



**GAUTENG PROVINCE**  
EDUCATION  
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**GGT 2030**  
GROWING GAUTENG TOGETHER

IsiZulu/English

# **Uhlelo Lokuthuthukisa Izibalo Zebanga R Grade R Mathematics Improvement Programme**



**Umhlangano Wokucobelelana Ngolwazi 6 • Workshop 6  
Incwadi Yokusebenzela Yababambiqhaza • Participant'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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# Overview

## Purpose

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

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

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

## Learning outcomes

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

## Workshop content

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

# Ukubuka ngelibanzi

## Inhloso

Lo owesithupha emihlanganweni yokucobelelana ulwazi eyishumi nambili ngaphansi kwesihloko: Uhlelo Lokuthuthukisa Izibalo ZeBanga R (Uhlelo Lwezibalo), eyingxene YoMnyango WezeMfundu wesiFundazwe saseGauteng (Gauteng Department of Education (GDE Uhlelo Lokuthuthukisa Izibalo neziLim iZeBanga R.))

Inhloso yalo mhlango wokucobelelana ngolwazi ukusiza othisha ukuthi basebenzise Uhlelo Lwezibalo emakilasini abo, kakhulukazi Izingxene Zolwazi ezenziwe kuThem 2 Amasonto 8–10. Ababambiqhaza bazodlinza ngenqubekelaphambili yabo yokuhlola abafundi, futhi bazobhala izikhathazo ezithuthukayo ngokuphathelene nabafundi abangadinga ukungenelela nokwesekwa okukhethekile. Ababambiqhaza bazodlinza futhi ngamasu okufundisa azoqinisa amakhono abafundi okuxazulula izinkinga.

Ingxene Yolwazi Yezibalwa zeBanga R zithathwe *kuSitatimende Senqu bomgomo Yohlelo Lwezifundo Nokuhlola (CAPS): Izibalo Zebanga R (Uhlaka Lokugcina)*, 2011, Umnyango Wemfundu Eyisisekelo, eNingizimu Afrika.

## Imiphumela yokufunda

- ◆ Ukucabanga ngokusethenziswa kweThem 2 Amasonto 4–7
- ◆ Ukuhlola amasu okuxhasa ukufundisa izibalo kuBanga R
- ◆ Ukucabanga ngemigomo yoHlelo LweZibalo ohlelweni lwesonto.
- ◆ Ukuzimbandakanya nokuqukethwe koHlelo LweZibalo lukathemu 2 Amasonto 8–10 (Indawo Nesimo (Ijiyomethri); Isilinganiso; Izinombolo, Izimpawu kanye Nobudlelwane Bazo)
- ◆ Ukusebenzisa ulwazi lokuhlola okungahlelekile okuqhube kayo ekufundeni nasekufundiseni.

## Okuqukethwe komhlangano wokucobelelana ngolwazi

- ◆ Ukuvula nokudlinza (1 hora)
- ◆ Iseshini 1: Indawo Nesimo (Ijiyomethri) (1 hora)

### ITIYE

- ◆ Iseshini 2: Isilinganiso (1 hora)
- ◆ Iseshini 3: Izinombolo, Izimpawu kanye Nobudlelwane Bazo (1 hora)

### ISIDLO SASEMINI

- ◆ Iseshini 4: Izinombolo, Izimpawu kanye Nobudlelwane Bazo (45 imizuzu)
- ◆ Iseshini 5: Ukuhlola Ithem 2 (1 hora)
- ◆ Imisebenzi yokuvala (15 imizuzu)

# Opening and reflection

1 hour

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



## Take back to school task (Workshop 5)

1. Continue to use the Record of Continuous Assessments in *Activity Guide: Term 2* to assess your learners. Make use of your ongoing observation notes to build up evidence of what learners understand and can do.
2. Identify any concerns you have about individual learner's emerging grasp of maths concepts.
3. Bring copies of rubrics that you used for maths assessment to the next workshop.
4. Bring a completed assessment record for one learner to the next workshop.
5. Use *Activity Guide: Term 2* to plan and implement Weeks 4–7 of the Maths Programme, including creating a maths area with a focus on the concept for each week.
6. Make notes on what worked well, what did not work so well and what you could do differently to improve teaching and learning.



## Activity 1

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

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

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# Ukuvula nokudlinza

1 ihora

Nanku *Umsebenzi obuyela nawo esikoleni* ophuma kuMhlangano Wokucobelelana Ngolwazi 5.



## Umsebenzi obuyela nawo esikoleni (Ngolwazi 5)

- Qhubeka ukusebenzisa iRekhodi lokuHlola okuqhubekayo *kuMhlahlandlela Wemisebenzi: Ithemu 2* ukuhlola abafundi bakho. Sebenzisa amanothi akho okuqaphela okuqhubekayo ukwakha ubufakazi balokho okuqondwa ngabafundi kanye nabakwazi ukukwenza.
- Hlonza noma yikuphi ukukhathazeka komfundi ngamunye onakho ngokuqala kwabo ukubamba ulwazi lwezibalo.
- Phatha amakhophi amarubhrikhi owasebenzisele ukuhlola iziBalo emhlanganweni wokucobelelana ngolwazi olandelayo.
- Phatha emhlanganweni wokucobelelana ngolwazi olandelayo irekhodi eliphelele lokuhlola umfundi oyedwa.
- Sebenzisa *Umhlahlandlela Wemisebenzi: Ithemu 2* Ukulungiselela kanye nokwenza amaSonto 4–7 oHlelo LweziBalo, ubandakanya nokwenza indawo yezibalo egxile olwazini lwesonto ngalinye.
- Yenza amanothi alokho okusebenze kahle, okungasebenzanga kahle kanye nalokho ongakwenza ngokuhlukile ukwenza ngcono ukufunda nokufundisa.



## Umsebenzi 1

- Emaqenjini enu, xoxani ngenqubekelaphambili yenu ekwenzeni Ithemu 2 Amasonto 4–7.
  - ◆ Yini esebenze kahle (amandla)?
  - ◆ Yini engasebenzanga kahle (izinselelo)?
  - ◆ Yini ongayenza ukwenza ngcono ukufunda nokufundisa ekilasini?

Qopho amaphuzu asemqoka engxoxo yenu ephepheni leshadi eliphenywayo ukuze nabelane namanye amaqembu kamuva.

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

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

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

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



## Activity 2

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

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

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2. Xoxani ukuthi uphumelele kanjani uku-:
  - ◆ qopha amanothi ngabafundi ngamunye emva komsebenzi oholwa uthisha eMasontweni 4–7.
  - ◆ qeda uThemu 2: Irekhodi Lokuhlola Okuqhubekayo emakhasini 190–193 *oMhlahlandela Wemisebenzi: Ithemu 2* ngomfundu ngamunye.

Qopha amaphuzu asemqoka engxoxo yakho ephepheni lakho leshadi eliphenywayo.

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3. Xoxa ngempumelelo kanye/noma ubulukhuni bomfundu oyedwa nokuthi ukuqophe kanjani lokhu. Qopha amaphuzu asemqoka engxoxo yenu ephepheni lakho leshadi eliphenywayo.
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KuMsebenzi obuyela nawo esikoleni ngoMhlangano Wokucobelelana Ngolwazi 5 wacelwa ukuthi ulethe amakhophi amarubhrikhi okuhlola abafundi owasebenzisa njengengxenye yoHlelo LweZibalo kulo mhlangano wokucobelelana ngolwazi. KuMsebenzi 2, iqembu lakho lizoxoxa ngala marubhrikhi, nokuthi ulwazi lokuhlola lufakwa kuphi kwabelwana kanjani ngalo. KuSeshini 5, sizoxoxa kabanzi ngamarubhrikhi.



### Umsebenzi 2

1. Emaqenjini enu, yabelanani ngeziboneло zamarubhrikhi ezibalo owasebenzise njengengxenye yenqubo yakho yokuhlola.
2. Xoxani ngokuthi niyifaka kanjani inqubekelaphambili ohlelweni lukaSA-SAMS nokuthi kwabelwana kanjani nabazali ngalolu lwazi.

Qopha amaphuzu asemqoka engxoxo yenu ephepheni leshadi eliphenywayo ukuze kamuva nabelane namanye amaqembu.

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## Video 1

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

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

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





## Ividiyo 1

Buka ividiyo kathisha eqaphela iqembu labafundi liqedela umsebenzi wezibalo. Mlalele ekhuluma ngokuthi uliqaphela kanjani, nokuthi uyiqophe kanjani inqubekelaphambili yabafundi futhi ubhekana kanjani namakhono ahlukene.

Xoxani ukuthi nenza njani ngabafundi abangaphumeleli ezinhlelwani zesonto, kanye nabafundi abenza kahle ngaphezu kokulindelekile.

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**Umgomo wamazinga:** Akubona bonke abafundi abaqhube ka ngesivinini esifanayo.

Abanye badinga isikhathi esiningi ukuqinisa amakhono nolwazi ngesikhathi abanye bebamba ngokushesha kakhulu. Inselelo kothisha kuba ukwamukela abafundi emazingeni ahlukene nokuvumelanisa izinhlelo zamasonto ukuze besekeleke nangemisebenzi enwetshiwe abafundi uma kunesidingo.



# Session 1: Space and Shape (Geometry)

1 hour

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

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

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

### Properties of shapes

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



#### Activity 4

The facilitator will give your group a set of shapes.

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

# **Isehini 1: Indawo Nesimo (Ijiyomethri)**

**1 ihora**

Lo mhlangano wokucobelana ngolwazi ugxile ekufundiseni okuqukethwe kuka Themu 2 Amasonto 8–10. Okugxilwe kukho kuThemu 2 Indawo Nesimo (Ijiyomethri).

## **Amathemu 1–4 Ukubuka ngelibanzi ulwazi: Indawo Nesimo (Ijiyomethri)**

Bhekisa ekubukeni ulwazi ngelibanzi kweNdawo Nesimo (Ijiyomethri) emakhasini 126–131 oMhlahlandela Wokuqonda Isifundo bese beqedela Umsebenzi 3.

### **Izimpawu zezimo**

Abafundi badinga amathuba okuqhathanisa nokuhlela izimo ngezimpawu kanye nokuchaza ukufana nokuhluka kwezimo.



### **Umsebenzi 4**

Umdidiyeli uzonika iqembu lenu iquoqo lezimo.

1. Hlela izimo.
2. Xoxani ukuthi kungani nizihlele ngale ndlela.
3. Hlela izimo ngenye indlela.
4. Xoxani ukuthi kungani nizihlele ngale ndlela.

## **Term 2 Content Summary: Week 8**

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

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

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



### **Activity 5**

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

## **Ithemu 2 Iqoqa Lolwazi: Isonto 8**

Bhekisa kuSithasiselo A: Themu 2 Iqoqa Lolwazi lweSonto Ngalinye Amasonto 8-10). Funda Ukubukwa kolwazi ngelibanzi kweSonto 6: Indawo Nesimo (Ijiyomethri) ekhasini lama- 21 loMhlahlandela Wemisebenzi: *Ithemu 2*.

Indawo Nesimo (Ijiyomethri) Ingxenye Yolwazi okwakugxilwe kuyo kuThemu 2 Amasonto 3 nelesi-4. Emihlanganweni yokucobelelana ngolwazi eyedlule, naxoxa ngolwazi lweNdawo neSimo okudinga kwensiwe.

Iqoqa Lolwazi Lwesonto leSonto 8 linikeza ukubuka ngelibanzi ukuhlelwa kwesonto: imisebenzi yekilasi lonke, imisebenzi eholwa uthisha nemisebenzi yasesiteshini sokusebenzela eyenziwa emaqenjini amancane azimele.



### **Umsebenzi 5**

1. Thatha imizuzu embalwa uziwayeza ngokuqukethwe kwiSonto 8 kuSithasiselo A: *Ithemu 2 Iqoqa Lolwazi Lwesonto Ngalinye* (Amasonto 8-10).
2. Qondanisa lokhu nokuqukethwe emakhasini 138 –153 *Umhlahlandela Wemisebenzi: Themu 2*. Hlonza ukuthi imisebenzi yekilasi lonke eholwa uthisha, nemisebenzi yasesiteshini sokusebenzela iyaxhumana nokuqukethwe kwiSonto 8 kuSithasiselo A.

# Session 2: Measurement

1 hour

The focus of Term 2 Week 9 is Measurement.

## Terms 1–4 Content overview: Measurement

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



### Activity 6

1. What Measurement concepts are covered in Term 2?

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

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## Directly comparing objects: length

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



### Activity 7

1. **Direct comparison**

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

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

2. **Using non-standard units of measurement**

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

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

## Iseshini 2: Isilinganiso

1 ihora

Okugxilwe kukho kuThemu 2 Isonto 9 Isilinganiso.

### Amathemu 1–4 Ukubuka ngelibanzi ulwazi: Isilinganiso

Bhekisa Ekubukeni Ulwazi Ngelibanzi kweSilinganiso emakhasini 132–135  
*oMhlahlandela Wokuqonda Isifundo.*



#### Umsebenzi 6

- Yiluphi ulwazi lweSilinganiso olwenziwe kuThemu 2?

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- Yimuphi umehluko okhona phakathi koHlelo lweziBalo kanye nokuqukethwe kuka-CAPS?

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### Ukuqhathanisa okuqondile izinto: ubude

KuThemu 1 oHlelweni LweZibalo okugxilwe kuko Ezingxenjeni Zolwazi lweSilinganiso okugxilwe kuzo isikhathi (usuku, ubusuku, izinsuku zesonto, ukulandelanisa izigameko) kanye neshadi lokuphakama. KuThemu 2 Isonto 9, kugxilwa ekusetshenzisweni kwesikali esingekho emthethweni ukulinganisa nokuqhathanisa ubude.



#### Umsebenzi 7

- Ukuqhathanisa okuqondile**

Khetha uphathina ozoma eduze kwakhe. Abanye abasele egenjini kumele baqhathanise ukuphakama kwenu.

- ◆ Ubani omujana? \_\_\_\_\_
- ◆ Ubani omfushanyana? \_\_\_\_\_
- ◆ Thola umuntu wesithathu omujana kunabo bobabili laba bantu.
- ◆

- Ukusebenzisa amayunithi okulinganisa angenasilinganiso**

Khetha izinto ezintathu (isib. ukhiye, umakhalekhukhwini, isikhwama semali).

- ◆ Sebenzisa lezi zinto ngesikhathi ukulinganisa lokhu kuyo *Incwadi Yokusebenzela Yababambiqhaza.*
- ◆ Bika okutholile egenjini.

## **Term 2 Content Summary: Week 9**

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

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



### **Activity 9**

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

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

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

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## Ithemu 2 Iqoqa Lolwazi: Isonto 9

Bhekisa kuSithasiselo A: Themu 2 Iqoqa Lolwazi Lwesonto Ngalinye (Amasonto 8-10). Funda ukubuka ulwazi ngelibanzi kweSonto 9: Ukulinganisa ekhaxini lama-21 *loMhlahlandlela Wemisebenzi: Themu 2.*

Funda imisebenzi yekilasi lonke yeSonto 9 emakhasini 154-165 oMhlahlandlela Wemisebenzi: Themu 2.



### Umsebenzi 9

Emaqenjini enu, xoxani ukuthi ubude bufundiswa kanjani ngesikhathi semisebenzi yekilasi lonke kwiSonto 9.

1. Yini ongayenza uma umfundi engakakwazi ukuqhathanisa kanye nokuhlela izinto ngobude – ende/ enjana kanye nemfishane/ nemfishanyana ngokuphela kweSonto 9?

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2. Yini ongayenza uma abanye abafundi beqeda umsebenzi osesiteshini sokusebenzela ngokushesha ngempumelelo kunalokhu obekuhleliwe?

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# Session 3: Numbers, Operations and Relationships

1 hour

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

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

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



### **Activity 10**

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

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## **Problem solving**

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

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

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

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

# **Iseshini 3: Izinombolo, Izimpawu kanye Nobudlelwane Bazo**

**1 ihora**

Okugxilwe kukho kuThemu 2 Isonto 10 Izinombolo, Izimpawu kanye Nobudlelwane Bazo.

## **Amathemu 1–4 Ukubuka ulwazi ngelibanzi: Izinombolo, Izimpawu kanye Nobudlelwane Bazo**

Izinombolo, Izimpawu kanye Nobudlelwano Bazo, Ingxenye Yolwazi obekugxilwe kuyo kumaSonto 1, 2, no-5 kuThemu 2, futhi waxoxa ngolwazi lwezinombolo okumele lwenziwe emihlanganweni yokucobelelana ngolwazi eyedlule. Bheka Ukubuka ulwazi ngelibanzi lweziNombolo, izimpawu kanye Nobudlelwane emakhasini 114–123 oMhlahlandela Wokuqonda Isifundo.



### **Umsebenzi 10**

Yiluphi ulwazi lwezinombolo olusadinga ukuba lwenziwe ngeThemu 2?

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### **Ukuxazulula izinkinga**

Othisha badinga ukunika abafundi amathuba amanigi ukuxazulula izinkinga ukuze bakwazi ukusebenzisa ulwazi lwabo lwezibalo kanye namakhono ezimweni ezintsha. Yonke imidlalo nemisebenzi ibandakanya ukuxazulula izinkinga. Izinkinga zamagama ezibalweni zethula inkinga ethile yohlobo lokuxazulula izinkinga oluuhlanganisa izinkinga zokuhlanganisa kanye nokususa ngokubala kanye nokusebenzisa amathuluzi abambekayo ukubalekelela ukuthi bathole isixazululo. Basebenzisa amaqoqo kanye nokwabelana kwabantu ngamunye-ngamunye ukuxazulula izinkinga zokuphindhaphinda nezokuhlukanisa.

Inselelo enkulu ekwethuleni izinkinga zamagama kubafundi, ukukwazi ukuqiniseka ukuthi kubuzwe ngendlela efanele nokusetshenziswa kolimi. Uma othisha bethula izibalo zendaba, kudingeka balalele izimpendulo zabafundi ngokucophelela, bese bebahola ukuba baxazulule inkinga besebenzisa isu elihambelana nezinga labo lokuqonda.

Amaphosta eBhuku *Lamaphosta* enzelwe ukunika abafundi iqoqo lezithombe ezihamisanayo nezimpilo zabo, lethule izimo zokuxazululwa kwezinkinga zangempela zempilo.

ESontweni 10 uSuku 4 (ikhasi le-181 loMhlahlandela Wemisebenzi: Ithemu 2) iPhosta 1 isetshenziselwe ukugqugquzelabafundi ukuxazulula izinkinga ezibandakanya izinombolo 1–5.



## Activity 11

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

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

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

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



## Activity 12

Reflect on Activity 11.

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

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



## Umsebenzi 11

Emaqenjini enu, bhekisani kuPhosta 1. Cabangani izinkinga zamagama ezifanele ngazinye zala makhono:

- ◆ ukuqhathanisa
  - ◆ ukuqondanisa
  - ◆ ukubala
  - ◆ ukuhlanganisa
  - ◆ ukususa
  - ◆ ukuqoqana
  - ◆ ukwabelana ngokulinganayo.
- 
- 
- 
- 

Uma wenza imisebenzi yezinkinga zamagama nabafundi bakho, bavumele basebenzise iminwe noma izinto zokubala ukubalekelela ukuxazulula izinkinga.

Eyodwa yezingxenyenye zeziNombolo, Izimpawu kanye Nobudlelwane, ‘Ukuxazulula izinkinga esimnweni esithile’. Emaqenjini enu, fundani ukubuka ngelibanzi ulwazi kwiThemu 2 engxenyeni esekhasini le-121 *loMhlahlandlela Wokuqonda isifundo*. Besi niqedela Umsebenzi 12.



## Umsebenzi 12

Cabanga ujule ngoMsebenzi 11.

1. Yiluphi ulwazi namakhono olufundiwe lwafundiswa kulesi sihloko: Amasu okuxazulula izinkinga?
- 
- 

2. Yiluphi ulwazi namakhono olufundiwe lwafundiswa kulesi sihloko: Ukuhlanganisa kanye nokususa?
- 
-

## **Estimation**

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



### **Activity 13**

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

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

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

## **Term 2 Content Summary: Week 10**

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



### **Activity 14**

1. What are the topics for Week 10?

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2. What new knowledge is introduced in this week?

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3. What skills from previous weeks are practised?

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

## **Ukulinganisela**

Abafundi bathuthukisa amakhono okulinganisela bese beqagela “ngokukhalipha” bathi ‘zingaki izinto’ eziseqoqweni. Ngesikhathi sokulinganisa, babheka ukuthi into isinda kanjani noma yinde kangakanani, noma zingaki izinkomishi ezizogcwalisa ujeke ngaphambi kokulinganisa kwangempela.



### **Umsebenzi 13**

Umdidiyeli uzokhombisa izitsha ezimbili. Linganisela ukuthi zingaki izinto ezisesitsheni ngasinye, bese uphendula imibuzo yakhe.

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Abafundi badinga ukukwazi ukusebenzisa amagama abanjengo-: *kumbalwa kakhulu, kunungi kakhulu, kunungi kuno-, kwanele, akwanele, kucishe, eduze kwe-, okucishe kufane, ngaphansi nje, sekuphelile/ngaphezulu nje.*

Othisha bangahlela imisebenzi yokulinganisela egquqquzelala abafundi ukuthi bakwazi ukuqagela ngokukhalipha mayelana nobuningi bezinto eziseqoqweni noma isilinganiso sento.

### **Ithemu 2 Iqoqa Lolwazi: Isonto 10**

Bheka Isithasiselo A: Ithemu 2 Iqoqa Lolwazi Lwesonto Ngalinye (Amasonto 8–10)

Funda Ukubuka ulwazi ngelibanzi lweSonto 10: Izinombolo, Izimpawu kanye

Nobudlelwane Bazo ekhagini lama-21 kuMhlahlandlela Wemisebenzi: *Ithemu 2.*



### **Umsebenzi 14**

1. Zithini izihloko zeSonto 10?

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2. Yiluphi ulwazi olusha olwethulwe kuleli Sonto?

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3. Yimaphi amakhono esonto eledlule ajwayezwayo?

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Bheka emisebenzini yokulinganisela kulo iSonto 10 (*Umhlahlandlela Wemisebenzi: Ithemu 2, Umhlahlandlela Wemisebenzi: Ithemu 2, ikhasi 175 (Usuku 1), ikhasi 177 (Usuku 2) kanye nekhasi 179 (Usuku 3).*

# Session 4: Numbers, Operations and Relationships

45 minutes

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

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

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

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



## Activity 15

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

Week	Content Area Focus	Song or rhyme	Oral counting	Counting objects
1	Numbers, Operations and Relationships	A rhyme from Term 1	1–10 5–1	1–5 (birthday chart)
2				
3				

## **Iseshini 4: Izinombolo, Izimpawu kanye Nobudlelwane Bazo**

**45 imizuzu**

Uhlelo lweziBalo lugxile kweyodwa Ingxeny Yeolwazi esemqoka esontweni ngalinye. Uzoqaphela ukuthi noma Ingxeny Yeolwazi Okugxilwe Kuyo ngesonto kungeyona ‘inombolo’, inqubo yenombolo iyaqhube ka zonke izinsuku zesonto ngalinye. Isizathu salokhu ukuthi ukuphindaphinda kanye nokuzejwayeza kubalulekile uma kuhloswe ukuqinisa ukuthuthukiswa kwamakhono enombolo kubafundi.

Imisebenzi yekilasi lonke yosku ngalunye lwesonto njalo iqala ngenqubo yezinombolo ezintathu:

- ◆ iculo noma umlolozelo
- ◆ ukubala ngomlomo
- ◆ ukubala izinto.

Le nqubo yezinombolo ezintathu ihlelelw ukuqondanisa ububanzi bezinombolo ethemini ngayinye.



### **Umsebenzi 15**

Thola inqubo yezinombolo zikaThemu 2 *kuMhlahlandela Wemisebenzi: Ithemu 2* kanye nokuqedela ithebulu. ISonto 1 sewenzelwe lona.

<b>Isonto</b>	<b>Ingxeny Yeolwazi Okugxilwe Kuyo</b>	<b>Iculo noma umlolozelo</b>	<b>Ukubala ngomlomo</b>	<b>Ukubala izinto</b>
1	Izinombolo, Izimpawu kanye Nobudlelwano Bazo	Umlolozelo osuka kuThemu 1	1–10 5–1	1–5 (Ishadi losuku lokuzalwa)
2				
3				

4				
5				
6				
7				
8				
9				
10				

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

4				
5				
6				
7				
8				
9				
10				

Uma sewulubonile ulwazi lwezinombolo kuThemu 2, uyoqaphela ukuthi inqubo yezinombolo yejwayezwa zonke izinsuku zesonto ngalinye kungakhathaleki ukuthi ikhona ingxene Yolwazi Okugxilwe Kuyo, nokuthi ukukhula kobubanzi bezinombolo kuyanda yini ethemini yonke.

# Session 5: Term 2 Assessment

1 hour



## Video 2

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

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



## Activity 16

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

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

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# Iseshini 5: Ukuhlola Ithemu 2

1 ihora



## Ividiyo 2

Buka ividiyo kathisha ethula isixazululo sezinkinga egenjini elincane labafundi.

Qaphela ukuthi umfundi ngamunye uyixazulula kanjani inkinga. Qaphela ukuthi uthisha uzisebenzisa kanjani izexwayiso uma umfundi enobunzima.



## Umsebenzi 16

Bheka kurubhrikhi ekhasini le-107 kuMhlahlandlela Wokuqonda Isifundo.

Emaqenjini enu, xoxani ukuthi nizobaklomelisa kanjani abafundi ngamunye nisebenzisa lesi silinganiso. Nika izizathu zesinqumo senu nisusela endleleni yokuhlola yophawu lokulinganisa ngalunye.

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# Closing activities

15 minutes



## Activity 17

**Workshop reflection:** Take a few minutes to reflect on the day. Page through your *Participant's Workbook* to remind yourself of what was covered. Write down any questions or comments to share with the group.

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### Take back to school task

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

## Evaluation

Complete the Evaluation Form.

# Imisebenzi yokuvala

15 imizuzu



## Umsebenzi 17

**Ukudlinza ngomhlangano wokucobelelana ngolwazi:** Thatha imizuzu embalwa udlinze ngosuku lolo. Phenya amakhasi *eNcwadi Yokusebenzela Yababambiqhaza* ukuzikhumbuza ngokwenziwa. Bhala phansi noma iyiphi imibuzo noma imibono ukuze wabelane eqembu.

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### Umsebenzi obuyela nawo esikoleni

1. Sebenzisa *Umhlahlandlela Wemisebenzi: Ithemu 2* ukuhlela kanye nokwenza AmaSonto 8–10 oHlelo lweziBalo.
2. Bhala ukuhlola okusebenze kahle, okungasebenzanga kahle nongakwenza ngokuhlukile ukwenza ngcono ukufundisa nokufunda.
3. Phatha ukuhlola emhlanganweni wokucobelelana ngolwazi olandelayo.

### Ukuhlola

Gcwalisa ifomu Lokuhlola.

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

### Term 2: Activity Plan

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

## ISITHASISELO A: ITHEMU 2 IQOQA LOLWAZI LWESONTO NGALINYE (AMASONTO 8-10)

### Ithemu 2: Uhlelo Lomsebenzi

Isonto 8			
INGXENYE YOLWAZI: INDAWO NESIMO (JIYOMETHRI)			
<b>ISIHLOKO:</b> Izimpawu zezimo - qhathanisa okufanayo kanye nokwehlukile, hlela ngokwezimpawu; ukuma nokubuka <b>YETHULA ULWAZI OLUSHA:</b> Landela inkomba Umugqa ophakathi oweqiwayo <b>ZEJWAYEZE:</b> Ukubala ngomlomo 1–20, ukubala uya emuva usuka kokuyisi-7, ukulandelanisa 1–5, ukubala izinto 1–7, gxilisa ulwazi lwenombolo 1–5, iyiphi inombolo ephambi/esemuva, zejwayeze ukusebenzia zonke izimo			
Imisebenzi yekilasi lonke	Umsebenzi oholwa nguthisha	Umsebenzi yesiteshi sokusebenzela	Umsebenzi yesiteshi sokusebenzela
<b>Usuku 1</b> Phambili/emuva.	Ukubala – ngikhombise izinto zokubala 1–3, 5–7.	<b>Umsebenzi 1</b>	Umsebenzi wokuhlela – usebenzisa izimo ezisikiwe.
<b>Usuku 2</b> Gxilisa zonke izimo (Ngilingisa inhloli ...)	Sebenza ngazo zonke izimo ezifundisiwe.	<b>Umsebenzi 2</b>	Ukwenza izimo usebenzisa inhlama yokudlala bese wenza ikhophi.
<b>Usuku 3</b> Umdlalo wesimo.	Ukweqela kolunye uhlangothi. Isikhundla – inkomba.	<b>Umsebenzi 3</b>	Izimo zetheyiphu eyimaski – abafundi balandela izimo besebenzisa amabhlulokhi Qondanisa izimo usebenzisa amakhadi ezimo.
<b>Usuku 4</b> Yini engingayenza: Ngilahlekelwe yi ... (isimo).	Phambili/emuva.	<b>Umsebenzi 4</b>	
<b>Usuku 5</b> Indlela eneziphazamiso (idinga indawo enkulu/ngaphandle). Ukweqela kolunye uhlangothi.			
Isonto 9			
INGXENYE YOLWAZI: ISILINGANISO			
<b>ISIHLOKO:</b> Ubude: ukuqhathanisa kanye nokuhlela izinto uchaza ubude ngokusebenzisa ulwazimagama olufanele <b>YETHULA ULWAZI OLUSHA:</b> Ukulunganisa kanye nokuhathanisa ubude (okude/okufishane, okujana/okufishanyana, okude kakhulu okufishane kakhulu) <b>ZEJWAYEZE:</b> Ukubala ngomlomo 1–20, ukubala uye emuva usuka kokuyisi-7, ukubala izinto 1–7, ukulunganisela 1–7, okude/okufishane			
Imisebenzi yekilasi lonke	Umsebenzi oholwa nguthisha	Umsebenzi yesiteshi sokusebenzela	Umsebenzi yesiteshi sokusebenzela
<b>Usuku 1</b> Okujana/okufishanyana (ukuphakama).	Okujana kuno-/okufishanyana kuno-.	<b>Umsebenzi 1</b>	Okufishanyana/okujana (imichilo esikiwe enobude obuhulkene).
<b>Usuku 2</b> Ukuqhathanisa ubude bamaribhini.	Okude kuno-/okufishane kuno-.	<b>Umsebenzi 2</b>	Izikelemu ezinyakazayo (ukwenza iPhosta yokufishane kakhulu kuya kokude kakhulu).
<b>Usuku 3</b> Ukuhlela izinto ngobude (imicu yamaphepha anemibala).	Isilinganiso ngezinto zansuku zonke.	<b>Umsebenzi 3</b>	Lunganisa amabhlulokhi usebenzisa intambo.
<b>Usuku 4</b> Ukuqhathanisa ishadi lobude (Kusukela kuThemu 1).		<b>Umsebenzi 4</b>	Inhlama yokudlala kanye nephepha elinomugqa (ubude obungafani).
<b>Usuku 5</b> Ukuqhathanisa ishadi lobude (omujana/omfushanyana kunawe).			

Week 10				
<b>CONTENT AREA:</b> NUMBERS, OPERATIONS AND RELATIONSHIPS				
<b>TOPIC:</b> Describe, compare and order numbers; addition and subtraction (oral); problem solving <b>INTRODUCE NEW KNOWLEDGE:</b> Breaking down and building up numbers, problem-solving techniques, addition and subtraction using concrete objects, numbers in familiar settings (address and phone number) <b>PRACTISE:</b> Oral counting 1-20, counting backwards from 7, sequencing numbers 1-5, counting objects 1-7, reinforce number concept 1-5, what number comes before/after				
<b>Whole class activities</b>		<b>Teacher-guided activity</b>	<b>Workstation activities</b>	
<b>Day 1</b>	Ordering, using numbers 1-5. Dot cards.	Ordering numbers and dot cards (1-5). Fewer/more/less than.	<b>Activity 1</b>	Write numbers 1-5 and draw dots using white board markers and plastic sheets. Count sticks to match.
<b>Day 2</b>	Addition using concrete objects. Musical chairs.	Decomposition of numbers. Phone numbers and addresses.	<b>Activity 2</b>	Tracing shapes according to given number. Feely cups with number of objects – feel amount and show number symbol.
<b>Day 3</b>	Subtraction using concrete objects.		<b>Activity 3</b>	Number matching pictures.
<b>Day 4</b>	Problem solving. Poster 1.		<b>Activity 4</b>	
<b>Day 5</b>	Memory game: Address and phone number. Game: Making groups of 1-5 learners.			

**Isonto 10**

**INGXENYE YOLWAZI:** IZINOMBOLO, IZIMPAWU KANYE NOBUDLELWANE BAZO

**ISIHLOKO:** Ukuhaza, ukuqhathanisa kanye nokuhlela izinombolo; ukuhlanganisa kanye nokususa (ngomlomo); ukuxazulula izinkinga

**UKWETHULA ULWAZI OLUSHA:** Ukuhlephula kanye nokwakha izinombolo, isu lokuxazulula izinkinga, ukuhlanganisa kanye nokususa usebenzisa izinto ezibambekayo (ikheli kanye nenombolo yocingo)

**ZEJWAYEZE:** Ukubala ngomlomo 1-20, ukubala uye emuva usuka kokuyisi-7, ukulandelanisa 1-5, ukubala izinto -7, ukugxilisa ulwazi lwezinombolo 1-5, iyiphi inombolo eza ngaphambili/ngemuva

<b>Imisebenzi yekilasi lonke</b>		<b>Umsebenzi oholwa uthisha</b>	<b>Imisebenzi yesiteshi sokusebenzela</b>		
<b>Usuku 1</b>	Ukuhlela, usebenzisa 1-5. Amakhadi anamachashazi.	Ukuhlela izinombolo kanye namakhadi anamachashazi (1-5).	<b>Umsebenzi 1</b>	Bhala izinombolo 1-5 bese udweba amachashazi usebenziza amapeni ebhodini elimhlopho namashidi angamapulasitiki. Izinti zokubala nokuqondanisa.	
<b>Usuku 2</b>	Ukuhlanganisa usebenzisa izinto eziphathhekayo. Izihlalo zomculo.	Okumbalwa/okuningi/kumbalwa kune-. Ukuhlephula izinombolo.	<b>Umsebenzi 2</b>	Qopha ulandelele izimo kuye ngokwenombolo enikiwe.	
<b>Usuku 3</b>	Ukususa usebenzisa izinto eziphathhekayo.	Izinombolo zocingo kanye namakheli.	<b>Umsebenzi 3</b>	Izinkomishi zokuzwa ezinezinto eziyinani elithile – thinta inani bese ukhombisa uphawu lwenombolo.	
<b>Usuku 4</b>	Ukuxazulula izinkinga. IPhosta 1.		<b>Umsebenzi 4</b>	Izithombe zokuqondanisa izinombolo.	
<b>Usuku 5</b>	Umdlalo wokukhumbula: Ikheli kanye nenombolo yocingo. Umdlalo: Ukwenza amaqembu abafundi kusukela ko-1-5.				

## **Workshop 6 Evaluation Form**

1. Did the workshop meet your expectations?

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2. What did you learn in this workshop that helped you the most?

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3. Was there anything that you did not like or had difficulty understanding?

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4. How will you apply what you have learnt in your Grade R classroom?

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5. Do you have any suggestions for improving further workshops?

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## Ifomu Lokuhlola Lomhlangano Wokucobelelana Ngolwazi 6

1. Ngabe umhlangano wokucobelelana ngolwazi uhlangabezene nalokho obukulindele?

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2. Yini oyifundile kulo mhlangano wokucobelelana ngolwazi ekusize kakhulu?

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3. Ngabe kukhona ongakuthandanga noma okuthole kunzima ukukuqonda?

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4. Uzokusebenzisa kanjani lokho okufundile ekilasini lakho leBanga R?

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5. Ngabe unazo iziphakamiso zokuthuthukisa eminye imihlangano yokucobelelana ngolwazi?

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