

MOPHATO

2

BUKA YA
MORUTABANA

Platinum

Dipalo

Platinum Dipalo Mophato wa 2 Buka ya Morutabana

Maskew Miller Learning
10 Freedom Way, Milnerton, Cape Town, 7441

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Ditokelo tsotlhe di sireleditswe. Ga go karolo ya kgatiso e, e e ka boelediawang, ya bokwadi wa mo mofuteng o o ka tlhagiswang gape ka ona, kgotsa ya gaswa mo sebopegong. E e ka gaisa ka mokgwa o o rileng (eleketeroniki, ka motšhine, ka kgatiso ka gaisa ka mokgwa o o mongwe o o sa dumeletsegeng) ntle le gore go bonwe tumelano e e kwaadimo e e gantsi e e fofatshe ya mong wa ditshiamelo tse di sireleditsweng tsa bokwadi pele.

Fa o batla go rebolelwa tetla ya go ka gatisa lekgetlo le lengwe gape kgotsa go dirisa karolo nngwe le nngwe ya buka eno, o kopiwa gore o ikgolaganye le Setlhophha sa sebopelelanang ka Ditshwanelo le Tetla mo go 021 532 6000 kgotsa ka go romela imeile mo go copyright@mmml.co.za. Go begela tshenyo ya ditshwanelo tsa mokwadi, tsweetswee.romela@mmml.co.za go copyright@mmml.co.za.

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Morulaganyimogolo Khanga Shanyane
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Molaetsa ka bakwadi

Morutabana yo o rategang

O fano ka gonne o neetse botshelo jwa gago mo pitsong e e tlotlegang ya go ruta. O moitseanape yo o tlotlegang. Le fa bangwe ba ka tswa ba sa anaanele tiro ya gago ka botlalo, o na le seabe se se botlhokwa thata mo go bopeng isago e e sa ntseng e tla diragala. Ka go nna le seabe ka botlalo mo tirong ya gago, o na le seabe mo maitekong a go fetola lefatshe lotlhe – go tlhotlheletsa ditsamaiso tse dišwa tsa puso, go kaela baeteledipele ka dikakanyo, le go ama diikonomi tsa isago. O maatla a a kgweetsang mo gola ga Botho le go tlhagolela bopelonomi le kutlwelobotlhoko mo kokomaneng e e latelang. Re lebogela seabe sa gago sa botlhokwa mo go tšwenyetswa setšhaba sa rona sa lefatshe ka bophara; go nna teng ga gago go botlhokwa thata.

Le fa go ntse jalo, go ruta go na le dikgwetlho tse di mosola tse di ka kgobang marapo. Go tšwenyetswa boitekanelo jwa gago, re akareditse didirisiwa tsa go ithusa go netefatsa gore o mo seemong se se kwa go tšwenyetswa boitekanelo jwa gago bo ama ka tlhamalalo go ruta ga gago, botsalano jwa gago le barutwana, le tiragatsi ya gago ka kakaretso. Re batla gore o nne morutabana yo o itumetseng.

Dikgakololo tse di fa tlase di tseentswe tirisong ka katlego ke barutabana ba mabotlana ba dipalo mo lefatsheng lotlhe. Ke mekgwa e e lekilweng e e fetotseng diphaposiborutelo le dikolo go nna mo go tšwenyetswa, a a nang le maduo a mantle.

Ikutlwe o gololesegile go amogela se se go utlwalang.

Ka madume a a bothiitho,

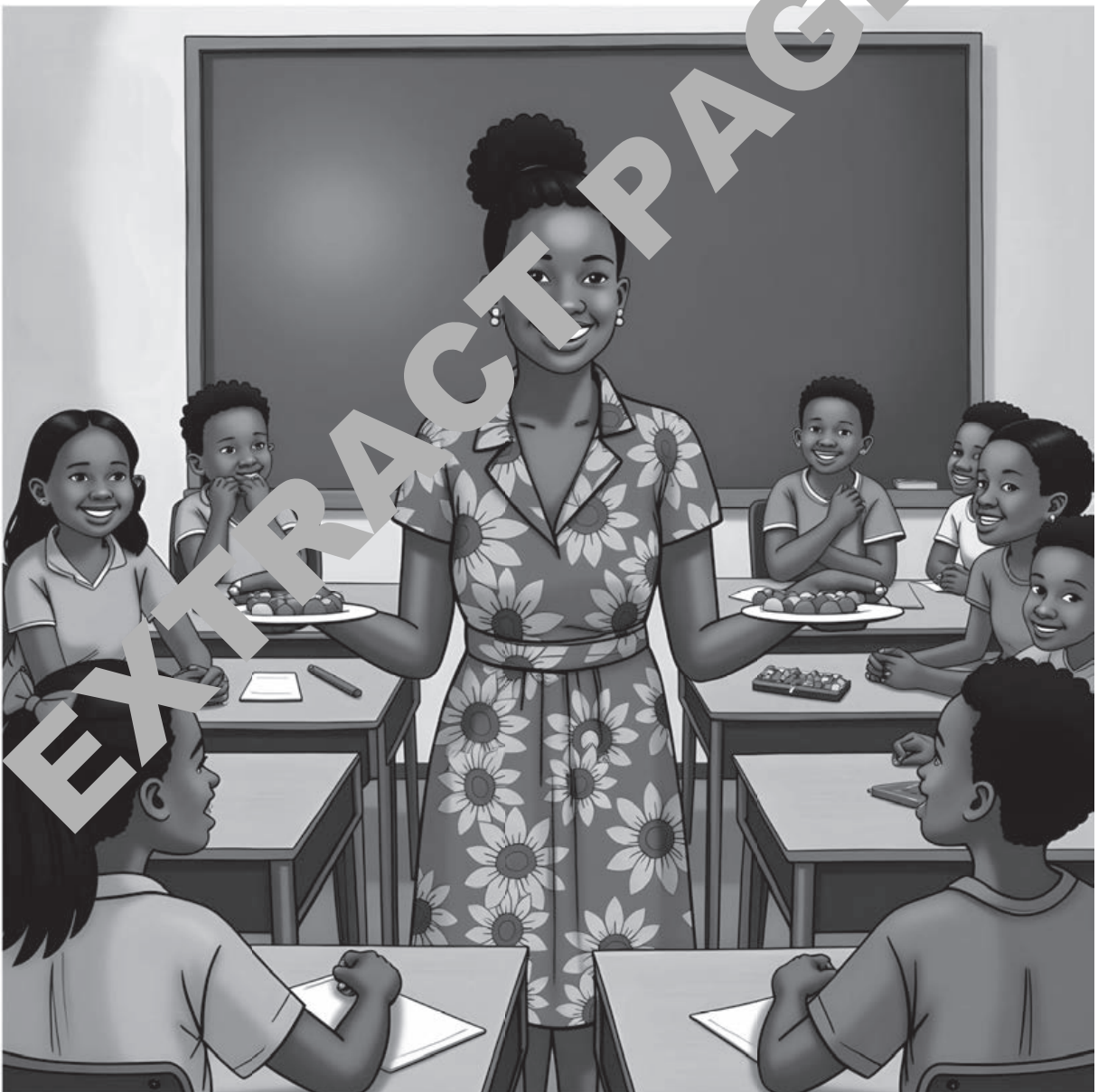
Bakwadi



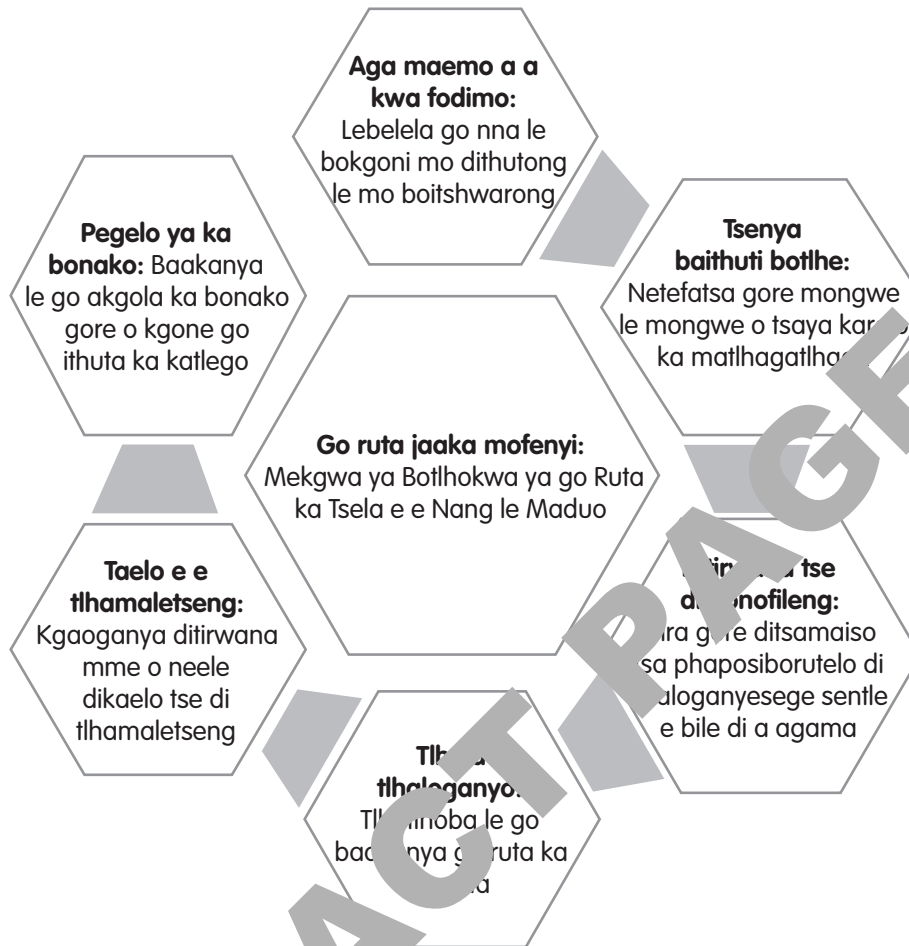
Go dirisa buka ka matsetseleko

Re a lo amogela mo bukeng ya morutisi ya Kgato ya Motheo, e leng motswedi wa bothokwa o o diretsweng go tshegetsa barutabana ba ba dirisang motseletsele wa rona wa thuto wa Mophato wa 1, 2, le 3. E tlhamilwe ka loeto lwa gago lwa go ruta mo mogopolong. Kaedi eno e naya dintlha tse di mosola le didirisiwa tse di ikaeletseng go tokafatsa maano a gago a go ruta le go humisa maitemogelo a go ithuta a barutwana.

Ka ntlha ya seo, buka eno e rotloetsa go akanya le mo gola ka metlha, e tlhama tikologo ya go ithuta ka tirisano mmogo gore barutabana ba kgone go tokafatsa bokgoni jwa bona jwa go ruta le go ama phitlhelelo ya barutwana ka tsela e e siameng. Re go laletsa go dirisa dintlha le didirisiwa tsa kaedi eno go tokafatsa bokgoni jwa gago jwa go ruta le go tlhama maitemogelo a a fetolang mo phaposiborutelong. Mmogo, buka eno e tsengetsa matsetseleko a barutwana ba rona gore ba atlege mo dikamusong le kwa ntle ga tsone.



Ruta jaaka mogaka!



Go tlhatlhanya go tliša bofelo

Mo lefatsheng la gompieno le tsamayang ka bonako, mokgwa wa bogologolo wa go tlhatlhanya go tlohokwa go feta le fa e le leng pele. Batho ba gompieno ba tlogela kwa go tlhatlhanyeng jaaka botshabelo mo kgatelelong le go tlogela go tlogela ga botshelo jwa segompieno. Go tlhatlhanya ka go hema kwa teng ke mokgwa o o bonolo wa go laola boitshwaro jwa bokafatsa bokgoni jwa tlhaloganyo. Ka go tsepamisa mogopolo mo lefatsheng ka bonya, wena le barutwana ba gago le ka fokotsa kgatelelo ya mogopolo, le ritibatsa megopolo ya lona. Mokgwa ono ga o boloke boboko fela, mme gape o thusa go dira gore motho a ikutlwe a le kagiso, a iketlile, le go nna le botsogo jo bo siameng.



Tsela ya go tlhatlhanya

Simolola ka go batla lefelo le le siameng la go nna, le ka nna mo ditulong kgotsa mo ditshingwaneng tsa sekolo. Simolola ka go hema bonolo, hema ka nko metsotswana e le mene, mme o hema ka iketlo ka molomo go fitlha go metsotswana e le robedi. Iketlo o fokotse go hema le go ntsha mowa, o dire bonnete jwa gore mmele o iketlile ka bottalo.

Go tshameka mmimo o o ritibetseng go ka tokafatsa maitemogelo le kagiso. Metsotso e le melhano go ya go e lesome ya mokgwa ono e ka lapolosa mme ya tlisa tlhaloganyo e e tlhamaletseng le kagiso ya letsatsi lotlhe.

Go dirisa mmimo go tokafatsa go ithuta

O ka dirisa dipina le diraeme go ruta dikgopolo tsa dipalo ka go tlhakanya moribo le molodi mo dikamusong tsa gago. Se se ka thusa barutwana go dira gore dikakanyo tse di sa tlhaloganyesegeng di nne le bokao ka go di dira gore di se ka tsa lebalwa. Sekao, go tlhama pina e e tshwarang ya go bala tatelano go ka dira gore dikgopolo tse di nne bonolo gore barutwana ba ba botlana ba di tlhaloganye le go di gakologelwa. Diraeme di ka thusa gape barutwana go tlhaloganya dipaterone tsa dipalo ka puo e e boaboelediwang, e e ngokang.



Go tlhaloganya thuto-kakaretso

Go akaretsa mo thutong go ikaelela go tlhama tikologo e mo go yona morutwana mongwe le mongwe a ikutlwang a le bothokwa, a tlotliwa le go tshegediwa:

Boakaretsi le togamaano ya tiragatso:

- Go tlotla le go akaretsa dipono tse di farologaneng tsa setso mo kharikhulamong le mo mekgweng ya go ruta.
- Go rotloetsa dikamano tse di siameng tsa loago le tirisano magareng ga barutwana go tswa mo maemong a farologaneng.

Phitlhelelo ya barutwana ba ba nang le bogole:

- Go netefatsa phitlhelelo ya mmele le ya dijithale ya didirisiwa le dibebofatsi tsa go ithutisa.
- Go tshegetsa barutwana ba ba nang le dipuo tse di farologaneng ka mananeo a dipuo tse di tshegetso ya puo.

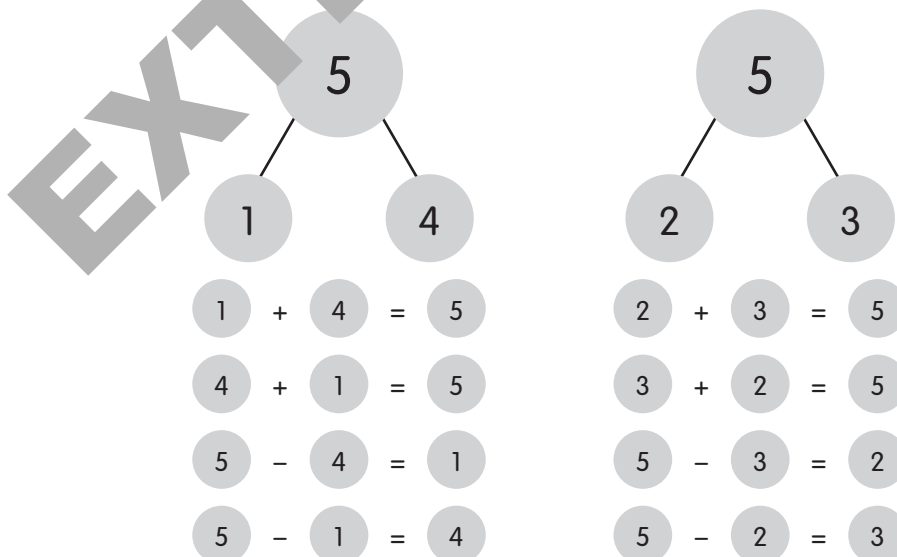
Maano a go tsenya tirisong:

- Tlhabololo ya porofesinale go thusa barutabana go ruta ka mekgwa e tshegetso.
- Tirisano mmogo le tshegetso go tswa mo malapeng, baagi le ditlhopha tsa barutwana.
- Tlhabololo ya melawana le kharikhulamo e e akaretsang botho.
- Go dira tlhatlhubo le tlhabololo ya metlha le metlha go netefatsa tekatekano mo dipoelong tsa thuto.

Dibuka tsa morutwana di itsisiwe ka go anela kgang go thutisa kgo polo e e tlhokang go ithutiwa. Sekao ke go bua ka ditlhopho tse pedi tsa diphologolo tse di kopanana bopaki tse di kopanana se segolo. Sekao sa kgang e ka nna: "Mo sekgweng go na le digwagwa di le 3, mme tse di nnye di le 2 di kopanela. Go na le digwagwa di le kae jaanong?" Tirwana ya go Bona le ya go Dira (Metsotso e le 15).

Dirisa didirisiwa:

Ruta barutwana go dirisa didirisiwa a $n + 2$. Ba ka kgobokanya diboloko mme ba di bale gore ba bona palo yotlhe.



Go ruta dipalo gore di tshologangwe

Go tshologanya go kaya bokgoni jwa go akanya ka kelotlhoko le go itshwara sentle mabapi le setlhogo kgotsa kgopolo. Ga se fela go kokoanya tshedimosetso, mme go feta moo, ke go feta bokgoni jwa go latela dikgato ka tsela e e ikemetseng. Mo dipalong, go tshologanya go bonala fa barutwana ba kgona go tshalosa boammaaruri jwa karabo ya dipalo le mabaka go ya ka melao ya dipalo (CCSSO, 2010):

Go tshologanya mogopolo: Go tshologanya megopolo, diopereshene le dikgolagano tsa dipalo.

Thulaganyo e e edileng: Go diragatsa dithulaganyo tsa dipalo sentle, ka nako le ka phuthologo.

Thulaganyo e e tshepegang: Go aga, go emela le go rarabolola ditharaano tsa dipalo.

Go ntsha mabaka: Go tlhatlhanya, go tshalosa le go netefatsa ditsamaiso le ditharabololo tsa dipalo.

Mekgwa e, e golagana sentle mo **phaposiborutelong e morutwana e leng pinagare**, go tshalosa go ithuta ka go dira, go aga mogopolo, go rarabolola ditharaano le go tshologanya dipalo.

Phaposiborutelo gape e tsepamisitse mogopolo mo go katiseng ditsamaiso, mo go golaganyeng dikemedi le mo go rarabololeng diphatlha mo kitsong ya barutwana. Ka kakaretso, leitho le le ikemetseng go ruta dipalo gore di tshologangwe ka mekgwa o o akaretsang le o o kopantsweng.



Metlobo ya didiriswa tsa thuto

Kagego ya Buka ya Morutwana

Buka ya Morutwana e neelana **ka ditšhono tse dintsi tsa go ikatisa** ka ditirwana tsa motho ka bongwe, tsa balekane, tsa setlhophha, le tsa phaposi, e tshegetsa bokgoni mo go ithuteng. Go ikatisa go botlhokwa mo tlhabololong ya bokgoni, mme buka e akaretsa **metshameko e e ngokang le ditirwana tse di itumedisang**, e naya barutwana ditsela tse dingwe tsa go tiisa tlhaloganyo ya bona. Ditirwana tse ga di rotloetse fela tlhatlhubo e e tswelelang mme gape di tlhama maitemogelo a **go ithuta a a monate le a boithamedi**.

Dikgang	Dikgang di a akarediwa go tokafatsa go boloka mogopolo le go tlhologanya ka go golaganya dikgopolo le diteng tse di amanang le go rotloetsa go tsa leabe ka kakanyo.
Tirwana e e ikemetseng	Se se tlhabolola go ikgalemela le go akanya ka kelotlhoko go matla tsa barutwana go nna beng ba thuto ya bona le go tlhabolola bokgoni jwa go rarabela ditharaano.
Tirwana ya balekane le ya setlhophha	Ditirwana tsa tisanommogo di rotloetsa tlhaeletsano go tsa nngwe ka setlhophha, le bokgoni jwa go tlhologanya dipono tse di farologaneng di nse di rotloetsa bokgoni jwa loago .
Tirwana ya phaposi yotlhe	Ditirwana tse di rotloetsa maikutlo a go ithuta mogolo go ithuta mmogo, go rotloetsa barutwana go abelana maitemogelo le go tsa karolo ka matlhagatlhaga mo dipuisanong.
Mafoko a mantšhwa	Ntlha e e tlhalosa tlotlofoko e ntšha ka tsela e e tlhapileng le e e fitlhelesegang, e thusa barutwana go tlhologanya le go gogelwa bokao jwa mafoko.
Teko ya bokhutlo jwa kgweditharo	Dipotso tseno di kopanya ditirwana tse dintsi, di tlhoka gore barutwana ba dirise kitso ya bona mo ditlhogong tse farologaneng. Mokgwa o o dirisa dipotso tse di samaganang le maemo a a farologaneng a ditharaano go thusa go sekaseka go tlhologanya le go boloka ga barutwana ka kitso.
Nako ya go batisisa	Ntlha e ya go ithuta e naya barutwana tshedimosetso e ntsi e e tlhotlheletsang le e e rutang, mme go le tse tse di tsosang dikakanyo tse di ikaeletseng go rotloetsa go batisisa go rarabela ditharaano ka boithimoleledi.
Ditirwana	Ka ditšhono tse di dirisiwang, ditirwana tse di tlhotlheletsa boithamedi le boithimoleledi , di letla barutwana go dirisa kitso ya tiori mo ditiragalong tsa nnete le go rarabela kakanyo e e tseneletseng.

Thulaganyo ya buka ya morutwana

- Diteng di rulagantswe go simolola ka **dikgono tsa motheo** jaaka go bala le bolengkemedi, mme go tsenyeletswa **dikgopolo tse di raraaneng** di tshwana le dipalophatlo, dipaterone, le go tshwara tshedimosetso ka bonya.
- **Ditlhogo di tsenyelediwa go ntse go tswelletswe:** Diopereshene tsa dipalo di aga motheo go tlhaloganya dipalophatlo, dipaterone di gogela kwa tshimologong ya alejebora kgotsa, fa tekanyo e tlhagisa dikgopolo tse di amanang le bogolo le selekanyo, mme go tshwara tshedimosetso go agetse mo bokgoning jwa go tshwantshanya jaaka go aga dipalo.
- **Popego e e tswelletseng** e e netefatsang gore kgopolo nngwe le nngwe e tiisa le go baakanyetso barutwana thuto e e latelang, go dira gore go nne le kgolagano e bana ba tla e itemogelang.

Kelelo le Kgolagano:

- Ditlhogo tsa ATP di rulagantswe go simolola ka dikgono tsa motheo mme ka iketso di tlhagisa dikgopolo tse di raraaneng.
- **Setlhogo sengwe le sengwe se golagangwa le dikarolothuto tse di fetileng:** Ditirivana tsa dipalo di aga diopereshene tsa dipalo, di aga motheo go tlhaloganya dipalophatlo, dipaterone di gogela kwa tshimologong ya alejebora, fa tekanyo e tlhagisa dikgopolo tse di amanang le bogolo le selekanyo, mme go tshwara tshedimosetso go agetse mo bokgoning jwa go tshwantshanya le go aga dithalo.
- Diteng di rulagantswe ka **mokgwa wa tswelletswe le kopanyo** go bapisa gore kgopolo nngwe le nngwe e agela mo go e e latelang.
- Dipotso-malepa tsa bofelo ba kgweditharo di agilwe ka mokgwa wa kopanyo, ka go tlhakanya dipotso go tswa ditlhogong tse di farologaneng go akaretsa dikgono tse di farologaneng go thusa go tlhaloganya.

Dipalo, matshwao le dikgolagano



Thulaganyo ya kharikhulamo (CAPS)

Maikaelelo a thuto go ya ka diteng tsa serutwa

Dipalo, matshwao le dikgolagano	Dipaterone, tiriso alejebora
<p>Mo legatong le, kgopolo ya dipalo ya barutwana e tlhamiwa ka go dira le didirisiwa tse di bonalang go bala dikokoanyo tsa didirisiwa, go kgaoganya le go tlhakanya dipalo, go tlola go bala ka ditsela tse di farologaneng, go rarabolola ditharaano tsa bokao (lefoko), le go aga le go arola dipalo.</p> <p>Go bala go kgontsha barutwana go tlhabolola dikgopolo tsa dipalo, dipalo tsa tlhogo, phopholetso, bokgoni jwa go bala le go lemoga dipaterone.</p> <p>Tlhabololo ya kgopolo ya dipalo e thusa barutwana go ithuta ka ga dipharologantsho tsa dipalo le go tlhama maano a a ka dirang gore dipalelo di nne bonolo.</p> <p>Go rarabolola ditharaano mo bokaong go kgontsha barutwana go tlhaeletsana ka kakanyo ya bona ka molomo le ka go kwala ka ditshwantsho le matshwao.</p> <p>Barutwana ba aga tlhaloganyo ya ditirwana tsa motheo tsa go tlhakanya, go ntsha, go atisa le go arola.</p> <p>Barutwana ba tlhama dikgopolo tsa dipalophatlo ka go rarabolola ditharaano tse di akaretsang go abela dilekanyo tsa sebopego le ka go dirisa ditshwantsho. Ditharaano di tshwanetse go akaretsa ditharabololo tse di felelang ka palo e e feletseng ya masolela kgotladi dipalophatlo. Go abelana ga go a tshwanetse go akaretsa fela go batla dikarolo tsa botlhe, mme gape go batla dikarolo tsa dikokoanyo tsa didirisiwa. Go kgontsha e, barutwana ga ba solofelwe go bala ka go kwala matshwao a dipalophatlo.</p>	<p>Mo legatong le, barutwana ba dira ka bobedi dipaterone tsa dipalo (sekao, go tlola go bala); le diphethene tsa jometeri (sekao, ditshwantsho).</p> <p>Barutwana ba tshwanetse go dirisa didirisiwa tse di bonwang, ditshwantsho le dipopego tsa matshwao go kopolola, go atolosa, go tlhalosa le go tlhama dipaterone.</p> <p>Go kopolola paterone go thusa barutwana go bona lebaka la gore paterone e dirile jwaga. Go atolosa paterone go thusa barutwana go tlhola gore a ba tlhalogantse sentle lebaka la paterone.</p> <p>Go tlhalosa paterone go thusa barutwana go godisa bokgoni jwa bona dipopego. Go baya mogopolo mo tlhaloganyo ya dipaterone go thaya motheo wa go nna le bokgoni jwa go akanya ka alejebora.</p> <p>Dipaterone tsa dipalo di tshegetsa tlhabololo ya kgopolo ya dipalo le tlhaloganyo ya tiriso e e agilweng mo dipalong, ditirwaneng le mo dikamanong.</p> <p>Dipaterone tsa jometeri di akaretsa tatelano ya mela, dipopego le didirisiwa mme gape le dipaterone mo lefatsheng. Mo dipateroneng tsa jometeri barutwana ba dirisa kitso ya bona ya sebaka le popego.</p>

Popego le boalo (Jometeri)	Go lekanya
<p>Mo legatong le barutwana ba tsepamisa mogopolo mo didirisiweng tsa dipopego tsa tlhakore-tharo (3-D), mo didirisiweng tsa dipopego tsa tlhakore-pedi (2-D), mo maemong le mo ditaelong.</p> <p>Barutwana ba sekaseka dipharologantsho tsa didirisiwa tsa dipopego tsa 3-D le didirisiwa tsa dipopego tsa 2-D ka go di tlhopha, go di tlhaola, go di tlhalosa le go di naya maina.</p> <p>Barutwana ba tshwantsha dipopego le go aga ka didirisiwa.</p> <p>Barutwana ba lemoga le go tlhalosa dipopego le didirisiwa tse di mo tikologong ya bona tse di tshwanang le didirisiwa le dipopego tsa dipalo.</p> <p>Barutwana ba tlhalosa maemo a didirisiwa, bona le ba bangwe ba dirisa tlotlofoko e e maleba.</p> <p>Barutwana ba latela le go neela ditaelo</p>	<p>Mo legatong le kgopolo ya barutwana ya tekanyetso e tlhamiwa ka go dira ka tiriso le didirisiwa le dipopego tse di farologaneng tse di tiileng, go ithuta dipharologantsho tsa boleele, bokgoni, bokete, kgaolo le nako.</p> <p>Barutwana ba lekanya dipharologantsho tsa dipopego le didirisiwa ba dirisa diyuniti tse di sa Agamang fa go tshwanetseng, jaaka diatla, dikgato, ditshodi.</p> <p>Barutwana ba bapisa dilekanyo tse di farologaneng ka go dirisa mafoko a a bapisiwang, jaaka boleele/ khutshwane, bokete/botlhofa.</p> <p>Barutwana ba itsisiwe diyuniti tse di vaelegileng jaaka digerama, dikhiberani, mililitara, dilitara; disentimitara, dimitha.</p> <p>Ditirwana tse di amanang le nako di tshwanetse go rulaganngwa ka tsamamo ya gore tlhaloganyo ya barutwana ya fetsa ga nako e tshwanetse go tlhabetlwa paka ka buisa ka ga nako.</p>

Go dira dipalo tsa tshedimisetso
<p>Mo legatong le,</p> <p>Barutwana ba gola mo bokgoning ba bona ba go tlhahisa, go emela, le go tlhalosa, ka seo se leng botlhokwa fa ba dira ka tshedimisetso.</p> <p>Ba ikatisa go tlhopha didirisiwa tse di jaaka dibotlhofa, ditshodi tse di akaretsang mmala kgotsa mofuta. Morago ba bo ba dira ditshwantsho go emela ditlhopha tsa bona tse ba di tlhophileng.</p> <p>Barutwana ba araba dipotso ka ditlhopha tse di tshamileng, mme ka iketlo ba simolola go tlhaloganya sediko sa tshedimisetso. Ka Kgweditharo ya 4, barutwana ba itebaganya le go sekaseka dikemedi tsa ditshwantsho le go araba dipotso di ka nna pedi ka ga tso.</p>

Diteng jwa diteng tsa serutwa			
Diteng tsa serutwa	Mophato 1	Mophato 2	Mophato 3
Dipalo, diopereishene le dipotso* [*]	65 %	60 %	58 %
Dipaterone, tiriso e Alejebana	10 %	10 %	10 %
Popego le boalo (Jometeri)	11 %	13 %	13 %
Go lekanya	9 %	12 %	14 %
Go dira dipalo tsa tshedimisetso	5 %	5 %	5 %
	100 %	100 %	100 %

*Go botlhokwa gore tsepamo e nne mo dipalong, diopereishene le botsalano mo mophatong wa R. Letlelela barutwana go fetsa mo kgatong ya motheo ba tshwanetse gore ba bo ba tlhomame go tlhaloganya bokao jwa dipalo le go Motlotlo ka diopereishene. Maikaelelo ka gore barutwana ban ne le bokgoni le go itshepa fa ba dira dipalo le go tlhakanya. Ka lebaka le, nako e e abetsweng dipalo, diopereishene le botsalano e okeditswe. Tiro ka bontsi e tshwanetse go tsepamedisiwa mo dopateroneng tsa dipalo go tiisa bokgoni jwa barutwana go dirisa dipalo

Tatelano le nako e e tlhaoletsweng diteng

Kabo ya nako go ya ka diteng tsa beke

Diteng tsa serutwa	Ditlhogo	Nako e e tsitshintsweng
Dipalo, Matshwao le Dikgolagano	Go bala Temogo ya dipalo Supa le go tlhalosa dipalotlalo Kgopolopalo Go rarabolola dipalo	Metsotso e le 120
Dipaterone, Diritiso le Alejebra	Kopolola, atolosa le go aga dipaterone tsa bone	Metsotso e le 80
Boalo le P opego (Jeometri)	Lemoga, tlhopha le go neela maina a tekanyo ya popegopedi (2-D) le diitshwantsho Tekanyo ya popego Aga dipopego tekanyo ya tlhakoretharo (3-D) o dirisa didiriswa tse di kgonngwang. Dikamano tsa boalo Dikaelo	Metsotso e le 80
Tekanyo	Nako Boleele Boima Mothamo	Metsotso e le 80
Go dira ka dipalo tsa tshedimosetso	Kgobokanya, aola, tshwantsha, bala le go emela tshedimosetso	Metsotso e le 80
Palogotlhe		Metsotso e le 420/Diura di le 7 ka beke

Palo ya dithuto tse di tsitshintsweng tsa diteng tsa serutwa tsa kgweditharo tsa Mophato 2

Diteng tsa serutwa	Setlhogo	Palo ya dikamuso				
		Kgweditharo 1	Kgeditharo 2	Kgweditharo 3	Kgweditharo 4	Gotlhe
Dipalo, matshwao le dikgolagano	Ditlhogo tsotlhe, dipalo, matshwao le dikgolagano	24	25	24	26	99
Dipaterone mediro le Alejebera	Dipaterone tsa Dipalo	3	3	3	3	12
	Dipaterone tsa tekano	1	1	1	1	4
Boalo le popego (Tekano)	Tekatekanyo ya dipopegothakorepedi (2-D)		3		3	6
	Tekanyo ya popegotlhakoretharo (3-D)	3			1	6
	Maemo, kitsiso, le dikakanyo			1		3
	Tekatekano				1	2
Tekano	Nako		1	3	1	8
	Bolele	3			1	4
	Boima		3		1	4
	Mothamo/bolumu			3	1	4
Go dira ka Dipalo tsa tshedimose tso	Kgobokanya, rula le go lokolola didirisa	3		3		6
	Dikarolo tsa nako sa tshedimose tso		1		1	2
Palo yotlhe ya dithuto		40	40	40	40	160

Kgato ya motheo dipalo mephato 1–3

Kabo ya nako

Kgato ya Motheo

a) Nako ya go ruta ya dirutwa tsa Kgato ya Motheo tse di kailweng mo lenaneong le le fa tlase:

Serutwa	Mophato R (Diura)	Mephato 1–2 (Diura)	Mephato 3 (Diura)
Puo ya Gae	10	7/8	7/8
Puo Tlaleletso ya Ntlha		2/3	2/3
Dipalo	7	7	7
Dikgono tsa Botshelo	6	6	7
Kitso ya Tshimologo	(1)	(1)	1
Boitlhamedi mo go tsa	(2)	(2)	(2)
Botsweretshi			
Thuto ya Ikatiso ya Mmele	(2)	(2)	(2)
Thuto ya boitekanelo jwa	(1)	(1)	(1)
motho le loago			
GOTLHE	23	2	25

b) Nako ya go ruta ya Mephato R, 1 le 2 ke diura di le 23 mme ya Mophato 3 ke diura di le 25.

c) Diura di le 10 mo dipuong di abetswe Mephato R-2 mme diura di le 11 ke tsa Mophato 2. Bogolo jwa diura di le 8 le bonnye jwa diura di le 7 di abetswe Puo ya Gae, bonnye jwa diura di le 2 le bogolo jwa diura di le 3 di abetswe Puotlaleletso mo mephatong R-2. Mo mophatong wa 3 bogolo jwa diura di le 8 le bonnye jwa diura di le 7 di abetswe Puo ya Gae fa bonnye jwa diura di le 3 le bogolo jwa diura di le 4 di abetswe Puotlaleletso ya Ntlha.

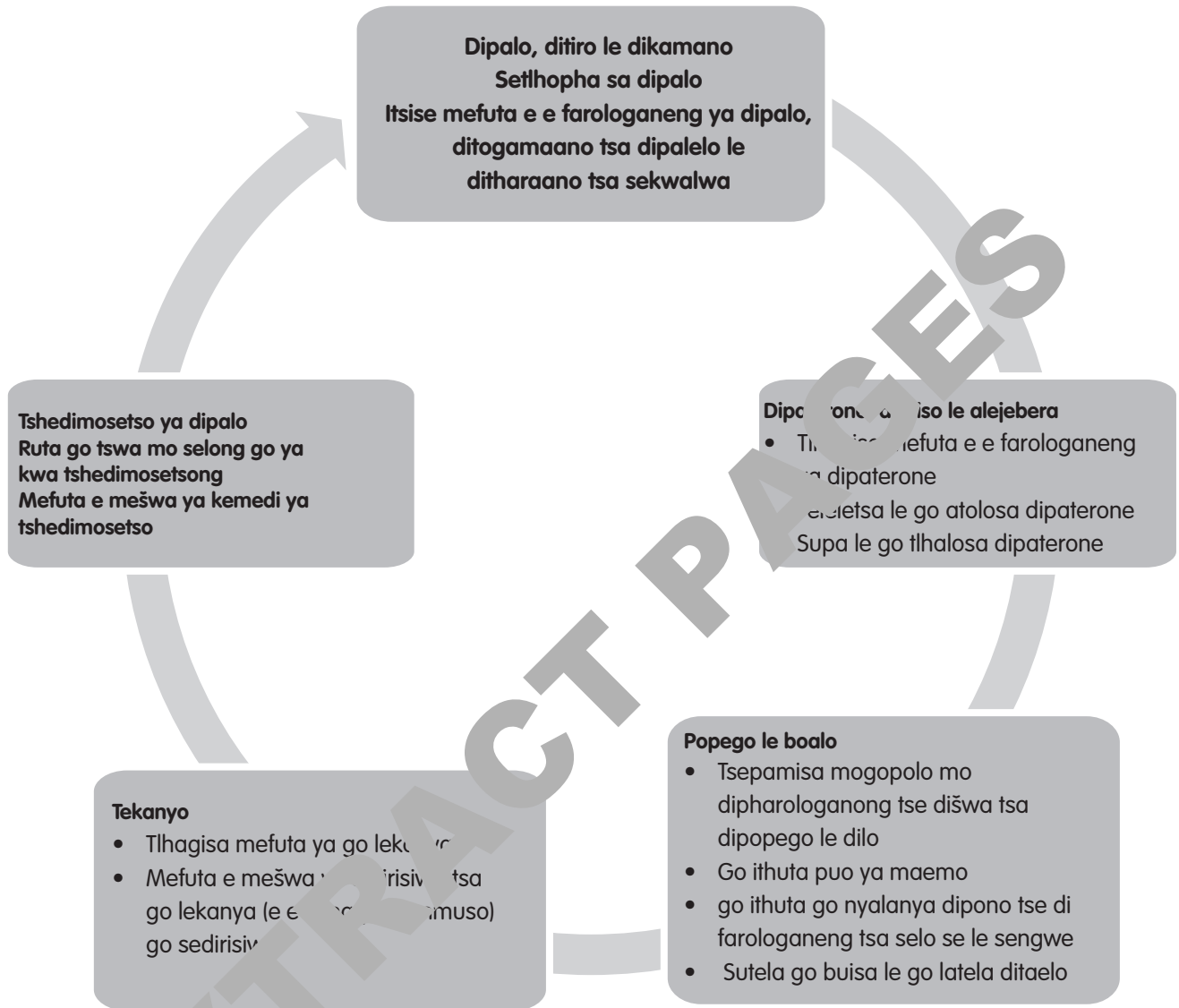
d) Mo serutweng sa Dikgono tsa Botshelo, Kitso ya Tshimologo e abetswe ura e le 1 mo mephatong ya R-2 le diura di le 2 jaaka go kailwe ka diura tse di mo mephatong mo mephatong wa 3.

Kgato ya Magareng

a) Nako ya go ruta ya dirutwa tsa Kgato ya Magareng tse di kailweng mo lenaneong le le fa tlase:

Serutwa	Diura
Puo ya Gae	6
Puo Tlaleletso ya	5
Dipalo	6
Disaense tsa Magareng Thekenoloji	3,5
Disaense tsa	3
Dikgono tsa Botshelo	4
Boitlhamedi mo go tsa Botsweretshi	(1,5)
Thuto ya Ikatiso ya Mmele	(1)
Thuto ya boitekanelo jwa motho le loago	(1,5)
GOTLHE	27,5

Thulaganyo ya diteng le megopolo





Dipalo • Mophato wa 2 • Kgweditharo 1

+ (Go oketsa)

- (Go fokotsa)

= (Go lekana)

Kgweditharo 1

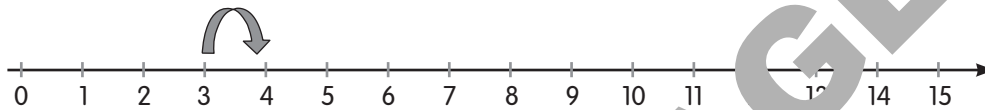
A re bone gore o itse eng

Tsebe 2

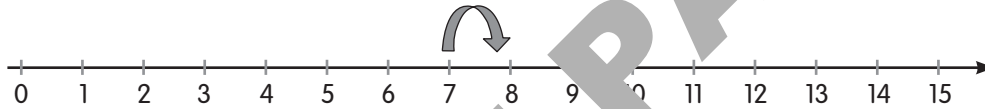
- Dikarabo tsa tiro 1 mo bukeng ya morutwana.

1. Ka go dirisa molapalo, tloga mo palong e o e neilweng o gatele kwa pele ka 1 mme o tlhalese gore o gorigile mo palong efe.

a. Go tloga mo go 3 ke gatetse kwa pele ka 1 fela mme ke fa ke goriga mo go 4.



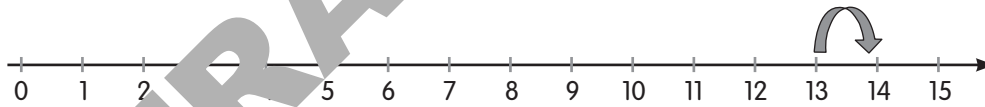
b. = 8



c. = 12



d. = 14



Ka go dirisa molapalo, tloga mo palong e o e neilweng o gatele kwa morago ka 1 mme o tlhalese gore o gorigile mo palong efe.

a. Go tloga mo go 15 ke gatetse kwa morago ka 1 fela mme ke fa ke goriga mo go 14.

b. = 11

c. = 8

d. = 5

Go tloga mo go 3 ke tlolela kwa pele mo go 5 ke abo ke tlotse 4.

a. = 4

b. = 13

c. = 9

d. = 8

2. Kwala maina a dipalo

- a = lesomethataro
- b = lesometharo
- c = lesomesupa
- d = lesomerobongwe
- e = lesomerobedi

3. Rulaganya dipalo tse.

- a. 1; 3; 5; 6; 9; 10; 11; 14
- b. 15; 13; 11; 10; 4; 3; 2

4. a. 14 = lesomenne

- b. 21 = masome a mabedi le bongwe
- c. 22 = masome a mabedi le bobedi
- d. 34 = masome a mararo le bona
- e. 30 = masome a mararo
- f. 21 = masome a mabedi le bongwe

5. Feleletsa

10	2	10	3
8	4	9	1
7	6	8	8



A re bone gore o itse eng

Maikaelelo a thuto:

- Balela kwa pele le kwa morago ka 1 go tswa mo palong nngwe le nngwe e e fa gare ga 1–10.
- Tlhalosa tatelano ya go bala.
- Balela kwa pele le kwa morago ka dikatsanetswa tsa 10, 5 le 2 go tswa mo katsanetsweng nngwe le nngwe ya 10, 5, 2 fa gare ga 0–100.

Kitsiso

Balela kwa pele le kwa morago ka 1 go tswa go palo nngwe le nngwe go ya go 60.

Nna le mefuta e e farologaneng ya didirisiwa tse di tiileng tsa go bala tse barutwana ba ba didirisiwang go bala.

- **Dirisa dipalo tse di segilweng gore barutwana ba buele dipalo kwa godimo.**
- **Pina ya Dipalo:** Opela pina ya dipalo e e balang go tswa go 0 go ya go 20 go tswa morago kwa barutwana le go ba baakanyetsa thuto.

Dirisa mmino le moribo go tlhama pina ya go bala mo barutwana ba opelang mmino e go opa diatla go ya ka dipalo. **Sekao opa diatla gangwe mo go 1, gabedi mo go 2 jalo le jalo.**

Botsa barutwana palo ya dinao, matlho, menwana ya dinao, ditsebetse tse di balang le tsone, mme ba tshwanetse go di bala.

Didirisiwa

- (sekao "Diboloko tsa go bala, dikarata tsa tshedimosetso, ditshate tsa dipalo, dibadi, diboto tsa dipalo, dipampiri tse di segilweng, mola wa dipalo, ditshate ya 100.
- didirisiwa dingwe le dingwe tse barutwana ba ka di dirisang go bala,

Maikaelelo a mašwa:

- Batlisisa ditshate ka sengwe se sešwa Go bala – go bua dipalo go bona ke di le kae.
- Nnye go gaisa, e kgolo go gaisa.
- Go tlhakanya (+) go raya go tlhakanya dipalo/ ditlhophha mmogo go bona palogotlhe.
- Go ntsha (-) go raya go tsaya dingwe go bona gore go setse di le kae.

Kaelo

• Ditaelo tsa Kgato le Kgato:

- Naya barutwana ditlhophha tse di farologaneng tsa didirisiwa tse di farologaneng tsa go bala mme o ba kope go bala.
- Barutwana ba ba bobedi go bala didirisiwa ka bongwe mme morago ba senolelana dikarabo

Go dira sekao: Botsa go bala setlhophha sa didirisiwa o dirisa didirisiwa tsa mmele, o gatelela go kwalelana ga motho e bongwe.

Botsa barutwana dipotso tse di latelang:

- Go bala go ka re thusa jang mo matshelong a rona a letsatsi le letsatsi?
- Ke ditogamaano dife tse re ka di dirisang go netefatsa gore re bala didirisiwa tsotlhe kwa ntle ga go tlhoka epe?
- A o ka akanya ka nako e o neng o tlwaetse go bala mo go neng ga go thusa go rarabolola bothata bongwe?
- Go balela go go thusa jang go tlhakanya dipalo?

Ba botse:

- O badile di le kae.
- A barutwana ka sebedi ba tlhole gore a ba badile mme ba bona palo e e tshwanang (**a o bona palo e e tshwanang?**) fa go sa nna jalo laletsa morutwana wa boraro go bala.
- Ke mang yo o bonang palo e e tshwanang le ya morutwana wa boraro?
- Go yo o bonang karabo e e fosagetseng? – Bala gape.
- Kopa barutwana ka sebedi go bolela gore a ba na le diithopha tse dinnye, tse dikgolo kgotsa tse di lekanang le tse dingwe.

Go tswa foo

- Bontsha barutwana dikarata tse di nang le matshwao a dipalo 1-20.
- Bontsha karata nngwe le nngwe morutwana o boeletsa letshwao la palo kwa godimo.

Morago ga motlotlo wa phaposi baya barutwana ka sebedi go dira tirwana e e latelang

- Naya mongwe le mongwe wa barutwana setlhopha sa didirisiwa tsa go bala (diboloko, tshwao).
- Bitsa nomoro mme o dire gore barutwana ba bale palo e e tsamaelanang le didirisiwa.
- Morago ga moo barutwana ba batla le go tsholetsa karata e e bontshang letshwao la palo le e nepagetseng.

Tirwana ya phaposi yotlhe

Tlhakanya barutwana ba le lesome ka dipalo ka tatelano go simolola ka morago nngwe le nngwe morago ga 20.

Kopa barutwana go tlhalosa kamano magareng ga dipalo tsa barutwana tse di dirisiwa di latelanang go itsise kgopolo ya go feta go le gonnye le ka bokae.

La bofelo simolola go bala ka setlhopha jaaka go tswa go 2, 4, 6 le 15 o dirisa menwana.

Barutwana ba kgona go bala mo moleng wa dipalo kgotsa o balela kwa morago.

Sekao sa go balela le go boela kwa morago le sekao sa dipalo di neetswe.

Feleletsa ka go balela kwa pele. 12 + 2

Barutwana ba ka dirisa mela ya dipalo kgotsa di dirise tsa dipalo go balela kwa morago le kwa pele.

A morutwana mongwe le mongwe a tlhalosa palo ya nngwe.

Maele a go ruta

- Tirwana ya bobedi
- Letla barutwana go balela kwa morago le go boeletsa dipalo go supa kutlwisiso.
- Tirwana ya setlhopha ya go balela kwa morago le go boeletsa ba setseng ba di badile.

A re simololeng loeto la nna la go bala: Dikarabo

Nako ya go sekaseka ga barutwana 2, 5, le 10

Tsebe 5

1. Kopolola le go feleletsa ka go balela kwa pele le kwa morago.

- 23; 24; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34
- 49; 50; 51; 52; 53; 54; 55; 56; 57; 58; 59
- 70; 72; 74; 76; 78; 80; 82; 84; 86; 88; 90
- 40; 38; 36; 34; 32; 30; 28; 26; 24; 22; 20
- 15; 20; 25; 30; 35; 40; 45; 50; 55; 60
- 55; 50; 45; 40; 35; 30; 25; 20; 15; 10
- 90; 80; 70; 60; 50; 40; 30; 20; 10; 0
- 10; 20; 30; 40; 50; 60; 70; 80; 90; 100

Dikarabo tsa tiro 3 mo bukeng ya morutwana

Tlatsa mananeo a a fa tlase ka go kwala dipalo tse di tlhaelang.

Tsebe 8

- a. = 1 b. = 1 c. = 74 d. = 74 e. = 5
 f. = 5 g. = 10 h. = 10

Go feta kgotsa kwa tlase ga

1. a. e kwa tlase ga b. e feta c. e kwa tlase ga
 d. e feta e. e kwa tlase ga f. e feta
 g. e kwa tlase ga h. go feta i. e kwa tlase ga
 j. e feta k. e kwa tlase ga m. e feta

Tsebe 9

2. Tsenya 10 mo nomorong ya ntlha

10 _____ ► 20

20 _____ ► 30

30 _____ ► 40

Go tswa kwa tshimologong go ya kwa bokhutlong: Dikarabo**Tirwana 1:**

Tsebe 10

1. a. 10 b. 20 c. 30 d. 40
 Diphopholetso di tla farologana, ruta barutwana go bala ka ditlhopho, go supa dipaterone le go bala mo palong eo.
 2. a. 53 b. 67
 Diphopholetso di tla farologana, ruta bokgoni jwa go fopholetsa.

Tirwana 2:

Tsebe 12

Go nna le bokgoni jwa go didirisiwa

1. Fopholetsa (palo e tswaeng ya diapole ke 68)
 2. a. = 10 b. = 2
 (bala ka h 2 o a... matla tsa motho)
 3. a. = Mac...
 (2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2)
 b. = 20 (4 + 4 + 4 + 4 + 4)

Go bala le go peleta: Dikarabo**Kgolo go feta, nnye, lekana le, go feta, kwa tlase ga**

Tsebe 17

1. a. 9 e kwa tlase ga 10
 9 e kwa tlase ka 1 go 10
 b. 13 e kgolo go 11
 13 e kwa godimo ka 2 go 11
 c. 18 e kwa tlase ga 21
 18 e kwa tlase ka 3 go 21
 d. 19 e kgolo go 15
 19 e kwa godimo ka 4 go 15
 2. 23; 18; 14; 7; 2
 3. 1; 5; 11; 17; 22
 4. Karabo ya morutwan...

Tsereganyo

- **Ikatiso ka nos**
- Ka go dirisa tsala popo ya 10, barutwana ba bala 55. Ba botse gore ba ka bala jang 51; 52; 53; 54, le 55 (go simolola ka 0). Kopa barutwana go rulaganya ditlhopho go tswa go tse dinnye go ya go tse dikgolo.
- **Phopholetso:**
- Go bala barutwana ba ba tswaeng ba neye didirisiwa tse ba ka di balang go feta selekanyo sa dipalo se se ikatisang.
- **Go barutwana ba ba tlhokang tshegetso e ntsi:**
- Tlamela ka dithusapono kgotsa di kopanye le tsala ka nako ya ditirwana.
- Neelana ka katiso e nngwe ka ditlhopho tse dinnye tsa dipalo pele o atologela kwa setlhopheng se se tletseng.

Bokhutlo

Kwa bokhutlong jwa thuto e barutwana ba tla bontsha go tlhaloganya go bala ba dirisa leano la go bala.
 Go dirisa dikarolo kgotsa ditlhopho go bala ditlhopho go tla tokafatsa go bala ka tsela e e ikanyegang.

Tirwana ya tiragatso

Rubriki ya dikarabo tirwana ya tiragatso

- Barutwana ba tshwanetse go itse le go tlhaloganya dipalopalo ka go dirisa dipalo le diphithhelelo tsa tsone.
- Ba tshwanetse go bontsha tlhaloganyo ya dipalo ka ditshwantsho le dipolelo tse di nang le dipalo.
- Go dirisa mekgwa ya go balela le go oketsa go thusa barutwana go tlhaloganya dipalo ka tsela ya tiragatso.

Mokgwa wa go ruta: Go ruta ka tlhaloganyo ya dipalopalo

Seelo	Tlhaloso ya thuto	Mokgwa wa kemo ya barutwana
Go itsise serutwa	Simolola ka go botsa barutwana dipotso tse di buang ka dipalopalo mo botshelong jwa letsatsi le letsatsi. (Fa o na le diapole tse 5 mme ke go naya tse 3, o tla nna le tse kae?)	Barutwana ba araba ka mafoko le dipalo. - Ba dirisa diphithhelelo go tlhalosa mafoko a bontsha bone.
Go dirisa ditshwantsho	Ruta barutwana ka ditshwantsho tse di bontshang dipalo tse di oketswang. (Tshwantsha diapole di le 10, o be o oketsa tse 2.)	Barutwana ba dirisa diboutu, dikarata, kgotsa dibopego go tlhalosa mafoko a bontsha bone.
Go kwadisa Dipalopalo	Bontsha barutwana kafa dipalo di dirwang ka teng ka go kwala dipalo le diphithhelelo. (10 + 5 = 15 (dinamunu))	Barutwana ba ikatisa ka go kwala dipalopalo le diphithhelelo tsa tsone.
Go ikatisa le go ikatisetsa	Naya barutwana dipotso tse di farologaneng tse ba tla di dirang ba le nosi kgotsa ka ditlhopho. - Fa o oketsa 4 mo go 6, o tla nna le bona eng?	Barutwana ba dirisa pampiri le diboutu go kwala diphithhelelo tsa dipalo tse di oketsegang.
Tlhahlobo le tlhatlhobo	Botsa barutwana dipotso tse di bontshang go tlhalosa gore ba tlhaloganeng. - Dirisa dipotso tse di akaretsang mafoko a bontsha ya go tlhaloganya dipalopalo.	Barutwana ba tlhalosa diphithhelelo tsa bone ka mafoko. - Ba bontsha tlhaloganyo ka go dirisa ditshwantsho.
<p>Mephato ya katlego:</p> <p>E gaisitse: Barutwana ba bontshitse tlhaloganyo e e boteng ya dipalopalo ka go dirisa diphithhelelo tse di siameng le ditshwantsho.</p> <p>E siame: Barutwana ba kgonne go tlhalosa dipalopalo mme ba dirisa ditsela tse di siameng go bontsha diphithhelelo.</p> <p>E tshwanetse go tokafadi: Barutwana ba santse ba tlhoka thuso mo tlhaloganyong ya dipalopalo mme ba tlhoka dikgakololo tse di oketsang.</p>		
<p>Dikakantsho tsa thuto</p> <ul style="list-style-type: none"> • Dirisa diboutu, dikarata le dipolelo tse di bonalang go thusa barutwana go tlhaloganya dipalo. • Kgothaletsa barutwana go tlhalosa gore ba tlhalela diphithhelelo tsa bone jang. • Etsa ditlhopho tse di bontshang barutwana gore ba ithute ba le mmogo. 		

Molaetsa wa bontsho: Barutwana ba tshwanetse go tlhaloganya gore dipalo ga se fela diphithhelelo, mme ke tsela ya go tlhaloganya lefatshe la bone!

Dipalo tsa tlhogo

Maikaelelo a thuto:

- Latela setlhopha se se neetsweng sa dipalo 1–25 (ya ntlha, ya bofelo, mo gare).
- Bapisa dipalo le 25 mme o bone gore ke efe e e fetang kgotsa e e kwa tlase.
- Latela setlhopha se se neetsweng sa dipalo mme o bolele gore ke efe: 1, 2, 10 kgotsa go feta kgotsa 1, 2, 10 kgotsa kwa tlase.

Matseno le/kgotsa sekao

Balela kwa pele le kwa morago ka dikatisanetswa tsa 10, 5 le 2 go tswa mo katisanetsweng nngwe le nngwe ya 10, 5, 2.

- Bontsha mola o mogolo wa dipalo mo phaposiborutelong.
- Bitsa dipalo tse di sa rulaganngwang mo teng ga selekanyo mme o kope barutwana go ba ba supe nomoro e e nepagetseng mo moleng wa dipalo.
- Tsenya phaposi ka go ba kopa go opa diatla nako le nako fa palo e supilwe same.
- Kopa barutwana go akanya ka fa ba bonang dipalo ka teng mo botshelong go ba bonwa letsatsi le letsatsi (sekao, dipalo tsa matlo, dipalo tsa ditsebe mo dibukeng).

Didirisiwa

Dikarata tsa dipalo (0–120).

Boto e tshweu le dimaraka.

Mola o mogolo wa dipalo (theipi kgotsa o o gatisitsweng go dirisiwa mo fatshe).

Matlharetiro a a nang le ditirwana tsa tatelano ya dipalo.

Dibadi tse dinnye kgotsa didirisiwa (sekao, dinawa, dikomolamo).

Kaelo

Kwala matshwao a dipalo 11 go ya go 20 mo motor

Kopa barutwana go bala go tswa mo moleng e e nngwe mme ba feleletse ka e nngwe, bala go tswa go 11 go ya go 15.

Dirisa mola/keriti e kgolo ya dirisiwa e e gatisitsweng kgotsa e e gatisitsweng gore barutwana ba tlhale palo e e fa gare ga dipalo tse pedi.

Botsa gore ke palo efe e tlhala fa gare ga 7 le 9.

Tshwaya palo 7 le 9

Barutwana ba tshwaya le tshwaya tlhola palo mme ba arabe ka 8.

- Kopa barutwana go bonisa palo 11 mo moleng wa dipalo.
- **Bontsha** palo e e nngwe o botse barutwana ka:
- **re badile ka dipele go fitlha go 12 go tswa go 11. (e e tshwanang le 12–1) Tlhalosa** gore palo 11 e bonwa ka go bala morago **1 go tswa go 12** mme seno se raya gore 11 ke 1 kwa tlase ga 12 kgotsa 12 ke 1 go feta 11.
- Dirisa mola/keriti go dira gore ba tlhaloganye mareo a go bala morago le go bala go akaretsa ntlha ya metsu.

Bala mola/keriti mme o boele morago = –

- Abela mola/keriti mme o boele morago le mongwe dikarata tsa dipalo ka go sa rulaganngwa.
- Kopa barutwana go ema mo moleng go ya ka nomoro e ba e tshwereng.
- Simolola ka ditlhopha tse dinnye, morago ga moo o tlhatlogele kwa phaposing yotlhe go netefatsa gore mongwe le mongwe o tlhaloganya firwana.

Dikarabo tsa ditirwana tsa bukathuto

Tirwana ya go arola dipalo tse dikgolo.

Tsebe 17

1. a. $10 + 5 = 15$ (dinamune)
- b. $10 + 2 = 12$ (diapole)
- c. $4 + 10 = 14$ (dibolo)
- d. $15 + 5 = 20$ (Dipere)
- e. $17 + 7 = 24$ (diterebe)

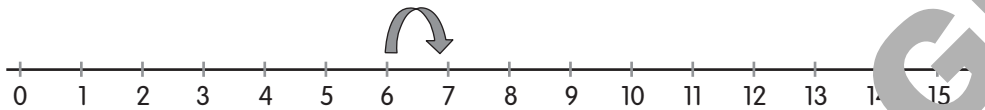
Dikarabo tsa ditirwana tsa bukathuto

Tsebe 19

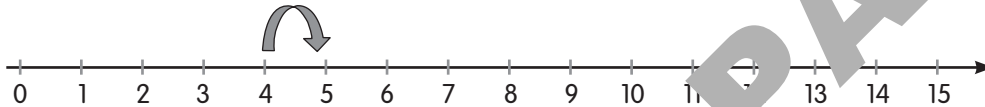
Dipalo tsa tlhogo tsa go rulaganya le go bapisa.

Balela kwa pele ka 1

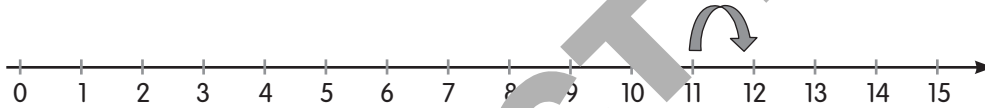
1. a.



b.



c.



d.



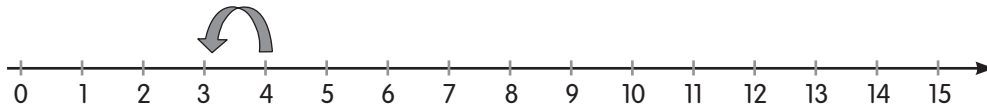
e.



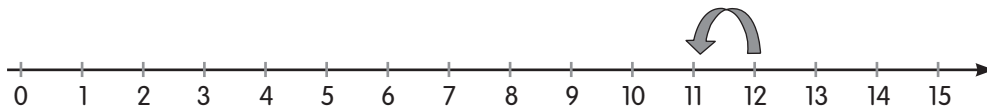
EXTRACT PAGES

2. balela morago ka 1

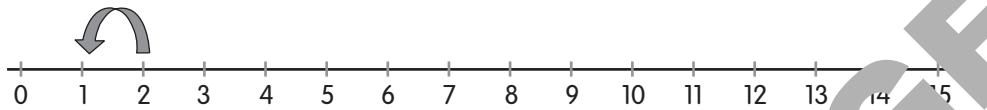
a.



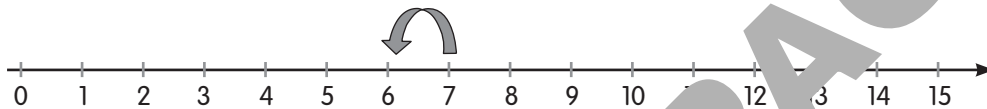
b.



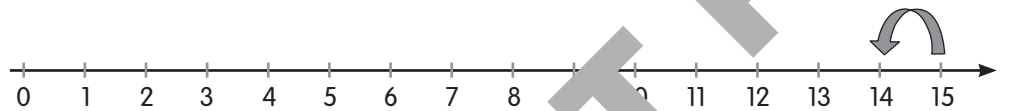
c.



d.



e.



3. balela pele ka 2

a.

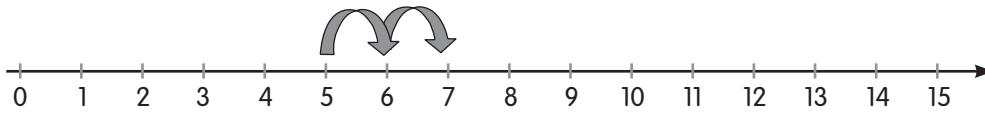


b.

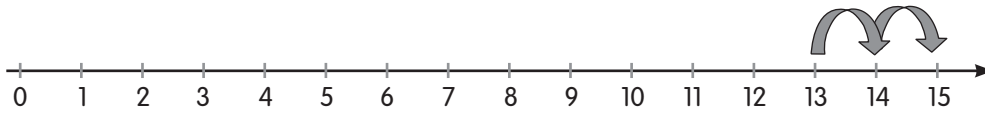


EXTRACT PAGES

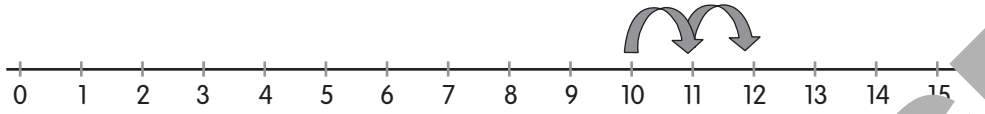
c.



d.

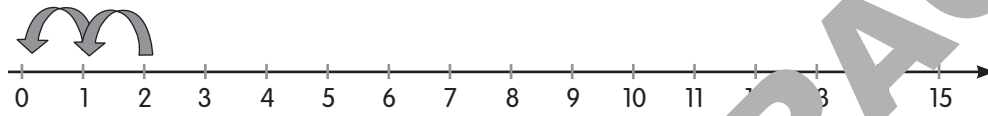


e.

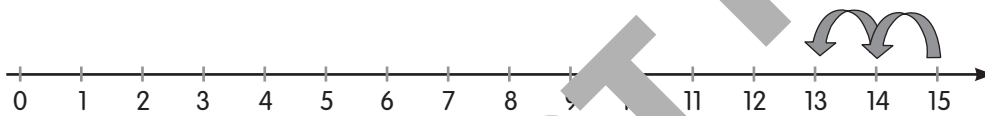


4. balela morago ka 2

a



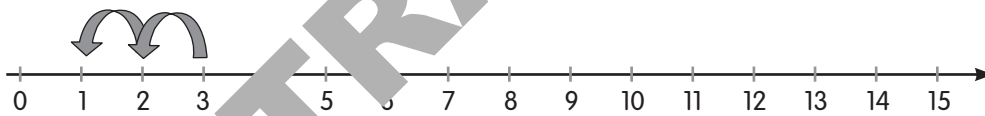
b.



c.

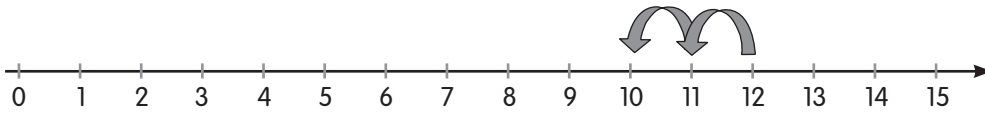


d.



EXTRACT PAGES

e.



5. dirisa molapalo go balela kwa pele le kwa morago

- a. 15; 3; 12; 11; 4
- b. 9; 11; 13; 15; 8
- c. 12; 14; 1; 8; 3
- d. 7; 3; 12; 8; 0

Dipalo tsa tlhogo tsa go rulaganya le go bapisa dipalo

- 6. a. 1; 3; 5; 8; 9; 12; 14; 15
- b. 2; 4; 6; 7; 10; 11; 12; 13

Bapisa dipalo go fi tlha go masomepedi

- 1. a. 4; 2; 3; 1; 5; 0
- b. 7; 27; 3; 4; 6; 5; 1
- c. 5; 8; 6; 4; 7; 9
- 2. a. 3; 1; 6; 5; 7; 4
- b. 4; 1; 5; 7; 3; 6.

3.

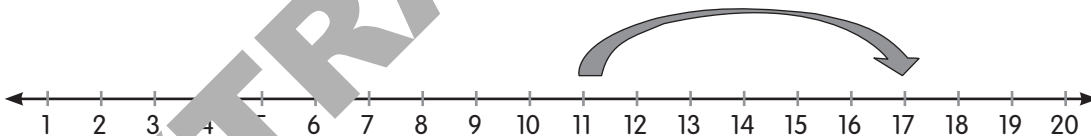
palo	10 go feta	2 kwa tlase ga	1 go feta	10 e kwa tlase ga
15	25	13	16	5
20	30	18	21	10
18	28	16	19	8
14	24	12	15	4

Tsebe 22

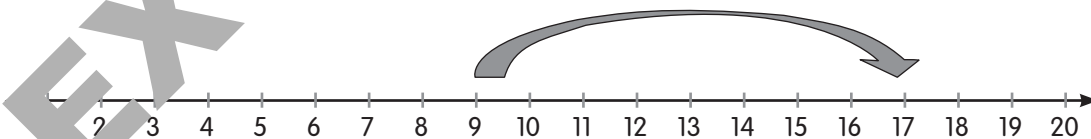
Dikarabo

Tsebe 23-25

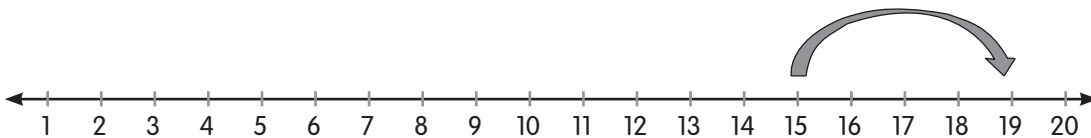
1. a. $11 + 6 = 17$



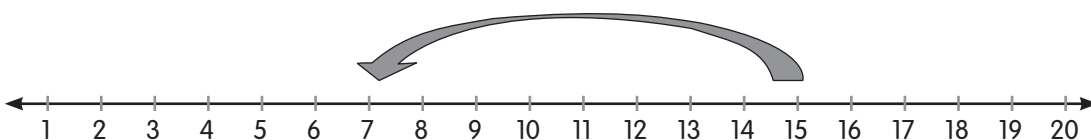
b. $9 + 8 = 17$



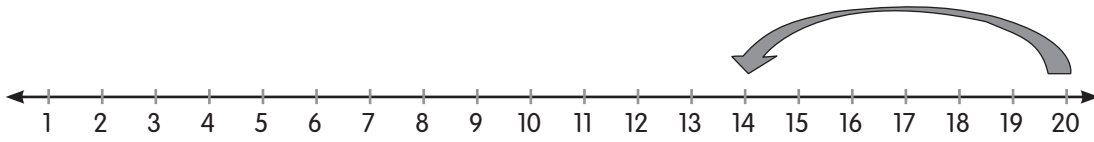
c. $15 + 4 = 19$



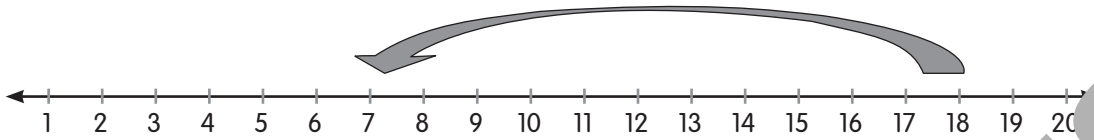
2. a. $15 - 9 = 6$



b. $20 - 6 = 14$

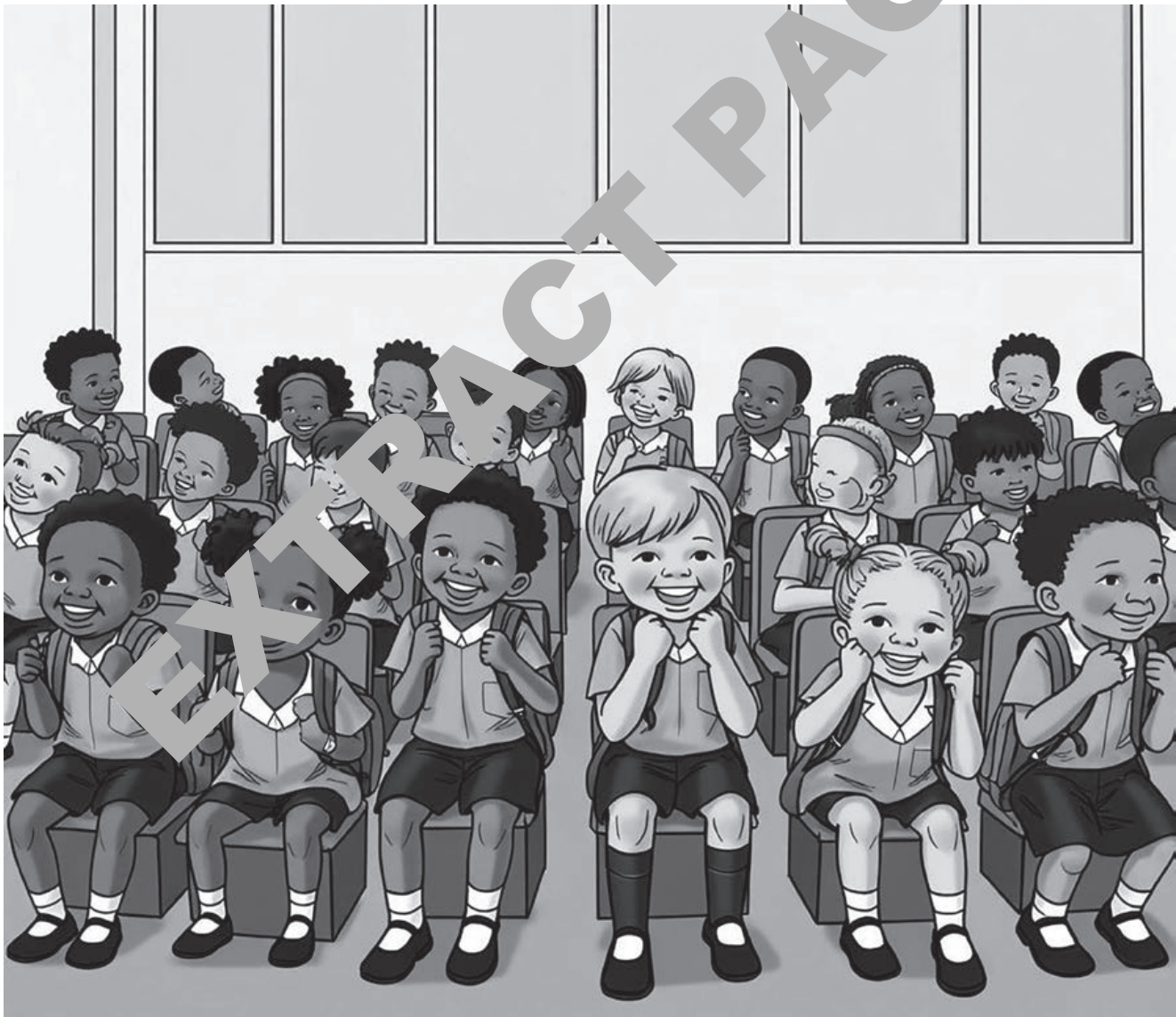


c. $18 - 11 = 7$



Dipalo tsa Tlhogo tsa papiso le thulaganyo

3. a. 20 b. 40 c. 37 d. 26 e. 55
4. a. 89 b. 60 c. 72 d. 44 e. 58



Bapisa dipalo go fitlha go masomepedi

Maikaelelo a thuto:

- Tlhalosa le go rulaganya dipalo go tswa go tse dinnye go ya go tse dikgolo go fitlha go 100.
- Tlhalosa le go bapisa dipalo go ya go 25.
- Tlhalosa le go rulaganya dipalo go tswa go tse dinnye go ya go tse dikgolo le go tswa go tse dikgolo go ya go tse dinnye.

Matseno le/kgotsa Sekao	
<p>Lobelo la go refosana la go rulaganya dipalo:</p> <ul style="list-style-type: none"> • Kgaoganya phaposi ka ditlhopha • Setlhopha sengwe le sengwe se amogela dikarata tsa dipalo. • Ditlhopha di gaisane go rulaganya dipalo tsa tsone sentle. • Balela kwa pele le kwa morago ka dikatisanetswa tsa 10, 5 le 2 go tswa mo katisanetswa e nngwe le nngwe ya 10, 5, 2. 	
Didirisiwa	Mafoko a mašwa:
	mmalwa, bonnye, bona
Kaelo	
<ul style="list-style-type: none"> • Tlhalosa gore boemong jwa go bapisa dipalo tse pedi fela, re tseba bona dipalo tse di fetang tse pedi ka nako e le nngwe le go di baya ka tatelano. • Dira sekao sa dipalo di le 3 tse di rulaganngwang gape. Sekao, 10 le 11. <p>Kgwetlho ya Tlhaloso ya Dipalo</p> <ul style="list-style-type: none"> • Bontsha palo (sekao, 63) • Ka sebedi, barutwana ba refosana go tlhalosa palo ka tsela tse di farologaneng jaaka, (e bopilwe ka 6 le 3) e feta 60, • Kwala dipalo tse pedi mo botong (sekao, 2 le 35) • Phaposi e abelane ka ditlhaloso tsa yona (F) le kgolo e nnye, kgotsa e lekana. • Kaela barutwana mo go bapiseng go dirisa mafoko a mannye, a magolo. <p>Tirwana ya phaposi yotlhe: a barutwana ba tseba palo mo ditšhateng tsa 100. Bitsa dipalo tse di kwa kgotsa tse dikgolo. A barutwana ba rulaganye dipalo go tswa go tse dinnye go ya go tse dikgolo kgotsa tse dikgolo go ya go tse dinnye.</p> <ul style="list-style-type: none"> • Boeletsa ka dipalo tsa sebedi tse di farologaneng ka dipalo. <p>Molapalo wa Batho:</p> <ul style="list-style-type: none"> • Naya morutwana o bopile le mongwe karata e e nang le nomoro e e fa gare ga 1 le 25. • Kopa barutwana go emela tatelano go ya dipalo tsa bona. 	
Dikarabo tsa Tirwana tsa bukathuto	
<p>Buka ya Dine tsebe 36 ditshwantsho di ka thusa barutwana ba ba nang le mathata.</p> <p>1. Alma o na le 4 ditshamekisi. Rashid – 2 ditshamekisi Tsebe 30</p> <p>2. Morutwana o na le 4 ditshamekisi go tshameka</p> <ol style="list-style-type: none"> Alma o na le ditshamekisi di le 2 (seripa sa 4). Rashid o na le 4 (2 gabedi). Alma o na le ditshamekisi tse dingwe gape di le 3 = $(2 + 3) = 5$. <p>3 a. Rashid o tsaya ditshamekisi di le 2 mo go Alma.</p> <p>$(5 - 2) = 3$, Alma o na le ditshamekisi di le 3.</p> <p>b. Rashid jaanong o na le $4 + 2$ (go tswa go Alma) $+ 2 + 2 + 2$ (e a e filweng gape) = 12 ditshamekisi.</p>	

Tsereganyo: Ikatiso ka nosi, tlhatlhobo e e tshwanetseng go ikatisediwa, ikatiso ya sebedi le Tirwana ya setlhopha.

Pharologano:

- Go barutwana ba nang le matsapa: Tlamela ka mela ya dipalo kgotsa ditšhate di le leggolo go dira ditirwana.
- Go barutwana ba ba kwa pele: Akaretsa dipalo tsa dipalo tse tharo mo ditirwaneng.

Bokhutlo:

Go bapisa le go rulaganya dipalo ke bokgoni jo bo botlhokwa mo barutwanang ba mophato wa bobedi, ka gonne bo ba thusa go nna le bokgoni jwa go tlhaloganya dipalo, go akanya ka tsela e e utlwalang le go rarabolola ditharaano. Moragonyana barutwana ba ka bapisa bontsi le bogolo jwa didirisiwa le go rulaganya didirisiwa ka tatelano kgotsa ka mokgwa wa tsone.



Mathata a madi

Maikaelelo a thuto:

- Go rarabolola ditharaano tsa dipalo go ya ka bokao le go tlhalosa ditharabololo tsa ditharaano.
- Bokgoni jwa go tlhakanya le go ntsha bo tla tokafadiwa ka go rarabolola dipalo.
- Go tlhakanya gangwe le gape mo go isang kwa katisanetsweng.
- Rarabolola ditharaano tsa madi a a akaretsang dipalogotlhe le poelo.

Matseno	
Metsotso e le 5 Balela kwa pele le kwa morago ka dikatisanetswa tsa 10, 5 le 2 go tswa mo katisanetsweng mo go sengwe ya 10, 5, 2.	
Sekao	
Kwala tse di latelang mo botong mme o kope barutwana go anela kgang ka ga go tloga ya e nno. 5 + 3 12 – 5	
Naya barutwana kgang e e fa tlase go buisana ka diithopha. Go na le dinamune di le 5 mo sejaneng mme tse 8 di mo kgetsaneng. Pa go na le ya dinamune bokae? Fa nkoko a ka tsaya dinamune di le 3 go di ja, go tla bo go setse dinamune di le 5.	
Didirisiwa	Mafoko a tsa Madi/Dikaelo:
Dikao tsa madi	Poelo ke madi a a palang ka one fa o duela go feta tlhwalhwa ya madi.
Kaelo	
Simolola ka go kopa barutwana go sobokanya kgang e e nno matsenong ka mafoko a bona mme ba bolele se ba se tlhaloganyang ka ga kgang.	
Metsotso ele 24 Baya barutwana ka sebedi mme o bontsha gore ba kwale palo ya dipalo ya kgang e e fa godimo ka go bontsha 1. Palogotlhe ya dinamune tse di mo sejaneng le mo kgetsaneng. (5 + 8) = 13 2. Go setse dinamune di le kae mo go sengwe nkoko a tseye tse 3. (13 – 3 = 10)	
Go tswa foo: tsamaisa barutwana ka dikgatong tsa tharabololo ya ditharaano tse e leng.	
<ol style="list-style-type: none"> Buisa polelo ya tharaano mo go leke go e tlhaloganya. Thalela mafoko a a tshwanang a Dipalo a a tshwanang le go feta, go le gonnye, le palogotlhe. Tshwantshana tshwanano go bontsha dipalelo. Kwala palo ya dipalo o bo o e rarabolola. Tlholo gore o rarabole a utlwala. 	
Metsotso ele 20 Kwala palo ya 27 mo botong.	
<ul style="list-style-type: none"> • Motlolo gore seno se ka rarabololwa jang o dirisa diboloko tsa popo ya lesome le tshate ya bolengkemedi. • Gatelela gore popo ya lesome ga 2 e emela masome a le 2, mme diboloko di le 7 tse di sa gagamalang di emela metso e le 7. • Bontsha se se dirang diboloko di le 27 ka kakaretso. • Boeletsa sekao se sengwe, o akaretsa barutwana mo thulaganyong. • Tirwana 1 kopa barutwana go rarabolola bothata jwa bankana ya kolobe jo bo fa tlase. • Kgaoganya phaposi ka diithopha tse dinnye go rarabolola bothata ba dipalo. • Diithopha di dirisa didirisiwa tsa go tlhotlheletsa go rarabolola le go tlhalosa mabaka a tsona. 	

Thabo o ne a boloka R2 letsatsi le letsatsi malatsi a le lesome. Kgaisadie a bula **bankana ya kolobe** mme a tsaya madi a tshipi a le 3 a e neng e le dipapetlana di le 2 tsa R2 le ranta e le nngwe.

- a. Thabo o bolokile bokae **$R2 + R2 + R2 + R2 + R2 + R2 + R2 + R2 + R2 + R2 = R20$**
- b. O ne a setse ka bokae fa kgaisadi a sena go tsaya madi a mararo a tshipi. Kgaisadi o ne a tsaya $R2 + R2 + R1 = R5$.

Thabo o ne a setse ka $R20 - R5 = R15$ (**barutwana ba ka dirisa molapalo , tshate ya dipalo**).

- **Dikologa fa gare ga dithlopha**, go neela kaelo le go botsa dipotso tse di sekasekang.

Tirwana 2:

- Ka bobedi, barutwana ba itirele palo ya mafoko e e akaretsang masome le metso.
- Ba ananya ditharaano le baithuti ba bangwe mme ba rarabolola ditharaano tsa mongwe le mongwe.
- Rotloetsa tiriso ya ditshwantsho kgotsa ditshwantsho tsa diboloko tsa popo ya lesome mme diharabang.

Kgakololo ya Morutabana: netefatsa tiriso ya R le c mo go kwaleng diranta le disente

Dikarabo tsa ditirwana tsa bukathuto

Buka ya DBE tsebe 52–55 go atolosa kitso ya bona.

Poelo- Ditharaano tsa madi

Tsebe 30

1. $R20 - R8 = R12$
2. $R20 - R15 = R5$
3. $R20 - R11 = R9$
4. $R20 - R6,00 = R14$
5. $R20 - R13,00 = R7$

Go reka dilwana tsa sekolo

Tsebe 31

1. Lebokoso la dikherayone
2. Dilwana go tswa go R5 (buka ya tirwana le seloosa), (sekgomaretsi, rulara le selootsa) (Dikgomaretsi di le 2) (Rulara, rabara le dirula di le 3), (dirabara di le 1, dirula di le 2), (dirabara di le 2 le buka ya ditirwana e le 1), (dirula tse 2 le didirisiwatsa tse 2)
3. **Poelo** go tswa go R15,00
 $Palogotlhe R1, 50 + 50c + R5,00 + R2,50 + R1,00 + R1,00 = R14,50$
Poelo ke $R15,00 - R14,50 = 50c$

Tseraganyo: Ikatiso ka nosi, tlhatlha e e shwanetseng go ikatisediwa, ikatiso ya sebedi le Tirwana ya setlhopha

1. Laborari ya sekololo e naya mabokosi a mararo a nang le dibuka di le 10 nngwe le nngwe, mme go na le dibuka di le 6 mo bokosong nngwe e e sa tlang. Dibuka tsotlhe di kae?
2. Sekolo se na le mophatong e le mararo, diphaposi di le 10 mo mophatong mongwe le mongwe, mme go na le barutwana ba tlhaloganya ba le 5. Barutwana botlhe ke ba kae?
3. Mo polaseng go na le dikgogo le dinku tse 4. Go na le ditlhago di le 8 le maoto a le 22. Go na le dikgogo di le kae?

Bokhutlo

Leanothuto le go itlhamela tharabololo ya ditharaano, le thusa barutwana go tlhaloganya boleng jwa lefelo mo maemong a letsatsi le letsatsi. Le akaretsa ditshwantsho tse di farologaneng, mme le naya barutwana ditshono tsa go itlhamela le go rarabolola, go tlhaloganya masome, go rulaganya, go bapisa, go kopanya le go ntsha.

Go Bala go se mo Tirisong

Maikaelelo a thuto:

- Tlhakanyo poeletso e e isang kwa go atiseng.
- Ikatisetse ka dipopo tsa dipalo go ya go 10.
- Tsenya palo e e tshwanang kgapetsakgapetsa mo go 20.
- Atisa palo 1 go ya go 10 ka 2.

Matseno le/kgotsa Sekao

Balela kwa pele le kwa morago ka dikatisanetswa tsa 10, 5 le 2 go tswa mo katisanetsweng nna we tlangwe ya 10, 5, 2.

Naya phaposi palogotlhe e e fa tlase mme o kaele barutwana gore

- Zane o na le mabokoso a le 2, mme lebokoso lengwe le lengwe le na le dikuku di le kuku'nsotlhe di kae?

Lebokoso 1	Lebokoso 2
------------	------------

Bontsha barutwana ka moo polelo e fetotsweng go nna ya diitshwantsho

Botsa barutwana palogotlhe ya dikuku = 6

Didiriswa

- Diboloko tsa popo ya lesome
- Ditšhate tsa bolengkemedi
- Boto e tshweu le dimaraka
- Dikarata tsa dipalo (0–9)
- Letlharetiro la go balelela
- Ditaese (ga go tlhokege)

Buka ya DBE tsebe 60–61, diitshwantsho tse di dirisiwang di ka senola dikgopolo tse di phoso.

Kaelo

O dirisa sekao, kopa barutwana go diitshwantsho tsa sebedi go tswa mo dikukung.

Kopa barutwana go kwala palo ya tlalele ya kuku ya kopikuku bangwe ba tla kwala $3 + 3$ ba bangwe $2 + 2 + 2 = 6$.

Kaela barutwana ka go botsa palo e bona diitshopho di le kae tsa dikuku tse 2.

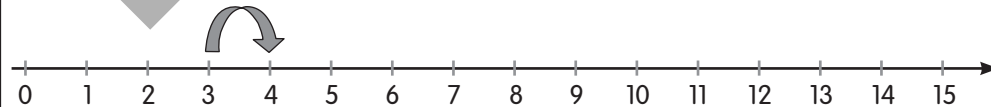
Botsa barutwana gore palo efe e boeletswang fa go tlhakangwa.

Karabo 3.

Tlhalosetsa ba barutwana gore diitshopho di le 3 tsa 2 di tshwana le $2 + 2 + 2 = 3 \times 2 = 6$.

Bontsha barutwana tshwantsho se se latelang mme o ba laele go dira le ditsala go bona palo ya diitshopho tsa sebedi e ditsala agwang. (Diitshopho di le 5 tsa di $- 2 = 2 + 2 + 2 + 2 + 2$).

Ba laele go tswa mo botong go supa ka fa diitshopho tse 5 tsa 2 di ka tlhagisiwang ka teng mo moleng wa dipalo.



Tlhalosetsa barutwana gore go tlhakanya o boeletsa go ka tlhagisiwa jang mo moleng wa dipalo.

Ditlhopha di le 5 tsa $2 = 2 + 2 + 2 + 2 + 2 = 5 \times 2$.

Golaganya karabo le katiso mme o tlhalose, "Go atisa ke tsela e nngwe ya go tlhakanya.

Pontsho mo Botong

1. Kopa barutwana go tlhalosa se ba se bonang mo setshwantshong.
2. **Re** balela ka eng? **ka 5**.
3. Setshwantsho se bontsha ditlhopha di le _____ tsa _____ (ditlhopha di le 2 tsa di le 5).

Dikarabo tsa dithutiso le ditirwana tsa bukathuto

Ditogamaano tsa go balelela.

4. a. = 14 b. = 12 c. = 15 d. = 12
 e. = 13 f. = 13

Dira tekatekano ya dipolelo tseno tsa dipalo

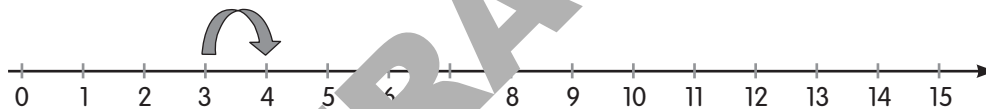
1. a. $4 + 1 = 5$ b. $3 + 2 = 5$
 c. $5 - 4 = 1$ d. $2 + 2 = 4$
 e. $3 + 1 = 4$ f. $4 - 2 = 2$
2. a. $8 + 0 = 8$ b. $4 + 5 = 9$
 c. $9 - 3 = 6$ d. $3 + 5 = 8$
 e. $8 + 1 = 9$ f. $8 - 7 = 1$

Dipalo tse di bonalang

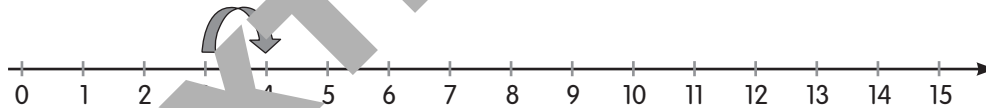
1. **Go dirisa molapalo**

- a. $13 - 2 = 11$ b. $18 + 2 = 20$
 c. $20 - 4 = 16$ d. $20 - 10 = 10$
 e. $12 + 6 = 18$ f. $15 + 5 = 20$

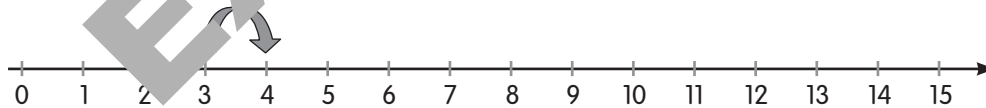
1. a. $12 + 5 = 17$



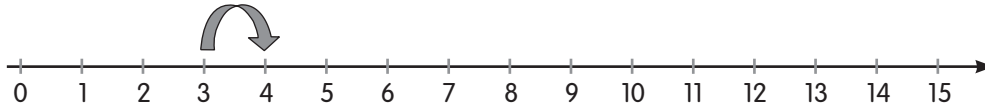
- b. $4 + 13 = 17$



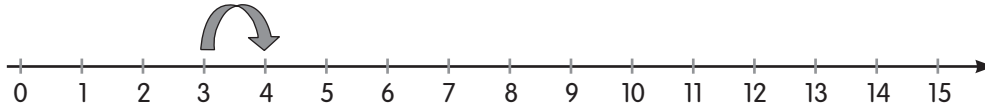
- c. $8 + 7 = 15$



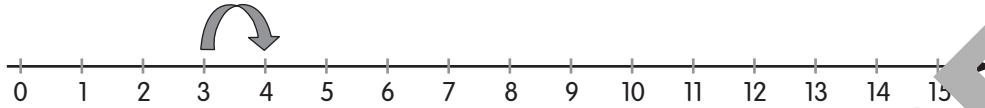
d. $14 - 7 = 7$



2. a. $9 - 5 = 4$



2. b. $13 - 7 = 6$

**Mme Mmutla le terena e takilweng**

1. 2; 4; 6; 8; 10; 12; 14; 16; 18; 20

2. **Kopa le go tsa dipalo tsa terena**

Tsebe 32

a. $2 + 2 = 4$

b. $2 + 2 + 2 = 6$

c. $2 + 2 + 2 + 2 = 8$

d. $2 + 2 + 2 + 2 + 2 = 10$

Leba tafole ya go bala ka 3 le 4

2. a. 6 b. 9 c. 15 d. 4 e. 12 f. 20

3. a. $10 + 5 = 15$ $15 - 5 = 10$ le $15 - 10 = 5$ b. $10 + 1 = 11$ $11 - 1 = 10$ le $11 - 10 = 1$ c. $10 + 4 = 14$ $14 - 4 = 10$ le $14 - 10 = 4$ d. $10 + 2 = 12$ $12 - 2 = 10$ le $12 - 10 = 2$ **Tirwana: go feta, kwa tlase ga kgotsa**

4.

Tsebe 33

a. 3: $3 + 3 = 6$

b. 4: $4 + 4 = 8$

Morutwana B ore.

a. $2 + 2 = 4$

b. $5 + 5 = 10$

5. 25; 30; 35; 40; ...

Tirwana

Tsebe 34

a. Go nna madi a tshipi a le **6** mo setshwantshong.

b. $2 + 2 + 2 = 6$

c. $3 \times 2 = 2 + 2 + 2 = 6$

d. $2 + 2 + 2 = 3 \times 2 = 6$

Tsereganyo: Ikatiso ka nosi, tshekatsheko e e tshwanetseng go ikatisediwa, ikatiso ya sebedi le Tirwana ya setlhopha.**Bokhutlo**

- Gatelela tlhaloso ya thakanyo poeletso mme o e amanye le katiso.

Tlhagisa diura le metsotso mo tshupanakong nngwe le nngwe.

Ikatisa go anela dikgang tsa nako mme o dire gore barutwana ba arabe dipotso.

- Jessica o tsenya dikuku mo ontong ka 7:00 a.m. Di tlhoka go butswa metsotso e le 18. Jessica o tshwanetse go ntsha dikuku mo ontong ka nako mang? **7.18 am**
- Tshupanako ya ga Thando e re ke 2:00 p.m. O tla ya dijong tsa maitseboa mo diureng di le 3 le metsotso e le 20. O tla ya dijong tsa maitseboa ka nako mang? **5.20 pm**
- Rre o goroga kwa gae ka 4:50 pm. O dule kwa tirong metsotso e le 40 e e fetileng. Rre o dule ka nako mang kwa tirong? **4.10 pm.**
- Jack o ne a sa kgone go palama terena ya gagwe e e tlwaelegileng ka gonne o ne a tsoga thari. O ne a palama terena e e latelang ka ura ya masome a mabedi le borobedi mo mosong, e e neng e le morago ga metsotso e le 40 go feta terena ya gagwe e e tlwaelegileng. Terena ya gagwe e e tlwaelegileng ke ya nako mang? **7.40 am**
- Fa a goroga kwa gae, Jack o ne a robala diura di le 3. O robetse metsotso e le kae? **Motsotso e 18**

Boleele: Bua ka gore re itse jang gore a selo se **seleele** kgotsa se **sekhutshwane**.

Sekao, **pensele** e **telele** fa e bapisiwa le **sekgomaretsi** mme e **khutshwane** fa e bapisiwa le **bolelwane** wa moalo.

Naya barutwana metsotso e le mmalwa go lekanya didirisiwa tse di farologaneng mo phaposing.

Laela barutwana gore ba dirise **diatla, dikgwele, thobane ya mitara** go lekanya ditlwa tse di farologaneng.

- Kopa barutwana go kwala ditekanyo mo botong e tshweu kgotsa mo phaposing, mme ba belege phaposi.
- **Buisanang** ka se ba se ribolotseng ka ditekanyo tsa bona.
- **Gatelela** gore go na le dipharologano mo dikarabong tsa bona tsona diyuniti tse di dirisiwang di farologane.
- **Itsise** diyuniti tse di tlwaelegileng tsa go lekanya ka rula.
- Dira gore barutwana ba lekanye didirisiwa tse mo phaposiboteng ba dirisa dirulana tsa bona.
- Fa barutwana ba ise ba lekanye, ba letle go fopholetsa. Dira gore ba kwale phopholetso le tekanyo:
- **Tirwana ya katoloso**
 - **Kgaoganyana didirisiwa go ya ka bogolo: telele e le telele go gaisa, khutshwane le khutshwane go gaisa.** Dira gore barutwana ba tlhalose gore e eng e a di arogantse jalo.
 - Botsa barutwana gore ke diyuniti dife tse nngwe tsa tekanyetso tse ba itseng ka tsona?

Dikaelo tsa go Ruta: Rotloetsa barutwana go tseka ditlhopha go wetsa ditirwana le go dirisa thekenoloji e e leng teng mo phaposing go ntsha dikarabo.

Dikarabo tsa dithutiso le ditirwana tsa ditlhopha

Tirwana

Tsebe 36

1. Mo mosong ; Thapama ; tshwana
2. Mo mosong.
3. Koloji e bonako mme e sekelele bonya.
4. a. Ka ura ya bosupa.
b. Motsotso e masome a mabedi morago ga borataro (Motsotso e 20 morago ga 6).

Dipaterone tsa Jometeri le tsa dipalo

Maikaelelo a thuto:

- Go kopolola, go atolosa, go tlhalosa dipaterone tse di bonolo tse di dirilweng ka didirisiwa, go tshwantsha mela, dipopego.
- Go itlhamela le go tlhalosa dipaterone tse di itiretsweng.
- Dipaterone tsa dipalo: Kopolola, atolosa le go tlhalosa tatelano ya dipalo go fitlha go 150.

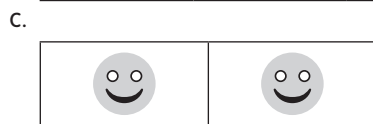
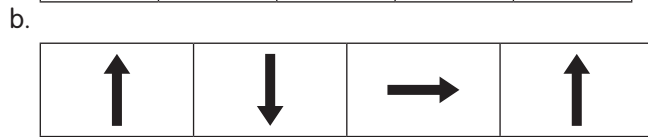
Kitsiso	
<p>Bontsha barutwana dipaterone tsa dipalo ka go ba kopa go balela kwa pele le kwa morago ka dikatibisiwa tsa 10, 5 le 2 go tswa mo katisanetsweng nngwe le nngwe ya 10, 5, 2.</p> <p>Matseno – video: Dipaterone tsa Dipalo tse di gola</p> <p>Metsotso ele 20</p> <p>Sekao sa Tirwana: Kopa barutwana go bala ka 2 ka go ntsha palo e e sa tlwaelegang ka go bulela didimalo. Bala ka 3 ka go ntsha fela nomoro nngwe le nngwe ya boraro.</p>	
Didirisiwa	Mafoko a mafokoa:
<p>Sega dipopego, dipensele</p> <p>Pampiri</p> <p>Diboloko</p>	<p>Paterone, mo go feleletso, go feta, palo e e tlhaelang.</p> <p>Mareo a kwadilwe le go tlhalosiwa ka fa tlase ga lenaanefoko la maboteng.</p> <p>Go botlhokwa go tlhalosetsa barutwana ba gago mafoko a le go ikatisa go a dirisa le barutwana ba gago ka nako ya thuto.</p>
Kaelo	
<ul style="list-style-type: none"> • Kwala dipalo dingwe mo botong ka maboteng o golang: tlogela dipalo mo gare gore barutwana ba di supe. <ul style="list-style-type: none"> ○ 1; 3; 5; ___; 9 ○ 2; 4; 6; ___; 10 ○ 5; 10; 15; ___; 25 ○ Botsa barutwana gore ba itseleletse go tlogela dipalo dife tse di tlhaelang? <p>Paterone ke eng? Thusa barutwana go bona paterone ka go e tshwantsha mo botong o dirisa didirisiwa.</p> <ul style="list-style-type: none"> • Naya barutwana tse di nnye ya go dira paterone mo botong le go dira gore ba bangwe ba feleletsa paterone. • Tirwana Ya Kaelo <ul style="list-style-type: none"> ○ A o ka balela kwa morago ka mokgwa wa go fologela? <p>Dikaelo tsa go Feta: Ronaetsa barutwana go dira ka sebedi kgotsa ka ditlhophha go wetsa ditirwana le go dirisa thekenoloji e neng e nng mo phaposing go ntsha dikarabo.</p>	

Dikarabo tsa dithutiso le ditirwana tsa bukathuto

Batutishi ba tshwanetse go kaela barutwana mo go kwadiseng mekgwa ya dipaterone le go netefatsa gore ba a tlhaloganya.



Tsebe 37



Dikarabo

Tsebe 38

1. Sekao sa kgolokwe ke bolo, mme sekai sa selenpere ke pampiri e e gotetsweng.
2. Bolo e ka dikologa ka gone ga e na dikutlwana.
3. Bolo e kgona go sutisiwa motlhofo.
4. Tishu e ka tshwaragangwa le go nwa.
5. Lebokoso le sethupa sa pampiri fa di tshwana kgotsa di pitlaganwa, di ka se bereke sentle.

Dikarabo

Tsebe 39

1. 20
2. Dithini
3. 10
4. 20
5. 9
6. a. Mmabana o tla neelang
- b. Setafo se se tlhamaletseng
- c. Bore bo bo
- d. 9
- e. 3

Bontsha bokgoni jwa gago jwa dipalo

Teko ya bokhutlo jwa kgweditharo – dipalopalo

Maikemisetso a teko:

- Go tlhomamisa gore barutwana ba tlhaloganya dipalopalo ka go dirisa dipalotshwao, dipalo le dipalo tse di tlhaelang.
- Go ruta barutwana go dirisa dipalo mo dipotsong tsa bophelo jwa letsatsi le letsatsi.
- Go godisa bokgoni jwa barutwana jwa go kwala mekgwa ya dipaterone, diphetogo tsa dipalo le dipalo tse di tlhaelang.
- Go tlhatlhoba fa barutwana ba kgona go rarabolola dipalo ka go tlhalosa dikarabo tsa bone.

Mekgwa ya go ruta:

- Go dirisa mekgwa ya tiragatso go thusa barutwana go bona dipaterone mo dipalopalo.
- Go dirisa diboutu le dipapadi tsa dipalo go netefatsa tlhaloganyo.
- Go letla barutwana go tlhalosa dikarabo tsa bone ka mafoko le dipalo.
- Go dirisa ditshwantsho le dipalo tse di tlhaelang go tsosolosa tlhaloganyo mo dipalopalo.

Dikarabo tsa dipotso:

- 4; 5; 7; 9; 10; 12; 15
- a. 15 → Lesometlhano (Lesome le botlhano)
b. 12 → Lesomepedi (Lesome le bobedi)
- a. $4 + 2 = 6$
b. Pele ga 20 ke 19, morago ga 20 ke 21.
Pele ga 17 ke 16, morago ga 17 ke 18.
- a. 32: 30 bosome le 2 bongwe.
b. 56: 50 bosome le 6 bongwe.
- $20 + 30 = 50$ le $3 + 5 = 8$
 $23 + 35 = 58$
- $9 + 10 = 19$
- a. Maje a $10 + 6 = 16$. Ba ne ba nako ya maje a le 16.
b. $19 - 14 =$ Go setse R5.
c. $18 - 12 =$ Go setse 6 ... nako.
- a. 16
b. Nwana monawe ... mongwe o tla bona 5 dimmabole.
c. Go setse 1 ...
d. Karabo ... morutwana.

9. 4 : 12 le 6 : 18



11.  Paterone e tshwanetse go latelwa go tlatsa dipotso.

12. a. Khutlonnêsepa – 8.
 Khutlonnêsepa e e maleele – 10.
 Khutlotharo – 9.
 Dikgolokwe – 7.
- b. Khutlonnêsepa e e maleele.
 c. Dikgolokwe.
 d. $9 - 7 = 2$
 e.

10				
9				
8				
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6				
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4				
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EXTRACT PAGES



Dipalo • Mophato wa 2 • Gweditsharo 2

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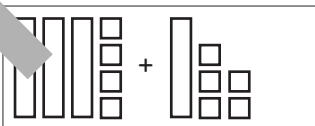

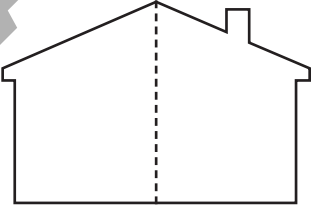
÷ (Go kgaoganya)

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Kgweditharo 2

A re bone gore o itse eng?

Tsebe 50

<p>1. Tlatsa tse di latelang</p> <p>a. $9 + 8$ ke bokae? (17)</p> <p>b. $17 - 5$ ke bokae? (12)</p> <p>2. Simolola ka 12 mo molapalong o bo o bala dikgato di le 5 go ya kwa pele. O fitlha mo palong efe? (17)</p> <p>3. Ke balela ka bokae? 110; 114; 118; 122; 126; 130 (O balela ka 4)</p>	<p>1. Leba tsela e e dirilweng ka yone: $\square, \bullet, \square$ Ke sebopego sefe se selatlang? \bullet</p> <p>2. Rulaganya ditshwai tse dikhibidu tse di botala ba loapi, tse dikhibidu, tse botala ba loapi. Go tla nna ope fa morago?</p> <p>3. Dira setshwantso: Δ, \bullet Ke dife dipopego tse piri tse selatlang? \bullet</p>
<p>1. Sarah o na le diapole di le 12 mme o fiwa tse dingwe di le 7. Tshwantsha diapole go bontsha gore o na le di le kae jaanong. (diapole di le 19)</p> <p>2. Ke palo efe e e tshwanetseng go tsamaisana le 4 go dira 10? (6)</p>	<p>Kwala dikarabo.</p> <p>a.  (49)</p> <p>b.  (25)</p>
<p>3. Ke efe ya ditshwantsho tseno e e lekalekanang? Kopa setshwantsho seno o bo o tshwantshe mola wa tekatekano mo go sona.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>E e lekalekanang (Symmetrical)</p> </div> <div style="text-align: center;">  <p>E e sa lekalekanang (Not symmetrical)</p> </div> </div>	

Maikaelelo a thuto:

- Rulaganya setlhopha se se rileng sa Dipalo.
- Tshwantshanya dipalo go ya go 30 mme go tlhalosiwe gore ke efe e e leng: 1, 2, 10 go feta kgotsa 1, 2, 10 kwa tlase - dirisa kamano magareng ga + le - go tlhalosa.
- Go gakologelwa ka bonako go tlhakanya le go ntsha dintlha go ya go 10.

Matseno	
Bala go ya kwa pele le kwa morago ka di 10, 5 and 2, 3, 4 le ka dikatisanetswa dipe tsa 10, 5, 2, 3, 4 maeneng ga 0-200	
Tirwana ya Sekao: Kwala dipalo tsa 2 go ya go 50 mo borotong mme o bo o kopa barutwana go tlhalosa gore ke bongwe katerone efe.	
Didiriswa	Mafoko a mašwa
Go tshwanetse ga akanyediwa ka kelotlhoko mofuta wa sedirisiwa se se dirisiwang. <ul style="list-style-type: none"> • Go bala diboloko • ditalama • Dingata di le lesome diboloko tsa popo ya lesome <ul style="list-style-type: none"> • Ditšhate Tsa Dipalo • Madi ago tshameka 	Kwala mafoko a a botlhokwa a barutwana ba tla a ithutang: <ul style="list-style-type: none"> • Botlhe • Go feta • Kwa tlase ga • Go tlola fa o bal • Thulagano e e tshang • Thulagano e e tshang Bona tlhaloso ya mafoko ano mo lenaaneng la mafoko. Go botlhokwa go tlhalosetsa barutwana ba gago mafoko ano le go itlwaetsa go dirisa le bona mo thutong.
Kaelo	
Kaelo e e Kgethegileng Kwala palo e e dipalo tse pedi mo botong, tsa go 36.	
Kopa barutwana gore ba tlotle ba le babee ba go direga eng ka palo fa go dirisiwa dintlha tse di latelang. 1 go feta 38 ke 39 .	
Tirwana ya phaposi ya go batla barutwana ba go dipotso tse di fa tlase.	
a. 1 kwa tlase ga 50	37
b. 1 go feta 39	38
c. 3 kwa tlase ga 27	29
d. 10 go feta 20	30
Sekaseka gore barutwana ba tlhologanya jang dipalo ka go ba kopa gore ba dire tirwana ka bongwe ka bongwe mme ba arabe dipotso tse di fa tlase.	
• Ke palo e e tlog pele ga 37?	36
• Ke palo e e tlog morago ga 39?	40
Kopanya barutwana ka sebedi mme o ba letle gore ba tlotle ka gore dipalo tseno tse pedi di farologana jang.	
• Ke efe e e fetang e nngwe: 21 kgotsa 41?	41
Tlhopha morutwana mongwe fela gore a bue palo e e fa gare ga 37 le 39.	38

Laela barutwana go rarabolola $12 + 8$ ka mekgwa e e farologaneng e e letlang go bala ka bonako.

a. Batla ditlhopha tsa dipalo tse di dirang 10.

$2 + 8$ e dira 10 kgotsa dirisa molapalo.

Jaanong kopa barutwana go rarabolola $3 + 6$

b. Simolola ka palo e kgolo

$3 + 6$

Kwala $6 + 3$ mme o bontshe barutwana go bala go fitlha go 9. Kopa barutwana go bala kwa morago go simolola ka palo, sekao 15 go ya go 11. Botsa gore ba tla bona jang karabo ya $10 - 4$. Letla gore go tlotliwe ka ditlhopha tse pedi o bo o kopa barutwana go ntsha maikutlo a bona gore ba bona karabo jang.

Dira sekao sa karabo mo moleng wa dipalo.

Tlhopha barutwana ba le 5 go tshameka motshameko wa Kgwetlho ya ga Khensani. Mone nteletse gore ba tlhaloganya go balela kwa pele le kwa morago ba dirisa mareo a "go feta" le "kwa tlase".

Dikarabo tsa Ditirwana tsa Bukathuto

- a. 30; 40; 50; 60; 70; 80; 90; 100
- b. 90; 80; 70; 60; 50; 40; 30; 20
- c. 70; 80; 90; 100; 110; 120; 130; 140; 150; 160; 170
- d. 35; 40; 45; 50; 55; 60; 65; 70
- e. 70; 65; 50; 45; 40; 35; 30; 20
- f. 155; 150; 145; 140; 135; 130; 125; 120; 115; 110; 105
- g. 22; 24; 26; 28; 30; 32; 34; 36

Dipotso e okeditsweng

$30 + 16 = 46$	$35 + 10 = 45$	$27 - 5 = 22$	$27 - 3 = 24$
$44 + 5 = 49$	$29 + 11 = 40$	$44 - 6 = 38$	$44 - 3 = 41$
$36 + 14 = 50$	$37 + 12 = 49$	$35 - 5 = 30$	$39 - 4 = 35$

Tirwana ya Katoloso

Mo barutwaneng ba ba nana o mme sapa dirisa molapalo le sedirisiwa sengwe se se tlwaelesegileng.

Sekao, fa palo e le 5, tse nna di tse 5 mme fa palo e le 2 go feta, ba oketsa ka dibadi tse 2.

Bokhutlo

Sekaseka le go tlhokanya

Kopa barutwana go tlhalosa se se diragalang fa re balela kwa pele (dipalo di oketsega) le fa re bala kwa morago (dipalo di fokotsega). Fa ba sena go tlhalosa, neela tirwana e khutshwane ya molomo, mme ba bale ka ditsela tse di farologaneng go simolola ka dipalo tse di farologaneng.

Motshameko: Selo se se ka dirwang kwa gae

Maikaelelo a thuto:

- Bala go ya kwa pele le kwa morago ka 1 go tswa mo palong e e fa gare ga 0 le 110.
- Bala go ya kwa pele le kwa morago ka 10, 5 le 2, 3, 4 le go tswa go dipalo dipe fela tsa 10, 5, 2, 3, 4 magareng ga 0–110.
- Dirisa kamano magareng ga + le –.
- Gatelela go feta, nnye - go ya godimo le go ya tlase.

Matseno:	
<p>Metsotso ele 5 Bala go ya kwa pele le kwa morago ka 10, 5 le 2, 3, 4 go tswa go dipalo dipe fela tsa 10, 5, 2, 3, 4 magareng ga 0–110.</p> <p>Sekao Tlotla ka kgang ya go bala ya ga Fatima le Ricardo mo bukeng ya morutwana.</p>	
Didiriswa	Mafoko a Mašwa:
<ul style="list-style-type: none"> • Go tshwanetse ga akanyediwa ka kelotlhoko mofuta wa sediriswa se se dirisiwang. <ul style="list-style-type: none"> ◦ Go bala diboloko ◦ go bala ditalama ◦ ditalama ◦ Dingata tsa 2, dingata tsa 5 le tsa 10 tse di balwang mmogo ◦ diboloko di le lesome ◦ Ditšhate Tsa Dipalo ◦ Madi go tshameka 	<ul style="list-style-type: none"> • Kwala mafoko a a bonafeteng a barutwana ba tla a ithutang: <ul style="list-style-type: none"> ◦ Gotlhelele ◦ Go feta ◦ Kwa tlase ◦ Go tlola fa o tlolela ◦ Thutlangano e e matlogang ◦ Thutlangano e e fologang <p>Bona lena la mafoko go bona tlhaloso ya mafoko ano. Go bonokwa go tlhalosetsa barutwana ba gago mafoko ano le go katisa go a dirisa le bona mo thutong.</p>
Kaelo	
<p>24 metsotso Tlhopha didiriswa di le 5–10, mme o tlele go bala ka kelotlhoko. Abela barutwana didiriswa (sekao, diboloko di le 10). Kaela barutwana go bala mmogo ba se se ba se balang. Gatelela gore ba bale sengwe gangwe fela. Sekao, bala ditalama go tloga ka 10 go tloga. Kgothaletsa barutwana go balela godimo diapole tse mo serotong. (diapole tse 5).</p> <p>Naya barutwana dibadi tse 5 go bala ka bobedi ka sebedi.</p> <p>Kaela barutwana go bala didiriswa mme e seng ka bongwe ka bongwe.</p> <p>Barutwana ba ka nna go kopanya didiriswa ka diithopha tsa 5 kgotsa 10 go ikatisa go di kopanya jaaka karolo ya go bala.</p> <p>Sekao se se tloga go tloga dipalo di ka balwa jang ka go di kgobokanya.</p>	
<p>57</p>	
<p>Bontsha go Bala Didiriswa</p> <p>Kopa barutwana go balela kwa pele ka 2, 5, 10 go ya go 20 ka tiriso ya molapalo.</p> <p>2; 4; 6; 8; 10; 12; 14; 16; 18; 20</p> <p>5; 10; 15; 20</p> <p>10; 20</p>	

Bala palo ya marothodi

Karabo: 57

Kopa barutwana go tlhalosa palo jaaka e okesega go ya go 20. **(e a oketsega)**

Tlhalosa gore fa go balwa go ya kwa pele dipalo di a oketsega.

Dirisa palo e e tshwanang ya 20 mme o kope barutwana go bala go ya kwa morago go tswa go 20.

20; 18; 16; 14; 12; 10; 8; 6; 4; 2

Gatelela gore dipalo di nna dinnye fa o bala go ya morago.

Tlhalosa pharologano fa gare ga go balela kwa pele (dipalo di a oketsega) le go balela kwa morago (dipalo di a fokotsega).

Dikarabo le ditirwana tsa tlaletso

Go Bala (Tirwana e e Kwadilweng):

- 10; 20; 30; 40; 50; 60; 70; 80; 90; 100; 110
- Ricardo o tla bala didirisiwa di le 5 mo sephuthelwaneng sa dijo.
- Mo dikgetsaneng di le 18 tsaya dikgetsana di le 6 go sala dikgetsana di le 12 tsa di fatang dikgetsana di le 10.
- Thini e le nngwe ya kofi, dikgetsi tse pedi tsa sukiri, dinawa tse nne tsa dithiri, dithiri tse tlhano tsa dithlapi, dinutule di le lesome.

Go balela kwa morago le kwa pele:

Tsebe 51

- 110; 100; 90; 80; 70; 60; 50; 40; 30; 20; 10; 0
- $27 + 9 = 36$
- $70 - 20 = 50$
- 20; 16; 12; 8; 4

Go bala (Tirwana e e Kwadilweng):

- a. 40; 44; 48; 52; 56; 60; 64; 68; 72; 76; 80; 84; 88; 92; 96; 100; 104; 108
b. 50; 45; 40; 35; 30; 25; 20; 15
- e tlhatlogela kwa godimo (12; 15; 18; 21)
- 60; 58; 56; 54; 52; 50
- a. 10; 20; 30; 40; 50
b. 50; 45; 40; 35; 30; 25; 20; 30
- 22; 26; 30; 34 30 e feta 20 mme e kga tlase ga 34

Go batlisisa dipalo tse di farologaneng:

- a. 30; 32; 34; 36; 38; 40; 42; 44; 46; 48; 50
b. 45; 40; 35; 30; 25; 20; 15
c. 60; 70; 80; 90; 100; 110; 120
- 12; 15; 18; 21; 24 ke dikgato di le nne kwa pele.
- 56; 66; 76 e kgone ka gonne e fa gare ga 56 and 66
- 79; 77; 75; 73
- 55; 60; 65; 70; 75

Kgakgamatso ya go bala mo tikologong ya Sekolo.

Bokhutlo:

Go bala go tokafatsa go tlhaloganya boleng jwa lefelo

- go bala ka tlhogo.
- go bua maina a dipalo.
- go lemoga matshwao a dipalo; le
- bokgoni jwa go bala jo bo tlhokegang go dira dipalo.

Tlhalosa gore go ntsifatsa ke tsela e e bonako ya go oketsa palo. Sekao, **dithlopha di le 3 tsa 4 di ka kwalwa e le 3×4 .**

Letlelela barutwana gore ba dirise didirisiwa kgotsa ditshwantsho go rulaganya le go bala, go tswa foo ba bo ba ranola se ba se ithutileng mo dipolelong tsa go atisa.

- Dibaesekele di le 8 di na le maatwana a le kae? **16**
- Bana ba le 9 ba na le matlho a le kae? **18**
- Thami o nwa digalase di le 6 tsa metsi ka letsatsi. O nwa digalase di le kae tsa metsi mo bekeng? **42**

Dirisa sekao sa go atisa gore barutwana ba bone kamano magareng ga \div le \times

Kwala gore diapole di le 12 tse di neng di kgaogantswe ke bana ba le 3. ngwana mongwe le mongwe o ne a amogela diapole di le kae mme o bontshe barutwana tharabololo.

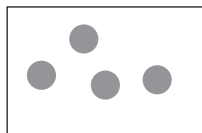
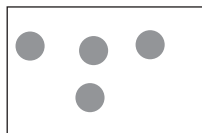
Kopa barutwana go nna dithlopha tsa batho ba le 3 mme ba dirise dipalo di le 12 go di tshela a go bontshe ba bona dipalo tse di lekanang.

Ba bontshe gore morutwana mongwe le mongwe o emelwa jang ke lebokoso le tsa tase.

Botsa barutwana gore go na le dithlopha di le kae **3**.

Akanya ka seno Fa bana ba le 3 ba abelana diapole di le 12, ngwana mongwe le mongwe o amogela di le 4.

Bolelela barutwana gore polelwana ya go arola e tla nna $12 \div 3 = 4$



Tlhalosa gore go kgaoganya ke tsela e e bonako ya go bala gore go tsenngwa didirisiwa di le kae mo setlhopheng sengwe le sengwe kgotsa gore motho mongwe le mongwe o amogela didirisiwa di le kae.

Dikakantsho Tsa go Ruta

- Dipotso tse di boaboetswang tsa go oketsa le go tshela wa kiriti di tshwanetse go bontsha polelo ya palo ya go ntsifatsa.
- Go sa ntse go tla nna le barutwana ba tsa dikanyang thata go kwala tharabololo ya bona ba dirisa go oketsa go na le go ntsifatsa.

Dikarabo tsa Ditirwana tsa go Ruta

Tirwana: **Tsebe 53**

- Dipalo di oketsegile ka 4.
 - Ee, dipaterone tsa go dipalo di oketsega ka 4 nako le nako.
 - 4; 8; 12; 16; 20; 24; 28; 32; 36; 40; ...
 - Dipalo di oketsegile ka 4 fa ke ya kwa godimo, mme fa ke ya kwa morago di fokotsega ka 4.
- 30; 27; 34; 31; 38; 40; 42; 44; 46; 48; 50.
 - 45; 40; 35; 30; 25; 20; 15.
 - 60; 80; 100; 100; 110; 120.
- 15; 18; 21; 24; 27; 30; 33; 36; ...
- 40
- 60 ke palo e kgolo. Fa o balela kwa pele ka bo10 go simolola ka 56, o tla bona 66; 76; 86... mme 60 e tla tla pele mo tatelanong.
- 90; 70; 50; 30 (E setse e beilwe mo tatelanong e e fologang, e siame ka jalo).
- 55; 60; 65; 70; 75 (Dipalo di rulagantswe go tswa mo e nnye go ya go e kgolo.)

Tirwana: **Tsebe 55**

- $16 + 8 = 24$; b. $12 + 12 = 24$; c. $15 + 20 = 35$; d. $35 + 15 = 50$
 - a. $21 - 7 = 14$; b. $23 - 10 = 13$; c. $30 - 8 = 22$; d. $50 - 25 = 25$

Tirwana:

2. 6; 15; 24; 33; 42; 51

3 a. $9 + 3 = 12$

b. $84 + 3 = 87$

c. $135 + 3 = 138$

4. Ditlhopha di le 10 tsa bo3 ke

$10 \times 3 = 30$.

30 ke e e kwa tlase fa e bapisiwa le 93.

5. a. $96 - 3 = 93$; $93 - 3 = 90$; $90 - 3 = 87$; $87 - 3 = 84$; $84 - 3 = 81 \dots$

b. $50 - 3 = 47$; $47 - 3 = 44$; $44 - 3 = 41$; $41 - 3 = 38$; $38 - 3 = 35 \dots$

c. $76 - 3 = 73$; $73 - 3 = 70$; $70 - 3 = 67$; $67 - 3 = 64$; $64 - 3 = 61$; $61 - 3 = 58 \dots$

Bokhutlo

Tiro gae: buka ya DBE pg 55–56

Sekaseka o bo o Tlhatlhanye

- Sekaseka kafa go boeletsa go oketsa go ntsifatsang ka teng mme o t'haloseng gaio tse di dirisiwang go rarabolola diitharaano.



Monate ka dipalo le mafoko!

Maikaelelo a thuto:

Dirisa mekgwa e e latelang fa o rarabolola ditharaano mme o tihalose gore di ka rarabololwa jang:

- Go oketsa le go fokotsa 40 (+, − =, □).
- Go ikatisa ka popo ya dipalo go fitlha go 12.
- Atisa dipalo ka 2 go tswa go 1 go ya go 10 le go tswa go 5 go ya go 40.
- Go kgobokanya le go aroganya dipalo.
- Go menaganya gabedi le go fokotsa ka seripagare.
- mela ya dipalo.

Matseno:

Bala go ya kwa pele le morago ka 10, 5 le di 2, 3, 4 mme o dirise dikatsanetsewa dino felele ka 1, 2, 3, 4 tse di magareng ga 0–110

Sekao

Dinonyane di le pedi di ne di ntse mo terateng. Dinonyane tse dingwe di tsharo a di ntsa tla. Ke dinonyane di le kae tse di leng mo terateng? Karabo 5 (oketsa $2 + 3$)

Didirisiwa/Sedirisiwa:

Ditshwantsho kgotsa didirisiwa tse di tshwaregang

Didirisiwa tsa go tshwantsha

Kaeletso/Mokgwa/togamaano

Kwala polelo ya palo mo botong $4 + 3 = \underline{\quad}$ mme o naya barutwana go fa karabo.

Barutwana ba tshwanetse go baya dibadi di 4 mo moleng, ba bo ba oketsa ka tse dingwe di le 3. Kgotsa ba bala dipalo tsotlhe go bona gore $4 + 3 = 7$.

Dirisa molapalo mme o bale go ba supa gore

Jaanong dirisa sekao sa go ntsha ga 16-7 mme barutwana ba tswellele ka go dirisa molapalo.

Simolola ka 16, ntsha 7, mme o bale go se setseng go bontsha gore $16 - 7 = 9$

Kwala mo borotong mo thara o naye **dipensele di le 7**. O naya tsala ya gagwe di le **3**. O setse ka di le kae?

Bontsha gore o ka rarabolola jang ditharaano tse di amanang le mafoko kgato ka kgato, o supa tshedimosetso e e botlhokwa le go tlopha tsela e e siameng ya go a rarabolola.

Tihalosa gore go rarabolola ditharaano go ka dirwa ka ditsela tse di farologaneng...

- **Tlhalosa** botlhokwa ba go ela tlhoko mafoko a a diriswang mo tharaanong: **Thandi o na le diapole di le 8 mme o na le dirisa tsa gagwe** di le 3. O setse ka diapole di le kae?
- **Thusa barutwana** go Tlhaloganya ditharaano ka go ba botsa dipotso tse di ka ba kaelang: Tharaanano eno e batla gore re dire eng? Re na le tshedimosetso efe?
- **Barutwana** ba tshwanetse go lemoga dipalo tsa botlhokwa le ditirwana tse di tlhokegang mo tharaanong

Tlhalosa ditsela di le mmalwa tsa go rarabolola ditharaano tse barutwana ba ka di dirisang ka go dirisa sekao sa apole.

1. Go Tshwantsha Setshwantsho: Re ka tshwantsha diapole di le 8 mme ra kgaola di le 3 mo go tsone.

2. **Go Dirisa Didirisiwa:** Re ka dirisa dipadi kgotsa diboloko go tshwantshanya le diapole.

Tshwantsha setshwantsho se se tshwanang le se se fa godimo

3. **Go dirisa molapalo:** Re ka kgona go bala go ya kwa morago go tloga go 8 go ya go 3 mo molengpalo.

