



GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

GGT 2030
GROWING GAUTENG TOGETHER

IsiXhosa/English

INkqubo yeMathematika yokuPhucula yeBanga R Grade R Mathematics Improvement Programme



**INdibano yoCweyo 11 • Workshop 11
IsiKhokelo somBhexeshi • Facilitator's Guide**

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

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

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

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

ACKNOWLEDGEMENTS

Special thanks to:

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



The Grade R Mathematics Improvement Programme is adapted from *R-Maths*, first published in 2017 by the Schools Development Unit, University of Cape Town. Copyright of *R-Maths* is held by the University of Cape Town.

The Grade R Mathematics Improvement Programme is licensed under a Creative Commons Attribution 4.0 International Licence [Attribution-NonCommercial-ShareAlike].



This licence allows re-users to distribute, remix, adapt, and build upon the material in any medium or format for non-commercial purposes only, and only so long as attribution is given to the creator. If you remix, adapt, or build upon the material, you must license the modified material under identical terms. To view the full conditions for this licence, visit: <https://creativecommons.org/licenses/by-nc-sa/4.0/>

Programme conceptualisation and management: Cally Kuhne and Tholisa Matheza

Translation and publishing project management: Arabella Koopman

Translation co-ordination (Nguni languages): Pumeza Ngobozana

Translation: Sebolelo Mokapela

Editing (isiXhosa): Pumeza Ngobozana

Illustrations: Jiggs Snaddon-Wood

IProjekthi yeBanga R yokuPhucula yeMathematika noLwimi lilinge **leSebe leMfundo laseGauteng (Gauteng Department of Education)** kunye neqabane layo eliphambili, i**Gauteng Education Development Trust**.

Ukwenziwa nokuveliswa kwezixhobo zoqeqesho nezegumbi lokufundela kwenziwe kwayimpumelelo ngezibele zenkxasomali ye**United States Agency for International Development** kwakunye ne**Zenex Foundation**.

IProjekthi yeBanga R yokuPhucula yeMathematika noLwimi ilawulwa yi**JET Education Services** ne**Schools Development Unit** yase**UCT** kunye no**Wordworks** njengamaqabane ezobugcisa.

Schools Development Unit (SDU) kwi**Yunivesithi yaseKapa (UCT)** liqabane lezobugcisa kwimathematika kwiProjekthi yeBanga R yokuPhucula yeMathematika noLwimi. ISDU yiyunithi ngaphakathi kwiSchool of Education kwiYunivesithi yaseKapa egxile kuphuhliso lobungcali bootitshala kwiMathematika, izifundo zeNzululwazi, iLitherasi/uLwimi kunye neZakhono zoBomi ukusuka kwiBanga R ukuya kwiBanga le-12. ISDU inikezela ngezinqinisekiso zootitshala kunye nezifundo ezifutshane ezivunyiweyo zeUCT, umsebenzi osekwe esikolweni, uphuhliso lweemathiriyeli kunye nophando lokuxhasa ukufundisa nokufunda kuzo zonke iimeko eMzantsi Afrika.

IMIBULELO

Senza umbulelo ongazenzisiyo:

- KwiCandelo leKharityhulam kwiSebe leMfundo laseGauteng, Izifundo zooTitshala kunye namagosa eCandelo elikhethekileyo leMfundo ngenkxaso yabo ekuvelisweni kwale mathiriyeli.
- Kumagosa eSebe leMfundo laseNtshona Koloni (WCED) kunye nootitshala ngegalelo labo kwimpumelelo yokuphunyezwa kweGrade R Mathematics Programme (R-Maths) eNtshona Koloni phakathi kweminyaka ka2016 no2019.
- Iqela lababhali beR-Maths: Abasebenzi kwiSDU.



Inkqubo yeMathematika yokuPhucula yeBanga R ilungiselelwe kwi**R-Maths**, yapapashwa okokuqala ngowama2017 yiSchools Development Unit, kwiYunivesithi yaseKapa. Ilungelo loshicilelo leR-Maths ligcinwe yiYunivesithi yaseKapa.

Inkqubo yeMathematika yokuPhucula yeBanga R inelayisensi phantsi kwe-Creative Commons Attribution 4.0 International Licence [Attribution-NonCommercial-ShareAlike].



Le layisensi inika abasebenzisi bezi zixhobo ilungelo lokuba bangazihambisa kwabanye abantu, bangazixuba, bangazitshintsha baze bazandise kodwa oko bangakwenzeli inzuzo okubalulekileyo kukuba bafumane imvume. Xa ubani ethe wazixuba, wazitshintsha okanye wazandisa, kufuneka ke izixhobo ezitshintshiweyo zibe nelayisensi ehambelana noko. Ukujonga imiqathango epheleleyo yale layisenisi, ndwendwela ku:

<https://creativecommons.org/licenses/by-nc-sa/4.0/>

Ukusungulwa nokuphathwa kwenkqubo: Cally Kuhne kunye noTholisa Matheza
Ulawulo lwenguqulelo nopapasho lweprojekthi: Arabella Koopman
Ulungelaneliso lwenguqulelo (iilwimi zesiNguni): Pumeza Ngobozana
Umgququli: Sebolelo Mopakela
Umhleli (isiXhosa): Pumeza Ngobozana
Imizobo: Jiggs Snaddon-Wood

Contents

Overview

Purpose	page 6
Learning outcomes	page 6
Workshop content	page 6
Preparation	page 8
Materials	page 8

Workshop content

Opening and reflection	page 10
Session 1: Review of the Maths Content Areas	page 16
Session 2: Maths Content Area presentations	page 20
Session 3 Maths Content Area presentations (continued)	page 22
Session 4: Planning for teaching	page 24
Closing activities	page 26
Appendix A: Term 4 Weekly Planning Template	page 28
Appendix B: Activity 2 Topics	page 34
Workshop 11 Evaluation Form	page 46

Isiqulatho

Amagqabantshintshi

Injongo	iphepha 7
Iziphumo zokufunda	iphepha 7
Umxholo wendibano yocweyo	iphepha 7
Ulungiselelo	iphepha 9
Iimathiriyeli	iphepha 9

Umxholo wendibano yocweyo

Ukuvula nocamngco	iphepha 11
Iseshoni 1: Ukuhlaziywa kweNkalo yoMxholo weMathematika	iphepha 17
Iseshoni 2: Ukunikezelwa kwentetho ngeNkalo yoMxholo weMathematika	iphepha 21
Iseshoni 3: Ukunikezelwa kwentetho ngeNkalo yoMxholo weMathematika (kuyaqhubeka)	iphepha 23
Iseshoni 4: Ukucwangcisela ukufundisa.....	iphepha 25
Imisebenzi yokuqukumbela	iphepha 27
Isingeniso A: Ithempleyithi yesiCwangciso seVeki neVeki yeKota 4	iphepha 29
Isingeniso B: Izihloko zoMsebenzi 2	iphepha 35
IFomu yokuHlola yeNdibano yoCweyo 11	iphepha 47

Overview

Purpose

This is the eleventh 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 consolidate the understanding of the Maths content taught in Grade R and to continue assisting teachers to implement the Maths Programme in their classrooms. Participants will have the opportunity to reflect on their implementation of the Maths Programme and discuss their planning, teaching and assessment. They will also consider learner progress, and individual developmental and learning needs. Participants will reflect on appropriate assessment strategies for capturing learner progress. The workshop explores the content for Term 4 Weeks 4–6 and its classroom implementation.

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

Learning outcomes

- ◆ To deepen understanding of Grade R Mathematics content
- ◆ To reflect on classroom implementation of the Maths Programme
- ◆ To identify challenges and find solutions to implementing the Maths Programme
- ◆ To reflect on informal forms of assessment in Grade R
- ◆ To plan the Maths Programme content to be taught in Term 4 Weeks 4–6

Workshop content

- ◆ Opening and reflection (1 hour)
 - ◆ Session 1: Review of the Maths Content Areas (1 hour)
- TEA
- ◆ Session 2: Maths Content Area presentations (1 hour)
 - ◆ Session 3: Maths Content Area presentations (continued) (1 hour)
- LUNCH
- ◆ Session 4: Planning for teaching (1½ hours)
 - ◆ Closing activities (30 minutes)

Amagqabantshintshi

Injongo

Le yeyeshumi elinanye kwezilishumi elinambini iindibano zocweyo zeNkqubo yeMathematika yokuPhucula yeBanga R (iNkqubo yeMathematika) neyinxalenye yeProjekthi yeBanga R yokuPhucula yeMathematika noLwimi yeSebe leMfundo laseGauteng (Gauteng Department of Education (GDE)).

Injongo yale ndibano yocweyo kukuyondelelanisa ingqiqo engomxholo weMathematika efundiswa kwiBanga R nokuqhubeka incedisa ootitshala ukuba baphumeze iNkqubo yeMathematika eziklasini zabo. Abathathinxaxheba bazakuba nethuba lokucamngca ngokuphumeza kwabo iNkqubo yeMathematika baze baxoxe ngocwangciso, ukufundisa nokuhlola kwabo. Bazakuphinda baqwalasele nenkqubela yabafundi, ukukhula komfundi ngamnye kunye neemfuno zokufunda. Abathathinxaxheba bazakucamngca ngeendlela ezifanelekileyo zokuhlola ezizezokurekhoda inkqubela yomfundi. Indibano yocweyo iphonononga umxholo weKota 4 iiVeki 4–6 kunye nokuphunyezwa kwawo eklasini.

Ubhekiso kwiiNkalo zomXholo weMathematika weBanga R luthathwe *kwiNkcazelo yePolisi yeKharityhulam nokuHlola (CAPS): IBanga R iMathematika (idrafti yokugqibela)*, 2011, iSebe leMfundo esiSiseko, yaseMzantsi Afrika.

Iziphumo zokufunda

- ◆ Ukumilisela ingqiqo yomxholo weMathematika yeBanga R
- ◆ Ukucamngca ngokuphunyezwa kweNkqubo yeMathematika eklasini
- ◆ Ukwalatha imingeni kwanokufumana izisombululo ekuphunyezweni kweNkqubo yeMathematika
- ◆ Ukucamngca ngeendlela ezingekho sikweni zokuhlola kwiBanga R
- ◆ Ukucwangcisa umxholo weNkqubo yeMathematika ozakufundiswa kwiKota 4 iiVeki 4–6

Umxholo wendibano yocweyo

- ◆ Ukuvula nocamngco (1 iyure)
- ◆ Iseshoni 1: Ukuhlaziywa kweNkalo yoMxholo weMathematika (1 iyure)

ITI

- ◆ Iseshoni 2: Ukunikezelwa kwentetho ngeNkalo yoMxholo weMathematika (1 iyure)
- ◆ Iseshoni 3: Ukunikezelwa kwentetho ngeNkalo yoMxholo weMathematika (kuyaqhubeka) (1 iyure)

ISIDLO SASEMINI

- ◆ Iseshoni 4: Ukucwangcisa ukufundisa (1½ iiyure)
- ◆ Imisebenzi yokuqukumbela (30 imizuzu)

Preparation

- ◆ PPT welcome and outcomes
- ◆ Familiarise yourself with all the PowerPoints and videos
- ◆ Read: *Activity Guide: Term 4*, pages 70–119
- ◆ Bring the post box
- ◆ Remind participants to bring their:
Concept Guide
Activity Guides (for Terms 1–4)
Poster Book
- ◆ Prepare the topic sheets from Appendix B

Materials

- ◆ Flipchart paper, kokis
- ◆ Prestik
- ◆ *A Resource Kit* for each group (Groups will be working with all the apparatus in the *Resource Kit*.)
- ◆ Scissors and glue for each group

Ulungiselelo

- ◆ PPT ulwamkelo neziphumo
- ◆ Ziqhelanise nazo zonke ii-*PowerPoints* neevidiyo
- ◆ Funda: *IsiKhokelo semiSebenzi: Ikota 4*, amaphepha 70–119
- ◆ Yiza nebhokisi yeposi
- ◆ Khumbuza abathathinxaxheba ukuba beze nesabo:
IsiKhokelo seeKhonsephi
Izikhokelo zemiSebenzi (zeeKota 1–4)
INcwadi yeePowusta
- ◆ Ukulungisa amaphepha ezihloko ezithathwe kwiSingeniso B

Iimathiriyeli

- ◆ Iphepha lefliptshathi, iikhoki
- ◆ IPrestikhi
- ◆ *IKiti yeziXhobo* kwiqela ngalinye (Amaqela azakube esebenza ngazo zonke izixhobo ezikwi*Kiti yeziXhobo*.)
- ◆ Izikere neglu kwiqela ngalinye

Opening and reflection

1 hour

When we think about and discuss what worked and how we dealt with any challenges that arose during our teaching, it allows us to recognise our strengths and weaknesses. Reflection on our practice as teachers helps us gain new insights into ourselves and our teaching. Reflective practice allows us to learn from our experiences and encourages us to work with our colleagues to share ideas that improve our teaching.

Facilitator's notes

- ◆ PPT: Familiarise yourself with the slide pack for the workshop.
- ◆ Discuss the post box comments and feedback from the previous workshop. Remind participants to 'post' any new comments and feedback during the workshop.
- ◆ Lead a discussion on the importance of reflective practice as part of our teaching.

The process of self-reflection is a cycle that needs to be repeated.

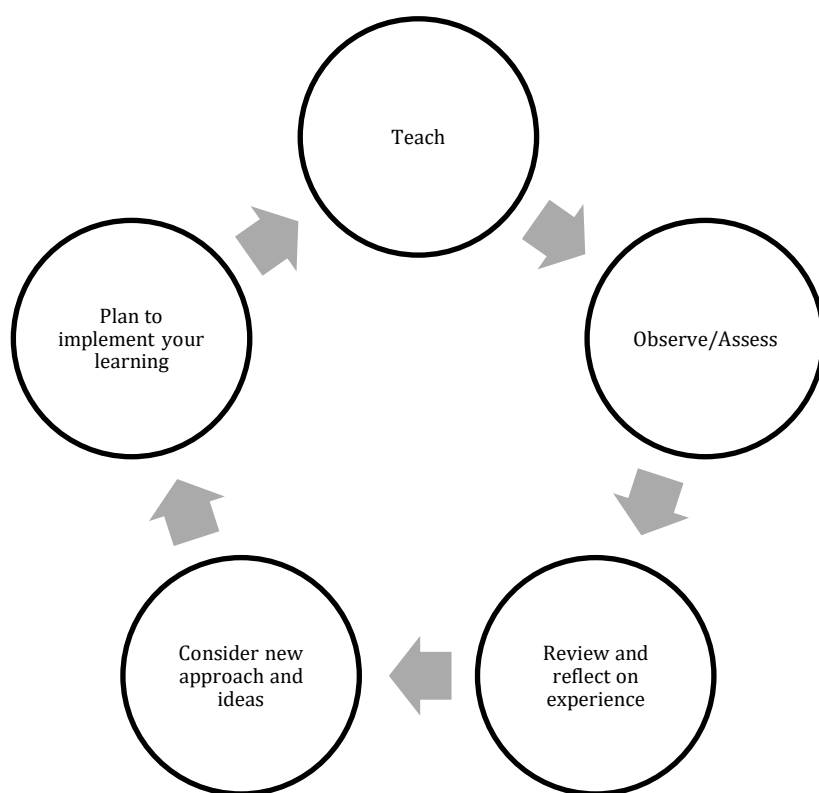


Figure 1: Stages of the reflection cycle

The process of self-reflection contains the following stages:

- ◆ Teach.
- ◆ Observe/assess.

Ukuvula nocamngco

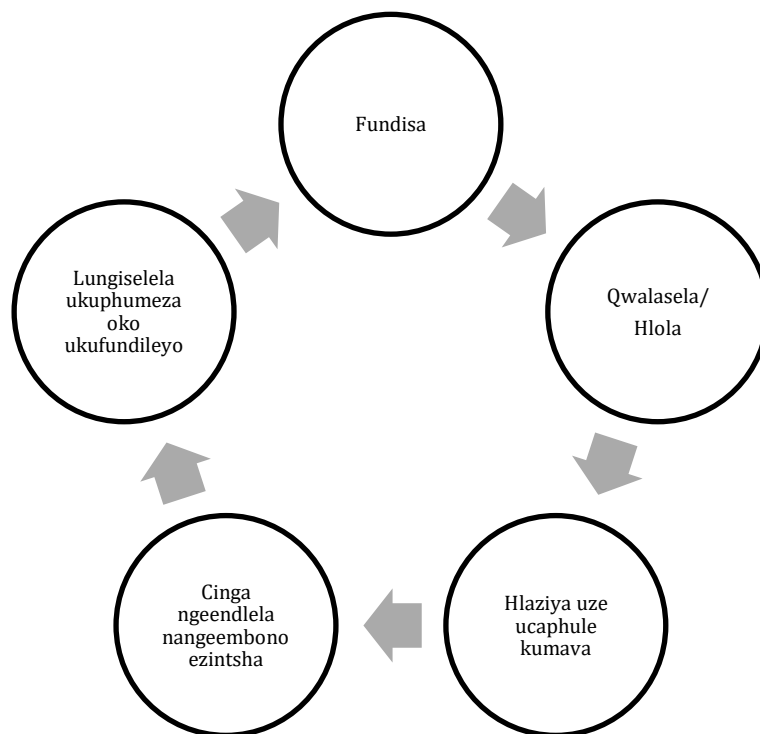
1 iyure

Xa sicinga kwaye sixoxa ngoko kusebenzileyo kwanokuba sihlangabezane njani na nemingeni esibe nayo ngexesha lokufundisa kwethu, oko kusenza sikwazi ukubona izakhono kwanokusilela kwethu. Ucamngco ngendlela esiqhuba ngayo singootitshala lusinceda ukuba sibe nokufumana iimbono ezintsha ngathi kwanendlela esifundisa ngayo. Ukusoloko sicamngca kusivumela ukuba sikwazi ukufunda kumava ethu kwaye kusikhuthazela ukuba sisebenzisane noogxa bethu ngokwabelana ngeembono zokuphucula indlela esifundisa ngayo.

Amanqaku ombhexeshi

- ◆ PPT: Ziqhelanise nomqulu weezilayidi zendibano yocweyo.
- ◆ Xoxa ngamanqaku akwibhokisi yeposi kunye nezimvo ezicatshulwe kwindibano yocweyo engaphambili. Khumbuza abathathinxaxheba ukuba 'bapose' amanqaku amatsha kunye nezimvo ngexesha lendibano yocweyo.
- ◆ Khokela ingxoxo engokubaluleka kokuziqhelanisa nokwenza ucamngco lubeyinxalenye yokufundisa kwakho.

Inkqubo yokuzihlola ingumjikelo ekufanele uphindaphindwe.



Umfanekiso 1: Amanqanaba omjikelo wokuzihlola

Le nkqubo yokuzihlola iqulethe la manqanaba alandelayo:

- ◆ Fundisa.
- ◆ Qwalasela/hlola.

- ◆ Review and reflect on how effective our teaching was, whether the lesson went well, what challenges emerged and whether the learners benefitted.
- ◆ Use the above information to consider new ways of teaching that could improve the quality of teaching and learning.
- ◆ Plan and implement new ideas and/or strategies in the classroom.

The cycle repeats after each teaching experience.

Reflection in implementation

Facilitator's notes

- ◆ Remind participants of the *Take back to school task* from the end of Workshop 10.
- ◆ Refer participants to **Activity 1** and read through the instructions aloud.
- ◆ Give each group a sheet of flipchart paper.
- ◆ Groups will present a summary of their discussion of the reflection cycle.

The *Take back to school task* from Workshop 10, required you to:

- ◆ Plan and implement Term 4 Weeks 1–3 of the Maths Programme.
- ◆ Write comments in the book that you use to keep track of each learner's progress (learner observation book), and to use the '**Check that learners are able to**' observation list during each of the teacher-guided activities to guide your observations and comments.
- ◆ Make notes of what worked well, what did not work well and how you resolved any challenges during your implementation of Term 4 Weeks 1–3.
- ◆ Bring your learner observation book and the notes you made when reflecting on each day's teaching to Workshop 11.



Activity 1

1. In your small group, consider each of the stages in the reflection cycle and discuss the *Take back to school task* from Workshop 10.
 - ◆ How successful was your planning and teaching in Term 4 Weeks 1–3?
 - ◆ Identify challenges and the strategies you used to resolve them.

- ◆ Hlaziya uze ucamngce ngendlela ekube yimpumelelo ngayo ukufundisa, nokuba isifundo eso siqhube kakuhle kusini na, yeyiphi imingeni ethe yakho kwanokuba abafundi baye bazuza kusini na.
- ◆ Sebenzisa olu lwazi lungasentla ukuqwalasela iindlela ezintsha zokufundisa ezinokuphucula izinga lokufundisa nelokufunda.
- ◆ Cwangcisa uze uphumeze iimbono kunye/okanye iindlela ezintsha eklasini. Umjikelo uyaphindwa emva kwesifundo ngasinye.

Ucamngco ngokuphunyezwa

Amanqaku ombhexeshi

- ◆ Khumbuza abathathinxaxheba ngo*Msebenzi ekubuyelwa nawo esikolweni* wasekupheleni kweNdibano yoCweyo 10.
- ◆ Bhekisa abathathinxaxheba ku*Msebenzi 1* uze ufunde imiyalelo ngokuvakalayo.
- ◆ Nika iqela ngalinye iphepha lefliptshathi.
- ◆ Amaqela azakunikela ngezishwankathelo zeengxoxo zawo ngomjikelo wokuzihlola.

Umsebenzi ekubuyelwa nawo esikolweni othathwe kwiNdibano yoCweyo 10, ubufuna ukuba wenze oku kulandelayo:

- ◆ Cwangcisa uze uphumeze iKota 4 iiVeki 1–3 zeNkqubo yeMathematika.
- ◆ Bhala amanqaku encwadini oyisebenzisela ukubhala inkqubela yomfundi ngamnye (incwadi yoqwalaselo lomfundi), uze usebenzise uluhlu lwengqwalasela phantsi ko-**‘Qwalasela ukuba abafundi bayakwazi uku-’** ngesihlandlo ngasinye semisebenzi ekhokelwa ngutitshala ukuze akhokele ingqwalasela kwanamanqaku owenzayileyo.
- ◆ Yenza amanqaku ngoko kusebenze kakuhle kunye noko kungaqhubanga kakuhle kwanendlela othe wahlangabezana nemingeni leyo ngayo ngelixa lokuphunyezwa kweKota 4 iiVeki 1–3.
- ◆ Yiza nencwadi yakho yoqwalaselo kunye namanqaku owenzileyo xa ubucamngca ngosuku ngalunye lokufundisa kwiNdibano yoCweyo 11.



Umsebenzi 1

1. Kumaqela enu amancinci, qwalaselani inqanaba ngalinye lomjikelo wokuzihlola nize nixoxe ngo*Msebenzi ekubuyelwa nawo esikolweni* wasekupheleni kweNdibano yoCweyo 10.
 - ◆ Kube yimpumelelo kangakanani ukulungiselela kwakho kwanokufundisa kwiKota 4 iiveki 1–3?
 - ◆ Balula imingeni kwaneendlela ozisebenzisileyo zokuyisombulula.

- ◆ Have you been able to observe each learner and record his/her progress? Give reasons and examples to support your answer.

2. Imagine that you have been asked by your Department Head to talk to the Grade R teachers at a cluster meeting.

- ◆ Refer to the reflection cycle in Figure 1.
- ◆ Draw the cycle on flipchart paper and add notes next to each stage of the cycle.
- ◆ Your group will present the main points of your discussion to the whole group.

Facilitator's notes

- ◆ Wrap up the discussion and address any questions raised.



Video 1

Watch the video of a group of teachers reflecting on their teaching and listen to their opinions about reflective practice.

1. Do you agree with their ideas about reflective practice? Explain your answer.

2. Does reflective practice increase your understanding of your teaching? Explain your answer.

3. Does reflective practice increase your understanding of learning in your class? Explain your answer.

4. Does reflective practice increase your engagement with colleagues? Explain your answer.

Facilitator's notes

- ◆ Invite comments and responses to the video.

- ◆ Ingaba ukwazile ukuqwalasela umfundi ngamnye uze urekhode inkqubela yakhe? Nika izizathu nemizekelo ukuxhasa impendulo yakho.
-
-

2. Cinga ngokucelwa kwakho yiNtloko yeSebe ukuba uyokuthetha nootitshala beBanga R kwindibano yeklasta.
 - ◆ Buyela kumjikelo wokuzihlola okuMfanekiso 1.
 - ◆ Zoba umjikelo kwiphepha lefliptshathi uze ufake amanqaku ecaleni kwenqanaba ngalinye lomjikelo.
 - ◆ Iqela lakho liza kunikezela ngamanqaku angundoqo engxoxo yenu kwiqela liphela.

Amanqaku ombhexeshi

- ◆ Qukumbela ingxoxo uze uphendule nayiphi na imibuzo ethe yavela.



Ividiyo 1

Bukela ividiyo yeqela lootitshala becamngca ngeendlela abafundisa ngazo uze umamele iibono zabo ngokuziqhelanisa nokuzihlola.

1. Ingaba uyavumelana neembono zabo ngokuziqhelanisa nokuzihlola? Cacisa impendulo yakho.

2. Ingaba ukuziqhelanisa nokuzihlola kuyayandisa ingqiqo yakho ngokufundisa? Cacisa impendulo yakho.

3. Ingaba ukuziqhelanisa nokuzihlola kuyayandisa ingqiqo yakho yokufunda eklasini? Cacisa impendulo yakho.

4. Ingaba ukuziqhelanisa nokuzihlola kuyakwandisa ukuphefumlelana noogxa bakho? Cacisa impendulo yakho.

Amanqaku ombhexeshi

- ◆ Cela ukuba bagqabaze kwaye bahlomle ngevidiyo.

Session 1: Review of the Maths Content Areas

1 hour

Facilitator's notes

- ◆ Divide the participants into 9 small groups. Allocate a space for each group to set up a table and wall display.
- ◆ Give each group flipchart paper, kokis, scissors and glue.
- ◆ Give one topic from Appendix B to each small group.
- ◆ Participants complete **Activity 2** in their small groups. Assist groups to ensure that content is accurate and that core concepts and skills are included in their presentation.
- ◆ Each group does a presentation to the whole group.
- ◆ After each presentation, draw the participants' attention to the main content focus. Address any issues that were raised or misconceptions that arose in the presentation.

In Sessions 1, 2 and 3 we will review our understanding and knowledge of the five CAPS Grade R Mathematics Content Areas and related topics. We will also discuss the teaching and approaches that form part of the Maths Programme we have been implementing.



Activity 2

1. Your group will prepare a presentation on a topic that the facilitator gives you.
 - ◆ You will have access to flipchart paper, kokis, scissors, glue and items from the *Resource Kit*. You will also be allocated a space in which to set up your presentation.
 - ◆ You need to refer to the *Concept Guide* and *Activity Guides* in your presentation.
2. Your presentation needs to include:
 - ◆ an overview of the content and how this is developed in Grade R
 - ◆ resources used to model concepts and represent ideas
 - ◆ appropriate learner activities for consolidating and applying new knowledge
 - ◆ areas of concern when teaching the topic
 - ◆ a table and wall display
 - ◆ examples of how learners would solve problems.
3. Your group will facilitate the discussion and answer questions from the whole group.

Ishoni 1: Ukuhlaziywa kweNkalo yoMxholo weMathematika

1 iyure

Amanqaku ombhexeshi

- ◆ Yahlula abathathinxaxheba babengamaqela ali9. Nika iqela ngalinye indawo elizakubeka kuyo itafile kunye nendawo yokuxhoma eludongeni.
- ◆ Nika iqela ngalinye iphepha lefliptshathi, iikhoki, isikere kunye neglu.
- ◆ Iqela ngalinye linike isihloko esinye esikwiSingeniso B.
- ◆ Abathathinxaxheba benza **Umsebenzi 2** kumaqela abo amancinci. Wancedise amaqela ukuqinisekisa ukuba umxholo uchanekile kwaye neekhonsepthi ezingundoqo kwanezakhono ziqukiwe kwiintetho zawo.
- ◆ Iqela ngalinye lenza intetho kwiqela elikhulu lilonke.
- ◆ Emva kwentetho nganye, tsalela umdla wabathathinxaxheba kowona mxholo kugxilwe kuwo. Phendula nayiphi na imiba okanye ukunqanda kakuhle okuthe kwavela xa bekusenziwa intetho.

KwiiSeshoni 1, 2 no3 sizakuqwalasela ingqiqo nolwazi lwethu ngeNkalo zoMxholo weMathematika yeBanga R zikaCAPS ezintlanu kunye nezihloko eziphathelelene nazo. Sizakuxoxa ngokufundisa nangeendlela eziyinxalenye yeNkqubo yeMathematika ebesiziphumeza.



Umsebenzi 2

1. Iqela lakho lizakulungiselela intetho engesihloko eso nisinikwe ngumbhexeshi.
 - ◆ Nizakufumana iphepha lefliptshathi, iikhoki, isikere, iglu nezinye izinto ezithathwe kwi*Kiti yeziXhobo*. Nizakunikwa nendawo enizakubonisa intetho yenu kuyo.
 - ◆ Kuzakufuneka nicaphule kwi*Sikhokelo seeKhonsepthi* kunye nakwi*Sikhokelo semiSebenzi* kwintetho yenu.
2. Intetho yenu kufuneka iquke:
 - ◆ amagqabantshintshi ngomxholo kunye nendlela ekuphuhliswa ngayo oku kwiBanga R
 - ◆ izixhobo ezisetyenzisiweyo ukumela iikhonsepthi kwanokuveza iibono
 - ◆ imisebenzi yabafundi efanelekileyo yokuyondelelanisa kwanokusebenzisa ulwazi olutsha
 - ◆ iinkalo ezixhalabisayo xa ufundisa isihloko eso
 - ◆ itafile kunye nendawo yokuxhoma eludongeni
 - ◆ imizekelo yendlela abafundi abazakuzisombulula ngayo iingxaki.
3. Iqela lakho lizakuququzelela ingxoxo lize liphendule imibuzo esuka kwiqela elikhulu.

Session 2: Maths Content Area presentations

1 hour

Facilitator's notes

- ◆ Each group makes its presentation to the whole group.
- ◆ After each group's presentation, draw participants' attention to the main content focus. Address any issues that were raised or misconceptions that arose in the presentation.

Each group will have 15 minutes to present their topic and respond to questions from the whole group.

Iseshoni 2: Ukunikezelwa kwentetho ngeNkalo yoMxholo weMathematika

1 iyure

Amanqaku ombhexeshi

- ◆ Iqela ngalinye lenza iintetho zalo kwiqela lonke.
- ◆ Emva kwentetho yeqela ngalinye, tsalela umdla wabathathinxaxheba kowoma mxholo kugxilwe kuwo. Sabela kuzo zonke iingxaki ezithe zaphakanyiswa okanye ukungaqondi okuye kwavela xa bekusenziwa iintetho.

Iqela ngalinye lizakuba nemizuzu eli-15 lokunikezela ngesihloko salo kwanokuphendula imibuzo evela kwiqela lilonke.

Session 3: Maths Content Area presentations (continued)

1 hour

Facilitator's notes

- ◆ Each group makes its presentation to the whole group.
- ◆ After each group's presentation, draw participants' attention to the main content focus. Address any issues that were raised or misconceptions that arose in the presentation.

Each group will have 15 minutes to present their topic and respond to questions from the whole group.

Iseshoni 3: Ukunikezelwa kwentetho ngeNkalo yoMxholo weMathematika (kuyaqhubeka) 1 iyure

Amanqaku ombhexeshi

- ◆ Iqela ngalinye lenza iintetho zalo kwiqela lilonke.
- ◆ Emva kwentetho yeqela ngalinye, tsalela umdla wabathathinxaxheba kowoma mxholo kugxilwe kuwo. Sabela kuzo zonke iingxaki ezithe zaphakanyiswa okanye ukungaqondi okuye kwavela xa bekusenziwa iintetho.

Iqela ngalinye lizakuba nemizuzu eli15 lokunikezela ngesihloko salo kwanokuphendula imibuzo evela kwiqela lilonke.

Session 4: Planning for teaching

1½ hours

This workshop session prepares participants for implementing Term 4 Weeks 4–6 and provides an opportunity for small groups to plan ahead. It is important to:

- ◆ address differences in learners’ levels of progress
- ◆ support those learners who need additional assistance
- ◆ provide enrichment activities for more advanced learners.

The goal is to ensure that all learners are competent in the Grade R Mathematics content and are well prepared for Grade 1.

Facilitator’s notes

- ◆ Move between the small groups as participants discuss the planning and preparation for teaching Term 4 Weeks 4–6 in **Activity 3**. Assist by making suggestions on overcoming challenges.
- ◆ Each small group plans the three weeks and completes the templates in Appendix A.
- ◆ Lead a whole-group discussion on differentiation and how to manage learners at different levels of competence. Write these ideas on flipchart paper.



Activity 3

1. In your group, complete the planning templates for Term 4 Weeks 4–6 (Appendix A).
2. Discuss how you will plan for and manage learners who have different levels of competence.

Ishoni 4: Ukucwangcisa ukufundisa

1½ iiyure

Le shoni yendibano yocweyo ilungiselela abathathinxaxheba ukuba bayokuphumeza iKota 4 iiVeki 4–6 ize ibonelele ngethuba lokuba amaqela amancinci azilungiselele kwangexesha. Kubalulekile uku-:

- ◆ hlangabezana nokwahluka kwamazinga enkqubela yabafundi
- ◆ nika inkxaso kubafundi abadinga uncedo olongezelelweyo
- ◆ bonelela ngemisebenzi yokwandisa kwabo bafundi abatshatshelayo.

Injongo kukuqinisekisa ukuba bonke abafundi banobuchule nolwazi lomxholo weMathematika yeBanga R kwaye balilungele iBanga 1.

Amanqaku ombhexeshi

- ◆ Hambahamba phakathi kwamaqela amancinci ngeli xesha abathathinxaxheba bexoxa ngesicwangciso nolungiselelo lokufundisa iKota 4 iiVeki 4–6 ku**Msebenzi 3**. Bancedise ngokubanika iingcebiso ukuze bakwazi ukukhawulelana nemingeni.
- ◆ Iqela elincinci lenza isicwangciso seeveki ezintathu lenze iithempleyithi ezikwiSingeniso A.
- ◆ Khokela ingxoxo yeqela lonke ngeyantluko kunye nokujongana nokwahluka kwamazinga esakhono sabafundi. Kubhale konke oku kwiphepha lefliptshathi.



Umsebenzi 3

1. Kwiqela lakho, yenzani iithempleyithi zeKota 4 iiVeki 4–6 (Isingeniso A).
2. Xoxa ngendlela ozakucwangcisa nozakujongana ngayo nabafundi abanamazinga ezakhono ezohlukeneyo.

Closing activities

30 minutes

Facilitator's notes

Workshop reflection:

- ◆ Ask participants to stand in two circles, one inside the other. Participants in the outer circle should stand facing inwards and participants in the inner circle should stand facing outwards.
- ◆ Participants take a few minutes to reflect on and discuss the workshop with the person opposite them. Invite them to mention highlights and also any questions they may have that have not yet been answered.
- ◆ Ask the inner circle to move one person to the right and to repeat the discussion. Repeat this a few times.
- ◆ Ask participants to volunteer something relevant that another participant mentioned to them.
- ◆ Encourage participants to add any comments and feedback not shared during the discussion to the post box.

Facilitator's notes

- ◆ **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.



Take back to school task

1. Invite other Grade R teachers at your school (or from another school) to join you in planning Term 4 Weeks 4–6 of the Maths Programme.
2. Implement these three weeks and use the reflection cycle (Figure 1) to review your experience. Write your reflections in a journal and bring it to the next workshop.

Evaluation

Complete the Evaluation Form.

Amanqaku ombhexeshi

Ucamngco ngendibano yocweyo:

- ◆ Cela abathathinxaxheba ukuba beme benze izangqa ezimbini, esinye sibengaphakathi kwesinye. Abathathinxaxheba abakwisangqa esingaphandle kufuneka beme bejonge ngaphakathi baze abo bakwisangqa esingaphakathi beme bejonge ngaphandle.
- ◆ Abathathinxaxheba bathatha imizuzu embalwa yokucamngca baze baxoxe ngendibano yocweyo nomntu abajongene naye. Bacele ukuba babalule iingongoma ezibalaseleyo kwanayo nayiphi na imibuzo abanayo engekaphenduleki.
- ◆ Cela abakwisangqa esingaphakathi ukuba batshintshe umntu omnye aze kwicala lakhe langasekunene baze baphinde ingxoxo. Kuphinde oku izihlandlo ezimbalwa.
- ◆ Cela abathathinxaxheba ukuba bazigqatse ekubaluleni okuthile okufanelekileyo okuthethwe kubo ngomnye wabathathinxaxheba.
- ◆ Khuthaza abathathinxaxheba ukuba bongeze nawaphi amanqaku kunye noko kungachazwanga ngexesha lengxoxo bakufake kwibhokisi yeposi.

Amanqaku ombhexeshi

- ◆ **Umsebenzi ekubuyelwa nawo esikolweni:** Fundisisa lo msebenzi. Buza ukuba ikhona na into engacacanga efuna ukucaciswa banzi.
- ◆ **Uhlolo:** Gqithisa iikopi zeFomu yokuHlola yeNdibano yoCweyo uze ucele abathathinxaxheba ukuba bayigcwalise.
- ◆ **Indibano yocweyo elandelayo:** Chaza imihla yendibano yocweyo elandelayo uze uyivale indibano yocweyo.



Umsebenzi ekubuyelwa nawo esikolweni

1. Mema ootitshala beBanga R esikolweni sakho (okanye abakwesinye isikolo) bakujoyine ekwenzeni isicwangciso seKota 4 iiVeki 4–6 zeNkqubo yeMathematika.
2. Phumeza ezi veki zintathu uze usebenzise umjikelelo wakho wokuzihlola (Umfanekiso 1) ukuhlaziya amava akho. Bhala ucamngco lwakho kwijenali kwaye uze nayo kwindibano yocweyo elandelayo.

Uhlolo

Gcwalisa iFomu yoHlolo.

APPENDIX A: TERM 4 WEEKLY PLANNING TEMPLATE

Term 4: Activity Plan: Week ____

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

ISINGENISO A: ITHEMPLEYITHI YESICWANGCISO SEVEKI NEVEKI YEKOTA 4

Ikota 4: Isicwangciso semiSebenzi: Ivekhi ____

INKALO YOMXHOLO:				
ISIHLOKO:				
YAZISA ULWAZI OLUTSHA:				
ZIQHELISE:				
Imisebenzi yeklasi yonke		Umsebenzi okhokelwa ngutitshala	Imisebenzi yesitishi sokusebenzela (imisebenzi ezimeleyo yamaqela amancinci)	
Usuku 1			Umsebenzi 1	
Usuku 2			Umsebenzi 2	
Usuku 3			Umsebenzi 3	
Usuku 4			Umsebenzi 4	
Usuku 5				

Term 4: Activity Plan: Week __

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

Ikota 4: Isicwangciso semiSebenzi: Iveki ____

INKALO YOMXHOLO:				
ISIHLOKO:				
YAZISA ULWAZI OLUTSHA:				
ZIQHELISE:				
Imisebenzi yeklasi yonke		Umsebenzi okhokelwa ngutitshala	Imisebenzi yesitishi sokusebenzela (imisebenzi ezimeleyo yamaqela amancinci)	
Usuku 1			Umsebenzi 1	
Usuku 2			Umsebenzi 2	
Usuku 3			Umsebenzi 3	
Usuku 4			Umsebenzi 4	
Usuku 5				

Term 4: Activity Plan: Week ____

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

Ikota 4: Isicwangciso semiSebenzi: Iveki ____

INKALO YOMXHOLO:				
ISIHLOKO:				
YAZISA ULWAZI OLUTSHA:				
ZIQHELISE:				
Imisebenzi yeklasi yonke		Umsebenzi okhokelwa ngutitshala	Imisebenzi yesitishi sokusebenzela (imisebenzi ezimeleyo yamaqela amancinci)	
Usuku 1			Umsebenzi 1	
Usuku 2			Umsebenzi 2	
Usuku 3			Umsebenzi 3	
Usuku 4			Umsebenzi 4	
Usuku 5				

APPENDIX B: ACTIVITY 2 TOPICS

Topic 1: Number concept development and counting (Numbers, Operations and Relationships)

Prepare a presentation that includes:

- ◆ a mapping of the main concepts/skills on flipchart paper
- ◆ how this topic is taught in Grade R
- ◆ a display with concrete objects, pictures and 'examples' of learners' work to support your discussion
- ◆ important points to note about this topic.

You will need to facilitate a discussion and answer questions from the whole group.

Points to consider in your presentation:

- ◆ What is number concept?
- ◆ How do children acquire number concept?
What does counting involve? Refer to:
 - the difference between sequencing number names and counting objects
 - matching one-to-one
 - comparing groups in terms of 'more than', 'less than', 'fewer than' and 'the same number as'
 - cardinal and ordinal numbers from 1–10
 - introducing the concept of the empty set with the number word 'zero' and number symbol '0'.
- ◆ What is the value of representing number in multiple ways? Provide and explain concrete examples.
- ◆ Discuss estimation in relation to the development of number concept.

Refer to the *Concept Guide* and *Activity Guides* for examples of activities, and discuss how these were implemented in the classroom.

Topic 2: Calculations (Numbers, Operations and Relationships)

Prepare a presentation that includes:

- ◆ a mapping of the main concepts/skills on flipchart paper
- ◆ how this topic is taught in Grade R
- ◆ a display with concrete objects, pictures and 'examples' of learners' work to support your discussion
- ◆ important points to note about this topic.

You will need to facilitate a discussion and answer questions from the whole group.

ISINGENISO B: IZIHLOKO ZOMSEBENZI 2

Isihloko 1: Ukuphuhlisa kwengqikelelomanani kunye nokubala (Amanani, iiOpareyshini noLwalamano)

Lungiselela ukunikezela ngentetho equka:

- ◆ ukondlalwa kwekhonsepthe engundoqo/izakhono kwiphepha lefliptshathi
- ◆ indlela esi sihloko esifundiswa ngayo kwiBanga R
- ◆ ukubonakaliswa kwezinto eziphathekayo, imifanekiso kunye 'nemizekelo' yemisebenzi 'yabafundi' ukuxhasa ingxoxo yakho
- ◆ amanqaku abalulekileyo emawaqatshelwe phantsi kwesi sihloko.

Kuzakufuneka uququzelele ingxoxo uze uphendule imibuzo esuka kwiqela lilonke.

Amanqaku ekufanele uwaqwalasele kwintetho yakho:

- ◆ Iyintoni ingqikelelomanani?
- ◆ Abantwana bayifumana njani ingqikelelomanani?

Ukubala kuquka ntoni? Jonga:

- umahluko phakathi kokulandelelanisa amagama amanani kunye nezixhobo zokubala
- ngokutshatisa enye nenye
- ukuthelekisa amaqela ngokuphathelele ku- 'ngaphezu kwe-', 'ngaphantsi kwe-', 'mbalwa kuna-' kunye 'nokulingana ne-'
- amanani entsusa namanani esingaphi ukusuka ku1-10
- ukwazisa ikhonsepthe yesethi engenanto negama lenani 'uziro' kunye nesimboli yenani u'0'.
- ◆ Lithini ixabiso lokumela inani ngeendlela ezahlukeneyo? Nika uze ucacise ngemizekelo ephathekayo.
- ◆ Xoxa ngothekelelo ngokuphathelele ekuphuhliseni kwengqikelelomanani.

Bhekisa kwi*Sikhokelo seeKhonsepthe nakwisiKhokelo semiSebenzi* ukufumana imizekelo yemisebenzi, uze uxoxe ngendlela ethe yaphunyezwa ngayo eklasini.

Isihloko 2: Ubalo (Amanani, iiOpareyshini noLwalamano)

Lungiselela ukunikezela ngentetho equka:

- ◆ ukondlalwa kwekhonsepthe engundoqo/izakhono kwiphepha lefliptshathi
- ◆ indlela esi sihloko esifundiswa ngayo kwiBanga R
- ◆ ukubonakaliswa kwezinto eziphathekayo, imifanekiso kunye 'nemizekelo' yemisebenzi 'yabafundi' ukuxhasa ingxoxo yakho
- ◆ amanqaku abalulekileyo emawaqatshelwe phantsi kwesi sihloko.

Kuzakufuneka uququzelele ingxoxo uze uphendule imibuzo esuka kwiqela lilonke.

Points to consider in your presentation:

- ◆ Breaking down numbers and building up numbers.
- ◆ Representing partitioned groups of objects.
- ◆ Introducing the concept of addition as combining two collections.
- ◆ Introducing the concept of subtraction as taking away from a collection.
- ◆ Comparing two collections of objects by matching one-to-one to find the difference.
- ◆ Using the number washing line and a jumping track to solve addition problems – ‘adding on’ or ‘counting on’.
- ◆ Using the number washing line and a jumping track to solve subtraction problems – ‘counting back’.
- ◆ Introducing the concept of equal sharing and grouping.
- ◆ Promoting rapid recall and number facts.

Refer to the *Concept Guide* and *Activity Guides* for examples of activities, and discuss how these were implemented in the classroom.

Topic 3: Patterns, Functions and Algebra

Prepare a presentation that includes:

- ◆ a mapping of the main concepts/skills on flipchart paper
- ◆ how this topic is taught in Grade R
- ◆ a display with concrete objects, pictures and ‘examples’ of learners’ work to support your discussion
- ◆ important points to note about this topic.

You will need to facilitate a discussion and answer questions from the whole group.

Points to consider in your presentation:

- ◆ Introducing the idea of a repeated pattern.
- ◆ Identifying the pattern unit.
- ◆ Explaining the meaning of ‘variable’ and what is appropriate in Grade R.
- ◆ Making linear patterns with one variable.
- ◆ Discuss the process of introducing pattern in Grade R. Provide concrete and pictorial examples to support your discussion.

Refer to the *Concept Guide* and *Activity Guides* for examples of activities, and discuss how these were implemented in the classroom.

Amanqaku ekufanele uwaqwalasele kwintetho yakho:

- ◆ Ukuqhekeza amanani kunye nokwakha amanani.
- ◆ Ukumela amaqela ezinto ohluliweyo.
- ◆ Ukwazisa ikhonsepthe yokudibanisa njengokudibanisa iingqokelela ezimbini.
- ◆ Ukwazisa ikhonsepthe yokuthabatha njengokususa kwingqokelela.
- ◆ Ukuthelekisa iingqokelela ezimbini zezinto ngokutshatisa enye kwenye ukufumana umahluko.
- ◆ Ukusebenzisa ucongo lokoneka amanani kunye nomzila wokuxhuma ukusombulula iingxaki zokudibanisa – ‘ukongeza’ okanye ‘ukuqhubeka ubala’.
- ◆ Ukusebenzisa ucingo lokoneka amanani kunye nomzila wokuxhuma ukusombulula iingxaki zokuthabatha – ‘ukubala ubuyela umva’.
- ◆ Ukwazisa ikhonsepthe yokwabelana ngokulinganayo nokubeka ngokwamaqela.
- ◆ Ukukhuthaza ukukhawuleza ukhumbule kunye neenyani ngamanani.

Bhekisa kwisi*Khokelo seeKhonsepthe* nakwisi*Khokelo semiSebenzi* ukufumana imizekelo yemisebenzi, uze uxoxe ngendlela ethe yaphunyezwa ngayo eklasini.

Isihloko 3: IiPateni, iiFanshini neAljibhra

Lungiselela ukunikezela ngentetho equka:

- ◆ ukondlalwa kwekhonsepthe engundoqo/izakhono kwiphepha lefliptshathi
- ◆ indlela esi sihloko esifundiswa ngayo kwiBanga R
- ◆ ukubonakaliswa kwezinto eziphathekayo, imifanekiso kunye ‘nemizekelo’ yemisebenzi ‘yabafundi’ ukuxhasa ingxoxo yakho
- ◆ amanqaku abalulekileyo emawaqatshelwe phantsi kwesi sihloko.

Kuzakufuneka uququzelele ingxoxo uze uphendule imibuzo esuka kwiqela lilonke.

Amanqaku ekufanele uwaqwalasele kwintetho yakho:

- ◆ Ukwazisa ngoluvo lwepateni ephindaphindiweyo.
- ◆ Ukwalatha iyunithi yepateni.
- ◆ Ukucacisa intsingiselo ‘yenguqulelo’ kwanoko kufanelekileyo kwiBanga R.
- ◆ Ukwenza iipateni ezikrozileyo usebenzisa inguqulelo enye.
- ◆ Xoxa ngenkqubo yokwazisa ipateni kwiBanga R. Bonelela ngemizekelo ephathekayo neyimifanekiso ukuxhasa ingxoxo yakho.

Jonga kwisi*Khokelo seeKhonsepthe* nakwisi*Khokelo semiSebenzi* ukufumana imizekelo yemisebenzi, uze uxoxe ngendlela ethe yaphunyezwa ngayo eklasini.

Topic 4: Space and Shape (Geometry)

Prepare a presentation that includes:

- ◆ a mapping of the main concepts/skills on flipchart paper
- ◆ how this topic is taught in Grade R
- ◆ a display with concrete objects, pictures and 'examples' of learners' work to support your discussion
- ◆ important points to note about this topic.

You will need to facilitate a discussion and answer questions from the whole group.

Points to consider in your presentation:

- ◆ Discovering the general properties of 2-D shapes and 3-D objects.
- ◆ Collecting shapes and objects that have these shapes on their faces.
- ◆ Sorting shapes and objects and describing the 'rule' (criterion) for sorting.
- ◆ Introducing symmetry.
- ◆ Making symmetrical shapes with one or two lines of symmetry through drawing, folding and cutting.

Refer to the *Concept Guide* and *Activity Guides* for examples of activities, and discuss how these were implemented in the classroom.

Topic 5: Measurement

Prepare a presentation that includes:

- ◆ a mapping of the main concepts/skills on flipchart paper
- ◆ how this topic is taught in Grade R
- ◆ a display with concrete objects, pictures and 'examples' of learners' work to support your discussion
- ◆ important points to note about this topic.

You will need to facilitate a discussion and answer questions from the whole group.

Points to consider in your presentation:

- ◆ Using vocabulary associated with time.
- ◆ Ordering (sequencing) events and activities according to the time at which they take place.
- ◆ Comparing objects according to their size.
- ◆ Identifying the attribute to be measured.

Isihloko 4: IsiThuba neMilo (ijiyometri)

Lungiselela ukunikezela ngentetho equka:

- ◆ ukondlalwa kwekhonsepthe engundoqo/izakhono kwiphepha lefliptshathi
- ◆ indlela esi sihloko esifundiswa ngayo kwiBanga R
- ◆ ukubonakaliswa kwezinto eziphathekayo, imifanekiso kunye 'nemizekelo' yemisebenzi 'yabafundi' ukuxhasa ingxoxo yakho
- ◆ amanqaku abalulekileyo emawaqatshelwe phantsi kwesi sihloko.

Kuzakufuneka uququzelele ingxoxo uze uphendule imibuzo esuka kwiqela lilonke.

Amanqaku ekufanele uwaqwalasele kwintetho yakho:

- ◆ Ukufumanisa ngeempawu zesiqhelo zeemilo ezingu2-D nezinto ezingu3-D.
- ◆ Ukuqokelela iimilo nezinto ezinezi milo kwiimbuso zazo.
- ◆ Ukuhlela iimilo nezinto kwanokuchaza 'umgaqo' (indlela) yokuzihlela.
- ◆ Ukwazisa isimetri.
- ◆ Ukwenza iimilo zesimetri ezinomngca omnye, okanye emibini yesimetri ngokuyizoba, ukusonga nangokuyisika.

Jonga kwisi*Khokelo seeKhonsepthe* nakwisi*Khokelo semiSebenzi* ukufumana imizekelo yemisebenzi, uze uxoxe ngendlela ethe yaphunyezwa ngayo eklasini.

Isihloko 5: Umlinganiselo

Lungiselela ukunikezela ngentetho equka:

- ◆ ukondlalwa kwekhonsepthe engundoqo/izakhono kwiphepha lefliptshathi
- ◆ indlela esi sihloko esifundiswa ngayo kwiBanga R
- ◆ ukubonakaliswa kwezinto eziphathekayo, imifanekiso kunye 'nemizekelo' yemisebenzi 'yabafundi' ukuxhasa ingxoxo yakho
- ◆ amanqaku abalulekileyo emawaqatshelwe phantsi kwesi sihloko.

Kuzakufuneka uququzelele ingxoxo uze uphendule imibuzo esuka kwiqela lilonke.

Amanqaku ekufanele uwaqwalasele kwintetho yakho:

- ◆ Usebenzisa isigama esinxulumene nexesha.
- ◆ Ukuhlela (ukulandelelanisa) iziganeko okanye imisebenzi ngokwexesha ezenzeke ngalo.
- ◆ Ukuthelekisa izinto ngokobungakanani bazo.
- ◆ Ukwalatha i-athribhyuthi ezakulinganiswa.

- ◆ Using maths vocabulary to compare height, length and width.
- ◆ Using maths vocabulary to compare the mass of different objects.
- ◆ Using maths vocabulary to compare capacity and volume.
- ◆ Explain what non-standard measurement is and how it relates to each of the following Measurement topics:
 - time
 - length
 - mass
 - capacity/volume.

Refer to the *Concept Guide* and *Activity Guides* for examples of activities, and discuss how these were implemented in the classroom.

Topic 6: Data Handling

Prepare a presentation that includes:

- ◆ a mapping of the main concepts/skills on flipchart paper
- ◆ how this topic is taught in Grade R
- ◆ a display with concrete objects, pictures and 'examples' of learners' work to support your discussion
- ◆ important points to note about this topic.

You will need to facilitate a discussion and answer questions from the whole group.

Points to consider in your presentation:

- ◆ Direct representation of situations using learners, objects and pictures.
- ◆ How does the idea of one-to-one matching relate to representing information/data in pictures or pictographs?
- ◆ What is the purpose of the pictures in the bottom row of the pictograph?
- ◆ What is the advantage of arranging the pictures in columns?
- ◆ Why do the pictures need to be the same size?
- ◆ Why do the pictures have to be evenly spaced?
- ◆ Discuss interpreting the information on a pictograph.

Refer to the *Concept Guide* and *Activity Guides* for examples of activities, and discuss how these were implemented in the classroom.

- ◆ Ukusebenzisa isigama semathematika ukuthelekisa umphakamo, ubude nobubanzi.
- ◆ Ukusebenzisa isigama semathematika ukuthelekisa ubunzima bezinto ezahlukileyo.
- ◆ Ukusebenzisa isigama semathematika ukuthelekisa umthamo nevolumu.
- ◆ Cacisa ukuba imilinganiselo engekho sikweni iyintoni kwaye inxulumene njani na nesihloko ngasinye soMlinganiselo kwezi zilandelayo:
 - ixesha
 - ubude
 - ubunzima
 - umthamo/ivolumu.

Jonga kwisiKhokelo seeKhonsepthe nakwisiKhokelo semiSebenzi ukufumana imizekelo yemisebenzi, uze uxoxe ngendlela ethe yaphunyezwa ngayo eklasini.

Isihloko 6: Ulwazi Oluqokelelweyo

Lungiselela ukunikezela ngentetho equka:

- ◆ ukondlalwa kwekhonsepthe engundoqo/izakhono kwiphepha lefliptshathi
- ◆ indlela esi sihloko esifundiswa ngayo kwiBanga R
- ◆ ukubonakaliswa kwezinto eziphathekayo, imifanekiso kunye 'nemizekelo' yemisebenzi 'yabafundi' ukuxhasa ingxoxo yakho
- ◆ amanqaku abalulekileyo emawaqatshelwe phantsi kwesi sihloko.

Kuzakufuneka uququzelele ingxoxo uze uphendule imibuzo esuka kwiqela lilonke.

Amanqaku ekufanele uwaqwalasele kwintetho yakho:

- ◆ Jolisa iintetho zeemeko ngokusebenzisa abafundi, izinto kunye nemifanekiso.
- ◆ Uluvo lokutshatisa enye nanye lunxibelelana njani nokuveza ulwazi/iinkcukacha ezisemifanekisweni okanye iigrafu zemifanekiso?
- ◆ Iyintoni injongo yemifanekiso ekumqolo osezantsi kwigrafu yemifanekiso?
- ◆ Iyintoni inzuzo yokubekwa kwemifanekiso ngokweekholamu?
- ◆ Kutheni kufuneka imifanekiso ibebubukhulu obulinganayo?
- ◆ Kutheni imifanekiso kufuneka iqaqelane ngokulinganayo?
- ◆ Xoxa ngokutolikwa kweenkcukacha ezikwigrafu yemifanekiso.

Jonga kwisiKhokelo seeKhonsepthe nakwisiKhokelo semiSebenzi ukufumana imizekelo yemisebenzi, uze uxoxe ngendlela ethe yaphunyezwa ngayo eklasini.

Topic 7: Classroom management

Prepare a presentation that includes:

- ◆ a mapping of this topic on flipchart paper
- ◆ this topic in relation to Grade R
- ◆ a display with concrete objects, pictures and 'examples' of learners' work to support your discussion
- ◆ important points to note about this topic.

You will need to facilitate a discussion and answer questions from the whole group.

Points to consider in your presentation:

- ◆ How do you create a stimulating learning environment? Refer to:
 - the classroom walls
 - the classroom floor space
 - the carpet area
 - the maths area.
- ◆ How do you manage and arrange resources (concrete apparatus) in the classroom?
- ◆ Describe how teaching in whole class and small groups is implemented.
- ◆ Outline the different types of planning that are required for successful teaching and learning.
- ◆ How are different levels of learner competence managed?

Refer to the *Concept Guide* and *Activity Guides* to support your discussion.

Topic 8: Assessment

Prepare a presentation that includes:

- ◆ a mapping of this topic on flipchart paper
- ◆ this topic in relation to Grade R
- ◆ a display with concrete objects, pictures and 'examples' of learners' work to support your discussion
- ◆ important points to note about this topic.

You will need to facilitate a discussion and answer questions from the whole group.

Points to consider in your presentation:

- ◆ What forms of assessment are implemented in Grade R?
- ◆ Describe how these are used for tracking learner progress and for reporting purposes.

Isihloko 7: Ulawulo lweklasi

Lungiselela ukunikezela ngentetho equka:

- ◆ ukondlalwa kwesihloko kwiphepha lefliptshathi
- ◆ esi sihloko ngokuphathelele kwiBanga R
- ◆ ukubonakaliswa kwezinto eziphathekayo, imifanekiso kunye 'nemizekelo' yemisebenzi 'yabafundi' ukuxhasa ingxoxo yakho
- ◆ amanqaku abalulekileyo emawaqatshelwe phantsi kwesi sihloko.

Kuzakufuneka uququzelele ingxoxo uze uphendule imibuzo esuka kwiqela lilonke.

Amanqaku ekufanele uwaqwalasele kwintetho yakho:

- ◆ Uyidala njani imeko yokufunda ekhuthazayo? Bhekisa ku-:
 - madonga eklasi
 - indawo ephantsi emgangathweni weklasi
 - indawo enekhaphethi
 - indawo yemathematika.
- ◆ Uzilawula uze uzibeke njani izixhobo (izixhobo ezibambekayo) kwigumbi lokufundela?
- ◆ Chaza ukuba kuphunyezwa njani na ukufundisa kwiklasi yonke nakumaqela amancinci.
- ◆ Bonisa iindidi ezahlukileyo zokucwangcisa ezidingekayo ukuze ukufundisa nokufunda kube yimpumelelo.
- ◆ Imigangatho yezakhono zabafundi ezahlukileyo ilawulwa njani?

Caphula kwisi*Khokelo seeKhonsepthe* kunye nesi*Khokelo semiSebenzi* ukuxhasa ingxoxo yakho.

Isihloko 8: Uhlolo

- ◆ Lungiselela ukunikezela ngentetho equka:
- ◆ ukondlalwa kwesi sihloko kwiphepha lefliptshathi
- ◆ indlela esi sihloko esifundiswa ngayo kwiBanga R
- ◆ ukubonakaliswa kwezinto eziphathekayo, imifanekiso kunye 'nemizekelo' yemisebenzi 'yabafundi' ukuxhasa ingxoxo yakho
- ◆ amanqaku abalulekileyo emawaqatshelwe phantsi kwesi sihloko.

Kuzakufuneka uququzelele ingxoxo uze uphendule imibuzo esuka kwiqela lilonke.

Amanqaku ekufanele uwaqwalasele kwintetho yakho:

- ◆ Zeziphi iindidi zohlolo eziphunyezwayo kwiBanga R?
- ◆ Chaza indlela ezisetyenziswa ngayo ukulandela inkqubela yomfundi kwanokulungiselela iinjongo zokunika ingxelo.

- ◆ Provide examples and illustrations to support your presentation.
- ◆ Describe in detail one learner's solution to a word problem and describe how you would use a rubric to assess this learner.
- ◆ Clarify the use of checklists.
- ◆ How do the various forms of assessment, guide our reporting to parents?

Refer to the *Concept Guide* and *Activity Guides* to support your discussion.

Topic 9: Problem solving

Prepare a presentation that includes:

- ◆ a mapping of the main concepts/skills on flipchart paper
- ◆ how this topic is taught in Grade R
- ◆ a display with concrete objects, pictures and 'examples' of learners' work to support your discussion
- ◆ important points to note about this topic.

You will need to facilitate a discussion and answer questions from the whole group.

Points to consider in your presentation:

- ◆ What does problem solving involve in Grade R?
- ◆ What are the language considerations involved in framing word problems?
- ◆ Why is problem solving included in Grade R?
- ◆ What skills do learners need to develop to become successful problem solvers?
- ◆ Give examples of different kinds of word problems that could be presented in Grade R.
- ◆ What strategies or techniques do Grade R learners use when solving word problems?
- ◆ What is the teacher's role?

Refer to the *Concept Guide* and *Activity Guides* for examples of activities, and discuss how these were implemented in the classroom.

- ◆ Nika imizekelo kunye nemizobo ukuxhasa intetho yakho.
- ◆ Chaza ngokunika iinkcukacha zendlela umfundi omnye ayisombulula ngayo ingxaki yamagama uze uchaze indlela ongayisebenzisa ngayo irubhrikhi ukuhlola lo mfundi.
- ◆ Cacisa ngokusetyenziswa kwetshekhlisti.
- ◆ Ingaba iindidi ezahlukileyo zokuhlola zikukhokela njani ukunikwa kwethu ingxelo ebazalini?

Caphula kwisi*Khokelo seeKhonsepthe* nakwisi*Khokelo seMisebenzi* ukuxhasa ingxoxo yakho.

Isihloko 9: Ukusombulula iingxaki

Lungiselela ukunikezela ngentetho equka:

- ◆ ukondlalwa kwekhonsepthe engundoqo/izakhono kwiphepha lefliptshathi
- ◆ indlela esi sihloko esifundiswa ngayo kwiBanga R
- ◆ ukubonakaliswa kwezinto eziphathekayo, imifanekiso kunye 'nimizekelo' yemisebenzi 'yabafundi' ukuxhasa ingxoxo yakho
- ◆ amanqaku abalulekileyo emawaqatshelwe phantsi kwesi sihloko.

Kuzakufuneka uququzelele ingxoxo uze uphendule imibuzo esuka kwiqela lilonke.

Amanqaku ekufanele uwaqwalasele kwintetho yakho:

- ◆ Ukusombulula iingxaki kuquka ntoni kwiBanga R?
- ◆ Ingaba kokuphi ukuqwalaselwa kolwimi okubandakanyekayo ekuqulunqweni kweengxaki zamagama?
- ◆ Kutheni ukusombulula iingxaki kubandakanyiwe kwiBanga R?
- ◆ Zeziphi izakhono ekufanele baziphuhlise abafundi ukuze bakwazi ukuba ngabasombululi beengxaki abaphambili?
- ◆ Nika imizekelo yeendidi zeengxaki zamagama ezinokwenziwa kwiBanga R.
- ◆ Zeziphi iindlela okanye amaqhinga asetyenziswa ngabafundi beBanga R xa besombulula iingxaki zamagama?
- ◆ Iyintoni indima katitshala?

Jonga kwisi*Khokelo seeKhonsepthe* nakwisi*Khokelo semiSebenzi* ukufumana imizekelo yemisebenzi, uze uxoxe ngendlela ethe yaphunyezwa ngayo eklasini.

Workshop 11 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?

IFomu yokuHlola yeNdibano yoCweyo 11

1. Ingaba indibano yocweyo ifikelele koko ubukulindele?

2. Ufunde ntoni kule ndibano yocweyo ekuncede kakhulu?

3. Ingaba ikhona into ongakhange uyithande okanye obenobunzima bokuyiqonda?

4. Uzakukusebenzisa njani oko ukufundileyo apha kwiklasi yakho yeBanga R?

5. Ingaba unazo iingcebiso zokuphucula nangakumbi iindibano zocweyo?
