



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 1 • Workshop 1
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.

ISchools 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 ngeziqinisekiso 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
Ulungelelaniso 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
House rules	page 8
Preparation	page 8
Materials	page 8

Workshop content

Session 1: Orientation to the Maths Programme	page 10
Session 2: Numbers, Operations and Relationships	page 38
Session 3: Implementing the five-group teaching model	page 54
Appendix A: The Guiding Principles of Teaching Maths in Grade R	page 66
Appendix B: Term 1 Weekly Content Summary (Weeks 1–2)	page 70
Appendix C: Number 1 frieze cards	page 72
Workshop 1 Evaluation Form	page 76

Isiqulatho

Amagqabantshintshi

Injongo	iphepha 7
Iziphumo zokufunda	iphepha 7
Umxholo wendibano yocweyo	iphepha 7
Imigaqo ekuzakusetyenzwa ngayo	iphepha 9
Ulungiselelo	iphepha 9
Iimathiriyeli	iphepha 9

Umxholo weNdibano yoCweyo

Iseshoni 1: Ukwaziswa kwiNkqubo yeMathematika	iphepha 11
Iseshoni 2: Amanani, iiOpareyshini noLwalamano	iphepha 39
Iseshoni 3: Ukuphumeza imodeli yokufundisa enguqelantlanu	iphepha 55

Isingeniso A: Imigaqo ekhokelayo yokufundisa imathematika kwiBanga R	iphepha 67
---	------------

Isingeniso B: Ikota 1 Isishwankathelo soMxholo weVeki neVeki (Iiveki 1–2)	iphepha 71
--	------------

Isingeniso C: Amakhadi efrizi yenani 1	iphepha 73
IFomu yokuHlola yeNdibano yoCweyo 1	iphepha 77

Overview

Purpose

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

Participants will receive information on the components and guiding principles of teaching mathematics in Grade R. They will reflect on and discuss these within the context of their own planning and teaching. Participants will also review the Curriculum and Assessment Policy Statement (CAPS) Grade R Mathematics Content Areas. They will plan the daily programme Mathematics focus time for the first two weeks of Term 1. Throughout the workshop they will reflect on the guiding principles that inform teaching and learning.

*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

Mathematics is the formal subject name, but in this *Facilitator's Guide* and during our discussions we will refer to it as 'maths'. (Read more about this on page 10 of the *Concept Guide*.)

Learning outcomes

- ◆ To become familiar with the Maths Programme and how it supports and extends the content of CAPS Grade R Mathematics
- ◆ To explore the components of the Maths Programme
- ◆ To understand the teaching principles presented in the Maths Programme
- ◆ To plan a Term 1 week based on the five-group teaching model
- ◆ To engage with the Maths Programme content of Term 1 Weeks 1–2 (Numbers, Operations and Relationships)

Workshop content

- ◆ Session 1: Orientation to the Maths Programme (2 hours)
TEA
- ◆ Session 2: Numbers, Operations and Relationships (2 hours)
LUNCH
- ◆ Session 3: Implementing the five-group teaching model (2 hours)

Amagqabantshintshi

Injongo

Le yeyokuqala 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)).

Abathathinxaxheba bazakufumana iinkcukacha ngeekhomponenti kwanemigaqo ekhokelayo yokufundiswa kwemathematika kwiBanga R. Bazakucaphula baze baxoxe ngayo ngokweemeko zocwangciso kwanokufundisa kwabo. Abathathinxaxheba bazakuphinda bahlaziye iNkcazelo yePolisi yeKharithyulam nokuHlola (CAPS) iNkalo yomXholo yeMathematika yeBanga R. Bazakucwangcisa ixesha ekuza kugxilwa kulo lenkqubo yemila ngemihla yeMathematika kwiiveki ezimbini zokuqala zeKota 1. Ngalo lonke ixesha lendibano yocweyo bazakuxoxa ngemigaqo ekhokelayo efuthela ukufundisa nokufunda.

*iNkalo zoMxholo zeMathematika yeBanga R zithathwe kwiCurriculum and Assessment Policy Statement (CAPS): Grade R Mathematics (Final Draft), 2011, iSebe leMfundo esiSiseko, yaseMzantsi Afrika

Iziphumo zokufunda

- ◆ Ukuyazi ngcono iNkqubo yeMathematika kwanokuba iwuxhasa ize iwandise njani na umxholo kaCAPS weMathematika yeBanga R
- ◆ Ukuqwalasela iikhomponenti zenkqubo yeMathematika
- ◆ Ukuqonda imigaqo yokufundisa edandalaziswe kwiNkqubo yeMathematika
- ◆ Ukucwangcisa iveki yeKota 1 esekelwe kwimodeli yokufundisa kaqelantlanu
- ◆ Ukunxibelelana nomxholo weNkqubo yeMathematika kaKota 1 iiveki 1–2 (Amanani, iiOpareyshini noLwalamano)

Umxholo wendibano yocweyo

- ◆ Iseshoni 1: Ukwaziswa kwiNkqubo yeMathematika (2 iiyure)
ITI
- ◆ Iseshoni 2: Amanani, iiOpareyshini noLwalamano (2 iiyure)
ISIDLO SASEMINI
- ◆ Iseshoni 3: Ukuphumeza imodeli yokufundisa enguqelantlanu (2 iiyure)

House rules

- ◆ Be punctual.
- ◆ Turn off your cellphone during sessions.
- ◆ Give everyone a chance to participate.
- ◆ Listen to each other's ideas.

Preparation

- ◆ PPT presentations
- ◆ Read:
Concept Guide, pages 114–117
Activity Guide: Term 1, pages 18–21
Appendix B: Term 1 Weekly Content Summary
- ◆ Set out a Maths Programme *Resource Kit*, kokis and paper on each group's table.
- ◆ Prepare the number frieze story and gather materials.
- ◆ Make a house template on a large sheet of flipchart paper – draw a house shape divided into four parts.
- ◆ Colour in the Number 1 frieze cards in Appendix C. Glue them onto cardboard.

Materials

- ◆ Attendance register
- ◆ Flipchart paper, kokis
- ◆ Copies of the *Participant's Workbook*, *Concept Guide* and *Activity Guide: Term 1*
- ◆ *Resource Kits*
- ◆ Puzzle pieces
- ◆ Number frieze house template and frieze cards

Imigaqo ekuzasetyenzwa ngayo

- ◆ Fika ngexesha.
- ◆ Cima iselula yakho ngexesha leeseshoni.
- ◆ Nika abanye ithuba lokuthatha inxaxheba.
- ◆ Mamelanani.

Ulungiselelo

- ◆ Unikezelo lwePPT
- ◆ Funda:

IsiKhokelo seeKhonsepthe, amaphepha 114–117

IsiKhokelo semiSebenzi: Ikota 1, amaphepha 18–21

Isingeniso B: Ikota 1 Isishwankathelo soMxholo weVeki neVeki

- ◆ Beka *iKiti yeziXhobo* yeNkqubo yeMathematika, iikhoki nephepha kwitafle yeqela.
- ◆ Lungiselela ibali lefrizi yamanani uze uqokelele iimathiriyeli.
- ◆ Yenza ithempleyithi yendlu kwiphepha elikhulu lefliptshathi – zoba imilo yendlu eyahlulwe kane.
- ◆ Faka umbala kumakhadi efrizi yeNani 1 kwiSingeniso C. Wancamathisele kwikhadibhodi.

Iimathiriyeli

- ◆ Irejista yabakhoyo
- ◆ Iphepha lefliptshathi, iikhoki
- ◆ Iikopi zeNcwadi yokuSebenzela yoMthathinxaxheba, *isiKhokelo seeKhonsepthe* kunye ne*siKhokelo semiSebenzi: Ikota 1*
- ◆ *iKiti zeziXhobo*
- ◆ Amaqhekeza ephazili
- ◆ Ifrizi yenani, ithempleyithi yendlu kunye namakhadi efrizi

Session 1: Orientation to the Maths Programme

2 hours

Facilitator's notes

- ◆ Participants should be seated in small groups of six to eight people. Observe COVID-19 protocols.
- ◆ Give each person a *Participant's Workbook* and the attendance register.
- ◆ Welcome the participants and introduce yourself.
- ◆ Discuss the house rules for working together during all workshops (see page 8).
- ◆ Give participants an opportunity to introduce themselves in their small groups and then to the whole group.
- ◆ Encourage them to share their training and teaching experiences.
- ◆ Invite participants to share their expectations of the workshop.

Registration

Welcome and house rules

(10 minutes)

Welcome to the first of twelve maths workshops for the Gauteng Department of Education (GDE) Grade R Mathematics and Language Improvement Project.

Let's start with an introduction to the presenters and agree on a set of house rules.

Sharing teaching experiences

(15 minutes)



Activity 1

1. Take some time to reflect on your experience of teaching Grade R, especially teaching maths in Grade R. Think about your training and how it prepared you for maths teaching. Also try to identify your strengths and weaknesses in maths.

2. Share some of your good experiences and bad experiences with a partner.
3. Choose one person from your group to capture the thoughts that everyone shared.

Iseshoni 1: Ukwaziswa kwiNkqubo yeMathematika

2 iiyure

Amanqaku ombhexeshi

- ◆ Abathathinxaxheba kufuneka babesebehleli kumaqela abo amancinci anabantu abathandathu ukuya kwabasibhozo. Yithathele ingqalelo imiqathango yeCOVID-19.
- ◆ Nika umntu ngamnye *iNcwadi yokuSebenzela yoMthathinxaxheba* kunye nerejista yabakhoyo.
- ◆ Yamkela abathathinxaxheba uze uzazise.
- ◆ Xoxa ngemithetho ekuzakusetyenziswa ngayo ebudeni beendibano zocweyo zonke (jonga iphepha 9).
- ◆ Nika abathathinxaxheba ithuba lokuzazisa kumaqela abo amancinci kwanakwiqela lilonke.
- ◆ Bakhuthaze ukuba babelane ngamava abo oqeqesho nokufundisa.
- ◆ Mema abathathinxaxheba ukuba bathethe ngoko bakulindeleyo kwindibano yocweyo.

Ubhaliso

Ulwamkelo nemithetho ekuzakusetyenzwa ngayo (10 imizuzu)

Wamkelekile kwindibano yocweyo yokuqala kwezilishumi elinambini zeSebe lezeMfundo laseGauteng (GDE) zeProjekthi yokuPhuculwa kweMathematika noLwimi kwiBanga R.

Masiqale ngokwazisa ababhexeshi size sivumelane ngemithetho ekuzakusetyenzwa ngayo.

Ukwabelana ngamava okufundisa (15 imizuzu)



Umsebenzi 1

1. Thatha ixesha ukhe ucinge ngamava akho okufundisa iBanga R, ingakumbi ukufundisa imathematika kwiBanga R. Cinga ngoqeqesho lwakho nendlela olwakulungiselela ngayo ukufundisa imathematika. Kwakhona zama ukuchonga iimpawu zokomelela nezobuthathaka onazo kwimathematika.

2. Yabelana nogxa wakho ngamanye wamava akho amnandi kwanamava amabi.
3. Khetha umntu abemnye kwiqela lakho ozakubhala amava omntu wonke ababelene ngawo.

Why a Maths Programme for Grade R?

Facilitator's notes

- ◆ PPT: Summary of the information below.
- ◆ Discuss the importance of improving maths learning and teaching in the Foundation Phase. Introduce the GDE Grade R Mathematics Improvement Programme as an intervention to enhance the implementation of the CAPS curriculum for Grade R.

Many South African primary school learners underperform in Language and Mathematics. A high percentage of learners fail to achieve even the minimum expected standards in these core subjects. There has been slow progress in the improvement of educational outcomes and in narrowing the achievement gap between learners from different backgrounds. The reasons for this are complex, go beyond the classroom and are affected by children's development and well-being from birth.

One of the critical issues around preschool access and attendance, as well as infrastructure and school management in South Africa, has been the fundamental questions about what and how children are learning. In order for all children to have a better chance of fulfilling their potential in Mathematics, the focus must broaden to include maths development in Grade R and, crucially, to provide Grade R teachers and practitioners with the knowledge and skills needed to support young children's maths learning.

The GDE identified Early Childhood Development as its Strategic Goal 1 and one of its key goals is to improve Home Language and Mathematics learning in Grade R. Through the Grade R Mathematics and Language Improvement Programme, the GDE is striving to improve performance in Grade R and prepare learners for Grade 1.

We believe that the Maths Programme will make an important contribution to the implementation of CAPS and that it will enhance the existing learning opportunities for all learners in Grade R so that they develop to their full potential.

What is the Grade R Maths Programme?

Facilitator's notes

- ◆ PPT: Page 10 of the *Concept Guide*, summary of the information below.

The Maths Programme focuses on teaching and learning one maths concept or topic at a time. The main focus of each week is on one CAPS Content Area. New knowledge is introduced through:

Kutheni kufuneka kubekho iNkqubo yeMathematika yeBanga R?

Amanqaku ombhexeshi

- ◆ PPT: Isishwankathelo solwazi olungezantsi.
- ◆ Xoxa ngokubaluleka kokuphuculwa kokufundwa nokufundiswa kwemathematika kwisiGaba esisisiSeko. Yazisa iNkqubo yokuPhuculwa kweMathematika yeBanga R yeGDE njengongenelelo lokuphucula ukuphunyezwa kwekharithulam kaCAPS yeBanga R.

Abafundi abaninzi bezikolo zamabanga asezantsi zaseMzantsi Afrika abaqhubi kakuhle kuLwimi neMathematika. Iphesenti enkulu yabafundi bayafeyilisha ukufumana nawona manqaku aphantsi alindelekileyo kwezi zifundo zingundoqo. Kubekho inkqubela ecothayo ekuphuculeni iziphumo zemfundo nasekucutheni umsantsa phakathi kwabafundi abasuka kwiindawo ezahlukeneyo. Izizathu zoku zimbaxa, zingaphaya kokwenzeka eklasini kwaye zichatshazelwa kukukhula neemeko zabafundi ukusukela ekuzalweni kwabo.

Omnye wemiba engundoqo ukuze bakwazi ukungena nokuhamba kwisikolo esihlakulela esamabanga asezantsi, ndawonye nezakhiwo zophuhliso nolawulo lwesikolo eMzantsi Afrika, ibeyimibuzo esisiseko malunga noko kufundwa ngabantwana nendlela abafunda ngayo. Ukuze bonke abantwana babenethuba elihle lokuzalisekisa isakhono sabo seMathematika, oko kugxilwa kuko kufuneka kwandiswe ukuze kuquke ukuphuhliswa kwemathematika kwiBanga R kwaye, ngokubalulekile, ukubonelela ootitshala beBanga R neengcali ezinolwazi nezakhono ezidingekayo ukuze kuxhaswe ukufundwa kwemathematika ngabantwana abancinci.

IGDE iphawule uPhuhliso lwaBantwana abaNcinci njenge njongo yesiCwangciso sayo soku- kwaye enye yeenjongo eziphambili kukuphucula ukufundwa koLwimi lwaseKhaya neMathematika yeBanga R. Ngokusebenzisa iNkqubo yokuPhuculwa kweMathematika noLwimi yeBanga R, iGDE izama ukuphucula umgangatho wokufunda kwiBanga R ukuze kulungiselelwe abafundi iBanga 1.

Sikholelwa ukuba iNkqubo yeMathematika izakuba negalelo elibalulekileyo ekuphunyezweni kweCAPS kwanokuba izakuphuhlisa amathuba okufunda akhoyo abafundi abakwiBanga R ukwenzela ukuba baphuhle kangangoko banokuba nako.

Yintoni ekhoyo kwiNkqubo yeMathematika yeBanga R?

Amanqaku ombhexeshi

- ◆ PPT: Iphepha 11 lesiKhokelo seeKhonsepthe, isishwankathelo solwazi olungezantsi.

INkqubo yeMathematika igxile ekufundiseni nasekufundweni kwekhonsepthe okanye isihloko esinye semathematika ngexesha. Okona kugxilwe kuko kwiveki nganye kukwiNkalo yeKhomsepthi enye kaCAPS. Ulwazi olutsha luyaziswa ngoku kulandelayo:

- ◆ whole class activities
- ◆ small group activities: teacher-guided activities and independent (side) activities
- ◆ free choice activities.

The Maths Programme:

- ◆ supports, extends and reinforces the content of CAPS Grade R Mathematics. It does not replace CAPS and it assumes that teachers have some prior knowledge and understanding of CAPS Grade R Mathematics.
- ◆ promotes focus time so that learners can practise newly acquired skills and knowledge, and embeds practise opportunities in planned maths activities and experiences.
- ◆ gives teachers a detailed guide that supports teaching and learning.
- ◆ is guided by eight principles that contribute to successful teaching and learning.
- ◆ supports teachers in making the link between Grade R Mathematics concepts and later mathematical competence.
- ◆ emphasises the weekly observation of learners as a tool for gathering information about each child to inform planning and assessment.

Refer to page 10 of the *Concept Guide* to read more about the Grade R Mathematics Improvement Programme.

Read more about the Maths Programme's guiding principles on pages 14–73 of the *Concept Guide*.

- ◆ imisebenzi yeklassi yonke
- ◆ imisebenzi yamaqela amancinci: imisebenzi ekhokelwa ngutitshala nemisebenzi ezimeleyo (esecaleni)
- ◆ imisebenzi yokuzikhethela.

INkqubo yeMathematika:

- ◆ ixhasa, yongeza, ibethelela umxholo kaCAPS weMathematika yeBanga R. Ayithathi ndawo kaCAPS kwaye ithatha ngokuba ootitshala banolwazi abasele benalo kwanengqiqo yeMathematika kaCAPS yeBanga R.
- ◆ ikhuthaza ixesha ekugxilwa kulo ukwenzela ukuba abafundi baziqhelanise nezakhono kwanolwazi abasandula ukulufumana, baze bafakele amathuba okuziqhelanisa kwimisebenzi ecwangcisiweyo yemathematika namava.
- ◆ inika ootitshala isikhokelo esineenkukacha ezixhasa ukufundisa nokufunda.
- ◆ ikhokelwa yimigago esibhozo enegalelo ekufundiseni nasekufundeni ngokuyimpumelelo.
- ◆ ixhasa ootitshala ekwenzeni uqhagamshelwano phakathi kweekhonsepthe zeMathematika zeBanga R nobuchule bemathematika kamva.
- ◆ igxininisa uqwalaselo lwabafundi ngeveki njengesixhobo sokuqokelela ulwazi ngomntwana ngamnye ukuze kufutheleke uyilo novavanyo.

Jonga kwiphepha 11 lwesi*Khokelo seeKhonsepthe* ukuze ufunde banzi ngeNkqubo yokuPhuculwa kweMathematika yeBanga R.

Funda banzi ngemigaqo ekhokelayo yeNkqubo yeMathematika kumaphepha 14–73 yesi*Khokelo seeKhonsepthe*.

Time allocation for Mathematics in Grade R

(10 minutes)

Facilitator's notes

- ◆ PPT: Time allocation in Grade R (*Concept Guide*, page 76/77, Table 1).
- ◆ Refer participants to the *Concept Guide*, pages 74–77.

CAPS suggests that the instructional time for Mathematics in Grade R should be 23 hours per week. However, CAPS does not provide a weighting or a breakdown of the time that should be spent on each Content Area for each term.

Maths in the Grade R daily programme

(20 minutes)

The daily programme in Grade R is not a timetable like the ones used in higher grades.

In Grade R the day is organised around the developmental needs of the learners. The day begins with time to talk and sing and ends with rest and stories. During the day, teachers plan activities for Home Language, Life Skills and Mathematics knowledge and understanding. During play and interaction with the teacher and other learners there are many opportunities for the integration of new skills and time to practise what has been learnt.

The Maths Programme suggests a way of organising the daily programme with focus time for Home Language, Life Skills and Mathematics.

Facilitator's notes

- ◆ PPT: Grade R daily programme (*Concept Guide*, page 80/81, Figure 31).
- ◆ Refer participants to the *Concept Guide*, pages 78–81.
- ◆ Discuss Mathematics focus time in relation to Home Language focus time, which has already been introduced.

Amanqaku ombhexeshi

- ◆ PPT: Ixesha elabelwe iBanga R (*isiKhokelo seeKhonsepthi*, iphepha 76/77, iTheybhile 1).
- ◆ Thumela abathathinxaxheba kwisiKhokelo seeKhonsepthi, amaphepha 74–77.

UCAPS ucebisa ukuba ixesha lokufundisa iMathematika kwiBanga R kufanele libe ziiyure ezingama23 ngeveki. Kodwa ke, uCAPS akaboneleli ngomthamo okanye ukwabiwa kwexesha ekufanele lichithwe kwiNkalo yoMxholo yekota nganye.

IMathematika kwinkqubo yemihla ngemihla yeBanga R (20 imizuzu)

Inkqubo yemihla ngemihla yeBanga R ayiyiyo ithamtheybhile njengezo zisetyenziswa kumabanga aphezulu.

KwiBanga R, usuku luhlelwe ngokweemfuno zokukhula kwabafundi. Usuku luqala ngexesha lokuthetha nokucula luze luphele ngokuphumla kunye namabali. Ebudeni bemini, ootitshala bacwangcisa imisebenzi yolwazi nokuqondwa koLwimi lwaseKhaya, izaKhono zoBomi kunye neMathematika. Ngexesha lokudlala nonxulumano lukatitshala nabafundi kubakho amathuba amaninzi okubandakanywa kwezakhono ezitsha kwanexesha lokuziqhelisa ngoko kufundiweyo.

INKqubo yeMathematika icebisa ngendlela yokulungiselela inkqubo yosuku enexesha eligxile kuLwimi lwaseKhaya, izaKhono zoBomi kunye neMathematika.

Amanqaku ombhexeshi

- ◆ PPT: Inkqubo yosuku yeBanga R (*isiKhokelo seeKhonsepthi*, iphepha 80/81, Umfanekiso 31).
- ◆ Thumela abathathinxaxheba kwisiKhokelo seeKhonsepthi, amaphepha 78–81.
- ◆ Cela abathathinxaxheba ukuba benze **Umsebenzi 5** kumaqela abo. Yithi iqela ngalinye linike ingxelo uze ucele imizekelo yendlela efundiswa nefundwa ngayo imathematika kwiinxenye ezahlukileyo zenkqubo yemihla, umzekelo: ngamaxesha esiqhelo, imisebenzi yamaqela amancinci, imisebenzi yeklassi yonke, imisebenzi ekhokelwa ngutitshala, izitishi zokusebenzela zamaqela amancinci nemisebenzi yokuzikhethela.
- ◆ Xoxa ngexesha lokugxila kwiMathematika ngokuhambelana nexesha lokugxila kuLwimi lwaseKhaya, nelisele lixoxiwe.

Daily Mathematics focus time

Facilitator's notes

- ◆ PPT: Daily Mathematics focus time (*Concept Guide*, page 82/83, Figure 33, or the diagram below). Summarise the information on pages 84–93 of the *Concept Guide*.

Guidelines for classroom organisation and management of the Mathematics focus time

1. Whole class maths sessions

- ◆ 15–25 minutes
- ◆ All learners sit in a circle together with the teacher.
- ◆ Activities:
 - Consolidate and provide practice of previously taught concepts.
 - Introduce a new concept.
 - Extend the concept that is the main focus of the week:
 - oral/rote counting (rhymes, songs, sequencing numbers)
 - counting objects
 - posing problems, memory games.
 - Give instructions for the small group activities at the workstations.

2. Small group maths sessions

- ◆ The class is divided into five groups of six to eight learners each.
- ◆ Each day one group works with the teacher (teacher-guided activity) and four groups work independently on planned maths activities at the workstations.
- ◆ Groups rotate daily.
- ◆ Activities:
 - Consolidate and provide opportunities to practise previously taught concepts.
 - Investigate the new concept that is the main focus of the week.
 - Provide opportunities to practise the concept that is the main focus of the week.
- ◆ The **teacher-guided activity** focuses on working with one group of learners to:
 - consolidate and practise previously taught concepts
 - deepen the understanding of a new concept
 - observe learners' progress.

3. Free choice activities

- ◆ Additional free choice activities with a maths focus are provided for learners who have completed their small group activity.

Ixesha lemihla ngemihla lokugxila kwiMathematika

Amanqaku ombhexeshi

- ◆ PPT: Ixesha lokugxila kwiMathematika losuku (*isiKhokelo seeKhonsepthi*, iphepha 82/83, Umfanekiso 33, okanye umzobo ongezantsi). Shwankathela ulwazi olukumaphepha 84–93 lwesiKhokelo seeKhonsepthi.

Amacebo okulungiswa kweklasi kwanolawulo lwexesha ekugxilwa kulo leMathematika

1. Iiseshoni zemathematika yeklasi yonke

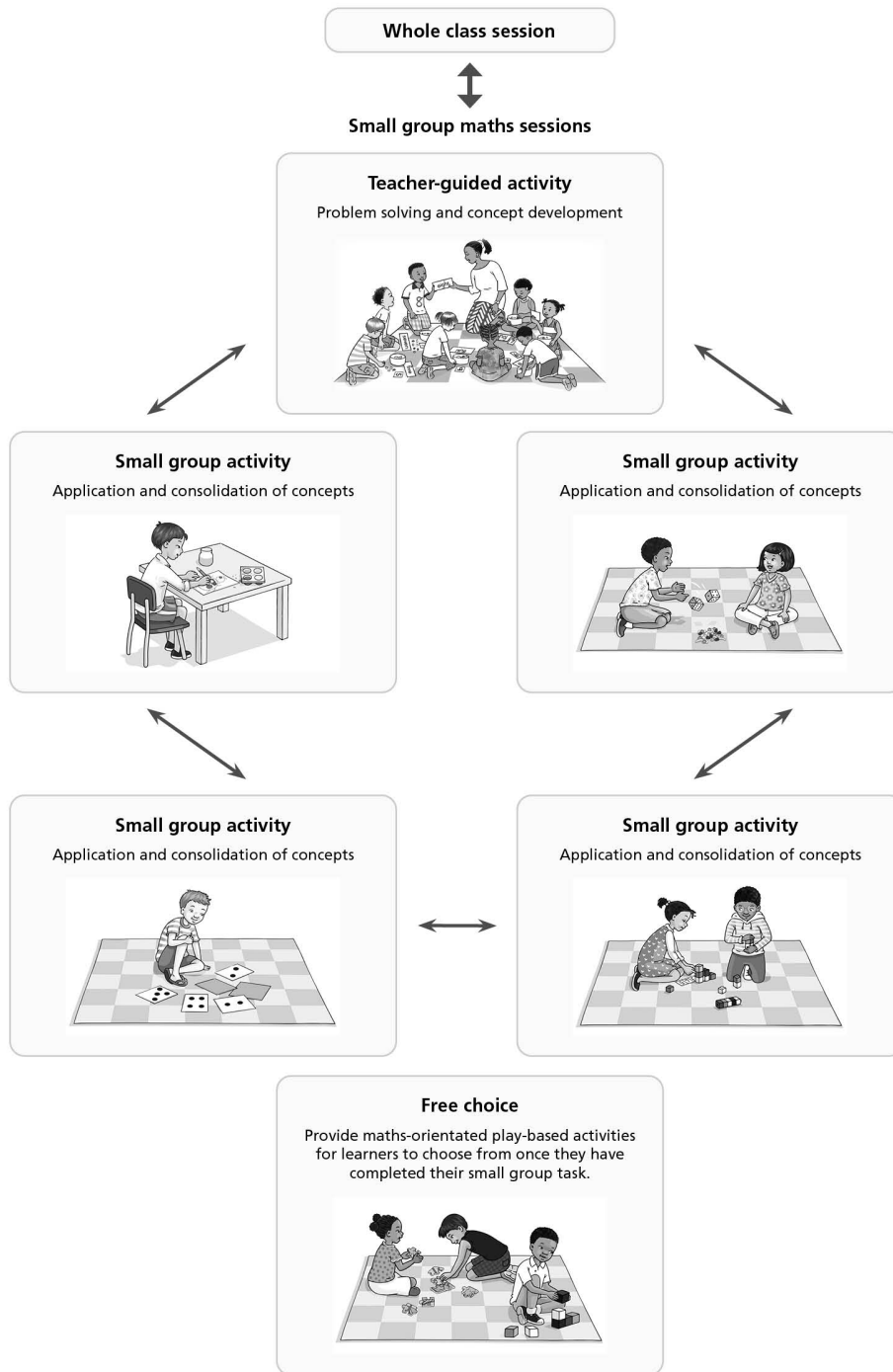
- ◆ 15–25 imizuzu
- ◆ Bonke abafundi bahlala kwisangqa notitshala.
- ◆ Imisebenzi:
 - Yondelelanisa uze ubonelele ngoqeqesho lweekhonsepthi ezisele zenziwe.
 - Yazisa ngekhonsepthi entsha.
 - Yandisa ikhonsepthi ekuyeyona kugxilwe kuyo kuloo veiki:
 - ukubala ngomlomo/ngentloko (izicengcelezo, iingoma, ukulandelelanisa amanani)
 - ukubala izinto
 - ukumisela iingxaki, imidlalo yenkumbulo.
 - Nika imiyalelo yemisebenzi yamaqela amancinci kwizitishi zokusebenzela.

2. Iiseshoni zemathematika zamaqela amancinci

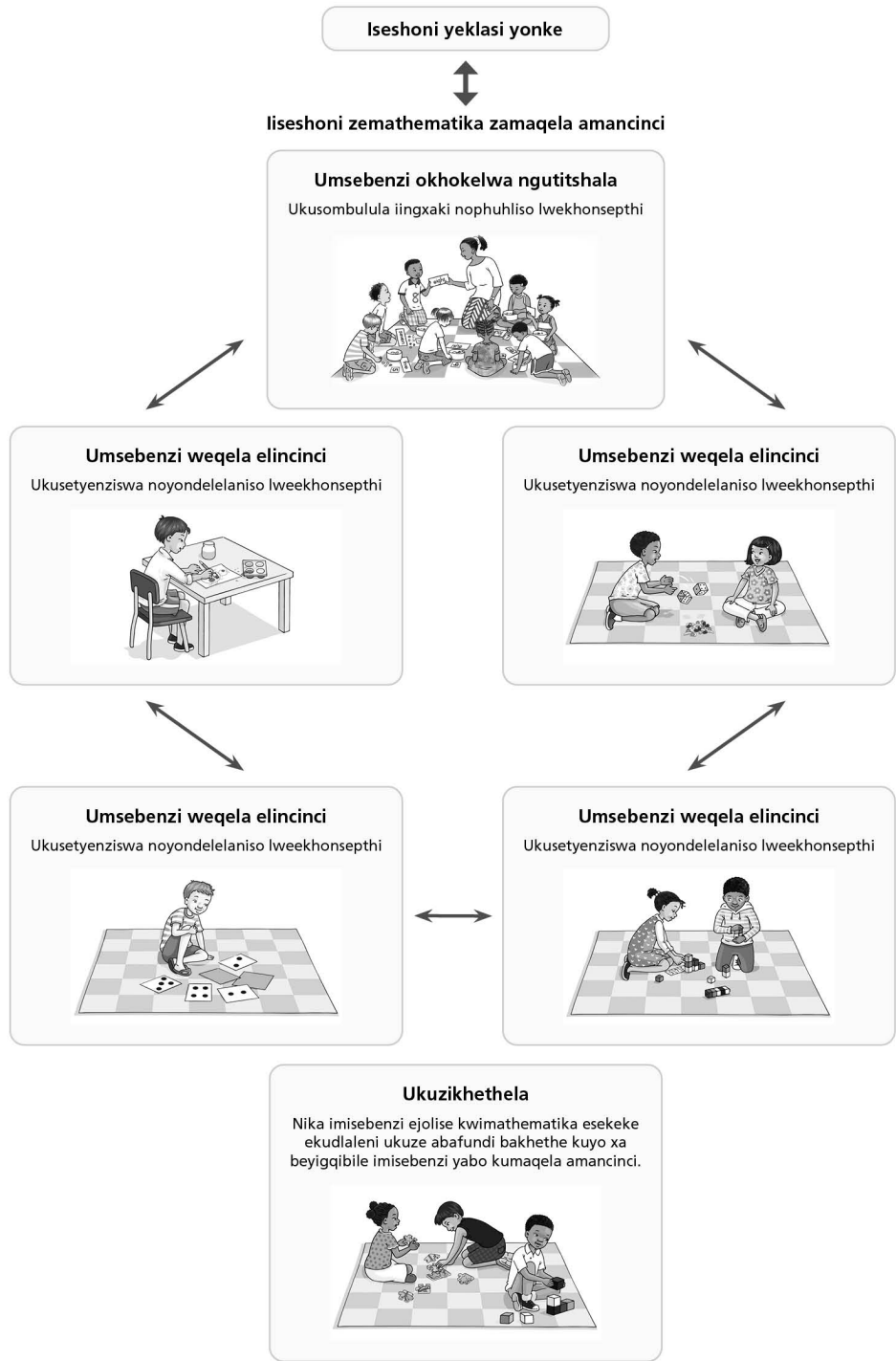
- ◆ Iklasi yahlulwe yangamaqela amahlanu anabafundi abathandathu ukuya kwabasibhozo lilinye.
- ◆ Ngosuku ngalunye iqela elinye lisebenza notitshala (umsebenzi okhokelwa ngutitshala) aze amaqela amane azisebenzele kwimisebenzi yemathematika ecwangcisiweyo ekwizitishi zokusebenzela.
- ◆ Amaqela ayatshintshana yonke imihla.
- ◆ Imisebenzi:
 - Ukuyondelelanisa uze ubonelele ngamathuba okuziqhelisa ngeekhonsepthi zemathematika ezifundisiweyo ngaphambili.
 - Ukuphanda ngekhonsepthi ekuyeyona kuzakugxilwa kuyo kuloo veiki.
 - Ukubonelela ngamathuba okuziqhelisa ngekhonsepthi ekuyeyona kuzakugxilwa kuyo kuloo veiki.
- ◆ **Umsebenzi okhokelwa ngutitshala** ugxile ekusebenzeni neqela elinye labafundi ukuze:
 - kuyondelelaniswe kuze kuqhelaniswe neekhonsepthi ezifundisiweyo ngaphambili
 - kwenziwe nzulu ukuqondwa kwekhonsepthi entsha
 - kuqwalaselwe inkqubela yabafundi.

3. Imisebenzi yokuzikhethela

- ◆ Imisebenzi yokuzikhethela egxile kwimathematika kubonelelwa ngayo kubafundi abasele beyigqibile imisebenzi yabo yamaqela amancinci.



Refer to pages 82–93 of the *Concept Guide* to read more about organising your classroom for the daily Mathematics focus session.



Jonga kumaphepha 82–93 esiKhokelo seeKhonsepthe ukuze ufunde banzi ngokulungiselela iklasi yakho iiseshoni zemihla ngemihla zokugxila kwiMathematika.

Session 2: Numbers, Operations and Relationships

2 hours

Term 1–4 content overview (CAPS)

(45 minutes)

Facilitator's notes

- ◆ PPT: *Concept Guide*, page 110/111, Figure 41 and summary on pages 110–113
- ◆ Refer participants to the *Concept Guide*, pages 114–137. Explain that this content overview provides the framework for all maths planning and will be used and referenced throughout the training.
- ◆ PPT: Discuss the table. Explain that the text in blue is from CAPS and the black text is content that has been added to build and extend CAPS in the Maths Programme.

The Maths Programme is aligned to and extends the content of the five Mathematics Content Areas of CAPS. The table on pages 114–137 of the *Concept Guide* provides a content overview of the maths to be taught in Grade R. It also shows what content is to be taught each term.

- ◆ The text in blue is the content from the CAPS for Grade R Mathematics.
- ◆ The text in black has been added to extend and build on CAPS.
- ◆ The topics are sequenced to show a developmental progression from one topic to the next.

Refer to pages 110–113 of the *Concept Guide* and read 1.1, 1.2 and 1.3 on pages 114–117. After reading numbers 1.1, 1.2 and 1.3, complete Activities 7 and 8.

Facilitator's notes

- ◆ Have participants complete **Activity 7** in their groups. Ask a person from each group to share their ideas.



Activity 3

Look through the Term 1–4 content overview for the Content Area: Numbers, Operations and Relationships, in the *Concept Guide* and in the CAPS document. In your group, discuss:

1. What does the Maths Programme add to the content of CAPS?

Ishoni 2: Amanani, iiOpayreyshini noLwalamano

2 iiyure

Ikota 1–4 amagqabantshintshi ngomxholo (CAPS)

(45 imizuzu)

Amanqaku ombhexeshi

- ◆ PPT: *IsiKhokelo seeKhonsepthe*, iphepha 110/111, Umfanekiso 41 nesishwankathelo esikumaphepha 110–113
- ◆ Jonga kwisiKhokelo *seeKhonsepthe*, amaphepha 114–137. Cacisa ukuba esi sishwankathelo somxholo sibonelela ngenkqubosikhokelo yesicwangciso sonke semathematika kwaye sizakusetyenziswa kuze sicatshulwe ngalo lonke ixesha loqeqesho.
- ◆ PPT: Xoxa ngetheybhile. Cacisa ukuba umbhalo ozuba uthathwe kwiCAPS uze omnyama umbhalo ubengumxholo owongeziweyo ukwakha nokongezelela iCAPS kwiNkqubo yeMathematika.

INkqubo yeMathematika yoyanyanise yaze yandisa umxholo weNkalo zoMxholo weMathematika ezintlanu zikaCAPS. Itheybhile ekumaphepha 114–137 *esiKhokelo seeKhonsepthe* ibonelela ngesishwankathelo somxholo wemathematika omawufundiswe kwiBanga R. Ikwabonisa ukuba ngowuphi na umxholo omawufundiswe kwikota nganye.

- ◆ Umbhalo ozuba ngumxholo othathwe kwiCAPS yeMathematika yeBanga R.
- ◆ Umbhalo omnyama ubengumxholo owongeziweyo ukwakha nokongezelela kwiiCAPS.
- ◆ Izihloko zilandelelanisiwe ukubonisa ukuqhubeka kokukhula ukusuka kwisihloko ukuya kwesinye.

Jonga kumaphepha 110–113 *esiKhokelo seeKhonsepthe* ufunde u1.1, 1.2 no1.3 kumaphepha 114–117. Emva kokufunda amanani 1.1, 1.2 no1.3, gqibezela Imisebenzi 7 no8.

Amanqaku ombhexeshi

- ◆ Nika ithuba lokuba abathathinxaxheba bagqibezele **Umsebenzi 7** kumaqela abo. Cela umntu omnye kwiqela ngalinye ukuba abelane ngezimvo zelo qela.



Umsebenzi 3

Qwalasela isishwankathelo somxholo weKota 1–4 weNkalo yoMxholo: Amanani, iiOpayreyshini noLwalamano, kwisiKhokelo *seeKhonsepthe* nakuxwebhu likaCAPS. Kwiqela lenu, xoxani ngokuba:

1. Yintoni eyongezwa yiNkqubo yeMathematika kumxholo kaCAPS?

Refer to the black text on pages 114–117 of the *Concept Guide*. Main content added: dot cards, multiple representations, structure beads, jumping track, number washing line, matching with number symbol/word, breaking down and building up collections, ordering of number symbols, ordinal numbers in everyday activities, orally solving problems, equal sharing.

2. What counting concepts are covered in Numbers, Operations and Relationships in Term 1?

Refer to the black text on pages 114–115 of the *Concept Guide*: one-to-one correspondence, estimation, matching, multiple representations, counting forwards 1–10, counting backwards 5–1.

Facilitator's notes

- ◆ Explain that during the workshops the focus is on the implementation of the Maths Programme and that participants need to understand the maths concepts themselves so that they are able to support their learners. This workshop provides an understanding of important concepts in Numbers, Operations and Relationships.

Important concepts in Numbers, Operations and Relationships

(1¼ hours)

Counting

Oral counting (rhythmic, rote or acoustic counting)

Facilitator's notes

- ◆ Ask participants to divide themselves into small groups of five and then to find an open space in the training room. Refer participants to **Activity 8** and let them say the rhyme, *One, two, three, four, five* (*Activity Guide: Term 1*, page 196) with actions.
- ◆ In their small groups, participants reflect on the activity and the counting skills they used and complete **Activity 8** and **9**.
- ◆ Ask the groups to report back on their discussions. List each new counting skill on the flipchart.
- ◆ Make sure that participants understand that oral counting involves memorising the names of numbers and does not mean that children can count.
- ◆ Read the information on oral counting below.
- ◆ Discuss the following terms: oral, rhythmic, rote and acoustic counting.
- ◆ PPT: such as: book, chair, dog, house.
- ◆ Explain that for learners the counting sequence of number names does not initially have any association with the concept of number, e.g. like: book, chair, dog, house, ... Learners gradually understand that each word stands alone in the sequence and that each word represents a specific number.

Jonga kwitekisi emnyama ekumaphepha 114–117 esiKhokelo seeKhonsepthi. Umxholo ongundoqo owongeziweyo: amakhadi anamachokoza, ukumelwa okwahlukeneyo, amaso okuhlela, umzila wokuxhuma, ucingo lokoneka amanani, ukutshatisa isimboli yenani/negama, ukucazulula nokudibanisa iingqokelela, ukuhlela iisimboli zamanani, amanani olandelelwano kwimisebenzi yemihla ngemihla, ukusombulula iingxaki ngomlomo, ukwaba ngokulinganayo.

2. Zeziphi iikhonsepthi zokubala eziqukiweyo kuManani, iiOpareyshini noLwalamano kwiKota 1?

Jonga kwitekisi emnyama kumaphepha 114–115 esiKhokelo seeKhonsepthi: ukuhambelana kwenye nenye, uthekelelo, ukutshatisa, ukubonakaliswa okwahlukeneyo, ukubala usiya phambili 1–10, ukubala ubuyela umva 5–1.

Amanqaku ombhexeshi

- ◆ Cacisa ukuba ngexesha lendibano yocweyo kuzakugxilwa ekuphunyezweni kweNkqubo yeMathematika kwanokuba abathathinxaxheba kufuneka baziqonde iikhonsepthi zemathematika ukwenzela ukuba bakwazi ukunika inkxaso kubafundi babo. Le ndibano yocweyo ibonelela ngengqiqo yeekhonsepthi ezibalulekileyo zaManani, iiOpareyshini noLwalamano.

Iikhonsepthi ezibalulekileyo zaManani, iiOpareyshini noLwalamano (1¼ iiyure)

Ukubala
Ukubala ngomlomo (ukubala ngentloko okanye ukubala ucengceleza)

Amanqaku ombhexeshi

- ◆ Cela abathathinxaxheba ukuba bazahlule babe ngamaqela amancinci anabantu abahlanu baze bafumane indawo evulekileyo kwigumbi elo lokuqeqeshela. Yithi abathathinxaxheba bajonge **Umsebenzi 8** baze benze isicengcelezo esithi, *Nye, mbini, ntathu, ne, ntlanu (IsiKhokelo seeKhonsepthi: Ikota 1, iphepha 197)* benze neentshukumo.
- ◆ Kumaqela abo amancinci, abathathinxaxheba bathetha ngomsebenzi kwanangezakhono zokubala abazisebenzisileyo baze benze **Umsebenzi 8** no**9**.
- ◆ Cela iqela linike ingxelo ngeengxoxo zalo. Dwelisa isakhono esitsha ngasinye kwifliptshathi.
- ◆ Qinisekisa ukuba abathathinxaxheba bayayiqonda into yokuba ukubala ngomlomo kuquka ukubethelela amagama amanani engqondweni kwaye oko akuthethi ukuba abantwana bayakwazi ukubala.
- ◆ Funda ulwazi ngokubala ukhwaza olungezantsi.
- ◆ Xoxani ngala magama alandelayo: ukubala ngomlomo, ngesingqi, ngophindaphindo nangokumamela.
- ◆ PPT: njenge-: ncwadi, situlo, nje, ndlu.
- ◆ Cacisa ukuba kubafundi ulandelelwano lwamagama amanani ekuqaleni alunaloyanyaniso nekhonsepthi yenani, umz. Njenge-: ncwadi, situlo, nja, ndlu, ... Abafundi bahambe bayiqonde into yokuba igama ngalinye lizimele kulandelelaniso kwanokuba igama ngalinye limele igama elithile.

Oral counting involves a learner memorising the names and counting order of numbers, often in a rhyme or song.

In Grade R learners learn the correct order of number names and repeat the sequence daily. The purpose of counting out loud is to help learners understand that when we count aloud there is a set order for the numbers: beginning at one, then two, three, four, etc. Initially learners do not fully understand the meaning of the number names and might skip numbers in a counting sequence. Reciting a rhyme or series of numbers orally means repeating the number names from memory. Even when learners count in steps of two, five and ten they are using their knowledge of this number order. Memorising number names and repeating them in the correct counting order does not necessarily mean that learners can count. This is different from counting to find out 'how much'.

Arrange yourselves into small groups of five and find an open space in the training room for the next activity.



Activity 4

1. In your small groups, say the rhyme, *One, two, three, four, five*, with actions.

One, two, three, four, five

One, two, three, four, five
Once I caught a fish alive.
'Why did you let it go?'
Because it bit my finger so.
One, two, three, four, five
Then I caught a frog alive.
'What did you do with that?'
I said hello and put it back.

2. Do you think using a rhyme like this one is good practice for teaching counting in Grade R? Give reasons for your answer.

Refer to pages 76 and 196 of *Activity Guide: Term 1* for this rhyme.

Ukubala ngomlomo kuquka ukunkqaywa kwamagama amanani nokubala ngolandelelwano ngumfundi, okudla ngokuba ngesicengcelezo okanye ingoma.

KwiBanga R abafundi bafunda ngendlela echanileyo yolandelelaniso lwamagama amanani baze baphinde olo landelelaniso. Injongo yokubala ngomlomo kukuncedisa abafundi bayiqonde into yokuba xa sibala ngomlomo kukho indlela ebekiweyo yokulandelelana kwamanani: ukuqala kunye, kulandele umbini, ntathu, ne, njlnjl. Ekuqaleni abafundi abayiqondi ngokupheleleyo intsingiselo yamagama amanani kwaye bangawatsiba kulandelelaniso lokubala. Ukwenza isicengcelezo okanye uluhlu lwamanani ngomlomo kuthetha ukuphindaphinda amagama amanani ngokuwakhumbula. Naxa abafundi bebala ngokwamanyathelo angambini, ngantlanu nengamashumi basebenzisa ulwazi abanalo ngolandelelwano lwelo nani. Ukunkqaya amagama amanani kwanokuwaphinda ngolandelwano oluchanileyo akuthethi ukuba abafundi bayakwazi ukubala. Oku kwahlukile ekubaleni ngenjongo yokufumanisa ukuba 'zingaphi'.

Zahluleni nibe ngamaqela amancinci anabantu abahlanu nize zifumane indawo evulekileyo kwigumbi lokuqeqeshela ukulungiselela umsebenzi olandelayo.



Umsebenzi 4

1. Kumaqela enu amancinci, yenzani esi sicengcelezo, *Nye, mbini, ntathu, ne, ntlanu* nenze neentshukumo.

Nye, mbini, ntathu, ne, ntlanu,

Nye, mbini, ntathu, ne, ntlanu,

Ndandikhe ndabambisa intlanzi ephilayo.

'Wayiyekelani?'

Kuba yandiluma eminweni kabulungu.

Nye, mbini, ntathu, ne, ntlanu,

Ndaze ndanqakula isele eliphilayo.

'Wenzani ngalo?'

Ndathi molo ndaze ndalibuyisela.

2. Ucinga ukuba ukusetyenziswa kwesicengcelezo yinto elungileyo xa ufundisa ukubala kwiBanga R? Nika izizathu zempendulo yakho.

Jonga kumaphepha 77 no197 esiKhokelo seeKhonsepthe: Ikota 1 ukufumana esi sicengcelezo.



Activity 5

In the same small groups, answer these questions:

1. What would learners learn by saying this rhyme?

2. What do learners learn when they repeat a sequence of numbers in the correct counting order?

Count in ones in the correct order.

Sequence of the counting numbers.

Correct number words.

Distinguish the number words.

Helps with memorising the sequence of counting order.

Counting objects (rational counting)

Facilitator's notes

- ◆ Demonstrate how to count objects using one-to-one correspondence.
- ◆ Ask participants to take two handfuls of counters from the *Resource Kit* equipment in the tub on their table and place them in front of them. Ask them to say which pile has more/fewer counters. Ask participants how they can determine this without counting. Prompt them to match the elements in each group one-to-one in order to say which group has more/less.
- ◆ Ask participants to count the items in each group to find out which has more/fewer.
- ◆ Ask participants what vocabulary was used, e.g. count, one, two, three ..., how many, more, fewer, group.
- ◆ Read the information about counting objects (rational counting) below.
- ◆ Make sure that participants understand the difference between oral counting and counting objects:
 - **Oral counting** involves memorising and sequencing number words.
 - **Counting objects** involves matching a number word to each object being counted and understanding that the last number said represents the total number counted (how many).



Umsebenzi 5

Kwakuloo maqela mancinci, phendulani le mibuzo:

1. Yintoni ezakufundwa ngabafundi ngokwenza esi sicengcelezo?

2. Bafunda ntoni abafundi xa bephindaphinda ulandelelwano lwamanani ngendlela yokubala echanileyo?

Bala nganye ngolandelelwano oluchanileyo.
Ulandelelwano lwamanani okubala.
Amagama amanani achanileyo.
Hlukanisa amagama amanani.
Ncedisa ekunkqayeni ulandelelwano lwendlela yokubala.

Ukubala izinto (ukubala ngengqiqo)

Amanqaku ombhexeshi

- ◆ Bonisa ngendlela yokubala izinto usebenzisa ukuhambelana kwenye nenye.
- ◆ Cela abathathinxaxheba bacaphule isandla sonke sezixhobo zokubala kwi*Kiti yeziXhobo* kwibhokisi elisetafileni yabo baze bazibeke phambi kwabo. Bacele ukuba bachaze ukuba yeyiphi imfumba enezixhobo zokubala ezininzi/ezimbalwa. Buza abathathinxaxheba ukuba bakubona njani oko bengabalanga. Bacele ukuba batshatise izinto ezikwiqela ngalinye enye kwenye ukuze bachaze ukuba leliphi iqela elinezininzi/elinezimbalwa.
- ◆ Cela abathathinxaxheba ukuba babale izinto ezikwiqela ngalinye ukufumanisa ukuba leliphi elinezininzi/elinezimbalwa.
- ◆ Buza abathathinxaxheba ukuba kusetyenziswe esiphi isigama, umz. bala, nye, mbini, ntathu ..., zingaphi, ninzi, mbalwa, iqela.
- ◆ Funda ulwazi olungezantsi malunga nokubala (ukubala ngengqiqo).
- ◆ Qinisekisa ukuba abathathinxaxheba bayawuqonda umahluko phakathi kokubala ukhwaza nokubala izinto:
 - **Ukubala ngomlomo** kuquka ukunkqaya nokulandelelanisa amagama amanani.
 - **Ukubala izinto** kuquka ukutshathisa igama lenani nento nganye ebalwayo kwanokuqonda ukuba inani lokugqibela elibiziweyo limele izinto ezibaliweyo xa zizonke (zingaphi).

Counting objects involves one-to-one correspondence. This means that each object or event to be counted is matched with a number word. To count 'how many', learners need to realise that each object in a collection gets a number word ('one, two, three, four ...') and that you count each object only once.

Once learners know the order of the counting numbers, they begin to understand that each number in the counting sequence is one bigger than the number before and one smaller than the next number. They:

- ◆ can mentally compare numbers and see that two is one more than one and that three is one more than two.
- ◆ realise that numbers grow by one each time.
- ◆ realise that any number in the counting sequence is exactly one more than the previous number.

Facilitator's notes

- ◆ Explain to participants that learners do not learn number concepts and skills in isolation. They need daily experiences with number in different contexts that involve oral counting, counting objects and representing a number in different ways.
- ◆ Emphasise that learners are not required to write number symbols in Grade R. Learning to write number symbols should be regarded the same way as Emergent Writing. Refer to Numbers, Operations and Relationships in the CAPS document and to pages 114–117 of the *Concept Guide*.



Video 2

Activity Guide: Term 1, Week 2, Teacher-guided activity #2, 3 (page 46/47)

Watch the video of learners counting a collection of objects. This is a teacher-guided activity. Notice how the teacher observes each learner and asks questions to prompt them to share their ideas.

Ukubala izinto kuquka ukuhambelana kwenye nenye. Oku kuthetha ukuba into nganye okanye isenzeko esizakubalwa sitshatiswa negama lenani. Ukubala ukuba 'zingaphi', abafundi badinga ukuqonda ukuba into nganye kwingqokelela ifumana igama lenani ('nye, mbini, ntathu, ne ...') kwanokuba into nganye uyibala kube kanye kuphela.

Bakube abafundi belwazi ulandelelaniso lwamanani okubala, baqalisa ukuqonda ukuba inani ngalinye kulandelelwaniso lokubala lingaphezulu ngesinye kunenani elingaphambi kwalo kwaye lingaphantsi ngesinye kwinani elilandelayo. Abafundi:

- ◆ bazakukwazi ukuthelekisa engqondweni amanani baze babone ukuba umbini ungaphezulu ngesinye kunye nokuba untathu ungaphezulu ngesinye kumbini.
- ◆ bazakuqonda ukuba amanani akhula ngesinye ngexesha ngalinye.
- ◆ bazakuqonda ukuba naliphi na inani kulandelelwano lokubala lingaphezulu ngqo ngesinye kunenani elingaphambili.

Amanqaku ombhexeshi

- ◆ Cacisela abathathinxaxheba ukuba abafundi abazifundi iikhonsepthi nezakhono zamanani ngokwahlukileyo. Badinga amava emihla ngemihla ngenani kwiimeko ezahlukileyo eziquka ukubala ngomlomo, ukubala izinto kwanokumelwa kwenani ngeendlela ezahlukileyo.
- ◆ Gxininisa kwinto yokuba abafundi akudingeki ukuba bazibhale iisimboli zamanani kwiBanga R. ukufunda ukubhala iisimboli zamanani kufanele kuthathwe ngendlela efanayo nokuBhala okusaQalayo. Jonga Amanani, iiOpareyshini noLwalamano kuxwebhu lweCAPS nakumaphepha 114–117 esiKhokelo seeKhonsepthi.



Ividiyo 2

IsiKhokelo semiSebenzi: Ikota 1, Iveki 2, Umsebenzi okhokelwa ngutitshala #2, 3 (iphepha 46/47)

Bukela ividiyo yabafundi ababala ingqokelela yezinto. Lo ngumsebenzi okhokelwa ngutitshala. Qaphela indlela utitshala anika ngayo ingqwalasela kumfundi ngamnye aze abuze imibuzo ukubakhuthaza ukuba bathethe ngezimvo zabo.

Representing numbers

Facilitator's notes

- ◆ Say to participants: *Show me five.*
- ◆ Participants will most likely hold up five fingers. Explain that the concept or idea of a number is in our heads and that we cannot see numbers. We can't see them, but we can represent them in different ways, for example, using fingers, counters, claps, birthday candles. We represent numbers to show 'how many'.
- ◆ Ask participants to think about the different ways to represent a number and ask them to complete **Activity 10** individually. Then ask participants to share their ideas.
- ◆ Use the information below to summarise how learners begin to represent numbers.



Activity 6

How many different ways can you find to represent the number 5?

Learners begin to represent numbers using their fingers, and then gradually start to use other methods, such as objects, drawings, pictures or symbols. Learners progress:

- ◆ from using actual objects to represent (stand in for) numbers, e.g. lemons, sweets, pencils, leaves
- ◆ to using pictures or drawings to represent the objects, e.g. a drawing of a lemon, person, car
- ◆ to using counters to represent the objects or pictures, e.g. plastic discs to show the number of lemons
- ◆ to using marks to represent the physical objects and pictures, e.g. circles, dots, tally marks, clapping sounds, drumbeats, stamping feet
- ◆ to using number symbols and number words, e.g. '2' or 'two'.

Facilitator's notes

- ◆ PPT: Explain that the Maths Programme uses an approach of teaching one number at a time and follows the same routine for each number taught. Summarise the text below to provide a brief outline of the routine.
- ◆ Tell the *Number 1 story* on page 196 of *Activity Guide: Term 1*.

Ukumela amanani

Amanqaku ombhexeshi

- ◆ Yithi kubathathinxaxheba: *Ndiboniseni untlanu.*
- ◆ Abathathinxaxheba basenokuphakamisa iminwe emihlanu. Cacisa ukuba ikhonsepthi okanye uluvo ngenani lusezingqondweni zethu kwanokuba asikwazi kuwabona amanani. Asiwaboni, kodwa siyakwazi ukuwamela ngeendlela ezahlukileyo, umzekelo, sisebenzisa iminwe, izixhobo zokubala, ukuqhwaba, amakhandlela osuku lokuzalwa. Amanani siyawamela ukubonisa ukuba 'zingaphi'.
- ◆ Cela abathathinxaxheba ukuba bacinge ngeendlela ezahlukileyo zokumela amanani uze ubacele ukuba benze **Umsebenzi 10** ngabanye. Emva koko cela abathathinxaxheba babelane ngeembono zabo.
- ◆ Sebenzisa ulwazi olungezantsi ukwenzela abafundi isishwankathelo sendlela amelwa ngayo amanani.



Umsebenzi 6

Zingaphi iindlela onokuzifumana zokumela inani 5?

Abafundi baqalisa ukumela amanani besebenzisa iminwe yabo, baze ngokuthe chu baqalise ukusebenzisa ezinye iindlela, ezifana nezinto, imizobo, imifanekiso okanye iisimboli. Abafundi baqhubela phambili besebenzisa:

- ◆ izinto zokwenene ukumela amanani, umz. iilamuni, iilekese, iipensile, amagqabi
- ◆ imifanekiso okanye imizobo ukumela izinto, umz. umzobo welamuni, umntu, imoto
- ◆ izixhobo zokubala ukumela izinto okanye imifanekiso, umz. idiski zeplastiki ukubonisa inani leelamuni
- ◆ amanqaku ukumela izinto eziphathekayo kunye nemifanekiso, umz. izangqa, amachokoza, iimpawu zokuqhoqhoza, izandi zokuqhwaba, izandi zamagubu, ukungqisha
- ◆ iisimboli zamanani ezibhaliweyo kunye namagama amanani, umz. '2' okanye 'mbini'.

Amanqaku ombhexeshi

- ◆ PPT: Cacisa ukuba iNkqubo yeMathematika isebenzisa indlela yokufundisa inani elinye ngexesha lize lisebenzise kwaloo ndlela ukufundisa inani ngalinye. Shwankathela umbhalo ongezantsi ubunika uyilo olufutshane lwenkqubo yesiqhelo.
- ◆ Balisa *Ibali lenani 1* elikwiphepha 197 lesiKhokelo semiSebenzi: *Ikota 1.*

- ◆ Retell the story, this time involving the participants in dramatising the story as you tell it, e.g. by moving like elephants, painting the number 1 on the roof of the house, smelling one flower, flying around like one bird.
- ◆ Demonstrate different number representations by displaying the house template on the wall of the training room and re-telling the *Number 1 story*. Exaggerate 'one' each time it occurs in the story, e.g. one bird, one tree, one bench, one flower, one cloud, one door, one doorbell. Place the number 1 frieze cards in the house template as you progress through the story:
 - the animal (picture)
 - the number symbol (1)
 - the dot (doorbell)
 - the number word (one).

The Maths Programme uses an approach that introduces numbers 0–10 one at a time and follows the same teaching routine for each number.

- ◆ A story is told about the number. This raises learners' interest and provides a familiar, fun context that connects with learners' lives and interests.
- ◆ Each number has a particular animal character. The story featuring the animal is used to build a number frieze to represent the number.
- ◆ Dramatising the story provides opportunities for learners to respond kinaesthetically (learning through acting and moving their bodies).
- ◆ Objects are collected to represent the number in various ways. The objects are put in the maths area.
- ◆ Learners match objects to pictures, dot cards, number symbols and number words.
- ◆ The *Poster Book* provides real-life contexts to stimulate discussion and encourage problem solving.

The number 'one' is introduced in the second week of Term 1 to familiarise learners with this routine. The same routine is used as each new number is introduced, adding one more to the number the learners learnt previously.

Before completing the next activity, interact with the facilitator as she tells the story for number 1 and builds up the number frieze using the house template and animal frieze cards. After listening to the story, complete Activity 11.

Facilitator's notes

- ◆ After the demonstration, ask participants to complete **Activity 11**.
- ◆ Allow participants to discuss the question in small groups and then to share their ideas in the big group.
- ◆ Reflect on the vocabulary used during the activity, e.g. one, number, number symbol, number name, number word, how many, group, collection, count, the same.

- ◆ Phinda ulibalise ibali, kweli ityeli ubandakanye abathathinxaxheba ekulinganiseni ibali njengokuba ulibalisa, umz. Ngokuhamba njengendlovu, ukupeyinta inani u1 kuphahla lwendlu, ukurhogola intyatyambo enye, ukubhabha njengentaka enye.
- ◆ Bonisa iindlela ezahlukileyo zokumelwa kwenani ngokuxhoma umfanekiso wendlu edongeni uze uphinde ubalise *Ibali lenani 1*. Mbaxa u'nye' qho evela ebalini, umz. Intaka enye, umthi omnye, isitulo esinye, intyatyambo enye, ilifu elinye, umnyango omnye, ibheli yomnyango enye. Beka amakhadi ifrizi enani 1 kumfanekiso wendlu njengokuba uqhubeka nebali:
 - isilwanyana (umfanekiso)
 - isimboli yenani (1)
 - ichokoza (ibheli yomnyango)
 - igama lenani (nye).

Inkqubo yeMathematika isebenzisa indlela eyazisa amanani 0–10 libe linye ngexesha kulandelwa indlela efanayo yokufundisa inani ngalinye.

- ◆ Ibali libaliswa ngenani. Oku kuvusa umdla wabafundi kuze kubonelele ngomxholo oqhelekileyo nowonwabisayo onxibelelana nempilo kwanoko abafundi abanomdla kuko.
- ◆ Inani ngalinye linomlinganiswa okhethekileyo osisilwanyana. Ibali elinezilwanyana lisetyenziselwa ukwakha ifrizi yenani ezakumela inani.
- ◆ Ukulinganisa ibali kubonelela abafundi ngamathuba okuphendula ngeentshukumo (ukufunda ngokulinganisa nokushukumisa imizimba yabo).
- ◆ Izinto ziyaqokelelwa ukuze zimele inani ngeendlela ezahlukileyo. Izinto zibeka kwindawo yemathematika.
- ◆ Abafundi batshatisa izinto nemifanekiso, amakhadi anamachokoza, iisimboli zenani kunye namagama enani.
- ◆ *INcwadi yeePowusta* ibonelela ngemixholo yobomi bokwenene ukuvuselela ingxoxo nokukhuthaza ukusonjululwa kwengxaki.

Inani u'nye' waziswa kwiveki yesibini yeKota 1 ukuqhelanisa abafundi nale ndlela. Kwale ndlela inye iyasetyenziswa xa kusaziswa inani ngalinye, kusongezwa elinye kwinqanaba abasandul' ukulifunda abafundi.

Ngaphambi kokwenza umsebenzi olandelayo, thethathethana nombhexeshi njengokuba ebalisa ibali lenani 1 kwaye esakha ifrizi yemanani esebenzisa ithempleyithi yendlu namakhadi efrizi yesilwanyana. Emva kokuphulaphula ibali, yenza uMsebenzi 11.

Amanqaku ombhexeshi

- ◆ Emva kokubonisa, cela abathathinxaxheba ukuba benze **Umsebenzi 11**.
- ◆ Vumela abathathinxaxheba baxoxe ngombuzo kumaqela amancinci baze babelane ngeembono zabo kwiqela elikhulu.
- ◆ Thetha ngesigama esisetyenzisiweyo ngexesha lomsebenzi, umz. nye, isimboli yenani, igama lenani, ngaphi, iqela, ingqokelela, bala, iyafana.



Activity 7

What are the different ways that the number 1 was represented in the story?

Picture, dot, number symbol, number word



Umsebenzi 7

Zeziphi iindlela ezahlukileyo elithe lamelwa ngayo inani 1 apha ebalini?

Umfanekiso, ichokoza, isimboli yenani, inani eliligama

Session 3: Implementing the five-group teaching model

2 hours

We have already discussed how to organise your classroom for maths teaching and learning during Mathematics focus time. This section outlines how to plan and implement the Maths Programme and focuses on preparing for the teaching of Weeks 1 and 2 of Term 1.

Term 1 Content Summary (Weeks 1–2)

(1 hour)

Facilitator's notes

- ◆ PPT: Daily Mathematics focus time (*Concept Guide*, page 82, Figure 33) and Week 1 of Appendix B.
- ◆ Refer participants to Week 1 of Appendix B: Term 1 Weekly Content Summary (Weeks 1–2). Explain that the Weekly Content Summary provides a summary of the maths content for each week. Explain that this framework was developed and then the content of the *Activity Guides* was written.
- ◆ Outline the different features of the week. Read the whole class activities, teacher-guided activity and independent small group (workstation) activities. Have participants work in groups to complete **Activity 12**.
- ◆ Focus on the structure of the Weekly Content Summary:
 - Content Area, Topic, New knowledge, Practise
 - Whole class activities: done with all the learners, activities linked to the Content Area and Topic, involves a routine that includes rhymes/songs, oral counting and counting objects.
 - Teacher-guided small group activity: focuses specifically on the concepts to be taught, involves a small group of six to eight learners.
 - Independent small group (workstation) activities: provide practice and consolidation of the concept being introduced in the whole class and teacher-guided activities.
- ◆ Explain that the Weekly Content Summary provides a structure and framework for planning the Mathematics focus time each week.

Appendix B: Term 1 Weekly Content Summary (Weeks 1–2) provides a summary of the content and offers suggestions for teaching and learning maths for each week with the following information:

- ◆ main Content Area Focus for the week
- ◆ topic(s) to be covered
- ◆ New knowledge and Practise focus for the week
- ◆ suggested activities for whole class and small groups (teacher-guided activity and workstation activities) for the week.

Iseshoni 3: Ukuphumeza imodeli yokufundisa enguqelantlanu

2 iiyure

Sele sixoxile ngendlela ongayihlela ngayo iklasi yakho ngexesha lokugxila ekufundiseni nasekufundeni iMathematika. Eli candelo lunika indlela enokucwangciswa ize iphunyezwe ngayo iNkqubo yeMathematika lize ligxile ekulungiseleleni ukufundisa kwiiVeki 1 no2 kwiKota 1.

Ikota 1 IsiShwankathelo soMxholo (Iiveki 1–2)

(1 iiyure)

Amaqaku ombhexeshi

- ◆ PPT: Ixesha lokugxila kwiMathematika lemihla ngemihla (*IsiKhokelo seeKhonsepthe*, iphepha 83) kunye neVeki 1 neSingeniso B.
- ◆ Thumela abathathinxaxheba kwiVeki 1 kwiSingeniso B: Isishwankathelo soMxholo weVeki neVeki (Iiveki 1–2). Cacisa ukuba isiShwankathelo soMxholo weVeki neVeki sibonelela ngoshwankathelo lomxholo wemathematika weveki nganye. Cacisa ukuba esi sikhokelo siphuhlisiwe waze kamva wabhalwa umxholo *weziKhokelo zeeKhonsepthe*.
- ◆ Dwelisa iimpawu ezahlukileyo zeveki. Funda imisebenzi yeklasi yonke, imisebenzi ekhokelwa ngutitshala kunye nemisebenzi yamaqela azimeleyo amancinci (isitishi sokusebenzela). Yithi abathathinxaxheba basebenze ngokwamaqela ukwenza **Umsebenzi 12**.
- ◆ Gxila kwimo yesiShwankathelo soMxholo seveki neveki:
 - INkalo yoMxholo, isiHloko, ulwazi olutsha, ukuziLungiselela
 - Imisebenzi yeklasi yonke: yenziwa nabafundi bonke, imisebenzi eyoyanyaniswa neNkalo yoMxholo kunye nesiHloko, iquka imisebenzi yesiqhelo equka izicengcelezo/iingoma, ukubala ngomlomo nokubala izinto.
 - Imisebenzi yamaqela amancinci ekhokelwa ngutitshala: igxile ngokukodwa kwiiKhonsepthe ezizakufundiswa, iquka amaqela amancinci anabafundi abathandathu ukuya kwabasibhozo.
 - Imisebenzi yamaqela amancinci azimeleyo (isitishi sokusebenzela): ibonelela ngokuziqhelisa nokuyondelelaniswa kwekhonsepthe eyaziswayo kwimisebenzi yeklasi yonke nakweyamaqela amancinci.
- ◆ Cacisa ukuba isiShwankathelo soMxholo weVeki neVeki sibonelela ngendlela nesikhokelo sokucwangcisa ixesha leveki nganye lokugxila kwiMathematika.

Isingeniso B: Ikota 1 isiShwankathelo soMxholo weVeki neVeki (Iiveki 1–2) sibonelela ngesishwankathelo somxholo size sibonelele ngezinye iingcebiso zokufundisa nokufunda imathematika ngeveki nganye ngolu lwazi lulandelayo:

- ◆ eyona Nkalo yomXholo ekuGxininiswa kuyo kule veke
- ◆ izihloko ekuzakunyathelwa kuzo
- ◆ Ulwazi olutsha kunye noZiqhelise ekuzakugxilwa kuko kule veke
- ◆ imisebenzi ecetyiswayo kumaqela eklasi yonke namaqela amancinci (imisebenzi ekhokelwa ngutitshala nemisebenzi yesitishi sokusebenzela) yeveki.

Read whole class activities, teacher-guided activity and workstation activities in Appendix B: Term 1 Weekly Content Summary (Weeks 1–2).



Activity 8

Look at Appendix B: Term 1 Weekly Content Summary (Weeks 1–2). Answer the questions.

Questions	Week 1	Week 2
What is the Content Area Focus for the week?	Numbers, Operations and Relationships	Numbers, Operations and Relationships
What are the key concepts that learners will be learning?	Oral counting Counting objects	Number symbols Number words
What new knowledge is introduced?	Oral counting 1–5 Counting objects 1–3 One-to-one correspondence Sequencing events	Number 1 Solving problems in everyday contexts
What skills are being practised in Week 2?		Oral counting 1–5 Counting objects 1–3 Vocabulary from Week 1

Facilitator's notes

- ◆ PPT: Briefly review the five-group teaching model and how the Maths Programme's focus time activities are organised (whole class, small group and free choice activities).
- ◆ Remind participants that the focus is on one concept/topic at a time from one Content Area.

Activity Guide: Term 1

Facilitator's notes

- ◆ Explain that *Activity Guide: Term 1* provides teachers with weekly suggestions for teaching maths in Grade R.
- ◆ PPT: Features of *Activity Guide: Term 1* (*Activity Guide: Term 1*, page 6/7).
- ◆ Explain that the next activity will give participants an opportunity to learn more about *Activity Guide: Term 1*.
- ◆ Let participants work in small groups to complete **Activity 13** and then share their responses with the large group.
- ◆ Make links between *Activity Guide: Term 1* and the Weekly Content Summary.

Funda imisebenzi yeklasi yonke, imisebenzi ekhokelwa ngutitshala nemisebenzi yesitishi sokusebenzela kwisiNgeniso B: Ikota 1 isiShwankathelo seVeki neVeki (liveki 1–2).



Umsebenzi 8

Jonga isiNgeniso B: Ikota 1 IsiShwankathelo somXholo weVeki neVeki (liveki 1–2). Phendula le mibuzo.

Imibuzo	Iveki 1	Iveki 2
Ithini iNkalo yoMxholo ekuGxininiswa kuyo kule veki?	Amanani, iiOpareyshini noLwalamano	Amanani, iiOpareyshini noLwalamano
Zithini iikhonsepthi ezingundoqo ezizakufundwa ngabafundi?	Ukubala ngomlomo Ukubala izinto	Iisimboli zamanani Amanani angamagama
Loluphi ulwazi olutsha oluzakwaziswa?	Ukubala ngomlomo 1–5 Ukubala izinto 1–3 Uhambelwano enye-kwenye Ukulandelelanisa iziganeko	Inani 1 Ukusombulula iingxaki kwiimeko zemihla ngemihla
Zeziphi izakhono ekuqheliswa ngazo kwiVeki 2?		Ukubala ngomlomo 1–5 Ukubala izinto 1–3 Isigama seVeki 1

Amanqaku ombhexeshi

- ◆ PPT: Hlaziya ngokufutshane imodeli yokufundisa enguqelantlanu kwanendlela elungiselelwa ngayo imisebenzi yexesha lokugxila kwimisebenzi yeNkqubo yeMathematika (imisebenzi yeklasi yonke, yamaqela amancinci neyokuzikhethela ngokukhululekileyo).
- ◆ Khumbuza abathathinxaxheba ukuba oko kugxilwe kuko kukwikhonsepthi enye/umxholo omnye ngexesha kwiNkalo yeKhonsepthi enye.

IsiKhokelo zomSebenzi: Ikota 1

Amanqaku ombhexeshi

- ◆ Cacisa ukuba *isiKhokelo semiSebenzi: Ikota 1* sibonelela ootitshala ngeengcebiso zeveki zokufundisa imathematika kwiBanga R.
- ◆ PPT: Iimpawu *zesiKhokelo semiSebenzi: Ikota 1 (IsiKhokelo semiSebenzi: Ikota 1, iphepha 6/7)*.
- ◆ Cacisa ukuba umsebenzi olandelayo uzakubanika abathathinxaxheba ithuba lokufunda banzi *ngesiKhokelo semiSebenzi: Ikota 1*.
- ◆ Vumela abathathinxaxheba ukuba basebenze kumaqela amancinci ukuze benze **Umsebenzi 13** baze babelane ngeempendulo zabo neqela elikhulu.
- ◆ Yenza uqhagamshelwano phakathi *kwesiKhokelo semiSebenzi: Ikota 1* kunye neSishwankathelo soMxholo weVeki.

The *Activity Guides* provide Grade R teachers with a structure and framework and offer weekly suggestions for maths teaching and learning.

Refer to Weeks 1 and 2 in *Activity Guide: Term 1* and the Weekly Content Summary in Appendix B. Complete Activity 13 in your group.



Activity 9

1. Look at *Activity Guide: Term 1* and add the information to the table.

Race around <i>Activity Guide: Term 1</i>	
What is on pages 6, 8 and 10?	
On which page is the 'Our classroom rules' poster?	
On which pages is the content overview for Term 1?	
What information is at the start of each new week?	
Find the <i>Grade R Maths family story</i> .	
Which song is introduced in Week 2?	
Find where number 1 is introduced.	
Find a whole class activity that focuses on oral counting.	
Find a teacher-guided activity that focuses on one-to-one correspondence.	
Find a workstation activity that focuses on consolidating the number concept '1'.	

2. Refer to the whole class activities, teacher-guided activity and workstation activities in Appendix B. Find these activities in *Activity Guide: Term 1*.



In Grade R assessment is informal and continuous. We need to observe learners throughout the day, inside and outside the classroom.

The Maths Programme is designed around the rotation of small groups during a week and the teacher pays special attention to one group a day, watching and listening as the learners complete specific tasks. This time gives the teacher the opportunity to carefully observe each learner and gather information on their progress.

IziKhokelo zeMisebenzi zibonelela ootitshala eBanga R ngesimo nesikhokelo zize zibonelele ngeengcebiso zeveki neveki zokufundisa nokufunda imathematika.

Jonga iVeki 1 neye2 kwisiKhokelo semiSebenzi: Ikota 1 kunye nesiShwankathelo soMxholo weveki neveki kwisiNgeniso B. Yenza Umsebenzi 13 kwiqela lakho.



Umsebenzi 9

1. Jonga kwisiKhokelo semiSebenzi: Ikota 1 uze wongeze ulwazi kwitheybhile.

Jikeleza kwisiKhokhelo semiSebenzi: Ikota 1	
Kukho ntoni kumaphepha 7, 9 nele11?	
Ikweliphi iphepha ipowusta ethi 'Imithetho yeklassi yethu'?	
Isishwankathelo somxholo sekota 1 sikweliphi iphepha?	
Loluphi ulwazi olusekuqaleni kweveki entsha nganye?	
Fumana <i>Ibali losapho likaGrade R Maths.</i>	
Yeyiphi ingoma eyaziswa kwiVeki 2?	
Fumanisa ukuba inani 1 laziswa phi na.	
Fumana umsebenzi weklasi yonke ekugxilwa kuwo wokubala ngomlomo.	
Fumana umsebenzi okhokelwa ngutitshala ogxininisa kukuhambelana kwenye nenye.	
Fumana umsebenzi wesitishi sokusebenzela ogxile ekuyondelelaniseni ikhonsepthi yenani '1'.	

2. Jonga kwimisebenzi yeklassi yonke, imisebenzi ekhokelwa ngutitshala kunye nemisebenzi yesitishi sokusebenzela kwiSingeniso B. Fumana le misebenzi kwisiKhokelo semiSebenzi: Ikota 1.



KwiBanga R uhlolo alukho sesikweni kwaye luyaqhubeka. Kufuneka siqwalasele abafundi imini yonke, ngaphakathi nangaphandle eklassini.

INkqubo yeMathematika ihlelwe ngokujikeleza kwamaqela amancinci ebudeni beveki kwaye notitshala unikela ingqalelo ekhethekileyo kwiqela elinye ngosuku, ebukeye kwaye emamele njengokuba abafundi besenza imisebenzi ethile. Eli xesha linika utitshala ithuba lokuqwalasela umfundi ngamnye ngokukhethekileyo nokuqokelela ulwazi ngenkqubela yabo.

Look at the shaded block at the end of the teacher-guided activity in Week 2: **‘Check that learners are able to’**. The eye icon reminds us that we need to observe the learners while they are busy, and we need to listen carefully while they are talking to us and to their peers.

The teacher makes a mental note of each learner and once the learners have left for the day, she writes down her observations in a dedicated observation book that has space for each learner’s notes.

Poster Book and Resource Kit

(10 minutes)

Facilitator’s notes

- ◆ Explain that the *Resource Kit* apparatus will be used during teacher-guided activities and that there is enough apparatus for a small group of six to eight learners. Remind participants of the contents of the *Resource Kit* and show them the following pieces of apparatus and discuss how each will be used:
 - counting materials: coloured discs and sticks, fruit and animal counters, Unifix blocks
 - dice
 - structure beads
 - number cards (number symbols and number words)
 - attribute blocks.
- ◆ Show participants the *Poster Book* and explain that there are activities in the *Activity Guides* that use the *Poster Book* to stimulate discussion and link maths to familiar contexts at school, home and in the community.

The *Resource Kit* has enough apparatus for a small group of six to eight learners. The apparatus that will be used in Term 1 Weeks 1 and 2 includes:

- ◆ counters: animal and fruit counters
- ◆ number cards: number symbol (1) and number word (one).

Facilitator’s notes

- ◆ Give a *Resource Kit* and a *Poster Book* to each participant.

You will each receive a *Resource Kit* and a *Poster Book*.

Refer to pages 6–17 of *Activity Guide: Term 1* to read about classroom resources and setting up a maths learning environment.

Jonga ibhloko ekhuhliweyo esekupheleni komsebenzi okhokelwa ngutitshala kwiVeki 2: **'Qwalasela ukuba abafundi bayakwazi uku-'**. Isalathisi esililiso sisikhumbuza ukuba kufuneka sibaqwalasele abafundi ngeli lixa baxakekileyo, kwaye sidinga nokuba phulaphula ngomonde xa bethetha nathi kwanoogxa babo.

Utitshala umthathela ingqalelo umfundi ngamnye baze bathi bakuhamba abafundi ukuphuma kwesikolo, abhale phantsi oko akuqwalaseleyo kwincwadi eyabelwe ingqwalasela nenendawo yamanqaku omfundi ngamnye.

INcwadi yeePowusta neKiti yeziXhobo

(10 imizuzu)

Amanqaku ombhexeshi

- ◆ Cacisa ukuba izixhobo ze*Kiti yeziXhobo* zizakusetyenziswa kwimisebenzi ekhokelwa ngutitshala kwanokuba kukho izixhobo ezaneleyo zamaqela amancinci wabafundi abathandathu ukuya kwabasibhozo. Bakhumbuze abathathinxaxheba ngemixholo ye*Kiti yeziXhobo* uze ubabonise la maqhekeza alandelayo ezixhobo zomsebenzi nize nixoxe ngokuba lilinye kuwo lizakusetyenziswa njani na:
 - iimathiriyeli zokubala: iidiski nezinti ezinemibala, izixhobo zokubala eziziziqhamo nezizizilwanyana, kunye neebhloko zeUnifix
 - idayisi
 - amaso okuhlela
 - amakhadi amanani (iisimboli zamanani namanani angamagama)
 - iibhloko zeathribhyuthi.
- ◆ Bonisa abathathinxaxheba *iNcwadi yeePowusta* uze ucacise ukuba kukho imisebenzi ekwizi*Khokelo zemiSebenzi* esebenzisa *iNcwadi yeePowusta* ukukhuthaza ingxoxo kuze koyanyaniswe imathematika nemixholo eqhelekileyo esikolweni, ekhaya nasekuhlaleni.

iKiti yeziXhobo inezixhobo ezanele iqela elincinci labafundi abathandathu ukuya kwabasibhozo. Izixhobo ezizakusetyenziswa kwiKota 1 iiVeki 1 no2 ziquka:

- ◆ izixhobo zokubala: izixhobo zokubala ezizizilwanyana neziziziqhamo
- ◆ amakhadi amanani: isimboli yenani (1) negama lenani (nye).

Amanqaku ombhexeshi

- ◆ Nika umthathinxaxheba ngamnye *iKiti yeziXhobo* kunye ne*Ncwadi yeePowusta*.

Emnye kuni uzakufumana *iKiti yeziXhobo* kunye ne*Ncwadi yeePowusta*.

Jonga kumaphepha 6–17 esi*Khokelo semiSebenzi: Ikota 1* ukuze ufunde ngezixhobo zaseklasini uze ulungiselele imeko yokufundwa kwemathematika.

Closing activities

(10 minutes)

Facilitator's notes

- ◆ **Lessons learnt:** Ask participants to think about what they have learnt during the workshop and to complete **Activity 14** individually.
- ◆ **Take back to school task:** Read through this task. Ask if there is anything that is not clear and that requires more explanation.
- ◆ **Evaluation:** Hand out copies of the Workshop Evaluation Form and have participants complete the form.
- ◆ **Next workshop:** Ask participants to bring the *Poster Book*, *Concept Guide* and *Activity Guide: Term 1* to the next workshop. Give dates for the next workshop.
- ◆ **Register:** Remind all participants to make sure that they have signed the register.
- ◆ Close the workshop.



Activity 10

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

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



Take back to school task

1. Read the *Concept Guide* pages that were referred to during this workshop.
2. Use *Activity Guide: Term 1* to plan and implement Weeks 1–2 of the Maths Programme.
3. Reflect on how the Maths Programme's guiding principles informed teaching and learning in your classroom.
4. Set up a maths area. Take a photograph of it and bring it to the next workshop.

Amanqaku ombhexeshi

- ◆ **Izifundo ezifundiweyo:** Cela abathathinxaxheba bacinge malunga noko bakufundileyo kule ndibano yocweyo baze benze **Umsebenzi 14** ngabanye ngabanye.
- ◆ **Umsebenzi ekubuyelwa nawo esikolweni:** Fundisisa lo msebenzi. Buza ukuba ikhona na into engacacanga efuna ukucaciswa banzi.
- ◆ **Uhlolo:** Gqithisa iikopi zeFomu yokuHlolwa kweNdibano yoCweyo uze ucele abathathinxaxheba ukuba bagcwalise ifomu.
- ◆ **Indibano yocweyo elandelayo:** Cela abathathinxaxheba beze *neNcwadi yeePowusta, isiKhokelo seeKhonsepthe nesiKhokelo semiSebenzi: Ikota 1* kwindibano yocweyo elandelayo.
- ◆ **Irejista:** Khumbuza bonke abathathinxaxheba ukuba baqinisekise ukuba bayisayinile irejista.
- ◆ Yivale indibano yocweyo.



Umsebenzi 10

Izifundo ezifundiweyo: Cinga malunga noko ukufundileyo ngexesha lendibano yocweyo uze ugcwalise le theybhile.

Izinto esele ndizenza ezisebenza kakuhle	Izimvo ezintsha endingathanda ukuzizama



Umsebenzi ekubuyelwa nawo esikolweni

1. Funda amaphepha *esiKhokelo seeKhonsepthe* ekolathwe kuwo ngexesha lendibano yocweyo.
2. Sebenzisa *isiKhokelo semiSebenzi: Ikota 1* ukucwangcisa nokuphumeza iiVeki 1–2 zeNkqubo yeMathematika.
3. Qwalasela indlela iinkqubo ezikhokelayo zeNkqubo yeMathematika ezikufuthela ngayo ukufundisa nokufunda eklasini.
4. Lungisa indawo yemathematika. Thatha ifoto yayo uze nayo kwindibano yocweyo elandelayo.



Bring the following to the next workshop:

- ◆ *Poster Book*
- ◆ *Concept Guide*
- ◆ *Activity Guide: Term 1.*

Evaluation

Complete the Evaluation Form.



Yiza noku kulandelayo kwindibano yocweyo elandelayo:

- ◆ *INcwadi yeePowusta*
- ◆ *IsiKhokelo seeKhonsepthi*
- ◆ *IsiKhokelo semiSebenzi: Ikota 1.*

Uhlolo

Gcwalisa iFomu yoHlolo.

APPENDIX B: TERM 1 WEEKLY CONTENT SUMMARY (WEEKS 1-2)

Term 1: Activity Plan

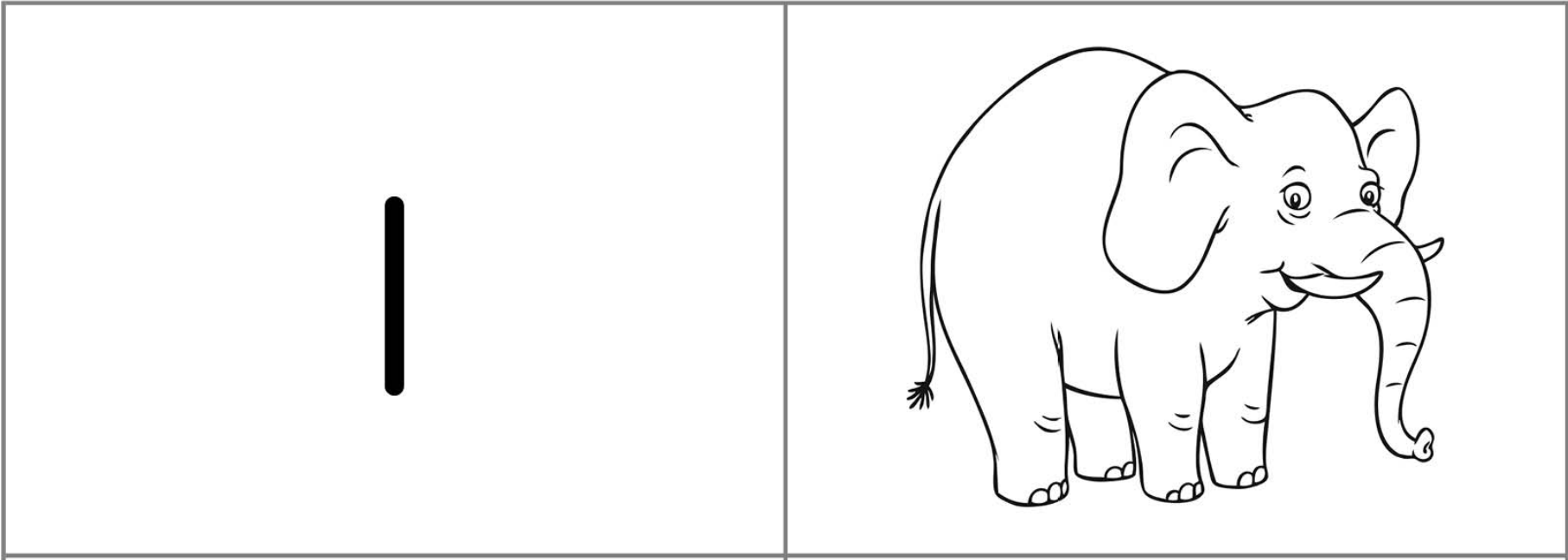
Week 1				
CONTENT AREA: NUMBERS, OPERATIONS AND RELATIONSHIPS				
TOPIC: Oral counting and counting objects				
INTRODUCE NEW KNOWLEDGE: Oral counting 1–5, counting objects 1–3, one-to-one correspondence, sequencing daily programme				
Whole class activities		Teacher-guided activity	Workstation activities	
Day 1	Routine, class rules, learner symbols and daily programme.	No teacher-guided small group activity in the first week to allow the teacher to rotate between all five workstations: guiding, assisting and encouraging the learners. Some learners may not have seen or used the equipment before so the teacher will need to demonstrate and support their first attempts.	Activity 1	Sorting animal and fruit counters by colour (from the <i>Resource Kit</i>).
Day 2	Helper’s chart, rhyme, <i>Grade R Maths family story</i> .		Activity 2	Playdough or clay modelling.
Day 3	Helper’s chart, Tidy-up chart, rhyme, oral counting and the <i>Grade R Maths family story</i> .		Activity 3	Draw a picture.
Day 4	Rhyme, oral counting, counting objects, sequencing daily events, bowls.		Activity 4	Six-piece puzzle.
Day 5	Rhyme, oral counting, learners’ symbols.		Activity 5	Building blocks.
Week 2				
CONTENT AREA: NUMBERS, OPERATIONS AND RELATIONSHIPS				
TOPIC: Number symbols and number words				
INTRODUCE NEW KNOWLEDGE: Introduce number 1, solving problems in everyday contexts (rhymes and posters)				
PRACTISE: Oral counting 1–5, counting objects 1–3, vocabulary from previous week				
Whole class activities		Teacher-guided activity	Workstation activities	
Day 1	Song, oral counting, introduce number 1 and the number 1 frieze, body parts (‘how many?’ games), find one object.	Support learners in their efforts to complete tasks. Ask guiding questions and encourage learners to share their ideas. Count objects: one-to-one correspondence. Sort animal counters according to colour. Match number 1 symbol and word cards with dot card and animal counters.	Activity 1	Matching counters to dots using egg boxes.
Day 2	Song, oral counting, frieze for number 1, body games.		Activity 2	Make one playdough object and draw it.
Day 3	Song, oral counting, counting objects, reinforce number 1, look for 1 object.		Activity 3	‘One’ template using playdough.
Day 4	Rhyme, oral counting, problem solving – poster story.		Activity 4	Building blocks.
Day 5	Rhyme, oral counting, counting objects in the poster, solving problems.			

ISINGENISO B: IKOTA 1 ISISHWANKATHELO SOMXHOLO WEVEKI NEVEKI (IIVEKI 1-2)

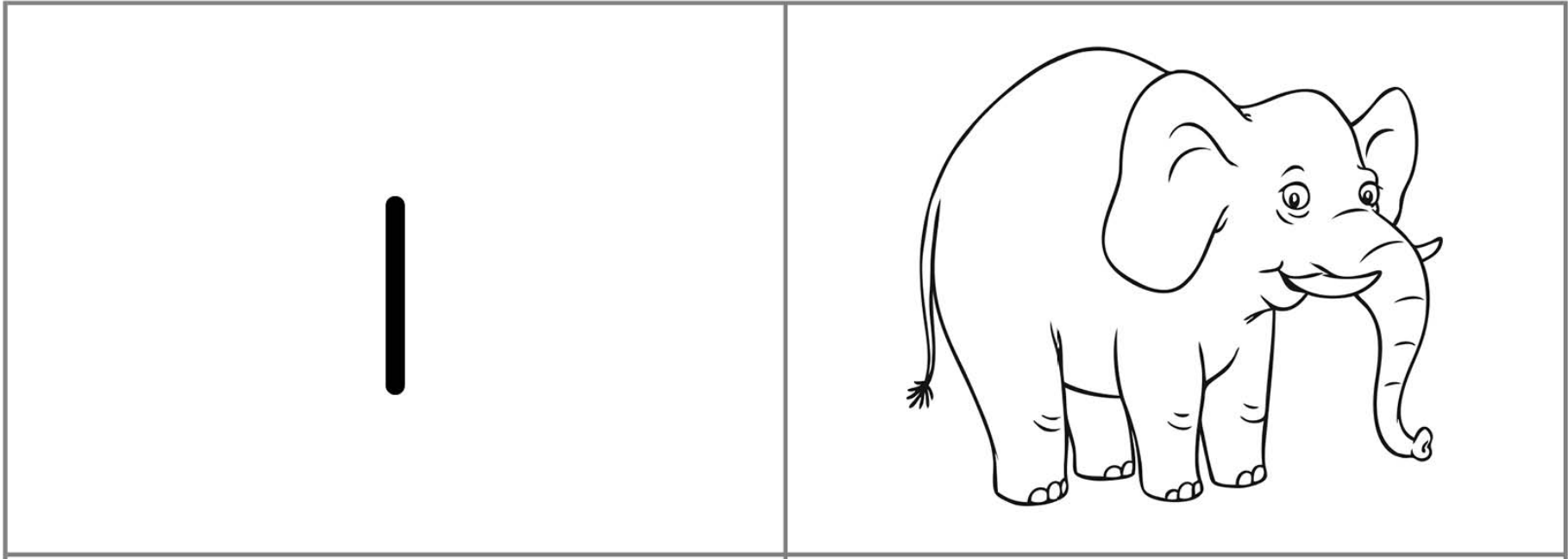
Ikota 1: Isicwangciso semiSebenzi

Iveki 1				
INKALO YOMXHOLO: AMANANI, IOPAREYSHINI NOLWALAMANO				
ISIHLOKO: Ukubala ngomlomo nokubala izinto				
UKWAZISA ULWAZI OLUTSHA: Ukubala ngomlomo 1-5, ukubala izinto 1-3, ukuhambelana kwenye nenye, ukulandelelanisa iziganeko zemihla ngemihla				
Imisebenzi yeklasi yonke		Umsebenzi okhokelwa ngutitshala		Imisebenzi yesitishi sokusebenzela
Usuku 1	Okwenziwa rhoqo, imithetho yeklasi, iisimboli zabafundi nenkqubo yemihla ngemihla.	Ayikho imisebenzi ekhokelwa ngutitshala kwiveki yokuqala ukuvumela utitshala ukuba akwazi ukujikeleza kuzo zontlanu izitishi zokusebenzela: ukukhokela, ukuncedisa nokukhuthaza abafundi. Kusenokwenzeka ukuba abanye abafundi abakaze basibone okanye basisebenzise isixhobo ngaphambili ngoko utitshala kuzakufuneka ukuba ababonise aze abanike inkxaso kumalinge abo okuqala.	Umsebenzi 1	Ukuhlela izixhobo zokubala ezizizilwanyana neziziziqhamo ngokombala (<i>kwiKiti yeziXhobo</i>).
Usuku 2	Itshathi yabancedisi, isicengcelezo, <i>Ibali losapho likaGrade R Maths</i> .		Umsebenzi 2	Intlama yokudlala okanye udongwe lokubumba.
Usuku 3	Itshathi yabancedisi, iTshathi yokuQoqosha, isicengcelezo, ukubala ngomlomo kunye <i>Ibali losapho likaGrade R Maths</i> .		Umsebenzi 3	Zoba umfanekiso.
Usuku 4	Isicengcelezo, ukubala ngomlomo, ukubala izinto, ukulandelelanisa iziganeko zemihla ngemihla, izitya.		Umsebenzi 4	Iphazili enamaqhekeza amathandathu.
Usuku 5	Isicengcelezo, ukubala ngomlomo, iisimboli zabafundi.		Umsebenzi 5	Iibhloko zokwakha.
Iveki 2				
INKALO YOMXHOLO: AMANANI, IOPAREYSHINI NOLWALAMANO				
ISIHLOKO: Iisimboli zamanani namanani angamagama				
UKWAZISA ULWAZI OLUTSHA: Yazisa inani 1, ukusombulula iingxaki kwimixholo yemihla ngemihla (izicengcelezo neepowusta)				
UKUZIQHHELISA: Ukubala ngomlomo 1-5, ukubala izinto 1-3, isigama seveki egqithileyo				
Imisebenzi yeklasi yonke		Umsebenzi okhokelwa ngutitshala		Imisebenzi yesitishi sokusebenzela
Usuku 1	Ingoma, ukubala ngomlomo, ukwazisa inani u1 nefrizi yenani 1, amalungu omzimba (imidlalo ka'zingaphi?'), fumana into enye.	Nika abafundi inkxaso ngamalinge abo okwenza umsebenzi. Buza imibuzo ekhokelayo uze ubakhuthaze abafundi ukuba babelane ngeembono zabo. Bala izinto: ukuhambelana kwenye nenye. Hlela izixhobo zokubala ezizizilwanyana ngokombala. Tshatisa isimboli yenani 1 namakhadi egama kunye nekhadi elinamachokoza kwakunye nezixhobo zokubala ezizizilwanyana.	Umsebenzi 1	Ukutshatisa izixhobo zokubala namachokoza kusetyenziswa iibhokisi zamaqanda.
Usuku 2	Ingoma, ukubala ngomlomo, ifrizi yenani 1, imidlalo yamalungu omzimba.		Umsebenzi 2	Bumba into enye ngentlama yokudlala uze uyizobe.
Usuku 3	Ingoma, ukubala ngomlomo, ukubala izinto, ukubethelela inani 1, khangela into ibe1.		Umsebenzi 3	Ithempleyithi ka'Nye' kusetyenziswa intlama yokudlala.
Usuku 4	Isicengcelezo, ukubala ngomlomo, ukusombulula ingxaki - ibali lepowusta.		Umsebenzi 4	Iibhloko zokwakha.
Usuku 5	Isicengcelezo, ukubala ngomlomo, ukubala izinto ezikwipowusta, ukusombulula iingxaki.			

APPENDIX C: NUMBER 1 FRIEZE CARDS



ISINGENISO C: AMAKHADI EFRIZI YENANI 1





one



nye

Workshop 1 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 1

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?
