepts.
3. Bring copies of rubrics that you have used for maths assessment to the next workshop.
4. Bring a completed assessment record for one learner to the next workshop.



## Dinoutso tsa motsamaisi

- ◆ **Dithuto tse ithutilweng:** Ere bankakarolo ba nahane ka seo ba ithutileng sona nakong ya wekshopo mme ba phethele **Ketsahalo ya 18** ka bomong.
- ◆ **Mosebetsi wa kgutlela le yona sekolong:** Bala mosebetsi ona. Botsa hore ebe ho na le ho sa hlangang le ho hlohang tlhaloso e fetang.
- ◆ **Tlhahlobo:** Fana ka dikhopi tsa Foromo ya Tlhahlobo ya Wekshopo mme o re bankakarolo ba tlatse foromo eo.
- ◆ **Wekshopo e latelang:** Fana ka matsatsi bakeng sa wekshopo e latelang mme o kwale wekshopo.



### Ketsahalo ya 18

**Dithuto tse ithutilweng:** Nahana ka seo o ithutileng sona nakong ya wekshopo mme o tlatse tafole ena.

Dintho tseo ke seng ke di etsa tse sebetsang hantle	Mehopolo e metjha eo nka lakatsang ho e leka



### Mosebetsi wa kgutlela le yona sekolong

1. Tswela pele ho sebedisa Rekoto ya Ditekanyetso tse Tswellang tse ho *Tataiso ya Diketsahalo: Kotara ya 2* ho lekanyetsa baithuti. Sebedisa dinoutso tsa hao tsa ditemoho tse tswellang ho aha bopaki ba seo baithuti ba se utlwisisang le ho ka se etsa.
2. Hlwaya dingongoreho dife kapa dife tseo o nang le tsona mabapi le kutlwisiso e hlahellang ya baithuti ka bomong ya mareo a mmetse.
3. Tloo le dikhopi tsa diruburiki tseo o di sebedisitseng bakeng sa tekanyetso ya mmetse wekshopong e latelang.
4. Tloo le rekoto ya tekanyetso e felletseng ya moithuti a le mong wekshopong e latelang.

5. Use *Activity Guide: Term 2* to plan and implement Weeks 4–7 of the Maths Programme, including creating a maths area with a focus on the concept for each week.
6. Make notes on what worked well, what did not work so well and what you could do differently to improve teaching and learning.

### **Evaluation**

Complete the Evaluation Form.

5. Sebedisa *Tataiso ya Diketsahalo: Kotara ya 2* bakeng sa ho rera le ho kenya tshebetsong Dibeke tsa 4–7 tsa Lenaneo la Mmetse, ho kenyeletsa ho thea sebaka sa mmetse o tsepamisitse maikutlo ho lereo le itseng bakeng sa beke ka nngwe.
6. Etsa dinoutso mabapi le tse sebeditseng hantle, tse sa sebetsang hantle le tseo o nahanang hore o ka di etsa ka tsela e fapaneng ho ntlafatsa ho ruta le ho ithuta.

## **Tlhahlobo**

Tlatsa Foromo ya Tlhahlobo.

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

### Term 2: Activity Plan

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

## SEHLOMATHISO A: KOTARA YA 2 KAKARETISO YA DIKAHARE TSA BEKE LE BEKE (DIBEKE TSA 4-7)

### Kotara ya 2: Moralo wa Ketsahalo

Beke ya 4				
<b>KAROLO YA DIKAHARE: SEBAKA LE SEBOPEHO (JEOMETRI)</b>				
<b>SEHLOOHO: Boemo, tlwaetso le ditjhebo: o hlalosa, o hlophisa le ho bapisa dintho tsa 3-D</b>				
<b>TSEBISA TSEBO E NTJHA:</b> Hlophisa dintho tsa 3-D ho ya ka ditshwano le diphapang, tse ngata ka e le nngwe, tse ka tlase ka e le nngwe				
<b>HO ETSA:</b> Ho bala ka molomo 1-15 le 5-1, ho bala dintho 1-7, kgopolo ya dinomoro 1-4, hatella dibopeho kaofela				
Diketsahalo tsa tselase yohle		Ketsahalo e tataiswang ke titjhere	Diketsahalo tsa diteisheneng tsa tshebetso	
<b>Letsatsi la 1</b>	Hatella dibopeho/ho tsoma dibopeho tsohle.	Ikwetliseng ka 1-4. Ho hlalosa ntho ho tswa maamong a fapaneng. Ho ikwetlisa ka dibopeho le maemo.	<b>Ketsahalo ya 1</b>	Sedikadikwe/kgutlonnetsepa/kgutlotharo hape e ka ba ... (bopa setshwantsho).
<b>Letsatsi la 2</b>	Mekotla e phopholetsang - phopholetsang dibopeho tse fapaneng mme le di hlalose.		<b>Ketsahalo ya 2</b>	Etsang dibopeho le sebedisa disehadikuku le hlama ya ho bapala.
<b>Letsatsi la 3</b>	Batlang dibopeho ka tselaseng le sebedisa mantswe a boemo.		<b>Ketsahalo ya 3</b>	Ho aha ka diboloko - sebedisang diboloko/diboloko tsa <i>Unifix</i> .
<b>Letsatsi la 4</b>	Mafokisi a dibopeho. E le nngwe ho feta, e le nngwe ka tlase.		<b>Ketsahalo ya 4</b>	Diphazele (dikotwana tse seng ka tlase ho 12).
<b>Letsatsi la 5</b>	Tshupiso le boemo. Tselana ya ditshita.			
Beke ya 5				
<b>KAROLO YA DIKAHARE: DINOMORO, MATSHWAO LE DIKAMANO</b>				
<b>SEHLOOHO: Ho lemoha matshwao a dinomoro le mantswe a dinomoro; o hlalosa, o hlophisa le ho bapisa dinomoro</b>				
<b>TSEBISA TSEBO E NTJHA:</b> Tsebisano nomoro ya 5				
<b>HO ETSA:</b> Ho bala ka molomo 1-15, ho bala dintho 1-7, bala o kgutlela morao ho tloha ho 5 (diraeme), hatella kgopolo ya dinomoro 1-4, ho hlahlamanya dinomoro 1-4, ngata ho/mmalwa ho				
Diketsahalo tsa tselase yohle		Ketsahalo e tataiswang ke titjhere	Diketsahalo tsa diteisheneng tsa tshebetso	
<b>Letsatsi la 1</b>	Tsebisano 5 (ditshwano tse 5 ntlong ya bohlang).	Nyalanya matshwao a dinomoro, mantswe a dinomoro le dikarete tsa matheba (4 le 5). Ho bala 1-7. Lekanyetsa mme o bale. Difaha tsa sebopelo. Dibopeho tse fapaneng tsa nomoro e le nngwe.	<b>Ketsahalo ya 1</b>	Mmata wa hlama ya ho bapala wa 5.
<b>Letsatsi la 2</b>	Hatella 4 le 5 (matshwao a dinomoro le mantswe a dinomoro).		<b>Ketsahalo ya 2</b>	Dinomoro tsa maleshwane (rola lenane le nepahetseng la dibolo tsa pampiri).
<b>Letsatsi la 3</b>	Ho bala o eya pele le ho kgutlela morao. Molapalo.		<b>Ketsahalo ya 3</b>	Ho nyalanya dinomoro - diphekse.
<b>Letsatsi la 4</b>	Hatella 4 le 5.		<b>Ketsahalo ya 4</b>	Diphazele tsa dinomoro ho isa ho 5 (le sebedisa mantswe a dinomoro).
<b>Letsatsi la 5</b>	Hatella dinomoro tsa 1-5 (dikarete tsa matheba, matshwao a dinomoro, mantswe a dinomoro ao o ka a lemohang.).			
Week 6				

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

Beke ya 6				
<b>KAROLO YA DIKAHARE: DIPATERONE, DITSHEBETSO LE ALJEBRA</b>				
<b>SEHLOOHO: O kopolla le ho atolosa dipaterone tse iphetang tse bonolo; o ipopela dipaterone tsa hae; o hlalosa phetapheto dipateroneng</b>				
<b>TSEBISA TSEBO E NTJHA:</b> Kopolla le ho atolosa dipaterone tse bobebe, bopa le ho hlalosa dipaterone tsa hao, ho bala ka molomo 1–20, ho bala o kgutlela morao ho tloha ho 7				
<b>HO ETSA:</b> Ho hlahlamanya dinomoro 1–5, ho bala dintho 1–7, ho etsa hore dihlopha di tshwane				
Diketsahalo tsa tlelase yohle		Ketsahalo e tataiswang ke titjhere	Diketsahalo tsa diteisheneng tsa tshebetso	
Letsatsi la 1	Dipaterone dinthong tse tshwarehang.	Tsepama ho kgopolo ya dinomoro 1–5. Tsukutla mme o arole. Etsa dihlopha tse lekanang. Dipaterone mmoho le molekane. Diboloko tsa <i>Unifix</i> .	Ketsahalo ya 1	Katoloso ya paterone – ho taka le ho kenya mebala. Dipaterone tsa noha – ho sebedisa dibopeho. Dikarete tsa dipaterone – ho sebedisa diboloko tsa <i>Unifix</i> . Ho rokella dipaterone ka difaha.
Letsatsi la 2	Ho hlwaya dipaterone dinthong tsa letsatsi le letsatsi.		Ketsahalo ya 2	
Letsatsi la 3	Ho rarolla bothata o sebedisa dipaterone.		Ketsahalo ya 3	
Letsatsi la 4	Ho etsa dipaterone o sebedisa dintho tsa letsatsi le letsatsi.		Ketsahalo ya 4	
Letsatsi la 5	Dipaterone tsa medumo.			
Beke ya 7				
<b>KAROLO YA DIKAHARE: HO SEBETSA KA DATHA</b>				
<b>SEHLOOHO: O bokella le ho hlophisa dintho; o emela dipokello tse hlophisitsweng tsa dintho; ho buisana le ho tlaleha mabapi le dipokello tse hlophisitsweng tsa dintho</b>				
<b>TSEBISA TSEBO E NTJHA:</b> Taka setshwantsho sa dintho tse bokeletsweng, araba dipotso mabapi le setshwantsho sa hao				
<b>HO ETSA:</b> Ho bala ka molomo 1–20 le ho kgutlela morao ho tloha ho 7, ho bala dintho 1–7, ngata ho feta/mmalwa ho feta/lekana le/kgopolo ya dinomoro 1–5, ho hlophisa le ho hlopha				
Diketsahalo tsa tlelase yohle		Ketsahalo e tataiswang ke titjhere	Diketsahalo tsa diteisheneng tsa tshebetso	
Letsatsi la 1	O bokella le ho hlophisa dintho (tjhitjha kapa kgutlonnetsepa).	Ho lekanyetsa. Ho bala. Ho hlophisa dipokello tsa diphoofolo. Kerafo ya ditshwantsho: ngata ho feta/mmalwa ho feta. Ho botsa dipotso.	Ketsahalo ya 1	Ho seha le ho hlophisa ditshwantsho tsa dipalangwang. Ho hlophisa dintho tse lahlwang. Kerafo ya dibopeho (sebedisa dibopeho tse sehilweng). Ho hlophisa ho ya ka mebala.
Letsatsi la 2	Papadi ya ho hlophisa dintho. Phoustara ya 8.		Ketsahalo ya 2	
Letsatsi la 3	Kerafo ya ditshwantsho: O ya jwang sekolong?		Ketsahalo ya 3	
Letsatsi la 4	Buisanang ka diphetho tsa Letsatsi la 3 (le botsa dipotso).		Ketsahalo ya 4	
Letsatsi la 5	Bokella le ho hlophisa dintho tsa ka phaposing ya borutelo.			

# Workshop 5 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?

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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?

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# Foromo ya Tlhahlobo ya Wekshopo ya 5

1. Na wekshopo ena e fihletse ditebello tsa hao?

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2. O ithutile eng ho wekshopo ena se o thusitseng ka ho fetisisa?

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3. Na ho na le seo o sa kang wa se rata kapa seo o ileng wa thatafallwa ke ho se utlwisisa?

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4. O tla sebedisa jwang seo o ithutileng sona mona phaposeng ya hao ya borutelo ya Kereiti ya R?

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5. Na o na le ditlhahiso tse itseng bakeng sa ho ntlafatsa diwekshopo tse ding tse tlang?

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