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GROWING GAUTENG TOGETHER

Sepedi/English

Lenaneo la go Kaonafatša Thuto ya Dipalo Mphatong wa R Grade R Mathematics Improvement Programme



**Thutofatlhošo ya 6 • Workshop 6
Pukutlhahlo ya Monolofatši • Facilitator's Guide**

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

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

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Lenaneokaonafatšo la Thuto ya Dipalo Mphatong wa R ke morero wa Kgoro ya Thuto ya Gauteng (**Gauteng Department of Education**) le badirišanimmogo ba bohlokwa e lego **Gauteng Education Development Trust**. Tšweletšo le kgatišo ya tlhahlo le dithuſathuto tša phapoši tša Lenaneokaonafatšo la Thuto ya Dipalo Mphatong wa R e kgontšhitšwe ke thušo ka mašelang go tšwa go **United States Agency for International Development** le **Zenex Foundation**.

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Schools Development Unit (SDU) kua **University of Cape Town** (UCT) ke badirišani ba sethekniki ba dipalo go Lenaneokaonafatšo la Thuto ya Dipalo Mphatong wa R. SDU ke uniti ya UCT ya School of Education yeo e hlokometšego tlhahlo le kgodišo ya dithuto tša Dipalo, Saense, Bokgoni bja go ngwala le go bala/Polelo le Mabokgoni a Bophelo go tloga go Mphato wa R go fihla go wa 12. SDU e aba dithuto tša tlhahlo ya barutiši le mangwalo a UCT a dithuto tše kopana tša tlaleletšo, tlhahlo ya mošomo yeo e ka dirwago sekolong, bongwadi bja dipuku le go dira dinyakišišo tše di thekgago go ithuta le go ruta mabakeng a go fapana dikolong tša Afrika Borwa.

DITEBOGO

Di lebišwa go:

- Bašomi ba Kgoro ya Thuto ya Gauteng Lefapha la Lenanethuto, Tlhahlo ya Barutiši le bašomedi ba Lefapha la Thuto ya go lkgetha, ka maele a bona phetagatšong ya setšweletšwa se sa rena.
- Bašomi ba Western Cape Education Department (WCED) le barutiši ka maele a bona tšweletšong le tsentšhotirišong ya Grade R Mathematics Programme (*R-Maths*) profenseng ya Kapa Bodikela magareng ga mengwaga ya 2016 le 2019.
- Sehlopha sa bangwadi ba *R-Maths*: Bašomi le baeletši ba SDU.



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Overview

Purpose

This is the sixth 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 with the implementation of the Maths Programme in their classrooms, especially the Content Areas covered in Term 2 Weeks 8–10. Participants will reflect on their ongoing assessment of learners' progress and will document developmental concerns related to the learners that may require special interventions and support. Participants will also reflect on teaching strategies that strengthen learners' problem-solving skills.

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 2 Weeks 4–7
- ◆ To explore strategies to support teaching maths in Grade R
- ◆ To reflect on the Maths Programme's principles in the weekly plan
- ◆ To engage with the Maths Programme content of Term 2 Weeks 8–10 (Space and Shape (Geometry); Measurement; Numbers, Operations and Relationships)
- ◆ To apply knowledge of informal, continuous assessment to learning and teaching

Workshop content

- ◆ Opening and reflection (1 hour)
 - ◆ Session 1: Space and Shape (Geometry) (1 hour)
- TEA
- ◆ Session 2: Measurement (1 hour)
 - ◆ Session 3: Numbers, Operations and Relationships (1 hour)
- LUNCH
- ◆ Session 4: Numbers, Operations and Relationships (45 minutes)
 - ◆ Session 5: Term 2 Assessment (1 hour)
 - ◆ Closing activities (15 minutes)

Kakaretšo

Morero

Ye ke thutofatlhošo ya botshela ya tše lesomepedi tša Lenaneo la go Kaonafatša Thuto ya Dipalo Mphatong wa R (Lenaneo la Dipalo), ye e lego karolo ya Kgoro ya Thuto Profenseng ya Gauteng (GDE) Lenaneokaonafatšo la Thuto ya Dipalo le ya Leleme Mphatong wa R.

Morero wa thutofatlhošo ke go thuša barutiši go phethagatša Lenaneo la Dipalo ka diphapošing tša bona, gagolo Dikarolo tša Diteng tša go akaretšwa ka Kotara ya 2 Dibeke tša 8–10. Batšeakarolo ba tlo naganiša kelo ye e tšwelago pele ya tšwelopele ya barutwana gomme ba tlo ngwala tše di sa ba fetego gabotse ka ga tllhabologo ya morutwana, tše di tlo nyakago tsenogare ya go ikgetha le thekgo. Batšeakarolo ba tlo naganiša le ka maano a go ruta a go tiiša mabokgoni a barutwana a go rarolla mathata.

Ditšhupetšo go Dikarolo tša Diteng tša Dipalo Mphatong wa R di tšwa ka go *Setatamente sa Pholisi sa Lenaneothuto le Kelo (SEPHOLEKE)*: Thuto ya Dipalo Mphatong wa R (*Kakanywa ya Mafelelo*), 2011, Kgoro ya Thuto ya Motheo, Afrika Borwa.

Dineo tša thuto

- ◆ Go naganiša ka phethagatšo ya Kotara ya 2 Dibeke tša 4–7
- ◆ Go kwešiša ditheo tša go ruta tša ka gare ga Lenaneo la Dipalo peakanyong ya beke ka beke
- ◆ Go naganiša ka ditheo tša go ruta tša ka gare ga Lenaneo la Dipalo peakanyong ya beke ka beke
- ◆ Go swaragana le diteng tša Lenaneo la Dipalo la Kotara ya 2 Dibeke tša 8–10 (Sekgoba le Sebopego (Tšeometri); Kelo; Dinomoro, Tirišo le Tswalano)
- ◆ Go diriša tsebo ya kelotšweledi ye e sego ya semmušo mo go ithuteng le go ruteng

Diteng tša thutofatlhošo

- ◆ Pulo le go naganiša (Iri e 1)
- ◆ Thuto ya 1: Sekgoba le Sebopego (Tšeometri) (Iri e 1)

TEYE

- ◆ Thuto ya 2: Kelo (Iri e 1)
- ◆ Thuto ya 3: Dipatrone, Difankšene le Altšebra (Iri e 1)

MATENA

- ◆ Thuto ya 4: Dinomoro, Tirišo le Tswalano (Metsotso ye 45)
- ◆ Thuto ya 5: Kelo ya Kotara ya 2 (Iri e 1)
- ◆ Mešongwana ya go tswalela (Metsotso ye 15)

Preparation

- ◆ PPT welcome and outcomes
- ◆ Read:
 - Concept Guide*, pages 114–137
 - Activity Guide: Term 2*, pages 18–21 and pages 138–189
 - Appendix A: Term 2 Weekly Content Summary (Weeks 8–10)
- ◆ Remind participants to bring their *Concept Guide*, *Activity Guide: Term 2*, an example of their assessment of a learner and their evaluation notes from the *Take back to school* task from Workshop 5.
- ◆ Place a *Resource Kit* on each group's table.
- ◆ Cut out a set of shapes from Appendix B for each group. Place the shapes in a separate envelope for each group.

Materials

- ◆ Flipchart paper, kokis
- ◆ A *Resource Kit* for each group
- ◆ A *Poster Book* for each group

Peakanyo

- ◆ PPT kamogelo le dineo
- ◆ Bala:
Pukutlhahlo ya Mareo, matlakala a 114–137
Pukutlhahlo ya Mešongwana: Kotara ya 2, matlakala a 18–21 le matlakala a 138–189
Mamatletšo ya A: Kakaretšo ya Diteng ya Beke ka Beke ya Kotara ya 2 (Dibeke tša 8–10)
Gopotša batšeakarolo gore ba tle le *Pukutlhahlo ya Mareo*, *Pukutlhahlo ya Mešongwana: Kotara ya 2*, mohlala wa kelo ya bona ya morutwana le dinoutse tša tshekatsheko tša ka gare ga mošomo *wa go Mošomo wo ba tlo boelago le wona sekolong wa Thutofatlhošo* ya 5.
- ◆ Bea *Dithušathuto tša Phapoši* tafoleng ya sehlopha se sengwe le se sengwe.
- ◆ Ripela sehlopha se sengwe le se sengwe sete ya diboego ka go Mamatletšo ya B. Bea diboego tša sehlopha se sengwe le se sengwe ka dionfolopong tša go fapana.

Didirišwa

- ◆ Pampiri ya tšhate ya go phetla, dikoki
- ◆ *Dithušathuto tša Phapoši* tša sehlopha se sengwe le se sengwe
- ◆ *Puku ya Diphoustara* ya sehlopha se sengwe le se sengwe

Opening and reflection

1 hour

Facilitator's notes

- ◆ PPT: Open the session and read through the agenda and learning outcomes for the workshop.
- ◆ Ask participants to reflect on their implementation of Term 2 Weeks 4–7 of the Maths Programme and their observations and assessment of learners.
- ◆ Participants discuss the questions in **Activity 1** in small groups. Spend time with each group during the discussions, joining in where appropriate.

Here is the *Take back to school task* from Workshop 5.



Take back to school task (Workshop 5)

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



Activity 1

1. In your groups, discuss your progress in implementing Term 2 Weeks 4–7.
 - ◆ What worked well (strengths)?
 - ◆ What did not work well (challenges)?
 - ◆ What could you do to improve teaching and learning in your classroom?

Record the main points of your discussion on flipchart paper to share with the other groups later.

Dinoutse tša monolofatši

- ◆ PPT: Bula thuto o bale lenaneoothero le dineo tša thuto ya thutofatlhošo.
- ◆ Gopotša batšeakarolo gore ba naganiše ka ga *Mošomo wo ba tlo boelago le wona sekolong* wo o filwego mafelelong a Thutofatlhošo ya 2 Dibeke tša 4–7 tša Lenaneo la Dipalo le tlhokomelo le kelo ya barutwana.
- ◆ Batšeakarolo ba ahlaahla dipotšišo tša **Mošongwana wa 1** ka dihlopha tše dinnyane. E ba le nako ya sehlopha se sengwe le se sengwe ka nako ya dipoledišano, o ba tsene gare mo go kgonegago.

Fa ke *Mošomo wo ba tlo boelago le wona sekolong* go tšwa Thutofatlhošong ya 5.



Mošomo wo ba tlo boelago le wona sekolong (Thutofatlhošo ya 5)

1. Tšwela pele go lekola barutwana ba gago o diriša Rekhote ya Tekolo/Kelotšweledi ka go *Pukutlhahlo ya Mešongwana: Kotara ya 2*. Diriša dinoutse tša tlhokomelo tše o tšwelago pele go di ngwala go aga bohlatse bja tšeo barutwana ba di kwešišago le tšeo ba kgonago go di dira.
2. Hlatha tše o belaelago ka tšona ka ga ka fao barutwana ba go fapana ba kwešišago mareo a dipalo.
3. Etle le dikhophi tša dirubriki tše o di dirišitšego go lekola dipalo thutofatlhošong ya go latela.
4. O tle le rekhote ya go felelela ya morutwana o tee thutofatlhošong ya go latela.
5. Diriša *Pukutlhahlo ya Mešongwana: Kotara ya 2* go beakanya le go phethagatša Dibeke tša 4–7 tša Lenaneo la Dipalo, go akaretšwa le go hlama karolo ya dipalo ya go nepiša lereo la beke ye nngwe le ye nngwe.
6. Ngwala dinoutse ka ga tše di šomilego gabotse, tše di sa šomago gabotse le se o ka se dirago ka tsela ye e fapanego go kaonafatša go ruta le go ithuta.



Mošongwana wa 1

1. Ka dihlopha, bolelang ka tšwelopele ya phethagatšo ya Kotara ya 2 Dibeke tša 4–7.
 - ◆ Ke eng tše di šomilego gabotse (maatla)?
 - ◆ Ke eng tše di sa šomago gabotse (ditlhohlo)?
 - ◆ O ka dira eng go kaonafatša go ruta le go ithuta ka phapošing ya gago?

Rekhota dintlhakgolo tša dipoledišano tša lena mo pampiring ya tšhate ya go phetla gore le di abelane le dihlopha tše dingwe ka morago.

2. Discuss how successful you were in:
 - ◆ recording notes about individual learners after each teacher-guided activity in Weeks 4–7.
 - ◆ completing the Term 2: Record of Continuous Assessments on pages 190–193 of *Activity Guide: Term 2* for each learner.

Record the main points of your discussion on your flipchart paper.

3. Discuss one learner’s areas of success and/or difficulty and how you recorded these. Record the main points of your discussion on your flipchart paper.

Facilitator’s notes

- ◆ Ask each group to share the main points from their discussion. Remind participants to only add points that other groups have not already mentioned.
- ◆ This discussion is intended to reflect on the process of capturing learners’ progress over a period of weeks. Participants were asked to observe learners as they perform tasks in whole class and small group activities and to capture this information. The discussion is intended to help teachers recognise how to use the Record of Continuous Assessments to look for patterns of competence in the learners and to share the assessment tools and processes they use in their schools.

In the *Take back to school task* in Workshop 5 you were asked to bring copies of the learner assessment rubrics you use as part of the Maths Programme to this workshop. In Activity 2, your group will discuss these rubrics and how assessment information is captured and shared. In Session 5, we will discuss rubrics in more detail.



Activity 2

1. In your groups, share examples of maths rubrics you have used as part of your assessment process.
2. Discuss how you capture the learners’ progress on the SA-SAMS system and how this information is shared with parents.

Record the main points of your discussion on flipchart paper to share with the other groups later.

2. Ahlaahlang ka fao le atlegilego ka gona ka:
 - ◆ go rekhota dinoutse tša morutwana yo mongwe le yo mongwe morago ga mošongwana wo mongwe le wo mongwe wa go hlahlwa ke morutiši ka Dibeke tša 4–7.
 - ◆ go fetša Kotara ya 2: Rekhote ya Tekolo/Kelotšweledi ya morutwana yo mongwe le yo mongwe matlakaleng a 190–193 a *Pukutlahlo ya Mešongwana: Kotara ya 2*.

Rekhota dintlhakgolo tša dipoledišano tša lena mo pampiring ya tšhate ya go phetla.

3. Bolelang ka dikarolo tšeo morutwana o tee a atlegilego go tšona le/goba tšeo di bilego bothata le ka fao le rekhotilego tše ka gona. Rekhota dintlhakgolo tša dipoledišano tša lena mo pampiring ya tšhate ya go phetla.

Dinoutse tša monolofatši

- ◆ Kgopela sehlopha se sengwe le se sengwe gore se abelane ka dintlhakgolo tša poledišano ya sona. Gopotša batšeakarolo gore ba tlaleletše fela ka dintlha tše e lego gore gase di bolelwe ke dihlopha tše dingwe.
- ◆ Maikemišetšo a poledišano ye ke go naganiša ka ga tshepedišo ya go rekhota tšwelopele ya morutwana sebakeng sa dibeke. Batšeakarolo ba kgopetšwe gore ba hlokomele barutwana ge ba dira mešomo ka nako ya mešomo ya barutwana ka moka le nako ya mešomo ya dihlopha tše dinnyane gomme ba rekhote tshedimošo ye. Maikemišetšo a poledišano ke go thuša barutiši gore ba lemoge gore Rekhote ya Tekolo/Kelotšweledi e dirišwa bjang go lebelela patrone ya bokgoni barutwaneng le go abelana didirišwa tša tekolo le ditshepedišo tše ba dirišago dikolong tša bona.

Ka go *Mošomo wo o tlo boelago le wona sekolong* ka Thutofatlhošong ya 5 o kgopetšwe gore o tle le dikhophi tša dirubriki tša tekolo ya barutwana tše o di dirišago bjalo ka karolo ya Lenaneo la Dipalo thutofatlhošong ye. Ka go *Mošongwana wa 2*, sehlopha sa gago se tlo boledišana ka dirubriki tše le ka fao go rekhotwago le go abelana tshedimošo ya tekolo. Ka go Thuto ya 5, re tlo ahlaahla dirubriki ka botlalo.



Mošongwana wa 2

1. Ka dihlopha, abelanang ka mehlala ya dirubriki tša dipalo tše le di dirišitšego bjalo ka karolo ya tshepedišo ya tekolo.
2. Ahlaahlang ka fao le rekhotago tšwelopele ya morutwana ka mokgwa wa SA-SAMS le ka fao le abelanago tshedimošo ye le batswadi.

Rekhotang dintlhakgolo tša dipoledišano tša lena mo pampiring ya tšhate ya go etla gore le abelane le dihlopha tše dingwe ka morago

Video 1

Watch the video of a teacher observing a group of learners completing a maths activity. Listen to her talking about how she observes and records her learners' progress and how she deals with their different levels of competence.

Discuss how you deal with learners who are not achieving success in the structured weekly plans, as well as those learners who exceed expectations.

The **level principle**: Not all learners progress at the same speed. Some learners need more time to consolidate a skill or concept while others grasp ideas more quickly. The challenge for teachers is to accommodate learners at different levels and to adapt the weekly plan to provide support or extension activities where necessary.



Facilitator's notes

- ◆ Discuss the need for a differentiated approach to teaching and why this is beneficial for all the learners in the class. Link the discussion to the **level principle**.
- ◆ Throughout this workshop make links to the **level principle** and differentiation strategies for dealing with learners who are not achieving success in the structured weekly plans, as well as those learners who exceed expectations.



Bideo ya 1

Bogela bideo ya morutiši a hlokometše sehlopha sa barutwana ba dira mošongwana wa dipalo. Mo theeletše ge a bolela ka ga mokgwa wo a hlokomelago le go rekhota tšwelopele ya barutwana ba gagwe le ka fao a šomanago le maemo a bona a go fapana a bokgoni.

Bolelang gore le šomana bjang le barutwana bao ba sa fihlelelego katlego dipeakanyong tša beke ka beke tša go hlophiwa, le barutwana ba go šoma go feta ka fao go lebeletšwego.

Setheo sa kgato ya maleba: Ga se barutwana ka moka bao ba tšwelago pele ka lebelo la go lekana. Barutwana ba bangwe ba hloka nako ye ntši go kwešiša mabokgoni goba lereo mola ba bangwe ba kwešiša dikgopolo ka potlako. Tlhohlo ya barutiši ke go amogela barutwana ba maemo a go fapana le go beakanya leano la beke ka beke gore go be le thekgo le katološo ya mešongwana mo go hlokegago.



Dinoutse tša monolofatši

- ◆ Ahlaahlang hlokego ya mokgwa wo o fapanego ge o ruta le gore ke ka lebaka la eng seo se na le mohola go barutwana ka moka ka phapošing. Tswalanya kahlaahlo le **setheo sa kgato ya maleba**.
- ◆ Mo thutofatlhošong o tswalanye **setheo sa kgato ya maleba** le maano a go dira phapano ge o šomana le barutwana ba go se fihlelele katlego peakanyong ya beke ka beke ye e hlophilwego, le barutwana ba go šoma go feta ka fao go lebeletšwego.

Session 1: Space and Shape (Geometry) 1 hour

This workshop focuses on teaching the content of Term 2 Weeks 8–10. The focus of Term 2 Week 8 is Space and Shape (Geometry).

Terms 1–4 Content overview: Space and Shape (Geometry)

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

Facilitator's notes

- ◆ The aim of **Activity 3** is to highlight the content of CAPS and the extended content provided in the Maths Programme.
- ◆ Refer participants to pages 126–131 of the *Concept Guide*: follow directions (3.1) and crossing the midline (3.4).
- ◆ Draw participants' attention to the Week 8 content in the New knowledge box on page 138 of *Activity Guide: Term 2*.
- ◆ Remind participants of Space and Shape (Geometry) content covered in previous weeks.

Thuto ya 1: Sekgoba le Sebopego (Tšeometri) Iri e 1

Thutofatlhošo ye e nepiša go ruta diteng tša Kotara ya 2 Dibeke tša 8–10. Nepišo ya Kotara ya 2 Beke ya 8 ke Sekgoba le Sebopego (Tšeometri).

Dikotara tša 1–4 Kakaretšo ya Diteng: Sekgoba le Sebopego (Tšeometri)

Lebelela kakaretšo ya diteng tša Sekgoba le Sebopego (Tšeometri) matlakaleng a 126–131 ka go *Pukutlhahlo ya Mareo* gomme o dire Mošongwana wa 3.

Dinoutse tša monolofatši

- ◆ Maikemišetšo a **Mošongwana wa 3** ke go laetša diteng tša SEPHOLEKE le diteng tše di okeditšwego ka go Lenaneo la Dipalo.
- ◆ Laela batšeakarolo gore ba lebelele matlakala a 126–131 ka go *Pukutlhahlo ya Mareo*: Go latela ditaello (3.1) le mothalogare (3.4).
- ◆ Lebiša šedi ya batšeakarolo go diteng tša Beke ya 8 ka lepokising la Tsebo ye mpsha letlakaleng la 139 ka go *Pukutlhahlo ya Mešongwana: Kotara ya 2*.
- ◆ Gopotša batšeakarolo ka diteng tša Sekgoba le Sebopego (Tšeometri) tše di akareditšwego dibekeng tša go feta.

Properties of shapes

Learners need many opportunities to compare and sort shapes according to their properties and to describe the similarities and differences of shapes.

Facilitator's notes

- ◆ Hand out one set of shapes from Appendix B to each group.
- ◆ Ask participants to sort the shapes. Don't prompt them. Once they have sorted them, ask: *How did you sort the shapes?* Ask participants to explain why they sorted the shapes in this way.
- ◆ Now ask participants to sort the shapes in another way. Ask participants to explain why they sorted the shapes in this way.
- ◆ Make sure that the following sorting criteria are mentioned:
 - shape
 - size
 - number of sides
 - number of corners
 - straight or curved lines.
- ◆ Encourage participants to use the correct maths vocabulary to describe the properties of shapes, e.g. *sides, corners, lines*.



Activity 4

The facilitator will give your group a set of shapes.

1. Sort the shapes.
2. Discuss why you sorted them in this way.
3. Sort the shapes in another way.
4. Discuss why you sorted them in this way.

Term 2 Content Summary: Week 8

Refer to Appendix A: Term 2 Weekly Content Summary (Weeks 8–10). Read the content overview for Week 8: Space and Shape (Geometry) on page 20 of *Activity Guide: Term 2*.

The Space and Shape (Geometry) Content Area was also the focus of Term 2 Weeks 3 and 4. In previous workshops, you have discussed the Space and Shape concepts that need to be covered.

The Weekly Content Summary for Week 8 provides an overview of planning for the week: whole class activities, teacher-guided activities and workstation activities done in independent small groups.

Dipharologantšho tša diboepo

Barutwana ba hloka menyetla ye mentšhi ya go bapetša le go hlaola diboepo go ya ka dipharologantšho le go hlaloša gore diboepo di swana le go fapana ka eng.

Dinoutse tša monolofatši

- ◆ Abela sehlopha se sengwe le se sengwe sete e tee ya diboepo tša ka go Mamatletšo ya B.
- ◆ Kgotela batšeakarolo gore ba hlaole diboepo. O se ba hlahle. Ge ba feditše go di hlaola o ba botšhiše: *O hlaotše diboepo bjang?* Kgotela batšeakarolo gore ba hlaloše gore ke ka lebaka la eng ba hlaotše diboepo ka mokgwa woo.
- ◆ Bjale kgotela batšeakarolo gore ba hlaole diboepo ka mokgwa o mongwe. Kgotela batšeakarolo gore ba hlaloše gore ke ka lebaka la eng ba hlaotše diboepo ka mokgwa woo.
- ◆ O kgonthiše gore o bolela mekgwa ya go hlaola ye e latelago:
 - seboepo
 - bogolo
 - palo ya mhlakore
 - palo ya dikhutlo
 - methaladi ya thwii goba ya go kgopama.
- ◆ Hlohloletša batšeakarolo gore ba diriše tlotlontšu ya dipalo ya go nepagala ge ba hlaloša dipharologantšho tša diboepo, mohl, *mhlakore, dikhutlo, methaladi*.



Mošongwana wa 4

Monolofatši o tlo fa sehlopha sa gago sete ya diboepo.

1. Hlaolang diboepo.
2. Hlalošang gore ke ka lebaka la eng le di hlaotše ka mokgwa wo.
3. Hlaolang diboepo ka mokgwa o mongwe.
4. Bolelang gore ke ka lebaka la eng le di hlaotše ka mokgwa wo.

Kakaretšo ya Diteng ya Kotara ya 2: Beke ya 8

Lebelela Mamatletšo ya A: Kakaretšo ya Diteng ya Beke ka Beke ya Kotara ya 2 (Dibeke tša 8–10). Bala kakaretšo ya diteng ya Beke ya 8: Sekgoba le Seboepo (Tšeometri) letlakaleng la 21 ka go *Pukutlhahlo ya Mešongwana: Kotara ya 2*.

Karolo ya Diteng ya Sekgoba le Seboepo (Tšeometri) e be e le nepišo ya Kotara ya 2 Dibeke tša 3 le 4. Ka dithutofatlhošong tša go feta, le ahlaahlile mareo a Sekgoba le Seboepo ao a bego a swanetše go akaretšwa.

Kakaretšo ya Diteng ya Beke ka Beke ya Beke ya 8 e neelana ka kakaretšo ya peakanyo ya beke: mešongwana ya barutwana ka moka, mešongwana ya go hlahlwa ke morutiši le mešongwana ya mafelong a go šomela ya go dirwa ke dihlopha tše dinnyane tša go ikemela.

Facilitator's notes

- ◆ The aim of **Activity 5** is for teachers to recognise the link between:
 - the CAPS content in the Term 1–4 content overview on pages 126–131 of the *Concept Guide*
 - the content overview on page 20 of *Activity Guide: Term 2*
 - Appendix A: Term 2 Weekly Content Summary (Weeks 8–10)
 - the daily activities in Week 8 of *Activity Guide: Term 2* (pages 138–153).
- ◆ In the whole group feedback session make sure that participants are familiar with the structure of and planning for the teaching of Week 8. Help them to identify the links between the suggested activities in *Activity Guide: Term 2* and the content overview. Link this discussion back to how the content of the week fits with CAPS.



Activity 5

1. Take a few minutes to familiarise yourself with the Week 8 content in Appendix A: Term 2 Weekly Content Summary (Weeks 8–10).
2. Match this with the content on pages 138–153 of *Activity Guide: Term 2*. Identify how the whole class, teacher-guided and workstation activities link with the Week 8 content in Appendix A.

Dinoutse tša monolofatši

- ◆ Maikemišetšo a **Mošongwana wa 5** ke gore barutiši ba lemoge tswalano magareng ga:
 - diteng tša SEPHOLEKE ka go kakaretšo ya diteng ya Kotara ya 1–4 matlakaleng a 126–131 ka go *Pukutlhahlo ya Mareo*
 - kakaretšo ya diteng letlakaleng la 21 ka go *Pukutlhahlo ya Mešongwana: Kotara ya 2*
 - Mamatletšo ya A: Kakaretšo ya Diteng ya Beke ka Beke ya Kotara ya 2 (Dibeke tša 8–10)
 - mešongwana ya tšatši ka tšatši ya Beke ya 8 ka go *Pukutlhahlo ya Mešongwana: Kotara ya 2* (matlakala a 138–153).
- ◆ Ka nako ya thuto ya pego ya sehlopha ka moka o kgonthiše gore batšeakarolo ba tseba popego ya le peakanyo ya go ruta ya Beke ya 8. Ba thuše go hlatha ditswalano magareng ga mešongwana ye e šišintšwego ka go *Pukutlhahlo ya Mešongwana: Kotara ya 2* le kakaretšo ya diteng. Tswalanya poledišano ye le ka fao diteng tša beke di tsenelanago le SEPHOLEKE ka gona.



Mošongwana wa 5

1. Tšea metsotso ye mmalwa go itlwaetša diteng tša Beke ya 8 ka go Mamatletšo ya A: Kakaretšo ya Diteng ya Beke ka Beke ya Kotara ya 2 (Dibeke tša 8–10).
2. Tswalanya se le diteng tše di lego matlakaleng a 138–153 ka go *Pukutlhahlo ya Mešongwana: Kotara ya 2*. Hlatha ka fao mešongwana ya barutwana ka moka, ya go hlahlwa ke morutiši le ya mafelong a go šomela e tswalanago le diteng tša Beke ya 8 ka go Mamatletšo ya A.

Session 2: Measurement

1 hour

The focus of Term 2 Week 9 is Measurement.

Terms 1–4 Content overview: Measurement

Refer to the content overview for Measurement on pages 132–135 of the *Concept Guide*.

Facilitator's notes

- ◆ The aim of **Activity 6** is to highlight the content of CAPS.
- ◆ Remind teachers that assessment in Grade R should be based on CAPS, and that the additional Maths Programme content is for enriching the teaching and learning experience.



Activity 6

1. What Measurement concepts are covered in Term 2?

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

Directly comparing objects: length

In Term 1 of the Maths Programme the focus of the Measurement Content Area was time (day, night, days of the week, sequencing events, etc.) and the height chart. In Term 2 Week 9, the focus is on using non-standard units to measure and compare length.



Activity 7

1. **Direct comparison**

Choose a partner to stand next to. The rest of your group members should compare your heights.

- ◆ Who is taller? _____
- ◆ Who is shorter? _____
- ◆ Find a third person who is taller than both of these people.

Thuto ya 2: Kelo

Iri e 1

Nepišo ya Kotara ya 2 Beke ya 9 ke Kelo.

Kakaretšo ya Diteng ya Dikotara tša 1-4: Kelo

Lebelela kakaretšo ya diteng ya Kelo matlakaleng a 132-135 ka go *Pukutlhahlo ya Mareo*.

Dinoutse tša monolofatši

- ◆ Maikemišetšo a **Mošongwana wa 6** ke go laetša diteng tša SEPHOLEKE.
- ◆ Gopotša barutiši gore ka Mphatong wa R motheo wa tekolo ke SEPHOLEKE, le gore diteng tša Lenaneo la Dipalo tša tlaleletšo di tiiša maitemogelo a go ruta le go ithuta.



Mošongwana wa 6

1. Go akaretšwa mareo afe a kelo ka go Kotara ya 2?

2. Phapano ke eng magareng ga diteng tša Lenaneo la Dipalo le diteng tša SEPHOLEKE?

Go bapetša dilo thwii: botelele

Ka go Kotara ya 1 ya Lenaneo la Dipalo nepišo ya Karolo ya Diteng tša Kelo e be e le nako (mosegare, bošego, matsatši a beke, go latelanya ditiragalo, bj.bj.) le tšhate ye telele. Ka go Kotara ya 2 Beke ya 9, nepišo e mo tirišong ya metšo ya go se tlwaelege ge go elwa le go bapetša botelele.



Mošongwana wa 7

1. **Papetšo ya thwii**

Kgetha motho yo o tlo emago kgauswi le yena. Maloko a mangwe a sehlopha sa gago a swanetše go bapetša botelele bja lena.

- ◆ Ke mang yo moteletšana? _____
- ◆ Ke mang yo mokopananyana? _____
- ◆ Hwetša motho wa boraro yo a fetago ba babedi ka botelele.

2. Using non-standard units of measurement

Choose three objects (e.g. a key, a cellphone, a purse).

- ◆ Use one of these items at a time to measure this *Participant's Workbook*.
 - ◆ Report your findings to the group.
-
-
-

Facilitator's notes

- ◆ Point out that the non-standard units used to measure the *Participant's Workbook* are not the same size. When participants compare their measurements (how many units, e.g. the key), they will recognise that the choice of the unit determines how many of a unit there are in the total number of units – so, the different objects used for measuring will result in a different number of units in the answer (total number of units), e.g. the *Participant's Workbook* measures 17 keys versus 4 cellphones.
- ◆ Make participants aware that the size of a non-standard unit can vary between people, e.g. one person may have a smaller cellphone than another. This will also result in a different total number of units.
- ◆ Observe participants as they measure and make sure that the non-standard unit is being used accurately (end-to-end).

Term 2 Content Summary: Week 9

Refer to Appendix A: Term 2 Weekly Content Summary (Weeks 8–10). Read the content overview for Week 9: Measurement on page 20 of *Activity Guide: Term 2*.

Read the whole class activities for Week 9 on pages 154–165 of *Activity Guide: Term 2*.

2. Go diriša metšo ya go se tlwaelege ya kelo

Kgetha dilo tše tharo (mohl, senotlelo, selefoune, sekhwama).

- ◆ Diriša selo se setee sa tše ka nako go ela *Pukutšhomo ya Motšeakarolo* yo.
 - ◆ Begela sehlopha dipoelo tša gago.
-
-
-

Dinoutse tša monolofatši

- ◆ Laetša gore metšo ya go se tlwaelege ye e dirišitšwego go ela *Pukutšhomo ya Motšeakarolo* ga e lekane ka bogolo. Ge batšeakarolo ba bapetša dikelo tša bona (metšo e mekae, mohl, senotlelo), ba tlo lemoga gore kgetho ya metšo e laetša palo ya motšo ka go palomoka ya metšo – gomme, dilo tša go fapana tše di dirišitšwego go ela di tlo hlola palo ye e fapanego ya metšo karabong (palomoka ya metšo), mohl, *Pukutšhomo ya Motšeakarolo* e ela dinotlelo tše 17 le diselefoune tše 4.
- ◆ Lemoša batšeakarolo gore bogolo bja metšo ya go se tlwaelege bo a fapana bathong ba go fapana, mohl, motho a ka ba le selefoune ye nyanenyana go ya yo mongwe. Se se tlo hlola palo ya metšo ya go fapana.
- ◆ Lebelela batšeakarolo ge ba ela gomme o kgonthiše gore ba diriša metšo ya go se tlwaelege gabotse (mathomong-go fihla-mafetšong).

Kakaretšo ya Diteng ya Kotara ya 2: Beke ya 9

Lebelela Mamatletšo ya A: Kakaretšo ya Diteng ya Beke ka Beke ya Kotara ya 2 (Dibeke tša 8–10). Bala kakaretšo ya diteng ya Beke ya 9: Kelo letlakaleng la 21 la *Pukutlhahlo ya Mešongwana: Kotara ya 2*.

Bala mešongwana ya barutwana ka moka ya Beke ya 9 matlakaleng a 154–165 ka go *Pukutlhahlo ya Mareo: Kotara ya 2*.



Activity 9

In your groups, discuss how length is taught during the whole class activities in Week 9.

1. What could you do if a learner is not yet able to compare and order objects according to length – long/longer and short/shorter by the end of Week 9?

Focus on language, on practical activities. Provide more repetition, more discussion, more input from the teacher. Pair learner with a peer.

2. What could you do if some learners complete a workstation activity successfully quicker than planned?

Prepare appropriate free choice activities. Give them a 'big' task to do e.g. use your shoe to measure one side of the classroom.



Mošongwana wa 9

Ka dihlopha, bolelang gore botelele bo rutwa bjang ka nako ya mešongwana ya barutwana ka moka ya Beke ya 9.

1. O ka dira eng ge morutwana a palelwa ke go bapetša le go latelanya dilo go ya ka botelele – telele/telelenyana le kopana/kopananyana mafelelong a Beke ya 9?

Nepiša leleme, mešongwaneng ya go dirwa. O neelane ka poeletšo ye ntši, poledišano ye ntši, dikgopolo tše dintši go tšwa go morutiši. Bea barutwana ka bobedi le dithaka.

2. O ka dira eng ge morutwana a ka fetša mošongwana wa mafelong a go šomela ka katlego ka potlako go feta ka mo o bego o beakantše?

Beakanya mešongwana ya go ikgethela ya maleba. O ba fe mošomo o 'mogolo' gore ba o dire, mohl, ela lehlakore le letee la phapoši ka seeta sa gago.

Session 3: Numbers, Operations and Relationships

1 hour

The focus of Term 2 Week 10 is Numbers, Operations and Relationships.

Terms 1–4 Content overview: Numbers, Operations and Relationships

The Numbers, Operations and Relationships Content Area was also the focus in Weeks 1, 2 and 5 of Term 2, and you discussed the number concepts that need to be covered in previous workshops. Look at the content overview for Numbers, Operations and Relationships on pages 114–123 of the *Concept Guide*.



Activity 10

What number concepts still need to be covered in Term 2?

Problem solving

Teachers need to provide learners with many opportunities to solve problems so that they can apply their maths knowledge and skills in new contexts. All games and activities involve problem solving. Word problems in maths introduce a specific type of problem solving that involves solving addition, subtraction, multiplication and division problems. In Grade R learners solve addition and subtraction problems by counting and using concrete apparatus to help them find a solution. They use grouping and one-to-one sharing to solve multiplication and division problems.

The biggest challenge in presenting word problems to learners, is to ensure that there is appropriate questioning and use of language. When teachers present a word problem, they need to listen carefully to learners' responses and guide them to solve the problem using a strategy that is suitable for their level of understanding.

The posters in the *Poster Book* have been designed to provide learners with a set of pictures that relate to their lives and provide contexts for solving real-life problems.

In Week 10 Day 4 (page 180 of *Activity Guide: Term 2*), Poster 1 is used to encourage learners to solve problems that involve numbers 1–5.

Thuto ya 3: Dinomoro, Tirišo le Tswalano Iri e 1

Nepišo ya Kotara ya 2 Beke ya 10 ke Dinomoro, Tirišo le Tswalano.

Kakaretšo ya Diteng ya Dikotara tša 1-4: Dinomoro, Tirišo le Tswalano

Karolo ya Diteng ya Dinomoro, Tirišo le Tswalano e be e le nepišo ya Dibeke tša 1, 2 le 5 ka go Kotara ya 2, gomme le ahlaahlile mareo a dinomoro ao a swanetšego go akaretšwa ka dithutofatlhošong tša go feta. Lebelela kakaretšo ya diteng ya Dinomoro, Tirišo le Tswalano matlakaleng a 114-123 ka go *Pukutlhahlo ya Mareo*.



Mošongwana wa 10

Ke mareo afe a dinomoro ao go sa hlokegago gore a akaretšwe ka go Kotara ya 2?

Tharollo ya mathata

Barutiši ba swanetše go nea barutwana menyetla ye mentši ya go rarolla mathata gore ba diriše tsebo ya bona ya dipalo le mabokgoni dikamanong tše diswa. Meraloko ka moka le mešongwana e akaretša tharollo ya mathata. Dipalo tša mantšu mo dipalong di hlagiša mohuta wo itšego wa tharollo ya mathata wa go akaretša dipalo tša go hlakantšha, go ntšha, go atiša le go arola. Ka Mphatong wa R barutwana ba dira dipalo tša go hlakantšha le go ntšha ka go bala le go diriša didirišwa tša go swarwa go ba thuša gore ba hwetše karabo. Ba diriša dihlopha le kabelano ya tee-ka-tee ge ba dira dipalo tša go atiša le go arola.

Tlhohlo ye kgolo ka go fetiša ge o bega dipalo tša mantšu barutwaneng, ke go kgonthiša gore go na le dipotšišo tša maleba le tirišo ya leleme. Ge barutiši ba bega palo ya mantšu, ba hloka go theeletša dikarabo tša barutwana gabotse gomme ba ba hlahle gore ba rarolle mathata ba diriša leano la go swanela maemo a bona a kwešišo.

Diphoustara tša ka gare ga *Puku ya Diphoustara* di akantšwe gore di nee barutwana sete ya diswantšho tša go amana le maphelo a bona le go ba nea kamano ya go rarolla mathata a nnete.

Ka go Beke ya 10 Letšatši la 4 (letlakala la 181 ka go *Pukutlhahlo ya Mareo: Kotara ya 2*), Phoustara ya 1 e dirišwa go hlohletša barutwana gore ba rarolle mathata a go akaretša dinomoro 1-5.

Facilitator's notes

- ◆ In **Activity 11** participants refer to Poster 1 to generate a series of appropriate number-related questions.
- ◆ These questions cover the following skills: comparing, matching, counting, addition, subtraction, grouping and equal sharing. They should involve a range of vocabulary. Remind participants that the focus of their questions should be on maths and that the language used should be clear and simple. Use the examples below to wrap up **Activity 11**.

Comparing/one-to-one correspondence (matching)

- *Are there enough spoons for each bowl?*
- *How many more spoons do we need so that there is one spoon for each bowl?*
- *Are there more glasses on the top shelf or on the bottom shelf?*

Counting

- *How many glasses are there in the cupboard?*
- *Are there enough chairs for the number of people in the kitchen?*

Addition

- *There are four green apples and four red apples in the fridge. How many apples are there in the fridge?*
- *Thami has three blocks. There are four blocks on the floor. How many blocks are there altogether?*

Subtraction

- *There are six eggs in the door of the fridge. Dad cooks four eggs. How many eggs will be left in the fridge?*
- *There are five mugs in the kitchen. Four mugs are white. How many mugs are yellow?*
- *There are eight apples in the fridge. Four apples are green. How many apples are red?*

Grouping

- *Each child has two eyes. How many eyes would there be altogether on three children?*

Equal sharing

- *There are three oranges in a bag. Three children share the oranges. How many oranges will each child get?*



Activity 11

In your groups, refer to Poster 1. Think of appropriate word problems for each of these skills:

- ◆ comparing
- ◆ matching
- ◆ counting
- ◆ addition
- ◆ subtraction
- ◆ grouping
- ◆ equal sharing.

Dinoutse tša monolofatši

- ◆ Ka **Mošongwaneng wa 11** batšeakarolo ba lebelela Phoustara ya 1 go hlama dipotšišo tša maleba tša go ama dinomoro.
- ◆ Dipotšišo tše di akaretša mabokgoni ao a latelago: go bapetša, go tswalanya, go bala, go hlakantšha, go ntšha, go hlopha le go aba ka go lekana. Di swanetše go akaretša tlotlontšu. Gopotša batšeakarolo gore maikemišetšo a dipotšišo a swanetše go ba mo dipalong le gore go dirišwe leleme la go kwagala la bonolo.

Diriša mehlala ya ka fase go phetha **Mošongwana wa 11**.

Go bapetša/tee-ka-tee tša go swana (go tswalanya)

- Go na le mahwana a go lekana sekotlelo se sengwe le se sengwe?
- Re hloka mahwana a mangwe a makae gore sekotlelo se sengwe le se sengwe se be le lehwana?
- Go na le digalase tše dintši godimo ga šelefo goba botlase bja šelefo?

Go bala

- Go na le digalase tše kae ka khapoteng?
- Go na le ditulo tša go lekana palo ya batho bao ba lego ka khitšhining?

Tlhakantšho

- Go na le diapola tše ditalamorogo tše nne le diapola tše dihubedu tše nne ka setšidifatšing. Go na le diapola tše kae ka setšidifatšing?
- Thami o na le dipoloko tše tharo. Go na le dipoloko tše nne lebatong. Dipoloko ka moka ke tše kae?

Ntšho

- Go na le mae a tshela mo lebating la setšidifatši. Tate o apea mae a mane. Go tlo šala mae a makae ka setšidifatšing?
- Go na le mabekere a mahlano ka khitšhining. Mabekere a mane ke a mašweu. Mabekere a maserolane ke a makae?
- Go na le diapola tše seswai ka setšidifatšing. Diapolo tše nne ke tše ditalamorogo. Diapolo tše dihubedu ke tše kae?

Go hlopha

- Ngwana yo mongwe le yo mongwe o na le mahlo a mabedi. Bana ba bararo ba tlo ba le mahlo a makae?

Go aba ka go lekana

- Go na le dinamune tše tharo ka mokotleng. Bana ba bararo ba abelana dinamune. Ngwana yo mongwe le yo mongwe o tlo hwetša dinamune tše kae?



Mošongwana wa 11

Ka dihlopha, lebelelang Phoustara ya 1. Naganang ka dipalo tša mantšu tša go swanela mabokgoni a:

- ◆ go bapetša
- ◆ go tswalanya
- ◆ go bala
- ◆ tlhakantšho
- ◆ ntšho
- ◆ go hlopha
- ◆ go abelana ka go lekana.

When you do word-problem activities with your learners, allow them to use their fingers or counters to help them solve the problems.

Facilitator's notes

- ◆ In a whole group session ask for examples of questions for each of the categories. Write these on a flipchart for further discussion.
- ◆ Main point to discuss include:
 - The way that you structure the language in a word problem determines whether it is easy or difficult for the learners to understand and solve, e.g.:
 - * *There are 10 sweets. I eat 4. How many are left?* (This uses a simple language structure.)
 - * *I bought some sweets. I ate 6 sweets. There are 4 left. How many sweets did I buy?* (This uses a more difficult structure.)
 - Learners need to be exposed to different word-problem structures so that they are able to apply their skills and reasoning in different contexts.

One of the sections in Numbers, Operations and Relationships is, 'Solve problems in context'. In your groups, read the content overview for Term 2 for this section on page 120 of the *Concept Guide*. Then complete Activity 12.



Activity 12

Reflect on Activity 11.

1. What concepts and skills are taught and learnt in the topic: Problem-solving techniques?
-
-

Counting using concrete apparatus, i.e. counters, physical number ladder, ten structure beads.

2. What concepts and skills are taught and learnt in topic: Addition and subtraction?
-
-

Use counters; orally solve problems.

Ge o dira mešongwana ya dipalo tša mantšu la barutwana ba gago, o ba dumelele go diriša menwana ya bona goba dibaledi go ba thuša go rarolla mathata.

Dinoutse tša monolofatši

- ◆ Ka thutwana ya sehlopha ka moka o kgopele mehlala ya dipotšišo tša sehlopha se sengwe le se sengwe. O di ngwale pampering ya tšhate ya go phetla gore di ahlaahlwe go ya pele.
- ◆ Ntlhakgolo ya go ahlaahlwa e akaretša:
 - Tsela ye o hlagišago leleme ka yona go dipalo tša mantšu e laetša ge eba e bonolo goba e bothata gore barutwana ba e kwešiše le go e rarolla, mohl:
 - * *Go na le malekere a 10. Ke ja a 4. Go šetše a makae?* (Se se diriša tlhagišo ya leleme ye bonolo.)
 - * *Ke rekile malekere. Ke jele malekere a 6. Go šetše a mane. Ke rekile malekere a makae?* (Se se diriša tlhagišo ye bothata kudu.)
 - Barutwana ba swanetše go bontšhwa dipopego tša dipalo tša mantšu tša go fapana gore ba kgone go diriša mabokgoni a bona le go fahlela dikamanong tša go fapana.

Ye nngwe ya dikarolo tša Dinomoro, Tirišo le Tswalano ke, 'Go rarolla mathata a kamano'. Ka dihlopha, balang kakaretšo ya diteng ya Kotara ya 2 ya karolo ye matlakaleng a 121 ka go *Pukutlhahlo ya Mareo*. Ka morago le dire Mošongwana wa 12.



Mošongwana wa 12

Lebelela Mošongwana wa 11.

1. Go rutwa le go ithuta mareo le mabokgoni afe hlogotabeng ye: Dithekniki tša tharollo ya mathata?

Go bala ka didirišwa tša go swarwa, ke gore, dibaledi, lleri la dinomoro, manti a diphepa a lesome.

2. Go rutwa le go ithuta mareo le mabokgoni afe hlogotabeng: Tlhakantšho le ntšho?

Diriša dibaledi; go rarolla mathata ka molomo.

Estimation

Learners develop estimation skills and make a 'sensible' guess about 'how many objects' there are in a collection. During measurement activities, they estimate how heavy or how long something is, or how many cups will fill a jug before they do the actual measuring.

Facilitator's notes

- ◆ Find two see-through containers (e.g. peanut butter jars). Fill one with eight small objects and the other with eight larger objects.
- ◆ Ask:
 - *How many objects do you think are in this jar?*
 - *How many objects do you think are in the other jar?*
 - *Do you think there are the same number of objects in each jar?*
 - *How can we find out which jar has more objects? (Count the objects.)*
- ◆ Remind participants that estimation is a reasonable guess. By showing the same number of objects in the bottles but using different-sized objects, learners are focusing on the number rather than the size of the object or the amount of space they fill in the container (volume).



Activity 13

The facilitator will show you two jars. Estimate how many objects are in each jar and respond to her questions.

Learners need to be able to use terms such as: *too few, too many, more than, enough, not enough, nearly, close to, about the same, just under, just over.*

Teachers can plan estimation activities that encourage learners to make sensible guesses about the quantity of a group of objects or the measurement of an object.

Term 2 Content Summary: Week 10

Refer to Appendix A: Term 2 Weekly Content Summary (Weeks 8–10). Read the content overview for Week 10: Numbers, Operations and Relationships on page 20 of *Activity Guide: Term 2*.

Akanya

Barutwana ba ba le mabokgoni a go akanya le go dira kakanyo 'ya go kwagala' mabapi le gore 'go na le dilo tše kae' mokgobong. Ka nako ya mešongwana ya go ela, ba akanya gore selo se boima go kaakang goba se na le botelele bjo bokaakang, goba gore jeke e tla tlatša ke mabekere a makae pele ba ela ka nnete.

Dinoutse tša monolofatši

- ◆ Hwetša dikotlolo tša go bontšha ka gare tše pedi (mohl, meruswi ya poto ya ditokomane). Tlatša o tee ka dilo tše dinnyane tše seswai gomme o mongwe ka dilo tše dikgolwane tše seswai.
- ◆ Botšiša:
 - *O nagana gore go na le dilo tše kae ka moruswing wo?*
 - *O nagana gore go na le dilo tše kae ka moruswing o mongwe?*
 - *O nagana gore go na le dilo tša go lekana ka palo ka moruswing o mongwe le o mongwe?*
 - *Re ka hwetša bjang gore ke moruswi ofe wo o swerego dilo tše dintši? (Bala dilo.)*
- ◆ O gopotše batšekarolo gore go akanya ke go fa kakanyo ya go kwagala. Ka go diriša palo ya go swana ya dilo tša ka lebotlelong efela ba diriša dilo tša go fapana ka bogolo, barutwana ba nepiša nomoro e sego bogolo bja selo goba bogolo bja sekgoba se ba se tlatšago ka moruswing (bolumo).



Mošongwana wa 13

Monolofatši o tlo le bontšha meruswi ye mebedi. Akanya gore moruswi o mongwe le o mongwe o na le dilo tše kae gomme le arabe dipotšišo tša gagwe.

Barutwana ba hloka go kgona go diriša mareo a bjalo ka: *tše dinnyane kudu, tše dintši kudu, go feta, lekane, ga ya lekana, nyakile, batametše, nyakile go swana, ka tlasenyana, go feta gannyane.*

Barutiši ba ka beakanya mešongwana ya go akanya ya go hlohleletša barutwana gore ba dire dikakanyo tša go kwagala ka ga palo ya sehlopha sa dilo goba kelo ya selo.

Kakaretšo ya Diteng ya Kotara ya 2: Beke ya 10

Lebelela Mamatletšo ya A: Kakaretšo ya Diteng ya Beke ka Beke ya Kotara ya 2 (Dibeke tša 8–10). Bala kakaretšo ya diteng ya Beke ya 10: Dinomoro, Tirišo le Tswalano letlakaleng la 21 ka go *Pukutlhahlo ya Mareo: Kotara ya 2.*



Activity 14

1. What are the topics for Week 10?

2. What new knowledge is introduced in this week?

3. What skills from previous weeks are practised?

Refer to the estimation activities in Week 10 (*Activity Guide: Term 2*, pages 174 (Day 1), 176 (Day 2) and 178 (Day 3)).



Mošongwana wa 14

1. Dihlogotaba tša Beke ya 10 ke dife?

2. Go tsebišwa tsebo efe ye mpsha bekeng ye?

3. Go ikatišwa mabokgoni afe a dibeke tša go feta

Lebelela mešongwana ya go akanya ka go Beke ya 10 (*Pukutlhahlo ya Mešongwana: Kotara ya 2, matlakala a 175 (Letšatši la 1), 177 (Letšatši la 2) le 179 (Letšatši la 3)*).

Session 4: Numbers, Operations and Relationships

45 minutes

The Maths Programme focuses on one main Content Area each week. You will have noticed that even though when the weekly Content Area Focus is not ‘number’, the number routines continue every day of each week. The reason for this is that repetition and practice are essential for consolidating the learners’ developing number skills.

The whole class activities for each day of the week always start with three number routines:

- ◆ a song or rhyme
- ◆ oral counting
- ◆ counting objects.

These three number routines are planned to match the number range for each term.

Facilitator’s notes

- ◆ In **Activity 15**, participants will use *Activity Guide: Term 2* to find the daily number routines and complete the table. This is to highlight the fact that number routines are practised every day of each week regardless of the Content Area Focus and to show the progression in number range across the term.



Activity 15

Find the Term 2 daily number routines in *Activity Guide: Term 2* and complete the table. Week 1 has been done for you.

Week	Content Area Focus	Song or rhyme	Oral counting	Counting objects
1	Numbers, Operations and Relationships	A rhyme from Term 1	1–10 5–1	1–5 (birthday chart)
2				

Thuto ya 4: Dinomoro, Tirišo le Tswalano

Metsotso ye 45

Lenaneo la Dipalo le nepiša go Karolo ya Diteng ye tee e kgolo beke ye nngwe le ye nngwe. O ka be o lemogile gore le ge Nepišo ya Karolo ya Diteng ya beke ka beke e se 'nomoro', go itlwaetša dinomoro go tšwela pele letšatši le lengwe le le lengwe la beke ye nngwe le ye nngwe. Lebaka ke gore poeletšo le go ikatiša go bohlokwa kopanyong ya mabokgoni a dinomoro ao a hlabologago barutwaneng.

Ka mehla mešongwana ya phapoši ka moka ya letšatši le lengwe le le lengwe la beke e thoma ka ditlwaetšo tša dinomoro tše tharo:

- ◆ koša goba sereto
- ◆ go balela godimo
- ◆ go bala dilo.

Ditlwaetšo tša dinomoro tše tharo di beakanywa gore di tswalane le dinomoro tša kotara ye nngwe le ye nngwe.

Dinoutse tša monolofatši

- ◆ Ka **Mošongwaneng wa 15**, batšeakarolo ba tlo diriša *Pukutlhahlo ya Mareo: Kotara ya 2* go hwetša ditlwaetšo tša dinomoro tša tšatši ka tšatši le go tlatša tafola. Se e le go laetša gore go ikatišwa ditlwaetšo tša dinomoro letšatši le lengwe le le lengwe la beke ye nngwe le ye nngwe go sa ye le Nepišo ya Karolo ya Diteng le go bontšha tšwelopelo mo dinomorong kotara ka moka.



Mošongwanwa wa 15

Hwetša ditlwaetšo tša dinomoro tša tšatši ka tšatši tša Kotara ya 2 ka go *Pukutlhahlo ya Mareo: Kotara ya 2* o be o tlatše tafola. O šetše o diretšwe Beke 1.

Beke	Nepišo ya Karolo ya Diteng	Koša goba sereto	Go balela godimo	Go bala dilo
1	Dinomoro, Tirišo le Tswalano	Sereto sa Kotara ya 1	1-10 5-1	1-5 (tšhate ya matšatši a matswalo)
2				

3				
4				
5				
6				
7				
8				
9				
10				

Having looked through the number content for Term 2, you will have noticed that the number routines are practised every day of each week regardless of the Content Area Focus and that the progression in number range increases across the term.

3				
4				
5				
6				
7				
8				
9				
10				

Ge o be o lebeletše diteng tša Kotara ya 2, o lemogile gore go dirwa katišo ya go itlwaetšwa ditlwaelo tša dinomoro letšatši le lengwe le le lengwe la beke ye nngwe le ye nngwe go sa kgethwe gore ke Nepišo ya Karolo ya Diteng efe le gore tšwelopele go ya ka bogolo bja dinomoro e oketšega mo kotareng.

Session 5: Term 2 Assessment

1 hour

Video 2

Watch the video of a teacher presenting word problems to a small group of learners.

Observe how each learner solves the problem. Notice how the teacher uses prompts when a learner has difficulty.

Facilitator's notes

- ◆ PPT: Rubric with the 1–7 rating scale.
- ◆ Discuss how the descriptions in the rubric provide distinguishing assessment criteria for each rating code.

Activity 16

Look at the rubric on page 106 of the *Concept Guide*.

In your groups, discuss how you would score each of the learners using this scale. Give reasons for your decisions based on the assessment criteria for each rating code.

Thuto ya 5: Tekolo ya Kotara ya 2

Iri e 1



Bideo ya 2

Bogela bideo ya morutiši a begela dihlopha tše dinnyane tša barutwana ka ga dipalo tša mantšu.

Lebelela ka fao morutwana yo mongwe le yo mongwe a rarollago bothata ka gona. O lemoge ka fao morutiši a hlohleletšago morutwana ge a eba le bothata.

Dinoutse tša monolofatši

- ◆ PPT: Rubriki ya khouto ya tekanyetšo 1–7.
- ◆ Ahlaahlang ka fao dihlahošo tša ka rubriking di neelanago ka mokgwa wa tekolo wa phapanyo go khoutu ya tekanyetšo ye nngwe le ye nngwe.



Mošongwana wa 16

Lebelela rubriki letlakaleng la 107 ka go *Pukutlahlo ya Mareo*.

Ka dihlopha, ahlaahlang gore le tlo lekanya barutwana bjang ka tekanyetšo ye. Fahlela diphetho tša gago go ya ka mokgwa wa tekolo wa khoutu ya tekanyetšo ye nngwe le ye nngwe.

Closing activities

15 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.
- ◆ **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 17

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 any questions or comments to share with the group.



Take back to school task

1. Use *Activity Guide: Term 2* to plan and implement Weeks 8–10 of the Maths Programme.
2. Write an evaluation of what worked well, what did not work so well and what you could do differently to improve teaching and learning.
3. Bring your evaluation to the next workshop.

Evaluation

Complete the Evaluation Form.

Dinoutse tša monolofatši

- ◆ **Go naganiša ka thutofatlhošo:** Kgopela batšeakarolo gore ba tšee metsotso ye mmalwa ba naganiša ka letšatši le gore ba phetle *Pukutšhomo ya Motšeakarolo*. Ba kgopele gore ba ngwale dipotšišo goba ditshwayatshwayo tše ba tlo di abelanago le sehlopha ka moka.
- ◆ **Mošomo wo o tlo boelago le wona sekolong:** Bala mošomo wo. O botšiše ge go na le seo se sa kwagalego gabotse sa go nyaka tlhalošo ye ntši.
- ◆ **Tekolo:** Aba dikhophi tša Foromo ya Tekolo ya Thutofatlhošo gomme batšeakarolo ba e tlatše.
- ◆ **Thutofatlhošo ya go latela:** Efa matšatšikgwedi a thutofatlhošo ye e latelago gomme o tswalele thutofatlhošo.



Mošongwana wa 17

Go naganiša ka thutofatlhošo: Tšea metsotso ye mmalwa o naganiša ka letšatši. O phetle *Pukutšhomo ya Motšeakarolo* go ikgotšša tše di akareditšwego. Ngwala dipotšišo goba ditshwayatshwayo tše o tlo di abelanago le sehlopha ka moka.



Mošomo wo o tlo boelago le wona sekolong

1. Diriša *Pukutlahlo ya Mareo: Kotara ya 2* go beakanya le go phethagatša Dibeke tša 8–10 tša Lenaneo la Dipalo.
2. Ngwala tekolo ya tše di šomilego gabotse, le tše di sa šomago gabotse le se o ka se dirago seo se fapanego go kaonafatša go ruta le go ithuta.
3. O tle le tekolo ya gago thutofatlhošong ya go latela.

Tekolo

Tlatša Foromo ya Tekolo.

APPENDIX A: TERM 2 WEEKLY CONTENT SUMMARY (WEEKS 8-10)

Term 2: Activity Plan

Week 8				
CONTENT AREA: SPACE AND SHAPE (GEOMETRY)				
TOPIC: Properties of shapes – compare same and different, sort according to properties; position; orientation and views				
INTRODUCE NEW KNOWLEDGE: Follow direction and midline crossing				
PRACTISE: Oral counting 1–20, counting backwards from 7, sequencing numbers 1–5, counting objects 1–7, reinforce number concept 1–5, what number comes before/after, practise using all shapes				
Whole class activities		Teacher-guided activity	Workstation activities	
Day 1	Forwards/backwards.	Counting – show me 1–3, 5–7 counters. Working with all taught shapes. Midline crossing. Position – direction. Forwards/backwards.	Activity 1	Sorting activity – using cut-out shapes. Make shapes using playdough and make a copy. Masking tape shapes – learners follow shapes using blocks. Match shapes using shape cards.
Day 2	Reinforce all shapes (I spy ...).			
Day 3	Shape game.		Activity 2	
Day 4	What can I do: Lost my ... (shape).		Activity 3	
Day 5	Obstacle course (requires a big space/outdoors). Midline crossing.		Activity 4	
Week 9				
CONTENT AREA: MEASUREMENT				
TOPIC: Length – compare and order objects using appropriate vocabulary to describe length				
INTRODUCE NEW KNOWLEDGE: Measuring and comparing length (long/short, longer/shorter, longest/shortest)				
PRACTISE: Oral counting 1–20, counting backwards from 7, counting objects 1–7, estimation 1–7, tall/short				
Whole class activities		Teacher-guided activity	Workstation activities	
Day 1	Longer/shorter (height).	Longer than/shorter than. Taller than/shorter than. Measurement with everyday objects.	Activity 1	Shorter/longer (pre-cut strips of different length). Wiggly worms (to make a poster shortest to longest). Measure blocks using string. Playdough and lined paper (different lengths).
Day 2	Comparing lengths of ribbons.			
Day 3	Sorting objects by length (coloured paper strips).		Activity 2	
Day 4	Height chart comparison (from Term 1).		Activity 3	
Day 5	Height chart comparison (taller/shorter than you).		Activity 4	

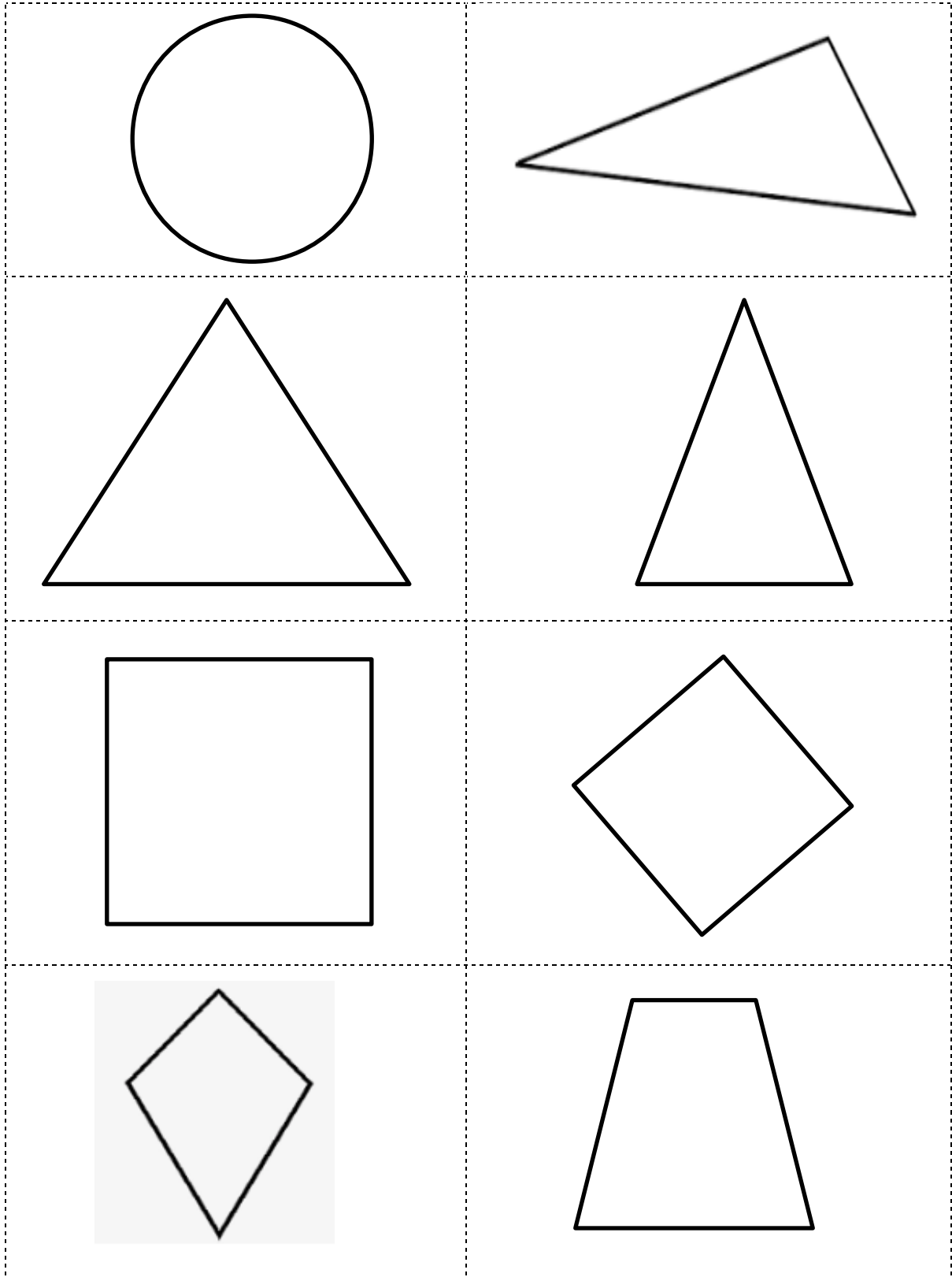
MAMATLETŠO YA A: KOTARA YA 2 KAKARETŠO YA DITENG YA BEKE KA BEKE (DIBEKE TŠA 8-10)

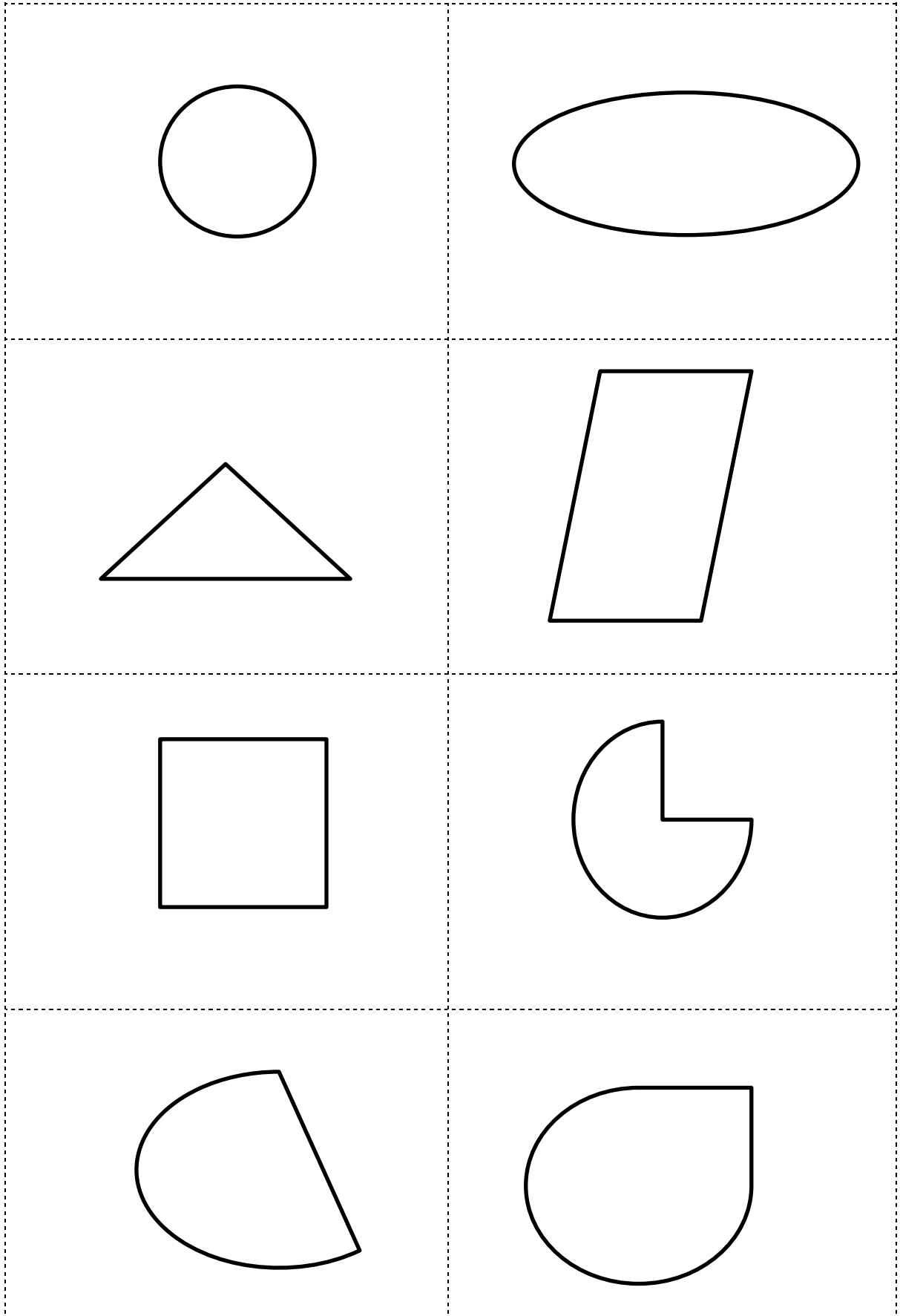
Kotara ya 1: Peakanyo ya Mošongwana

Beke ya 8				
KAROLO YA DITENG: SEKGOBA LE SEBOPEGO (TŠEOMETRI)				
DIHLOGOTABA: Dipharologantšho tša diboepo – bapetša go swana le go fapana, hlaola go ya ka dipharologantšho; maemo; peakanyo le dipono				
TSEBO YE MPSHA: Latela ditšhupetšo, Go putla mothalading wa gare				
GO IKATIŠA: Go balela godimo 1–20 le 7-1, temogopalo 1–5, go bala dilo 1–7, diboepo: sediko, sekwere khutlotharo, pele, morago, tiiša maemo				
Mešongwana ya barutwana ka moka		Mošomo wa go hlhlwa ke morutiši	Mešongwana ya mafelong a go šomela	
Letšatši la 1	Pele/morago.	Go bala – mpontšhe dibaledi tše 1–3, 5–7. Go šoma ka diboepo ka moka tše go rutilwego ka tšona. Pele/morago. Boemo – tšhupetšo. Pele/morago.	Mošongwana wa 1	Mošongwana wa go hlaola – o diriša diboepo tša go ripiwa.
Letšatši la 2	Gatelela diboepo ka moka (Ke tshebi ...).		Mošongwana wa 2	Dira diboepo ka tlhama gomme o dire khophi.
Letšatši la 3	Moraloko wa diboepo.		Mošongwana wa 3	Diboepo tša maskhing theipi – barutwana ba latela diboepo ba diriša dipoloko.
Letšatši la 4	Nka dira eng: Ke timeditše (seboepo)....		Mošongwana wa 4	Tswalanya diboepo o diriša dikarata tša diboepo.
Letšatši la 5	Lepatlalo la ditšhitišo (go nyakega sekgoba se segolo/ka ntle). Mothalogare.			
Beke ya 9				
KAROLO YA DITENG: KELO				
DIHLOGOTABA: Botelele – bapetša le go hlaola dilo o diriša tlotlontšu ya maleba				
TSEBO YE MPSHA: Go ela le go bapetša botelele (telele/kopana, teletšana /kopananyana, telele ka go fetiša/kopana ka go fetiša)				
GO IKATIŠA: Go balela godimo 1–20 le 7-1, go bala dilo 1–7, kakanyo 1–7, Botelele: telele, kopana				
Mešongwana ya barutwana ka moka		Mošomo wa go hlhlwa ke morutiši	Mešongwana ya mafelong a go šomela	
Letšatši la 1	Telelenyana/kopananyana (botelele).	Telele go/kopana go. Telele go feta/kopana go feta. Kelo ka dilo tša letšatši le lengwe le le lengwe.	Mošongwana wa 1	Kopananyana/telenyana (meseto ye e ripilwego ka botelele bja go fapana).
Letšatši la 2	Go bapetša botelele bja malente.		Mošongwana wa 2	Diboko tša go runyarunya (go dira gore phoustara e be ye kopana ka go fetiša/telele ka go fetiša).
Letšatši la 3	Go hlaola dilo go ya ka botelele (meseto ya dipampiri tša mebala).		Mošongwana wa 3	Ela dipoloko ka lenti.
Letšatši la 4	Papetšo ya tšhate ye telele (ya Kotara ya 1).		Mošongwana wa 4	Tlhama le pampiri ya go ba laening (botelele bja go fapana).
Letšatši la 5	Papetšo ya tšhate ye telele (telele/kopana go wena).			

**APPENDIX B: SHAPES FOR SORTING/MAMATLETŠO YA B: DIBOPEGO TŠA
GO HLAOLWA**

Cut along the dotted lines./Ripa go bapela le methaladi ya marontho.





Workshop 6 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?

Foromo ya Tekolo ya Thutofatlhošo ya 6

1. Na thutofatlhošo e fihleletše tše o bego o di lebeletše?

2. O ithutile eng go thutofatlhošo ye se se go thušitšego kudu?

3. Go na le se o se go wa se rata goba o sa se kwešiše go?

4. O tlo phethagatša se o ithutilego sona bjang phapošing ya gago ya Mphato wa R?

5. Go na le tše o di šišinyago go kaonafatša dithutofatlhošo tše di latelago?
