Siswati/English

Luhlelo Lwekwenta Kancono
Tibalo TeLibanga R
Grade R Mathematics
Improvement Programme

Umhlanganosikolo 3 ● Workshop 3

Incwadzi Yekusebentela Yemhlanganyeli ● Paticipant's Workbook

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**.

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

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

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Le-**Schools Development Unit** (SDU) e-**University of Cape Town** (UCT) ingumlingani wetebuchwepheshe wetibalo kuloMklamo Wetibalo TeLibanga R Nekwenta Kancono Lulwimi. Le-SDU iyiyunithi lengekhatsi e-UCT School of Education lebukene nekutfutfukiswa kwabothishela ngekwebungcweti kuTibalo, Isayensi, Kufundza nekubhala/Lulwimi Nemakhono Ekuphila kusuka kuLibanga R kuya kuLibanga le-12. Le-SDU iniketa ticu tebuthishela kanye netifundvo letifishane letivunywe yi-UCT, umsebenti lophatselene nesikolo, kwentiwa kwemethiriyeli nekucwaninga kusekela kufundzisa nekufundza kuto tonkhe tingcikitsisimo taseNingizimu Afrika.

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Overview

Purpose

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

The purpose of this workshop is to assist teachers to implement the Maths Programme in their classrooms. Participants will strengthen their understanding of the CAPS Content Areas covered in Weeks 6–9 of Term 1 and practise skills in mediating maths learning.

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

Learning outcomes

- To reflect on the implementation of Term 1 Weeks 3–5
- To apply the Maths Programme principles in weekly planning
- To explore strategies to support teaching maths in Grade R
- To engage with the Maths Programme content of Term 1 Weeks 6–9 (Patterns, Functions and Algebra; Space and Shape (Geometry); Measurement; Numbers, Operations and Relationships)
- To start to understand how learners' different interests and ability levels inform learning and teaching

Workshop content

- Opening and reflection (1 hour)
- Session 1: Patterns, Functions and Algebra (1 hour)

TEA

- Session 2: Space and Shape (Geometry) (1 hour)
- Session 3: Measurement (1 hour)

LUNCH

- Session 4: Numbers, Operations and Relationships (1 hour)
- Session 5: Planning for teaching (1 hour)

Sibutsetelo

Inhloso

Lona ngumhlanganosikolo wesitsatfu walelelishumi nakubili yeLuhlelo Lwekwenta Kancono Tibalo TeLibanga R (Luhlelo Lwetibalo), loyincenye yeLitiko Letemfundvo laseGauteng (Gauteng Department of Education (GDE)) Umklamo Wetibalo TeLibanga R Nekwenta Kancono Lulwimi.

Inhloso yalomhlanganosikolo kusita bothishela kutsi bafezekise Luhlelo Lwetibalo emaklasini abo. Lomhlanganosikolo. Bahlanganyeli batawugcizelela kuvisisa kwabo Umkhakha Walokucuketfwe ku-CAPS lokufundvwe kuMaviki 6–9 eThemu 1 baphindze batetayete emakhono ekungenelela nakufundvwa tibalo.

Emareferensi kuMikhakha Yalokucuketfwe Tibalo Telibanga R atsetfwe ku*Sitatimende Senchubomgomo Yekharikhulamu Nekuhlola (i-CAPS): Tibalo TeLibanga R (Luhlaka Lwekugcina),* 2011, Litiko Letemfundvo Lesisekelo, laseNingizimu Afrika.

Imiphumela yekufundza

- Kubuyeketa kufezekiswa kweThemu 1 Emaviki 3–5
- Kusebentisa imitsetfosimiso yeLuhlelo Lwetibalo ekuhleleni kwangeliviki
- Kwehlwaya emasubuciko kwesekela kufundzisa tibalo kuLibanga R
- Kutibandzakanya kulokucuketfwe Luhlelo Lwetibalo kweThemu 1 Emaviki 6–9 (Emaphethini, Emafangshini ne-Aljebhra; Sikhala naBunjwa (Ijomethri); Kulinganisa; Tinombolo, Ema-ophareshini neBudlelwane)
- Kucala kuvisisa kutsi tintfo letifunwa bafundzi letehlukene nemazinga ekukhona kwenta lokutsite esekele kufundza nekufundzisa

Lokucuketfwe kwemhlanganosikolo

- Kuvula nekubuyeketa (1 li-awa)
- Iseshini 1: Emaphethini, Emafangshini ne-Aljebhra (1 li-awa)

LITIYA

- Iseshini 2: Sikhala naBunjwa (Ijomethri) (1 li-awa)
- Iseshini 3: Kulinganisa (1 li-awa)

KUDLA KWASEMINI

- Iseshini 4: Tinombolo, Ema-ophareshini neBudlelwane (1 li-awa)
- Iseshini 5: Kuhlelela kufundzisa (1 li-awa)

Opening and reflection **1 hour**

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

 **Activity 1**

1. Discuss your progress in implementing Weeks 3–5 and the *Take back to school* task from Workshop 2.
2. Share your photograph of the Space and Shape (Geometry) focus in the maths area.
3. How did you record your observations of each learner during the teacher-guided activity?
4. Which teaching principles are you more aware of in your classroom?

 **Video 1**

Watch the video of how the teacher uses a rhyme to practise counting and solving word problems.

Discuss how you managed this and other lessons that incorporated rhymes into counting activities.

_____
_____
_____
_____

Kuvula nekubuyeketa

1 li-awa

Buyeketa kufezekiswa kweLuhlelo Lwetibalo kuluhlelo lwemalanga onkhe lwakho bese uyenta ucedzela lomsebenti lolandzelako ecenjini lakho.

Umsebenti 1

1. Khulumisanani ngenchubekelembili eKufezekiseni Emaviki 3–5 nemsebenti loniketiwe weKubuyisela emuva esikolweni lokuMhlanganosikolo 2.
2. Yabelana sitfombe sakho sekugcila kweSikhala naBunjwa (Ijomethri) kundzawo yetibalo.
3. Ukubhale kanjani loko lokubukisisile kwemfundzi ngamunye ngesikhatsi semsebenti loholwa nguthishela?
4. Nguyiphi imitsetfomgomo loyicaphela kakhulu eklasini lakho?

Ividiyo 1

Bukela levidiyo lemayelana nekutsi thishela usisebentisa kanjani silandzelo kutetayeta kubala nekusombulula tinkinga temagama.

Khulumisanani ngekutsi ukulawula kanjani loku naletinye tifundvo letifake tilandzelo emisebentini yekubala.

_____

_____

_____

_____

Session 1: Patterns, Functions and Algebra

1 hour

This workshop focuses on teaching the following Maths Programme content: Term 1 Weeks 6–9. This session focuses on Term 1 Week 6: Patterns, Functions and Algebra.

Term 1 Content overview: Patterns, Functions and Algebra

Refer to the Patterns, Functions and Algebra Content Area on page 124 of the *Concept Guide*.

 **Activity 2**

In your group, discuss:

1. What concepts are covered in Term 1?

_____
_____
_____

2. What are the differences between the content and the content from CAPS?

_____
_____
_____

Understanding patterns

Developing an understanding of patterns is an important part of maths. Patterns are all around us and children encounter lots of patterns in their daily lives at home and at school.

Think about your own understanding of the Content Area: Patterns, Functions and Algebra and complete Activity 3 with your group.

Iseshini 1: Emaphethini, Emafangshini ne-Aljebhra

1 li-awa

Lomhlanganosikolo ugcile ekufundziseni naku lokulandzelako lokucuketfwe Luhlelo Lwetibalo: Ithemu 1 Emaviki 6–9. Leseshini igcile kuThemu 1 Liviki 6: Emaphethini, Emafangshini ne-Aljebhra.

Ithemu1 Sibutsetelo Salokucuketfwe: Emaphethini, Emafangshini ne-Aljebhra

Fundza Umkhakha Walokucuketfwe weMaphethini, Emafangshini ne-Aljebhra kulikhasi 125 *Inkhombandlela Yemcondvo*.

Umsebenti 2

Ecenjini lakho, khulumisanani:

1. Nguyiphi imicondvo lefundziswe kuThemu 1?

_____
_____
_____

2. Nguwuphi umehluko losemkhatsini walokucuketfwe kanye nalokucuketfwe kwe-CAPS?

_____
_____
_____

Kuvisisa emaphethini

Kutfutfukisa kuvisisa emaphethini kuyincenye lenkhulu yetibalo. Emaphethini lasitungeletile futsi bantfwana bahlangana nemaphethini lamanyenti etimphilweni tabo temalanga onkhe ekhaya nasesikolweni.

Cabanga ngekuvisisa kwakho Inkhundla Yalokucuketfwe: Emaphethini, Emafangshini ne-Aljebhra bese uyenta ucedze Umsebenti 3 nelicembu lakho.

Activity 3

In your group, discuss:

1. What kinds of patterns might Grade R learners observe in their daily lives?

_____

_____

2. Look at Poster 7 in the *Poster Book*.

- What patterns do you see?

_____

_____

- What is the pattern?

_____

_____

- Can you repeat the pattern? Explain.

_____

_____

A **pattern** describes the regular sequence of objects, pictures, movements, actions or events that are repeated in a predictable way.
A **sequence** is the particular order in which objects, pictures, movements, actions or events follow each other.

Identifying patterns

In a regular pattern, we can see how the elements in the sequence are repeated. We can also predict the order or sequence of the elements and how they will be repeated to create a pattern. In the pattern below we can see that the circle and square are repeated and we can predict what the next shape in the sequence will be.

Umsebenti 3

Ecenjini lakho, coca:

1. Ngutiphi tinhlobo temaphethini letingabukisiswa kubafundzi beLibanga R etimphilweni tabo temalanga onkhe?

_____

_____

2. Buka Iphosta 7 ku*Ncwadzi Yemaphosta*.

- Ngumaphi emaphethini lowabonako?

_____

_____

- Nguyiphi lephethini?

_____

_____

- Ungayiphindza lephethini? Chaza.

_____

_____

Iphethini kulandzelana kwema-objekthi, titfombe, iminyakato noma tehlakalo letiphindzekako ngendlela lengalindzeleka.

Kulandzelana (isikhwensi) kuhleleka lokutsite lapho ema-objekthi, iminyakato noma tehlakalo tilandzelana.

Kukhomba emaphethini

Kuphethini lehlelekile, siyabona kutsi lama-elementi aphindvwe kanjani kulokulandzelanisa. Singaphindze futsi sicombele kuhleleka nekulandzelana kwema-elementi nekutsi atawuphindvwa kanjani kute kwakheke iphethini. Kulephethini lengentasi siyabona kutsi indingilizi nesikwele kuphindziwe futsi siyakhona kucombela kutsi lobunjwa lolandzelako kulokulandzelana utawuba yini.

Activity 4

1. Which shape is first?

_____

2. Which shape is next?

_____

3. What shape do you think will come after the last square?

_____

4. How would you extend the pattern?

_____

Repeating patterns are made up of a repeated sequence of elements, e.g. shapes, colours, sounds, objects, movements.

In the next activity, the facilitator will show you a sequence of shapes. You will use the attribute blocks on your table to copy this sequence and discuss how to extend this to create a pattern.

Activity 5

1. What is the pattern?

_____

_____

2. What is the repeating part of the sequence?

_____

_____

Umsebenti 4

1. Ngumuphi bunjwa lowekucala?

_____

2. Ngumuphi bunjwa lolandzelako?

_____

3. Ngumuphi bunjwa locabanga kutsi utawulandzela lesikwele sekugcina?

_____

4. Yini longayenta kukhulisa lephethini?

_____

Emaphethini laphindzekako akhiwa kulandzelana kwema-elementi laphindziwe, sib. bobunjwa, imibala, imisindvo, ema-objekthi, kuhamba.

Kulomsebenti lolandzelako, umfundzisi utawukhombisa kulandzelanisa kwabobunjwa. Utawusebentisa emabhlokhi e-athribhuyithi lasetafuleni lakho kukopa lokulandzelanisa bese ukhuluma ngekutsi loku kungakhuliswa kanjani kute kwakhe iphethini.

Umsebenti 5

1. Nguyiphi iphethini?

_____

_____

2. Nguyiphi incenye yekulandzelanisa lephindzekako?

_____

_____

Introduce learners to patterns that start with only one attribute that differs, e.g. shape, and provide enough items in the sequence so that learners can work out what the pattern is (the repeating part in the sequence).

It is important for teachers to provide a range of opportunities for learners to identify, copy and create different kinds of patterns using sounds, actions, objects and pictures.

 **Video 2**

Watch the video of the teacher setting up activities that provide opportunities for learners to create and discuss patterns.

Notice how the teacher guides the learners through questions and prompts to create a pattern. Write down the vocabulary that she and the learners using during these activities.

_____

_____

_____

_____

Refer to pages 160–173 of the *Concept Guide* to read more about teaching Patterns, Functions and Algebra in Grade R. You will also find a list of appropriate questions and vocabulary for this Content Area.

The **level principle** says that learners are at different starting points in Grade R. Each learner's prior knowledge is the starting point for what they will learn. They can use what they know already to learn new maths concepts and skills.

Yetfula bafundzi kumaphethini lacala nge-athribhuyithi yinye kuphela leyehlukile sib. bunjwa, futsi ubanike tintfo letenele kulokulandzelanisa kute kutsi bafundzi batfole kutsi yini lephethini (lencenye lephindzako kulokulandzelanisa).

Kubalulekile kutsi bothishela banike bafundzi ematfuba lamanyenti ekukhomba, kukopa kanye nekucamba bakhe emaphethini lamanyenti lehlukene basebentisa imisindvo, tento, ema-objekthi kanye netitfombe.

Ividiyo 2

Bukela ividiyo yathishela enta imisebenti lenika bafundzi ematfuba ekucamba bakhe baphindze futsi bakhulume ngemaphethini.

Caphela kutsi thishela ubakhombindlela kanjani bafundzi ngekubabuta imibuto aphindze futsi abagcugcutele kutsi bakhe iphethini. Bhala phasi silulumagama lesisetjentiswe nguye kanye nebafundzi ngesikhatsi benta lomsebenti.

_____

_____

_____

_____

Fundza emakhasi 160–173 e*Nkhombandlela Yemcondvo* kute ufundze kabanti mayelana nekufundzisa Emaphethini, Emafangshini ne-Aljebhra kuLibanga R. Utawuphindze futsi utfole luhlu lwemibuto lefanele kanye nesilulumagama saleNkhundla Yekufundza.

Umtsetfosimiso welizinga utsi bafundzi baseticakwini tekucala letehlukene kuLibanga R. Lwati lwangaphambilini lwemfundzi ngamunye sicaku sekucala saloko labatawukufundza. Bangasebentisa loko lesebavele bakwati bafundze imicondvo nemakhono etibalo lamasha.

Session 2: Space and Shape (Geometry) **1 hour**

The focus of Term 1 Week 7 is Space and Shape (Geometry). In Workshop 2, we discussed 3-dimensional objects and 2-dimensional shapes and the content of Weeks 3–5 to be implemented in the classroom.

Term 1 Content overview: Space and Shape (Geometry)

 **Activity 6**

Refer to the Space and Shape (Geometry) Content Area on pages 126–131 of the *Concept Guide*. You will see that circles, squares and triangles are introduced in CAPS in Term 1 and rectangles are introduced in Term 4. The Maths Programme suggests that rectangles are introduced incidentally in Term 1.

1. When you taught squares did you find that learners confused squares and rectangles? Give reasons to support your answer.

_____

_____

_____

_____

2. How were rectangles introduced in Week 3 of the Maths Programme?

_____

_____

_____

_____

Identifying 2-dimensional shapes (triangles)

In Grade R learners recognise, identify and name 2-dimensional shapes: circles, squares, triangles and rectangles. The Maths Programme also suggests that learners are encouraged to describe the properties of these shapes, e.g. straight or curved lines, number of lines and corners.

Learners apply their new knowledge of shapes and reinforce this learning in the independent small group activities.

Iseshini 2: Sikhala naBunjwa (Ijomethri) **1 li-awa**

Kugcila kweThemu 1 Liviki 7 kukuSikhala naBunjwa (Ijomethri). Kumhlanganosikolo 2, sikhulume ngema-objekthi lanetinhlangotsi letintsatfu nabobunjwa netinhlangotsi leti-3 nabobunjwa labanetinhlangotsi leti-2 labanetinhlangotsi leti-2 futsi lokucuketfwe ngemaviki 3–5 kutawufezekiswa eklasini.

Sibutsetelo salokucuketfwe Ithemu 1: Sikhala naBunjwa (Ijomethri)

Umsebenti 6

Fundza Inkhundla Yalokucuketfwe yeSikhala naBunjwa (Ijomethri) kumakhasi 126–131 e*Nkhombandlela Yemcondvo*. Utawubona kutsi letindingilizi, tikwele nabocalantsantfu betfulwe ku-CAPS kuThemu 1 bese kutsi bocalandze bona betfulwe kuThemu 4. LoLuhlelo Lwetibalo lubeka kutsi bocalandze betfulwa ngalokungakacashelwa kuThemu 1.

1. Ngesikhatsi ufundzisa tikwele ubonile kutsi bafundzi bebadideka batsi tikwele bocalandze? Niketa tizatfu letesekela imphendvulo yakho.

_____

_____

_____

_____

2. Betfulwe kanjani bocalandze kuLiviki 3 leLuhlelo Lwetibalo?

_____

_____

_____

_____

Kukhomba bobunjwa labangu-2-D (bocalantsatfu)

KuLibanga R bafundzi bayabona, bayakhomba baphindze futsi basho emagama abobunjwa labanetinhlangotsi le-2: tindingilizi, tikwele, bocalantsatfu nabocalandze. LoLuhlelo Lwetibalo luphindze futsi lubeke kutsi bafundzi bakhutsatwa kutsi kucacisa emaphrophathi alabobunjwa, sib. ucondzile noma ugobile, linani lemigca nemakona.

Bafundzi basebentisa lwati lwabo lwabobunjwa lolusha baphindze futsi bagcizelele kufundza loku kumsebenti wekutimela wemacembu lamancane.

Video 3

Watch the video of the teacher introducing the learners to the triangle.

Notice how the teacher encourages the learners to describe the properties of the triangle.

_____

_____

_____

_____

Activity Guide: Term: Term 1 provides many opportunities throughout the term for teachers to use open-ended questions. The *Poster Book* is used during whole class activities and small group teacher-guided activities to encourage learners to express their own ideas and solve problems.

In Activity 7, you will discuss a poster and talk about whether the questions posed are 'open-ended' or 'closed' questions.

Activity 7

1. Look at Poster 8 and respond to the following questions.

- How many triangles can you see?

_____

- How do you know it is a triangle?

_____

- How many sides does it have?

_____

- How many corners does it have?

_____

- How many lines?

_____

- Can you see any other triangles?

_____

- What other shapes can you see?

_____

- What is the same about these two shapes?

_____

- What is different about these two shapes?

_____

Ividiyo 3

Bukela ividiyo yathishela angenisa bafundzi kucalantsatfu.

Caphela kutsi thishela ubakhutsata kanjani bafundzi kutsi bachaze emaphrophathi acalantsatfu.

_____

_____

_____

_____

Inkhombandlela Yemsebenti: Ithemu 1 iniketa ematfuba lamanyenti kuyo yonkhe ithemu ekutsi bothishela basebentise imibuto levulekile. *Incwadzi Yemaphosta* isetjentiswa ngesikhatsi semisebenti yeliklasi lonkhe nesemisebenti yemacembu lamancane leholwa nguthishela kukhutsata bafundzi kutsi babeke imibono yabo kanye nekusombulula tinkinga.

KuMsebenti 7, nitawukhuluma ngephosta niphindze futsi nikhulume ngekutsi lemibuto lebutiwe imibuto 'levulekile' yini noma 'levalekile'.

Umsebenti 7

1. Buka Iphosta 8 bese uphendvula lemibuto lelandzelako.

- Bangaki bocalantsatfu lobabonako?

_____

- Wati kanjani kutsi ngucalantsatfu?

_____

- Unemacala lamangaki?

_____

- Unemakona lamangaki?

_____

- Unemigca lemingaki?

_____

- Bakhona yini labanye bocalantsatfu lobabonako?

_____

- Ngubaphi labanye bobunjwa lobabonako?

_____

- Yini lokufananako ngalabobunjwa lababili?

_____

- Yini leyehlukile ngalabobunjwa lababili?

_____

2. Which of the questions above are open-ended and which are closed questions?

_____

_____

The **guidance principle** encourages teachers and learners to work together to solve problems using effective questioning.

- **Closed questions** are questions that have a limited 'yes' or 'no' response. Closed questions can be helpful in finding out what learners know, like 'Which shape is a triangle?', 'What colour is it?'
- **Open-ended questions** have more than one possible answer, stimulate thinking and encourage learners to express their own ideas when solving problems.

Not all learners will grasp these concepts or learn the maths language at the same time (**level principle**).

Maths vocabulary

When learners investigate, and describe shapes and objects, they use everyday language like 'flat', 'smooth' and 'pointy'. Teachers can introduce maths vocabulary to replace everyday language, for example: straight lines, curved lines, corners, sides. We also talk about how long something is, how wide it is and refer to the height of something.

Refer to the pages 190–193 of the *Concept Guide* to read more about asking questions related to teaching and learning Space and Shape (Geometry) concepts. Also read page 192 for more about Space and Shape (Geometry) vocabulary in Grade R.

2. Nguyiphi yalemibuto lengetulu lemibuto levulekile futsi nguyiphi lemibuto levalekile?

_____

_____

Umtsetfosimiso wekukhombindlela ukhutsata bafundzi nabothishela kutsi basebentisane kusombulula tinkinga basebentisa kubuta imibuto lokunemphumelelo.

- **Imibuto levalekile** yimibuto lenetimphendvulo letibo'yebo' noma 'cha' letinemkhawulo. Imibuto levalekile ingaba lusito ekutfuleni kutsi bafundzi bati ini, njengekutsi 'Ngumuphi bunjwa longucalantsatfu?', 'Unemibala lenjani?'
- **Imibuto levulekile** inetimphendvulo letingaba ngito letingetulu kwayinye, uvusa kucabanga iphindze futsi ikhutsate bafundzi kutsi babeke imibono yabo uma basombulula tinkinga.

Akusibo bonkhe bafundzi labatawubamba lemicondvo noma bafundze lulwimi lwetibalo ngesikhatsi sinye (**umtsetfosimiso welizinga**).

Silulumagama selulwimi

Uma bafundzi baphenya, baphindze futsi bachaze bobunjwa nema-objekthi, basebentisa lulwimi lwemalanga onkhe njengekutsi 'sicaba', 'busheleleti' kanye na'cijile'. Bothishela bangetfula silulumagama setibalo kute singene esikhundleni selulwimi lwemalanga onkhe, sibonelo: imigca lecondzile, imigca legobile, emakona, emacala. Siphindze futsi sikhulume ngekutsi intfo yindze kangakanani, ibanti kangakanani siphindze futsi sibhekise kubudzekuphakama bentfo letsite.

Fundza emakhasi 190–193 e*Nkhombandlela Yemcondvo* kute ufundze kabanti ngekubuta imibuto lephatselene nekufundzisa nekufundza ngemicondvo yeSikhala naBunjwa (Ijomethri). Fundza futsi nelikhasi 193 utfole kabanti ngesilulumagama seSikhala naBunjwa (Ijomethri) kuLibanga R.

Session 3: Measurement **1 hour**

The focus of Term 1 Week 8 is Measurement: time and length.

Term 1 Content overview: Measurement

Activity 8

Refer to the Measurement Content Area on pages 132–135 of the *Concept Guide*.
In your group, review:

1. What concepts are covered in Term 1?

_____

_____

2. What are the differences between this content and the content from CAPS?

_____

_____

What is measurement?

In Activity 9 we will discuss the question 'What is measurement?'.

Activity 9

Look at the picture below and answer the question.

Who is the biggest?

_____

Iseshini 3: Kulinganisa **1 li-awa**

Kugcila kweThemu 1 Liviki 8 kuKulinganisa: sikhatsi nebudze.

Sibutsetelo salokucuketfwe seThemu 1: Kulinganisa

Umsebenti 8

Fundza Inkhundla Yalokucuketfwe yeKulinganisa emakhasini 132–135 e*Nkhombandlela Yemcondvo*.
Ecenjini lakho, khulumisanani:

1. Nguyiphi imicondvo lefundziswe kuThemu 1?

_____
_____
_____

2. Ngumuphi umehluko losemkhatsini walokucuketfwe kanye nalokucuketfwe kwe-CAPS?

_____
_____

Yini kulinganisa?

KuMsebenti 9 sitawukhuluma ngalombuto 'Yini kulinganisa?'.

Umsebenti 9

Buka lesitfombe lesingentasi bese uphendvula lombuto.

Ngubani lomkhulu kakhulu?

_____

Measurement is about finding 'how much' there is of a thing, e.g.:

- the length of something
- how much something holds
- the mass of something
- how long it takes to do something.

In order to measure, we need to decide on which attribute (feature/characteristic) we want to measure, e.g. length, mass, time. We use the following words to describe the measurements: taller, heavier, older.

We need to use units to measure. These can be non-standard units or standard units.

- **Non-standard measuring units** include hands, feet, crayons, pieces of string, sticks and blocks.
- **Standard measuring units** include litres, millilitres, kilograms, grams, metres, hours, minutes, etc.

In Grade R learners measure **informally** and use **non-standard measuring units** to measure time, length, mass, capacity and volume.

Direct comparison

Measurement in Grade R includes comparing the attribute of something 'directly' with something else. For example, measuring the length of a crayon against another crayon or comparing the height of two learners standing back-to-back.

Observe the facilitator measuring a group of participants and then complete Activity 10 in your group.

Activity 10

Refer to pages 194–207 of the *Concept Guide* to read more about Measurement and pages 136–149 of *Activity Guide: Term 1* before you answer the questions below.

Kulinganisa kumayelana nekutfola kutsi ‘kungakanani’ kwalokutsite, sib.:

- budze bentfo letsite
- kutsi intfo iphatsa noma-ke imumatsa intfo lengakanani
- sisindvo sentfo letsite
- kutsatsa sikhatsi lesingakanani kwenta intfo letsite.

Kute kutsi sikale, sifanele kutsi sincume kutsi nguyiphi i-athribhuyithi (luphawunkhomba/umkhuba) lesifuna kuyikala, sib. budze, sisindvo, sikhatsi. Sisebentisa lamagama lalandzelako kucacisa kulinganisa: mudze kakhudlwana, usindza kakhudlwana, mdzala kakhudlwana.

Sidzinga kukala sisebentisa emayunithi. Kungaba ngemayunithi lasezingeni noma emayunithi langekho ezingeni.

- **Emayunithi ekukala langekho ezingeni**: afaka ekhatsi tandla, tinyawo, emakhrayoni, tintsambo, tindvuku nemabhlokhi.
- **Iyunithi yekukala lesezingeni** ifaka ekhatsi emalitha, emamililitha, emakhilogremu, emagremu, emamitha, ema-awa, emaminitsi, njll.

KuLibanga R bafundzi bakala **ngalokungekho ezingeni** baphindze futsi basebentise **emayunithi ekukala lasezingeni le**kukala sikhatsi, budze, sisindvo, umtsamo kanye nevolumu.

Kucatsanisa-ngco

Kulinganisa kuLibanga R kufaka ekhatsi kucatsanisa ‘ngco’ i-athribhuyithi yentfo letsite. Sibonelo, kukala budze bekhrayoni kucatsaniswa nalenye ikhrayoni noma kucatsanisa budzekuphakama bebafundzi labahlanganyeli labeme batsintsana ngemihlana bafulatselana.

Bukisisa umfundzisi akala licembu lebahlanganyeli bese benta bacedza Umsebenti 10 ecenjini lakho.

Umsebenti 10

Fundza emakhasi 194–207 e*Nkhombandlela Yemcondvo* kute ufundze kabanti ngeKulinganisa nemakhasi 136–149 e*Nkhombandlela Yemsebenti: Ithemu 1* ngembi kwekutsi uphendvule lemibuto lengentasi.

1. What non-standard unit of measurement was used to measure the height of the participants?

_____

2. What other non-standard units of measurement could be used to measure the height of the participants?

_____

Time

Time is a difficult abstract concept for learners to understand. Learners need to understand how time passes in their own lives, so teachers need to relate time to the learner's daily experiences and events that are familiar to them.

Activity 11

Refer back to Term 1 Week 8 in *Activity Guide: Term 1* and with a partner discuss how time is taught in these lessons. Share your ideas about the following.

1. How can Grade R teachers/practitioners help learners understand more about the concepts of:

- day and night?
- yesterday, today and tomorrow?
- how long things take?
- the sequence of time?

_____
_____
_____
_____
_____
_____

2. How can you use your daily programme activities to teach learners about the concept of time?

_____
_____
_____
_____

1. Nguyiphi iyunithi yekulinganisa lengekho ezingeni lesetjentiselwe kukala budzekuphakama bebahlanganyeli?

_____

2. Ngumaphi lamanye emayunithi langekho ezingeni angasetjentiswa kukala budzekuphakama bebahlanganyeli?

_____

Sikhatsi

Sikhatsi ngumcondvo longaphatseki ngesandla lolukhuni kutsi bafundzi bawuvisise. Bafundzi bafanele bavisise kutsi sikhatsi sihamba kanjani etimphilweni tabo, ngako-ke bothishela bafanele kutsi bahlobanise sikhatsi naloko bafundzi labahlangabetana nako etimphilweni tabo onkhe emalanga kanye netehlakalo labatetayele.

Umsebenti 11

Batjele kutsi bafundze Ithemu 1 Liviki 8 ku*Nkhombandlela Yemsebenti: Ithemu 1* ukanye nemlingani wakho cocani ngekutsi sikhatsi sifundziswa kanjani kuletifundvo. Yabelana imibono yakho ngaloku lokulandzelako.

1. Bothishela/basebenti beLibanga R babasita kanjani bafundzi kuvisisa kakhulu ngemcondvo we:
   - lilanga nebusuku?
   - itolo, lamuhla kanye nakusasa?
   - tintfo titsatsa sikhatsi lesingakanani?
   - kulandzelana kwesikhatsi?

_____
_____
_____
_____
_____
_____

2. Ungayisebentisa kanjani imisebenti yeluhlelo lwemalanga onkhe kufundzisa bafundzi ngemcondvo wesikhatsi?

_____
_____
_____
_____

3. What vocabulary is important to understand the concept of time?

_____

_____

_____

Refer to pages 194–207 of the *Concept Guide* to read more about Measurement and time. Refer to the page 210 of the *Concept Guide* to read more about asking questions related to teaching and learning of Measurement in Grade R.

3. Ngusiphi silulumagama lesibalulekile kute uvisise silulumagama sesikhatsi?

_____
_____
_____

Kufundza emakhasi 194–207 e*Nkhombandlela Yemcondvo* kute ufundze kabanti ngeKulinganisa kanye nesikhatsi. Fundza likhasi 211 le*Nkhombandlela Yemcondvo* kute ufundze kabanti ngekubuta imibuto lephatselene nekufundzisa nekufundza Kulinganisa kuLibanga R.

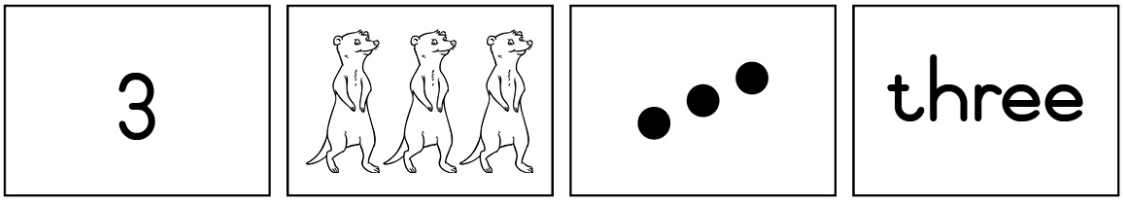
Session 4: Numbers, Operations and Relationships

1 hour

In Workshop 2, you were introduced to the concepts of counting and representation of number. In this workshop we will see how the same ideas continue into Week 6 as the number 3 is introduced. The same routine is followed as with numbers 1 and 2, namely:

Tell the *Number 3 story* and dramatise as you build up the story with the different representations of the number using frieze cards from the *Resource Kit*:

- animal (picture)
- number symbol
- number word
- dots (representing the doorbells).



Look for objects and match the number symbol (3) and number word (three). In Week 6, learners are introduced to dot cards (from the *Resource Kit*). Learners match counters to the dot cards and discuss that 3 is made up of 1 and 2 dots.

Term 1 Content overview: Numbers, Operations and Relationships

Week 7 focuses on Space and Shape (Geometry) while Week 8 focuses on Measurement. The focus of Week 9 in Term 1 is once more on number concepts. In this session, you will investigate the relationship between numbers.

Activity 12

Refer to the Numbers, Operations and Relationships content overview on pages 114–123 of the *Concept Guide*. In your group, discuss the following features of the content overview:

1. What is Topic 1.4?
2. What sub-topics are listed under this topic?
3. What are the differences between the blue and black text? Explain why you think this is so.

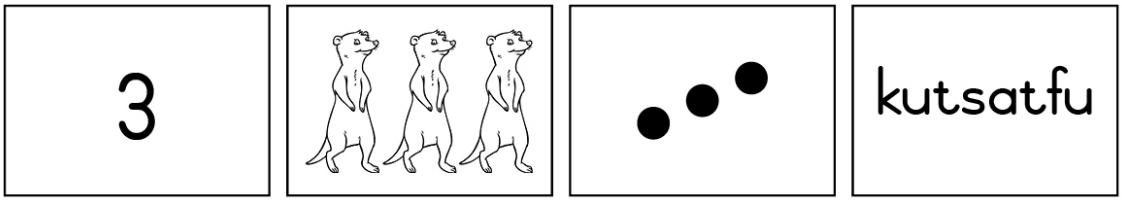
Iseshini 4: Tinombolo, Ema-ophareshini neBudlelwane

1 li-awa

KuMhlanganosikolo 2, wetfulwe kumicondvo yekubala nekumelela inombolo. Kulomhlanganosikolo sitawubona kutsi lemibono ichubeka kanjani iye kuLiviki 6 ngesikhatsi kwetfulwa inombolo 3. Kulandzela inhlalayenta lefananako nakunombolo 1 na- 2, lekungulena:

Coca *Indzaba yanombolo 3* uphindze futsi uyente samdlalo ngesikhatsi ukhulisa lendzaba ngekumelela lokwehlukene kwalenombolo usebentisa emakhadi efrizi ku*Khithi Yetinsita*:

- silwane (sitfombe)
- luphawu lwenombolo
- ligama lenombolo
- emacashati (amelele tinsimbi tasemnyango).



Funa ema-objekthi bese umatanisa luphawu lwenombolo (3) neligama lenombolo (kutsatfu). KuLiviki 6, bafundzi bangeniswa kumakhadi emacashati (laku*Khithi Yetinsita*). Bafundzi bamatanisa tibali nemakhadi emacashati bese nikhulumisana ngekutsi 3 wakhiwa ngemacashati 1 nala-2.

Sibutsetelo Salokucuketfwe SeThemu 1: Tinombolo, Ema-ophareshini neBudlelwane

Liviki 7 ligcile kuSikhala naBunjwa (Ijomethri) kantsi Liviki 8 lona ligcile kuKulinganisa. Gcila kuLiviki 9 kuThemu 1 liyaphindza futsi likhuluma ngemicondvo yetinombolo. Kuleseshini, utawuphenya ngebudlelwane lobukhona emkhatsini wetinombolo.

Umsebenti 12

Fundza sibutsetelo salokucuketfwe seTinombolo, Ema-ophareshini neBudlelwane emakhasini 114–123 e*Nkhombandlela Yemcondvo*. Ecenjini lakho, khulumisanani nganaku lokulandzelako kwesibutsetelo salokucuketfwe:

1. Yini Sihloko 1.4?
2. Ngutiphi tihloko letincane letibhalwe ngaphasi kwalesihloko?
3. Yini umehluko lokhona emkhatsini wembhalo loluhlata sasibhakabhaka nalomnyama? Chaza kutsi wentiwa yini kutsi ucabange kanjalo.

Calculating

In Grade R learners do not do number operations like addition and subtraction, multiplication and division. These concepts are gradually built up through investigation and through problem solving. For example: *I have three apples. I eat one. How many apples do I have left?*

Learners need to understand the relationship between numbers. Activities that involve breaking down and building up numbers help learners to understand the relationships between numbers and the value of numbers. For example: *5 is made up of 2 and 3, 1 and 4.*

Demonstration

Watch the demonstration of a 'shake-and-break' game and then discuss your observations in your group.

 **Activity 13**

Discuss the demonstration you have just watched.

1. What number concepts could the learners learn by playing this game?

_____

_____

2. What questions did the facilitator use that highlighted addition and subtraction?

_____

_____

_____

_____

Not all learners will demonstrate an understanding of these number concepts at the same time (**level principle**).

Kubala

KuLibanga R bafundzi abatati abawenti ema-ophareshini etinombolo njengekuhlanganisa (kwengeta) kususa, kuphindzaphindza kanye nekwehlukanisa. Lemicondvo lena yakheka kancane kancane ngekuphenya nangekusombulula tinkinga. Sibonelo: *Nginemahhabhula lamatsatfu. Ngidla linye. Ngisele nemahhabhula lamangaki?*

Bafundzi bafanele kutsi bavisise budlelwane emkhatsini wetinombolo. Imisebenti lefaka ekhatsi kubhidlita nekwakha tinombolo kusita bafundzi bavisise budlelwane emkhatsini wetinombolo nemanani etinombolo. Sibonelo: *5 sakhiwa nguku-2 na-3, 1 naku-4.*

Kukhombisa

Buka kukhonjiswa kwemdlalo 'wekukhuhlutisa bese uyahlukanisa' bese ukhulumisana nelicembu lakho ngaloko lokubonile.

Umsebenti 13

Khulumisanani ngalokukhombisa locedza kukubukela.

1. Nguyiphi imicondvo yetinombolo lengafundvwa bafundzi ngekudlala lomdlalo?

_____

_____

2. Nguyiphi imibuto umfundzisi layisebentisile legcamise kuhlanganisa nekususa?

_____

_____

_____

_____

Akusibo bonkhe bafundzi labatawukhombisa kuvisisa lemicondvo yetinombolo ngesikhatsi sinye (**umtsetfosimiso welizinga**).

Session 5: Planning for teaching **1 hour**

Term 1 Content Summary (Weeks 6–9)

Appendix A: Term 1 Weekly Content Summary (Weeks 6–9) outlines the main Content Area Focus for each week, the topics to be covered, the new knowledge and practise focus for each week, and suggested activities for whole class, teacher-guided and independent group work for the week.

 **Activity 14**

Look at Appendix A: Term 1 Weekly Content Summary (Weeks 6–9). Answer the questions.

Questions	Week 6	Week 7	Week 8	Week 9
What is the Content Area Focus for the week?				
What are the key concepts that learners will be learning?				
What new knowledge is introduced?				
What skills are being practised?				

Iseshini 5: Kuhlela kufundzisa **1 li-awa**

Sibutsetelo Salokucuketfwe Seliviki SeThemu 1 (Emaviki 6–9)

Sengeto A: Ithemu 1 Sibutsetelo Salokucuketfwe Seliviki (Emaviki 6–9) sibeka emabalengwe eKugcila Kwemkhakha Walokucuketfwe lokukhulu kweliviki ngalinye, tihloko lekutawukhulunywa ngato, lwati lolusha nekutetayeta kugcila kweliviki ngalinye, uphindze futsi wente tincomo temisebenti yeliklasi lonkhe, leholwa nguthishela kanye nemsebenti welicembu lelitimele.

Umsebenti 14

Buka Sengeto A: Ithemu 1 Sibutsetelo Salokucuketfwe Seliviki (Emaviki 6–9). Phendvula lemibuto.

Imibuto	Liviki 6	Liviki 7	Liviki 8	Liviki 9
Ngumuphi Umkhakha Walokucutketfwe Wekugcila kuleliviki?				
Nguyiphi imicondvo lebalulekile letawufundvwa bafundzi?				
Nguluphi lwati lolusha lolwetfuliwe?				
Ngumaphi emakhono lotawetayetwa wona?				

Activity Guide: Term 1: Weeks 6, 7, 8 and 9

Refer to Weeks 6, 7, 8 and 9 in *Activity Guide: Term 1*. Complete Activity 15 in your group.

Activity 15

Find Weeks 6, 7, 8 and 9 in *Activity Guide: Term 1*. Answer the questions.

1. What is the Content Area Focus for each week?
2. What topics and new knowledge are taught in each week?
3. How does the 'Practise' content link to the previous week?
4. What do you need to get ready before teaching each week?
5. Read the whole class activities and small group activities.
6. Discuss in your small group how you will plan and organise your class for these four weeks of teaching.

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

Look at the shaded block at the end of the teacher-guided activity: '**Check that learners are able to**'. 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.

Inkhombandlela Yemsebenti: Ithemu 1: Emaviki 6, 7, 8 na-9

Fundza Emaviki 6, 7, 8 na-9 ku*Nkhombandlela Yemsebenti: Ithemu 1*. Yenta ucedze Umsebenti 15 ecenjini lakho.

Umsebenti 15

Tfola Emaviki 6, 7, 8 ne 9 ku*Nkhombandlela Yemsebenti: Ithemu 1*. Phendvula imibuto.

1. Yini Kugcila Kumkhakha Walokucuketfwe kweliviki ngalinye?
2. Ngutiphi tihloko nelwati lolufundziswa ngeliviki ngalinye?
3. Lokucuketfwe kwa'Tetayete' kuchumana kanjani neliviki leliphelile?
4. Yini lodzinga kukulungiselela ngembi kwekufundzisa liviki ngalinye?
5. Fundza yonkhe imisebenti yeliklasi lonkhe nemisebenti yemacembu lamancane.
6. Cocisanani emacenjini enu lamancane kutsi utawenta lisu uphindze futsi ulihlele kanjani liklasi lakho kulamaviki lamane ekufundzisa

Khumbula kutsi luhlolo lweLibanga R luluhlolo lolungakahleleki kantsi futsi luyachubeka. Sidzinga kubukisisa bafundzi lilanga lonkhe, ngekhatsi nangaphandle kweliklasi. Loluphawu lweliso lusikhumbuta kutsi sidzinga kubukisisa bantfwana ngesikhatsi basematasatasa, futsi sidzinga kulalelisisa ngesikhatsi bakhuluma natsi nabontsanga yabo.

LoLuhlelo Lwetibalo lwentiwe lwamisela ekujikeliseni emacembu lamancane ekuhambeni kweliviki futsi thishela unaka licembu linye ngelilanga, abuke futsi alalele bafundzi ngesikhatsi benta imisebenti yabo. Manje nika bafundzi litfuba lekubukisisa umfundzi ngamunye bese ugcogca lwatiso ngenchubekelembili yabo.

Buka lebhlokhi lehlikihliwe ekugcineni kwemsebenti loholwa nguthishela: '**Hlola kutsi bafundzi bayakhona ku**'. Thishela ubhala emanotsi akhe engcondvweni ngemfundzi ngamunye futsi kutawutsi bafundzi bangacedza umsebenti welusuku bahambe utawubese ubhala phasi konkhe lakubukisisile encwadzini yakhe yemsebenti wekubukisisa lenendzawo yemanotsi yemfundzi ngamunye..

Closing activities

Activity 16

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 6–9 of the Maths Programme, including creating a maths area with a focus on the concept for each week.
3. Write an evaluation of what worked well and what did not work so well. Bring your plan and evaluation to the next workshop.
4. Bring examples or photographs of work that learners did.

Evaluation

Complete the Evaluation Form.

Imisebenti yekuvala

Umsebenti 16

Sifundvo lesifundziwe: Cabanga ngaloko lokufundzile kumhlanganosikolo bese ugcwalisa lelithebula.

Tintfo lesengivele ngitenta letisebenta kahle	Imibono lemisha lengitayetama

Umsebenti wekubuyisela emuva esikolweni

1. Fundza emakhasi e*Nkhomandlela Yemcondvo lokutsiwe wafundze ngesikhatsi salomhlanganosikolo*.
2. Sebentisa *Inkhombandlela Yemsebenti: Ithemu 1* kuhlela nekufezekisa Emaviki 6–9 eLuhlelo Lwetibalo, kufaka ekhatsi kwakha indzawo yetibalo.
3. Bhala silinganiso saloko lokusebente kahle kakhulu naloko lokungakasebenti kahle kakhulu. Wota nelisu lakho nesilinganiso kumhlanganosikolo lolandzelako.
4. Letsa tibonelo noma titfombe temsebenti lowentiwe bafundzi.

Kuhlolisisa

Gwalisa leLiFomu Lekuhlolisisa.

APPENDIX A: TERM 1 WEEKLY CONTENT SUMMARY (WEEKS 6–9)

Term 1: Activity Plan

<table>
<tr><th colspan="5">Week 6</th></tr>
<tr><td colspan="5">CONTENT AREA: PATTERNS, FUNCTIONS and ALGEBRA</td></tr>
<tr><td colspan="5">TOPIC: Geometric patterns
INTRODUCE NEW KNOWLEDGE: Identify patterns, copy patterns, complete patterns, introduce number 3, sequencing numbers 1–3. Making groups the same.
PRACTISE: Oral counting 1–5, counting objects 1–5, number concept 1 and 2, circle, square, big and small, forwards and backwards</td></tr>
<tr><th colspan="2">Whole class activities</th><th>Teacher-guided activity</th><th colspan="2">Workstation activities</th></tr>
<tr><td>Day 1</td><td>Introduce number 3 number frieze story.</td><td rowspan="5">Play a movement game using symbols 1 and 2.
Match and order dot picture/number cards 1–3.
Simple pattern using counters. Discuss the pattern, use counters to copy the pattern.
Problem solving 1–3. Making groups the same.</td><td>Activity 1</td><td>Frame a picture using pattern and draw three objects.</td></tr>
<tr><td>Day 2</td><td>Uses different sized and coloured circles to make simple patterns. Discuss patterns (repetition, differences, similarities).</td><td>Activity 2</td><td>Fingerprint counting.</td></tr>
<tr><td>Day 3</td><td>Body percussion patterns and problem solving.</td><td>Activity 3</td><td>Pattern cards using counters and sticks.</td></tr>
<tr><td>Day 4</td><td>Using big and small circles and objects to make simple patterns. Identify patterns in classroom.</td><td>Activity 4</td><td>Template with playdough – make 3.</td></tr>
<tr><td>Day 5</td><td>Problem solving 1–3. Making groups the same.</td><td></td><td></td></tr>
<tr><th colspan="5">Week 7</th></tr>
<tr><td colspan="5">CONTENT AREA: SPACE and SHAPE (GEOMETRY)</td></tr>
<tr><td colspan="5">TOPIC: Recognise, identify and name 2-D shapes: triangle; describe and compare 3-D objects and 2-D shapes: triangles; sort 2-D shapes; figure ground; symmetry
INTRODUCE NEW KNOWLEDGE: Triangle; figure ground; position (in front and behind); oral counting 1–10
PRACTISE: Oral counting 1–10, sequencing number 1–3, counting objects 1–5, reinforce number concept 1–3, what number before/after, circle, square, symmetry, big and small</td></tr>
<tr><th colspan="2">Whole class activities</th><th>Teacher-guided activity</th><th colspan="2">Workstation activities</th></tr>
<tr><td>Day 1</td><td>Introduce triangle and its properties.</td><td rowspan="5">Oral counting.
Touch and count using number towers 1–3 (Unifix blocks).
One-to-one correspondence.
Properties of a triangle (2-D).
Sort and compare 3-D objects and 2-D shapes into two groups, one of triangles and one not triangles.</td><td>Activity 1</td><td>Triangle activity – cut and decorate four triangles.</td></tr>
<tr><td>Day 2</td><td>Identify triangle shapes in Poster Book, problem solving.</td><td>Activity 2</td><td>Butterfly prints – symmetry.</td></tr>
<tr><td>Day 3</td><td>In front of and behind; midline crossing.</td><td>Activity 3</td><td>Shape person – use pre-cut shapes.</td></tr>
<tr><td>Day 4</td><td>Compare biggest and smallest. Bigger and smaller.</td><td>Activity 4</td><td>Shape puzzles – (minimum six pieces).</td></tr>
<tr><td>Day 5</td><td>Symmetry.</td><td></td><td></td></tr>
</table>

SENGETO A: ITHEMU 1 SIBUTSETELO SALOKUCUKETFWE SELIVIKI (EMAVIKI 6–9)

Ithemu 1: Luhlelolisu Lwemsebenti

<table>
<tr><th colspan="5">Liviki 6</th></tr>
<tr><td colspan="5">UMKHAKHA WALOKUCUKETFWE: EMAPHETHINI, EMAFANGSHINI ne-ALJEBRA</td></tr>
<tr><td colspan="5">SIHLOKO: Emaphethini ejomethri
YETFULA LWATI LOLUSHA: Khomba emaphethini, kopa emaphethini, cedzela emaphethini, yetfula inombolo 3, kulandzelanisa tinombolo 1–3. Kwakha emacembu afanane.
TETAYETE: Kubala ngemlomo 1–5, kubala ema-objekthi 1–5, imicondvo yetinombolo 1 na-2, indingilizi, sikwele, khulu ncane, kuya embili nekuya emuva</td></tr>
<tr><th colspan="2">Imisebenti yeliklasi lonkhe</th><th>Umsebenti loholwa nguthishela</th><th colspan="2">Imisebenti yendzawo yekusebentela</th></tr>
<tr><td>Lilanga 1</td><td>Yetfula inombolo 3 indzaba yefrizi yetinombolo.</td><td rowspan="5">Dlala imidlalo yekuhamba (kunyakata) usebentisa timphawu 1 na-2.
Matanisa uphindze futsi uhlelembise titfombe temacashati/emakhadi etinombolo 1–3.
Emaphethini lalula usebentisa tibali.
Khulumisanani ngephethini, sebentisa tibali kukopa emaphethini.
Kusombulula tinkinga 1–3. Kwakha emacembu afanane.</td><td>Umsebenti 1</td><td>Yakha ifreyimu yesitfombe usebentisa emaphethini bese futsi udvweba lama-objekthi lamatsatfu.</td></tr>
<tr><td>Lilanga 2</td><td>Usebentisa tindingilizi letinemasayizi nemibala lehlukene kwakha emaphethini lalula. Khulumisanani ngemaphethini (kuphindza, imehluko, kufanana).</td><td>Umsebenti 2</td><td>Kubala tinyatseliso teminwe.</td></tr>
<tr><td>Lilanga 3</td><td>Emaphethini ekwenta umsindvo ngemtimba kanye nekusombulula tinkinga.</td><td>Umsebenti 3</td><td>Emaphethini usebentisa tibali netintsi.</td></tr>
<tr><td>Lilanga 4</td><td>Usebentisa tindingilizi letinkhulu naletincane nema-objekthi kwakha emaphethini lalula. Khomba emaphethini eklasini.</td><td>Umsebenti 4</td><td>Ithemplethi ngenhlama yekudlala – yakha 3.</td></tr>
<tr><td>Lilanga 5</td><td>Kusombulula tinkinga 1–3. Kwakha emacembu afanane.</td><td></td><td></td></tr>
<tr><th colspan="5">Liviki 7</th></tr>
<tr><td colspan="5">UMKHAKHA WALOKUCUKETFWE: SIKHALA naBUNJWA (IJOMETHRI)</td></tr>
<tr><td colspan="5">SIHLOKO: Kubona, kukhomba kanye nekusho bobunjwa lababo-2-D; calantsatfu; chaza uphindze ucatsanise ema-objekthi langu-3-D nabobunjwa labangu-2-D: kucondza kuma kwentfo esikhundleni sayo isimethri
YETFULA LWATI LOLUSHA: Calantsatfu; kuma kwentfo esikhundleni; sikhundla (ngembili nangemuva); Kubala ngemlomo 1–10
TETAYETE: Kubala ngemlomo 1–10,kulandzelanisa 1–3, kubala ema-objekthi 1–5, gcizelela imicondvo yetinombolo 1–3, nguyiphi inombolo lengembili/ngemuva, indingilizi, sikwele, isimethri, khulu nancane</td></tr>
<tr><th colspan="2">Imisebenti yeliklasi lonkhe</th><th>Umsebenti loholwa nguthishela</th><th colspan="2">Imisebenti yendzawo yekusebentela</th></tr>
<tr><td>Lilanga 1</td><td>Yetfula bocalantsatfu nemaphrophathi abo.</td><td rowspan="5">Kubala ngemlomo.
Tsintsa bese uyabala usebentisa tinombolo 1–3 (Emabhlokhi e Yunifiksi).
Kucondzana kwakunye nakunye.
Emaphrophathi acalantsatfu (2-D).
Hlunga bese ucatsanisa ema-objekthi nabobunjwa labangu-3-D nabobunjwa labangu-2D ngemacembu, linye libe labocalantsatfu bese kutsi leli lelinye lelingasilo labocalantsatfu.</td><td>Umsebenti 1</td><td>Umsebenti wabocalantsatfu – sika uphindze uhlobise labocalantsatfu labane.</td></tr>
<tr><td>Lilanga 2</td><td>Khomba bobunjwa lababocalantsatfu kuNcwadzi Yemaphosta, kusombulula tinkinga.</td><td>Umsebenti 2</td><td>Imidvwebo yemavivane – isimethri.</td></tr>
<tr><td>Lilanga 3</td><td>Ngembili nangemuva; kweca umugcamkhatsi.</td><td>Umsebenti 3</td><td>Bunjwa longumuntfu – sebentisa bobunjwa labasikwe phambilini.</td></tr>
<tr><td>Lilanga 4</td><td>Catsanisa lokukhulu kakhulu nalokuncane kakhulu. Lokukhulu kakhudlwana nalokuncane kakhudlwana.</td><td>Umsebenti 4</td><td>Emaphazili abobunjwa – (linanincane tincetu letisitfupha).</td></tr>
<tr><td>Lilanga 5</td><td>Isimethri.</td><td></td><td></td></tr>
</table>

<table>
<tr><th colspan="5">Week 8</th></tr>
<tr><td colspan="5">CONTENT AREA: MEASUREMENT</td></tr>
<tr><td colspan="5">TOPIC: Time: day and night; Length: compare and order objects to describe height
INTRODUCE NEW KNOWLEDGE: Sequencing day and night, light and dark; height chart; position (on, under, on top, below, next to, between); counting backwards 5–1
PRACTISE: Oral counting 1–10, counting backwards from 5, sequencing numbers 1–3, counting objects 1–5, reinforce number concept 1–3, patterns</td></tr>
<tr><th colspan="2">Whole class activities</th><th>Teacher-guided activity</th><th colspan="2">Workstation activities</th></tr>
<tr><td>Day 1</td><td>Day and night; light and dark.</td><td rowspan="5">Routine introduction.
Day and night; dark and light activities:
- blanket
- activity cards.
Day and night story and sequencing.
Position (on, under, below, on top, next to, between).
Pattern (animals).
Height chart.</td><td>Activity 1</td><td>Day and night activity – cutting out pictures.</td></tr>
<tr><td>Day 2</td><td>Introduce height chart; position vocabulary.</td><td>Activity 2</td><td>Draw from shortest to tallest.</td></tr>
<tr><td>Day 3</td><td>Height chart. Sorting day and night everyday objects.</td><td>Activity 3</td><td>Paste shapes from biggest to smallest.</td></tr>
<tr><td>Day 4</td><td>Poster – Day and night. Positional vocabulary: on, under, below and on top.</td><td>Activity 4</td><td>Day/night matching cards.</td></tr>
<tr><td>Day 5</td><td>Compare heights.
Movement-positions.</td><td></td><td></td></tr>
<tr><th colspan="5">Week 9</th></tr>
<tr><td colspan="5">CONTENT AREA: NUMBERS, OPERATIONS and RELATIONSHIPS</td></tr>
<tr><td colspan="5">TOPIC: Describe, order and compare numbers; estimation; problem-solving techniques; using numbers in familiar contexts; position
INTRODUCE NEW KNOWLEDGE: Estimation, numbers in familiar contexts, one more, one less, position (up/down)
PRACTISE: Oral counting 1–10, counting backwards from 5, sequencing numbers 1–3, counting objects 1–5, number concept 1–3, problem-solving techniques. Circle, square and triangle.</td></tr>
<tr><th colspan="2">Whole class activities</th><th>Teacher-guided activity</th><th colspan="2">Workstation activities</th></tr>
<tr><td>Day 1</td><td>Describe and order numbers 1–3.</td><td rowspan="5">Oral counting.
One-to-one correspondence.
Describe and order numbers 1–3.
Estimation.
Shake and break.</td><td>Activity 1</td><td>Playdough making 1–3 objects.</td></tr>
<tr><td>Day 2</td><td>Matching number representations 1–3.
Estimation.</td><td>Activity 2</td><td>Draw pictures 1–3 in shapes.</td></tr>
<tr><td>Day 3</td><td>Counting – one more/one less.
Position: up and down.</td><td>Activity 3</td><td>Pasting. Picture with three stars, two trees, one moon.</td></tr>
<tr><td>Day 4</td><td>Problem solving (more/less). Poster 1.</td><td>Activity 4</td><td>Puzzles (minimum six piece).</td></tr>
<tr><td>Day 5</td><td>Using number in familiar context: How old are you?</td><td></td><td></td></tr>
</table>

<table>
<tr><th colspan="5">Liviki 8</th></tr>
<tr><td colspan="5">UMKHAKHA WALOKUCUKETFWE: KULINGANISA</td></tr>
<tr><td colspan="5">SIHLOKO: Sikhatsi: imini nebusuku; Budze: catsanisa uphindze futsi uhlelembise ema-objekthi kute uchaze budzekuphakama
YETFULA LWATI LOLUSHA: Kulandzelanisa imini nebusuku, kukhanya nebumnyama; lishadi lebudzekuphakama; sikhundla (ngetulu, ngaphasi, etulu kwe, ngaphasi, eceleni kwe, emkhatsini); kubala uye emuva 5–1
TETAYETE: Kubala ngemlomo 1–10, kubala uye emuva kusuka ku-5, kulandzelanisa tinombolo 1–3, kubala ema-objekthi 1–5, kugcizelela umcondvo wetinombolo 1–3, emaphethini</td></tr>
<tr><th colspan="2">Imisebenti yeliklasi lonkhe</th><th>Umsebenti loholwa nguthishela</th><th colspan="2">Imisebenti yendzawo yekusebentela</th></tr>
<tr><td>Lilanga 1</td><td>Imini nebusuku; kukhanya nebumnyama</td><td rowspan="6">Kwetfula inhlalayenta.
Imisebenti yemini nebusuku; bumnyama nekukhanya:
- ingubo yekulala
- emakhadi emsebenti.
Indzaba yemini nebusuku kanye nekulandzelanisa.
Sikhundla (etulu, ngaphasi, ngentasi, ngetulu, eceleni kwe, emkhatsini).
Iphethini (tilwane).
Lishadi lebudzekuphakama.</td><td>Umsebenti 1
Umsebenti 2
Umsebenti 3

Umsebenti 4</td><td>Umsebenti wemini nebusuku – kusika ukhiphe titfombe.
Dvweba ucale ngalomfishane kakhulu uye kulomudze kakhulu.
Namatsisela bobunjwa ucale ngalomkhulu kakhulu uye kulomncane kakhulu.
Emakhadi emini/busuku.</td></tr>
<tr><td>Lilanga 2</td><td>Ngenisa lishadi lebudzekuphakama; silulumagama sesikhundla.</td></tr>
<tr><td>Lilanga 3</td><td>Lishadi lebudzekuphakama. Kuhlunga ema-objekthi emalanga onkhe emini nebusuku.</td></tr>
<tr><td>Lilanga 4</td><td>Iphosta – Imini nebusuku. Silulumagama sesikhundla: etulu, ngaphasi, ngentasi kanye nangetulu.</td></tr>
<tr><td>Lilanga 5</td><td>Catsanisa budzekuphakama.
Timo tekuhamba.</td></tr>
<tr><td colspan="5"></td></tr>
<tr><th colspan="5">Liviki 9</th></tr>
<tr><td colspan="5">UMKHAKHA WALOKUCUKETFWE: TINOMBOLO, EMA-0PHARESHINI neBUDLELWANE</td></tr>
<tr><td colspan="5">SIHLOKO: Chaza, hlelembisa bese ucatsanisa tinombolo; kulinganisa; emasu ekusombulula tinombolo etimeni letetayelekile; sikhundla
YETFULA LWATI LOLUSHA: Kulinganisela, tinombolo etimeni letetayelekile, kunyenti ngakunye, kuncane ngakunye, sikhunndla (etulu/phasi)
TETAYETE: Kubala 1–10, kubala uye emuva kusuka ku- 5, kulandzelanisa tinombolo 1–3, kubala ema-objekthi 1–5, umcondvo wetinombolo 1–3, emasu ekusombulula tinombolo. Indingilizi, sikwele kanye nacalanntfu.</td></tr>
<tr><th colspan="2">Imisebenti yeliklasi lonkhe</th><th>Umsebenti loholwa nguthishela</th><th colspan="2">Imisebenti yendzawo yekusebentela</th></tr>
<tr><td>Lilanga 1</td><td>Chaza uphindze uhlelembise tinombolo 1–3.</td><td rowspan="5">Kubala ngemlomo.
Kucondzana kwakunye nakunye.
Chaza uphindze uhlelembise tinombolo 1–3.
Kulinganisela
Khuhlutisa uphindze wehlukanise.</td><td>Umsebenti 1
Umsebenti 2
Umsebenti 3

Umsebenti 4</td><td>Inhlama yekudlala yekwakha ema-objekthi 1–3.
Dvweba titfombe 1–3 ngabobunjwa.
Kunamatsisela. Sitfombe lesinetinkhanyeti letintsatfu, tihlahla letimbili, inyanga yinye.
Emaphazili (lizingancane letincetu letisitfupha).</td></tr>
<tr><td>Lilanga 2</td><td>Kumatanisa kuphindzeka kwetinombolo 1–3. Kulinganisela.</td></tr>
<tr><td>Lilanga 3</td><td>Kubala – kunyenti ngakunye/kuncane ngakunye.
Sikhundla: etulu naphasi.</td></tr>
<tr><td>Lilanga 4</td><td>Kusombulula tinkinga (nyenti nga/kuncane).
Iphosta 1.</td></tr>
<tr><td>Lilanga 5</td><td>Kusebentisa inombolo etimeni letetayelekile: Uneminyaka lemingakhi budzala?</td></tr>
</table>

Workshop 3 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?

_____
_____
_____
_____

Lifomu Lekuhlolisisa Umhlanganosikolo 3

1. Lomhlanganosikolo ufinyelele yini ezingeni lebewulilindzele?

_____
_____
_____
_____

2. Yini lokufundzile kulomhlanganosikolo lokubalulekile lokukusite kakhulu?

_____
_____
_____
_____

3. Kukhona yini longakakutsandzi noma lokutfole kulukhuni?

_____
_____
_____
_____

4. Utakusebentisa kanjani eklasini leLibanga R loku lokufundzile?

_____
_____
_____
_____

5. Ikhona yini imibono lonayo yekwenta kancono imihlanganosikolo lechubekako?

_____
_____
_____
_____